



## **AGENDA**

### **N.C. WILDLIFE RESOURCES COMMISSION**

**February 28, 2018, 9:00 a.m.**

**1751 Varsity Drive**

**NCWRC Conference Room, 5<sup>th</sup> Floor**

**Raleigh, North Carolina**

**CALL TO ORDER** - *Chairman John Coley*

**This meeting is being recorded as a public record and is audio streaming live at [www.ncwildlife.org](http://www.ncwildlife.org). As a courtesy to others please turn off all cell phones during the meeting.**

**PLEDGE OF ALLEGIANCE** – *Commissioner Tommy Fonville*

**INVOCATION** - *Commissioner Wes Seegars*

**RECOGNITION OF VISITORS** – *Chairman John Coley*

**MANDATORY ETHICS INQUIRY** - North Carolina General Statute 138A-15(e) mandates that the Commission Chair shall remind all Commissioners of their duty to avoid conflicts of interest and appearances of conflict under this Chapter, and that the chair also inquires as to whether there is any known conflict of interest or appearance of conflict with respect to any matters coming before the Commission at this time. It is the duty of each Commissioner who is aware of such personal conflict of interest or of an appearance of a conflict, to notify the Chair of the same. *Chairman John Coley*

**APPROVAL OF MINUTES** – Take action on the December 7, 2017 Wildlife Resources Commission meeting minutes as written in the exhibit and distributed to members (**EXHIBIT A**)

## **ADMINISTRATION**

**Financial Status Report** - Receive a financial status report on the Wildlife Operating Fund and Wildlife Endowment Fund – *Executive Director Gordon Myers* (**EXHIBIT B**)

**PRESENTATION OF THE 2017 LAWRENCE G. DIEDRICK SMALL GAME AWARDS**  
– *Chairman John Coley and Executive Director Gordon Myers*

## **COMMITTEE REPORTS**

**Finance Committee Report February 7, 2018** – *Landon Zimmer, Chair*

**Land Use and Access Committee Report** – *Tom Berry, Chair*

**Habitat, Nongame and Endangered Species Committee Report** – *Mark Craig, Chair*

**Boating Safety Committee Report** – *Mike Johnson, Chair*

**Migratory Birds and Waterfowl Committee Report January 24, 2018 in New Bern** –  
*Richard Edwards, Chair*

**Migratory Birds and Waterfowl Committee Report** – *Richard Edwards, Chair*

**Committee of the Whole Report** – *Chairman John Coley*

*Break for Photographs*

**AGENCY SPOTLIGHT – HUMAN/WILDLIFE INTERACTIONS HOTLINE** - Receive a presentation highlighting the progress of the *NC Wildlife Helpline* during its first year– *Daron Barnes, Section Manager – Customer Service Section*

**WILDLIFE EDUCATION DIVISION UPDATE** – Receive a staff update on the activities of the Wildlife Education Division – *Kris Smith, Wildlife Education Division Chief*

## **INLAND FISHERIES DIVISION**

**Fisheries Division Update** - Receive a staff update on activities of the Inland Fisheries Division – *Christian Waters, Inland Fisheries Division Chief*

**Public Comments and Rulemaking for 2018 – 2019 Inland Fishing Rules** – Receive public comments on proposed changes to inland fishing Rules received from statewide public hearings, internet portal, and correspondence. Review and consider for adoption proposed changes to the 2018-2019 inland fishing Rules – *Christian Waters* (**EXHIBITS C-1, C-2**)

## **WILDLIFE MANAGEMENT DIVISION**

**Wildlife Management Division Update** – Receive an update on the activities of the Wildlife Management Division – *Dr. David Cobb, Wildlife Management Division Chief*

**Public Comments and Rulemaking for 2018-2019 Wildlife Management Rules** – Receive public comments on proposed changes to wildlife management Rules received from statewide public hearings, internet portal, and correspondence. Review and consider for adoption proposed changes to the 2018-2019 wildlife management Rules – *David Cobb (EXHIBITS D-1, D-2)*

**Coyote Management Plan** – Consider staff recommendations for final adoption of the Coyote Management Plan – *David Cobb (EXHIBIT E)*

## **LAND AND WATER ACCESS SECTION**

### **Land Acquisitions and Property Matters**

**Phase I Land Acquisitions** – Consider approval for staff to work with State Property Office and funding partners to develop acquisition plans for the following properties – *Brian McRae, Land and Water Access Section Chief; Kris Smith, Wildlife Education Division Chief (EXHIBITS F-1, F-2, F-3)*

- Corpening Tract – Burke County (Exhibit F-1)
- Aydlette Tract – Camden County (Exhibit F-2)
- Camp McCall – Rutherford County (Exhibit F-3)

**Easement Request** – Consider a request from NCDOT for an easement across Sandhills Game Land – *Brian McRae (EXHIBIT G)*

**Easement Request** – Consider a request for an easement across the Wood Tract of Nantahala Game Land in Jackson County – *Brian McRae (EXHIBIT H)*

**Other Property Matters** – Consider a request from a non-profit to exchange four acres at Roanoke Island Marshes Game Land for 12 acres of land in Currituck County – *Brian McRae (EXHIBIT I)*

**McDowell County Shooting Range** – Consider approval to partner with McDowell County to design and construct a shooting range facility – *Gary Gardner, Engineering Section Chief (EXHIBIT J)*

**Summary of Public Comments** – Receive summary of public comments on proposed changes to game lands management regulations, received from statewide district public hearings held in January and February 2018, from WRC internet portal, and correspondence. Review and consider adoption of proposed changes in the 2018-2019 game land management regulations – *Brian McRae – Brian McRae (EXHIBIT K-1, K-2)*

## **WATER SAFETY RULEMAKING**

**Notice of Text – 15A NCAC 10F .0300 – Local Water Safety Regulations** – Consider request to approve publishing Notice of Text in the *NC Register* for proposed amendments to 7 water safety regulations, hold one public hearing, and open the public comment period. Approve Fiscal Note – *Betsy Haywood, No-Wake Zone Coordinator (EXHIBITS L-1, L-2)*

**Rulemaking Notice of Text and Fiscal Note – 15A NCAC 10F .0320 Queens Creek, Onslow County** – Consider request by the Onslow County to approve publishing Notice of Text in the *NC Register*, hold one public hearing, and open the public comment period for a proposed amendment to 15A NCAC 10F .0320, to establish a no-wake zone at a Boating Access Area on Queens Creek in Hubert. Approve Fiscal Note – *Betsy Haywood (EXHIBIT M-1, M-2)*

**COMMENTS BY CHAIRMAN** – *Chairman John Coley*

**COMMENTS BY EXECUTIVE DIRECTOR** – *Gordon Myers*

**ADJOURN**

# EXHIBIT A

## February 28, 2018



### MINUTES

#### December 7, 2017

#### N. C. Wildlife Resources Commission Meeting

#### Raleigh, North Carolina

Chairman John Coley called the December 7, 2017 N. C. Wildlife Resources Commission meeting to order at 9:00 a.m. in the Commission Room at Wildlife Resources Commission Headquarters in Raleigh. Coley reminded everyone that the meeting audio is being streamed live and will be available on the Wildlife Resources Commission website. He asked everyone to silence cell phones.

Commissioner David Hoyle, Jr. led the Pledge of Allegiance.

Commissioner John Litton Clark gave the invocation.

#### COMMISSIONER ATTENDANCE

John Coley	Richard Edwards
Brian White	Wes Seegars
John Litton Clark	Nat Harris
Monty Crump	Joe Budd
Mike Johnson	Brad Stanback
Ray Clifton	Landon Zimmer
Hayden Rogers	Garry Spence
Mark Craig	John Stone
David Hoyle, Jr.	Tommy Fonville
Tom Berry	

#### VISITORS

Fred Harris – NCWF	Tim Gestwicki – NCWF
Dick Hamilton – NCWF	Karen Beck – NCDA & CS
Bryan Perry – NWTF	Wynn Smith – NWTF
Zac Morton – NWTF	Mark Duda – Responsive Management
Heather Clarkson – Defenders of Wildlife	

## **WELCOME AND MANDATORY ETHICS INQUIRY**

Chairman John Coley welcomed guests present. Chairman Coley advised the Commission of the mandatory ethics inquiry as presented in the agenda.

## **MINUTES**

On a motion by Brian White and second by John Litton Clark, the Commission approved the October 5, 2017 Wildlife Resources Commission minutes, presented in **Exhibit A**. **Exhibit A** is incorporated into the official record of this meeting.

## **COMMITTEE REPORTS**

**Finance Committee Report** – Landon Zimmer, *Chair*, reported that the Finance Committee held its inaugural meeting on December 6, 2017. Melissa Earp, *Chief Financial Officer*, gave an update about the quarterly budget report. The Committee will meet again soon.

**Fisheries Committee Report** – Tommy Fonville, *Chair*, reported that the Fisheries Committee met on December 6, 2017. Christian Waters, Tyler Black, and Ben Ricks gave updates and overviews, including an overview of catfish management, an update about the Central Southern Management Area for striped bass, and an update about work on introduction of red drum into Hyco Reservoir. Attempts to obtain red drum eggs or larvae have been unsuccessful so far. Staff will continue to explore options for procuring eggs or larvae and are working to develop plans for 2018.

**Land Use and Access Committee Report** – Tom Berry, *Chair*, reported that the Land Use and Access Committee met on December 6, 2017. The committee reviewed four Phase I projects and six Phase II projects presented by Brian McRae. The committee recommended tabling discussion of an easement across the Wood Tract of Nantahala Game Land in Jackson County, and will ask the owner if there is interest in selling the property. The committee discussed the allocation of Shelly Island, a newly formed island, from the NC Department of Administration to the Wildlife Resources Commission. The committee also recommended development of an agreement with the National Park Service detailing management of the parcel.

**Small Game and Wild Turkey Committee Report** – Garry Spence, *Chair*, reported that the Small Game and Wild Turkey Committee met on December 6, 2017. John Isenhour presented an update about incentive programs for wildlife habitat management on private lands. Benjy Strobe updated the committee about the Corporate CURE Program with twenty-two farms enrolled in the program. Chris Kreh gave an update about year two of the turkey gobbling chronology study. Dr. David Cobb presented the slate of nominees for the Lawrence Diedrick Small Game Award. One individual and one corporation will receive the award.

**Committee of the Whole Report** – *Chairman* John Coley reported that the Committee of the Whole met on December 6, 2017. Executive Director Gordon Myers introduced the NC Wildlife Leadership Program Fellows, and the Fellows gave a presentation to the COW on the work they have done on their adaptive challenges. Carrie Ruhlman reviewed public comments for proposed changes to rules for wild turkey, falconry, taxidermy, and wildlife captivity and rehabilitation. Ruhlman presented an overview of a Notice of Text for rulemaking to repeal existing wildlife captivity and rehabilitation rules. Betsy Haywood reviewed the Notices of Text for rulemaking for changes to 15 water safety rules and an application for rulemaking on Palmerville Lake in Stanly County. Jessie Birckhead reviewed the draft NC Coyote Management Plan that will be brought back to the Commission for consideration at the February 2018 WRC meeting. Gordon Myers announced that there will be a webinar for a more in-depth review of the Coyote Management Plan prior to its release for public comment. Minimum counts of elk in North Carolina will be repeated this winter to obtain a more accurate minimum population estimate.

### **ADMINISTRATION**

**Financial Status Report** - Melissa Earp, *Chief Financial Officer*, presented in **Exhibit B** a financial status report on the Wildlife Operating Fund and the Wildlife Endowment Fund as of September 30, 2017. Year to date receipts were \$22,056,761.07. Year to date expenditures were \$21,494,324.56. The Endowment Fund balance was \$124,567,9077.99. **Exhibit B** is incorporated into the official record of this meeting.

### **AGENCY SPOTLIGHT – BIG GAME HARVEST REPORTING**

Janice Underwood, *IT Director*, introduced CarolAnne Feehan, *Business Analyst*, who gave an overview of the new Live Harvest Reports and enhanced mobile features. Live harvest reporting for county, region, or state has been added in 2017. Paper logs have been discontinued. The new software includes responsive applications that can render in an acceptable format, depending on the type of device used for viewing. Validation is immediate. Certificates can be printed. The new live reporting system provides a streamlined user experience.

### **SPECIAL PRESENTATION**

Gordon Myers introduced Brian Perry, who is a member of the Board of Directors of the National Wild Turkey Federation (NWTF). The WRC and the NWTF have been close partners since 1973. The NWTF helped with the recovery of the wild turkey in North Carolina, receiving turkeys from other states to enhance the population and providing funding for habitat and research. Currently the NWTF supports 20 habitat and research projects. Perry presented a check for \$61,681.00 to the WRC for habitat and research projects for the benefit of wild turkey.

A short break was taken so that photographs could be taken. The meeting reconvened at 10:00 am.

## **UPDATE TO THE WILDLIFE RESOURCES COMMISSION**

Mark Duda, *Responsive Management Executive Director*, provided an update on a study by Responsive Management that will provide an assessment of the social and economic aspects of hunting migratory birds on Sunday. The North Carolina General Assembly has requested a report on March 1, 2018 about the biological, economic and social impacts of hunting migratory birds on Sunday. Duda stated that a scientific survey of migratory bird hunters will be conducted, as well as an online forum, public meetings, and focus groups with migratory bird hunters to gather comments and opinions. A final report then will be developed and submitted to the Commission.

## **INLAND FISHERIES**

Christian Waters, *Inland Fisheries Division Chief*, reported that trout production went well in 2017 resulting in a surplus of rainbow trout. A one-time winter stocking of trout was conducted at 18 Community Fishing Program ponds in Districts 5, 6, 7, 8, and 9. Also data collection for the Economic Survey of Inland Recreational Fishing in North Carolina should be completed by February 2018. Faculty at University of North Carolina Wilmington has been contracted to conduct data analysis, and the results should be available in early fall 2018.

## **WILDLIFE MANAGEMENT**

**Wildlife Management Update** – Dr. David Cobb, *Wildlife Management Division Chief*, presented an update about the activities of the Wildlife Management Division. Cobb announced that deer harvest results as of December 3, 2017 show an increase of 10.2 percent increase statewide. Bear harvest is up 10.6 percent statewide. In the mountains, the bear harvest is up 24 percent. Cobb stated that the Upland Gazette is published in the Fall Outdoor Guide. Duke Marine Laboratory is discussing the use of drones for wildlife surveys.

## **LAND AND WATER ACCESS SECTION**

### **PROPERTY MATTERS**

**Phase I Land Acquisitions** – Upon a motion by Tom Berry and second by Tommy Fonville, the Commission approved staff working to develop plans for acquisition of four properties, presented by Brian McRae in **Exhibits C-1, C-2, C-3, and C-4**. **Exhibits C-1 through C-4** are incorporated into the official record of this meeting.

- West Fork Tract – Haywood County
- Johnson Tract – Haywood County
- SipeTract – Wilkes County
- McKeithan Tract –Pender County



**Adoptions of Phase II Acquisitions** – Upon a motion by Tom Berry and second by David Hoyle, Jr. the Commission gave final approval to proceed with the acquisition of six properties, presented in **Exhibits D-1, D-2, D-3, D-4, D-5, and D-6**. **Exhibits D-1 through D-6** are incorporated into the official record of this meeting.

- Foster’s Creek Preserve Tract – Polk County
- Maggot Springs Gap Tract – Haywood County
- Usher Tract – Scotland County
- Godwin II Tract – Scotland County
- Womble Tract – Scotland County
- Waccamaw River Sportsman’s Retreat – Columbus County

**Easement Request – Wood Tract, Nantahala Game Land** – The Commission tabled action on a request for an easement across the Wood Tract of Nantahala Game Land in Jackson County. Staff will ask the owner if there is interest in selling the property.

**Property Allocation** – On a motion by Tom Berry and second by Brian White, the Commission gave approval to proceed with requesting the allocation of Shelly Island in Dare County from the NC Department of Administration to the WRC, and to develop an agreement with the National Park Service detailing management of the parcel. **Exhibit F** is incorporated into the official record of this meeting.

## **WATER SAFETY RULEMAKING**

**Notice of Text and Fiscal Note – 15A NCAC 10F .0300 – Local Water Safety Regulations** – Upon a motion by David Hoyle and second by Nat Harris, the Commission approved publishing Notice of Text in the *NC Register* for re adoption of two water safety Rules and amendments to 10 water safety Rules, holding one public hearing, and opening the public comment period. Presented in **Exhibit G-1** by Betsy Haywood, *No Wake Zone Coordinator*, the Rules proposed for amendment and re adoption as part of the 2016 Periodic Review of Rules will be revised to:

- Revise language and terms for consistency;
- Clarify no-wake zone boundaries by including coordinates;
- Correct names of locations;
- Remove applicant’s responsibility for maintenance of markers;
- Remove the word “motorboat”, as the statutory definition of “vessel” includes motorboats;
- Include appropriate federal approval for placement of markers

**15A NCAC 10F .0302 ATLANTIC BEACH** (for re adoption – substantive public interest)

Update language for consistency, correct locations and add coordinates, remove maintenance of markers, remove “motorboat.” This Rule has not been amended since 1998.

**15A NCAC 10F 0355 SWAIN COUNTY**

Clarify descriptions, remove maintenance, add federal authority of Tennessee Valley Authority.

**15A NCAC 10F .0338 CALDWELL COUNTY**

Revise language for consistency, remove maintenance, remove US Coast Guard authority.

**15A NCAC 10F .0359 CHEROKEE COUNTY**

Correct location names, add coordinates, remove maintenance, add authority of TVA and US Army Corps of Engineers.

**15A NCAC 10F .0367 HOKE COUNTY**

Describe location of no-wake zone, add coordinates, remove motorboat.

**15A NCAC 10F .0308 CLAY COUNTY**

Revise language for consistency, remove motorboat.

**15A NCAC 10F .0315 POLK COUNTY**

Clarify location of no-wake zone, add coordinates, remove maintenance, remove motorboat.

**15A NCAC 10F .0321 PENDER COUNTY** (for re-adoption – substantive public interest)

Add location for clarity, revise language for consistency. Prior to a recent amendment for Town of Surf City this Rule had not been touched since 2000.

**15A NCAC 10F .0349 JOHN H. MOSS LAKE**

Revise language for consistency, remove maintenance.

**15A NCAC 10F .0372 HERTFORD COUNTY**

Confirmed need for no-wake zone with Hertford County, clarify and simplify description of no-wake zone and add coordinates, remove motorboat, remove maintenance, add federal authority of US Coast Guard and US Army Corps of Engineers.

**15A NCAC 10F .0340 CURRITUCK COUNTY**

Revise language for consistency, add location names for clarity, remove motorboat, remove maintenance.

The Fiscal Note review for water safety Rules proposed for revision and re-adoption under the 2016 Periodic Review of Rules, presented in **Exhibit G-2**, was approved under the same motion. **Exhibits G-1 and G-2**, except for removal of 15A NCAC 10F .0342 Catawba County, are incorporated into the official record of this meeting.

**Rulemaking Application – 15A NCAC 10F .0317 Palmerville Lake, Stanly County** – On a motion by Monty Crump and second by Ray Clifton, the Commission denied an application from Stanly County, presented in **Exhibit H**, for rulemaking to establish a no-wake zone on a canal on Palmerville Lake, a landlocked section of Badin Lake. **Exhibit H** is incorporated into the official record of this meeting.

**Notice of Text – 15A NCAC 10F .0338 Caldwell County** – On a motion by Mike Johnson and second by Wes Seegars, the Commission approved a request by the City of Hickory, presented in **Exhibit I**, to publish Notice of Text in the NC Register, hold one public hearing, and open the public comment period for a proposed amendment to 15A NCAC 10F .0338, to establish a no-wake zone at Lake Hickory Marina on Lake Hickory. **Exhibit I** is incorporated into the official record of this meeting.

**Notice of Text and Fiscal Note – 15A NCAC 10F .0305 Brunswick County** – On a motion by David Hoyle and second by Brian White, the Commission approved **Exhibit J-1**, to publish Notice of Text in the *NC Register*, hold one public hearing, and open the public comment period for a proposed amendment to 15A NCAC 10F .0305 to establish a no-wake zone on the Intracoastal Waterway near the Sunset Beach Boating Access Area and bridge. The Commission approved the Fiscal Note review, **Exhibit J-2**, for the proposed Brunswick County amendment. **Exhibits J-1 and J-2** are incorporated into the official record of this meeting.

**Notice of Text and Fiscal Note – 15A NCAC 10F .0350 Durham and Wake counties** – On a motion by Mike Johnson and second by David Hoyle, the Commission approved **Exhibit K-1**, a request by NC State Parks to publish Notice of Text in the *NC Register*, hold one public hearing, and open the public comment period for a proposed amendment to 15A NCAC 10F .0305, for an extension of the no-wake zone at Holly Point Recreation Swim and Boat Launch on Falls Lake in Wake County. The Commission also approved the Fiscal Note review, presented in **Exhibit K-2**. **Exhibits K-1 and K-2** are incorporated into the official record of this meeting.

## **RULEMAKING**

**Public Comments and Final Adoption – 15A NCAC 10B .0209 Wild Turkey** – The Commission reviewed public comments regarding proposed amendments to Wild Turkey Rules, presented in **Exhibit L-1**. On a motion by Mark Craig and second by Brian White, the Commission adopted amendments for technical changes to 15A NCAC 10B .0209 – Wild Turkey, presented in **Exhibit L-2**. **Exhibits L-1 and L-2** are incorporated into the official record of this meeting.

**Final Adoption – 15A NCAC 10H .0800 Falconry** – On a motion by Mark Craig and second by Brian White, the Commission adopted amendments to 15A NCAC 10H .0800 Falconry, presented in **Exhibit M**. **Exhibit M** is incorporated into the official record of this meeting.

**Public Comments and Final Adoption – 15A NCAC 10H .1000 Taxidermy** – The Commission reviewed public comments regarding proposed amendments to 15A NCAC 10H .1000 Taxidermy, presented in **Exhibit N-1**. As part of the 2016 Periodic Review of Rules, part of the taxidermy Rules are required to be readopted as being “necessary with substantive public interest,” and all taxidermy Rules were proposed for review and amendment at the same time. On a motion by Mark Craig and second by Brian White, the commission adopted amendments to 10H .1002, 10H .1003, 10H .1004 and 10H .1005, presented in **Exhibit N-2**. **Exhibits N-1 and N-2** are incorporated into the official record of this meeting.

**Review of Public Comments and Disapproval – 15A NCAC 10H .1400 Wildlife Captivity and Rehabilitation** - The Commission reviewed **Exhibit O**, comments from public hearings, online and by correspondence, regarding proposed changes to captivity and rehabilitation Rules. Commenters were overwhelmingly opposed to the proposed changes as written. On a motion by David Hoyle, Jr. and second by Wes Seegars, the Commission voted to disapprove adoption of proposed changes and directed staff to work with constituents in the rehabilitation and long-term captivity communities to address major areas of concern and revise the rule language and fiscal analysis. **Exhibit O** is incorporated into the official record of this meeting.

**Approval for Notice of Text – 15A NCAC 10H .0300 Holding Wildlife in Captivity** – 15A NCAC 10H .0300 Holding Wildlife in Captivity Rules are required to be readopted under the 2016 Periodic Review of Rules, as being “necessary with substantive public interest.” Because these subsections were reorganized into a new section of 10H .1400 Wildlife Captivity and Rehabilitation, these Rules will not be required once the new Rules become effective. Because the Commission disapproved proposed changes to 10H .1400 as written, it is necessary for the agency to keep the 10H .0300 Holding Wildlife in Captivity Rules in the NCAC until the 10H .1400 Wildlife Captivity and Rehabilitation Rules are adopted. Therefore, on a motion by Monty Crump and second by Mike Johnson, the Commission approved publishing Notice of Text in the *NC Register* and opening the public comment period for the proposed delayed repeal of current Rules regarding holding wildlife in captivity, presented in **Exhibit P**. **Exhibit P** is incorporated into the official record of this meeting.

**COMMENTS BY THE CHAIRMAN**

Chairman John Coley thanked agency staff for their preparations for the meetings. He wished everyone a happy holiday.

**COMMENTS BY THE EXECUTIVE DIRECTOR**

Executive Director Gordon Myers stated that proposed survey questions regarding Migratory Bird Hunting on Sunday will be sent to Commissioners for their review before the survey is distributed. Later in the month there will be a Coyote Management Plan webinar for Commissioners. Myers reminded everyone of the nine public hearings that will be held statewide in January to receive comments about proposed Rule changes. Myers mentioned the big changes to both white-tailed deer and black bear seasons and thanked staff from the Wildlife Management Division for all the work leading up to these proposals. Myers closed by thanking the Commissioners for their support of the Leadership Program.

**ADJOURNMENT**

The meeting was adjourned by Chairman Coley at 11:25 a.m.

All exhibits are incorporated into the official record of this meeting by reference and are filed with the minutes.

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**John Coley, Chairman**

**Date**

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**Gordon Myers, Executive Director**

**Date**

**NORTH CAROLINA WILDLIFE RESOURCES COMMISSION**

**Exhibit B**  
February 28, 2018

ENDOWMENT FUND UPDATE

**Net Assets as of December 31, 2017:**

Bond Index Fund (BIF)	\$121,394,344.30 *
Short-Term Interest Fund (STIF)	<u>\$3,225,545.20</u>
	<b><u>\$124,619,889.50</u></b>

\*Includes lifetime license sales revenue of \$2,110,370.00 from July 1, 2017 to December 31, 2017 compared to \$1,798,400.00 for the same period last year

**Endowment Fund Interest**

<b>Sources of Interest Available</b>	<b>Expendable</b>	<b>Non Expendable</b>	<b>Transferred to Operations</b>	<b>Transferred to Capital Projects</b>
<b>ADULT Licenses</b>	\$ 25,398,122.32	\$ -	\$ -	\$ 360,000.00
<b>INFANT Licenses</b>	-	11,950,205.22	-	-
<b>YOUTH Licenses</b>	-	1,044,378.79	-	-
<b>Magazine Subscriptions</b>	562,108.25	-	-	-
<b>Contributions - General</b>	385.39	-	-	-
<b>Contributions - Diversity</b>	1,818,269.41	-	-	-
<b>TOTAL</b>	<b>\$ 27,778,885.37</b>	<b>\$ 12,994,584.01</b>	<b>\$ -</b>	<b>\$ 360,000.00</b>

**2017-18 Budgeted Obligated**

**2017-18 Transferred To Date**

<b>Allocation of Endowment Interest - Operating</b>	298,706.00
<b>Allocation of Endowment Interest - Capital Projects</b>	360,000.00
	<b><u>\$ 658,706.00</u></b>

<b>To Operating</b>	-
<b>To Capital Projects</b>	360,000.00
	<b><u>\$ 360,000.00</u></b>

**NORTH CAROLINA WILDLIFE RESOURCES COMMISSION**

**Summary and Analysis of Agency Operating Cash Balance - Code 14350, 24350, 4351 and 24352**

	<b>December, 2016</b>	<b>December, 2017</b>
<b>Cash Balance July 1</b>	\$ <b>11,106,479.31</b>	\$ <b>12,047,722.61</b>
<b>Appropriations</b>	<b>Actual</b>	<b>Actual</b>
Appropriations	\$ 5,110,662.00	\$ 5,570,827.00
<b>Total</b>	\$ <b>5,110,662.00</b>	\$ <b>5,570,827.00</b>
<b>Receipts</b>		
Administration	\$ 360,671.95	\$ 402,185.40
Enforcement	2,833,880.65	3,160,061.15
Education	1,017,980.93	1,135,150.84
Inland Fisheries	3,037,709.24	3,387,350.47
Wildlife Management	2,748,343.67	3,064,678.84
Land and Water Access	8,421,598.83	9,390,927.35
Habitat Conservation	307,210.93	342,571.00
Wildlife Fund	17,471,809.57	19,434,343.09
Outdoor Heritage	-	48,476.94
<b>Total</b>	\$ <b>36,199,205.76</b>	\$ <b>40,365,745.08</b>
<b>Expenditures</b>		
Administration	\$ 4,411,121.51	\$ 4,918,798.13
Enforcement	11,170,341.47	9,984,688.92
Education	2,756,286.41	2,684,118.01
Inland Fisheries	4,106,804.38	4,137,753.30
Wildlife Management	4,121,208.33	3,873,106.51
Land and Water Access	9,760,569.93	10,359,791.20
Habitat Conservation	574,956.86	572,023.48
Wildlife Fund	6,698,220.92	7,103,898.74
Outdoor Heritage		8,145.14
<b>Total</b>	\$ <b>43,599,509.81</b>	\$ <b>43,642,323.43</b>
<b>Cash Balance December 31</b>	\$ <b>8,816,837.26</b>	\$ <b>14,341,971.26</b>



# EXHIBIT C-1

February 28, 2018

## Summary of Public Comments on Proposed Changes to Fishing Regulations for 2018-2019

Proposal	Proposed Text	Position Count	Comment Types
F1	Designate all waters on Headwaters Game Land in Transylvania County, William H. Silvers Game Land in Haywood County and Pisgah Game Land in Watauga County as Public Mountain Trout Waters and classify as Wild Trout Waters adding approximately 65 miles to Public Mountain Trout Waters. In addition, this proposal would reformat the N.C. Administrative Code by alphabetizing the list of game lands and would correct the spelling of DuPont State Forest Game Land.	4 :No Position 181 :Agree 37 :Disagree	23 :Online 192 :Comment Card 7 :Letter/Email
F2	Modify the lower boundary of Hatchery Supported Trout Waters on Beaver Creek in Ashe County removing approximately 0.4 miles from Public Mountain Trout Waters. The designated reach will be from N.C. 221 to the confluence of Beaver Creek and South Beaver Creek.	3 :No Position 156 :Agree 44 :Disagree	15 :Online 181 :Comment Card 7 :Letter/Email
F3	Modify the upper boundary of Delayed Harvest Trout Waters on East Fork French Broad River in Transylvania County removing 1.0 miles of Public Mountain Trout Waters. The designated reach will be from East Fork Baptist Church to the French Broad River.	2 :No Position 154 :Agree 51 :Disagree	16 :Online 184 :Comment Card 7 :Letter/Email
F4	Modify the size and creel limits on the Special Regulation Trout Waters reach of the Catawba River in Burke County by establishing a 14-inch minimum size limit, removing the restriction of only one may be greater than 14 inches and reducing the daily creel limit from seven to two fish.	2 :No Position 158 :Agree 57 :Disagree	21 :Online 189 :Comment Card 7 :Letter/Email
F5	Correct the N.C. Administrative Code to remove the prohibition on night fishing in Public Mountain Trout Waters on game lands.	4 :No Position 165 :Agree 44 :Disagree	23 :Online 184 :Comment Card 6 :Letter/Email
F6	Modify the exception to the general statewide regulation for black bass by prohibiting possession of black bass in Jean Guite Creek and associated canals within the boundaries of the Town of Southern Shores in Dare County.	6 :No Position 166 :Agree 39 :Disagree	11 :Online 193 :Comment Card 7 :Letter/Email
F7	Establish an exception to the general statewide regulation for Blue Catfish in the North Carolina portion of John H. Kerr Reservoir, Lake Gaston and Roanoke Rapids Reservoir by allowing only one fish greater than 32 inches to be possessed in the daily creel.	4 :No Position 188 :Agree 69 :Disagree	33 :Online 216 :Comment Card 12 :Letter/Email
F8	Require that the appearance of nongame fishes subject to a length and/or creel limit not be altered such that the fish cannot be identified, measured or counted.	2 :No Position 188 :Agree 44 :Disagree	23 :Online 203 :Comment Card 8 :Letter/Email
F9	Remove the requirement that minnow traps must be under the immediate control and attendance of the individual operating them when used to take nongame fish for bait or personal consumption. Under this provision, the use of minnow traps only requires a license that authorizes basic fishing privileges, and any nongame fish collected may not be sold. Minnow raps must be checked daily to remove all fish. Each minnow trap must be labeled with either the user's Commission customer number or name and address.	2 :No Position 216 :Agree 39 :Disagree	25 :Online 224 :Comment Card 8 :Letter/Email
F10	Allow the harvest of nongame fishes for bait with equipment specified for the taking of nongame fishes for bait or personal consumption from impounded waters of power supply reservoirs and municipally-owned water supply reservoirs that are designated as Public Mountain Trout Waters. The expection would only apply to the following reservoirs: Bear Creek Lake, Buckeye Creek Reservoir, Calderwood Reservoir, Cedar Cliff Lake, Cheoah Reservoir, Cliffside Lake, Tanassee Creek Lake, Queens Creek Lake and Wolf Lake.	6 :No Position 202 :Agree 38 :Disagree	26 :Online 212 :Comment Card 8 :Letter/Email
O	Propose a Regulation (Fishing)		7 :Online 9 :Comment Card 8 :Letter/Email





Summary of Public Comments on Proposed Regulations for 2018-2019  
by District

Proposal	District 1	District 2	District 3	District 4	District 5	District 6	District 7	District 8	District 9	Out of State
F7	<b>Position Count:</b> 15 :Agree 21 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 35 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 16 :Agree 0 :Disagree 2 :No Position  <b>Comment Types:</b> 4 :Online 14 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 27 :Agree 18 :Disagree 0 :No Position  <b>Comment Types:</b> 8 :Online 34 :Comment Card 3 :Letter/Email	<b>Position Count:</b> 21 :Agree 6 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 25 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 13 :Agree 2 :Disagree 1 :No Position  <b>Comment Types:</b> 4 :Online 10 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 6 :Agree 3 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 7 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 6 :Agree 3 :Disagree 0 :No Position  <b>Comment Types:</b> 4 :Online 5 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 25 :Agree 4 :Disagree 0 :No Position  <b>Comment Types:</b> 3 :Online 24 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 56 :Agree 12 :Disagree 1 :No Position  <b>Comment Types:</b> 4 :Online 62 :Comment Card 3 :Letter/Email	<b>Position Count:</b> 3 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 0 :Comment Card 2 :Letter/Email
F8	<b>Position Count:</b> 18 :Agree 13 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 29 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 15 :Agree 1 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 15 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 26 :Agree 9 :Disagree 0 :No Position  <b>Comment Types:</b> 4 :Online 29 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 21 :Agree 6 :Disagree 0 :No Position  <b>Comment Types:</b> 3 :Online 24 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 15 :Agree 2 :Disagree 1 :No Position  <b>Comment Types:</b> 4 :Online 11 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 6 :Agree 2 :Disagree 1 :No Position  <b>Comment Types:</b> 2 :Online 7 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 6 :Agree 2 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 5 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 24 :Agree 1 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 22 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 56 :Agree 11 :Disagree 0 :No Position  <b>Comment Types:</b> 4 :Online 61 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 1 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 0 :Comment Card 1 :Letter/Email
F9	<b>Position Count:</b> 18 :Agree 13 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 29 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 16 :Agree 1 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 16 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 29 :Agree 8 :Disagree 0 :No Position  <b>Comment Types:</b> 4 :Online 31 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 20 :Agree 6 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 24 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 15 :Agree 0 :Disagree 1 :No Position  <b>Comment Types:</b> 4 :Online 10 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 12 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 10 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 7 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 7 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 26 :Agree 1 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 25 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 72 :Agree 10 :Disagree 1 :No Position  <b>Comment Types:</b> 8 :Online 72 :Comment Card 3 :Letter/Email	<b>Position Count:</b> 1 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 0 :Comment Card 1 :Letter/Email
F10	<b>Position Count:</b> 18 :Agree 11 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 29 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 15 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 2 :Online 13 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 24 :Agree 5 :Disagree 2 :No Position  <b>Comment Types:</b> 5 :Online 24 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 19 :Agree 6 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 24 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 13 :Agree 0 :Disagree 2 :No Position  <b>Comment Types:</b> 3 :Online 10 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 11 :Agree 0 :Disagree 1 :No Position  <b>Comment Types:</b> 2 :Online 10 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 6 :Agree 0 :Disagree 1 :No Position  <b>Comment Types:</b> 1 :Online 6 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 27 :Agree 2 :Disagree 0 :No Position  <b>Comment Types:</b> 5 :Online 24 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 68 :Agree 14 :Disagree 0 :No Position  <b>Comment Types:</b> 7 :Online 72 :Comment Card 3 :Letter/Email	<b>Position Count:</b> 1 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 0 :Comment Card 1 :Letter/Email
O (Fishing)	<b>Position Count:</b> 3 :Other  <b>Comment Types:</b> 0 :Online 3 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 0 :Other  <b>Comment Types:</b> 0 :Online 0 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 4 :Other  <b>Comment Types:</b> 3 :Online 0 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 0 :Other  <b>Comment Types:</b> 0 :Online 0 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 0 :Other  <b>Comment Types:</b> 0 :Online 0 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 1 :Other  <b>Comment Types:</b> 0 :Online 1 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 1 :Other  <b>Comment Types:</b> 0 :Online 0 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 4 :Other  <b>Comment Types:</b> 2 :Online 1 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 11 :Other  <b>Comment Types:</b> 2 :Online 4 :Comment Card 5 :Letter/Email	<b>Position Count:</b> 0 :Other  <b>Comment Types:</b> 0 :Online 0 :Comment Card 0 :Letter/Email

# EXHIBIT C-2

February 28, 2018



## PROPOSED CHANGES IN INLAND FISHERIES REGULATIONS FOR 2018-2019 AND RULE TEXT FOR COMMISSION ACTION

- F1)** Designate all waters on Headwaters Game Land in Transylvania County, William H. Silvers Game Land in Haywood County, and Pisgah Game Land in Watauga County as Public Mountain Trout Waters and classify as Wild Trout Waters adding approximately 65 miles to Public Mountain Trout Waters. In addition, this proposal would reformat the NC Administrative Code by alphabetizing the list of game lands and would correct the spelling of DuPont State Forest Game Land.  
*15A NCAC 10D .0104 Fishing on Game Lands (pages 19 and 20)*
- F2)** Modify the lower boundary of Hatchery Supported Trout Waters on Beaver Creek in Ashe County removing approximately 0.4 miles from Public Mountain Trout Waters. The designated reach will be from N.C. 221 to the confluence of Beaver Creek and South Beaver Creek.  
*15A NCAC 10C .0205 Public Mountain Trout Waters (page 4)*
- F3)** Modify the upper boundary of Delayed Harvest Trout Waters on East Fork French Broad River in Transylvania County removing 1.0 miles of Public Mountain Trout Waters. The designated reach will be from East Fork Baptist Church to the French Broad River.  
*15A NCAC 10C .0205 Public Mountain Trout Waters (page 9)*
- F4)** Modify the size and creel limits on the Special Regulation Trout Waters reach of the Catawba River in Burke County by establishing a 14-inch minimum size limit, removing the restriction of only one may be greater than 14 inches, and reducing the daily creel limit from seven to two fish.  
*15A NCAC 10C .0316 Trout (page 14)*
- F5)** Correct the NC Administrative Code to remove the prohibition on night fishing in Public Mountain Trout Waters on game lands.  
*15A NCAC 10D .0104 Fishing on Game Lands (page 19)*
- F6)** Modify the exception to the general statewide regulation for black bass by prohibiting possession of black bass in Jean Guite Creek and associated canals within the boundaries of the Town of Southern Shores in Dare County.  
*15A NCAC 10C .0305 Black Bass (page 12)*

- F7)** Establish an exception to the general statewide regulation for Blue Catfish in the North Carolina portion of John H. Kerr Reservoir, Lake Gaston, and Roanoke Rapids Reservoir by allowing only one fish greater than 32 inches to be possessed in the daily creel.  
*15A NCAC 10C .0401 Manner of Taking Nongame Fishes: Purchase and Sale (page 15)*
- F8)** Require that the appearance of nongame fishes subject to a length and/or creel limit not be altered such that the fish cannot be identified, measured, or counted.  
*15A NCAC 10C .0401 Manner of Taking Nongame Fishes: Purchase and Sale (pages 15 and 16)*  
*15A NCAC 10C .0402 Taking Nongame Fishes for Bait or Personal Consumption (page 18)*
- F9)** Remove the requirement that minnow traps must be under the immediate control and attendance of the individual operating them when used to take nongame fish for bait or personal consumption. Under this provision, the use of minnow traps only requires a license that authorizes basic fishing privileges, and any nongame fish collected may not be sold. Minnow traps must be checked daily to remove all fish. Each minnow trap must be labeled with either the user's Commission customer number or name and address.  
*15A NCAC 10C .0402 Taking Nongame Fishes for Bait or Personal Consumption (page 17)*
- F10)** Allow the harvest of nongame fishes for bait with equipment specified for the taking of nongame fishes for bait or personal consumption from impounded waters of power supply reservoirs and municipally-owned water supply reservoirs that are designated as Public Mountain Trout Waters. The exception would only apply to the following reservoirs: Bear Creek Lake, Buckeye Creek Reservoir, Calderwood Reservoir, Cedar Cliff Lake, Cheoah Reservoir, Cliffside Lake, Tanassee Creek Lake, Queens Creek Lake, and Wolf Lake.  
*15A NCAC 10C .0402 Taking Nongame Fishes for Bait or Personal Consumption (pages 17 and 18)*

1 **15A NCAC 10C .0205 PUBLIC MOUNTAIN TROUT WATERS**

2 (a) For purposes of this Rule, the following definitions apply:

- 3 (1) "Natural bait" means any living or dead organism (plant or animal), or parts thereof, or prepared  
4 substances designed to attract fish by the sense of taste or smell.
- 5 (2) "Artificial lure" means a fishing lure that neither contains nor has been treated by any substance that  
6 attracts fish by the sense of taste or smell.
- 7 (3) "Youth anglers" are individuals under 18 years of age.

8 (b) For purposes of this Rule, 15A NCAC 10C .0316, and 15A NCAC 10D .0104, the following classifications apply:

- 9 (1) "Public Mountain Trout Waters" are all waters included in this Rule and so designated in 15A NCAC  
10 10D .0104.
- 11 (2) "Catch and Release/Artificial Flies Only Trout Waters" are Public Mountain Trout Waters where  
12 only artificial flies having one single hook may be used. No trout may be possessed or harvested  
13 while fishing these streams. Waters designated as such include tributaries unless otherwise noted.
- 14 (3) "Catch and Release/Artificial Lures Only Trout Waters" are Public Mountain Trout Waters where  
15 only artificial lures having one single hook may be used. No trout may be possessed or harvested  
16 while fishing these streams. Waters designated as such include tributaries unless otherwise noted.
- 17 (4) "Delayed Harvest Trout Waters" are Public Mountain Trout Waters where between October 1 and  
18 one-half hour after sunset on the Friday before the first Saturday of the following June it is unlawful  
19 to possess natural bait, use more than one single hook on an artificial lure, or harvest or possess trout  
20 while fishing. From 6:00 a.m. on the first Saturday in June until noon that same day only youth  
21 anglers may fish and these waters have no bait or lure restrictions. From noon on the first Saturday  
22 in June until October 1 anglers of all ages may fish and these waters have no bait or lure restrictions.  
23 Waters designated as such do not include tributaries unless otherwise noted.
- 24 (5) "Hatchery Supported Trout Waters" are Public Mountain Trout Waters that have no bait or lure  
25 restrictions. Waters designated as such do not include tributaries unless otherwise noted.
- 26 (6) "Special Regulation Trout Waters" are Public Mountain Trout Waters where watercourse-specific  
27 regulations apply. Waters designated as such do not include tributaries unless otherwise noted.
- 28 (7) "Wild Trout Waters" are Public Mountain Trout Waters which are identified as such in this Rule or  
29 15A NCAC 10D .0104. Only artificial lures having only one single hook may be used. No person  
30 shall possess natural bait while fishing these waters. Waters designated as such do not include  
31 tributaries unless otherwise noted.
- 32 (8) "Wild Trout Waters/Natural Bait" are Public Mountain Trout Waters where all artificial lures and  
33 natural baits, except live fish, may be used provided they are fished using only one single hook.  
34 Waters designated as such include tributaries unless otherwise noted.
- 35 (9) "Undesignated Waters" are all other waters in the State. These waters have no bait or lure  
36 restrictions. Trout may not be possessed while fishing these waters from March 1 until 7:00 a.m. on  
37 the first Saturday in April.

38 (c) Seasons, creel and size limits. Seasons, creel and size limits for trout in all waters are listed in Rule .0316 of this  
39 Subchapter.

40 (d) Classifications. This Paragraph designates waters in each county that have a specific classification. Waters on  
41 game lands are so designated in 15A NCAC 10D .0104, unless otherwise indicated in this Paragraph. All other waters  
42 are classified as Undesignated Waters.

- 43 (1) Alleghany
  - 44 (A) Delayed Harvest Trout Waters are as follows:  
45 Little River (S.R. 1133 bridge to 275 yards downstream of the intersection of S.R. 1128  
46 and S.R. 1129 [marked by a sign on each bank])
  - 47 (B) Hatchery Supported Trout Waters are as follows:  
48 Big Pine Creek  
49 Bledsoe Creek  
50 Brush Creek (N.C. 21 bridge to confluence with Little River, except where posted against  
51 trespassing)  
52 Cranberry Creek  
53 (Big) Glade Creek  
54 Little River (275 yards downstream from the intersection of S.R. 1128 and S.R. 1129  
55 [marked by a sign on each bank] to McCann Dam)  
56 Meadow Fork

- 1 Pine Swamp Creek  
2 Piney Fork  
3 Prathers Creek  
4 (C) Wild Trout Waters are as follows:  
5 All waters located on Stone Mountain State Park  
6 (2) Ashe County  
7 (A) Catch and Release/Artificial Lures Only Trout Waters are as follows:  
8 Big Horse Creek (Virginia state line to Mud Creek at S.R. 1363, excluding tributaries)  
9 (B) Delayed Harvest Trout Waters are as follows:  
10 Big Horse Creek (S.R. 1324 bridge to North Fork New River)  
11 Helton Creek (Virginia state line to New River)  
12 South Fork New River (upstream end of Todd Island to the SR 1351 bridge)  
13 Trout Lake  
14 (C) Hatchery Supported Trout Waters are as follows:  
15 Beaver Creek (N.C. 221 to ~~South Fork New River~~ confluence of Beaver Creek and South  
16 Beaver Creek)  
17 Big Horse Creek (Mud Creek at S.R. 1363 to S.R. 1324 bridge)  
18 Big Laurel Creek (S.R. 1315 bridge to confluence with North Fork New River)  
19 Buffalo Creek (S.R. 1133 bridge to N.C. 194-88 bridge)  
20 Cranberry Creek (Alleghany Co. line to South Fork New River)  
21 Nathans Creek  
22 North Fork New River (Watauga Co. line to Sharp Dam)  
23 Old Fields Creek (N.C. 221 to South Fork New River)  
24 Peak Creek (headwaters to Trout Lake, except Blue Ridge Parkway waters)  
25 Roan Creek  
26 Three Top Creek  
27 (3) Avery County  
28 (A) Catch and Release/Artificial Flies Only Trout Waters are as follows:  
29 Elk River (portion on Lees-McRae College property, excluding the millpond)  
30 Lost Cove Creek (game land portion, excluding Gragg Prong and Rockhouse Creek)  
31 (B) Catch and Release/Artificial Lures Only Trout Waters are as follows:  
32 Wilson Creek (game land portion)  
33 (C) Hatchery Supported Trout Waters are as follows:  
34 Boyde Coffey Lake  
35 Elk River (S.R. 1305 crossing immediately upstream of Big Falls to the Tennessee state  
36 line)  
37 Linville River (Land Harbor line [below dam] to the Blue Ridge Parkway boundary line,  
38 except where posted against trespassing)  
39 Milltimber Creek  
40 North Toe River — upper (Watauga St. to Roby Shoemaker Wetlands and Family  
41 Recreational Park, except where posted against trespassing)  
42 North Toe River — lower (S.R. 1164 to Mitchell Co. line, except where posted against  
43 trespassing)  
44 Squirrel Creek  
45 Wildcat Lake  
46 (D) Wild Trout Waters are as follows:  
47 Birchfield Creek  
48 Cow Camp Creek  
49 Cranberry Creek (headwaters to U.S. 19E/N.C. 194 bridge)  
50 Gragg Prong  
51 Horse Creek  
52 Kentucky Creek  
53 North Harper Creek  
54 Plumtree Creek  
55 Roaring Creek  
56 Rockhouse Creek

- 1 Shawneehaw Creek (portion adjacent to Banner Elk Greenway)  
2 South Harper Creek  
3 Webb Prong  
4 (4) Buncombe County  
5 (A) Catch and Release/Artificial Lures Only Trout Waters are as follows:  
6 Carter Creek (game land portion)  
7 (B) Hatchery Supported Trout Waters are as follows:  
8 Bent Creek (headwaters to N.C. Arboretum boundary line)  
9 Cane Creek (headwaters to S.R. 3138 bridge)  
10 Corner Rock Creek (Little Andy Creek to confluence with Walker Branch)  
11 Dillingham Creek (Corner Rock Creek to Ivy Creek)  
12 Ivy Creek (Ivy River)(Dillingham Creek to U.S. 19-23 bridge)  
13 Lake Powhatan  
14 Reems Creek (Sugar Camp Fork to U.S. 19-23 bridge, except where posted against  
15 trespassing)  
16 Rich Branch (downstream from the confluence with Rocky Branch)  
17 Stony Creek  
18 Swannanoa (S.R. 2702 bridge near Ridgecrest to Wood Avenue bridge [intersection of  
19 N.C. 81 and U.S. 74A in Asheville], except where posted against trespassing)  
20 (5) Burke County  
21 (A) Catch and Release/Artificial Lures Only Trout Waters are as follows:  
22 Henry Fork (portion on South Mountains State Park)  
23 (B) Delayed Harvest Trout Waters are as follows:  
24 Jacob Fork (Shinny Creek to lower South Mountains State Park boundary)  
25 (C) Hatchery Supported Trout Waters are as follows:  
26 Carroll Creek (game land portion above S.R. 1405)  
27 Henry Fork (lower South Mountain State Park line downstream to S.R. 1919 at Ivy Creek)  
28 Linville River portion within Linville Gorge Wilderness area and portion below Lake  
29 James powerhouse from upstream bridge on S.R. 1223 to Muddy Creek)  
30 (D) Special Regulation Trout Waters are as follows:  
31 Catawba River (Muddy Creek to City of Morganton water intake dam)  
32 (E) Wild Trout Waters are as follows:  
33 All waters located on South Mountains State Park, except those waters identified in parts  
34 A and B of this Subparagraph  
35 (6) Caldwell County  
36 (A) Delayed Harvest Trout Waters are as follows:  
37 Wilson Creek (game land portion below Lost Cove Creek to Philips Branch)  
38 (B) Hatchery Supported Trout Waters are as follows:  
39 Boone Fork Pond  
40 Buffalo Creek (mouth of Joes Creek to McCloud Branch)  
41 Joes Creek (first falls upstream of S.R. 1574 to confluence with Buffalo Creek)  
42 Wilson Creek (Phillips Branch to Brown Mountain Beach Dam, except where posted  
43 against trespassing)  
44 Yadkin River (Happy Valley Ruritan Community Park to S.R. 1515)  
45 (C) Wild Trout Waters are as follows:  
46 Buffalo Creek (Watauga Co. line to Long Ridge Branch including game land tributaries)  
47 Joes Creek (Watauga Co. line to first falls upstream of the end of S.R. 1574)  
48 Rockhouse Creek  
49 (7) Cherokee County  
50 (A) Hatchery Supported Trout Waters are as follows:  
51 Davis Creek (confluence of Bald and Dockery creeks to Hanging Dog Creek)  
52 Hyatt Creek (Big Dam Branch to Valley River)  
53 Junaluska Creek (Ashturn Creek to Valley River)  
54 Shuler Creek (Joe Brown Hwy [S.R. 1325] bridge to Tennessee state line)  
55 Valley River (S.R. 1359 to U.S. 19 Business bridge in Murphy)  
56 (B) Wild Trout Waters/Natural Bait are as follows:

- 1 Bald Creek (game land portion)
- 2 Dockery Creek (game land portion)
- 3 North Shoal Creek (game land portion)
- 4 (8) Clay County
  - 5 (A) Delayed Harvest Trout Waters are as follows:
    - 6 Fires Creek (USFS Rd. 340A to the foot bridge in the USFS Fires Creek Picnic Area)
  - 7 (B) Hatchery Supported Trout Waters are as follows:
    - 8 Buck Creek (game land portion downstream of U.S. 64 bridge)
    - 9 Fires Creek (foot bridge in the USFS Fires Creek Picnic Area to S.R. 1300)
    - 10 Tusquitee Creek (Compass Creek to lower S.R. 1300 bridge)
- 11 (9) Graham County
  - 12 (A) Delayed Harvest Trout Waters are as follows:
    - 13 (Big) Snowbird Creek (USFS footbridge at the old railroad junction to USFS Rd. 2579)
  - 14 (B) Hatchery Supported Trout Waters are as follows:
    - 15 Calderwood Reservoir (Cheoah Dam to Tennessee state line)
    - 16 Cheoah Reservoir
    - 17 Panther Creek (confluence of Stand Creek and Rock Creek to Lake Fontana)
    - 18 Santeetlah Creek (Johns Branch to Lake Santeetlah)
    - 19 (Big) Snowbird Creek (USFS Road 2579 to S.R. 1127 bridge)
    - 20 Stecoah Creek (upper game land boundary to Lake Fontana)
    - 21 Tulula Creek (S.R. 1201 to lower bridge on S.R. 1275)
    - 22 West Buffalo Creek
    - 23 Yellow Creek (Lake Santeetlah hydropower pipeline to Cheoah River)
  - 24 (C) Wild Trout Waters are as follows:
    - 25 Little Buffalo Creek
    - 26 South Fork Squally Creek
    - 27 Squally Creek
  - 28 (D) Wild Trout Waters/Natural Bait are as follows:
    - 29 Deep Creek
    - 30 Franks Creek
    - 31 Long Creek (game land portion)
- 32 (10) Haywood County
  - 33 (A) Delayed Harvest Trout Waters are as follows:
    - 34 West Fork Pigeon River (Queen Creek to the first game land boundary upstream of Lake Logan)
  - 35 (B) Hatchery Supported Trout Waters are as follows:
    - 36 Cold Springs Creek (Fall Branch to Pigeon River)
    - 37 Jonathan Creek (upstream S.R. 1302 bridge to Pigeon River, except where posted against trespassing)
    - 38 Pigeon River (Stamey Cove Branch to upstream U.S. 19-23 bridge)
    - 39 Richland Creek (Russ Avenue [U.S. 276] bridge to U.S. 19 bridge)
    - 40 West Fork Pigeon River (Tom Creek to Queen Creek, including portions on game lands, except Middle Prong)
  - 41 (C) Wild Trout Waters/Natural Bait are as follows:
    - 42 Hemphill Creek
    - 43 Hurricane Creek
- 44 (11) Henderson County
  - 45 (A) Delayed Harvest Trout Waters are as follows:
    - 46 North Fork Mills River (game land portion below the Hendersonville watershed dam)
  - 47 (B) Hatchery Supported Trout Waters are as follows:
    - 48 (Rocky) Broad River (end of S.R. 1611 to Rutherford County line)
    - 49 Cane Creek (railroad bridge upstream of S.R. 1551 bridge to U.S. 25 bridge)
    - 50 Clear Creek (Laurel Fork to S.R. 1582)
    - 51 Green River (Lake Summit powerhouse to game land boundary)
    - 52 (Big) Hungry River
- 53 (12) Jackson County

- 1 (A) Catch and Release/Artificial Lures Only Trout Waters are as follows:  
2 Flat Creek  
3 Tuckasegee River (upstream from the Clark property)  
4 (B) Delayed Harvest Trout Waters are as follows:  
5 Tuckasegee River (downstream N.C. 107 bridge to the falls located 275 yards upstream  
6 of the U.S. 23-441 bridge [marked by a sign on each bank])  
7 (C) Hatchery Supported Trout Waters are as follows:  
8 Balsam Lake  
9 Bear Creek Lake  
10 Cedar Cliff Lake  
11 Cullowhee Creek (Tilley Creek to Tuckasegee River)  
12 Dark Ridge Creek (Jones Creek to Scott Creek)  
13 Greens Creek (Greens Creek Baptist Church on S.R. 1370 to Savannah Creek)  
14 Savannah Creek (Shell Branch to Cagle Branch)  
15 Scott Creek (Dark Ridge Creek to Tuckasegee River, except where posted against  
16 trespassing)  
17 Tanasee Creek Lake  
18 Tuckasegee River — upper (John Brown Branch to the downstream N.C. 107 bridge)  
19 Tuckasegee River — lower (falls located 275 yards upstream of U.S. 23-441 bridge  
20 [marked by a sign on each bank] to S.R. 1534 bridge at Wilmot)  
21 Wolf Creek Lake  
22 (D) Wild Trout Waters are as follows:  
23 Gage Creek  
24 North Fork Scott Creek  
25 Tanasee Creek  
26 Whitewater River (downstream from Silver Run Creek to South Carolina state line)  
27 Wolf Creek (except Balsam Lake and Wolf Creek Lake)  
28 (E) Wild Trout Waters/Natural Bait are as follows:  
29 Buff Creek  
30 Chattooga River (S.R. 1100 bridge to the South Carolina state line)  
31 Lower Fowler Creek (game land portion)  
32 Scotsman Creek (game land portion)  
33 (13) Macon County  
34 (A) Delayed Harvest Trout Waters are as follows:  
35 Nantahala River (Whiteoak Creek to Nantahala hydropower discharge canal)  
36 (B) Hatchery Supported Trout Waters are as follows:  
37 Burningtown Creek (Left Prong to Little Tennessee River)  
38 Cartoogechaye Creek (downstream U.S. 64 bridge to Little Tennessee River)  
39 Cliffside Lake  
40 Cullasaja River (Sequoyah Dam to U.S. 64 bridge near junction of S.R. 1672)  
41 Nantahala River — upper (Dicks Creek to Whiteoak Creek)  
42 Nantahala River — lower (Nantahala hydropower discharge canal to Swain Co. line)  
43 Queens Creek Lake  
44 (C) Wild Trout Waters/Natural Bait are as follows:  
45 Chattooga River (S.R. 1100 bridge to South Carolina state line)  
46 Jarrett Creek (game land portion)  
47 Kimsey Creek  
48 Overflow Creek (game land portion)  
49 Park Creek  
50 Tellico Creek (game land portion)  
51 Turtle Pond Creek (game land portion)  
52 (14) Madison County  
53 (A) Delayed Harvest Trout Waters are as follows:  
54 Big Laurel Creek (N.C. 208 bridge to the U.S. 25-70 bridge)  
55 Shelton Laurel Creek (N.C. 208 bridge at Belva to the confluence with Big Laurel Creek)



- 1 Spring Creek (N.C. 209 bridge at Hot Springs city limits to iron bridge at end of Andrews  
2 Ave.)
- 3 (B) Hatchery Supported Trout Waters are as follows:  
4 Big Laurel Creek (Mars Hill watershed boundary to the S.R. 1318 [Big Laurel Rd.]  
5 bridge downstream of Bearpen Branch)  
6 Big Pine Creek (S.R. 1151 bridge to French Broad River)  
7 Little Ivy Creek (confluence of Middle Fork and Paint Fork at Beech Glen to confluence  
8 with Ivy Creek at Forks of Ivy)  
9 Max Patch Pond  
10 Meadow Fork Creek (S.R. 1165 to Spring Creek)  
11 Puncheon Fork (Hampton Creek to Big Laurel Creek)  
12 Roaring Fork (Fall Branch to Meadow Fork)  
13 Shelton Laurel Creek (confluence of Big Creek and Mill Creek to N.C. 208 bridge at  
14 Belva)  
15 Shut-in Creek  
16 Spillcorn Creek  
17 Spring Creek (junction of N.C. 209 and N.C. 63 to USFS Rd. 223)  
18 West Fork Shut-in Creek (lower game land boundary to confluence with East Fork Shut-  
19 in Creek)
- 20 (C) Wild Trout Waters/Natural Bait are as follows:  
21 Big Creek (headwaters to the lower game land boundary)
- 22 (15) McDowell County  
23 (A) Catch and Release/Artificial Lures Only Trout Waters are as follows:  
24 Newberry Creek (game land portion)  
25 (B) Delayed Harvest Trout Waters are as follows:  
26 Catawba River (portion adjacent to Marion Greenway)  
27 Curtis Creek (game land portion downstream of the USFS boundary at Deep Branch)  
28 Mill Creek (U.S. 70 bridge to I-40 bridge)  
29 (C) Hatchery Supported Trout Waters are as follows:  
30 Armstrong Creek (Cato Holler line downstream to upper Greenlee line)  
31 Catawba River (Catawba Falls Campground to Old Fort Recreation Park)  
32 Little Buck Creek (game land portion)  
33 Mill Creek (upper railroad bridge to U.S. 70 bridge, except where posted against  
34 trespassing)  
35 North Fork Catawba River (headwaters to North Cove School at S.R. 1569 bridge)
- 36 (16) Mitchell County  
37 (A) Delayed Harvest Trout Waters are as follows:  
38 Cane Creek (N.C. 226 bridge to S.R. 1189 bridge)  
39 North Toe River (U.S. 19E bridge to N.C. 226 bridge)  
40 (B) Hatchery Supported Trout Waters are as follows:  
41 Big Rock Creek (headwaters to N.C. 226 bridge at S.R. 1307 intersection)  
42 Cane Creek (S.R. 1219 to N.C. 226 bridge)  
43 East Fork Grassy Creek  
44 Grassy Creek (East Fork Grassy Creek to mouth)  
45 Little Rock Creek (Green Creek bridge to Big Rock Creek, except where posted against  
46 trespassing)  
47 North Toe River (Avery Co. line to S.R. 1121 bridge)  
48 (C) Wild Trout Waters are as follows:  
49 Green Creek (headwaters to Green Creek bridge, except where posted against  
50 trespassing)  
51 Little Rock Creek (above Green Creek bridge, including all tributaries, except where  
52 posted against trespassing)  
53 Wiles Creek (game land boundary to mouth)
- 54 (17) Polk County  
55 (A) Delayed Harvest Trout Waters are as follows:  
56 Green River (Fishtop Falls Access Area to the confluence with Cove Creek)

- 1 (B) Hatchery Supported Trout Waters are as follows:  
2 Green River (Mouth of Cove Creek to the natural gas pipeline crossing)  
3 North Pacolet River (Joels Creek to N.C. 108 bridge)  
4 (18) Rutherford County  
5 (A) Hatchery Supported Trout Waters are as follows:  
6 (Rocky) Broad River (Henderson Co. line to U.S. 64/74 bridge, except where posted  
7 against trespassing)  
8 (19) Stokes County  
9 (A) Hatchery Supported Trout Waters are as follows:  
10 Dan River (Virginia state line downstream to a point 200 yards below the end of S.R.  
11 1421)  
12 (20) Surry County  
13 (A) Delayed Harvest Trout Waters are as follows:  
14 Ararat River (portion adjacent to the Ararat River Greenway)  
15 Mitchell River (.6 mile upstream of the end of S.R. 1333 to the S.R. 1330 bridge below  
16 Kapps Mill Dam)  
17 (B) Hatchery Supported Trout Waters are as follows:  
18 Ararat River (S.R. 1727 bridge downstream to the N.C. 103 bridge)  
19 Big Elkin Creek (dam 440 yards upstream of N.C. 268 bridge to a point 265 yards  
20 downstream of N.C. 268 [marked by a sign on each bank])  
21 Fisher River (Cooper Creek)(Virginia state line to I-77 bridge)  
22 Little Fisher River (Virginia state line to N.C. 89 bridge)  
23 Lovills Creek (U.S. 52 Business bridge to Ararat River)  
24 Pauls Creek (Virginia state line to .3 miles below S.R. 1625 bridge)  
25 (21) Swain County  
26 (A) Delayed Harvest Waters Trout Waters are as follows:  
27 Tuckasegee River (U.S. 19 bridge to Slope Street bridge)  
28 (B) Hatchery Supported Trout Waters are as follows:  
29 Alarka Creek (game land boundary to Fontana Reservoir)  
30 Calderwood Reservoir (Cheoah Dam to Tennessee state line)  
31 Cheoah Reservoir  
32 Connelly Creek (Camp Branch to Tuckasegee River)  
33 Deep Creek (Great Smoky Mountains National Park Boundary line to Tuckasegee River)  
34 Nantahala River (Macon Co. line to existing Fontana Lake water level)  
35 (22) Transylvania County  
36 (A) Catch and Release/Artificial Flies Only Trout Waters are as follows:  
37 Davidson River (headwaters to Avery Creek, excluding Avery Creek, Looking Glass  
38 Creek and Grogan Creek)  
39 (B) Delayed Harvest Waters Trout Waters are as follows:  
40 East Fork French Broad River (~~Glady Fork~~ East Fork Baptist Church to French Broad  
41 River)  
42 Little River (confluence of Lake Dense to 100 yards downstream of Hooker Falls)  
43 (C) Hatchery Supported Trout Waters are as follows:  
44 Davidson River (Avery Creek to lower USFS boundary)  
45 French Broad River (confluence of North Fork French Broad River and West Fork) French  
46 Broad River to the Island Ford Rd. [S.R. 1110] Access Area  
47 Middle Fork French Broad River (upstream U.S. 178 bridge to French Broad River)  
48 West Fork French Broad River (Camp Cove Branch to confluence with North Fork French  
49 Broad River)  
50 (D) Wild Trout Waters are as follows:  
51 All waters located on Gorges State Park  
52 Whitewater River (downstream from Silver Run Creek to South Carolina state line)  
53 (E) Wild Trout Waters/Natural Bait are as follows:  
54 North Fork French Broad River (game land portion downstream of S.R. 1326)  
55 Thompson River (S.R. 1152 to South Carolina state line, except where posted against  
56 trespassing)

- 1 (23) Watauga County
- 2 (A) Catch and Release/Artificial Lures Only Trout Waters are as follows:
- 3 Laurel Creek (confluence of North and South Fork Laurel creeks to Elk Creek, excluding
- 4 tributaries)
- 5 Pond Creek (headwaters to Locust Ridge Rd. bridge, excluding the pond adjacent to
- 6 Coffee Lake)
- 7 (B) Delayed Harvest Trout Waters are as follows:
- 8 Lake Coffey
- 9 Watauga River (adjacent to intersection of S.R. 1557 and S.R. 1558 to N.C. 105 bridge
- 10 and S.R. 1114 bridge to N.C. 194 bridge at Valle Crucis)
- 11 (C) Hatchery Supported Trout Waters are as follows:
- 12 Beaverdam Creek (confluence of Beaverdam Creek and Little Beaverdam Creek to an
- 13 unnamed tributary adjacent to the intersection of S.R. 1201 and S.R. 1203)
- 14 Beech Creek
- 15 Buckeye Creek (Buckeye Creek Reservoir dam to Grassy Gap Creek)
- 16 Buckeye Creek Reservoir
- 17 Cove Creek (S.R. 1233 bridge at Zionville to S.R. 1214 bridge at Sherwood)
- 18 Dutch Creek (second bridge on S.R. 1134 to mouth)
- 19 Elk Creek (S.R. 1510 bridge at Triplett to Wilkes Co. line, except where posted against
- 20 trespassing)
- 21 Laurel Creek (S.R. 1123 bridge at S.R. 1157 intersection to Watauga River)
- 22 Meat Camp Creek (S.R. 1340 bridge at S.R. 1384 intersection to N.C. 194)
- 23 Middle Fork New River (adjacent to intersection of S.R. 1539 and U.S. 321 to South
- 24 Fork New River)
- 25 Norris Fork Creek
- 26 South Fork New River (canoe launch 70 yards upstream of U.S. 421 bridge to lower
- 27 boundary of Brookshire Park)
- 28 Stony Fork (S.R. 1500 bridge at S.R. 1505 intersection to Wilkes Co.line)
- 29 (D) Wild Trout Waters are as follows:
- 30 Dutch Creek (headwaters to second bridge on S.R. 1134)
- 31 Howard Creek
- 32 Maine Branch (headwaters to North Fork New River)
- 33 North Fork New River (from confluence with Maine and Mine branches to Ashe Co.
- 34 line)
- 35 Watauga River (Avery Co. line to S.R. 1580 bridge)
- 36 Winkler Creek (lower bridge on S.R. 1549 to confluence with South Fork New River)
- 37 (24) Wilkes County
- 38 (A) Delayed Harvest Trout Waters are as follows:
- 39 East Prong Roaring River (Bullhead Creek downstream to Stone Mountain State Park
- 40 lower boundary)
- 41 Elk Creek — upper (Watauga Co. line to lower boundary of the Blue Ridge Mountain
- 42 Club)
- 43 Elk Creek — lower (portion on Leatherwood Mountains development)
- 44 Reddies River (Town of North Wilkesboro water intake dam to confluence with the
- 45 Yadkin River)
- 46 Stone Mountain Creek (from falls at Alleghany Co. line to confluence with East Prong
- 47 Roaring River and Bullhead Creek)
- 48 (B) Hatchery Supported Trout Waters are as follows:
- 49 Basin Creek (S.R. 1730 bridge to confluence with Lovelace Creek)
- 50 Bell Branch Pond
- 51 Cub Creek (.5 mile upstream of S.R. 2460 bridge to S.R. 1001 bridge)
- 52 Darnell Creek (North Prong Reddies River)(downstream ford on S.R. 1569 to confluence
- 53 with North Fork Reddies River)
- 54 East Prong Roaring River (Stone Mountain State Park lower boundary to S.R. 1002 bridge)
- 55 Fall Creek (S.R. 1300 bridge to confluence with South Prong Lewis Fork, except where
- 56 posted against trespassing)

- 1 Middle Fork Reddies River (Clear Prong)(headwaters to bridge on S.R. 1580)  
 2 Middle Prong Roaring River (headwaters to bridge on S.R. 1736)  
 3 North Fork Reddies River (Vannoy Creek)(headwaters to Union School bridge on S.R.  
 4 1559)  
 5 Pike Creek  
 6 Pike Creek Pond  
 7 South Fork Reddies River (S.R. 1355 bridge to confluence with Middle Fork Reddies  
 8 River)  
 9 South Prong Lewis Fork (Fall Creek to S.R. 1155 bridge)  
 10 (C) Wild Trout Waters are as follows:  
 11 All waters located on Stone Mountain State Park, except East Prong Roaring River from  
 12 Bullhead Creek downstream to the Stone Mountain State Park lower boundary where  
 13 Delayed Harvest Trout Waters regulations apply, and Stone Mountain Creek from falls at  
 14 Alleghany County line to confluence with East Prong Roaring River and Bullhead Creek  
 15 in Stone Mountain State Park where Delayed Harvest Trout Waters regulations apply  
 16 (25) Yancey County  
 17 (A) Catch and Release/Artificial Flies Only Trout Waters are as follows:  
 18 South Toe River (headwaters to Upper Creek)  
 19 Upper Creek  
 20 (B) Delayed Harvest Trout Waters are as follows:  
 21 Cane River (Blackberry Ridge Rd. to downstream boundary of Cane River County Park)  
 22 (C) Hatchery Supported Trout Waters are as follows:  
 23 Bald Mountain Creek (except where posted against trespassing)  
 24 Cane River (Bee Branch [S.R. 1110] to Bowlens Creek)  
 25 Price Creek (junction of S.R. 1120 and S.R. 1121 to Indian Creek)  
 26 South Toe River (Clear Creek to lower boundary line of Yancey Co. Recreation Park,  
 27 except where posted against trespassing)  
 28 (D) Wild Trout Waters are as follows:  
 29 Cattail Creek (bridge at Mountain Farm Community Rd. to N.C. 197 bridge)  
 30 Lickskillet Creek  
 31 Middle Creek (game land boundary to mouth)  
 32

33 *History Note: Authority G.S. 113-272; 113-292;*  
 34 *Eff. February 1, 1976;*  
 35 *Amended Eff. July 1, 1998; July 1, 1997; July 1, 1996; July 1, 1995; July 1, 1994; July 1, 1993;*  
 36 *October 1, 1992;*  
 37 *Temporary Amendment Eff. July 1, 1999;*  
 38 *Amended Eff. July 1, 2000;*  
 39 *Temporary Amendment Eff. July 1, 2001;*  
 40 *Temporary Amendment Eff. July 1, 2002;*  
 41 *Amended Eff. August 1, 2002 (approved by RRC on 6/21/01 and 04/18/02);*  
 42 *Temporary Amendment Eff. June 1, 2003;*  
 43 *Amended Eff. June 1, 2004 (this amendment replaces the amendment approved by RRC on July*  
 44 *17, 2003);*  
 45 *Amended Eff. August 1, 2018; August 1, 2017; August 1, 2016; August 1, 2015; August 1, 2014;*  
 46 *August 1, 2013; August 1, 2012; August 1, 2011; August 1, 2010; May 1, 2009; May 1, 2008; May*  
 47 *1, 2007; May 1, 2006; June 1, 2005.*

1 **15A NCAC 10C .0305 BLACK BASS**

2 (a) The daily creel limit for Largemouth, Smallmouth, and Spotted Bass — collectively known as Black Bass - is five  
3 fish, except in waters identified in Paragraphs (b), (c), ~~and (d)~~(d), and (n) of this Rule. There is no minimum size limit  
4 for these fish, but only two of them may be less than 14 inches except in waters identified in Paragraphs (b), (c), (d),  
5 (e), (f), (g), (h), (i), (j), (k), (l), ~~and (m)~~(m), and (n) of this Rule. There is no closed season, except for waters identified  
6 in ~~Paragraph~~ Paragraphs (l) and (n) of this Rule.

7 (b) In Lake Cammack in Alamance County, and Lake Holt in Granville County the daily creel limit for Largemouth  
8 Bass is 10 fish and no more than two fish greater than 14 inches may be possessed.

9 (c) In Lake Santeetlah in Graham County, there is no daily creel limit for Black Bass less than 14 inches. The daily  
10 creel limit for Black Bass greater than 14 inches is five fish.

11 (d) In Lake Chatuge in Clay County, the daily creel limit for Black Bass is 10 fish, the minimum size limit for  
12 Largemouth Bass is 12 inches, and there is no minimum size limit for Smallmouth Bass and Spotted Bass.

13 (e) The minimum size limit for Black Bass is 14 inches in the following:

14 (1) Lake Raleigh in Wake County;

15 (2) Pungo Lake in Washington and Hyde counties;

16 (3) New Lake in Hyde County; and

17 (4) Currituck, Roanoke, Croatan, Albemarle sounds, and all their tributaries including Roanoke River  
18 downstream of Roanoke Rapids Dam, Chowan River, Yeopim River, Pasquotank River,  
19 Perquimans River, North River, Northwest River, Scuppernong River, and Alligator River  
20 (including the Alligator/Pungo Canal east of the NC Hwy 264/45 bridge).

21 (f) In Cane Creek Lake in Union County, and Buckhorn Reservoir in Wilson and Nash counties, the minimum size  
22 limit for Largemouth Bass is 16 inches.

23 (g) In Lake Phelps in Tyrrell and Washington counties, the minimum size limit is 14 inches, and no fish between 16  
24 and 20 inches may be possessed.

25 (h) In Shearon Harris Reservoir and Lake Hampton in Yadkin County, there is no minimum size limit for Black Bass,  
26 but only two Black Bass less than 14 inches and no Black Bass between 16 and 20 inches may be possessed.

27 (i) In Randleman Reservoir, there is no minimum size limit for Largemouth Bass, but only two Largemouth Bass less  
28 than 14 inches and only one Largemouth Bass greater than 20 inches may be possessed.

29 (j) In Lake Thom-A-Lex in Davidson County, the minimum size limit for Black Bass is 18 inches.

30 (k) In the Alleghany County portion of New River downstream of Fields Dam (Grayson County, Virginia) there is  
31 no minimum size limit for Black Bass, but no fish between 14 and 22 inches in length may be possessed and only one  
32 Black Bass greater than 22 inches may be possessed.

33 (l) In Sutton Lake, the minimum size limit for Black Bass is 14 inches and no Black Bass may be possessed from  
34 December 1 through March 31.

35 (m) In Lake Mattamuskeet and associated canals in Hyde County, the minimum size limit for Largemouth Bass is 16  
36 inches and only one Largemouth Bass greater than 20 inches may be possessed.

37 (n) In Jean Guite Creek and associated canals within the Town of Southern Shores, Dare County, no Black Bass may  
38 be possessed.

39 (o) For purposes of this Rule, creel limits apply to Largemouth, Smallmouth, and Spotted Bass in aggregate unless  
40 otherwise specified.

41  
42 *History Note: Authority G.S. 113-134; 113-292; 113-304; 113-305;*

43 *Eff. February 1, 1976;*

44 *Temporary Amendment Eff. May 10, 1990, for a period of 180 days to expire on November 1,*  
45 *1990;*

46 *Temporary Amendment Eff. May 22, 1990, for a period of 168 days to expire on November 1,*  
47 *1990;*

48 *Temporary Amendment Eff. May 1, 1991, for a period of 180 days to expire on November 1, 1991;*  
49 *Amended Eff. July 1, 1994; July 1, 1993; October 1, 1992;*

50 *Temporary Amendment Eff. December 1, 1994 for a period of 180 days or until the permanent*  
51 *rule becomes effective, whichever is sooner;*

52 *Amended Eff. July 1, 1998; July 1, 1997; July 1, 1996; July 1, 1995;*

53 *Temporary Amendment Eff. November 1, 1998;*

54 *Amended Eff. April 1, 1999;*

55 *Temporary Amendment Eff. July 1, 1999;*

56 *Amended Eff. July 1, 2000;*

1                    *Temporary Amendment Eff. July 1, 2001;*  
2                    *Temporary Amendment Eff. March 8, 2002 [This rule replaces the rule proposed for permanent*  
3                    *amendment effective July 1, 2002 and approved by RRC in May 2001];*  
4                    *Amended Eff. August 1, 2002 (approved by RRC in April 2002);*  
5                    *Temporary Amendment Eff. June 1, 2003;*  
6                    *Amended Eff. June 1, 2004 (this amendment replaces the amendment approved by RRC on July*  
7                    *17, 2003);*  
8                    *Amended Eff. August 1, 2018; August 1, 2017; August 1, 2016; November 1, 2013; August 1, 2012;*  
9                    *March 1, 2012; August 1, 2011; August 1, 2010; May 1, 2009; July 1, 2008; May 1, 2008; May 1,*  
10                   *2007; May 1, 2006; June 1, 2005.*

1 **15A NCAC 10C .0316 TROUT**

2 (a) The daily creel limit for trout in Hatchery-Supported Trout Waters is seven fish. There is no minimum size limit  
3 for these fish. The open season is from 7 a.m. on the first Saturday in April until March 1, except for waters designated  
4 in Paragraphs (d) and (g) of this Rule.

5 (b) The daily creel limit for trout in Wild Trout Waters and Wild Trout/Natural Bait Trout Waters is four fish. The  
6 minimum size limit for these fish is seven inches. There is no closed season.

7 (c) No trout may be harvested from Catch and Release/Artificial Lures Only Trout Waters or Catch and  
8 Release/Artificial Flies Only Trout Waters. Trout may not be possessed while fishing these waters.

9 (d) The daily creel limit for trout in Delayed Harvest Trout Waters is seven fish. There is no minimum size limit for  
10 these fish. The Youth-only Delayed Harvest Trout Water Season is from 6 a.m. on the first Saturday in June until 12  
11 p.m. that same day. During this season only individuals under the age of 18 may fish. From 12 p.m. on the first  
12 Saturday in June until September 30, the Delayed Harvest Trout Waters Season is open for all anglers. From October  
13 1 to one-half hour after sunset on the Friday before the first Saturday in June, trout may not be harvested or possessed  
14 while fishing these waters. Delayed Harvest Trout Waters are closed to all fishing from one-half hour after sunset on  
15 the Friday before the first Saturday in June to 6 a.m. on the first Saturday in June.

16 (e) The daily creel limits, size limits, and seasons for trout in Special Regulation Trout Waters are as follows: in the  
17 Catawba River (Burke County) from Muddy Creek to the City of Morganton water intake dam the daily creel limit is  
18 ~~seven two~~ fish. ~~There is no minimum size limit for these fish, but only one may be greater than~~ The minimum size  
19 limit is 14 inches. There is no closed season.

20 (f) The daily creel limit for trout in undesignated trout waters is seven fish. There is no minimum size limit for these  
21 fish.

22 (g) There is no closed season on taking trout from Linville River within Linville Gorge Wilderness Area and the  
23 impounded waters of power reservoirs and municipally-owned water supply reservoirs open to the public for fishing.

24 (h) In designated Public Mountain Trout Waters the season for taking all species of fish is the same as the trout fishing  
25 season.

26 (i) All trout water designations and manners of take are set forth in 15A NCAC 10C .0205.

27  
28 *History Note: Authority G.S. 113-134; 113-292;*  
29 *Eff. November 1, 2013;*  
30 *Amended Eff. August 1, 2018; August 1, 2017; August 1, 2015.*

1 **15A NCAC 10C .0401 MANNER OF TAKING NONGAME FISHES: PURCHASE AND SALE**

2 (a) Except as permitted by the rules in this Section, it is unlawful to take nongame fishes from the inland fishing  
3 waters of North Carolina in any manner other than with hook and ~~line~~, line or grabbling. Nongame fishes may be  
4 taken by hook and line or grabbling at any time without restriction as to size limits or creel limits, with the following  
5 exceptions:

- 6 (1) Blue crabs shall have a minimum carapace width of five inches (point to point) and it is unlawful to  
7 possess more than 50 crabs per person per day or to exceed 100 crabs per vessel per day.  
8 (2) While boating on or fishing in the following inland fishing waters, no person shall take river herring  
9 (alewife and blueback) that are greater than six inches in length, or possess such herring regardless  
10 of origin in:  
11 (A) Roanoke River downstream of Roanoke Rapids Dam;  
12 (B) Tar River downstream of Rocky Mount Mill Dam;  
13 (C) Neuse River downstream of Milburnie Dam;  
14 (D) Cape Fear River downstream of Buckhorn Dam;  
15 (E) Pee Dee River downstream of Blewett Falls Dam;  
16 (F) Lumber River including Drowning Creek;  
17 (G) all the tributaries to the rivers listed above; and  
18 (H) all other inland fishing waters east of I-95.  
19 (3) Grass carp shall not be taken or possessed on Lake James, Lookout Shoals Lake, Lake Norman,  
20 Mountain Island Reservoir, Lake Wylie, and John H. Kerr Reservoir, except that one fish per day  
21 may be taken with archery equipment.  
22 (4) No trotlines or set-hooks shall be used in the impounded waters located on the Sandhills Game Land  
23 or in designated public mountain trout waters.  
24 (5) In Lake Waccamaw, trotlines or set-hooks may be used only from October 1 through April 30.  
25 (6) In inland fishing waters, gray trout (weakfish) recreational seasons, size limits, and creel limits are  
26 the same as those established by Marine Fisheries Commission rule or proclamations issued by the  
27 Fisheries Director in adjacent joint or coastal fishing waters.

28 (b) The season for taking nongame fishes by other hook and line methods in designated public mountain trout waters  
29 is the same as the trout fishing season. Trout seasons are designated in 15A NCAC 10C .0316.

30 (c) Nongame fishes taken by hook and line, grabbling, or by licensed special devices may be sold, with the following  
31 exceptions:

- 32 (1) alewife and blueback herring, excluding those less than six inches in length collected from Kerr  
33 Reservoir (Granville, Vance, and Warren counties);  
34 (2) blue crab; and  
35 (3) bowfin.

36 (d) Freshwater mussels, including the Asiatic clam (*Corbicula fluminea*), may be taken only from impounded waters,  
37 except mussels shall not be taken in Lake Waccamaw in Columbus County, and in University Lake in Orange County.  
38 The daily possession limit for freshwater mussels is 200 in the aggregate, except there is no daily possession limit for  
39 the Asiatic clam (*Corbicula fluminea*).

40 (e) In waters that are stocked and managed for catfish and located on game lands, on Commission-owned property,  
41 or on the property of a cooperator, including waters within the Community Fishing Program, it is unlawful to take  
42 channel, white, or blue catfish by means other than hook and line; the daily creel limit is six catfish in aggregate.  
43 Waters where this creel limit applies shall be posted on-site with signs indicating the creel limit.

44 (f) The daily creel limit for blue catfish greater than 32 inches is one fish in the following reservoirs:

- 45 (1) Lake Norman;  
46 (2) Mountain Island Lake;  
47 (3) Lake Wylie;  
48 (4) Badin Lake; ~~and~~  
49 (5) ~~Lake Tillery~~; Tillery;  
50 (6) John H. Kerr Reservoir (North Carolina portion);  
51 (7) Lake Gaston (North Carolina portion); and  
52 (8) Roanoke Rapids Reservoir.

53 (g) The daily creel limit for American eels taken from or possessed, regardless of origin, while boating on or fishing  
54 in inland fishing waters is 25, and the minimum size limit is 9 inches.

55 (h) No person while fishing shall remove the head or tail or otherwise change the appearance of any nongame fish  
56 having a size limit so as to render it impracticable to measure its total original length. No person while fishing shall



1 change the appearance of any nongame fish having a daily creel limit so as to obscure its identification or render it  
2 impracticable to count the number of fish in possession.

3  
4 *History Note: Authority G.S. 113-134; 113-272; 113-292;*  
5 *Eff. February 1, 1976;*  
6 *Amended Eff. July 1, 1994; July 1, 1993; May 1, 1992;*  
7 *Temporary Amendment Eff. December 1, 1994;*  
8 *Amended Eff. July 1, 1998; July 1, 1996; July 1, 1995;*  
9 *Temporary Amendment Eff. July 1, 1999;*  
10 *Amended Eff. July 1, 2000;*  
11 *Temporary Amendment Eff. July 1, 2002; July 1, 2001;*  
12 *Amended Eff. August 1, 2002 (approved by RRC on 06/21/01 and 04/18/02);*  
13 *Temporary Amendment Eff. June 1, 2003;*  
14 *Amended Eff. May 1, 2004 (this amendment replaces the amendment approved by RRC on July 17,*  
15 *2003);*  
16 *Amended Eff. August 1 2018; August 1, 2016; August 1, 2015; August 1, 2014; August 1, 2013;*  
17 *August 1, 2012;*  
18 *August 1, 2011; August 1, 2010; May 1, 2009; May 1, 2008; May 1, 2007; May 1, 2006; June 1,*  
19 *2005.*  
20  
21

1 **15A NCAC 10C .0402 TAKING NONGAME FISHES FOR BAIT OR PERSONAL CONSUMPTION**

2 (a) It is unlawful to take nongame fish for bait or personal consumption in the inland waters of North Carolina using  
3 equipment other than:

- 4 (1) a net of dip net design not greater than six feet across;
- 5 (2) a seine of not greater than 12 feet in length (except in Lake Waccamaw in Columbus County where  
6 there is no length limitation) and with a bar mesh measure of not more than one-fourth inch;
- 7 (3) a cast net;
- 8 (4) a bow net for the seasons and waters in which the use of bow nets is authorized in 15A NCAC 10C  
9 .0407;
- 10 (5) a dip net when used in conjunction with a licensed hand-crank electrofisher;
- 11 (6) a gig (except in Public Mountain Trout Waters);
- 12 (7) up to three traps for the seasons and waters in which the use of traps is authorized in 15A NCAC  
13 10C .0407;
- 14 (8) up to two eel pots;
- 15 (9) a spear gun for the seasons and waters in which the use of a spear gun is authorized in 15A NCAC  
16 10C .0407;
- 17 (10) minnow traps not exceeding 12 inches in diameter and 24 inches in length, with funnel openings not  
18 exceeding one inch in diameter, ~~and that are under the immediate control and attendance of the~~  
19 ~~individual operating them; from which all fish and animals are removed daily, and which are labeled~~  
20 with the user's Wildlife Resources Commission customer number or name and address;
- 21 (11) a hand-held line with a single bait attached;
- 22 (12) a single, multiple-bait line for taking crabs not to exceed 100 feet in length, marked on each end  
23 with a solid float no less than five inches in diameter, bearing legible and indelible identification of  
24 the user's name and address, and under the immediate control and attendance of the person using  
25 the device, with a limit of one line per person and no more than one line per vessel; or
- 26 (13) a collapsible crab trap with the largest open dimension not greater than 18 inches and that by design  
27 is collapsed at all times when in the water, except when it is being retrieved or lowered to the bottom,  
28 with a limit of one trap per person.

29 (b) The use of equipment under this Rule only requires a valid license that provides basic inland fishing privileges.

30 (c) It is unlawful to sell nongame fishes or aquatic animals taken under this Rule.

31 (d) Game fishes taken while netting for bait shall be returned unharmed to the water, except white perch may be taken  
32 when captured in a cast net being used to collect nongame fishes for bait or personal consumption in all impounded  
33 waters west of I-95 and in the Tar River Reservoir (Nash County).

34 (e) No person shall take or possess during one day more than 200 nongame fish in aggregate for bait or personal  
35 consumption subject to the following restrictions:

- 36 (1) No more than 25 eels, none of which may be less than 9 inches in length, shall be taken from or  
37 possessed, regardless of origin, while boating on or fishing in inland fishing waters;
- 38 (2) While boating on or fishing in the following inland fishing waters, no river herring (alewife and  
39 blueback) that are greater than six inches in total length shall be taken, and no such river herring  
40 shall be possessed regardless of origin:
  - 41 (A) Roanoke River downstream of Roanoke Rapids Dam;
  - 42 (B) Tar River downstream of Rocky Mount Mill Dam;
  - 43 (C) Neuse River downstream of Milburnie Dam;
  - 44 (D) Cape Fear River downstream of Buckhorn Dam;
  - 45 (E) Pee Dee River downstream of Blewett Falls Dam;
  - 46 (F) Lumber River including Drowning Creek;
  - 47 (G) the tributaries to the rivers listed above; and
  - 48 (H) all other inland fishing waters east of Interstate 95.
- 49 (3) No more than 50 crabs per person per day or 100 per vessel per day with a minimum carapace width  
50 of five inches (point to point) shall be taken.

51 (f) Any fishes taken for bait purposes are included within the daily possession limit for that species.

52 (g) It is unlawful to take nongame fish for bait or any other fish bait ~~from designated public mountain trout waters~~  
53 ~~and from the bodies of water specified for the following counties:~~ waters:

- 54 (1) Public Mountain Trout Waters (except in impounded waters of power reservoirs and municipally-  
55 owned water supply reservoirs);
- 56 (2) Bear Creek in Chatham County; County;

- 1           (3)     Deep River in Chatham, Lee, and Moore counties and downstream of Coleridge Dam in Randolph
- 2                     County;
- 3           (4)     Fork Creek in Randolph County; and
- 4           (5)     Rocky River in Chatham County.
- 5     ~~Bear Creek~~
- 6           (2)     ~~Lee County;~~
- 7                     ~~Deep River~~
- 8           (3)     ~~Moore County;~~
- 9                     ~~Deep River~~
- 10          (4)     ~~Randolph County;~~
- 11                     ~~Deep River below the Coleridge Dam~~
- 12                     ~~Fork Creek~~

13 (h) In the waters of the Little Tennessee River, including all the tributaries and impoundments thereof, and on adjacent  
 14 shorelines, docks, access ramps, and bridge crossings, it is unlawful to transport, possess, or release live river herring  
 15 (alewife and blueback).

16 (i) No person while fishing shall remove the head or tail or otherwise change the appearance of any nongame fish  
 17 having a size limit so as to render it impracticable to measure its total original length. No person while fishing shall  
 18 change the appearance of any nongame fish having a daily creel limit so as to obscure its identification or render it  
 19 impracticable to count the number of fish in possession.

20  
 21 *History Note:*     *Authority G.S. 113-134; 113-135; 113-135.1; 113-272; 113-272.3; 113-292;*  
 22                     *Eff. February 1, 1976;*  
 23                     *Amended Eff. July 1, 2000; July 1, 1998; July 1, 1993; July 1, 1992; May 1, 1992; July 1, 1989;*  
 24                     *Temporary Amendment Eff. July 1, 2001;*  
 25                     *Amended Eff. July 18, 2002;*  
 26                     *Temporary Amendment Eff. June 1, 2003;*  
 27                     *Amended Eff. June 1, 2004 (this amendment replaces the amendment approved by RRC on July*  
 28                     *17, 2003);*  
 29                     *Amended Eff. August 1, 2018; August 1, 2017; August 1, 2016; August 1, 2015; August 1, 2014;*  
 30                     *August 1, 2013; August 1, 2010; May 1, 2008; May 1, 2007; May 1, 2006.*

1 **15A NCAC 10D .0104 FISHING ON GAME LANDS**

2 (a) Generally. Except as otherwise indicated herein, fishing on game lands that are open to fishing shall be in  
3 accordance with the North Carolina rules. All game lands are open to public fishing except restocked ponds when  
4 posted against fishing, Hunting Creek Swamp Waterfowl Refuge, Grogan Creek in Transylvania County, and in the  
5 case of private ponds where fishing may be prohibited by the owners thereof. No trotline or set-hook or any net, trap,  
6 gig, ~~bow and arrow~~, archery equipment, or other special fishing device of a type mentioned in 15A NCAC 10C  
7 .0404(b),(c),(d), and (f) may be used in any impounded waters located entirely on game lands. ~~Bow and arrow~~ Archery  
8 equipment may be used to take nongame fishes in impounded waters located entirely on game lands with the exception  
9 of those waters mentioned in 15A NCAC 10C .0404(a). Blue crabs taken by hook and line (other than set-hooks) in  
10 designated waterfowl impoundments located on game lands shall have a minimum carapace width of five inches (point  
11 to point) and the daily possession limit is 50 per person and 100 per vessel.

12 (b) Designated Public Mountain Trout Waters

13 ~~(1) Fishing Hours. It is unlawful to fish in designated public mountain trout waters on any game land  
14 and in all waters on the Dupont State Forest Game Land from one half hour after sunset to one half  
15 hour before sunrise, except in Hatchery Supported Trout waters as stated in 15A NCAC 10C  
16 .0305(a), Delayed Harvest waters as stated in 15A NCAC 10C .0205(a)(5), game lands sections of  
17 the Nantahala River located downstream from the Swain County line, and in the sections of Green  
18 River in Polk County located on Green River Game Lands from Cove Creek downstream to the  
19 natural gas pipeline crossing.~~

20 ~~(2)(1) Location. All waters located on the game lands listed in this Subparagraph are designated public  
21 mountain trout waters except as noted: Cherokee Lake, Grogan Creek, Big Laurel Creek  
22 downstream from the US 25-70 bridge to the French Broad River, Pigeon River downstream of  
23 Waterville Reservoir to the Tennessee state line, Nolichucky River, Mill Ridge Pond, Cheoah River  
24 downstream of Santeetlah Reservoir, Little River from 100 yards downstream of Hooker Falls  
25 downstream to the Dupont State Forest boundary, Lake Imaging, Lake Dense, Lake Alfred, Lake  
26 Julia, Fawn Lake, North Fork Catawba River downstream of the mouth of Armstrong Creek, Green  
27 River downstream of the natural gas pipeline crossing, and Spring Creek below US Forest Service  
28 road 223.~~

29 ~~Dupont State Forest Game Lands in Henderson and Transylvania counties.~~

30 ~~Three Top Mountain Game Land in Ashe County.~~

31 ~~Nantahala National Forest Game Lands in Cherokee, Clay, Graham, Jackson, Macon, Swain, and  
32 Transylvania counties.~~

33 ~~Pisgah National Forest Game Lands in Avery, Buncombe, Burke, Caldwell, Haywood, Henderson,  
34 Madison, McDowell, Mitchell, Transylvania, and Yancey counties.~~

35 ~~Thurmond Chatham Game Land in Wilkes County.~~

36 ~~Toxaway Game Land in Transylvania County.~~

37 ~~South Mountains Game Land in Cleveland and Rutherford counties.~~

38 ~~Cold Mountain Game Land in Haywood County.~~

39 ~~Green River Game Land in Henderson and Polk counties.~~

40 ~~Pond Mountain Game Land in Ashe County.~~

41 ~~Rendezvous Mountain State Forest Game Land in Wilkes County.~~

42 (A) Cold Mountain Game Land in Haywood County;

43 (B) DuPont State Forest Game Lands in Henderson and Transylvania counties, except Little  
44 River from 100 yards downstream of Hooker Falls downstream to the DuPont State Forest  
45 boundary, Lake Imaging, Lake Dense, Lake Alfred, Lake Julia, and Fawn Lake;

46 (C) Green River Game Land in Henderson and Polk counties, except Green River downstream  
47 of the natural gas pipeline crossing;

48 (D) Headwaters Game Land in Transylvania County;

49 (E) Nantahala National Forest Game Lands in Cherokee, Clay, Graham, Jackson, Macon,  
50 Swain, and Transylvania counties, except Cheoah River downstream of Santeetlah  
51 Reservoir and Cherokee Lake;

52 (F) Pisgah National Forest Game Lands in Avery, Buncombe, Burke, Caldwell, Haywood,  
53 Henderson, Madison, McDowell, Mitchell, Transylvania, Watauga, and Yancey counties,  
54 except Grogan Creek, North Fork Catawba River downstream of the mouth of Armstrong  
55 Creek, Big Laurel Creek downstream from the US 25-70 bridge to the French Broad River,

1 Mill Ridge Pond, Nolichucky River, Pigeon River downstream of Waterville Reservoir to  
2 the Tennessee state line, and Spring Creek below US Forest Service road 223;

3 (G) Pond Mountain Game Land in Ashe County;

4 (H) Rendezvous Mountain State Forest Game Land in Wilkes County;

5 (I) South Mountains Game Land in Cleveland and Rutherford counties;

6 (J) Three Top Mountain Game Land in Ashe County;

7 (K) Thurmond Chatham Game Land in Wilkes County;

8 (L) Toxaway Game Land in Transylvania County; and

9 (M) William H. Silvers Game Land in Haywood County.

10 ~~(3)~~(2) All designated public mountain trout waters located on the game lands listed in Subparagraph (b)(1)  
11 of this Rule are Wild Trout Waters unless classified otherwise. [See 15A NCAC 10C .0205(d)]

12 (c) Ponds. In all game lands ponds, it is unlawful to take channel, white, or blue catfish (forked tail catfish) by means  
13 other than hook and line and the daily creel limit for forked tail catfish is six fish in aggregate.  
14

15 *History Note:* Authority G.S. 113-134; 113-264; 113-272; 113-292; 113-305;  
16 Eff. February 1, 1976;

17 Amended Eff. July 1, 2000; July 1, 1998; July 1, 1996; July 1, 1995; July 1, 1994; July 1, 1993;  
18 July 1, 1992;

19 Temporary Amendment Eff. July 1, 2002; July 1, 2001;

20 Amended Eff. August 1, 2002 (approved by RRC on 06/21/01 and 04/18/02);

21 Temporary Amendment Eff. June 1, 2003;

22 Amended Eff. August 1, 2018; August 1, 2017; August 1, 2015; August 1, 2014; August 1, 2010;  
23 May 1, 2009; August 1, 2004.



# EXHIBIT D-1

February 28, 2018

## Summary of Comments For 2018-2019 Wildlife Management Hunting Rules Proposals

Proposal	Proposed Text	Position Count	Comment Types
H1	Modify statewide deer hunting seasons to establish five deer season zones as shown below. Under this proposal, the current Eastern Zone would be separated into two zones, Northeastern and southeastern; Polk and Rutherford counties would be moved to the Western Zone; and Cleveland County would be moved to the Northwest Zone.	18 :No Position 480 :Agree 349 :Disagree	269 :Online 483 :Comment Card 95 :Letter/Email
H2	Implement deer hunting seasons that are based on biological data and hunter feedback for each of the five deer season zones. These options include changes in season length and time frames, establishing a statewide antlered deer bag limit of 2 antlered bucks, antlerless deer bag limit of 4, and restricting the use of bonus antlerless deer tags to the Urban Archery Season. Under this proposal there would be no changes in the season opening dates for archery, but where other seasons begin later, archery seasons would be longer than currently established seasons.	14 :No Position 483 :Agree 855 :Disagree	576 :Online 539 :Comment Card 237 :Letter/Email
H3	Shift either-sex days to the front of Introductory, Conservative and Moderate Antlerless Deer Seasons.	31 :No Position 363 :Agree 360 :Disagree	199 :Online 441 :Comment Card 114 :Letter/Email
H4	Modify the bear hunting season in the Coastal Bear Management Unit (CBMU), as shown below, to align hunting seasons with five bear hunting zones established based upon biological data and bear hunter feedback.	18 :No Position 286 :Agree 221 :Disagree	124 :Online 373 :Comment Card 28 :Letter/Email
H5	Modify bear hunting season in the Mountain Bear Management Unit (MBMU) to add two weeks to the beginning of the current season.	15 :No Position 250 :Agree 431 :Disagree	103 :Online 353 :Comment Card 240 :Letter/Email
H6	Establish rules to allow limited take of American alligators as prescribed by the N.C. Alligator Management Plan. Under this proposal: <ul style="list-style-type: none"> <li>• The season for taking American alligators would September 1 to October 1.</li> <li>• Limited take would be by permit only issued by the Commission.</li> <li>• The bag limit would be one per permit, with a season limit of one alligator per person.</li> <li>• Alligators could only be taken using hand-held ropes or catch poles; handheld or rod/reel snatch hooks; harpoons or gigs with attached restraining lines; baited, wooden pegs less than 2-inches in length attached to hand-held restraining lines; or archery equipment with arrow-attached restraining lines.</li> <li>• Alligators taken by any method described above would have to be dispatched immediately upon capture.</li> <li>• Alligators could be taken day or night and with the use of artificial lights.</li> <li>• Baited hooks would be prohibited.</li> <li>• Persons receiving a permit would be required to complete a harvest survey provided by the Commission and to allow staff to collect biological data from harvested alligators.</li> </ul>	8 :No Position 323 :Agree 103 :Disagree	104 :Online 310 :Comment Card 20 :Letter/Email
H7	Amend the rule regulating possession of non-native species in the N.C. Administrative Code to include additional non-native, potentially invasive, species that threaten native species. Under this proposal, brown anoles, red-eared sliders, Cuban treefrogs and all Asian newt species in the genera Cynops, Pachytriton, Paramesotriton, Laotriton and Tylototriton would be added to this rule.	12 :No Position 276 :Agree 71 :Disagree	62 :Online 281 :Comment Card 16 :Letter/Email
H8	Clarify the definition of a blackpowder firearm to mean “any firearm, including any firearm with a matchlock, flintlock, percussion cap or similar type of ignition system, manufactured in or before 1898, that cannot use fixed ammunition; any replica of this type of firearm if such replica is not designed or redesigned for using rimfire or conventional centerfire fixed ammunition; and any muzzle-loading rifle, muzzle-loading shotgun or muzzle-loading or cylinder-loading handgun that is designed to use blackpowder, blackpowder substitute or any other propellant loaded through the muzzle or cylinder and that cannot use fixed ammunition.”	20 :No Position 340 :Agree 94 :Disagree	139 :Online 298 :Comment Card 17 :Letter/Email
H9	Clarify that the hunting seasons for pheasant, fox (by archery) and rabbits open on the Saturday before Thanksgiving.	9 :No Position 292 :Agree 75 :Disagree	67 :Online 291 :Comment Card 18 :Letter/Email
O	Propose a Regulation (Hunting)		96 :Online 67 :Comment Card 76 :Letter/Email

DISTRICT REPORT

Proposal	District 1	District 2	District 3	District 4	District 5	District 6	District 7	District 8	District 9	Out of State
H1	<b>Position Count:</b> 28 :Agree 99 :Disagree 2 :No Position  <b>Comment Types:</b> 19 :Online 105 :Comment Card 5 :Letter/Email	<b>Position Count:</b> 57 :Agree 28 :Disagree 3 :No Position  <b>Comment Types:</b> 36 :Online 41 :Comment Card 11 :Letter/Email	<b>Position Count:</b> 100 :Agree 62 :Disagree 5 :No Position  <b>Comment Types:</b> 73 :Online 76 :Comment Card 18 :Letter/Email	<b>Position Count:</b> 46 :Agree 29 :Disagree 2 :No Position  <b>Comment Types:</b> 14 :Online 59 :Comment Card 4 :Letter/Email	<b>Position Count:</b> 32 :Agree 11 :Disagree 3 :No Position  <b>Comment Types:</b> 17 :Online 21 :Comment Card 8 :Letter/Email	<b>Position Count:</b> 34 :Agree 12 :Disagree 1 :No Position  <b>Comment Types:</b> 23 :Online 23 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 21 :Agree 2 :Disagree 1 :No Position  <b>Comment Types:</b> 11 :Online 9 :Comment Card 4 :Letter/Email	<b>Position Count:</b> 71 :Agree 18 :Disagree 1 :No Position  <b>Comment Types:</b> 33 :Online 39 :Comment Card 18 :Letter/Email	<b>Position Count:</b> 85 :Agree 83 :Disagree 0 :No Position  <b>Comment Types:</b> 37 :Online 110 :Comment Card 21 :Letter/Email	<b>Position Count:</b> 6 :Agree 5 :Disagree 0 :No Position  <b>Comment Types:</b> 6 :Online 0 :Comment Card 5 :Letter/Email
H2	<b>Position Count:</b> 32 :Agree 126 :Disagree 0 :No Position  <b>Comment Types:</b> 31 :Online 113 :Comment Card 14 :Letter/Email	<b>Position Count:</b> 61 :Agree 77 :Disagree 0 :No Position  <b>Comment Types:</b> 67 :Online 44 :Comment Card 27 :Letter/Email	<b>Position Count:</b> 100 :Agree 149 :Disagree 0 :No Position  <b>Comment Types:</b> 121 :Online 83 :Comment Card 45 :Letter/Email	<b>Position Count:</b> 38 :Agree 73 :Disagree 0 :No Position  <b>Comment Types:</b> 39 :Online 66 :Comment Card 6 :Letter/Email	<b>Position Count:</b> 34 :Agree 57 :Disagree 3 :No Position  <b>Comment Types:</b> 48 :Online 26 :Comment Card 20 :Letter/Email	<b>Position Count:</b> 42 :Agree 55 :Disagree 2 :No Position  <b>Comment Types:</b> 62 :Online 28 :Comment Card 9 :Letter/Email	<b>Position Count:</b> 28 :Agree 38 :Disagree 1 :No Position  <b>Comment Types:</b> 38 :Online 12 :Comment Card 17 :Letter/Email	<b>Position Count:</b> 83 :Agree 71 :Disagree 2 :No Position  <b>Comment Types:</b> 70 :Online 44 :Comment Card 42 :Letter/Email	<b>Position Count:</b> 60 :Agree 183 :Disagree 6 :No Position  <b>Comment Types:</b> 81 :Online 123 :Comment Card 45 :Letter/Email	<b>Position Count:</b> 5 :Agree 26 :Disagree 0 :No Position  <b>Comment Types:</b> 19 :Online 0 :Comment Card 12 :Letter/Email
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H5	<b>Position Count:</b> 24 :Agree 36 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 54 :Comment Card 5 :Letter/Email	<b>Position Count:</b> 25 :Agree 19 :Disagree 5 :No Position  <b>Comment Types:</b> 9 :Online 27 :Comment Card 13 :Letter/Email	<b>Position Count:</b> 36 :Agree 30 :Disagree 3 :No Position  <b>Comment Types:</b> 12 :Online 39 :Comment Card 18 :Letter/Email	<b>Position Count:</b> 31 :Agree 11 :Disagree 0 :No Position  <b>Comment Types:</b> 4 :Online 37 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 24 :Agree 27 :Disagree 2 :No Position  <b>Comment Types:</b> 6 :Online 19 :Comment Card 28 :Letter/Email	<b>Position Count:</b> 17 :Agree 20 :Disagree 2 :No Position  <b>Comment Types:</b> 4 :Online 17 :Comment Card 18 :Letter/Email	<b>Position Count:</b> 9 :Agree 11 :Disagree 1 :No Position  <b>Comment Types:</b> 3 :Online 7 :Comment Card 11 :Letter/Email	<b>Position Count:</b> 42 :Agree 36 :Disagree 1 :No Position  <b>Comment Types:</b> 21 :Online 43 :Comment Card 15 :Letter/Email	<b>Position Count:</b> 39 :Agree 174 :Disagree 1 :No Position  <b>Comment Types:</b> 40 :Online 110 :Comment Card 64 :Letter/Email	<b>Position Count:</b> 3 :Agree 67 :Disagree 0 :No Position  <b>Comment Types:</b> 3 :Online 0 :Comment Card 67 :Letter/Email
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DISTRICT REPORT

H7	<p><b>Position Count:</b> 26 :Agree 23 :Disagree 0 :No Position</p> <p><b>Comment Types:</b> 3 :Online 46 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 35 :Agree 3 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 11 :Online 26 :Comment Card 2 :Letter/Email</p>	<p><b>Position Count:</b> 44 :Agree 11 :Disagree 2 :No Position</p> <p><b>Comment Types:</b> 13 :Online 40 :Comment Card 4 :Letter/Email</p>	<p><b>Position Count:</b> 30 :Agree 10 :Disagree 0 :No Position</p> <p><b>Comment Types:</b> 5 :Online 35 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 26 :Agree 0 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 8 :Online 17 :Comment Card 2 :Letter/Email</p>	<p><b>Position Count:</b> 21 :Agree 1 :Disagree 3 :No Position</p> <p><b>Comment Types:</b> 5 :Online 19 :Comment Card 1 :Letter/Email</p>	<p><b>Position Count:</b> 8 :Agree 0 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 3 :Online 6 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 32 :Agree 2 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 4 :Online 28 :Comment Card 3 :Letter/Email</p>	<p><b>Position Count:</b> 52 :Agree 20 :Disagree 2 :No Position</p> <p><b>Comment Types:</b> 8 :Online 64 :Comment Card 2 :Letter/Email</p>	<p><b>Position Count:</b> 2 :Agree 1 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 2 :Online 0 :Comment Card 2 :Letter/Email</p>
H8	<p><b>Position Count:</b> 26 :Agree 25 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 4 :Online 48 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 39 :Agree 4 :Disagree 4 :No Position</p> <p><b>Comment Types:</b> 17 :Online 27 :Comment Card 3 :Letter/Email</p>	<p><b>Position Count:</b> 53 :Agree 17 :Disagree 3 :No Position</p> <p><b>Comment Types:</b> 29 :Online 41 :Comment Card 3 :Letter/Email</p>	<p><b>Position Count:</b> 34 :Agree 13 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 10 :Online 38 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 30 :Agree 1 :Disagree 2 :No Position</p> <p><b>Comment Types:</b> 13 :Online 18 :Comment Card 2 :Letter/Email</p>	<p><b>Position Count:</b> 28 :Agree 5 :Disagree 3 :No Position</p> <p><b>Comment Types:</b> 15 :Online 20 :Comment Card 1 :Letter/Email</p>	<p><b>Position Count:</b> 13 :Agree 2 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 9 :Online 7 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 49 :Agree 3 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 20 :Online 30 :Comment Card 3 :Letter/Email</p>	<p><b>Position Count:</b> 66 :Agree 23 :Disagree 3 :No Position</p> <p><b>Comment Types:</b> 20 :Online 69 :Comment Card 3 :Letter/Email</p>	<p><b>Position Count:</b> 2 :Agree 1 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 2 :Online 0 :Comment Card 2 :Letter/Email</p>
H9	<p><b>Position Count:</b> 26 :Agree 24 :Disagree 0 :No Position</p> <p><b>Comment Types:</b> 2 :Online 48 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 34 :Agree 2 :Disagree 2 :No Position</p> <p><b>Comment Types:</b> 11 :Online 24 :Comment Card 3 :Letter/Email</p>	<p><b>Position Count:</b> 46 :Agree 12 :Disagree 2 :No Position</p> <p><b>Comment Types:</b> 15 :Online 41 :Comment Card 4 :Letter/Email</p>	<p><b>Position Count:</b> 29 :Agree 10 :Disagree 0 :No Position</p> <p><b>Comment Types:</b> 4 :Online 35 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 27 :Agree 1 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 8 :Online 19 :Comment Card 2 :Letter/Email</p>	<p><b>Position Count:</b> 26 :Agree 1 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 6 :Online 21 :Comment Card 1 :Letter/Email</p>	<p><b>Position Count:</b> 10 :Agree 1 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 5 :Online 7 :Comment Card 0 :Letter/Email</p>	<p><b>Position Count:</b> 36 :Agree 1 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 7 :Online 28 :Comment Card 3 :Letter/Email</p>	<p><b>Position Count:</b> 56 :Agree 23 :Disagree 0 :No Position</p> <p><b>Comment Types:</b> 8 :Online 68 :Comment Card 3 :Letter/Email</p>	<p><b>Position Count:</b> 2 :Agree 0 :Disagree 1 :No Position</p> <p><b>Comment Types:</b> 1 :Online 0 :Comment Card 2 :Letter/Email</p>
O (Hunting)	<p><b>Position Count:</b> 22 :Other</p> <p><b>Comment Types:</b> 6 :Online 12 :Comment Card 4 :Letter/Email</p>	<p><b>Position Count:</b> 40 :Other</p> <p><b>Comment Types:</b> 19 :Online 9 :Comment Card 12 :Letter/Email</p>	<p><b>Position Count:</b> 43 :Other</p> <p><b>Comment Types:</b> 26 :Online 4 :Comment Card 13 :Letter/Email</p>	<p><b>Position Count:</b> 15 :Other</p> <p><b>Comment Types:</b> 1 :Online 12 :Comment Card 2 :Letter/Email</p>	<p><b>Position Count:</b> 26 :Other</p> <p><b>Comment Types:</b> 10 :Online 8 :Comment Card 8 :Letter/Email</p>	<p><b>Position Count:</b> 18 :Other</p> <p><b>Comment Types:</b> 6 :Online 4 :Comment Card 8 :Letter/Email</p>	<p><b>Position Count:</b> 13 :Other</p> <p><b>Comment Types:</b> 7 :Online 0 :Comment Card 6 :Letter/Email</p>	<p><b>Position Count:</b> 20 :Other</p> <p><b>Comment Types:</b> 7 :Online 6 :Comment Card 7 :Letter/Email</p>	<p><b>Position Count:</b> 37 :Other</p> <p><b>Comment Types:</b> 13 :Online 12 :Comment Card 12 :Letter/Email</p>	<p><b>Position Count:</b> 5 :Other</p> <p><b>Comment Types:</b> 1 :Online 0 :Comment Card 4 :Letter/Email</p>



**Letters, Petitions, and Resolutions Received During the Public Comment Period for the  
2018-2019 Regulatory Cycle**  
Wildlife Management Division

In addition to the individual comments tallied, the Commission received the following letters from organizations:

- 1) Opposed to shortening the deer season in any part of the state. (H2)  
Letter received from NORTH CAROLINA FARM BUREAU FEDERATION, INC.
- 2) Opposed to limiting hunters to take only two antlered and two antlerless deer. (H2)  
Letter received from GOVERNER'S CLUB PROPERTY OWNERS ASSOCIATION
- 3) Opposed to proposed rule to allow alligator hunting in North Carolina (H6)  
Letter received from PEOPLE FOR THE ETHICAL TREATMENT OF ANIMALS (PETA)
- 4) In favor of H7 (Possession of Non-native Species). (H7)  
Letter Received from NCPARC
- 5) Opposed to proposed rule to allow alligator hunting in North Carolina (H6)  
Letter Received from NCPARC

The Commission received the following letters/petitions from individuals:

- 1) Opposed to changing deer and bear seasons. Specifically losing Thanksgiving week and one week of Muzzleloader season. (H2)  
Letter composed by Jeffrey Heatherly – Signed by 11 others
- 2) Opposed to changes in deer and bear seasons resulting in an overlap. (H2)  
Letter submitted at D9 hearing – Signed by 25
- 3) Opposed to changing the deer and bear seasons specifically due to the overlap. (H2)  
Letter submitted at D9 hearing – Signed by 28
- 4) Opposed to changes in season dates and limits. Proposes to raise limits on bear. (H2, H3, H5)  
Letter composed by Johnny Chastain – Signed by 10 others
- 5) Opposed to changes in season eliminating a week of the now two-week muzzleloader season and the loss of Thanksgiving. (H2, H3, H5)  
Letter composed by Harold Rogers – Signed by 20 others
- 6) Opposed to changes in black powder season and the loss of Thanksgiving Day hunting. (H2)  
Letter composed by Matt Rhea – Signed by 18 Others
- 7) Opposed to changes in deer season resulting in the loss of hunting on Thanksgiving Day. (H2)  
Letter composed by Homer Williams – Signed by 10 others
- 8) Opposed to season changes resulting in loss of hunting on Thanksgiving Day. Opposed to the start date of bear season. Opposed to extending deer season. Opposed to doe days. (H2, H3, H5)  
Letter composed by Kenneth Bryan Rogers – Signed by 10 others
- 9) Opposed to the take of alligators. (H6)  
Emails received from 611 individuals.

The Commission received resolutions from the following Counties:

- 1) Opposed to shortening the deer season in Bertie County. (H2)  
Resolution received from BERTIE COUNTY
- 2) Opposed to shortening the deer season in Hertford County. (H2)  
Resolution received from HERTFORD COUNTY
- 3) Oppose the proposed deer season zones. Propose that Lee County be included in Southeastern Zone as opposed to Central Zone. (H1)  
Resolution received from LEE COUNTY
- 4) Opposed to shortening the deer season in Northampton County. (H2)  
Resolution received from NORTHAMPTON COUNTY

# EXHIBIT D-2-B

February 28, 2018



## PROPOSED CHANGES IN WILDLIFE MANAGEMENT REGULATIONS FOR 2018-2019 AS RECOMMENDED BY AGENCY STAFF

### Deer

- 1) ~~Change statewide deer hunting seasons to establish five deer season zones. Separate the current Eastern Zone into two zones, Northeastern and Southeastern; m Move Polk, and Rutherford, and Cleveland counties to the Western Zone; and move Cleveland County to the Northwest Zone.~~  
*15A NCAC 10B .0203 DEER (WHITE-TAILED) (page 4)*
- 2) ~~Implement a balanced option for deer hunting seasons that is based on biological data and hunter feedback for each of the five season zones. These options include changes in season length and time frames, and antlered and antlerless bag limits. There would be no changes in the season opening dates for archery, but where other seasons would begin later, archery seasons would be longer than currently established seasons. Change the deer bag limits to 4 antlerless deer and 2 antlered deer statewide. Eliminate the use of Bonus Antlerless Deer Harvest Report Cards except in the Urban Archery Season.~~  
*15A NCAC 10B .0203 DEER (WHITE-TAILED) (page 4)*
- 3) Shift either-sex days to the front of Introductory, Conservative, and Moderate antlerless deer seasons.  
*15A NCAC 10B .0203 DEER (WHITE-TAILED) (page 4)*

### Bear

- 1) Change bear hunting seasons in the Coastal Bear Management Unit to align hunting seasons with five bear hunting zones established based upon biological data and bear hunter feedback; move Pamlico County to Zone 5.  
*15A NCAC 10B .0202 BEAR (page 11)*
- 2) ~~Change bear hunting season in the Mountain Bear Management Unit to add two weeks to the beginning of the current season.~~  
*15A NCAC 10B .0202 BEAR (page 11)*

## **Alligators**

- 1) Allow limited take of American alligators as prescribed by the North Carolina Alligator Management Plan.

Under this proposal:

1. The season for taking American alligators would be September 1 to October 1.
2. Limited take would be by permit only issued by the Wildlife Resources Commission.
3. The bag limit would be one per permit, with a season limit of one alligator per permittee.
4. Alligators could only be taken using hand-held ropes or catch poles; hand-held or rod/reel snatch hooks; harpoons or gigs with attached restraining lines; baited, wooden pegs less than 2-inches in length attached to hand-held restraining lines; archery equipment with arrow-attached restraining lines.
5. Alligators taken by any lawful method described above would have to be dispatched immediately upon capture.
6. Alligators could be taken day or night and with the use of artificial lights.
7. Baited hooks would be prohibited.
8. Permittees would be required to complete a harvest survey provided by the Wildlife Resources Commission and to allow staff to collect biological data from harvested alligators.

*15A NCAC 10B .0224 AMERICAN ALLIGATOR (page 14)*

## **Possession of Non-native Species**

- 1) Amend the rule regulating possession of non-native species in the North Carolina Administrative Code to include brown anoles, red-eared sliders, Cuban treefrogs, and all Asian newt species in the genera *Cynops*, *Pachytriton*, *Paramesotriton*, *Laotriton*, and *Tylototriton*.

*15A NCAC 10B .0123 POSSESSION OF CERTAIN SPECIES OF WILDLIFE RESOURCES (page 15)*

## **Clarify Definition of Blackpowder Firearm**

- 1) Clarify the definition of a blackpowder firearm to mean “any firearm, including any firearm with a matchlock, flintlock, percussion cap, or similar type of ignition system, manufactured in or before 1898, that cannot use fixed ammunition; any replica of this type of firearm if such replica is not designed or redesigned for using rimfire or conventional centerfire fixed ammunition; and any muzzle-loading rifle, muzzle-loading shotgun, or muzzle-loading or cylinder-loading handgun that is designed to use

blackpowder, blackpowder substitute, or any other propellant loaded through the muzzle or cylinder and that cannot use fixed ammunition."

*15A NCAC 10B .0203 DEER (WHITE-TAILED) (page 4)*

## **Technical Correction**

- 1) Clarify that the hunting seasons for pheasant, fox (by archery), and rabbits open on the Saturday before Thanksgiving.

*15A NCAC 10B .0207 RABBITS (page 17)*

*15A NCAC 10B .0211 PHEASANT (NONNATIVE VARIETIES) (page 17)*

*15A NCAC 10B .0212 FOXES (GRAY AND RED) (page 17)*

1 **15A NCAC 10B .0203 DEER (WHITE-TAILED)**

2 (a) Open Seasons (All Lawful Weapons) for hunting deer:

3 (1) Deer With Visible Antlers. Except on Buffalo Cove, Nicholson Creek, Rockfish Creek, Sandhills,  
4 and South Mountains Game Lands, Deer deer with antlers or spikes protruding through the skin, as  
5 distinguished from knobs or buttons covered by skin or velvet, may be taken during the following  
6 seasons (Refer to 15A NCAC 10D .0103 for Deer With Visible Antlers seasons on these Game  
7 Lands):

8 (A) Saturday on or nearest October 15 through January 1 in all of Beaufort, ~~Bertie~~, Bladen,  
9 Brunswick, ~~Camden~~, Carteret, ~~Chowan~~, Columbus\*, Cumberland, Craven, ~~Currituck~~,  
10 Dare, Duplin, ~~Edgecombe~~, ~~Franklin~~, ~~Gates~~, ~~Greene~~, ~~Halifax~~, Harnett, ~~Hertford~~, Hoke,  
11 Hyde, ~~Johnston~~, Jones, Lenoir, ~~Martin~~, Moore, ~~Nash~~, New Hanover, ~~Northampton~~,  
12 Onslow, Pamlico, ~~Pasquotank~~, Pender, ~~Perquimans~~, ~~Pitt~~, ~~Richmond\*\*~~, Richmond,  
13 Robeson, Sampson, ~~Scotland\*\*~~, Scotland, Tyrrell, and Vance, ~~Wake~~, ~~Warren~~,  
14 Washington, ~~Wayne~~, and ~~Wilson~~ counties.

15 \*Unlawful to hunt or kill deer in Lake Waccamaw or within 50 yards of its shoreline.

16 \*\*~~Refer to 15A NCAC 10D .0103(h) for seasons on Nicholson Creek, Rockfish Creek, and~~  
17 ~~Sandhills Game Lands.~~

18 (B) Saturday on or nearest October 15 through January 1 in all of Bertie, Camden, Chowan,  
19 Currituck, Edgecombe, Franklin, Gates, Greene, Halifax, Hertford, Johnston, Martin,  
20 Nash, Northampton, Pasquotank, Perquimans, Pitt, Vance, Wake, Warren, Wayne, and  
21 Wilson counties.

22 (C) Saturday before Thanksgiving Day through January 1 in all of Alexander, Alleghany, Ashe,  
23 Catawba, Cleveland, Davie, Forsyth, Gaston, Iredell, Lincoln, Polk, Rutherford, Stokes,  
24 Surry, Watauga, ~~Wilkes\*~~ Wilkes, and Yadkin counties.

25 \*~~Refer to 15A NCAC 10D .0103(h) for seasons on Buffalo Cove Game Land.~~

26 ~~(C)~~(D) Monday of Thanksgiving week through the third Saturday after Thanksgiving Day in all  
27 of Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Graham, Haywood, Henderson,  
28 Jackson, Macon, Madison, McDowell, Mitchell, Swain, Transylvania, and Yancey  
29 counties.

30 ~~(D)~~(E) Two Saturdays before Thanksgiving through January 1 in all of Alamance, Anson,  
31 Cabarrus, Caswell, Chatham, Davidson, Durham, Granville, Guilford, Lee, Mecklenburg,  
32 Montgomery, Orange, Person, Randolph, Rockingham, Rowan, Stanly, and Union  
33 counties.

34 ~~(E)~~(F) Saturday on or nearest September 10 through January 1 in those parts of Camden, Gates,  
35 and Pasquotank counties known as the Dismal Swamp National Wildlife Refuge; in those  
36 parts of Hyde, Tyrrell, and Washington counties known as the Pocosin Lakes National  
37 Wildlife Refuge; in that part of Hyde county known as Lake Mattamuskeet National

1 Wildlife Refuge; in those parts of Dare and Hyde counties known as Alligator River  
2 National Wildlife Refuge; in those parts of Anson and Richmond counties known as the  
3 Pee Dee National Wildlife Refuge; and in that part of Currituck County known as the  
4 Mackay Island National Wildlife Refuge.

5 ~~(F) Monday of Thanksgiving week through January 1 in all of Cleveland, Polk, and Rutherford~~  
6 ~~counties, except for South Mountain Game Land.~~

7 (2) Deer of Either Sex. Except on Game Lands, deer of either sex may be taken during the open seasons  
8 and in the counties and portions of counties listed in Parts (A), (B), (C), (D), (E), (F), and (G) of this  
9 ~~Subparagraph: Subparagraph~~ (Refer to 15A NCAC 10D .0103 for either-sex deer seasons on Game  
10 Lands). Deer of either sex may be taken during the open season identified in Part (H) of this  
11 Subparagraph.

12 (A) The open either-sex deer hunting dates established by the U.S. Fish and Wildlife Service  
13 during the period from the Saturday on or nearest September 10 through January 1 in those  
14 parts of Camden, Gates, and Pasquotank counties known as the Dismal Swamp National  
15 Wildlife Refuge; in those parts of Hyde, Tyrrell, and Washington counties known as the  
16 Pocosin Lakes National Wildlife Refuge; in those parts of Anson and Richmond counties  
17 known as the Pee Dee National Wildlife Refuge; and in those parts of Currituck County  
18 known as the Currituck National Wildlife Refuge and the Mackay Island National Wildlife  
19 Refuge.

20 (B) The open either-sex deer hunting dates established by the appropriate military commands  
21 at each of the military installations listed in this Paragraph, during the period from Saturday  
22 on or nearest October 15 through January 1 in that part of Brunswick County known as the  
23 Sunny Point Military Ocean Terminal, in that part of Craven County known and marked  
24 as Cherry Point Marine Base, in that part of Onslow County known and marked as the  
25 Camp Lejeune Marine Base, on Fort Bragg Military Reservation, and on Camp Mackall  
26 Military Reservation.

27 (C) Youth either-sex deer hunts. First Saturday in October for youth either-sex deer hunting by  
28 permit only on a portion of Belews Creek Steam Station in Stokes County designated by  
29 agents of the Commission; the third Saturday in October for youth either-sex deer hunting  
30 by permit only on Mountain Island State Forest in Lincoln and Gaston counties; and the  
31 second Saturday in November for youth either-sex deer hunting by permit only on  
32 apportion of Warrior Creek located on W. Kerr Scott Reservoir, Wilkes County designated  
33 by agents of the Commission. A youth is defined as a person under 18 years of age.

34 (D) The ~~last first~~ open ~~day~~ Saturday of the Deer with Visible Antlers season described in  
35 Subparagraph (a)(1) of this Rule in all of Buncombe\*, Haywood, Henderson, Madison,  
36 and Transylvania counties.

1 \*Except for that part east of NC 191, south of the French Broad and Swannanoa Rivers,  
2 west of US 25, and north of NC 280

3 ~~\*\*Refer to 15A NCAC 10D .0103 for either sex deer seasons on game lands that differ~~  
4 ~~from the days identified in this Subparagraph~~

5 (E) The ~~last six~~ first open days day of the Deer With Visible Antlers season described in  
6 Subparagraph (a)(1) of this Rule through the first Saturday thereafter in all of Avery,  
7 Burke, Caldwell, McDowell, Mitchell, and Yancey counties.

8 (F) The first ~~six~~ open days ~~and the last seven open days~~ of the Deer with Visible Antlers season  
9 described in Subparagraph (a)(1) of this Rule through the second Friday thereafter in all of  
10 Cleveland, Polk, and Rutherford counties.

11 (G) All the open days of the Deer With Visible Antlers season described in Subparagraph (a)(1)  
12 of this Rule in and east of Ashe, Watauga, Wilkes, Alexander, Catawba, Lincoln, and  
13 Gaston counties and in the following parts of counties: Buncombe: That part east of NC  
14 191, south of the French Broad and Swannanoa Rivers, west of US 25, and north of NC  
15 280; and Henderson; That part east of NC 191 and north and west of NC 280.

16 (H) The fourth Saturday in September in all counties, subject to the following restriction: only  
17 persons under the age of 18 years may hunt.

18 (b) Open Seasons (~~Bow and Arrow~~ Archery) for hunting deer:

19 (1) Authorization. Subject to the restrictions set out in Subparagraph (2) of this Paragraph and the bag  
20 limits set out in Paragraph (e) of this Rule, deer may be taken with ~~bow and arrow~~ archery equipment  
21 during the following seasons:

22 (A) Saturday on or nearest September 10 through the day immediately preceding the first open  
23 day of the Blackpowder Firearms and Archery Seasons described in Subparagraph (c)(1)  
24 of this Rule; and the Sunday immediately following the closing of blackpowder firearms  
25 and archery season identified in Part (c)(1)(B) of this Rule to the Sunday before  
26 Thanksgiving in the counties and parts of counties having the open seasons for Deer With  
27 Visible Antlers specified by Part (D) of Subparagraph (a)(1) of this Rule except on Buffalo  
28 Cove, Nicholson Creek, Rockfish Creek, Sandhills, and South Mountains Game Lands  
29 (Refer to 15A NCAC 10D .0103 for Archery seasons on these Game Lands).

30 ~~(A) Saturday on or nearest September 10 to the third Friday thereafter in the counties and parts~~  
31 ~~of counties having the open season for Deer With Visible Antlers specified by Part (A) of~~  
32 ~~Subparagraph (a)(1) of this Rule, except on Nicholson Creek, Rockfish Creek, and~~  
33 ~~Sandhills Game Lands.~~

34 ~~(B) Saturday on or nearest September 10 to the third Friday before Thanksgiving in the~~  
35 ~~counties and parts of counties having the open seasons for Deer with Visible Antlers~~  
36 ~~specified by Part (B) of Subparagraph (a)(1) of this Rule except for that portion of Buffalo~~  
37 ~~Cove Game Land in Wilkes County.~~



1           ~~(C)~~     ~~Saturday on or nearest September 10 to the Sunday prior to the opening of the blackpowder~~  
2           ~~firearms and bow and arrow season identified in Part (c)(1)(C) of this Rule; and the Sunday~~  
3           ~~immediately following the closing of blackpowder firearms and bow and arrow season~~  
4           ~~identified in Part (c)(1)(C) of this Rule to the Sunday before Thanksgiving in the counties~~  
5           ~~and parts of counties having the open seasons for Deer With Visible Antlers specified by~~  
6           ~~Part (C) of Subparagraph (a)(1) of this Rule and in Cleveland, Polk, and Rutherford~~  
7           ~~counties.~~

8           ~~(D)~~     ~~Saturday on or nearest September 10 to the fourth Friday before Thanksgiving in the~~  
9           ~~counties and parts of counties having the open season for Deer With Visible Antlers~~  
10          ~~specified by Part (D) of Subparagraph (a)(1) of this Rule, and on Nicholson Creek,~~  
11          ~~Rockfish Creek, and Sandhills Game Lands.~~

12          ~~(E)~~     Sunday immediately following the closing of the open season for Deer With Visible  
13          Antlers specified by Part (a)(1)~~(C)~~(D) of this Rule through January 1 in the counties and  
14          parts of counties having the open season for Deer With Visible Antlers specified by Part  
15          (a)(1)~~(C)~~(D) of this Rule.

16          (2)     Restrictions

17          (A)     In the areas of the State where the Commission is authorized to regulate the use of dogs as  
18          provided in G.S. 113-291.5, dogs ~~Dogs~~ may not be used for hunting deer during the ~~bow~~  
19          ~~and arrow~~ archery season, except a single dog on a leash may be used to retrieve a wounded  
20          deer in accordance with G.S. 113-291.1(k).

21          (B)     Only archery equipment of the types authorized in 15A NCAC 10B .0116 for taking deer  
22          may be used during the ~~bow and arrow~~ archery deer hunting season.

23          (C)     Deer of either sex may be taken during ~~bow and arrow~~ archery seasons specified by ~~Parts~~  
24          Subparagraph (b)(1)(A), (B), (C), and (D) (b)(1)(A) of this Rule.

25          (D)     Only deer with antlers or spikes protruding through the skin, as distinguished from knobs  
26          or buttons covered by skin or velvet, shall be taken during the ~~bow and arrow~~ archery  
27          season specified by Part (b)(1)~~(B)~~(B) of this Rule.

28          (c) Open Seasons (Blackpowder Firearms and ~~Bow and Arrow~~ Archery) for hunting deer:

29                  (1)     Authorization. Subject to the restrictions set out in Subparagraph (2) of this Paragraph, deer may be  
30                  taken only with blackpowder firearms and ~~bow and arrow~~ archery equipment during the following  
31                  seasons:

32                  (A)     Two Saturdays preceding the first day of the Deer with Visible Antlers seasons described  
33                  in Parts (a)(1)(A), (B), (C), (E), and (F) of this Rule through the second Friday thereafter  
34                  except on Buffalo Cove, Nicholson Creek, Rockfish Creek, Sandhills, and South  
35                  Mountains Game Lands (Refer to 15A NCAC 10D .0103 for Blackpowder Firearms and  
36                  Archery seasons on these Game Lands):

1 (B) Monday on or nearest October 1 through the second Saturday thereafter in the counties and  
2 parts of counties having the open seasons for Deer With Visible Antlers specified by Part  
3 (D) of Subparagraph (a)(1) of this Rule.

4 (A) ~~The Saturday on or nearest October 1 to the Friday of the second week thereafter in the~~  
5 ~~counties and parts of counties having the open seasons for Deer With Visible Antlers~~  
6 ~~specified by Part (A) of Subparagraph (a)(1) of this Rule, except on Nicholson Creek,~~  
7 ~~Rockfish Creek, and Sandhills Game Lands.~~

8 (B) ~~The third Saturday preceding Thanksgiving until the Friday of the second week thereafter~~  
9 ~~in the counties\* and parts of counties having the open seasons for Deer With Visible~~  
10 ~~Antlers specified by Part (B) of Subparagraph (a)(1) of this Rule.~~

11 \*Refer to 15A NCAC 10D .0103(h) for seasons on Buffalo Cove game land.

12 (C) ~~Monday on or nearest October 1 to the Saturday of the second week thereafter in Cleveland,~~  
13 ~~Polk, and Rutherford counties and in the counties and parts of counties having the open~~  
14 ~~seasons for Deer With Visible Antlers specified by Part (F) of Subparagraph (a)(1) of this~~  
15 ~~Rule.~~

16 (D) ~~The fourth Saturday preceding Thanksgiving until the Friday of the second week thereafter~~  
17 ~~in the counties and parts of counties having the open season for Deer With Visible Antlers~~  
18 ~~specified by Part (D) of Subparagraph (a)(1) of this Rule, and on Nicholson Creek,~~  
19 ~~Rockfish Creek, and Sandhills Game Lands.~~

20 (2) Restrictions

21 (A) Deer of either sex may be taken during blackpowder firearms and ~~bow and arrow~~ archery  
22 season in and east of the following counties: Polk, Rutherford, McDowell, Burke,  
23 Caldwell, Watauga, and Ashe. Deer of either sex may be taken on the ~~last~~ first Saturday  
24 day of this season only in all other counties.

25 (B) In the areas of the State where the Commission is authorized to regulate the use of dogs as  
26 provided in G.S. 113-291.5, dogs ~~Dogs~~ shall not be used for hunting deer during the  
27 blackpowder firearms and ~~bow and arrow~~ archery seasons, except a single dog on a leash  
28 may be used to retrieve a wounded deer in accordance with G.S. 113-291.1(k).

29 (3) As used in this ~~Paragraph~~ Rule, blackpowder firearms means "Any firearm - including any firearm  
30 with a matchlock, flintlock, percussion cap, or similar type of ignition system - manufactured in or  
31 before 1898, that cannot use fixed ammunition; any replica of this type of firearm if such replica is  
32 not designed or redesigned for using rimfire or conventional centerfire fixed ammunition; and any  
33 muzzle-loading rifle, muzzle-loading shotgun, or muzzle-loading or cylinder-loading handgun that  
34 is designed to use blackpowder, blackpowder substitute, or any other propellant loaded through the  
35 muzzle or cylinder and that cannot use fixed ammunition."

36 (d) Open Season (Urban Season) for hunting deer:

1 (1) Authorization. Subject to the restrictions set out in Subparagraph (3) of this Paragraph and the bag  
2 limits set out in Paragraph (e) of this Rule, deer of either sex may be taken with bow and arrow in  
3 participating cities in the State, as defined in G.S. 160A-1(2), from the second Saturday following  
4 January 1 ~~to through the fifth sixth Saturday Sunday~~ thereafter. Deer shall not be taken on any game  
5 land or part thereof that occurs within a city boundary.

6 (2) Participation. Cities that intend to participate in the urban season shall send a letter to that effect no  
7 later than April 1 of the year prior to the start of the urban season to the Executive Director or his  
8 designee at 1722 Mail Service Center, Raleigh, N.C. ~~27699-1722.~~ 27699-1700. Cities shall also  
9 submit a map of the city's boundaries within which the urban season shall apply.

10 (3) Restrictions:

11 (A) ~~In the areas of the State where the Commission is authorized to regulate the use of dogs as~~  
12 ~~provided in G.S. 113-291.5, dogs~~ Dogs shall not be used for hunting deer during the urban  
13 season, except a single dog on a leash may be used to retrieve a wounded deer in accordance  
14 with G.S. 113-291.1(k).

15 (B) Only archery equipment of the types authorized in 15A NCAC 10B .0116 for taking deer  
16 shall be used during the urban season.

17 (e) Bag limits. ~~In and east of Vance, Franklin, Wake, Harnett, Moore, and Richmond counties, the possession limit is~~  
18 ~~six deer, up to four of which may be deer with visible antlers. In all other counties of the state the~~ The possession and  
19 season limit is six deer, up to two of which may be deer with visible antlers, antlers and four of which may be antlerless  
20 deer. Antlerless deer include males with knobs or buttons covered by skin or velvet as distinguished from spikes  
21 protruding through the skin. The season limit in all counties of the State, is six deer. In addition to the bag limits  
22 described above, a hunter may obtain multiple bonus antlerless deer harvest report cards from the Wildlife Resources  
23 Commission or any Wildlife Service Agent to allow the harvest of two additional antlerless deer per card ~~on lands~~  
24 ~~others than lands enrolled in the Commission's game land program during any open deer season in all counties and~~  
25 ~~parts of counties of the State identified in Part (G) of Subparagraph (a)(2) of this Rule. Antlerless deer harvested and~~  
26 ~~reported on the bonus antlerless harvest report card shall not count as part of the possession and season limit. Hunters~~  
27 ~~may also use the bonus antlerless harvest report cards for deer harvested during the season described in Paragraph (d)~~  
28 ~~of this Rule within the boundaries of participating municipalities, except on State-owned game lands. Antlerless deer~~  
29 ~~harvested and reported on the bonus antlerless harvest report card shall not count as part of the possession and season~~  
30 ~~limit. Antlerless deer include males with knobs or buttons covered by skin or velvet as distinguished from spikes~~  
31 ~~protruding through the skin.~~ The bag limits described above do not apply to deer harvested in areas covered in the  
32 Deer Management Assistance Program (DMAP) as described in G.S. 113-291.2(e) for those individuals using  
33 Commission-issued DMAP tags and reporting harvest as described on the DMAP license. Season bag limits shall be  
34 set by the number of DMAP tags issued and in the hunters' possession. All deer harvested under this program,  
35 regardless of the date of harvest, shall be tagged with these DMAP tags and reported as instructed on the DMAP  
36 license. The hunter does not have to validate the Big Game Harvest Report Card provided with the hunting license for  
37 deer tagged with the DMAP tags. Any deer harvested on lands enrolled in the DMAP and not tagged with DMAP tags

1 may only be harvested during the regularly established deer seasons subject to all the restrictions of those seasons,  
2 including bag limits, and reported using the big game harvest report card or the bonus antlerless harvest report card.

3  
4 *History Note:* Authority G.S. 113-134; 113-270.3; 113-276.1; 113-291.1; 113-291.2; 113-291.5  
5 Eff. February 1, 1976;  
6 Amended Eff. July 1, 1998; July 1, 1997; July 1, 1996, July 1, 1995; December 1, 1994; July 1,  
7 1994; July 1, 1993;  
8 Temporary Amendment Eff. July 1, 1999;  
9 Amended Eff. July 1, 2000;  
10 Temporary Amendment Eff. July 1, 2002; July 1, 2001;  
11 Amended Eff. August 1, 2002 (Approved by RRC on 06/21/01 and 04/18/02);  
12 Temporary Amendment Eff. June 1, 2003;  
13 Amended Eff. June 1, 2004 (this amendment replaces the amendment approved by RRC on July  
14 17, 2003);  
15 Amended Eff. August 1, 2018; August 1, 2017; August 1, 2016; August 1, 2015; August 1, 2014;  
16 August 1, 2013; August 1, 2012; August 1, 2011; July 10, 2010; June 1, 2008; May 1, 2007; May  
17 1, 2006; June 1, 2005.  
18

1 **15A NCAC 10B .0202 BEAR**

2 (a) Open Seasons for hunting bear shall be from the:

- 3 (1) Monday on or nearest October 15 ~~to through~~ the Saturday before Thanksgiving and the third  
4 Monday after Thanksgiving ~~to through~~ January 1 in and west of Surry, Wilkes, Caldwell, Burke,  
5 and Cleveland ~~counties. counties:~~
- 6 (2) Second Monday in November ~~to through~~ January 1 in Bladen, Brunswick, Carteret, Columbus,  
7 Cumberland, Duplin, New Hanover, Onslow, Pamlico, Pender, Robeson, and Sampson ~~counties.~~  
8 counties:
- 9 ~~(3) First Monday in December to the third Saturday thereafter in Robeson County~~
- 10 ~~(4)(3)~~ (4) Second Monday Saturday in November ~~to through~~ the ~~following Saturday~~ second Sunday thereafter  
11 and the third ~~Monday Saturday~~ after Thanksgiving ~~to through~~ the fifth ~~Saturday Sunday~~ after  
12 Thanksgiving in Beaufort, Bertie, ~~Camden, Chowan, Craven, Dare, Edgecombe, Greene, Halifax,~~  
13 Hyde, Hertford, Jones, Lenoir, Martin, Nash, ~~Northampton, Pasquotank, Pitt, Tyrrell, and~~  
14 Washington ~~Washington, Wayne, and Wilson counties. counties:~~
- 15 (4) Second Saturday in November through the first Sunday after Thanksgiving and the third Saturday  
16 after Thanksgiving through the fifth Sunday after Thanksgiving in Dare, Hyde, and Tyrrell counties;
- 17 (5) Second Saturday preceding the second Monday in November ~~to through~~ the ~~following second~~  
18 Sunday thereafter ~~Saturday~~ and the third Saturday Monday after Thanksgiving ~~to through~~ the fifth  
19 Saturday Sunday after Thanksgiving in Bertie, Currituck, Gates, ~~Hertford~~, and Perquimans ~~counties.~~  
20 counties;
- 21 (6) Second Sunday in November through the following Sunday and the third Saturday after  
22 Thanksgiving through the fifth Sunday after Thanksgiving in Camden, Chowan, and Pasquotank  
23 counties;
- 24 (7) Third Saturday in November though the fifth Sunday thereafter in Edgecombe, Greene, Halifax,  
25 Lenoir, Nash, Northampton, Pitt, Wayne, and Wilson counties; and
- 26 ~~(6)(8)~~ (8) Concurrent with the open season for all lawful weapons for hunting deer as specified in 15A NCAC  
27 10B .0203(a)(1) in Alamance, Alexander, Anson, Cabarrus, Caswell, Catawba, Chatham, Davie,  
28 Davidson, Durham, Franklin, Forsyth, Gaston, Granville, Guilford, Harnett, Hoke, Iredell, Johnston,  
29 Lee, Lincoln, Mecklenburg, Montgomery, Moore, Orange, Person, Randolph, Richmond,  
30 Rockingham, Rowan, Scotland, Stanly, Stokes, Union, Vance, Wake, Warren, and Yadkin counties.

31 (b) Restrictions

- 32 (1) For purposes of this Paragraph, "bait" means any natural, unprocessed food product that is a grain,  
33 fruit, nut, vegetable, or other material harvested from a plant crop that is not modified from its raw  
34 components.
- 35 (2) Bears shall not be taken with the use or aid of:

- 1 (A) any processed food product as defined in G.S. 113-294(r), any animal, animal part or
- 2 product, salt, salt lick, honey, sugar, sugar-based material, syrups, candy, pastry, gum,
- 3 candy block, oils, spices, peanut butter, or grease;
- 4 (B) any extracts of substances identified in Part (A) of this Subparagraph;
- 5 (C) any substances modified by substances identified in Part (A) of this Subparagraph,
- 6 including any extracts of those substances; or
- 7 (D) any bear bait attractant, including sprays, aerosols, scent balls, and scent powders.
- 8 (3) Bears may be taken with the aid of bait from the Monday on or nearest October 15 to the Saturday
- 9 before Thanksgiving in the counties in Subparagraph (a)(1) of this Rule.
- 10 (4) Bears may be taken with the aid of bait during the entire open season in the counties identified in
- 11 Subparagraphs (a)(2) through (a)(6) of this Rule.
- 12 (5) Bears shall not be taken while in the act of consuming bait.
- 13 (6) Hunters shall not take bears using dogs in the following counties: Alamance south of Interstate 85,
- 14 Anson west of N.C. Hwy 742, Cabarrus, Chatham, Davie, Davidson, Franklin, Forsyth, Gaston,
- 15 Guilford, Lee, Lincoln, Mecklenburg, Montgomery, Orange south of Interstate 85, Randolph,
- 16 Rockingham, Rowan, Stanly, Union, and Wake south of N.C. Hwy 98. In all other counties and
- 17 parts of counties, hunters may take bears using dogs and may release dogs in the vicinity of bait.
- 18 (c) No Open Season. There is no open season in those parts of counties included in the following posted bear
- 19 sanctuaries:
- 20 Avery, Burke, and Caldwell counties--Daniel Boone bear sanctuary except by permit only
- 21 Beaufort, Bertie, and Washington counties--Bachelor Bay bear sanctuary
- 22 Bladen County--Suggs Mill Pond bear sanctuary
- 23 Brunswick County--Green Swamp bear sanctuary
- 24 Buncombe, Haywood, Henderson, and Transylvania counties--Pisgah bear sanctuary
- 25 Carteret, Craven, and Jones counties--Croatan bear sanctuary
- 26 Clay County--Fires Creek bear sanctuary
- 27 Columbus County--Columbus County bear sanctuary
- 28 Currituck County--North River bear sanctuary
- 29 Dare County--Bombing Range bear sanctuary except by permit only
- 30 Haywood County--Harmon Den bear sanctuary
- 31 Haywood County--Sherwood bear sanctuary
- 32 Hyde County--Gull Rock bear sanctuary
- 33 Hyde County--Pungo River bear sanctuary
- 34 Jackson County--Panthertown-Bonas Defeat bear sanctuary
- 35 Macon County--Standing Indian bear sanctuary
- 36 Macon County--Wayah bear sanctuary
- 37 Madison County--Rich Mountain bear sanctuary

1 McDowell and Yancey counties--Mt. Mitchell bear sanctuary except by permit only

2 Mitchell and Yancey counties--Flat Top bear sanctuary

3 Wilkes County--Thurmond Chatham bear sanctuary

4 (d) The daily bag limit for bear is one, the possession limit is one, and the season limit is one.

5 ~~(e) Kill Reports. The carcass of each bear shall be reported as provided by 15A NCAC 10B .0113.~~

6  
7 *History Note: Authority G.S. 113-134; 113-291.1; 113-291.2; 113-291.7; 113-305;*

8 *Eff. February 1, 1976;*

9 *Amended Eff. July 1, 1998; September 1, 1995; July 1, 1995; July 1, 1994; April 14, 1992;*

10 *Temporary Amendment Eff. July 1, 1999;*

11 *Amended Eff. July 1, 2000;*

12 *Temporary Amendment Eff. July 1, 2002;*

13 *Amendment Eff. August 1, 2002;*

14 *Temporary Amendment Eff. September 1, 2003;*

15 *Temporary Amendment Expired Eff. December 27, 2003;*

16 *Amended Eff. August 1, 2015; August 1, 2014; August 1, 2012; August 1, 2010; May 1, 2009; May*

17 *1, 2008; May 1, 2007; May 1, 2006; June 1, 2005;*

18 *Temporary Amendment Eff. May 31, 2016;*

19 *Amended Eff. August 1, 2018; August 1, 2016*

20

1 **15A NCAC 10B .0224 AMERICAN ALLIGATOR**

2 (a) The season for taking American alligators shall be September 1 to October 1.

3 (b) Take shall be by permit only.

4 (c) The bag limit shall be one per permit and the season limit is one.

5 (d) American alligators shall be restrained before being killed. American alligators shall only be restrained using a  
6 hand-held restraining line or catch pole; a snatch hook attached to a hand-held restraining line or rod and reel; a  
7 harpoon or gig attached to a hand-held restraining line; a baited wooden peg less than two inches in length attached to  
8 a hand-held restraining line; or archery equipment with an arrow-attached restraining line.

9 (e) American alligators restrained by any method specified in Paragraph (d) of this Rule shall be killed immediately  
10 upon capture.

11 (f) Alligators may be taken day or night and with the use of artificial lights.

12 (g) The use of baited hooks is prohibited.

13

14 *History Note: Authority G.S. 113-134; 113-291.1; 113-291.2;*

15 *Eff. August 1, 2018.*

16



1 **15A NCAC 10B .0123 POSSESSION OF CERTAIN SPECIES OF WILDLIFE RESOURCES**

2 (a) It is unlawful for any individual to import, transport, export, purchase, possess, or sell any species of Tongueless  
3 or African Clawed Frog (~~Xenopus spp.~~)(Xenopus spp.), Brown Anole (Anolis sagrei), Cuban Treefrog (Osteopilus  
4 septentrionalis), or any Asian Newts (genera Cynops, Pachytriton, Paramesotriton, Laotriton, Tylototriton); or to stock  
5 or release them any of the species identified in this Rule in the public or private waters or lands of North Carolina,  
6 except as authorized under permit issued to the entities identified in Subparagraphs (1) and (2) of this Paragraph by  
7 the ~~Executive Director Commission,~~ pursuant to G.S. 113-274(c)(4) 113-274(c)(4), and subject to the following  
8 limitations: limitations as specified in this Rule:

9 (1) Retail and Wholesale Establishments. Importation, possession, ~~sales, sale, transfer,~~ transportation,  
10 and exportation of these species within North Carolina, ~~will be allowed under permit~~ by retail and  
11 wholesale establishments whose primary business function is providing scientific supplies for  
12 research; ~~provided that they must be possessed in indoor facilities; and that all transportation of~~  
13 ~~specimens provides adequate safeguards against accidental escape; and that sale or transfer is~~  
14 ~~permitted only as listed in Item (2) of this Rule. Written applications for permits shall include plans~~  
15 ~~for holding, transportation, advertisement, and sale in such detail as to allow a determination of the~~  
16 ~~safeguards provided against accidental escape and sales to unauthorized individuals. research, shall~~  
17 be allowed by permit, provided the following conditions are met:

- 18 (A) the application for a permit shall be in writing and include detailed plans for holding,  
19 transportation, advertisement, and sale to allow a determination of the safeguards employed  
20 to prevent accidental escape and sales to unauthorized individuals;  
21 (B) in-state sale or transfer is allowed only to agencies, entities, and institutions listed in  
22 Subparagraph (2) of this Paragraph; or to out-of-state persons;  
23 (C) exportation shall comply with all applicable rules and regulations of the importing state;  
24 (D) all specimens shall be possessed in indoor facilities; and  
25 (E) transportation of specimens employs safeguards that prevent accidental escape.

26 (2) Government Agencies and Research Institutions. ~~Purchase, importation, and possession~~  
27 Importation, possession, transfer, transportation, and exportation of this these species within North  
28 Carolina shall be allowed by permit by permitted state and federal governmental agencies, corporate  
29 research entities, and research institutions; provided that sales are permitted to lawful out of state  
30 consumers; and, provided that they must be possessed in indoor facilities and that all transportation  
31 of specimens provides adequate safeguards against accidental escape; and that the agency's or  
32 institution's Animal Use and Care Committee has approved the research protocol for this species;  
33 and, further provided that no specimens may be stocked or released in the public or private waters  
34 or lands of North Carolina and may not be transferred to any private individual. institutions,  
35 provided the following conditions are met:

- 36 (A) The application for a permit shall be in writing and include detailed plans for holding,  
37 transportation, final disposition, and safeguards to prevent accidental escape;

- 1           (B)     exportation shall only be to out-of-state agencies, entities, and institutions identified in this
- 2                     Subparagraph;
- 3           (C)     all specimens shall be possessed in indoor facilities;
- 4           (D)     transportation of specimens shall employ safeguards that prevent accidental escape; and
- 5           (E)     the agency's, entity's, or institution's Animal Use and Care Committee has approved the
- 6                     research protocol for this species.

7 (b) Except as provided in Paragraph (a) of this Rule, it is unlawful for private individuals to import, purchase, or sell  
8 live specimens of Red-eared Sliders (*Trachemys scripta elegans*); or to stock or release them in the public or private  
9 waters or lands of North Carolina.

10  
11 *History Note:*     *Authority G.S. 113-134; 113-274; 113-292;*  
12                     *Eff. February 1, 1994;*  
13                     *Amended Eff. August 1, 2018; April 1, 1997.*

1 **15A NCAC 10B .0207 RABBITS**

2 (a) Open Season: The open season for taking rabbits ~~shall be~~ is the first Saturday preceding before Thanksgiving Day  
3 through the last day of February.

4 (b) Bag Limits: The daily bag limit for rabbits is five and there are no season and no possession limits.

5 (c) Box-traps: During the hunting season specified in Paragraph (a) of this Rule and subject to the bag limits set forth  
6 in Paragraph (b) of this Rule, rabbits may be taken with box-traps. A valid hunting license shall serve as a  
7 transportation permit for live rabbits taken pursuant to this Rule.

8  
9 *History Note: Authority G.S. 113-134; 113-274; 113-291.1; 113-291.2;*

10 *Eff. February 1, 1976;*

11 *Amended Eff. July 1, 1987; July 1, 1986; July 1, 1985; July 1, 1984;*

12 *Temporary Amendment Eff. August 1, 1998;*

13 *Amended Eff. August 1, 2018; May 1, 2008; April 1, 1999.*

14  
15 **15A NCAC 10B .0211 PHEASANT (NONNATIVE VARIETIES)**

16 (a) Open Season: The Saturday next preceding before Thanksgiving Day to February 1 on male pheasant only.

17 (b) Bag Limits: Daily, three; possession, six; season, 30.

18  
19 *History Note: Authority G.S. 113-134; 113-291.2;*

20 *Eff. February 1, 1976;*

21 *Amended Eff. August 1, 2018; July 1, 1987; July 1, 1986; July 1, 1985; July 1, 1984.*

22  
23 **15A NCAC 10B .0212 FOXES (GRAY AND RED)**

24 (a) ~~Seasons:~~ Fox Season:

25 (1) There shall be no closed season on taking foxes with dogs;

26 (2) Foxes may be taken with weapons or traps the first to fourth Saturday in January in the following  
27 counties:

28  
29 Caswell Henderson  
30 Clay Macon  
31 Graham Tyrrell

32  
33 (3) Foxes may be taken the Saturday ~~next preceding~~ before Thanksgiving Day through January 1 using  
34 archery equipment ~~by bow and arrow~~ in all areas of the State east of Interstate Highway 77 and in  
35 Mitchell County.

36 (b) ~~Bag Limit.~~ Limit for Foxes:

37 (1) Except in areas of open season for taking foxes with weapons or traps, foxes ~~may~~ shall not be  
38 intentionally killed by any method;

1           (2)     In areas of open season in all areas east of Interstate Highway 77 as set by the ~~Legislature~~ General  
2                     Assembly and in Subparagraph (a)(2) and (a)(3) of this Rule, the following bag limit applies: Daily,  
3                     two; season, 10.

4 (c) ~~Note:~~ Where local laws governing the taking of foxes conflict with this Rule, ~~these Regulations~~, the local laws  
5 shall prevail.

6  
7 *History Note: Authority G.S. 113-134; 113-291.2; 113-291.4; 113-291.4A*

8                     *Eff. February 1, 1976;*

9                     *Amended Eff. July 1, 1987; December 1, 1985;*

10                    *Temporary Amendment Eff. November 1, 1989;*

11                    *Amended Eff. July 1, 1994; May 1, 1990;*

12                    *Temporary Amendment Eff. July 1, 1999;*

13                    *Amended Eff. August 1, 2018; May 1, 2009; July 1, 2000.*

14

**EXHIBIT E**  
**February 28, 2018**



**DRAFT of the Coyote Management Plan**



# Coyote Management Plan

March 1, 2018



NORTH CAROLINA WILDLIFE RESOURCES COMMISSION



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Coyote (photo: Alan Cameron)

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## Introduction

The North Carolina Wildlife Resources Commission (Commission) conserves North Carolina's wildlife resources and their habitats and provides programs and opportunities that allow hunters, anglers, boaters and other outdoor enthusiasts to enjoy wildlife-associated recreation. As outlined in our strategic plan, the Commission will evaluate and improve the effectiveness of regulatory programs designed to promote wildlife conservation by establishing a comprehensive framework to ensure sustainable wildlife resources. Through the development and implementation of wildlife management plans, the Commission merges the ecological needs of the State's wildlife resources with the desires of the citizens of the State.

Section 4.35. (a) of SL 2015-286, stipulates that "[t]he Wildlife Resources Commission shall establish a coyote management plan to address the impacts of coyotes in this State and the threats that coyotes pose to citizens, industries, and populations of native wildlife species within the State." In the Commission's 2016 Report to the Environmental Management Commission (Appendix A), Commission staff committed to developing a coyote management plan (Plan) by March 1, 2018. The development of a statewide management plan for any species is a complex undertaking that considers biological, social, economic, and political aspects of species management. Using the Commission's current coyote management efforts as a foundation, this Plan incorporates the current understanding of the attitudes, perceptions, and opinions of our citizens regarding coyotes, the available scientific information about coyotes, and the management strategies available to the Commission to address the above directive.

Coyotes are now a statewide component of North Carolina's fauna. County, regional, and statewide efforts at coyote management must recognize that the coyote is a persistent species and strategies must remain flexible and adaptive to address a wide array of issues and concerns. The Plan must satisfy the desires of North Carolinians by providing strategies and solutions capable of resolving and minimizing negative human-coyote interactions and other wildlife concerns.



Herein, we identify concerns about coyotes, discuss the challenges of coyote control, and provide strategies to minimize potential impacts of coyotes. We provide recommendations for statutory changes that will improve coyote management. Finally, we identify known knowledge gaps and research needs and discuss new strategies for coyote management in North Carolina.

The Plan was developed by Commission staff based on best-available science and management principles, with incorporation of public comments from constituents, deer hunter surveys, and organizations across North Carolina. In addition, the Commission, in collaboration with North Carolina State University, conducted surveys of North Carolina citizens

to ascertain the public's views and experiences regarding coyotes in 2015 (Drake 2016). Results from the surveys were reviewed by the Commission and incorporated into the Plan. A draft of the Plan was posted on the Commission's website ([www.ncwildlife.org](http://www.ncwildlife.org)) from January 5 through February 9, 2018 to solicit public comments. Comments on the plan were reviewed by staff and incorporated as appropriate in this final version. The document was endorsed by a majority vote of the full Commission at its meeting on Wednesday, February 28, 2018.

## I. Coyote Range Expansion and Colonization of North Carolina

Prior to the 1800s, coyotes occupied the prairies and grasslands of the Midwest. Reduced competition through removal of other large predators (wolves and cougars), major landscape level habitat changes, including the creation of fields, trails and roads, and an increase of novel food resources such as crops allowed the expansion of coyotes across the United States. Contrary to the widespread cultural myth, the Commission did not release coyotes into North Carolina.

Coyotes took two paths to colonize the eastern United States (Figure 1, Appendix B). The northeastern path saw coyotes that had moved into the upper Midwest in the late 1800s, further expand into Canada during the early 1900s, New York and New England by the 1950s, and Pennsylvania and West Virginia in the mid-1970s (Moore and Parker 1992). The southeastern path documented coyotes in Arkansas by the 1920s, Alabama, Louisiana, Mississippi, and Tennessee by the mid-1960s, and Georgia, Florida, Kentucky, Maryland, North Carolina, and South Carolina by the mid- to late-1980s (Moore and Parker 1992; Mastro 2011). In southeastern states, evidence shows natural range expansion by coyotes was supplemented by illegal importations for hunting purposes (Hill et al. 1987).

The first coyotes believed to have naturally dispersed into North Carolina were detected in 1988 in the far western counties; elsewhere occurrences of coyotes were sporadic, and are suspected to be animals that either escaped from captivity or were released illegally for hunting. Coyotes colonized and expanded their range throughout North Carolina over the next decade (Appendix B). By 2005, natural range expansion coupled with illegal releases resulted in coyotes occurring in all North Carolina counties.

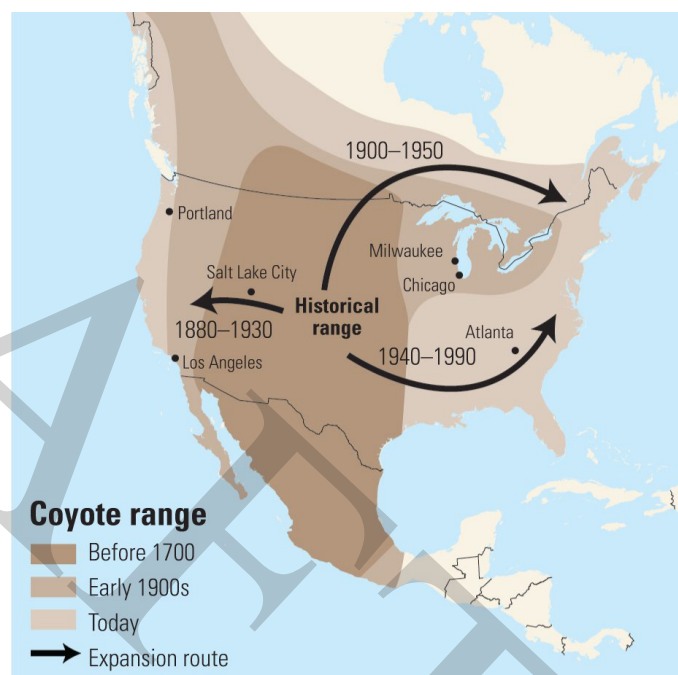


Figure 1. Coyote Expansion throughout the United States. Credit: <http://science.sciencemag.org/content/341/6152/1332.full>

## II. Concerns about Coyotes

Concerns regarding coyotes are multifaceted, ranging from an innate fear of predators and the belief that they are lurking to attack people to concerns that they kill animals that are important to us, both domestic and wild. The remedies, solutions, and actions that can be taken to address these concerns vary. Some concerns have options that can be applied to treat or resolve the problem, some may require an increased awareness and understanding of coyotes, others may simply require an acceptance that the desired outcome cannot be achieved. Successfully addressing concerns about coyotes requires an understanding of the types and levels of people's concerns. As with many wildlife issues, fears and concerns may be more closely linked to perceived dangers or potential damage rather than specific experiences or examples of either. To better address the concerns of North Carolina citizens regarding coyotes, a baseline understanding of the human component of this issue is required and specific concerns must be identified.

## Survey Information from North Carolina

**Citizen Survey:** In 2014, urban/suburban residents, including hunters, in four metropolitan areas (Raleigh/Durham, Asheville, Charlotte, and Greenville), hunters residing in rural areas, and greenway users were surveyed on their knowledge and perception of coyotes (Drake et al. 2017). Knowledge of coyotes, including how they arrived in North Carolina and their biology, was generally low among all respondents. Perceptions about coyotes also differed by city of residence, gender, college education, hometown size, and pet ownership. Asheville residents were less fearful of coyotes than other areas; residents in Greenville had the lowest support for coyotes; and those of Charlotte perceived the most risk from coyotes (Drake 2016). Most urban respondents (62%) and hunters (57%) agreed with the statement “by following simple precautions, problems with coyotes can be avoided” (Drake et al. 2017).

The general public appears to be largely unfamiliar with why coyotes are in North Carolina (79%) and unaware of hunting and trapping seasons (88% and 92%, respectively). Even hunters are unaware of hunting and trapping seasons; 51% and 36% of hunters residing in urban/suburban areas and rural areas, respectively, were unsure about the coyote hunting season. Seventy-six percent and 57% of hunters residing in urban/suburban areas and rural areas, respectively, were unsure or unaware of the regulated trapping season.

Urban residents have generally neutral or negative views of coyotes in their cities, with 36% of urban respondents reporting that they do not like coyotes and 26% reporting that they do like coyotes. An equal percent of the public wanted the coyote population to either increase or stay the same (38%), or decrease or disappear completely (38%) in the next ten years. Greenway users and urban residents were more supportive of coyotes increasing or staying the same (38% to 48%) versus hunters (14% to 22%)

The public was generally not concerned about risk posed by coyotes; for example, perceived risk of a face-to-face encounter with a coyote was 0.7 on a 0-4 scale. Direct encounters with coyotes were rare, with a minority of respondents reporting they had heard a coyote (23%), observed a coyote (24%), felt threatened by a coyote (2%), or had a pet attacked by a coyote (4%). Few residents (9%) have ever taken action because of coyotes in their neighborhood and the most commonly implemented actions were keeping pets indoors (68%) or supervising outdoor pets (48%). A plurality of respondents who took these two actions reported that this solved their coyote problem. Urban residents preferred hazing of non-threatening coyotes (37% acceptable) as a management action over shooting (20% acceptable) or ignoring coyotes (32% acceptable).

On average, respondents reported the acceptability of state officials shooting coyotes as a management action to be 2.8 on a five-point scale, while the acceptability of trapping and euthanizing coyotes was 3.0. Most respondents (52%) reported that they would use a general web search to find out more information about coyotes while 31% stated that they would contact the Commission. However, most respondents (53%) reported they would call a wildlife official if they saw a coyote, and many respondents reported that they would take recommended actions, such as keeping pets inside (54%) and removing outdoor attractants (39%).

Consistent patterns in coyote perceptions were noted relating to respondent participation in hunting, greenway use, and city of residence. Among urban respondents, hunters had 0.31 lower support (on a 1-5 scale) for the presence of coyotes within cities and 1.50 higher support for lethal coyote management than the general population. Conversely, greenway users had 0.45 higher support for coyotes in urban areas than others surveyed.

As predicted by Ericsson & Heberlein (2003), hunters have less support for coyotes and are more accepting of lethal control methods than others surveyed. However, the hunting community is far from homogenous. Support for coyotes on the landscape by hunters varied by both location and most common prey species of the hunter, with deer and turkey hunters emerging as having the least support for coyotes (Drake et al. 2017). Hunters residing in suburban/urban areas generally agreed and held a higher belief that coyotes were an important part of nature in rural areas (3.09 on a five-point scale) than hunters residing in rural areas, who were neutral (2.56 on a five-point scale) on this statement. Greenway users generally had more positive perceptions of coyotes than others surveyed, suggesting that participation in non-consumptive outdoor activities relates to acceptance of coyotes on the landscape.

**Livestock Owner Survey:** During 2016, the Commission surveyed livestock owners in Mitchell and Yancey counties about coyotes (Appendix C). In Mitchell County, 70% of livestock owners were “extremely concerned” with coyotes on or near their farm and in Yancey County, 60% were “extremely concerned.” Over half of those surveyed in each county believe that coyotes were released by a government agency, which is untrue and suggests misinformation about coyotes is common (Commission unpublished data). Further suggesting a lack of information, 48% of Mitchell County livestock owners were unsure if coyote hunting was legal and 62% were unsure if trapping was legal. These numbers were lower in Yancey County, with 20% being unsure about hunting and 28% being unsure about trapping. Less than 11% and 14% of Mitchell and Yancey county respondents, respectively, took any action to address their concerns about coyotes. The most common actions taken in Yancey County were shooting a coyote (13%), confining livestock (12.5%), or getting guard animals (12.5%), while confining livestock (10.2%) was the most common action in Mitchell County.

### Common Concerns Regarding Coyotes

**Coyotes in Proximity to People:** A common complaint about coyotes is simply their presence on the landscape, particularly when they are in and around human infrastructure. In a rapidly developing state like North Carolina, coyotes and humans are likely to interact, and human behaviors and practices can greatly increase the likelihood of human-coyote interactions. Coyotes can become habituated to humans over time when they experience no negative consequences to interactions with people or when they learn to closely associate people and food through intentional or unintentional feeding (Timm et. al. 2004, Schmidt and Timm 2007, Bonnell and Breck 2017). Habituation can cause coyotes to lose their natural wariness of humans and become bold and potentially aggressive. Concerns about the presence of coyotes in an area can often be addressed by removing any potential food or habitat attractants that encourage coyotes to spend time in and around human infrastructure (Murray and St. Clair 2017).

Concern for the safety of humans is often expressed by citizens regarding coyotes. To date, there have been no documented attacks on humans by non-rabid coyotes in North Carolina.

**Human Safety:** Concern for the safety of humans is often expressed by citizens regarding coyotes. Coyotes behaving normally are curious but wary when close to humans, however habituation can lead to coyotes that are bold and aggressive. Any attack on humans by a canid, whether domestic or wild, is a serious concern. To date, there have been no documented attacks on humans by non-rabid coyotes in North Carolina.

In a recent review of coyote attacks on humans from 1970-2015, Baker and Timm (2017) documented 367 attacks by non-rabid coyotes in the United States and Canada, two of which were fatal. In comparison, 4.5 million dog bites occur nationwide annually, with 800,000 requiring medical attention; in 2016, 31 dog bites resulted in fatalities. North Carolina ranks 14<sup>th</sup> in dog bite incidences, with 77 dog bite claims to insurance companies in 2016 (Bennett 2017).

Most coyote attacks on humans have occurred in California and other urbanized areas in western states. Factors that contribute to increasingly bold behavior in coyotes are a resource-rich suburban environment, lack of harassment and hazing, and intentional feeding (Howell 1982, Carbyn 1989). Due to the adaptability of coyotes, it is possible for urban coyotes to become habituated to humans through the feeding of coyotes by a few residents within a neighborhood, defeating any efforts to keep urban coyotes wild (Schmidt and Timm 2007). In situations such as these, a more active approach, such as hazing (the application of deliberate negative conditioning), may be necessary. Hazing includes such actions as making loud noises, using your arms to make yourself look large, and, if needed, throwing small objects such as rocks or tennis balls directly at the coyote. In the short-term, hazing can encourage coyotes to move out of the immediate area, allowing the human to safely leave as well. Long-term behavioral changes associated with hazing have not been well studied, but anecdotal evidence supports hazing as a smart strategy in conjunction with the removal of food attractants. Research has shown that engaging citizens in community-level hazing efforts promotes greater understanding of coyotes and capacity to manage human-coyote interactions (Adams 2014, Bonnell and Breck 2017).

Hazing has not shown to be effective at reducing extreme aggressive behavior in problem coyotes, and these individuals are most effectively managed through targeted lethal removal (Baker 2007, Baker and Timm 2017, Breck et. al. 2017). Non-rabid coyotes exhibit an escalation in bold behaviors over time, allowing corrective measures to be implemented, such as hazing and removing anthropogenic attractants, that can reverse the behavior and avoid a dangerous situation.

While the statistical probability of a coyote attack is low and most certainly significantly less than that of a domestic dog, there are certain actions and behaviors that can minimize the threat of a coyote attack even further. To minimize negative human/coyote encounters the Commission routinely provides the following general advice.

- Do not approach a coyote. Remain a safe and respectful distance from the animal.
- Always supervise small children when outdoors, and remind them not to approach coyotes or other animals.
- Don't be intimidated by a coyote. Make noise and let the coyote know that it is not welcome near you. Throwing small objects such as rocks or tennis balls can encourage the animal to leave the area.
- Avoid areas where coyotes have dens and/or young. Coyotes will defend their pups, especially against domestic dogs, if you come too close.
- If you encounter an extremely aggressive or sick coyote (stumbling, listless, drooling excessively) contact your local Animal Control for immediate assistance. Coyotes can contract diseases such as rabies and canine distemper. Commission staff work cooperatively with citizens and other government agencies to address situations where lethal removal is required.

**Pet Safety:** In addition to concerns for human safety, concerns for pet safety are often raised by citizens. Few data are available on how many domestic cats and dogs are injured or killed by coyotes each year, but public perception is that these events are on the rise. Securing domestic pets indoors and supervising them when outdoors are simple, cost effective solutions that greatly reduce the risk of injury by a coyote.

Fencing can be used to exclude coyotes from yards; however, inadequate fences may not fully protect pets that are unsupervised in the yard. Fencing should be a minimum of 5.5 feet tall to limit coyotes climbing over and include either 2 feet of buried fence or apron fencing on the ground to prevent coyotes from digging under (Green et al. 1994). Existing fences can be modified with electricity or “coyote roller” devices to make them more challenging for coyotes. Fencing is most effective when used in conjunction with removal of food sources within the fenced area and proper supervision of pets.

*Cats:* Coyotes are predators that will opportunistically take cats as prey items when they are available and easy to capture. Outdoor cats are at risk of being killed by a coyote, as well as being exposed to other risk factors including other predators, dogs, cars, and diseases. Keeping cats indoors is a simple solution that eliminates the risk of coyotes injuring or killing a cat (Grubbs and Krausman, 2008).

Outdoor cats, and especially feral cat colonies, attract coyotes due to the number of cats in the area and the availability of food placed by humans. This may increase the visitation of coyotes to those areas resulting in other issues in the neighborhood.

*Dogs:* Like cats, small dogs can be viewed as potential prey items by coyotes, so supervision when outdoors is recommended, particularly at night. Attacks on large dogs are less common but can result from coyotes that view large dogs as competitors. Potential for coyote conflicts with large dogs increases during coyote breeding season (January to March) when coyotes are more likely to defend their territory. Supervising all dogs when they are outdoors, particularly at night, will reduce or eliminate the risk to dogs from coyotes.



Keeping cats indoors at all times eliminates the possibility of coyote depredation.  
(Photo: Wikimedia)

***Livestock Concerns:*** Livestock can be vulnerable to attacks by coyotes, resulting in loss of animals and economic impacts to producers. The US Department of Agriculture National Agriculture Statistics Service (NASS) keeps records on a range of aspects related to crop and livestock, including depredation on livestock. While these surveys are of producers on causes of mortality of their livestock, no verification is conducted to confirm suspected causes of mortality, and it is difficult to differentiate cause of mortality by an untrained person. For example, many predators, including coyotes, will scavenge a carcass, which is often confused with predation (Gese et al. 2005). In 2014, 6% of adult sheep loss and 4% of lamb loss was suspected to be due to predators (i.e., dogs, foxes, coyotes, vultures; NASS 2015). The number of adults and lambs lost due to suspected predators declined from 1995 through 2014, partly due to an increase in the use of nonlethal methods by livestock producers (NASS 2015). In the Southeast through 2009, NASS listed domestic dogs, followed by coyotes, as the top two suspected predators of sheep and goats, (NASS 2010). During 2010, domestic dogs and coyotes were suspected to be the top predators of cattle; suspected coyote predation comprised 3% of all cattle deaths (NASS 2011).

A variety of lethal and nonlethal tools have been documented to be effective at the prevention and management of livestock depredation (Appendix D; Green et. al. 1994, USDA 2002, Mitchell et al. 2004, Shivik 2004).

**Game Species Concerns:** Coyote impacts to game species is an often-raised concern from hunters and landowners. In their historic range, coyotes play an important ecological role in nature as an apex predator. In their new range, coyotes are filling the niche left vacant by large mammalian predators (i.e., wolves, cougars) that have been extirpated. It is important to remember that predation is a natural, normally occurring process in nature and that prey species develop physiological and morphological adaptations to offset predation risk and impact. While the arrival of coyotes in the eastern landscape is generally viewed negatively, there are some ecological and human benefits resulting from their presence. For example, coyotes can have positive impacts on ground nesting birds (e.g., waterfowl, quail), by preying on nest predators (e.g., foxes, raccoons and opossums; Sovada et al. 1995). Additionally, coyotes can benefit landowners by reducing numbers of undesirable species such as groundhogs and rodents.

The relationships between coyotes and prey species vary greatly. Human concerns most frequently involve both real and perceived issues surrounding coyote predation on game species such as white-tailed deer and game birds (e.g., quail and wild turkey). These concerns likely derive from the belief that predators are taking a resource that they perceive is reserved primarily for humans. In the case of coyotes, the predator is a recent arrival on our landscape, therefore sportsmen are reluctant to accept that resource allocation may be changing.

**White-tailed Deer:** Many deer hunters believe predators like coyotes are the biggest threat to NC's deer population (Figures 2 and 3, page 12), and likely believe coyotes are a substantial contributing factor for observed declines in deer numbers in parts of the state (Commission 2016). Numerous studies in the southeastern US have documented fawn predation by coyotes, and several indicate coyotes can have notable impacts on fawn survival and their recruitment into adulthood (Saalfeld and Ditchkoff 2007, Kilgo et al. 2012, Chitwood 2014, Gulsby et al. 2015). There are many factors that influence the effect coyotes have on fawn survivorship, including coyote density, deer density, abundance of alternative coyote food sources (e.g., small mammals and fruits), presence of other predator species, vegetative hiding cover for fawns, and habitat quality (Kilgo et al. 2012, Gulsby et al. 2017, Shuman et al. 2017). Intensive coyote trapping efforts have variable results and coyote impacts on fawn recruitment can vary seasonally, annually (Kilgo et al. 2014), and from one site to the next (Gulsby et al. 2015). Predator-prey relationships are extremely complex, and how this relationship plays into the intricacies of deer management and population trajectories is multifaceted (Ballard 2011) and remains poorly understood.

There are many factors that influence the effect coyotes have on fawn survivorship, including coyote density, deer density, abundance of alternative coyote food sources, presence of other predator species, vegetative hiding cover for fawns, and habitat quality.

Deer fawns may be preyed upon by numerous predators. In some studies, predation by bobcats and black bears rivals or exceeds that of coyotes (Vreeland et al. 2004, Shuman et al. 2017). However, most studies in the southeastern US indicate coyotes are the most common predator of fawns (Saalfeld and Ditchkoff 2007, Kilgo et al. 2012, Chitwood 2014, Gulsby et al. 2015). Coyotes can impact fawn recruitment to varying degrees, but the specific role coyotes play in herd dynamics across the landscape is complex and difficult to measure (Ballard 2011).



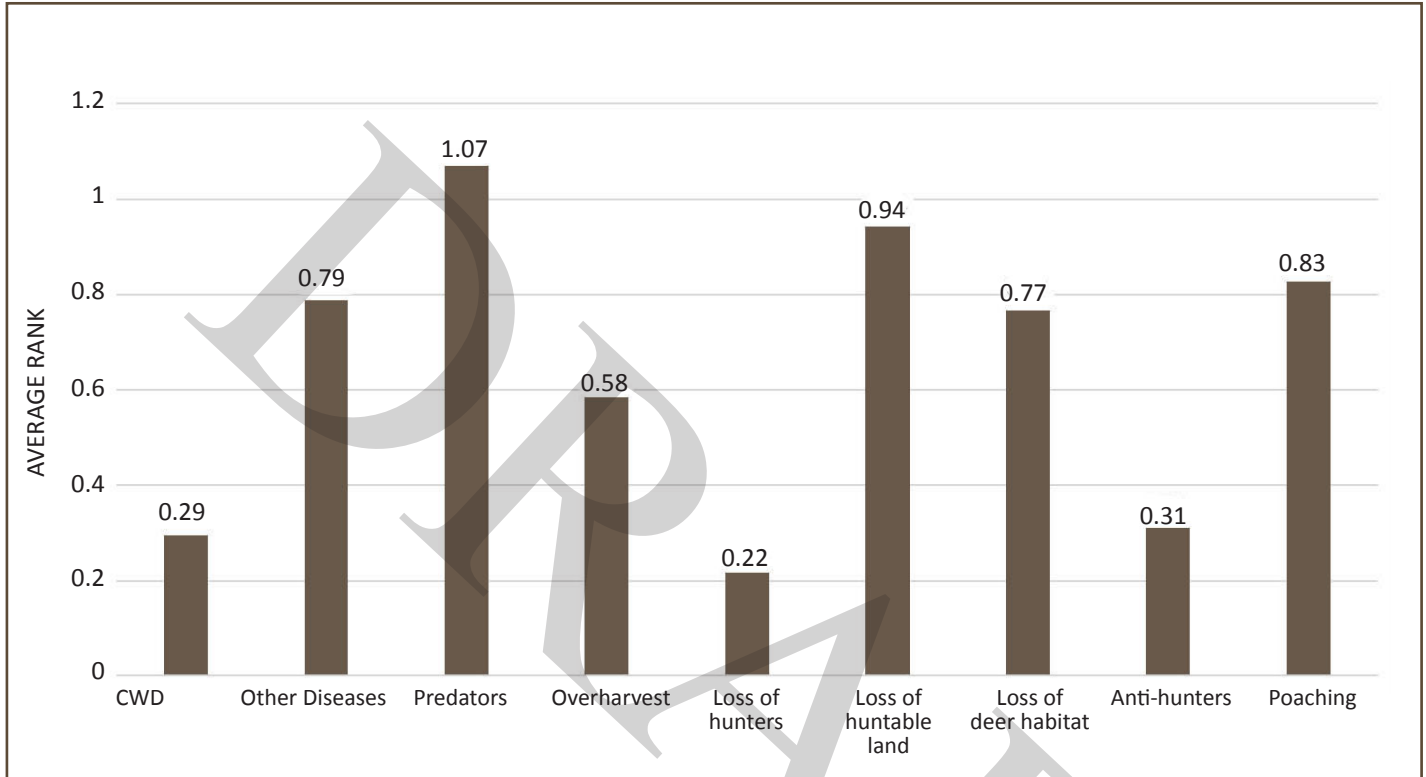


Figure 2. Question 25: Rank your opinion of the top three threats to the NC deer population. Results presented as the statewide mean response of the inverse rank (0=no rank, 3=highest rank / top threat) from the 2016 Deer Hunter Survey.

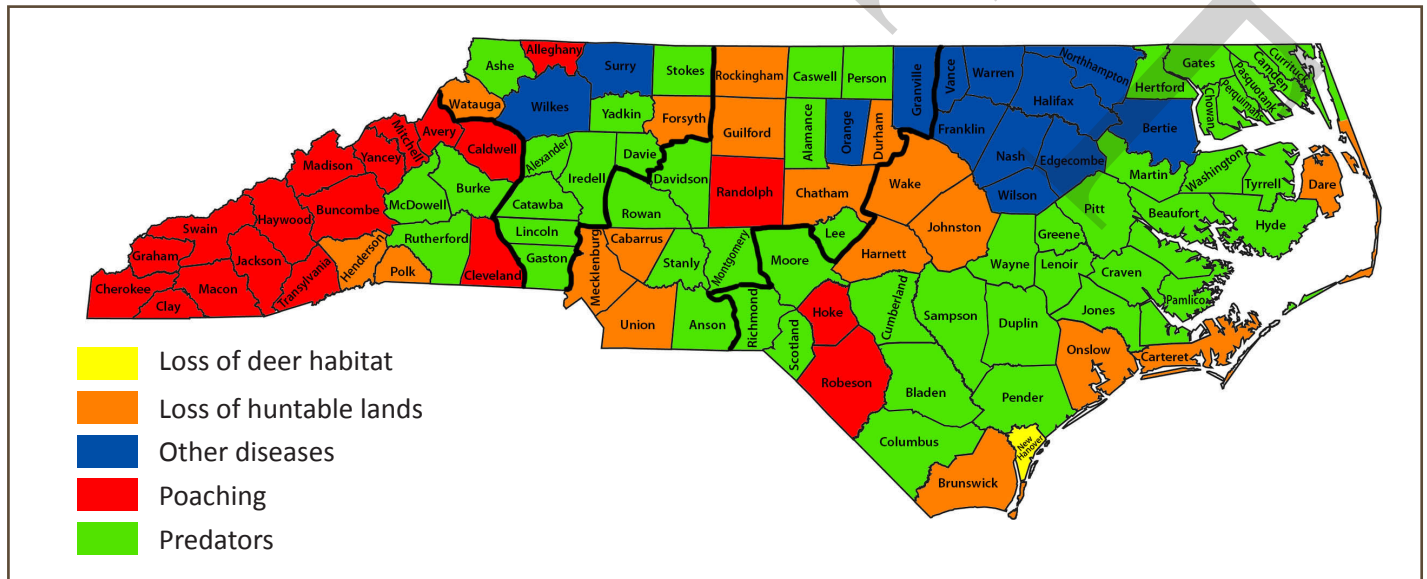


Figure 3. Rank your opinion of the top three threats to the NC deer population. Results presented as the threat with the highest mean rank (0=no rank, 3=highest rank / top threat) response per county from the 2016 Deer Hunter Survey.

Deer numbers have declined in parts of NC, with the most notable large-scale decline occurring in the Eastern Deer Season, covering about half the state. Reported antlered buck harvest trends are an index of deer population trends, and over a 10-year period (2007-2016) declined 23% in the Eastern Deer Season and 8.5% statewide. While coyotes have likely played a role in these declines, there are multiple contributing factors with variable impacts on the herd between years and by area. The primary factors for deer declines include disease, habitat quality, hunter harvest, and predators.

Hemorrhagic disease (HD) is a common disease of deer caused by two types of viruses — one producing blue tongue and the other producing epizootic hemorrhagic disease. HD appears to be increasing in distribution, frequency, severity, and virus serotypes in the US (Stallknecht et al. 2015). HD occurs in North Carolina every year with varying degrees of severity and distribution. Notable outbreaks have occurred in the past decade that have contributed to significant local and regional declines in NC deer numbers, most recently in 2007, 2011, 2012, 2014, and 2017. Deer herds can rebound from HD outbreaks, but population responses from HD setbacks are influenced by habitat quality, harvest rates, and predation rates.

Deer can exist in a wide variety of habitats, but deer numbers and potential for population growth are limited by habitat quality. The quality of habitat may be declining in areas of the state due to subtle, but significant changes in land use practices, including commercial and residential development, and increased efficiency in farming and forestry practices. For example, in western North Carolina where 1.2 million acres of National Forest remains intact, the lack of timber harvest has resulted in forests that now consist of predominately mature, deciduous, even-aged hardwood forest with few scattered

While predation on adult deer has been documented, it is uncommon, and hunter harvest remains as the primary source of adult mortality in hunted populations.

wildlife clearings. While this forest type benefits some wildlife species, it provides low nutritional carry capacity for species like deer, and declines in some game species populations continue as the forests continue to age (Morin 2015).

While antlered buck harvest has declined 32% in National Forests in western NC, this is not the case on surrounding private lands. Western NC is the only large region in the state where deer numbers have notably increased over the last

decade (2007-2016) as indicated by a 63% increase in antlered buck harvest. Interestingly, coyotes have been established longer in western NC than anywhere else in the state. White-tailed deer can adapt to changes in their environment and respond with behavioral modifications in the presence of threats, like predators (DeYoung and Miller 2011). It is conceivable deer will adapt or have already adapted in some areas to what was once a novel predator in the state.

While predation on adult deer has been documented (Chitwood et al. 2014), it is uncommon (Schrecengost et al. 2008; Vanglider 2008; Kilgo et al. 2010), and hunter harvest remains as the primary source of adult mortality in hunted populations (DeYoung 2011). Deer numbers are dependent on the number of adult females in the population, and doe harvest remains as the most important tool for deer managers to manipulate herd density (Kilgo et al. 2014). Bag limits (number of deer that can be lawfully harvested by day or season) and either-sex days (number of days does can be harvested in the firearms season) are the primary regulatory tools that impact doe harvest.

Doe bag limits and season lengths were increasingly liberalized over the last several decades to provide additional opportunity for hunters, improve or maintain herd and habitat condition, and reduce property damage issues. Most recently, doe harvest opportunity has been increased by expanding areas of the state with a maximum either-sex season (currently 80 of 100 counties), removing the daily bag limit in 2010, adding a week of blackpowder season in 2010, and allowing Sunday hunting with firearms in 2015. Hunters increased doe harvest over this period, most notably with a 28% increase in 2007 when unlimited “bonus antlerless tags” were implemented (Figure 4). This intentional increase in doe harvest has contributed significantly to deer declines. This herd reduction was warranted in parts of the state, but deer numbers are now at (31%) or below (48%) the desires of many deer hunters (Commission 2016).

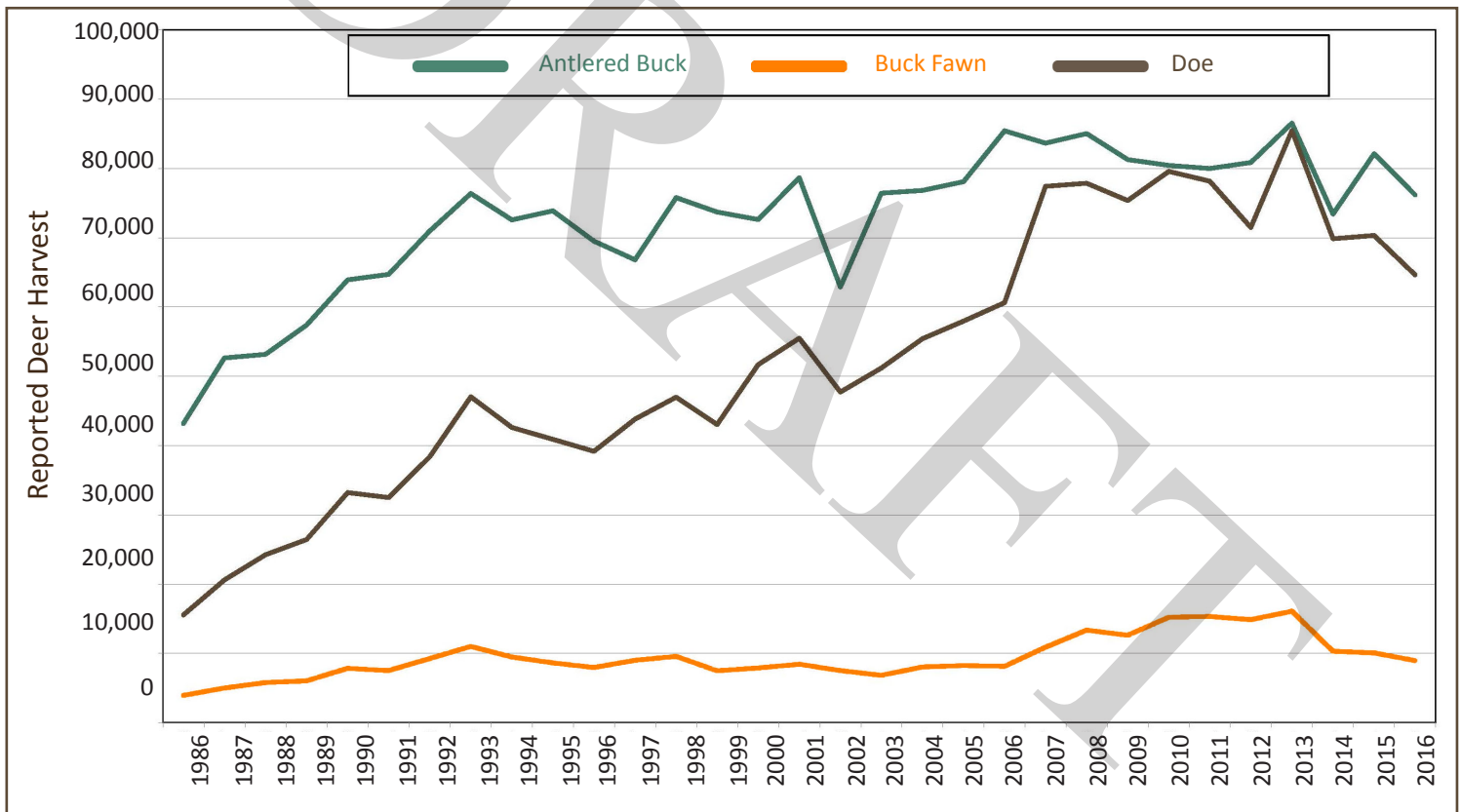


Figure 4. North Carolina reported antlered buck, buck fawn (button buck), and doe harvest from 1986-2016.

Deer populations can be less vulnerable to the effects of coyote predation not only through increasing deer densities, but also with improved birth synchrony (DeYoung and Miller 2011). Predation decreases rapidly as fawns mature. Survival rates are lowest during the first week of life, improve dramatically after 6 weeks of age, and level off by 10 weeks of age (Kilgo et al. 2012). Therefore, the window of time coyotes can effectively predate deer is condensed when most fawns are born during a shorter period. To accomplish this, harvest seasons should be anchored by breeding seasons with limited buck harvest prior to the peak breeding period. This ensures most does are bred during their first estrus cycle at the biologically correct time, resulting in fawns born in synchrony during an optimal time of year, close to spring green-up (Guynn et al. 1986). Where it is biologically and sociologically appropriate, the most effective method to increase or stabilize deer numbers at statewide and regional scales is through regulatory changes in season lengths, bag limits, and timing of harvest (Commission 2015).

Numerous studies on coyote and deer dynamics have been conducted in the southeastern US, including Ft. Bragg, NC. Research at Ft. Bragg documented coyotes were the leading cause of mortality for fawns during 2011 and 2012 (Chitwood et al. 2015b). This research provided valuable insight into the potential impacts coyotes can have on deer populations, but the study site and management activities at Ft. Bragg are not representative of the diverse landscape and activities that occur across the state. It is unclear if deer-coyote dynamics documented on Fort Bragg are representative of other landscapes and regions across North Carolina. The habitat (longleaf pine ecosystem) and habitat management practices (three-year prescribed fire intervals) at Ft. Bragg resulted in an extensive and drivable firebreak network, creating linear strips of edge habitat conducive to predator search behavior for prey. In addition, the soils of the sandhills region result in some of the poorest habitat in the white-tailed deer range (Shea and Osborne 1995). This habitat contributed to very low deer densities (2-4 deer/km<sup>2</sup>), starvation being the second leading cause of mortality for fawns, and starvation rates greater than reported in other studies (Chitwood 2014). Starving fawns are also vocal, which could increase their chances of being detected by predators and likely contributed to the high predation rates (Chitwood et al. 2014b). Research has shown that predation mortality does not normally suppress prey populations unless nutritional carry capacity of the habitat is low, at which point predation can result in additive mortality (Kilgo et al. 2014, Robinson et al. 2014, Chitwood et al. 2015). The most effective and least expensive way to increase deer numbers is to reduce doe harvest (Kilgo et al. 2014, Chitwood et al. 2015b), but in extreme situations with very low deer densities, poor habitat, and high predation rates on fawns, both intensive coyote trapping and reduction in doe harvest may be warranted if increasing or stabilizing deer numbers is desired in these areas (Chitwood et al. 2015b).

The Commission initiated an annual Deer Hunter Observation Survey in 2014 in part to increase understanding and monitor the impacts of coyotes on fawn recruitment across the state. Participants in this survey voluntarily record county-level observations of numerous species while deer hunting. These hunter observations to date included 187,557 deer observations (2014-2016) and provided a solid base-line to enable biologists to begin to monitor trends in deer observation rates (deer/hour) and ratios (fawns/doe, does/buck) over space and time.

Statewide, hunters observed on average (2014-2016) 0.61 fawns for every adult (1.5+ years) doe. This ratio varied from 0.45 in Biological Deer Management Unit (BDMU) V to 0.66 in BDMU II (Figure 5, page 16). The observed fawn/doe ratio varied considerably between years, within each BDMU (Table 1, page 16). These observed ratios are relatively consistent with ratios reported through various methods and sources in the southeastern US. These observation data complement other annual deer data sets (reported harvest, hunter harvest survey, biological data collections) that biologists rely on to monitor and manage the herd.



A useful, reliable, and predictable model of the impact of coyotes on fawn recruitment or deer populations does not currently exist due to the complexities of predator/prey relationships and the confounding intricacies of deer management.

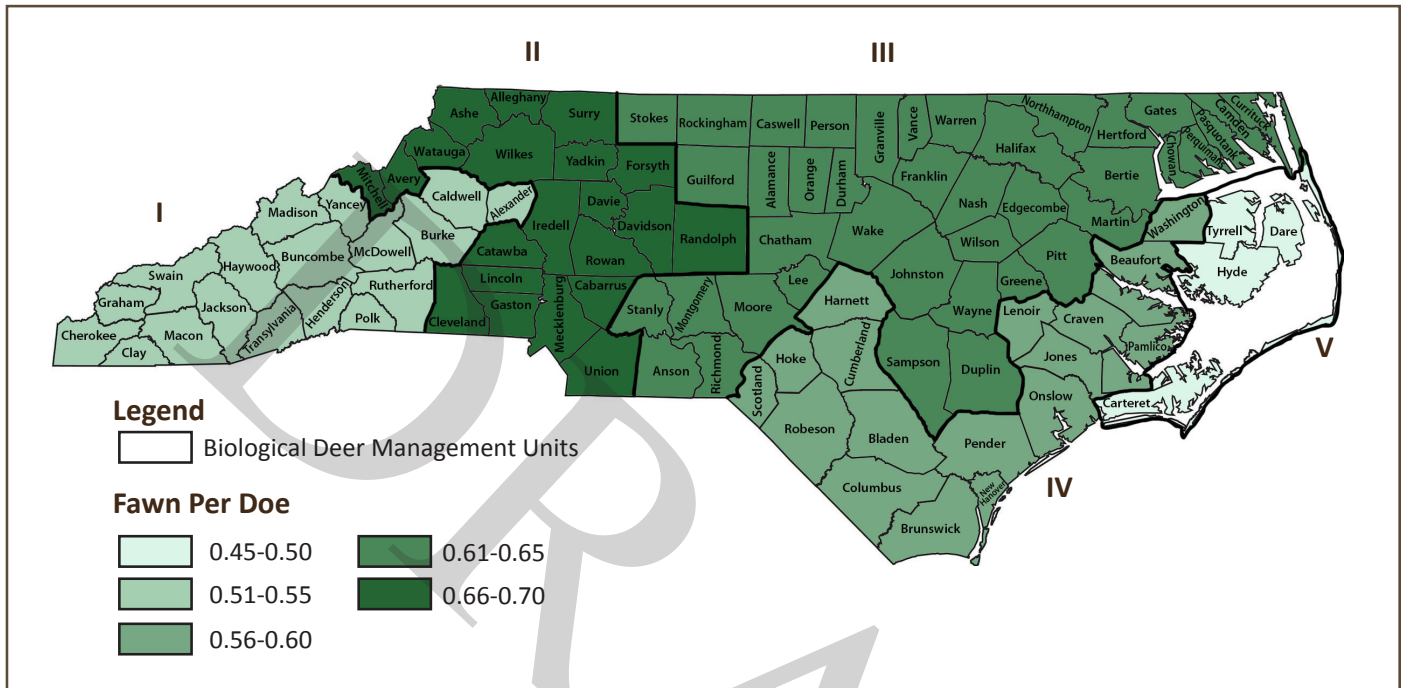


Figure 5. Deer Hunter Observation Survey average fawn per doe observation (2014-2016) by BDMU.

Table 1. Observed annual fawn/doe ratio per BDMU with 95% confidence intervals.

Year	BDMU 1	95% CI	BDMU 2	95% CI	BDMU 3	95% CI	BDMU 4	95% CI	BDMU 5	95% CI
2014	0.52	+/- .07	0.63	+/- .04	0.68	+/- .02	0.56	+/- .04	0.62	+/- .11
2015	0.64	+/- .05	0.68	+/- .03	0.57	+/- .03	0.61	+/- .04	0.50	+/- .13
2016	0.51	+/- .06	0.67	+/- .03	0.60	+/- .03	0.51	+/- .05	0.23	+/- .12
<b>Avg.</b>	<b>0.56</b>	<b>+/- .08</b>	<b>0.66</b>	<b>+/- .03</b>	<b>0.61</b>	<b>+/- .06</b>	<b>.56</b>	<b>+/- .06</b>	<b>0.45</b>	<b>+/- .23</b>

However, biologists can closely monitor deer population trends and account for predation along with other non-harvest mortality factors (e.g., disease, poaching, roadkill, and depredation), and adjust targeted hunter harvest rates with a more conservative approach that tolerates unpredictable temporal and geographic variability caused by predators and other factors. In addition to doe harvest regulations that promote sustainable herds at regional and statewide scales, the Commission continues to provide site-specific harvest prescriptions to landowners and technical guidance to improve habitat quality and herd production to offset the impacts of predation from coyotes and other predators.

**Game Birds:** Research in the prairie pothole region of the U.S. (i.e., the Dakotas) has shown that duck nesting success increases in the presence of coyotes as they suppress more common nest predators such as red foxes and raccoons (Sovada et al. 1995). Most coyote diet studies document low to no prevalence of wild turkey or other gamebirds in diets (Wagner and Hill 1994, Albers 2012), though coyote predation has been documented on radio-marked wild turkeys in Missouri (Vangilder

and Kurzejeski 1995) and Mississippi (Miller et al. 1998), as well as states in the Midwest (Paisley et al. 1998, Hubbard et al. 1999). Coyotes were documented as preying on urban Canada goose nests in Chicago, Illinois, and research there suggested coyotes aided in limiting the urban Canada goose population (Brown 2007). Coyotes can also have effects on other mesopredators such as feral cats (Gehrt et al. 2013) and raccoons (Rogers and Caro 1998), in some cases helping to control their populations and lessen their effects on other species, such as some bird species (Rogers and Caro 1998, Schmidt 2002, Mezquida et al. 2006).

Because coyotes prey on smaller mammals, including nest predators (i.e., raccoons, foxes, skunks, opossums), coyotes can increase quail survivorship (Henke and Bryant 1999, Rollins and Carroll 2001). For example, in areas of Texas where quail numbers were highest, coyote abundance was also high and, conversely, in areas with low quail numbers, coyote numbers were also low (Rollins 1999). This relationship is due to a phenomenon known as “mesopredator release,” in which there is



Research in Illinois suggests coyotes prey on urban Canada geese and can aid in limiting that population. (Photo: Wikimedia)

an increase in the abundance of raccoons, skunks, badgers, gray foxes, and bobcats with the removal of a more dominant predator (e.g., the coyote; Henke and Bryant 1999). Raccoons, striped skunks, opossums, and gray foxes have been found to be the primary nest predators for quail (Hernandez et al. 1997, Fies and Puckett 2000). Snakes, avian predators, raptors, armadillos, and fire ants also impact nest and chick survivorship (Allen et al. 1995, Burger et al. 1995, Peoples et al. 1996, Mueller et al. 1999). While coyotes will consume quail if given the opportunity, it occurs in very low frequency (<1%) and is an incidental prey item (Henke 2002).

Changes in land management over the last 30+ years have resulted in conditions that make it more difficult to maintain high densities of quail over much of their distribution, due to increased habitat fragmentation, reduction in nesting cover, and increase in nest predators (Rollins and Carroll 2001). While there is no scientific evidence demonstrating that predator management in the absence of adequate bobwhite quail habitat will produce birds, there is a wealth of scientific evidence demonstrating that habitat management will significantly increase local quail populations in the absence of predator control (Smith 2010). Targeted removal of nest predators prior to and during nesting, coupled with habitat management and reducing artificial foods that increase nest predator populations (e.g., raccoons and deer feeders), may increase quail populations (Palmer et al. 2005).

**Other Mammals:** The impacts of coyotes on nongame species are not greatly studied but are becoming more concerning, especially as coyote populations expand into coastal areas that serve as nesting grounds for shore and seabirds as well as sea turtles. Many of these species are identified as species of greatest conservation need and some are specifically Federally listed as threatened or endangered. While long-term impact of nest predation on these taxa groups has not been studied in detail along the Atlantic coast thus far, evidence exist that as coyotes move into these habitats and establish themselves as a new and novel resident predator, they are likely having a significant impact on nest success. Targeted removal of

coyotes in these areas is and will continue to be an important component of all efforts to conserve and promote these shore nesting species until a greater understanding of these relationships is developed.

The impact of coyotes on other nongame species likely varies depending on the species, the habitats they use and reproductive behaviors. Coyotes may be beneficial to the management of some nongame species in some areas, especially those that might be perceived as undesirable by humans, such as groundhogs and rodents. Additionally, coyotes may prey on the predators of some nongame species and may in turn enhance survival or reproduction of these species.

**Shore and Seabirds:** To reduce susceptibility to predation, ground-nesting birds must camouflage their nests with herbaceous vegetation or lay eggs that blend well with bare ground such as sand and shells. Species that nest on open or sparsely vegetated beaches along the Atlantic Coast lay 1-4 cryptic eggs, and flush from nests if predators approach. Flushing increases adult survival and may be an attempt to direct the predator's attention to the adult rather than the eggs. Small clutch sizes allow these species to lay multiple clutches in a season if eggs are lost.

Many shore and seabirds nest on barrier, marsh, and dredged-material islands along the Atlantic Coast. Small ( $\leq 10$  ha) islands,  $\geq 1$  km from the mainland are optimal nesting habitat for these birds because mammalian predators have historically been unlikely to swim to isolated islands or live on small islands year-round. However, increased recreation on islands by people has introduced discarded food and fish offal, attracting increased numbers of mesomammals (raccoons, etc.). Coyotes, however, had not been reported on coastal islands until the early 2000s. In 2009, Schweitzer and Meliopoulos (2015) detected predation on American Oystercatcher (*Haemotopus palliatus*) eggs by coyotes on Cumberland Island National Seashore (NS), Georgia. Cumberland Island NS is only accessed by boat; thus, coyotes had to swim to the large, barrier island and colonize it. Coyotes have essentially displaced nesting seabirds (e.g., Least Terns [*Sternula antillarum*]), and have reduced nesting success of shorebirds to zero on Cumberland Island NS.



To reduce susceptibility to predation, ground-nesting birds must camouflage their nests with vegetation or lay eggs that blend well with bare ground such as sand and shells. (Photo: Sue Cameron)

Recently, increased reports of coyotes on North Carolina's barrier islands have coincided with predation on shorebird nests and abandonment by colonial-nesting seabirds. Coyotes easily access NC barrier islands connected to the mainland with bridges such as Cape Hatteras NS and Pea Island National Wildlife Refuge. Barrier islands along the central and southern coast of North Carolina are connected to the mainland with bridges and are separated from the mainland by small sounds and the Atlantic Intracoastal Waterway, across which coyotes can easily swim (Schweitzer, personal observation). Several barrier islands are accessed only by boat but coyotes have colonized them as well.

One of North Carolina's largest Brown Pelican (*Pelecanus occidentalis*) colonies consistently nested on Island MN, a dredged-material island in the Pamlico Sound, near Oregon Inlet. The pelicans abandoned the nesting site in 2015 after

several chicks and nearly fledged young were killed. The island was not used for nesting by pelicans in 2016, and in March 2017, several dead pelicans that may have used the island for roosting, were found. Further, surveys of the island by Commission biologists in spring and summer 2017, found freshly killed Black Ducks (*Anas rubripes*) and pelicans, as well as a coyote den with pups. This was the first discovery of a denning coyote on islands in the Pamlico Sound. Camera traps on Island MN and adjacent Island L in fall 2017, recorded female adult coyotes. Pups were recorded only on Island MN.

**Sea Turtles:** Coyote predation of sea turtle nests on Cape Lookout National Seashore's islands was reported in 2016 (NPS 2016c; Altman, unpublished data). In 2017, there were 42 known cases of mammalian predation of sea turtle nests with incubating eggs: 3 by raccoon, 8 by fox, and 31 by coyote, including some nests with protective screening. It is unknown how many nests experienced unsuccessful predation attempts by predators, although coyote tracks were documented near incubating nests on beaches in New Hanover, Onslow, Carteret and Dare counties (Commission 2017).

Because many species that nest on islands along the Atlantic Coast are species of greatest conservation need, and the Piping Plover is federally listed as threatened, as are sea turtle species, management actions are necessary to increase their survival and productivity. Thus, properly timed and targeted removal of coyotes from islands with these nesting species is needed. In part to address this issue, the Commission entered into a Cooperative Service Agreement with the USDA APHIS WS in July of 2017 to provide predator management services to protect rare, threatened and endangered avian, mammalian, amphibian and reptilian species on public and private lands within the coastal counties of NC (Appendix G). Additionally, Best Management Practices for predator management are being completed by a team from Virginia Tech (Karpanty et al. *in draft*) as part of the Atlantic Flyway Shorebird Initiative conservation business plan (Andres et al. 2015). These BMPs will include nonlethal techniques to remove coyote predation pressure, but also humane lethal removal if nonlethal methods are not successful.

**Other Mammals:** Although there have been numerous studies in the southeastern United States on coyote diet, the primary focus of this research has been to determine their impacts to white-tailed deer and other game species. While these studies do quantify the abundance of individual food items (small mammal species are often lumped together in one category, such as "rodents") in coyote diets, they do not attempt to determine effects of this predation on small game or other nongame mammal populations.

Because many nongame species that nest on islands along the Atlantic Coast are species of greatest conservation need, and the Piping Plover is federally listed as threatened, as are sea turtle species, management actions are necessary to increase their survival and productivity. Thus, properly timed and targeted removal of coyotes from islands with these nesting species is warranted.

Poessel et al. (2017) determined that rodents and lagomorphs were the most prevalent food item in a Colorado study, indicating that rodents and native plants were consumed more often in areas of high-density housing and that deer, corn, and native plants were consumed more often in areas of low-density housing.

Several studies in North Carolina have documented that coyotes consume a variety of food types, including rabbit, white-tailed deer, rodents, anthropogenic material, vegetation, and invertebrates (Schrecengost et al., 2008, Dellinger et al.,



2011, McVey et al., 2013, Cherry et al., 2016). Coyote diets tend to be localized, change seasonally, and focus on the most abundant or preferred food sources (Stratman and Pelton, 1997, Tremblay et al. 1998, Bekoff and Gese 2003, Schrencengost et al. 2008). Swingen et al. (2015) noted that soft mast was the most common food item detected at Ft. Bragg, NC, followed by mammals and insects. Of the mammals consumed, white-tailed deer, rabbits, and hispid cotton rats were the most common species. A summary of results from different coyote diet studies can be found on page 69 in Appendix B.

In North Carolina, published data on coyotes impacts on other nongame mammals have been related primarily to red wolf reintroduction efforts. Coyotes negatively impact red wolf restoration efforts through hybridization (Roth et al., 2008, Hinton et al., 2013).

### **III. Challenges of “Coyote Control” by Population Reduction**

For more than 100 years efforts have been devoted to controlling coyote populations across the United States. Despite these extensive control attempts, coyotes persisted and continued to expand their range. Coyotes now reside in all 49 continental states, most of Canada and Central America and are the most widely distributed wild canid in North America.

#### **Physiological and Behavioral Adaptations**

The biology and life history of coyotes are complex (Appendix B). The species has physiological and behavioral adaptations leading to high reproductive capacity, dynamic dispersal and colonization abilities, and high survival rates. These attributes result in coyotes being extremely resilient and capable of thriving in a wide variety of landscapes (including urban environments). Coyotes have demographic spatial structures capable of rapid recruitment and population self-regulation when a high number of coyotes are removed from the landscape. The mechanisms that enable this are compensatory reproduction (i.e., larger litter sizes, increased pup survivorship, and younger age of reproduction) and compensatory immigration (Windberg and Knowlton 1988, Morin 2015). These qualities confound efforts to manage or “control” coyote populations.

Extensive research has documented the ability of the coyote to adapt to changing environments and landscapes as well as to respond to changes in density resulting from harvest and other mortality pressures. In areas of high mortality due to efforts by hunters and trappers to reduce coyote density, coyote populations continue to persist through additional recruitment (Conner and Morris 2015), often referred to as “density-dependent negative feedback” (Murdoch 1994, Turchin 1999, Hixon et al. 2002). In these areas, coyote densities either remain the same or increase despite intense harvest levels. Conversely, research has shown in areas of light harvest where adult survivorship is high, recruitment into the population is lower due to decreased reproduction and immigration (Morin 2015).

#### **Removal/Control**

In an examination of 34 studies that conducted intensive predator removal, there was no decline over time in coyotes and other mesopredators (e.g., foxes, raccoons, striped skunks); year-to-year removal rates of coyotes remained relatively consistent and no studies showed long-term (>1 year) declines in coyote populations (Conner and Morris 2015). Research in South Carolina in which intensive coyote removal was conducted to increase fawn survival concluded that coyote control was not an effective method to increase fawn survival (Kilgo et al. 2014). While the fawn survival rate increased during the

first year of coyote removal (0.513), it declined (0.202) below pre-removal rates (0.228) during the second year of removal and an intermediate rate (0.431) the third year of removal (Kilgo et al. 2014). The decline in fawn survivorship observed is likely due to a combination of factors, including habitat quality, increased immigration of coyotes into the vacant territory, and higher reproductive potential of the coyotes (Knowlton and Gese 1995, Windberg 1995, Morin and Kelly 2017).

Intensive removal of coyotes is time-consuming and expensive, and research has yet to show it to be effective. In fact, in areas of high coyote mortality, higher densities of coyotes can occur versus areas with low mortality of coyotes (Morin 2015). When 60% of the coyote population is removed from an area, the population can recover within a year (Pitt et al. 2001). A three-year South Carolina study reduced coyotes by 78% each year and their numbers rebounded to pre-trapping levels in nine months (Kilgo et al. 2014). To cause a decline in the coyote population, 90% of coyotes must be removed. However, the population can recover in less than five years without continued intensive removal (Pitt et al. 2001). Local coyote populations are regulated by density dependence and demonstrate persistence and compensatory recruitment despite high mortality (Morin 2015).

Local, small-scale coyote control efforts will not reduce coyote populations, as coyotes removed are rapidly replaced with other individuals. However, hunter and trapper harvest of coyotes may result in changes in temporal activity due to increased behavioral wariness demonstrated by the surviving coyotes (Kitchen et al. 2000). These coyotes may restrict their activities to nocturnal hours, to avoid people, and may become warier of trapping activity. In lightly exploited coyote populations, intraspecific competition for available territories, mates, and resources may result in highly limited recruitment, lower reproductive rates, and lower coyote densities.

Intensive removal of coyotes is time-consuming and expensive, and research has yet to show it to be effective. In fact, in areas of high coyote mortality, higher densities of coyotes can occur versus areas with low mortality of coyotes.

### **Bounties and Harvest Incentive Programs**

Historically, bounties have been used with little success to control coyote populations. The goals of these efforts have mostly focused on protecting livestock or wildlife or controlling disease. As other incentives (e.g., fur prices) to remove predators decrease, public pressure for a bounty often increases because of real or perceived changes in predator populations and actual or anecdotal reports of predation (Switzenberg 1950, Novaro et al. 2004). It is often thought that paying for proof that an animal of an unwanted species, like coyotes, is killed will result in more of those animals being killed, the population of that species declining, and increased benefits to natural resource management and satisfaction among interested stakeholders. However, these results are rarely realized and numerous bounty program case studies have led to conclusions that bounties are ineffective in achieving real declines of predators (including coyotes), at addressing livestock depredation, or at positively affecting populations of species targeted for protection (Bennitt 1948, Omand 1950, Switzenberg 1950, Nielsen 1973, Theberge 1973, Parker 1995, Bartel and Brunson 2003, Sillero-Zubiri et al. 2004).

One reason for the lack of effectiveness in bounty programs is that bounty hunters (or trappers) will hunt (or trap) in areas where predators are most abundant, which may not be the same area where the damage is occurring, or removal may be

indiscriminate and thereby not include the individual animals causing the damage (Gerstell 1941, Kartchner 1941, Nielson 1973). In some cases, there is no relation between reported damage and the actual number of predators on the landscape because most damage is attributable to a limited number of individuals (Bennitt 1948).

Many predators killed under a bounty program are killed incidental to other activities, such as hunting and highway driving, thus contributing little to reducing the overall population (Switzenberg 1950). Predators killed under bounty programs may themselves be predators on other species. So, removing those primary predators may result in increases in the prey species that in some cases are also undesirable (Leopold 1933, Kosack 1995). Bounty programs rarely deal with full operational costs, are open to corruption, and many times involve an expensive bureaucracy (Gerstell 1941, Kosack 1995, Sillero-Zubiri et al. 2004). Bounty programs provides an enhanced, subsidized recreation program for a small segment of citizens (Bartel and Brunson 2003). For example, the North Carolina coyote harvest for 2016-17 totaled an estimated 51,905 individuals. If each of those were reported for collecting a bounty, the cost would exceed \$1.2 million annually at \$25 per animal for animals that are already being removed from the landscape (Table 2). Bounties are more expensive than a well-regulated system of hunting and trapping (Kartchner 1941), in some cases being five times more expensive than extension-trapper programs designed to target specific damage control objectives (Bennitt 1948).

Table 2. Potential costs if bounties were enacted statewide in North Carolina.

<b>Bounty</b>	<b># Coyotes Trapped<sup>1</sup></b>	<b>Potential Costs</b>	<b># Coyotes Hunted<sup>1</sup></b>	<b>Potential Costs</b>	<b>Total Potential Costs</b>
\$25	4,497	\$112,425	45,468	\$1,136,700	\$1,249,125
\$50	4,497	\$224,850	45,468	\$2,273,400	\$2,498,250
\$75	4,497	\$337,275	45,468	\$3,410,100	\$3,747,375
\$100	4,497	\$449,700	45,468	\$4,546,800	\$4,996,500

<sup>1</sup>Based on 2016-17 trapper and hunter harvest.

Coyotes are a species that requires sustained removal to reduce populations, as opposed to sporadic removals characteristic of bounty programs. They exhibit density-dependent reproduction and may increase their litter size in response to changes in food supply and population densities (Parker 1995). In areas where intense coyote harvest occurs, a temporary reduction in coyotes may occur, but this result may be short-lived because coyotes can respond by producing larger litters. In addition, killing individuals that are not causing damage can open territories for other individuals that have learned to depredate livestock or cause other damage.

In summary, the use of bounties for controlling unwanted wildlife, including predators, has been discontinued by most state and federal agencies because:

- they are ineffective in reducing actual damage because they often do not target problem individuals,
- circumstances surrounding the take of animals is largely unregulated,
- no process exists to prohibit animals taken from outside the damage management area from being presented for compensation,

- animals submitted for bounties are often taken incidentally and likely would have been harvested without incentives,
- bounties have a long history of use without achieving the intended results of reducing damage and predator population levels,
- for species like coyotes, removal can cause an increase in reproduction and increase in long-term population size, and
- killing predators that are not causing damage can open territories for predators that have learned to depredate on livestock or cause other damage.

In 2017, two southeastern states, Georgia and South Carolina, created harvest incentive programs for coyotes. These incentive programs are similar to bounty programs, in that an incentive is offered for a harvested coyote and there is no targeted area for coyote removal. Georgia's program, entitled the "Coyote Challenge," allows hunters and trappers to submit five coyotes per month to the wildlife agency in order to earn an entry into a monthly drawing for a lifetime hunting license. The stated goal of the program is to educate people on the tools available to take coyotes that are causing problems, and not to reduce or eradicate coyotes in the state. Georgia has no system in place to determine if participants increased their efforts to specifically harvest coyotes to qualify for the incentive. From April through June 2017, 40 participants brought in 160 coyotes, which averages one coyote per county in Georgia.

South Carolina's coyote harvest incentive program was initiated by the SC General Assembly (SCGA) in 2016. Funding for the program was provided by the SCGA. Experienced trappers captured four male coyotes in each of four game zones, for a total of 16 coyotes. The coyotes were ear-tagged by South Carolina Department of Natural Resources (SCDNR) biologists and moved from the original site of capture and released. Anyone who kills a tagged coyote receives a lifetime license. If a tagged coyote is harvested outside of South Carolina, the hunter still qualifies for the incentive.

From November 2016 through October 2017, 7 tagged coyotes (44%) were taken, one of which was shot in North Carolina. The measure of success of South Carolina's program is whether hunters changed their behavior and increased their efforts to specifically hunt for coyotes. The SCDNR sent a survey to people who had voluntarily registered for the incentive program (N=2,055). Ninety-three percent of respondents reported that they had shot a coyote while deer hunting prior to the incentive program. and, despite the incentive, the net recruitment of hunters of "coyote hunters" was estimated

at 19%. This increase did not appear to result in a proportional increase in the take of coyotes, as most of the tagged coyotes would have been harvested regardless of the incentive program (J. Butfiloski, SCDNR, pers. communication).

Coyotes are a species that requires sustained removal to reduce populations, as opposed to sporadic removals characteristic of bounty programs. They exhibit density-dependent reproduction and may increase their litter size in response to changes in food supply and population densities.

While novel programs such as these may have led to a slight increase in coyote hunting, most take occurs incidental to hunting other species (e.g., deer or wild turkey). Data from the Commission's annual Deer Hunter Observation Survey provides some insight into the potential effectiveness of providing a monetary incentive to encourage hunters to shoot more coyotes. Participants in this survey record county-level observations of both deer and coyotes on their observation

form (hunt diary). Since 2014, participants in the survey have reported 187,557 deer observations at an average rate of 0.78 deer observed per hour (780 deer /1,000 hours, Figure 6). These same deer hunters saw a total of 3,777 coyotes at an average rate of only 0.013 coyotes/hour, (13.42 coyotes /1,000 hours). Adding a financial incentive will not increase the number of coyotes these deer hunters see.

When avid deer hunters were asked at recent Commission public deer forums “What is your approach for managing coyotes where you hunt?,” 61% said they “shoot coyotes when they see them,” an additional 33% said they also “specifically hunt” or “specifically hunt and trap” them. While deer hunters see very few coyotes while hunting, most say that they attempt to kill every coyote they see. As such, financial incentives would neither increase the number of coyotes that deer hunters see or the number that they shoot. In 2016-17 North Carolina hunters killed an estimated 45,568 coyotes without any incentives or bounties (Table 3, page 28).

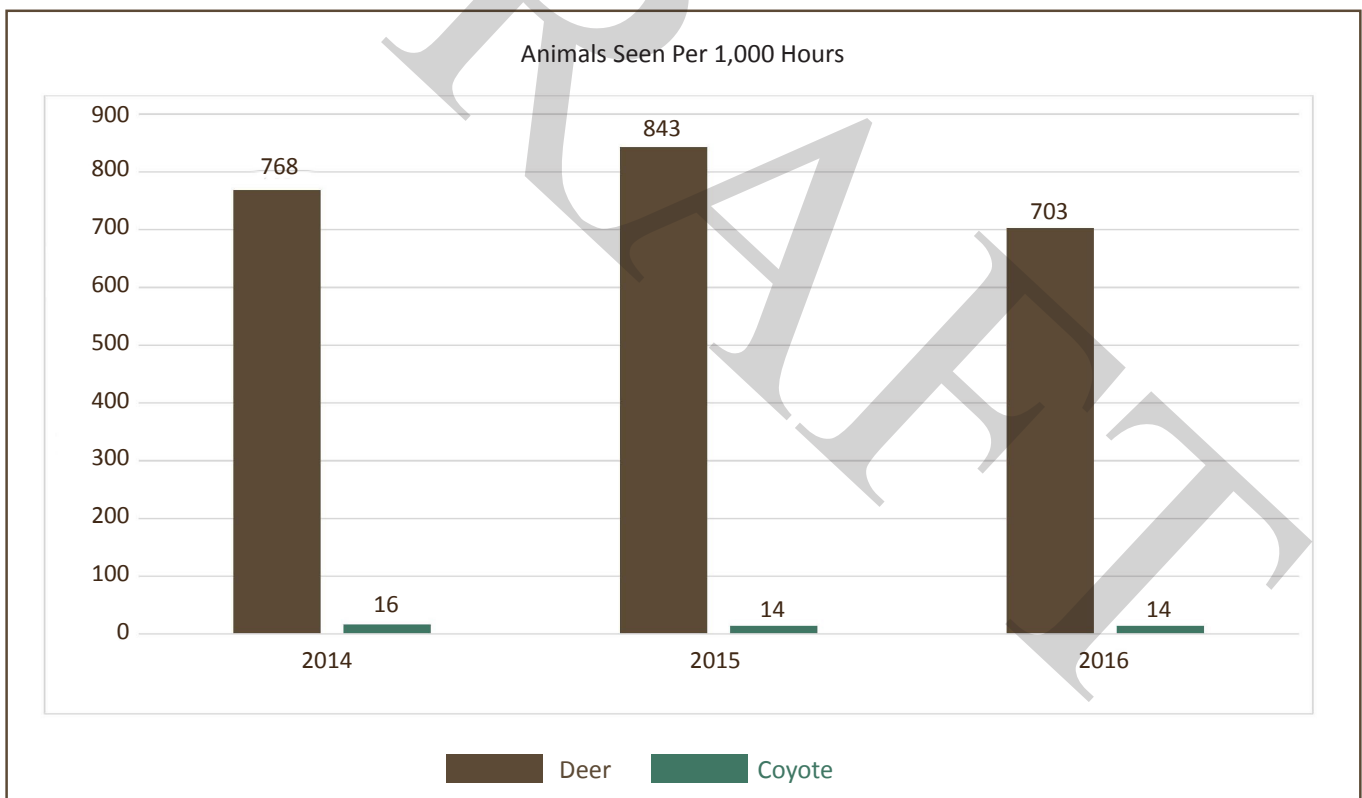


Figure 6. Observations of deer and coyotes by participants in Commission’s Deer Hunter Observation Survey, 2014-2016.

### Summary

While coyote population reduction (“coyote control”) is often the first and only management approach that people suggest, it has proven ineffective. There is no silver bullet that will eradicate or permanently reduce free-ranging coyote populations. However, there are strategies that can address specific issues and concerns about coyotes that are more effective and cost efficient. Most of these strategies focus on implementing non-lethal techniques or, if necessary, removing individual problem coyotes. Strategies to address impacts of coyotes on other wildlife likely will require management actions directed at the species of interest rather than coyotes (e.g., emphasizing habitat productivity and quality or re-examining harvest season structures).

## IV. Strategies for Coyote Management in North Carolina

There are many approaches to coyote management and a variety of available tools. Effective coyote management at the individual property scale requires that the coyote problem be identified, treatment options evaluated, and appropriate tool(s) applied to resolve the problem and prevent future problems from occurring. Therefore, communication is the Commission's most important tool; through it we inform landowners and citizens about coyotes and options for effective coyote problem management. The Commission uses a variety of methods to communicate to the public on the best approach, nonlethal or lethal, to address each individual circumstance. These include:

### Education and Outreach

As stated previously, public attitudes and awareness of coyotes and coyote management vary considerably across the state. Citizens dealing with coyote problems come from a wide variety of backgrounds and experience levels with wildlife, and many are unfamiliar with coyotes to begin with. Educating the public about coyote biology and behavior as well as management options is critical to preventing and managing coyote problems, as well as encouraging coexistence with the species. The Commission provides education and outreach related to coyotes through a variety of avenues.

**Technical Guidance:** Technical guidance, the transfer of technical knowledge from professional staff to citizens, is a critical component of the Commission's approach to all wildlife damage management, including coyote management. Staff from across the Commission are available to provide technical guidance, including district wildlife biologists and wildlife enforcement officers at the local level, and staff from the Private Lands and Surveys and Research Programs at the state level. Staff work with citizens to identify the nature of their coyote problems and advise on the most effective lethal and nonlethal tools to address the problem and prevent future concerns. Staff are available to citizens by phone and email, and site visits can be conducted if/when needed. District wildlife biologists and wildlife enforcement officers issue depredation permits when merited for damage management trapping of coyotes outside of the regulated trapping season. Contact information for district wildlife biologists is available on our website:

([ncwildlife.org/Portals/0/Hunting/Documents/WMDistrictBiologistContacts.pdf](http://ncwildlife.org/Portals/0/Hunting/Documents/WMDistrictBiologistContacts.pdf)).

**NC Wildlife Helpline:** In addition to the technical guidance provided by field staff, the Commission launched a call center for human-wildlife interactions known as the NC Wildlife Helpline (Helpline) in April 2017. The Helpline is staffed by trained wildlife biologists who provide technical guidance over the phone for a variety of wildlife concerns including questions about coyotes. Helpline staff provide information about coyote biology and behavior, recommend lethal and nonlethal management tools, and connect citizens to resources such as Wildlife Damage Control Agents and licensed trappers. The Helpline is available to the public Monday-Friday, from 8 a.m. to 5 p.m. toll-free by phone at 866-318-2401 or by email at [wildlifehelpline@ncwildlife.org](mailto:wildlifehelpline@ncwildlife.org).



The Commission developed a human-wildlife interaction database in 2015 to better track reported human-wildlife interactions. Staff from the Wildlife Management Division and the Helpline input data from public inquiries including the species involved, type of concern, and location of the problem. From January 2015 through September 2017, 15,351 interactions were recorded in the database, 5.5% of those calls (850) involved

coyotes. Calls regarding coyotes were related to coyotes suspected of causing damage or being perceived as nuisance (76%), observations of coyotes (19%), and reports of suspected sick or injured coyotes (6%). Data collected from the HWI database will be used to monitor the types of concerns/issues so that appropriate education and outreach efforts can be developed and targeted to the human-coyote interactions that are common in specific areas.

**Educational Materials:** The Commission has many resources available to the public related to preventing and resolving human-wildlife interactions, including coyotes and coyote management (Figure 7). These resources include:

- coyote species page on the Commission website with links to information about coyote biology, regulations, management, and other resources: [ncwildlife.org/coyote](http://ncwildlife.org/coyote),
- coyote species profile, which provides an overview of coyote biology,
- *Coexisting with Coyotes* flyer, which outlines common coyote questions and provides quick tips for preventing and addressing problems with coyotes,
- Coyote Biology and Natural History presentation, a slide presentation about coyote biology in NC, and
- *Hazards of Feeding Wildlife* flyer, which reviews the risks of intentional feeding of wildlife, including coyotes.

Commission staff continue to improve these materials, and develop additional resources including:

- a brochure outlining legal rights of landowners regarding coyotes
- a rack card and door hanger sign with coexisting messages
- materials specifically targeted for livestock producers

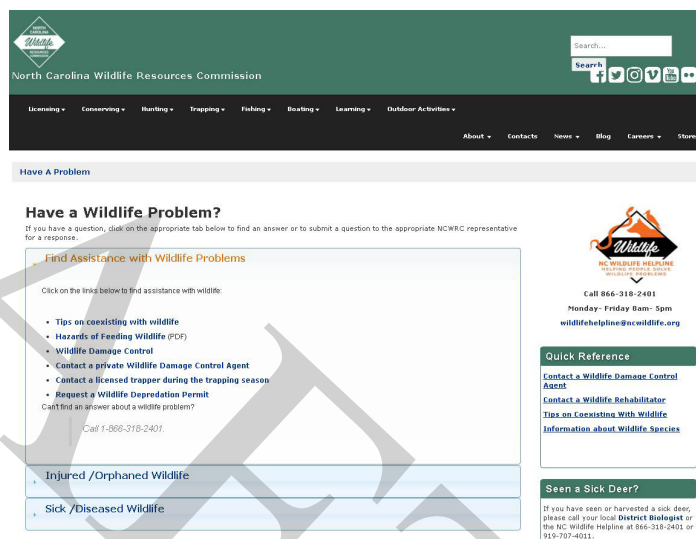


Figure 7. Resources are available on the Commission’s website to help the public with preventing or resolving wildlife conflicts ([www.ncwildlife.org/Have-A-Problem](http://www.ncwildlife.org/Have-A-Problem)).

In addition to publications and the Commission website, information about coyotes will be shared across other digital platforms (Facebook, Instagram, and Twitter), and videos related to coyotes and coyote management will be developed to provide another resource for citizens. Engaging partner organizations will ensure that resources are shared and reach a broader audience.

**Coyote Management Workshops and Programs:** In 2016, Commission staff developed a Coyote Management Workshop in conjunction with the US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services and the NC Cooperative Extension Service. The workshop is a three-hour program for citizens that provides an overview of coyote biology, non-lethal and lethal management tools, and includes a demonstration of trapping techniques. In the 2016 pilot year, four workshops were presented and all were extremely well received. Based on the success of the pilot program, 13 workshops were held in 2017, including at least one in each of the nine Commission districts. Workshop locations were targeted to areas where coyote problems and concerns were known to occur. An average of 30 participants attended each workshop, with over 400 participants across the State.

The Commission will continue to offer workshops, and will work to develop a second workshop focused on coyote management in urban and suburban settings, where some lethal tools may be prohibited based on local ordinance. Additionally, Commission staff will continue to provide individualized coyote programs to respond to the needs of specific audiences such as homeowner's associations, livestock associations, city councils, and civic organizations.

**Partnerships:** Disseminating information and management recommendations about coyotes can be a challenge in a large, diverse state such as North Carolina. Working with partners to ensure that information about coyotes reaches people across the state is critical. The Commission has worked successfully with several key partners to develop and disseminate educational materials and training regarding coyotes and coyote management, including the US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services and the North Carolina Cooperative Extension Service. The agency will continue to expand partnership efforts to include groups such as:

- State Agencies (e.g., State Parks, NC Museum of Natural Sciences, NC Zoo),
- Livestock Associations,
- Animal Control Organizations,
- Colleges and Universities,
- Non-profit Organizations focused on conservation/wildlife/agriculture, and
- Civic Organizations and Clubs.

Appropriately selected partner organizations will assist in reaching new audiences, refine messaging to fit various demographics, and expand the scope and scale of education and outreach efforts. Working with partners may also improve the public's willingness to engage in coyote management and increase credibility of the Commission's recommended coyote management actions.

### **Coyote Management Tools**

Tools for managing coyotes can be grouped into two broad categories: nonlethal tools and lethal tools.

**Nonlethal Tools:** Lethal removal of coyotes may be the least effective in many circumstances. A wide variety of nonlethal tools are available for the prevention and management of coyote problems. Other nonlethal tools often revolve around modifying human behaviors and practices to prevent or reduce the likelihood of human-coyote conflicts. For example, practices such as leashing dogs, keeping cats indoors, and securing small livestock in lighted corrals at night are modifications of human behavior that significantly reduce the chance for coyote depredations on those domestic animals. Nonlethal tools focus on addressing the root cause of coyote damage to prevent problems in the long run, and can be paired with lethal tools as needed to meet management objectives in the short run.

Setting realistic, achievable management objectives for coyotes is important, and landowners should focus on addressing clearly defined problems on their property. Managing coyotes often requires the use of several management tools, and the Commission recommends landowners take an integrated approach to coyote management, using both lethal and nonlethal tools as needed to meet objectives. Options and recommendations for the use of lethal and nonlethal tools come from a review of relevant literature and field experiences of Commission staff and partners within the context of common coyote problems and concerns.



**Lethal Tools:** Lethal tools can be used for take of coyotes by hunting or trapping, as well as for damage management and prevention. North Carolina allows coyotes to be killed through regulated hunting and trapping, and under depredation permits. In addition, private landowners may shoot coyotes in the act of depredating at any time. Lethal tools may need to be paired with appropriate nonlethal tools to ensure coyote damage management and prevention objectives are met.

Hunting, trapping, and take under depredation permits are the lethal tools regulated by the Commission. The number of coyotes taken is estimated using an annual hunter harvest survey, an annual trapping survey, and through reporting of take under depredation permits. Approximately 52,000 coyotes were harvested in the 2016-17 hunting and trapping seasons (Table 3).

**Hunting:** Coyotes are not classified as either game or furbearing animals in NC, but instead are classified as wild animals (i.e., nongame). The Commission has authority to set hunting seasons, bag limits, and manner of take, including the use of artificial lights for coyotes. Currently there is no closed season for hunting coyotes in North Carolina. A hunting license is required to hunt coyotes, except that landholders (owners and those leasing land for cultivation) are not required to purchase a license. Electronic calls may be used and coyotes may be hunted at night with artificial light, except on private lands in the counties of the Albemarle Peninsula (Beaufort, Dare, Hyde, Tyrrell and Washington). Coyote hunting in those counties is restricted to daytime only and requires a permit from the Commission.

Table 3. Statewide estimates of coyote depredation take, hunter harvest and trapper harvest from 2010-2011 season through 2016-2017 season.

Year	Depredation	Hunter Harvest		Trapper Harvest		
	Estimated Coyote Depredation Take <sup>1</sup>	Estimated # Coyote Hunters <sup>2</sup>	Estimated Coyote Harvest <sup>2</sup>	#Licensed Trappers <sup>3</sup>	Reported Coyote Harvest <sup>4</sup>	Estimated Coyote Harvest <sup>5</sup>
2010-11	66	32,388 (±2,322)	36,041 (±7,327)	2,186	2,843	4,141 (±627)
2011-12	101	25,770 (±1,816)	31,622 (±7,557)	2,640	3,458	5,393 (±774)
2012-13	91	26,059 (±1,777)	27,152 (±3,952)	3,125	3,858	5,419 (±917)
2013-14	203	34,477 (±2,342)	34,972 (±4,769)	3,696	3,975	6,951 (±1,141)
2014-15	78	35,254 (±2,525)	43,507 (±7,993)	3,547	4,196	7,611 (±1,605)
2015-16	112	31,321 (±2,306)	47,649 (±13,212)	3,077	4,177	7,645 (±1,451)
2016-17	Data not yet available	37,874 (±2,885)	45,568 (±12,366)	2,941	4,497	6,337 (±958)

<sup>1</sup> Based on mandatory reports from Wildlife Damage Control Agents and USDA-WS depredation take, and voluntary reports from WRC-issued permits.

<sup>2</sup> Estimates are from the voluntary Hunter Harvest Surveys of license holders. The number of hunters and harvest are estimates and based on number of hunters responding to survey. Hunters include both still hunters and houndsmen.

<sup>3</sup> Number of licensed trappers based on the sale of resident, county and non-resident trapping licenses during each trapping season.

<sup>4</sup> Coyote trapping harvest is based on number reported by licensed trappers responding to the annual voluntary trapper harvest.

<sup>5</sup> Trapper harvest estimates were calculated to account for non-respondents to survey.

To gain a better understanding of the hunter harvest of coyotes, the Commission added the species to its annual hunter harvest survey in the 2005-06 season. Survey results suggest an increasing trend for coyote harvest by hunters from 2005-06 through 2014-15, with harvest levels stabilizing the last three years (Figure 8). Estimates of take for this species have a large standard error so results must be interpreted with caution. In the 2016-2017 hunting season, NC hunters harvested an estimated 45,568 coyotes. Most coyote harvest is incidental to other types of hunting, such as deer hunting (Chitwood 2014). While we do not know how many NC hunters devote effort specifically to hunt coyotes (i.e., use predator calls or go night hunting), approximately 38,000 hunters who responded to our hunter harvest survey said that they either hunted coyotes or killed one or more coyotes (1.2 coyotes/hunter) during the 2016-17 hunting seasons. Hunter harvest take of coyotes is highest in the Piedmont region, followed by the Coastal Plain and Mountains (Figure 9, page 30). While regional harvest statistics demonstrate that coyote hunting occurs across the entire state, regional harvest levels should not be considered indicators of coyote abundance as they may be more related to land cover types, property ownership patterns, hunter densities, deer season timing and length, and human land use decisions.

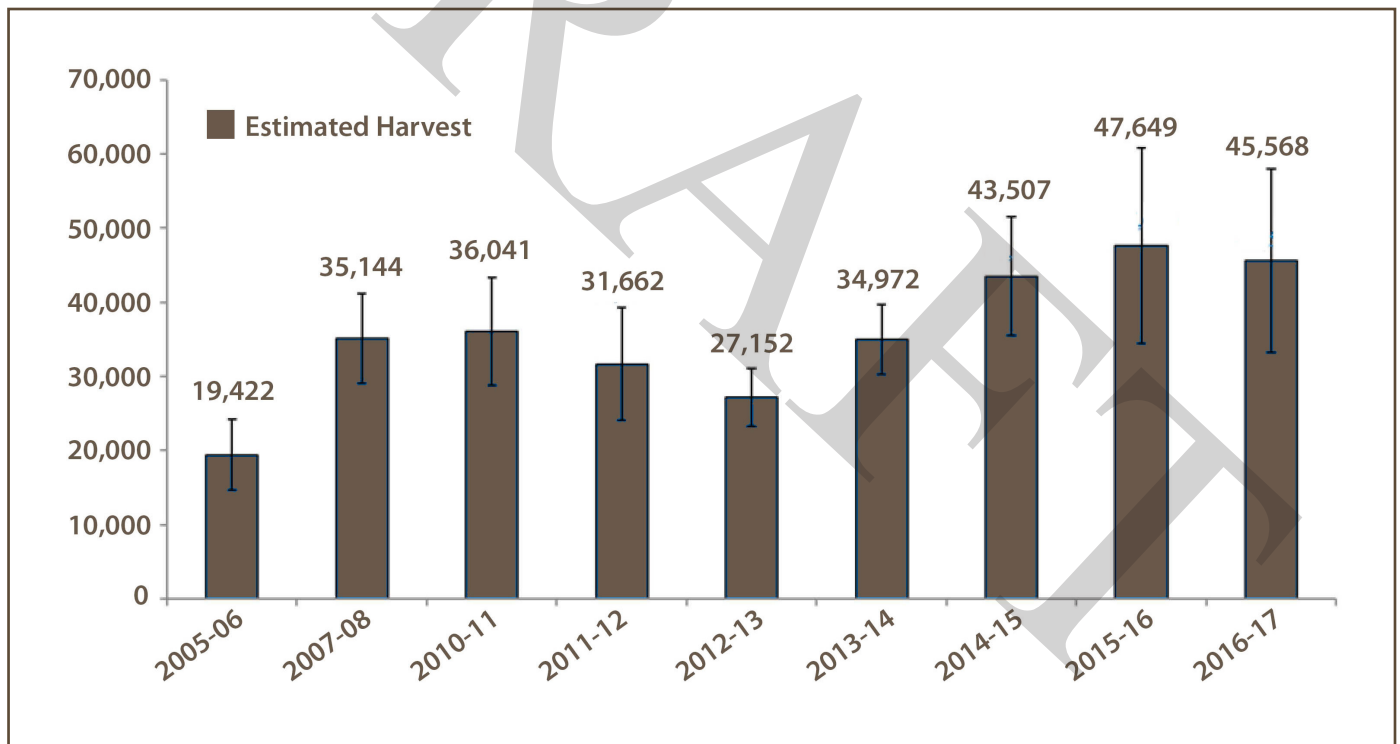


Figure 8. Estimated coyote harvest by hunters from 2005-06 through 2016-17 season. Note: No data for 2009

**Trapping:** Trapping during the regulated trapping season is an important proactive wildlife management tool. The Commission has the authority to set trapping seasons and bag limits on furbearer species and wild animals, including coyotes. However, legal trapping devices are specified by statute (NCGS § 113-291.6). An annual trapping license is required to trap coyotes, except that landholders (owners and those leasing land for cultivation) are not required to purchase an annual trapping license. Trapping coyotes is allowed during the Commission established trapping season and when any fox trapping season established by local law is open (Figure 10, page 30). The trapping season is established during a time of

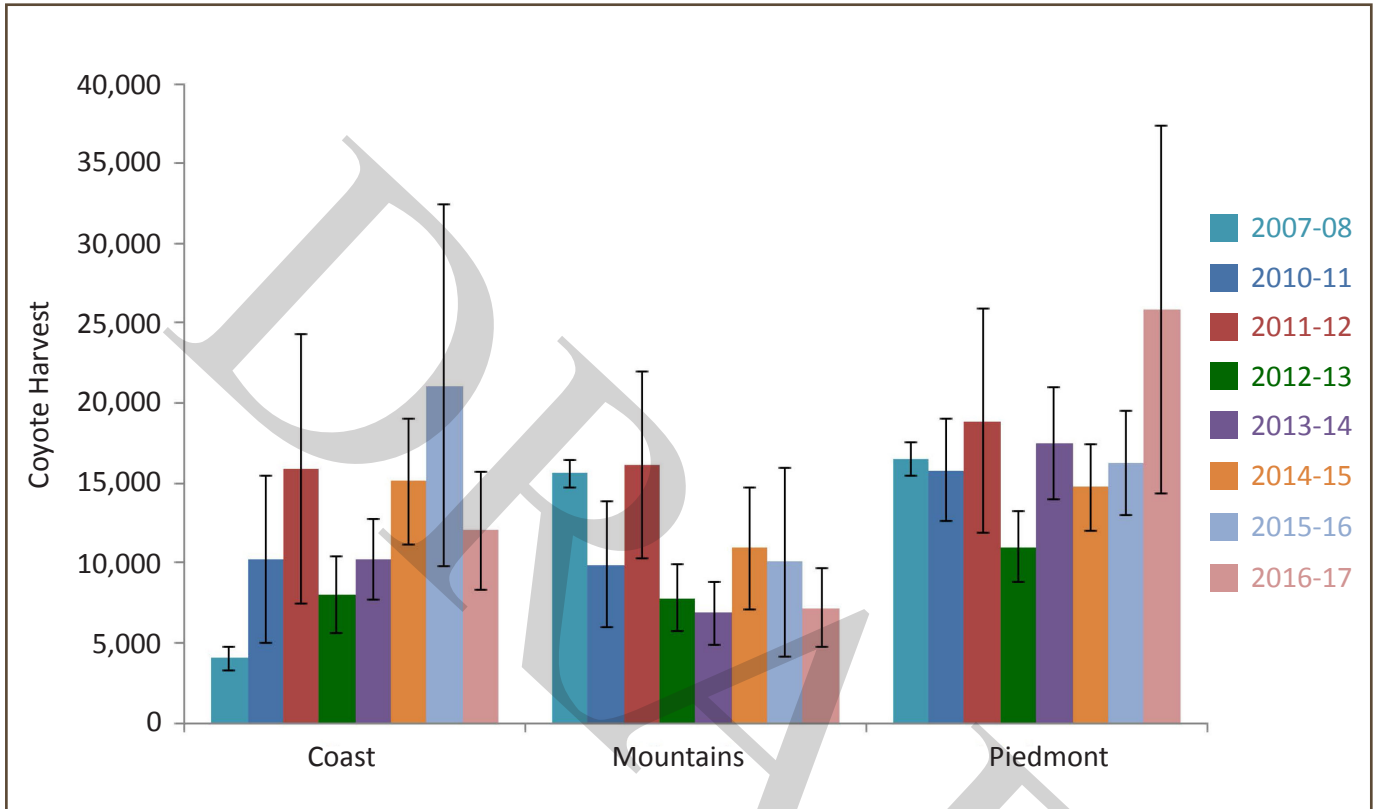


Figure 9. Estimated harvest of coyotes by hunters in each of the furbearer management regions from 2007 through 2017. Note: No data for 2009.

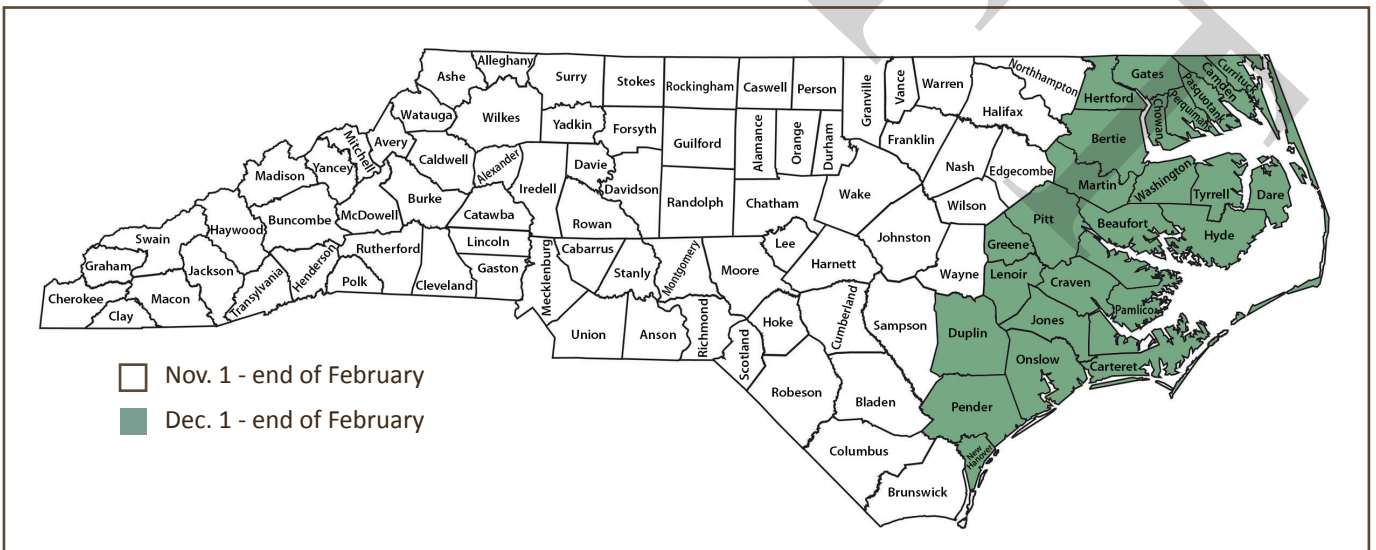


Figure 10. Regulated trapping seasons in North Carolina.

year when young wildlife is independent, temperatures do not cause distress or mortality for the animal while in the trap, and the fur is prime, thereby allowing sustainable utilization of the resource. Unlike the hunting season on coyotes, there is no year-round trapping season on coyotes. While a hunter can correctly identify his/her target before discharging his/her weapon, it is possible to capture non-targets (e.g., dogs, bobcats, foxes) while coyote trapping. Capture of non-targets

outside the established trapping season can negatively impact reproduction (e.g., the dependent young) and increase the risk of heat stress to non-target animals. Numerous stakeholders have opposed a year-round coyote trapping season due to animal welfare of non-targets. In addition to selling coyote fur, live coyotes taken by during the legal trapping seasons may be sold to Controlled Fox Hunting Preserves across the state, as established under NCGS § 113-273(g). It is illegal to breed or import coyotes into North Carolina (NCGS § 113-294(o)).

The foothold trap is the primary device used for trapping coyotes. The Association of Fish and Wildlife Agencies has completed extensive trap testing on many types of traps to evaluate them for humaneness, efficiency, selectivity, safety, and practicality (White et al. 2015). This program is known as Best Management Practices for Trapping, or BMPs. Results from the trap testing are used to make recommendations on traps that have been scientifically proven to be humane and efficient at trapping certain species. While the Commission does not have the authority to regulate trapping devices, trapping BMPs are promoted through the Commission website at [www.ncwildlife.org/bmp](http://www.ncwildlife.org/bmp).

In 2001-02, the Commission initiated a voluntary survey of all licensed trappers to determine the harvest of coyotes (Table 3, page 28). North Carolina trappers successfully trapped an estimated 6,337 coyotes during the 2016-17 trapping season (Figure 11). While harvest of furbearer species often mirrors pelt prices, coyote harvest has been steadily increasing since the 2002-03 season, likely due to both an increasing coyote population and an increasing interest in harvesting coyotes (Table 3, page 28). Coyote harvest levels in the Mountain Furbearer Management Region are lower than that of the Piedmont and Coastal Plain furbearer management regions (Figure 12, page 32). While regional harvest statistics demonstrate that coyote trapping effort occurs across the entire state, regional harvest levels should not be considered indicators of coyote abundance as they may be more related to land cover types, property ownership patterns, open fox trapping seasons, and human land use decisions.

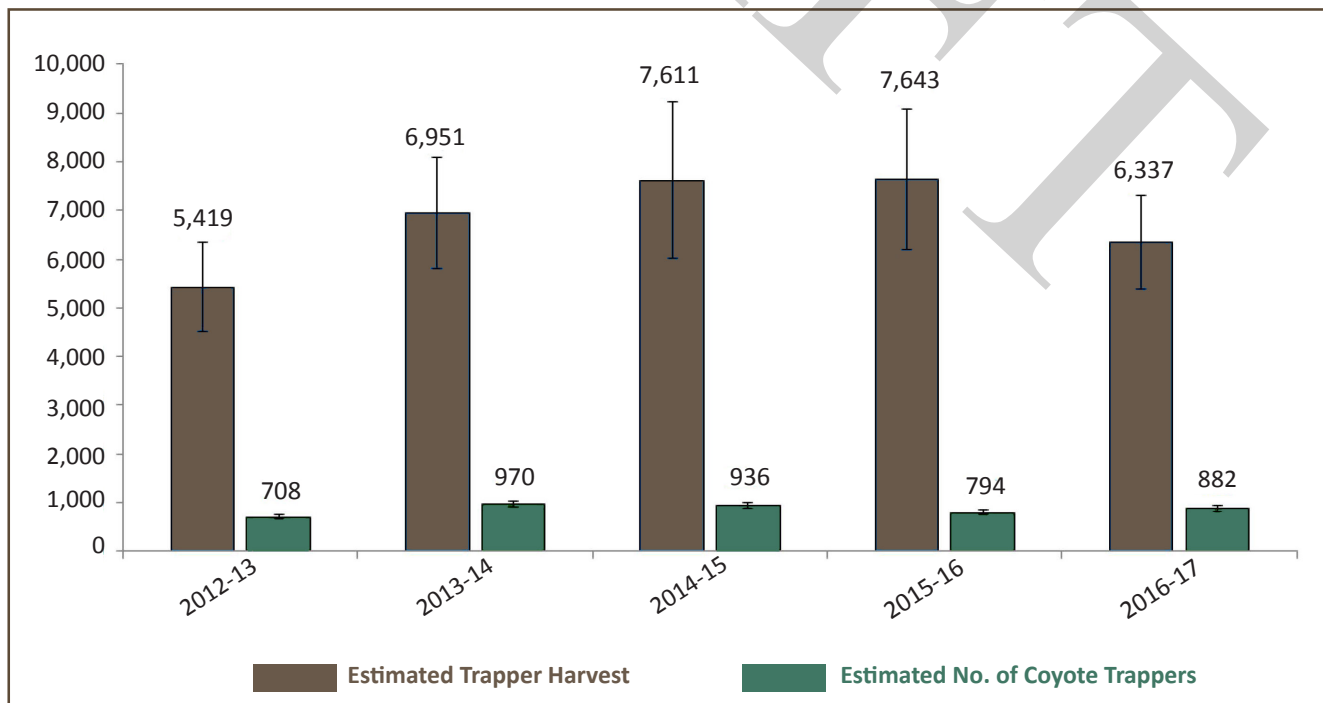


Figure 11. Estimated number of coyote trappers and estimated coyote harvest from 2012-13 trapping season through 2016-17 trapping season.

While the total number of coyotes taken by hunters (45,568 in 2016-17) in NC is greater than that taken by trappers, trappers took more coyotes per person (7.2 coyotes/trapper) than hunters (1.2 coyotes/hunter) (Figure 13, page 33). By allowing trapping on their property during open trapping seasons landowners can potentially prevent conflicts and possibly reduce costs of addressing conflicts since trappers can recoup their expenses (e.g., gas, equipment, time) by selling the fur of animals while it is prime, thus not charging for their services as they would under an out-of-season depredation permit.

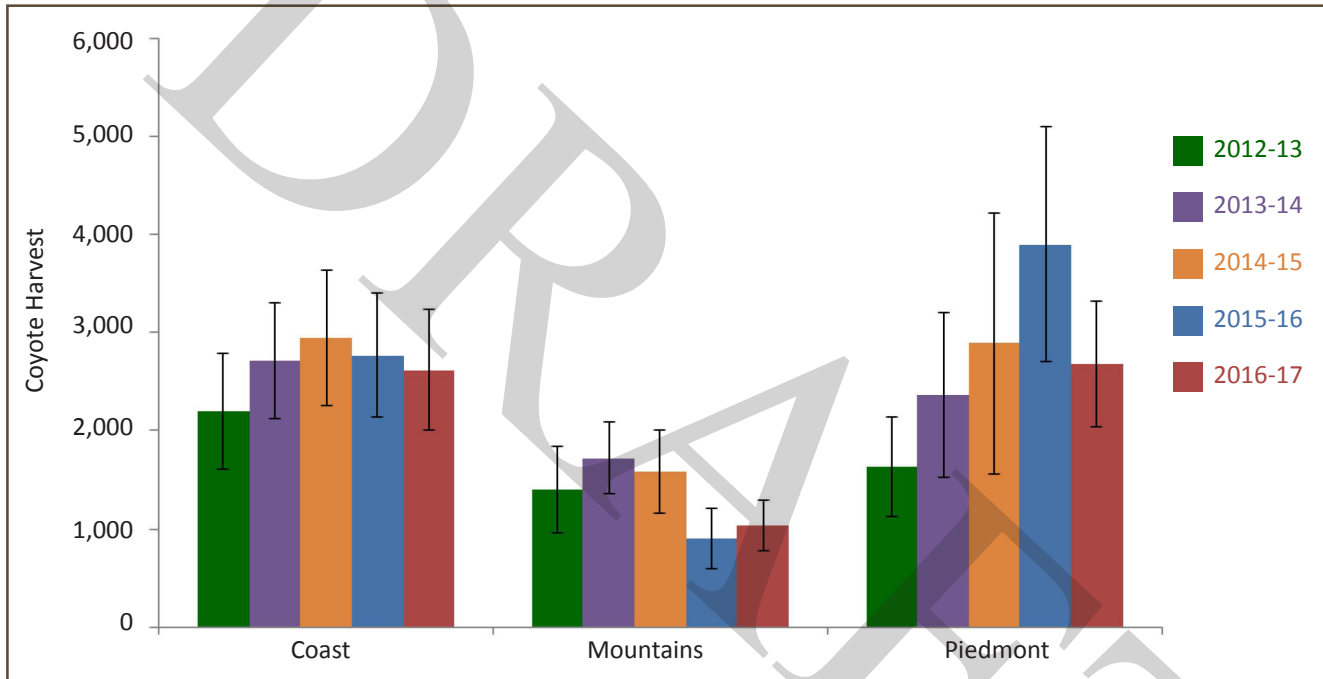


Figure 12. Estimated harvest of coyote by licensed trappers in each of the furbearer management regions from 2012-13 season through the 2016-17 season.

**Relationship between Coyote Trapping and Fox Trapping Seasons:** Similarities between foxes and coyotes result in an inability to separate the management of one species from the other. In June 2011, the NC General Assembly directed the Commission to study fox and coyote populations and to recommend management methods and controls designed to ensure statewide conservation of fox populations while managing adverse effects of coyote populations. In the report from this evaluation (Appendix E), we established a long-term goal for the Commission to improve the efficiency and effectiveness of coyote control measures by reducing regulatory barriers for our citizens while ensuring the sound conservation of fox populations.

Essentially the same techniques are used to trap coyotes and foxes. Therefore, trappers are reluctant to trap for coyotes in counties that do not allow fox trapping, because they must release all foxes rather than keeping them to sell. Harvest of coyotes by trappers is consistently lower in counties that do not have a fox trapping season (Table 4, page 34). For example, during the 2015-16 regulated trapping season, counties with fox trapping seasons (n=43) had a 61% higher harvest of coyotes than counties without a fox trapping season (n=57). We have observed a 94% to +3,000% increase in coyote harvest after a county has been opened to fox trapping (Table 5, page 35).

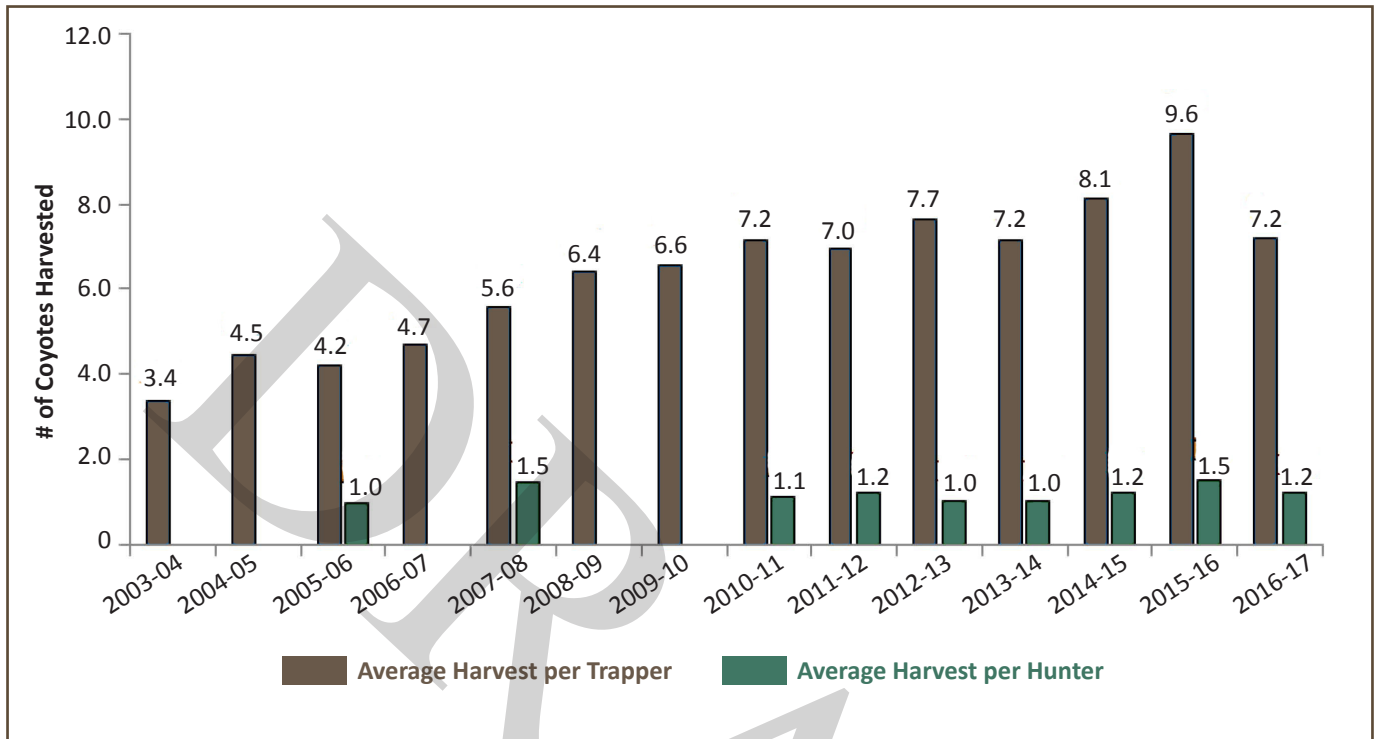


Figure 13. Average number of coyotes harvested by hunters and trappers from 2003 through 2017 in North Carolina. Note: No hunter data available for 2003-05, 2006-07, and 2008-10.

Currently, only the NC General Assembly has the authority to allow fox trapping in a county through passage of a session law, commonly referred to as “local law.” Red and gray foxes are currently classified in statute as game animals rather than both game and furbearers as are bobcat, opossum, and raccoon (NCGS § 113 291.4). Because trapping is not a legal manner of take for game species (NCGS §113 291.1), the Commission may not set regulations to allow foxes to be taken by trapping within the regulated trapping season.

Over the past 40 years, the NC General Assembly has established numerous session laws relating to both the trapping and hunting of foxes. Many of these laws apply only to a specific county, multiple counties, or parts of counties. The diversity of these local laws has resulted in 27 fox hunting seasons with weapons in 85 counties, and 23 fox trapping seasons in 43 counties. The resulting complicated matrix of fox hunting and trapping seasons leads to confusion for hunters and trappers regarding to what is and is not legal. The Commission produces and publishes an online document to assist hunters and trappers on this topic (Appendix F).

**Controlled Hunting Preserves:** A “Controlled fox and coyote hunting preserve” is defined by NCGS §113-273 (g) as an area enclosed with a dog-proof fence on which foxes and coyotes may be hunted with dogs only. There are two types: those operated for private use, which may be of any size, and those operated for commercial purposes, which must be not less than 500 acres or of such size as set by regulation of the Commission. An annual operator license must be purchased for \$50.00.

Table 4. Reported trapper harvest of coyotes by counties with and without a fox trapping season<sup>1</sup> in North Carolina and the percent difference in harvest between these counties, 2006-2016.

Year	Fox Trapping Season <sup>1</sup>	Coyote Harvest Per County	% Difference
2015-16	No (59 Counties)	47.1	+61%
	Yes (41 Counties)	75.6	
2014-15	No (59 Counties)	33.3	+55%
	Yes (41 Counties)	51.7	
2013-14	No (62 Counties)	30.0	+78%
	Yes (38 Counties)	53.5	
2012-13	No (62 Counties)	25.8	+116%
	Yes (38 Counties)	55.8	
2011-12	No (62 Counties)	24.7	+104%
	Yes (38 Counties)	50.3	
2010-11	No (64 Counties)	21.9	+79%
	Yes (36 Counties)	39.1	
2009-10	No (61 Counties)	14.4	+112%
	Yes (39 Counties)	30.5	
2008-09	No (62 Counties)	15.6	+31%
	Yes (38 Counties)	20.5	
2007-08	No (63 Counties)	11.5	+71%
	Yes (37 Counties)	19.7	
2006-07	No (67 Counties)	7.0	+54%
	Yes (34 Counties)	10.8	

<sup>1</sup> Fox trapping seasons are legislated through the North Carolina General Assembly.

The trapping and holding of live foxes and coyotes for sale to licensed controlled hunting preserves are allowed under NCGS §113-273 (g). There is little to no data about the numbers of coyotes moved into controlled fox hunting preserves or the source locations from which they are obtained (noted in Knowledge Gaps and Research Priorities). However, Commission biologists do not believe the number of coyotes removed from the landscape for the purpose of stocking hunting preserves has an impact on the numbers of animals in the statewide wild/free-ranging population. Currently, the value of a live coyote is higher than that of a pelt and certainly provides an economic incentive for trappers to pursue coyotes. It is illegal to import live coyotes into NC for release into controlled shooting preserves.

**Depredation Permits:** Under authority of NCGS §113 274(c)(1a), any landowner experiencing property damage may receive a depredation permit to allow coyotes to be trapped outside of the regulated trapping season. Depredation permits may be issued in circumstances where property damage or overabundance has been demonstrated. Livestock and poultry owners may receive a depredation permit upon request for coyotes only. When experienced trappers are used, depreda-

Table 5. Reported trapper harvest of coyotes prior to and after a fox trapping season was implemented or extended within a county by the North Carolina General Assembly, 2004-2014<sup>1</sup>.

County	Average Coyote Harvest Before Fox Season <sup>2</sup>	Average Coyote Harvest After Fox Season <sup>2</sup>	% Change
Alleghany	11	20	+94%
Alamance (year 2006 <sup>3</sup> )	6	17	+187%
Alamance (year 2008 <sup>4</sup> )	17	46	+168%
Ashe	3	24	+741%
Craven	12	44	+255%
Davidson	1	15	+2533%
Johnston	1	35	+3087%
Person	1	13	+167%
Surry	14	63	+348%

<sup>1</sup> No new counties with fox trapping seasons until the 2015-16 season.

<sup>2</sup> Same number of years used to compare average coyote harvest before and after a fox season was implemented (e.g., 2 years before and 2 years after). No coyote trapper harvest data was available by county prior to 2004-05.

<sup>3</sup> In 2006, Alamance County changed from a 22-day fox trapping season in January to an Oct. 1 through Jan. 31 fox trapping season.

<sup>4</sup> In 2008, Alamance County changed from the Oct. 1-Jan. 31 fox trapping season to a June 1 through Feb. 28 fox trapping season. The Commission does not recommend the trapping of native species during breeding and is not recommended for native species due to impacts on recruitment and animal welfare concerns of trapping in summer heat.

tion permits can allow the targeted removal of individual problem coyotes, while reducing the indiscriminate capture of non-target species (e.g., dogs, bobcats, foxes, raccoons). In addition, depredation permits can also allow the use of a Collarum™-type trap (a unique cable restraint trapping device) for trapping coyotes. If a permit holder uses a Collarum™-type trap, s/he must submit specific reports provided by the Commission.

Either the Commission or a Wildlife Damage Control Agent may issue depredation permits for damage, and the Commission can issue depredation permits for overabundance. Landowner reporting under depredation permits is only required for bear, deer, wild turkey, alligator, elk, Canada geese, coyotes taken with a Collarum™-type trap, and coyotes taken within the five-county Albemarle Peninsula; for all other species (including coyotes) reporting is voluntary. Wildlife Damage Control Agents are required to report numbers of all species taken as part of their services. While approximately 13%



of landowners do voluntarily report activity under the depredation permit, most of our known coyote take under depredation permits is from Wildlife Damage Control Agents. Depredation permits and coyote removals has varied over the past 15 years (Figure 14). On average, Wildlife Damage Control Agents take 1.5 coyotes per depredation permit issued to a landowner. Most of the depredation permits issued by Wildlife Damage Control Agents and the Commission are in the Piedmont region, where both human population densities and complaints are highest, followed by the Coastal Plain and Mountain regions (Figure 15, page 37).

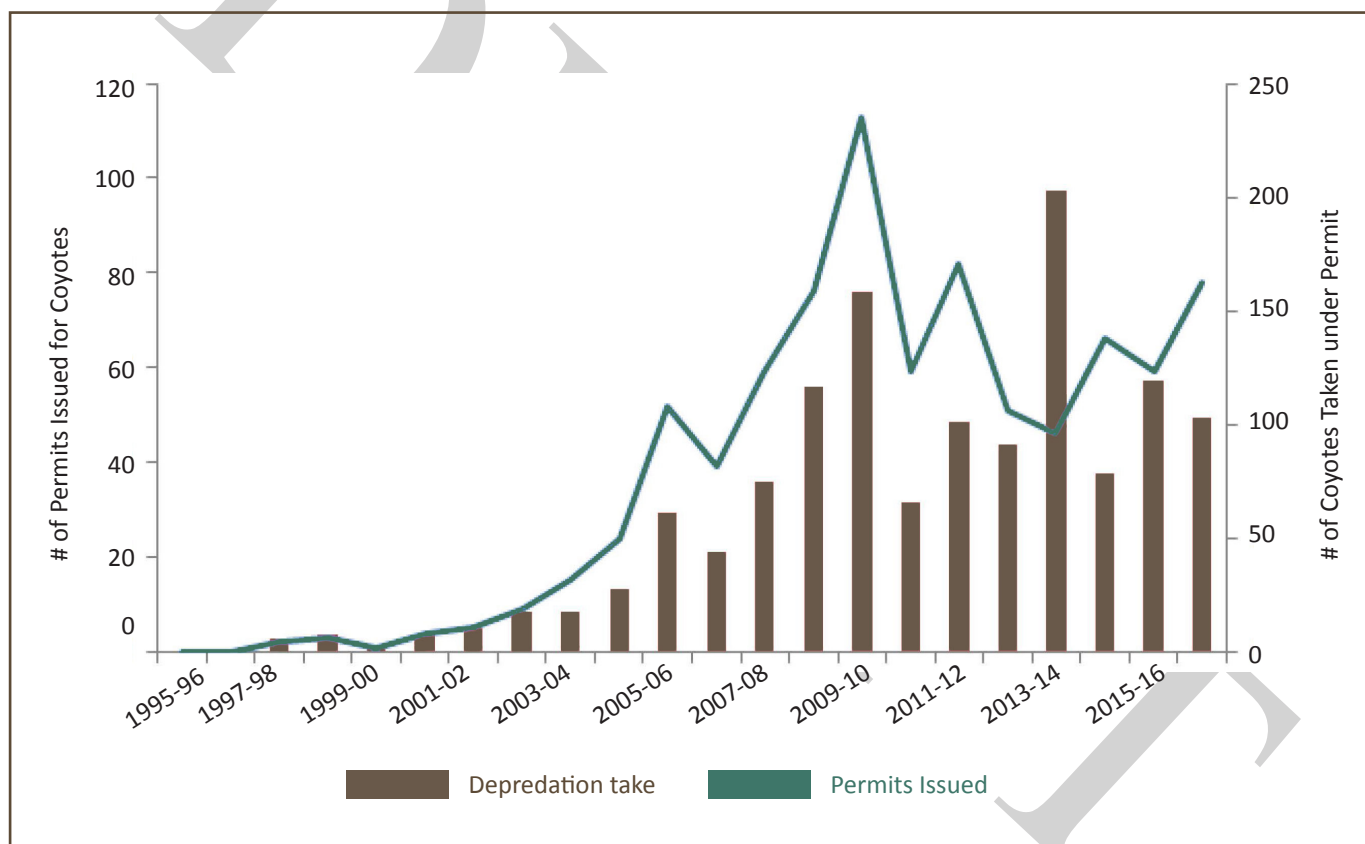


Figure 14. Number of depredation permits issued by WDCAs and the Commission, and the reported take of coyotes under those permits from 1995-96 through 2016-17. Note: Permits can allow for take of multiple animals.

**Wildlife Damage Control Agents:** Wildlife Damage Control Agents are individual citizens or employees of animal damage control companies that are trained and certified to issue Commission wildlife depredation permits to landowners with confirmed wildlife damage problems. Wildlife Damage Control Agents are only allowed to issue permits for certain species and cannot charge a fee for issuing a permit. However, they can charge for services they provide (e.g., site visit evaluation or capture and removal of the problem animal).

To assure that Wildlife Damage Control Agents are knowledgeable and competent, they are required to complete a Commission course that teaches the rules and regulations of the Wildlife Damage Control Agent program, and hunting, trapping, and deposition of wild animals. Information is also provided on euthanasia, safe handling of wildlife, professional-

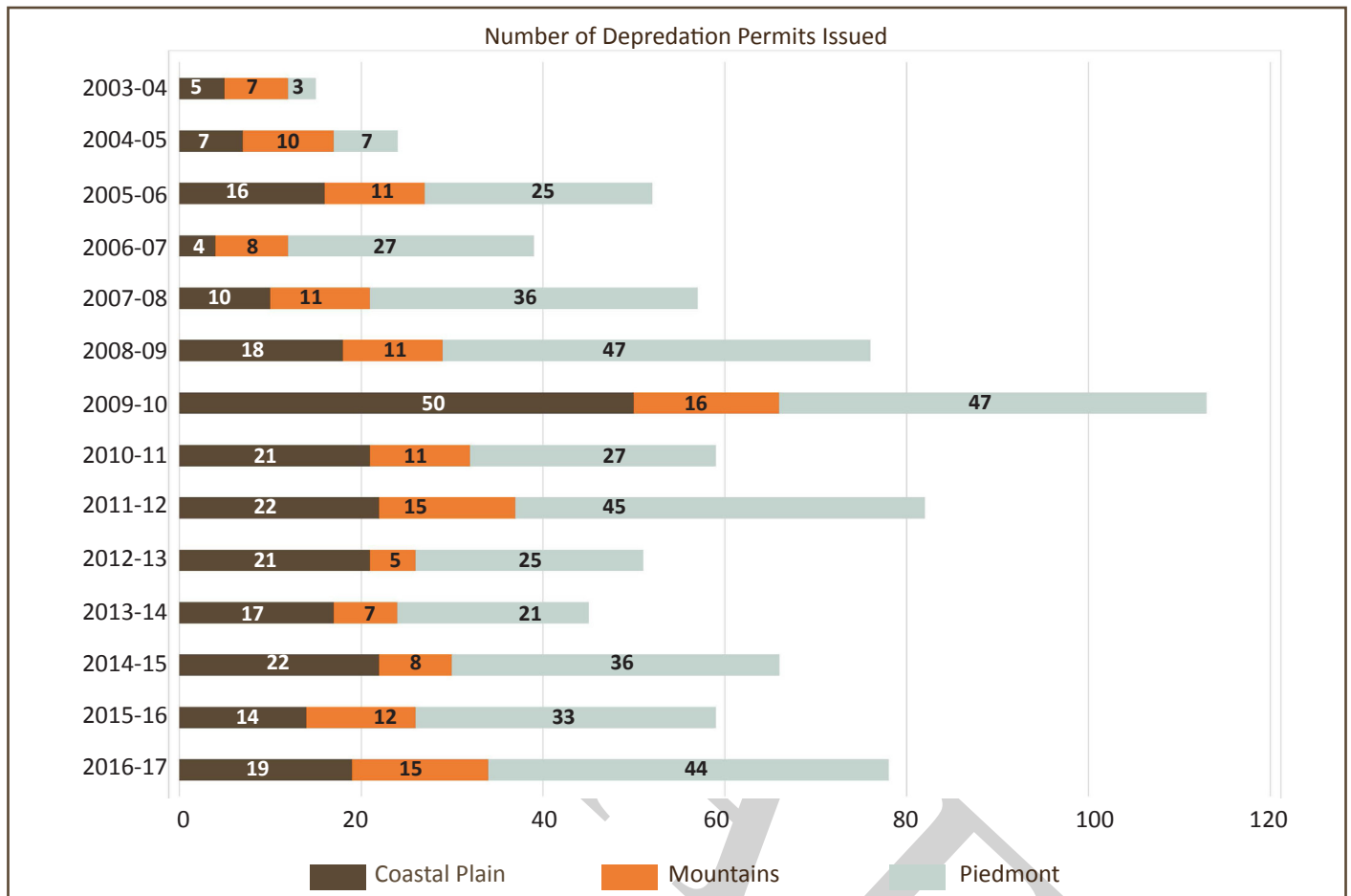


Figure 15. Number of depredation permits issued by Wildlife Damage Control Agents and the Commission in each of the fur-bearer management regions.

ism, wildlife diseases, trapping methods, and a variety of other information useful for Wildlife Damage Control Agents. Agents must pass a closed book certification examination and a background check prior to being certified.

Certification must be renewed every three years. To provide more options and increased professional development opportunities for recertifying Wildlife Damage Control Agents, an agent can now complete one of many training options during the 12 months prior to the expiration of their certification. These options include species-specific trapping workshops, including coyote trapping workshops offered by the North Carolina Trappers Association. The current list of options is available on our website: [www.ncwildlife.org/WDCA/Classes-and-Certifications](http://www.ncwildlife.org/WDCA/Classes-and-Certifications).

The public can locate a certified Wildlife Damage Control Agent in their county through a portal on the Commission website ([www.ncwildlife.org/Trapping/Wildlife-Damage-Control-Agent](http://www.ncwildlife.org/Trapping/Wildlife-Damage-Control-Agent)). There are currently 589 active Wildlife Damage Control Agents in North Carolina.

**Trapper Referral List:** The Commission annually compiles a list of licensed trappers who offer to assist the public during the trapping season (November through February) when they experience problems with certain wildlife species (<http://www.ncwildlife.org/Trapping/Contact-a-Licensed-Trapper>; Figure 16). Trappers will likely do it for free or at a very reduced cost, since they can recoup their expenses by selling the fur of the animal.

By resolving conflicts with wildlife during the trapping season, the trapper can utilize the animal as a valuable natural resource, because this is the time of year when an animal’s fur is prime. To become a listed trapper, licensed trappers must offer to be included in the list by completing the annual state trapper harvest survey which is sent to them at the end of the trapping season.

Currently, there are 1,214 licensed trappers that are willing to assist the public with coyote trapping listed on the Commission’s website portal. Trappers are available in 99 of 100 NC counties.

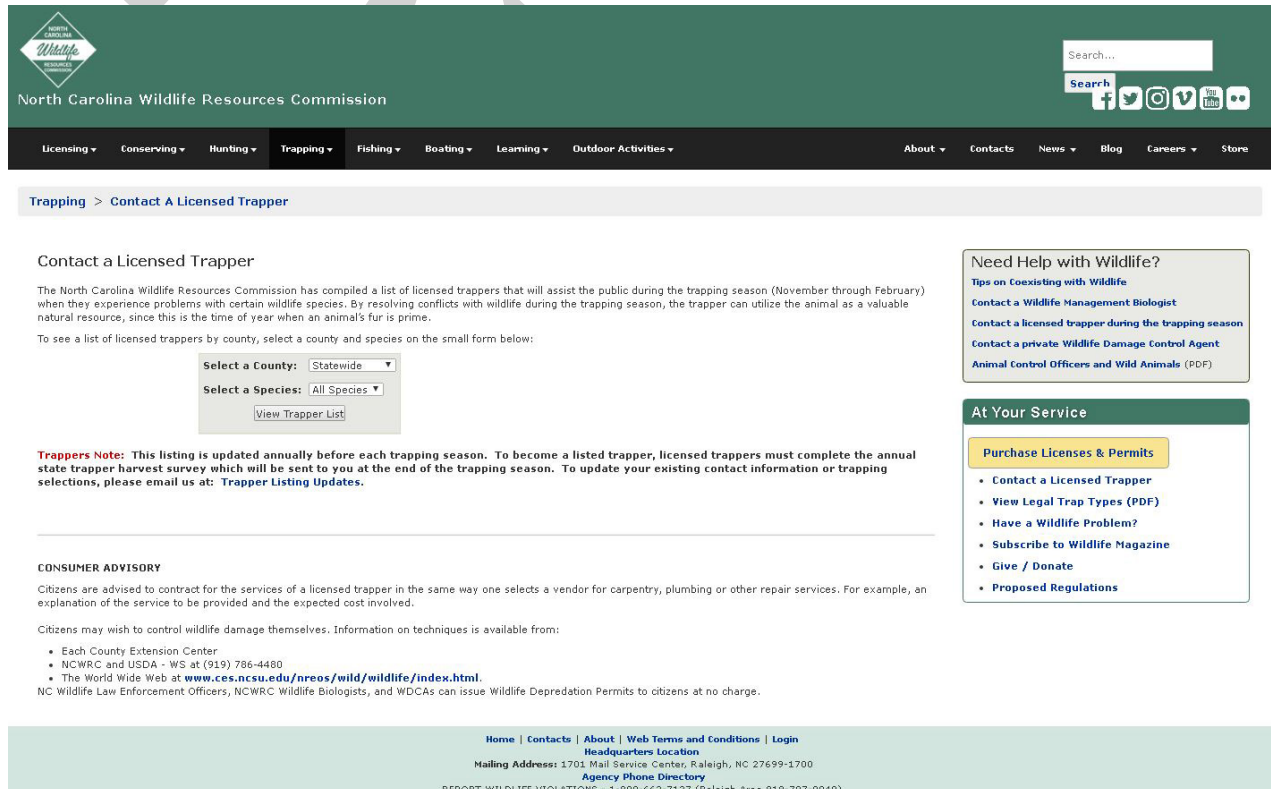


Figure 16. The web portal that allows the public to select their county and the species of interest in order to find a licensed trapper.

**Trapper Education:** The Commission, in cooperation with the North Carolina Trappers Association, offers basic trapper education courses through our Advanced Hunter Education Program. The current trapper education program consists of an online training program followed by a four-hour field day component. The Association of Fish and Wildlife Agencies trapper education manual is used for the course and was designed to assure that content taught to students was consistent among state agencies, despite differences in trapping regulations. This is a similar method used by state hunter education programs. While trapper education is not required in North Carolina, it is recommended for both novice and experienced trappers, and is required in many other states. The course covers skills, regulations, and the role of trapping in scientific wildlife management. It also teaches basic trapping techniques with a strong focus on the responsible treatment of animals, legal methods, safety, selectivity and ethical trapper behavior. The course was developed to 1) protect the health, safety, and welfare of people, wildlife, and domestic animals, 2) support wildlife conservation programs that sustain spe-

cies and ecosystems for the benefit of future generations, and 3) increase the benefits society currently receives from regulated trapping activities.

Other trapper educational opportunities are offered by the North Carolina Trappers Association that include species-specific trapping workshops, such as coyote and beaver. These workshops offer in-depth training and allow students to set traps and run a live trapline. In order to encourage Wildlife Damage Control Agents to become more proficient at targeting certain species, the Commission allows these workshops to qualify for recertification.



The current trapper education program consists of an online training program followed by a 4-hour field day component. (Photo: Colleen Olfenbuttel)

### **Coyote Management on the Albemarle Peninsula**

The counties of Dare, Tyrrell, Hyde, Beaufort and Washington are referred to as the Albemarle Peninsula (AP). This area is designated as the red wolf (*Canis rufus*) recovery area by the US Fish and Wildlife Service, and, consequently, regulations for coyotes on the AP differ from the rest of the State. A detailed overview of rules and rulemaking regarding canids on the AP can be found in Appendix H. Currently, lethal management options available in other areas of North Carolina are restricted on the AP. To take coyotes by hunting on private lands on the AP, a “Coyote Hunting Permit” from the Commission is required. Trapping coyotes during the regulated trapping season (December 1 through end of February in AP counties) is not restricted. As in other areas of North Carolina, a depredation permit is required for the taking of coyotes by traps outside the regulated trapping season. In the future, the Commission will continue to work with the USFWS to address regulation of coyotes on the AP.

***Albemarle Peninsula Coyote Hunting Permit:*** The Coyote Hunting permit is required in addition to a hunting license (if required). There is no closed season but hunting is restricted to the hours of one-half hour before sunrise until one-half hour after sunset. There is no bag limit on coyotes, and hunters may use electronic calls. Coyote hunting on public lands is prohibited, except coyotes may be taken on state-owned game lands by the holder of a Coyote Hunting permit and a Commission-issued permit for specific permitted hunt opportunities for coyotes. Permit holders must report the take of coyotes to the Commission within 24 hours of killing each individual coyote. Each report must include the date; time; location; whether a radio transmitter was present on the animal; and measurements of hind foot length and tail length taken from the carcass. Coyote hunting permits are valid for one calendar year and subject to renewal. Permit holders must submit their harvest reports to be eligible for permit renewal.

***Albemarle Peninsula Coyote Depredation Permits:*** Under a depredation permit, coyotes may only be taken from the hours of one-half hour before sunrise until one-half hour after sunset with legal weapons. Only trapping is authorized at night. All individuals exercising the authority granted by the coyote depredation permit shall carry a copy of the coyote depredation permit. If traps are used they must be labeled, as required by North Carolina statute, checked daily and any animals caught therein must be removed. Any coyote taken under a depredation permit on the AP must be reported to the

Commission within 24 hours. All non-target wildlife must be released immediately onsite; however, any red wolf that is captured must be released onsite unless the U.S. Fish and Wildlife Service authorizes otherwise. All coyotes euthanized must be disposed of in a sanitary manner. Each depredation permit has an expiration date or time after which the depredation permit is no longer valid.

## V. Recommended Statutory Changes

It is important to recognize that there are no statutory “silver bullets;” that is, statutory changes that will reduce the abundance of coyotes on the landscape. However, there are potentially statutory changes that could increase the harvest of coyotes.

### Regulation of Manner of Take

In general, traps and other methods of legal take in NC have been established in statute for over 30 years. As previously noted in the Plan, significant advancements in trapping techniques and equipment have occurred since that time. Giving the Commission authority to regulate all manner of take more flexibly, including trap types (e.g., footholds, snares, etc.), would enable the Commission to reduce complexity regarding legal take. Additionally, through the regulatory process, the Commission could more rapidly respond to advancements in equipment technology and address public needs with regard to taking coyotes. Finally, this change would allow the Commission to consider the use of equipment, traps and trapping systems that have been proven to be effective and humane.

Changes needed include:

1. Amend NCGS §113.291.1 and § 113.291.6 to give the Commission authority to regulate the use of all gear types used in hunting and trapping.

### Other Regulatory Considerations

Coyote management is complex and is made even more so with other canids (e.g., foxes) that have different statutory status (i.e., coyotes are wild animals while foxes are only game animals) on the landscape. While the Commission has authority to set seasons on coyotes, only the North Carolina General Assembly has authority to establish hunting and trapping seasons for foxes. As a result, fox hunting and trapping seasons vary substantially across our state (Appendix F). As outlined above, coyote harvest via trapping increases when trappers may harvest both coyotes and foxes. However, the Commission recognizes the complexity associated with the comprehensive management of canids in North Carolina and believes that constituent (e.g., hunters, trappers, and Controlled Fox Hunting Preserve operators) input is critical to ensure that all interested parties are at the table informing the best path to examine this issue.

Before implementation of regulatory or statutory change much of the subjectivity in the current dialogue must be removed by developing a structured decision-making process that includes formalized adaptive feedback mechanisms for all changes. To this end, the Commission will initiate a stakeholder engagement process through which stakeholders can collaborate on cooperative approaches to management of foxes and coyotes as recommended previously in the Commis-

sion's 2012 Fox and Coyote Study Report (Appendix E). Stakeholders will include relevant agencies, organizations, and constituents, including hunters, trappers, Controlled Fox Hunting Preserve operators, and non-profit organizations focused on conservation/wildlife/agriculture. This process will afford an opportunity to develop consensus on recommendations including regulatory and statutory approaches to improve the management of foxes and coyotes in North Carolina.

## **VI. Knowledge Gaps and Research Priorities**

The Commission currently collects harvest data from hunters and trappers through annual surveys as well as data related to conflicts between NC citizens and coyotes. However, to effectively address statewide coyote management issues there are other monitoring and research efforts needed.

### **Area Specific Management**

While coyotes are ubiquitous across the State, relative abundance varies, as does prey abundance and other food resources. With that in mind, we must determine if coyote management is best prescribed in zones, as opposed to statewide approaches and if so, how to optimize coyote management in zones with varying social and biological conditions. For example, issues regarding coyote management are very different between urban and rural areas. Understanding that management involves both lethal and non-lethal approaches, conflict resolution and management may differ due to local land use (e.g., agriculture, livestock, or recreation) and other factors. Continued use of social science to develop our understanding of the social dynamics of coyote management issues will be important in future management efforts.

Like our efforts to understand bears in the urban environment, research is needed to examine the ecology of coyotes in urban environments. Findings from such research can be adaptively integrated into coyote management approaches throughout the state.

### **Controlled Fox Hunting Preserves**

North Carolina currently allows the establishment and operation of controlled fox hunting preserves for the purpose of training hounds and/or hunting foxes. Licensed preserves consist of fenced areas that meet certain statutory and regulatory requirements. While originally established primarily for the purpose of running foxes, coyotes are now legal to possess within these facilities. Trappers in NC can legally sell live coyotes to licensed operators for release into these enclosures. There are scant data about the numbers of coyotes moved into controlled fox hunting preserves or the source locations from which they are obtained. The Commission has contracted with the Wildlife Management Institute to perform a comprehensive review of the regulations and impacts of Controlled Fox Hunting Preserves as a part of the Periodic Review of Rules.

### **Impacts on Other Wildlife Species**

Of concern to many is the impact coyotes may be having on game species populations, especially deer and wild turkey. To examine this issue research must examine both the predator and the prey populations. The Commission is currently designing deer and wild turkey research projects that will examine large-scale predation impacts and other issues. Parts of these statewide studies will address the influence of predation by coyotes and other predators (e.g., domestic dogs, bob-

cats, and bears). This research should help in making landscape-level habitat and game management recommendations versus using indiscriminate harvest, bounties, and incentive programs to attempt achieving game population objectives. Additionally, it will provide information specific to NC for development of site specific recommendations for managers/landowners regarding habitat and harvest management strategies.

### **Estimation and Modeling of Populations**

While not necessary to manage the species, requests for a population estimate or questions such as “how many coyotes do we have” are common. Currently, no viable method exists to estimate coyote populations either at a small or large scale. Development of a population estimation model that is sufficiently sensitive to be applicable across the state would be valuable to wildlife management. It is also imperative to continue our harvest surveys as these data will likely be a principle component of any potential model.

### **Disease Monitoring and Management**

Diseases can be important in managing coyotes and other species that may be susceptible to diseases they carry, so development of a health monitoring strategy is important. Because coyote distribution and ecology are inextricably linked to human ecology, we must develop approaches to monitoring coyote health as it relates to changes in human population and habitat modification.

### **Commission Research on the Albemarle Peninsula**

In 2013, the Commission and US Fish and Wildlife Service established a committee to oversee the collaborative management and conservation of sympatric canids (two or more species of wild canids existing in the same geographic location at the same time) on the Albemarle Peninsula. A US Fish and Wildlife Service and Commission joint memorandum documented detailed action items for this collaborative management, including specific research objectives. As part of the joint management agreement, the Commission is initiating a pilot project to begin addressing components of these research objectives.

As sympatric canids on the Albemarle Peninsula increase in number, monitoring their movements, particularly in relation to individuals of differing ancestry, could provide important data to Commission and US Fish and Wildlife Service staff for science-based local and landscape-level decisions about sympatric canid populations and conflict management. Collection of finer temporal scale location data would help to manage interactions of sympatric canids with humans, as well as to support development of dynamic stochastic population models.

Goals for this research include:

1. Using GPS collar and proximity sensor technology to test performance under various conditions and evaluate the frequency and accuracy of the scheduled fix rates.
2. Using fine scale GPS data collection for investigating annual and seasonal spatial dynamics of sympatric canids: home range and core area sizes, amount of overlap in home range and core areas, movement pathways and daily activity patterns, and cover type selection and preference.

3. Using fine scale GPS data collection for investigating the number and age structure of offspring for family groups of collared sympatric canids.
4. Using fine scale GPS data collection for investigating sources of mortality for sympatric canids.
5. Using fine scale GPS data collection for preventing and mitigating canid conflicts with landowners.
6. Determining genetic profiles of sympatric canids through DNA identification of all captured individuals, parentage, and presence of hybridization.

## **VII. New and Expanded Strategies**

Numerous strategies and efforts are currently employed in NC to address coyote issues and concerns, but opportunities for new efforts exist. Developing new strategies and expanding some existing ones may enhance efforts at proactively addressing many current and future coyote issues and provide greater public service to the citizens of the State.

### **Increase Promotion of the Trapper Referral Program**

There are currently 1,214 licensed trappers that have provided their contact information to the public to assist in trapping coyotes during the regulated trapping season. However, public and private landowners are often unaware of this referral program. Improvement of outreach and marketing efforts of these, often free, trapping services is needed to make them more accessible to the public.

### **Create a Coyote Hunter Referral Program**

While trapping coyotes is an efficient tool for removing coyotes, hunting can be another tool. In particular, coyote hunters specifically target coyotes using various techniques and equipment not used by average hunters. Connecting coyote hunters with landowners would provide assistance for landowners, while increasing hunting access opportunities for coyote hunters.

### **Develop New Strategies that Target Specific Animals Causing Problems**

Work with constituent groups such as the North Carolina Trappers Association, Wildlife Damage Control Agents and others to educate the public about the habits of predators and successful hunting and trapping techniques, developing skills-based training to teach successful techniques, and social-media driven outreach to link persons with predator problems to those persons willing to assist in removing targeted individuals or species on targeted landscapes.

### **Enhance Educational Materials Regarding Coyote Management**

Substantial information exists regarding coyotes and coyote management; however certain actions are needed to improve content and delivery of that information. Efforts to improve, expand, and unify the message include:

- Distribute and/or make readily available all current coyote management and regulation educational materials produced by the Commission.
- Develop a brochure that clearly outlines landowner's legal rights (including use of lethal tools) to address coyotes on their property.



- Create recommendations and outreach materials to guide the public on when coyote removal is appropriate and effective based on the objectives of the property owner.
- Develop a new rack card and door hanger reviewing basics of preventing and addressing coyote problems for use in communities where coyote concerns/problems are occurring.
- Create materials that have recommendations on how landowners can increase wildlife populations on their properties.
- Ensure all guidance for trapping of coyotes to Wildlife Damage Control Agents, licensed trappers, depredation permit holders, and landowners promotes trapping Best Management Practices.

### **Delivery Methods to Increase Public Knowledge and Awareness**

Getting accurate information to those who need it remains a challenge. Action items to maximize delivery of information to increase public knowledge and awareness include:

- Expand the coyote management workshop series to target smaller geographic and demographic areas of the State.
- Develop a standard coyote management presentation and train Commission staff across divisions.
- Improve the Commission website and incorporate coyote management messaging into Commission social media efforts.
- Develop a short-form video series with topics such as coyote biology, coyote trapping, coyote hunting, and preventing problems with coyotes and share with partners.
- Promote proactive stories about coyote management tools to the media through press releases and relationship building with local media outlets.
- Work with the Commission's Hunter Education Program to develop educational resources about coyotes for certified volunteer instructors and for hunters.
- Work with NC Cooperative Extension to develop and share resources and provide training to their staff as needed to maximize outreach efforts to the public.
- Promote the local NC Cooperative Extension offices as hubs for local citizens to obtain information specifically related to coyote biology and management, and connect the citizens with appropriate professionals to address their needs.

### **Distribution and Availability of Materials to the Public**

Expanding understanding and awareness of coyotes and successfully addressing coyote issues at appropriate scales requires a partnership approach between the Commission and a wide range of other governmental and non-governmental entities. Each partner is closely connected to a unique group of the State's citizenry and each group often has different specific concerns about coyotes that are most important to them (i.e., cattle owners vs. urban house cat owners). Additionally, these partners have an established relationship and credibility with their constituency. Developing or intensifying relationships with partners will both increase the delivery of accurate and consistent information and maximize its acceptance and use by the public.

Examples of organizations where partnerships currently exist, can be enhanced, or should be developed include but are not limited to:

- NC Cooperative Extension,
- Natural Resources Conservation Service,
- NC Soil and Water Conservation Districts,

- State and County Cattlemen’s Associations,
- NC Farm Bureau,
- Non-profit Organizations focused on conservation/wildlife/agriculture,
- NC Sheep Producers Association,
- NC Trappers Association,
- NC Predator Hunters Association,
- NC Animal and Rabies Control Association,
- NC Wildlife Damage Control Agents, and
- US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services.

### **Continue and Expand Surveys of Citizens**

The Commission should continue to survey the public to understand how education and outreach efforts may influence behaviors, prevent/address coyote problems, and promote tolerance and coexistence with coyotes.

## Literature Cited

- Adams, M. 2014. Evaluating the role of citizen science in the context of human-wildlife conflict management. Thesis, Colorado State University, Fort Collins, Colorado. USA.
- Albers, G. 2012. Coyote diets in West Virginia. Thesis, West Virginia University, Morgantown, USA.
- Allen, C. R., S. Demarais, and R. S. Lutz. 1995. Red imported fire ants impacts on northern bobwhite populations. *Ecological Applications* 5:632-638.
- Andres, B., S. Brown, R. Clay, I. Davidson, et al. 2015. Atlantic Flyway Shorebird Initiative – a business plan. Steering Committee, Atlantic Flyway Shorebird Initiative. ([www.atlanticflywayshorebirds.org](http://www.atlanticflywayshorebirds.org))
- Baker, R. O. 2007. A review of successful urban coyote management programs implemented to prevent or reduce attacks on human and pets in Southern California. *Proceedings of the 12th Wildlife Damage Management Conference* 12:382-392.
- Ballard, W. 2011. Predator-prey relationships. Pp. 251-286, In D.G. Hewitt (Ed.). *Biology and Management of White-tailed Deer*. CRC Press, Boca Raton, FL.
- Baker, R. O., and R. M. Timm. 2017. Coyote attacks on humans, 1970-2015: implications for reducing the risks. *Human-Wildlife Interactions* 11(2):120-132.
- Bartel, R. A. and M. W. Brunson. 2003. Effects of Utah's coyote bounty program on harvester behavior. *Wildlife Society Bulletin* 31:736-743.
- Bennett, A. 2017. State Farm: North Carolina ranks 14 for dog bites. *The News and Observer*. 10 April 2017.
- Bennitt, R. 1948. The coyote bounty system in Missouri, 1936-1947. *Transactions of the North American Wildlife Conference* 13:314-322.
- Bonnell, M. A., and S. W. Breck. 2017. Using resident-based hazing programs to reduce human-coyote conflicts in urban environments. *Human-Wildlife Interactions* 11(2):146-155.
- Breck, S. W., S. A. Poessel, and M. A. Bonnell. 2017. Evaluating lethal and nonlethal management options for urban coyotes. *Human-Wildlife Interactions* 11(2):133-145.
- Brown, J. L. 2007. The influence of coyotes on an urban Canada Goose population in the Chicago metropolitan area. Thesis, Ohio State University, Columbus, USA.
- Burger Jr., L. W., T. V. Dailey, E. W. Kurzejeski, and M. R. Ryan. 1995. Survival and cause-specific mortality of northern bobwhite in Missouri. *Journal of Wildlife Management* 59(2):401-410.
- Carbyn, L. N. 1989. Coyote attacks on children in western North America. *Wildlife Society Bulletin* 17(4):444-446.
- Cherry, M. J., K. L. Turner, M. B. Howze, B. S. Cohen, L. M. Conner, and R. J. Warren. 2016. Coyote diet in a longleaf pine ecosystem. *Wildlife Biology* 22: 64-70.
- Chitwood, M. C. 2014. White-tailed deer in the presence of a novel predator. Dissertation, North Carolina State University, Raleigh, USA.
- Chitwood, M. C., M. A. Lashley, C. E. Moorman, and C. S. DePerno. 2014. Confirmation of coyote predation on adult female white-tailed deer in the southeastern United States. *Southeastern Naturalist* 13(3):30-32.
- Chitwood, M. C., M. A. Lashley, C. E. Moorman, and C. S. DePerno. 2014b. Vocalization observed in starving white-tailed deer neonates. *Southeastern Naturalist* 13:N6-N8.
- Chitwood, M.C., M. A. Lashley, J. C. Kilgo, K. H. Pollock, C.E. Moorman, and C.S. Deperno. 2015. Do biological and bedsites characteristics influence survival of neonatal white-tailed deer? *PLoS One* 10(3): e0119070.

- Chitwood, M. C., M. A. Lashley, J. C. Kilgo, C. E. Moorman, and C. S. DePerno. 2015b. White-tailed deer population dynamics and adult female survival in the presence of a novel predator.
- Conner, L.M., and G. Morris. 2015. Impacts of mesopredator control on conservation of mesopredators and their prey. *PLoS One* 10(9):e0137169.
- Dellinger J. A., B. L. Ortman, T. D. Steury, J. Bohling, and L. P. Waits. 2011. Food habits of red wolves during pup-rearing season. *Southeastern Naturalist* 10: 731-740.
- DeYoung, C. A. 2011. Population dynamics. Pp. 147-180, in D. G. Hewitt, editor. *Biology and Management of White-tailed Deer*. CRC Press, Boca Raton, FL, USA.
- DeYoung, R. W., and K. V. Miller. 2011. White-tailed deer behavior. Pp. 311–351, in D.G. Hewitt, editor. *Biology and management of white-tailed deer*. CRC Press, Boca Raton, FL, USA.
- Drake, M. D. 2016. Human perceptions of coyotes in urban North Carolina. Thesis, North Carolina State University, Raleigh, USA.
- Drake, M. D., M. Gyovai, N. Peterson, C. Moorman, C. DePerno, and C. Olfenbuttel. 2017. Human dimensions of coyote management in human-dominated environments. Final Report under Cooperative Agreement WM-0284. North Carolina State University, Raleigh, USA.
- Ericsson, G., and T. A. Heberlein. 2003. Attitudes of hunters, locals, and the general public in Sweden now that wolves are back. *Biological Conservation*. 111(2):149-159.
- Fies, M. L., and K. M. Puckett. 2000. Depredation patterns of northern bobwhite nest predators in Virginia. *Proceedings of the National Quail Symposium* 4:96–102.
- Gehrt, S. D., E. C. Wilson, J. L. Brown, and C. Anchor. 2013. Population ecology of free-roaming cats and interference competition by coyotes in urban parks. *PLoS ONE* 8(9):e75718.
- Gerstell, R. 1941. The advisability of paying bounties for the killing of predators. *Transactions of the North American Wildlife Conference* 6:278-282.
- Gese, E. M., S. P. Keenan, and A. M. Kitchen. 2005. Lines of defense: coping with predators in the Rocky Mountain region. Utah Agricultural Experiment Station, Utah State University, Logan, USA.
- Green, J.S., Henderson, F.R. and Collinge, M.D. 1994. Coyotes. Pages C51–76 in S.E. Hygnstrom, R. M. Timm and G. E. Larson, editors. *Prevention and control of wildlife damage*. University of Nebraska Cooperative Extension Service, Lincoln, USA.
- Grubbs, S. E., and P. R. Krausman. 2008. Observations of coyote-cat interactions. *The Journal of Wildlife Management* 73(5):683-685.
- Gulsby, W. D., C. H. Killmaster, J. W. Bowers, J. D. Kelly, B. N. Sacks, M. J. Statham, and K. V. Miller. 2015. White-tailed deer fawn recruitment before and after experimental coyote removals in central Georgia. *Wildlife Society Bulletin* 39(2):248-255.
- Gulsby, W. D., J. C. Kilgo, M. Vukovich, and J. A. Martin. 2017. Landscape heterogeneity reduces coyote predation on white-tailed deer fawns. *The Journal of Wildlife Management* 81(4):601–609.
- Guynn, D. C., Jr., J. R. Sweeney, and R. J. Hamilton. 1986. Adult sex ratio and conception dates in a South Carolina deer herd. *Annual Meeting of the Southeastern Deer Study Group* 9:13.
- Henke, S. E. 2002. Coyotes: friend or foe of northern bobwhite in southern Texas. *Proceedings of the National Quail Symposium* 5:57-60.
- Henke, S. E., and F. C. Bryant. 1999. Effect of coyote removal on the faunal community in western Texas. *Journal of Wildlife Management* 63:1066–1081.

- Hernandez, F., D. Rollins, and R. Cantu. 1997. Evaluating evidence of identify ground-net predators in west Texas. *Wildlife Society Bulletin*. 25:826-831.
- Hill, E. P., P. Sumner, and J. B. Wooding. 1987. Human influences on range expansion of coyotes in the Southeast. *Wildlife Society Bulletin* 15(4):521–524.
- Hinton, J. W., M. J. Chamberlain, and D. R. Rabon. 2013. Red wolf (*Canis rufus*) recovery: a review with suggestions for future research. *Animals* 3: 722-744.
- Hixon, M. A., S. W. Pacala, and S. A. Sandin. 2002. Population regulation: historical context and contemporary challenges of open vs. closed systems. *Ecology* 83(6):7490-1508.
- Howell, R. G. 1982. The urban coyote problem in Los Angeles county. *Vertebrate Pest Conference* 10:21-23.
- Hubbard, M. W., D. L. Garner, and E. E. Klaas. 1999. Wild turkey poult survival in southcentral Iowa. *Journal of Wildlife Management* 63(1):199–203.
- Kartchner, K. C. 1941. Desirability for control of predators in wildlife management as experienced in Arizona. *Transactions of the North American Wildlife Conference* 6:273-277.
- Kilgo, J. C., H. S. Ray, C. Ruth, and K. V. Miller. 2010. Can coyotes affect deer populations in southeastern North America. *Journal of Wildlife Management* 74:929–933.
- Kilgo, J. C., H. S. Ray, M. Vukovich, M. J. Goode, and C. Ruth. 2012. Predation by coyotes on white-tailed deer neonates in South Carolina. *Journal of Wildlife Management* 76(7):1420-1430.
- Kilgo, J. C., M. Vukovich, H. S. Ray, C. E. Shaw, and C. Ruth. 2014. Coyote removal, understory cover, and survival of white-tailed deer neonates. *Journal of Wildlife Management* 78(7):1261–1271.
- Kitchen, A. M., E. M. Gese, and E. R. Schauster. 2000. Changes in coyote activity patterns due to reduced exposure to human persecution. *Canadian Journal of Zoology* 78(5):853-857.
- Knowlton, F. F., and E. M. Gese. 1995. Coyote population processes revisited. Pages 1–6 in D. Rolling, C. Richardson, T. Blankenship, K. Canon, and S. Henke, editors. *Coyotes in the Southwest: a compendium of our knowledge*. Texas Park and Wildlife Department, Austin, USA.
- Kosack, J. 1995. *The Pennsylvania Game Commission 1895-1995*. Pennsylvania Game Commission, Harrisburg, USA.
- Leopold, A. 1933. *Game management*. Charles Scribner’s Sons, New York, New York, USA.
- Mastro, L. 2011. Life history and ecology of coyotes in the Mid-Atlantic states: A summary of the scientific literature. *Southeastern Naturalist* 10(4):721–730.
- McVey, J. M., D. T. Cobb, R. A. Powell, M. K. Stoskopf, J. H. Bohling, L. P. Waits, and C. E. Moorman. 2013. *Journal of Mammalogy* 94: 1141-1148.
- Mezquida, E. T., S. J. Slater, and C. W. Benkman. 2006. Sage-Grouse and indirect interactions and potential implications of coyote control on Sage-Grouse populations. *The Condor* 108(4):747–759.
- Miller, D. A., L. W. Burger, B. D. Leopold, and G. A. Hurst. 1998. Survival and cause-specific mortality of wild turkey hens in Central Mississippi. *Journal of Wildlife Management* 62(1):306–313.
- Mitchell, B. R., M. M. Jaeger, and R. H. Barrett. 2004. Coyote depredation management: current methods and research needs. *Wildlife Society Bulletin* 32(4):1209-1218.
- Moore, G. C., and G. R. Parker. 1992. Colonization by the eastern coyote (*Canis latrans*). Pages 23–37 in A. Boer, editor. *Ecology and Management of the Eastern Coyote*. Wildlife Research Unit, University of New Brunswick, Fredericton, Canada.
- Morin, D. J. 2015. Spatial ecology and demography of eastern coyotes (*Canis latrans*) in western Virginia. Dissertation, Virginia Tech University, Blacksburg, USA.

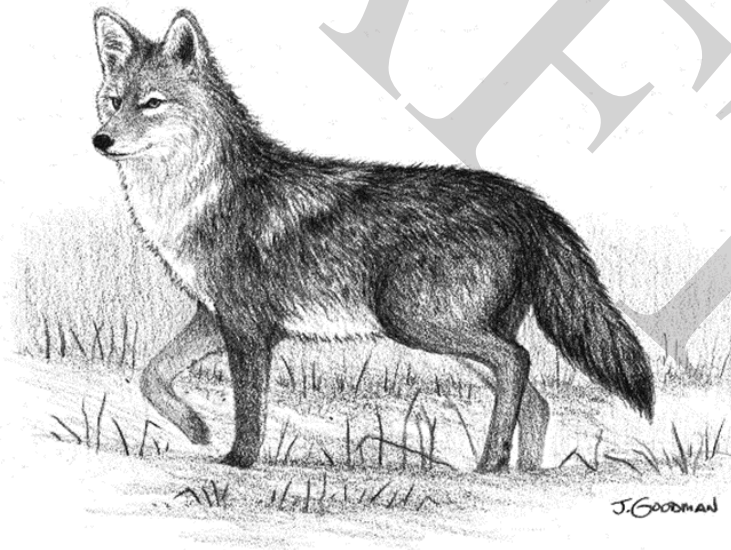
- Morin, D. J. and M. J. Kelly. 2017. The dynamic nature of territoriality, transience and biding in an exploited coyote population. *Wildlife Biology*: wlb.00335.
- Mueller, J. M., C. B. Dabbert, S. Demarais, and A.R. Forbes. 1999. Northern bobwhite chick mortality caused by red imported fire ants. *Journal of Wildlife Management* 63:1291-1298.
- Murdoch, W. W. 1994. Population regulation in theory and practice. *Ecology* 75(2):271-287.
- Murray, M. H. and C. C. St. Clair. 2017. Predictable features attract urban coyotes to residential yards. *Journal of Wildlife Management* 81(4):593-600.
- National Agricultural Statistics Service [NASS]. 2010. Sheep and goats death loss. National Agriculture Statistics Service. United States Department of Agriculture, Washington, D.C., USA.
- National Agricultural Statistics Service [NASS]. 2011. Cattle and calf predator loss. National Agriculture Statistics Service. United States Department of Agriculture, Washington, D.C., USA.
- National Agricultural Statistics Service [NASS]. 2015. Sheep and lamb predator and nonpredator death loss in the United States. National Agriculture Statistics Service. United States Department of Agriculture, Washington, D.C., USA.
- National Park Service. 2016c. Cape Lookout National Seashore Sea Turtle Monitoring and Management Report. NPS, Harkers Island, NC.
- Nielson, D. B. 1973. Alternate bounty systems. *Utah Science* 34:38-40.
- North Carolina Wildlife Resources Commission [Commission]. 2015. Evaluation of Deer Hunting Seasons and Structures and Deer Management Units in North Carolina.  
<<http://www.ncwildlife.org/Portals/0/Regs/Documents/Evaluation-of-Deer-Hunting-Seasons-and-Mgt-Units.pdf>>.
- North Carolina Wildlife Resources Commission [Commission]. 2016. North Carolina Deer Hunting and Management Survey Report.  
< <http://www.ncwildlife.org/Portals/0/Hunting/Documents/Deer/2016-Deer-Hunting-and-Management-Survey-Report.pdf>>.
- North Carolina Wildlife Resources Commission [Commission]. 2017. State Wildlife Grant, Annual Report for Sea Turtle Nesting Activities.
- Novaro, A. J., M. C. Funes, and J. E. Jimenez. 2004. Selection for introduced prey and conservation of culpeo and chilla foxes in Patagonia. Pages 243-254 in D.W. Macdonald and C. Sillero-Zubiri, editors. *The biology and conservation of wild canids*. Oxford University Press, New York, USA.
- Omand, D. N. 1950. The bounty system in Ontario. *Journal of Wildlife Management* 14:425-434.
- Paisley, R. N., R. G. Wright, J. F. Kubisiak, and R. E. Rolley. 1998. Reproductive ecology of Eastern Wild Turkeys in southwestern Wisconsin. *Journal of Wildlife Management* 62(3):911-916.
- Palmer, W.E., S.D. Wellendorf, J.R. Gillis, and P.T. Bromley. 2005. Effect of field borders and nest-predator reduction on abundance of northern bobwhites. *Wildlife Society Bulletin* 33:1398-1405.
- Parker, G. 1995. *Eastern coyote: the story of its success*. Nimbus Publishing, Halifax, Nova Scotia, Canada.
- Peoples, A. D., S. J. DeMaso, S. A. Cox, and E. S. Parry. 1996. Bobwhite reproductive strategies in western Oklahoma. Pages 1-6 in W. E. Cohen, editor. *Proceedings Texas Quail Shortcourse II*. Texas Agricultural Extension Service, 23 March 1996. Corpus Christi, USA.
- Pitt, W. C., A. Ogawa, F. F. Knowlton, and P. W. Box. 2001. Evaluating the effects of management on terrestrial populations using Swarm. *Natural Resources and Environmental Issues* 8:36-40.
- Poessel, S. A., E. C. Mock, and S. W. Breck. 2017. Coyote (*Canis latrans*) diet in an urban environment: variation relative to pet conflicts, housing density, and season. *Canadian Journal of Zoology* 95: 287-297.

- Robinson, K. F., D. R. Diefenbach, A. K. Fuller, J. E. Hurst, and C. S. Rosenberry. 2014. Can managers compensate for coyote predation of white-tailed deer? *Journal of Wildlife Management* 78(4):571-579.
- Rogers, C. M., and M. J. Caro. 1998. Song sparrow, top carnivores and nest predation: a test of the mesopredator release hypothesis. *Oecologia* 166:227-233.
- Rollins, D. 1999. Is there a place for predator control in quail management? Pages 45-48 in K.A. Cearley, editor. *Preserving Texas' Quail Heritage into the 21st Century*. Texas Agricultural Extension Service, 13-15 October 1999, Abilene, USA.
- Rollins, D. and J. P. Carroll. 2001. Impacts of predation on northern bobwhite and scaled quail. *Wildlife Society Bulletin* 29(1):39-51.
- Roth, J. D., D. L. Murray, and T. D. Steury. 2008. Spatial dynamics of sympatric canids: modeling the impact of coyotes on red wolf recovery. *Ecological Modelling* 214: 391-403.
- Saalfeld, S. T. and S. S. Ditchkoff. 2007. Survival of neonatal white-tailed deer in an exurban population. *The Journal of Wildlife Management* 71(3):940-944.
- Schmidt, K. A. 2002. Nest predation and population declines in Illinois songbirds: a case for mesopredator effects. *Conservation Biology* 17(4):1141-1150.
- Schmidt, R. H. and R. M. Timm. 2007. Bad dogs: why do coyotes and other canids become unruly? *Proceedings of the 12th Wildlife Damage Management Conference* 12:287-302.
- Schrecengost, J. D., J. C. Kilgo, D. Mallard, H. S. Ray, and K. V. Miller. 2008. Seasonal food habits of the coyote in the South Carolina coastal plain. *Southeastern Naturalist* 7:135-144.
- Schrecengost, J. D., J. C. Kilgo, D. Mallard, H. S. Ray, and K. V. Miller. 2008. Seasonal food habits of the coyote in the South Carolina Coastal Plain. *Southeastern Naturalist* 7(1): 135-144.
- Schweitzer, S.H., and D. Meliopoulos. 2015. Nest fate and chick behavior of American Oystercatchers on Cumberland Island National Seashore, Georgia, May—July 2009. *The Oriole* 80:1-13.
- Shea, S. M. and J. S. Osborne. 1995. Poor-quality habitats. Pages 193-209 in K. V. Miller and R. L. Marchinton, editors. *Quality whitetails: the why and how of Quality Deer Management*. Stackpole Books, Mechanicsburg, PA, USA.
- Shivik, J. A. 2004. Non-lethal alternatives for predation management. *Sheep & Goat Research Journal* Vol. 19:64-71.
- Shuman, R. M., M. J. Cherry, T. N. Simoneaux, E. A. Dutoit, J. C. Kilgo, M. J. Chamberlain, and K. V. Miller. 2017. Survival of white-tailed deer neonates in Louisiana. *Journal of Wildlife Management* 81(5):834-845
- Sillero-Zubiri, C., J. Reynolds, and A. J. Novaro. 2004. Management and control of wild canids alongside people. Pages 107-122 in D. W. Macdonald and C. Sillero-Zubiri, editors. *The biology and conservation of wild canids*. Oxford University Press, New York, New York, USA.
- Smith, M. D. 2010. Controlling predators to increase quail populations. Alabama Cooperative Extension System. ANR-1369.
- Sovada, M. A., A. B. Sargeant, and J. W. Grier. 1995. Differential effects of coyotes and red foxes on duck nest success. *Journal of Wildlife Management* 59:1-9.
- Sovada, M. A., A. B. Sargeant, and J. W. Grier. 1995. Differential effects of coyotes and red foxes on duck nest success. *Journal of Wildlife Management* 59(1):1-9.
- Stallknecht, D. E., A. B. Allison, A. W. Park, J. E. Phillips, V. H. Goekjian, V. F. Nettles, and J. R. Fischer. 2015. Apparent increase of reported hemorrhagic disease in Midwestern and Northeastern USA. *Journal of Wildlife Diseases*, 51(2): 348-361.
- Swingen, M. B., C. S. DePerno, and C. E. Moorman. 2015. Seasonal coyote diet composition at a low productivity site. *Southeastern Naturalist* 14:397-404.

- Switzenberg, D. F. 1950. Examination of a state fox bounty. *Journal of Wildlife Management* 14:288-299.
- Theberge, J. B. 1973. Death of a legislative fossil: Ontario's wolf and coyote bounty. *Ontario Naturalist* 13:33-37.
- Timm, R. M., R. O. Baker, J. R. Bennet, and C. C. Coolahan. 2004 Coyote attacks: an increasing suburban problem. *Transactions of the North American Wildlife and Natural Resources Conference* 69:67-88.
- Turchin, P. 1999. Population regulation: a synthetic view. *Oikos* 84(1):153-159.
- United States Department of Agriculture (USDA). 2002. Wildlife Services: Helping producers manage predation. Program Aid No. 1722.
- Vangilder, L. D., and E. W. Kurzejeski. 1995. Population ecology of the eastern wild turkey in northern Missouri. *Wildlife Monographs* 130:3-50.
- Vangilder, C.L. 2008. Coyote and bobcat food habits and the effects of an intensive predator removal on white-tailed deer recruitment in Northeastern Alabama. Thesis, The University of Georgia, Athens, USA.
- Vreeland, J. K., D. R. Diefenbach, and B. D. Wallingford. 2004. Survival rates, mortality causes, and habitats of Pennsylvania white-tailed deer fawns. *Wildlife Society Bulletin* 32(2):542-553.
- Wagner, G. D., and E. P. Hill. 1994. Evaluation of southeastern coyote diets during the wild turkey reproductive season. *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies* 48:173-181.
- White, H. B., T. Decker, M. J. O'Brien, J. F. Organ and N. M. Roberts. 2015. Trapping and furbearer management in North American Wildlife Conservation. *International Journal of Environmental Studies* 72(5):756-769.
- Windberg, L. A. 1995. Demography of a high-density coyote population. *Canadian Journal of Zoology* 73(5):942-954.
- Windberg, L. A., and F. F. Knowlton. 1988. Management implications of coyote spacing patterns in southern Texas. *Journal of Wildlife Management* 52(4):632-640.



## Appendix A. Report to the Environmental Review Commission on Coyote Management



Report to the Environmental Review Commission on Coyote Management

March 1, 2016



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◊ North Carolina Wildlife Resources Commission ◊

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Gordon Myers, Executive Director

March 1, 2016

Honorable Jimmy Dixon  
N.C. House of Representatives  
300 N. Salisbury Street, Room 416B  
Raleigh, NC 27603-5925

Honorable Chuck McGrady  
N.C. House of Representatives  
300 N. Salisbury Street, Room 304  
Raleigh, NC 27603-5925

Senator Trudy Wade  
N.C. Senate  
300 N. Salisbury Street, Room 521  
Raleigh, NC 27603-5925

Honorables:

The 2015 General Assembly directed the North Carolina Wildlife Resources Commission (WRC) to establish a coyote management plan to address the impacts of coyotes in North Carolina. I am submitting this report to the Environmental Review Commission in fulfillment of the requirements of Section 4.35.(a) and Section 4.34.(a) of Session Law 2015-286 (H765). As directed in statute, this report provides initial findings and recommendations by the North Carolina Wildlife Resources Commission to address overpopulation of coyotes in North Carolina. This report also outlines the progress of the established pilot coyote management assistance program in Mitchell County.

If you have questions or need additional information, please contact me by phone at (919) 707-0151 or via email at [gordon.myers@ncwildlife.org](mailto:gordon.myers@ncwildlife.org).

Respectfully,

A handwritten signature in black ink that reads "Gordon S. Myers".

Gordon Myers  
Executive Director

## Introduction

The Wildlife Resources Commission conserves North Carolina's wildlife resources and their habitats and provides programs and opportunities that allow hunters, anglers, boaters and other outdoor enthusiasts to enjoy wildlife-associated recreation. As outlined in our strategic plan, the commission will evaluate and improve the effectiveness of regulatory programs designed to promote wildlife conservation by establishing a comprehensive framework to ensure sustainable wildlife resources. By implementing wildlife management plans, we can attempt to address the impact of predators and other wildlife species.

The 2015 General Assembly directed the NCWRC to establish a coyote management plan to address the impacts of coyotes and the threats that coyotes pose to citizens, industries, and populations of native wildlife species within the State. The Wildlife Resources Commission was directed to report its findings and recommendations, including any proposed legislation to address overpopulation of coyotes, to the Environmental Review Commission by March 1, 2016.

In addition, the NCWRC was directed to establish a pilot coyote management assistance program in Mitchell County. In implementing the program, the Commission must document and assess private property damage associated with coyotes; evaluate effectiveness of different coyote control methodologies, including lethal removal; and evaluate potential for a scalable statewide coyote assistance program.

WRC was directed to submit an interim report on the progress of the pilot program to the Environmental Review Commission by March 1, 2016. A final report on the results of the pilot program, including any proposed legislation, shall be submitted to the Environmental Review Commission by January 1, 2017.

## Legislation

### **SESSION LAW 2015-286 (HOUSE BILL 765)**

**SECTION 4.34.(a)** The Wildlife Resources Commission shall establish a coyote management plan to address the impacts of coyotes in this State and the threats that coyotes pose to citizens, industries, and populations of native wildlife species within the State.

**SECTION 4.34.(b)** The Wildlife Resources Commission shall report its findings and recommendations, including any proposed legislation to address overpopulation of coyotes, to the Environmental Review Commission by March 1, 2016.

**SECTION 4.35. (a)** The Wildlife Resources Commission shall establish a pilot coyote management assistance program in Mitchell County. In implementing the program, the Commission shall document and assess private property damage associated with coyotes; evaluate effectiveness of different coyote control methodologies, including lethal removal; and evaluate potential for a scalable statewide coyote assistance program.

**SECTION 4.35. (b)** The Wildlife Resources Commission shall submit an interim report on the progress of the pilot program to the Environmental Review Commission by March 1, 2016. The Wildlife Resources Commission shall submit a final report on the results of the pilot program, including any proposed legislation, to the Environmental Review Commission by January 1, 2017.

## Background

### Coyote Description and Biology

Coyotes have pointed and erect ears, and long slender snouts. The tail is bushy and black-tipped and is usually carried pointing down. Their color is typically dark gray, and can range from blonde to black. Adults are typically the size of a medium-sized dog and average between 20 and 45 pounds although larger animals have been documented. In many parts of the U.S., including N.C., coyotes may be mistaken for dogs or wolves, and the existence of both dog-coyote hybrids and wolf-coyote hybrids can make identification difficult. Coyotes feed on a wide variety of food sources, depending on what is most readily available and easy to obtain. Coyote foods sources include fruit, berries, pet food left outside, small mammals (voles, rats, and mice), deer, carrion, rabbits, birds, snakes, frogs, insects, etc. Coyotes can also prey on livestock and domestic pets. Coyotes have an important ecological role in nature as an apex predator, maintaining prey species numbers at bay.

Coyotes typically mate for life and breeding occurs from January through early March. Pups are born in March and April and the typical litter size is six to eight pups. As a highly adaptable species, coyotes can increase the number of pups per litter when stressed, this is called compensatory reproduction and it usually happens when a high number of coyotes is removed from the landscape. This specific compensatory trait should be considered when implementing coyote management strategies. In areas where intense coyote harvest occurs, a temporary reduction in coyotes may occur, but this result may be short-lived because coyotes can respond by producing larger litters. Additionally, individuals born in other areas may disperse large distances in search of new home ranges, and replace removed dominant animals. Surprisingly, when as much as 60% of the coyote population is removed from an area, the population can recover within a year. Even if 90% of coyotes are removed, the population can recover in 5 years.

Family units usually begin to disperse by late November or December. Dispersal rates are high and dispersal distances can be extensive; records show that some coyotes in North Carolina have dispersed more than 200 miles in just a few months. Coyotes are territorial and actively defend their home ranges. These home ranges can vary between 1,000 and 16,000 acres depending on season, habitat, presence of other predators, and food availability. Coyote habitat ranges from agricultural fields to forested regions and suburban neighborhoods. Coyotes usually dig their own den, but they will sometimes enlarge an old animal hole or use a natural hole in a rocky ledge as a den. Dens are usually hidden from view and used by coyotes to birth their young and sleep.

When an individual coyote or family group leaves or is removed, new coyotes will usually move into the vacated territory. These territories frequently overlap with one or more transient coyotes that are searching for a mate or their own territory. The transient nature of the population makes estimating the number of coyotes in a particular area difficult, which, in turn, makes controlling coyote populations difficult. Coyotes are often wary of people and will avoid areas in which threats are perceived. In some cases coyotes can become acclimated to humans in the absence of threats, and in areas where unnatural food sources, such as pet food and garbage are readily available.

### Coyote Distribution

Prior to the 1800s, coyotes occupied the prairies and grasslands of the Midwest. However, changes in habitat and predator prey dynamics have allowed the expansion of coyotes across the United States.

Extensive efforts have been devoted to controlling coyotes across the United States. Despite these extensive control attempts coyotes have continued to expand their range. The coyote is North America's widest ranging wild canid. A highly adaptable species, coyotes have thrived in a variety of landscapes, including urban environments.

The first reported sighting of a coyote in N.C. was in Gaston County in 1938. The first confirmed coyotes that were collected came from Johnston County (1955) and Wake County (1970). Prior to 1983, North Carolina had only sporadic instances of coyotes mostly on the coastal plain; these coyotes likely escaped from captivity or were released illegally for the purpose of hunting. The first coyotes believed to have naturally dispersed into North Carolina were detected in 1988 in the far western counties of the state. This natural range expansion from Tennessee, Georgia, and South Carolina likely occurred due to removal of other large predators (wolves and cougar) reducing competition, major landscape level habitat changes, including the creation of trails and roads, and an increase of novel food resources such as crops. By 2005, coyotes occurred in all 100 North Carolina counties.

### Legal Status

Coyotes have no special protection in North Carolina and may be killed by any method that is not prohibited by federal, state, or local statutes. Currently there is no closed season for hunting coyotes in North Carolina. Electronic calls may be used and coyotes may be hunted at night, except on private lands in Beaufort, Dare, Hyde, Tyrrell and Washington counties. Coyote hunting in those counties is restricted to daytime only and requires a permit from the NCWRC. However, under authority of 15A NCAC 10B .0106 depredation permits may be issued by WRC for the taking of wildlife resources in circumstances of overabundance.

Trapping coyotes is allowed during any open furbearer trapping season and when any fox trapping season established by local law is open. Coyotes taken by trapping during these seasons may be sold to Controlled Fox Hunting Preserves, as established under GS 113-273(g). Further, any landowner wishing to control coyotes may receive a depredation permit from the NCWRC. There are no coyote bag limits of any kind (individual, daily, season, etc.) for trapping and hunting seasons. It is illegal to breed or import coyotes into North Carolina, as established under GS 113-294(o).

**Commission Authority to Regulate Coyote Hunting** – Coyotes are classified as wild animals (GS 113-129), but not game. Under this classification the Commission has the authority to set hunting seasons and bag limits (GS 113-291.2) and designate manner of taking, including the use of artificial lights and electronic calls (GS 113-291.1).

**Commission Authority to Regulate Coyote Trapping** – The Commission uses the same authority (GS 113-291.2) to set trapping seasons and bag limits as for hunting seasons. Trap types for wild animals are specified in GS 113-291.6. Trappers may trap coyotes under the authority of their trapping or hunting license.

**Commission Authority to Issue Depredation Permits** – The Commission has the authority (GS 113-274) to issue depredation permits to authorize the taking, destruction, transfer, removal, transplanting, or driving away of undesirable, harmful, predatory, excess, or surplus wildlife or wildlife resources. Livestock or poultry owners are issued a depredation permit for coyotes upon request. No depredation permit or any license is needed for the owner or lessee of property to take wildlife while committing depredations upon the property.

In the 2014-2015 hunting season, NC hunters harvested an estimated 43,507 coyotes. While some hunters do specifically hunt for coyotes, many coyotes are killed incidentally by hunters that are pursuing other species such as deer. North Carolina trappers successfully trapped an estimated 7,611 coyotes during the 2014-15 trapping season.

<b>Year*</b>	<b>Species</b>	<b>Estimated Statewide Hunter Harvest</b>	<b>Estimated Statewide Trapper Harvest</b>
2005-06	Coyote	19,422	593
2006-07	Coyote	-	847
2007-08	Coyote	35,144	1,434
2008-09	Coyote	-	1,747
2009-10	Coyote	-	2,091
2010-11	Coyote	36,041	2,843
2011-12	Coyote	31,663	3,458
2012-13	Coyote	27,152	5,419
2013-14	Coyote	34,972	6,951
2014-15	Coyote	43,507	7,611
*Hunter harvest surveys were conducted intermittently prior to 2010.			

### **North Carolina Coyote Management Plan**

As stated, Section 4.34(a) of Session Law 2015-286 (House Bill 765) stipulates that “[t]he Wildlife Resources Commission shall establish a coyote management plan to address the impacts of coyotes in this State and the threats that coyotes pose to citizens, industries, and populations of native wildlife species within the State.” Coyotes are now a statewide component of North Carolina’s fauna. While intensive management of coyotes on individual or groups of properties can be successful, statewide perspectives on coyote management must recognize the variability and persistence of coyotes across the state and must be flexible and adaptive. Critical tenants of successful coyote management must be collaboration, and implementation to satisfy the desires of citizens across a wide variety of circumstances. Coyote

population management to satisfy the desires of North Carolinians and managing situations to minimize negative human-coyote interactions must be our goals and, therefore, the foundation of a statewide management plan.

### Developing a Statewide Coyote Management Plan

The development of a statewide management plan for any species is a complex undertaking that addresses biological, social, economic, and political aspects of species management. Using coyote management efforts previously undertaken by the NCWRC as a foundation, we will expand efforts through development of a statewide coyote management plan (Plan). Approaches to developing the Plan, and elements therein, will address the biological, social, economic, and political aspects of successful coyote management. Developing the Plan requires that we explore and understand the attitudes, opinions, and desires of our citizens regarding coyotes, that we compile other currently available information about coyotes, and that we meld these considerations into a plan that collectively addresses stated goals. It is important to understand the real and perceived economic impact of human-coyote interactions and the cost associated with implementing a coyote management plan to assess its economic viability. Development of multiple aspects of the Plan will progress simultaneously. In order to address the requirements of Section 4.34(a), the NCWRC has established a team to draft a North Carolina Coyote Management Plan (Plan). The Plan will include:

- Evaluation of all available biological information on coyotes in North Carolina;
- Identification of knowledge gaps and additional research needed on coyote population dynamics, reproduction, habitat use, movements, social dynamics, impacts on other wildlife species, and impacts on humans;
- Recommendations for partnerships with other agencies and organizations to provide assistance and education to citizens about living with coyotes;
- Recommendations for biological and social strategies to address coyote management issues;
- Recommendations for any statutory and/or regulatory changes need to reduce or eliminate legal barriers to effective coyote management; and
- Recommendations on a framework for gathering public input on the North Carolina Coyote Management Plan.

### Social Aspects of Coyote Management

Public opinion about coyotes can vary significantly across the state depending on a person's location, interests, and value systems. The NCWRC is currently collaborating with North Carolina State University, the U.S. Fish and Wildlife Service, and Mitchell County officials to conduct surveys in the Charlotte Metro Area, on the Albemarle Peninsula, and in Mitchell County to describe the perspectives of citizens in these areas about coyotes and their management. Building on these efforts and to provide information to build the Plan, the NCWRC will conduct public input meetings regarding coyote management. These public input meetings will be held in each of the NCWRC's nine administrative districts. Input from these meetings will be used to both inform initial development of the Plan and as a basis for a statewide survey of citizens to scientifically determine their attitudes and opinions regarding coyotes and their management. Results of these human dimensions surveys and research efforts will drive development of the goals and objectives of the Plan and will form a significant basis for the final recommendations. This work will proceed concurrently with developing other aspects of the Plan.

### Coyote Monitoring and Research

The NCWRC currently collects harvest data from hunters and trappers through annual surveys. However, to effectively address statewide coyote management issues there are other monitoring and research efforts needed. First, we must determine if coyote management is best prescribed in zones, as opposed to statewide approaches. For example, issues regarding coyote management are very different between urban and rural areas. While coyotes are ubiquitous across our State, relative abundance varies, as does prey abundance and other food resources. With that in mind, we must determine how to optimize coyote management in zones with varying social and biological conditions.

With increasing coyote populations, we must determine if predation on game species is causing significant population impacts (e.g., reducing deer populations), and if so whether modifications are needed in harvest seasons for the game species. The NCWRC is currently designing research to address large-scale predation issues. Similar to our efforts to understand bears in the urban environment, we will initiate research to determine the ecology of coyotes in the urban environment. While this research will not be completed before completion of the Plan, we will structure recommendations in the Plan such that as they become available results can be adaptively integrated into coyote management approaches. We must continue our harvest surveys and use these data to propose development of a population estimation model that is timely and sufficiently sensitive to be applicable across the state. Diseases can be important in managing coyotes, and other species that may be susceptible to diseases they carry, so development of a disease monitoring strategy will be included in the Plan. We must learn more about the dynamics of coyotes that move into (or through) Controlled Fox Hunting Preserves and their impacts on other species within and outside the Preserves. Finally, because coyote distribution and ecology are inextricably linked to our human ecology, we must develop approaches to monitor changes in human population dynamics in ways meaningful to management of coyotes.

### Legal Considerations Regarding Coyote Management

As a relatively recent addition to N.C.'s fauna, rules and laws related to coyote management continue to evolve. Currently there is no closed season for hunting coyotes in North Carolina and hunting with electronic callers and at night is also allowed, except on private lands in Beaufort, Dare, Hyde, Tyrrell and Washington counties (due to range overlap with the red wolf, coyote hunting is allowed during daytime only and requires a permit from the NCWRC). Trapping coyotes is allowed during any open furbearer trapping season and any open fox trapping season established by local law. There is no bag limit for taking coyotes whether by hunting or trapping. Any landowner may receive a depredation permit from the NCWRC to kill coyotes on their properties. Even with all these allowances for landowners to manage coyotes on their properties through legal take, there are many legal considerations regarding coyote management in our State. With that in mind, we will review all current rules and laws to clearly demonstrate the legal status of coyotes in North Carolina and how these legal mandates influence their management. Because coyote management is intertwined with fox management, we will also examine how fox management influences coyote management. Finally we will evaluate and recommend specific additional steps that can be taken by the NCWRC and/or the General Assembly to reduce or eliminate legal barriers to effective coyote management.



## Education and Outreach

For many citizens coyote management centers on managing situations in which coyotes have been a nuisance or caused damage; for others, is the sole presence of coyotes that creates unease. There are many approaches to coyote management and these will be explored and fully explained in the Plan. In addition, in this section of the Plan we will inform and educate readers about living with coyotes, especially in urban or suburban areas. The NCWRC's Wildlife Damage Control Agent Program and collaboration with the N.C Trappers Association provide many options for landowners to seek assistance in managing coyote nuisance situations. These options and the options for developing an integrated predation management program (which could benefit management of many other species) will be fully explored in the Plan. There are many exemplary agencies and institutions in our State and we will explore expanding collaborations with Cooperative Extension and other entities.

## Recommendations

To be successful, management efforts directed toward coyotes must be broad in nature and adaptable to change. Based upon constituent desires determined through our social research, information presented in the plan, and the range of potential research outcomes, we will present a list of coyote management recommendations for immediate implementation and for integration as increases in our knowledge and socio-political opportunities allow. The North Carolina Coyote Management Plan will be submitted to the NCWRC Commissioners for consideration for adoption by March 2018.

### **Establish a pilot Coyote Management Assistance Program (CMAP) in Mitchell County**

The NCWRC established a working group to address the action items outlined in statute (Section 4.35. (a)). Initial action required meeting with representatives of the agriculture industry in Mitchell County to determine the most effective approach to meeting both the legislative and constituent needs related to coyote depredation on livestock.

Staff members with NCWRC held a meeting with Senator Ralph Hise, Mitchell county officials, livestock owners and livestock producers on November 30, 2015 in Mitchell County. The constituents in attendance clarified that property damage caused by coyotes in Mitchell County is primarily predation on livestock, and outlined immediate needs and potential solutions. The findings represent the foundation of the pilot coyote management assistance program.

During the initial discussions we identified the following needs:

- Increase understanding of coyote/human/livestock interactions, specifically depredation incidents in Mitchell County;
- Provide public outreach related to coyote biology and coyote management;
- Develop a communication system to place landowners in direct contact with individuals qualified to address and assess coyote damage; and
- Educate constituents on coyote management options and available coyote damage control techniques.

Based on the identification of these needs, NCWRC is working cooperatively with NCSU Cooperative Extension to design a coyote management assistance program for Mitchell County. The program will include onsite technical guidance to landowners as well as a trapper referral program for Mitchell County.

The program will immediately place the landowner in contact with local wildlife professionals (most often NCWRC biologists) that can visit their property, assess the situation and provide immediate advice as necessary to address issues. The program will provide landowners with a consistent point of contact to reach dependable and capable individuals to assist with lethal removal of depredating coyotes such as licensed trappers, Wildlife Damage Control Agents and as necessary USDA-Wildlife Services or other wildlife damage services. Most coyote management services will require some fee for service. Current discussions with Mitchell county officials suggest a potential shared cost model between the landowner, county and state or an individual contract model between landowner and trapper with cost and incentives negotiated between the two entities.

Working cooperatively with USDA Wildlife Services, the North Carolina Trappers Association and potentially NCSU Cooperative Extension, NCWRC staff are developing Coyote Management and Trapping workshops to help educate and train individuals on the biology, management and control techniques available for coyotes. The workshops will be a combination of lectures and skills based training on the field.

To address education needs, NCWRC is working cooperatively with Mitchell County Cooperative Extension and Mitchell county officials to design and implement an educational outreach strategy to include informational packages to be made available at the County Extension office. In addition, NCWRC will partner with Mitchell County to provide informational programs at organized events to inform constituents about the availability of onsite technical guidance by NCWRC wildlife biologists. Onsite technical guidance will focus on coyote biology and how to minimize predation using lethal and non-lethal control methods as well as alternative husbandry practices.

Once established, the pilot program will allow NCWRC and Mitchell County Cooperative Extension to evaluate the effect of varying levels of control/prevention tools on livestock loss and livestock producer satisfaction and subsequently be able to pass that information along to producers when issues or problems arise.

### Human Dimensions

Normally, coyotes are elusive animals that avoid direct contact with humans. Being most active after dusk and before daylight, they are typically seen only at a distance. In most areas of North Carolina, coyotes continue to behave in ways that minimize their contact with humans. The majority of citizens have little personal experience with coyotes which may influence their perceptions.

The wide range in perspectives about coyotes prompts the need to determine a fundamental understanding of the public's primary issues and concerns. Coyotes come into contact with humans in a variety of ways, from just crossing a street or a field in an urbanized area to chasing and attacking pets or depredating livestock or other private property. The first step in solving any conflict with wildlife is to accurately identify the problem and address the wildlife species causing the problem. Because coyote damage is often not observed by humans as it is happening, heavy reliance must be placed on indirect evidence at the damage site. It should be noted that not all coyotes develop predation tendencies on livestock and coyotes that scavenge livestock carcasses may be incorrectly blamed for the deaths of those animals.

Initial conversations at the November 30<sup>th</sup> meeting with Mitchell County livestock producers suggested that actual predation on livestock is currently limited. However, there is concern that coyote depredation will increase. Furthermore, attendees shared information about depredation suffered by other producers

in Mitchell County. To assess the damage occurring in Mitchell County, a scientific survey is currently being developed and will be sent to all registered livestock/poultry producers in the county. The survey will allow producers to report specific damage and losses attributed to coyotes in 2015. A concurrent survey will be sent to producers in a neighboring county with similar livestock statistics to provide a control group for the research associated with the pilot coyote management assistance program in Mitchell County.

In addition to the survey, NCWRC staff will work directly with the local Cooperative Extension office, landowners, and other livestock predation experts to develop a system that livestock producers can access to specifically identify depredating animals based on examination of carcasses believed to have been lost due to predation. Because the emphasis should be on assisting producers with a reduction in loss due to predatory animals (regardless of the species of predator), identifying the cause of death and attempting to link that cause to a particular species will aid in determining the most effective treatment or methodology.

### Coyote Control Methodologies

While coyotes have established a reputation for efficient and effective predation, the true extent and effect of coyotes preying on livestock is poorly documented in North Carolina. It is critical to understand coyote population dynamics and localized impacts is fundamental to developing statewide control methodologies. To determine the scalability of the pilot coyote management assistance program in Mitchell County, the NCWRC will have to obtain data from each region to account for differences in habitat, type of depredation occurring, and landscape characteristics.

Constituents attending the initial meeting in Mitchell County presented multiple recommendations for coyote population reduction, including the use of a bounty system. Historically, bounties have been used with little success to control coyote populations. The use of bounties for controlling unwanted wildlife, including predators, has been discontinued by most instituting authorities because they are ineffective in reducing actual damage and lack of economic viability. For example, the North Carolina coyote harvest for 2014-15 totaled 51,118 individuals. If each of those were reported for the purpose of collecting a bounty, the cost would exceed \$1.2 million annually at \$25 per animal for animals that are already being removed from the landscape. Killing individuals that are not causing damage can open territories for other individuals that have learned to depredate livestock or cause other damage.

Lethal removal of coyotes is not the only method available for reducing coyote damage, and in some circumstances it might be the least effective. Recommended non-lethal techniques for reducing coyote depredations on livestock include: confining or concentrating young or birthing livestock at times of vulnerability, removing carrion from pastures, improved fencing, and the use of guard animals. Protective fencing options are available and can exclude or deter coyote depredation in an area. Dogs, donkeys, mules, and llamas are used as effective livestock guards to reduce property loss by coyotes. Several Mitchell County landowners and livestock producers stated that they currently use guard animals (donkeys and llamas), and that they currently have minimal issues with coyotes.

When non-lethal techniques do not deter depredations, targeted or selected removal of offending coyotes may achieve management objectives. Trapping is the most effective and efficient means for targeting and removing coyotes that are actively depredating livestock. Removing one or two offending individuals in a small area may stop the problem. Several Mitchell County landowners also indicated that they had used trapping to address coyote issues in the past with varying degrees of effectiveness.

Trapping coyotes requires knowledge and a skillset not necessarily possessed by the average individual. Well trained and experienced coyote trappers will be required to successfully remove problem animals without exacerbating the issue by causing the coyotes to become more difficult to trap due to poor technique.

#### Next Steps

The NCWRC will continue to develop and implement the pilot coyote management assistance program in Mitchell County with its partners. In addition, the NCWRC will also be collecting information required to determine the scalability of this program. A final report detailing the findings will be presented to the Environmental Review Commission by January 1, 2017.

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## Appendix B. Coyote Biology and Life History

### Coyote Distribution

Prior to the 1800s, coyotes occupied the prairies and grasslands of the Midwest. However, changes in habitat and predator prey dynamics have allowed the expansion of coyotes across the United States. Coyotes took two paths to colonize the eastern United States (Figure 1). The northeastern path saw coyotes that had moved into the upper Midwest in the late 1800s, further expand into Canada during the early 1900s, New York and New England by the 1950s, and Pennsylvania and West Virginia in the mid-1970s (Moore and Parker 1992). The southeastern path documented coyotes in Arkansas by the 1920s, Alabama, Louisiana, Mississippi, and Tennessee by the mid-1960s, and Georgia, Florida, Kentucky, Maryland, North Carolina and South Carolina by the mid- to late-1980s (Moore and Parker 1992, Mastro 2011). In southeastern states, evidence shows natural range expansion by coyotes was supplemented by illegal importations for hunting purposes (Hill et al. 1987).



Contrary to the widespread cultural myth, the NCWRC did not release coyotes into North Carolina. The first reported sighting of a coyote in N.C. was in Gaston County in 1938 (Figure 2). The first confirmed coyotes that were collected came from Johnston County (1955) and Wake County (1970). Prior to 1990, North Carolina had only sporadic instances of coyotes mostly on the coastal plain; these coyotes likely escaped from captivity or were released illegally for the purpose of hunting (Figure 3).

Figure 2. Observations and collections of coyotes from 1938 through 1978.

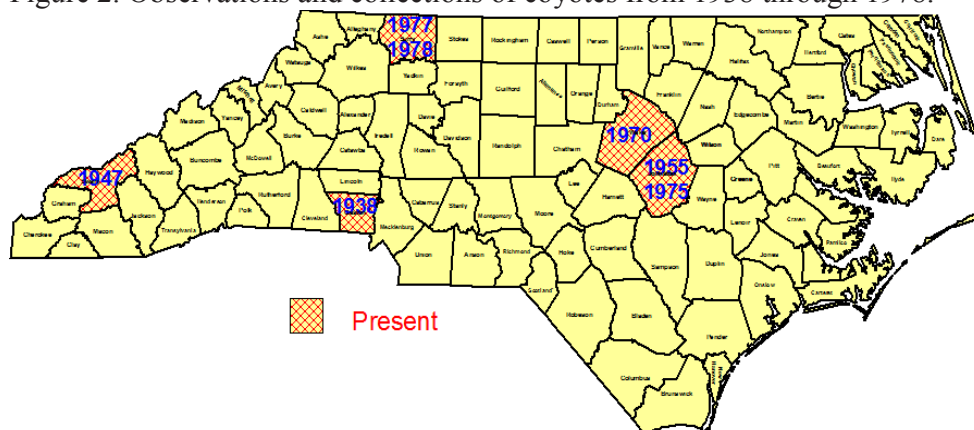
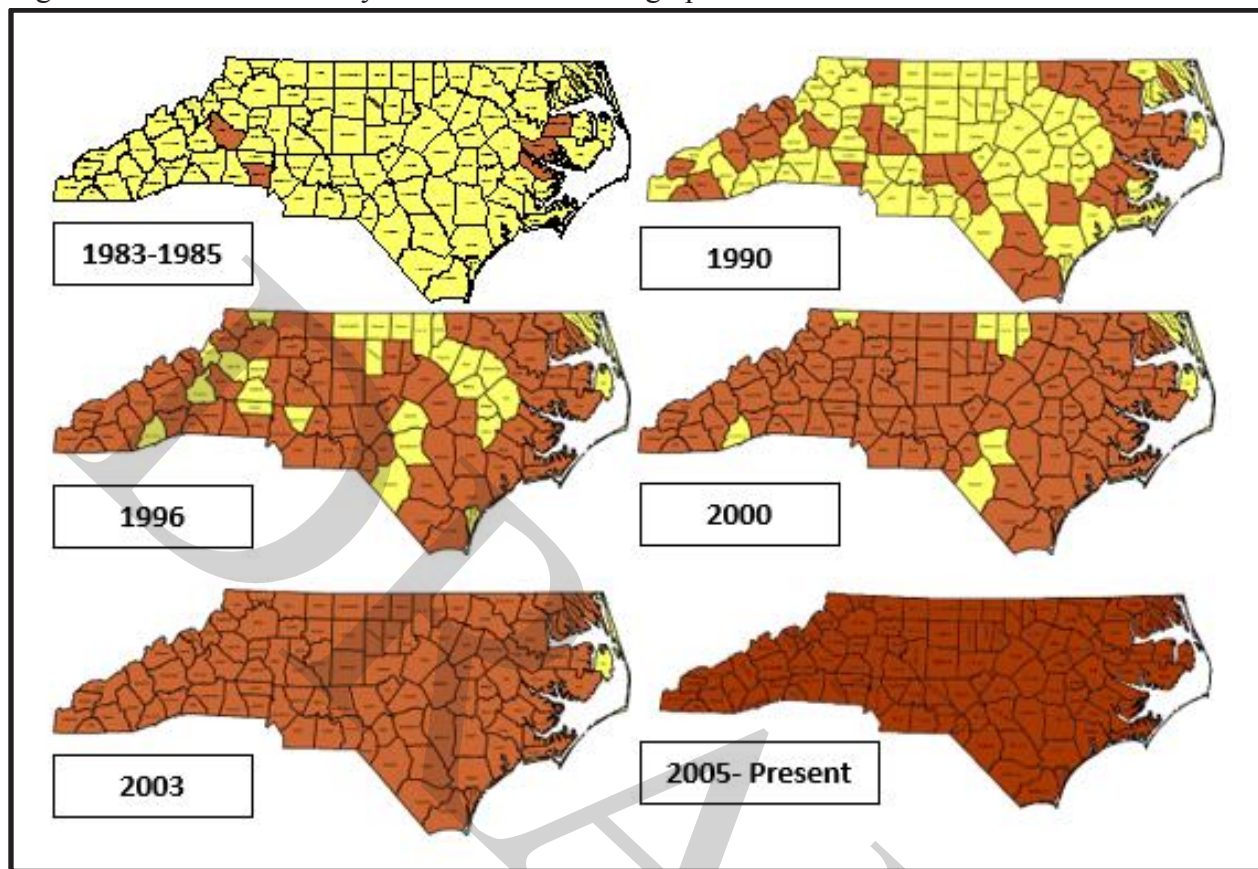


Figure 3. Distribution of coyotes from 1983 through present.



From 1986 through 1990, there were 56 credible observations and/or specimens of coyotes submitted to the NCWRC (Table 1). Twenty-eight (50%) of the 56 records occurred in the Coastal Plain region of North Carolina and were the result of illegal releases. Some of the coyote collected in North Carolina came from areas adjacent to controlled fox hunting preserves, which could suggest the coyotes were illegally brought into the pens and then escaped. In May 1989, an undetermined number of coyotes escaped a 1,240-acre controlled fox hunting preserve enclosure located in Rowan County when Hurricane Hugo damaged the fence (Wireback 1990). Adjacent states have also reported correlation between new coyote locations and escapes from enclosures (Hill et al. 1987). The first coyotes believed to have naturally dispersed into North Carolina were detected in 1988 in the far western counties of the state (Figure 3). This natural range expansion from Tennessee, Georgia, and South Carolina likely occurred due to removal of other large predators (wolves and cougar) reducing competition, major landscape level habitat changes, including the creation of trails and roads, and an increase of novel food resources such as crops. By 2005, coyotes occurred in all 100 North Carolina counties, and in 2009, coyotes were found on the barrier islands (Figure 3).

Table 1. Credible sightings and/or specimens of coyotes in the coastal plain region of North Carolina, 1955 through 1990.

<b>County</b>	<b>Year</b>	<b>Information on sightings and/or individual coyotes recovered</b>
Johnston	1955	NCSM collection, January 22, male.
Johnston	1975	Smithfield, collected by L. Barber on 3 May 1975 (probable deliberate introduction)
Beaufort	1983	Numerous visual sightings by local residents in Terra Cia and Acre area.
Washington	1983	Hunter kill, unknown sex and age.
Duplin	1986	Hunter killed a male on November 29 near the Cedar fork Community, delivered to NCSM.
Hyde	1986	NCWRC collected on February 2, male, delivered to NCSM. Possible dog. NCSM date collected 02/16/86.
Halifax	1986	Killed in December near Enfield, delivered to NCSM by Mike Scruggs with NCWRC.
Beaufort	1987	Numerous visual sightings in Terra Cia area since 1987, individuals, dens, and pups.
Jones	1987	Hunter killed male in November, 5 miles south of Trenton.
Jones	1987	Road killed female near Jones/Craven Co. line on HWY 17 in November, carcass delivered to NCSM. F#2 Partial skull.
Tyrrell	1987	Coyote shot during March. NC Museum #5285.
Tyrrell	1987	Hunter kill January 29, near Gum Neck, male. NCWRC Fur has skin.
Pasquotank	1988	Reported sighting by WEO.
Washington	1988	Visual report on November 3.
Jones	1989	Two pups caught in March near den site on farm near Cove City, delivered to NCSM, numerous sightings reported over past year. F#3.
Jones	1989	Two pups caught in March near den site on farm near Cove City, delivered to NCSM, numerous sightings reported over past year. F#3.
Pasquotank	1989	Hunter killed male on December 5 and visual sightings reported in same area, taxidermist has skull.
Beaufort	1990	WEO 326 sighting near Terra Cia in December.
Bertie	1990	Survey of district wildlife biologists for current coyote range.
Bladen	1990	Several sightings reported on the Dupont plant site.
Brunswick	1990	Several sightings reported on the Dupont plant site.
Columbus	1990	Road killed female located just north of Chadburn on HWY 410 between Hwy 76 and HWY 130 on March 21
Columbus	1990	A road kill about 1/2 mile north of HWY 76 on SR1574 on March 14. F#5
Columbus	1990	A male trapped by landowner for turkey depredation on April 6 just south of SR1842, delivered to NCSM.
Columbus	1990	Collected 6 April 1990

<b>County</b>	<b>Year</b>	<b>Information on sightings and/or individual coyotes recovered</b>
Craven	1990	Hunter killed female between SR1401 and Neuse River on October 28, delivered to NCSM by David Sawyer.
Craven	1990	Road killed female near intersection of HWY 43 and SR1243 on December 9, delivered to NCSM.
Hertford	1990	Survey of district wildlife biologists for current coyote range. Hunter killed two males of three individuals near Pollocksville on October 27, delivered to NCSM, numerous sightings reported in past 2 years.
Jones	1990	Possible dogs. F#8. Hunter killed two males of three individuals near Pollocksville on October 27, delivered to NCSM, numerous sightings reported in past 2 years.
Jones	1990	Possible dogs. F#9
Martin	1990	Survey of district wildlife biologists for current coyote range.
Halifax	1990	Hunter observed 5 coyotes 6 miles ENE of Enfield and killed one.

### **Coyote Biology and Life History**

**Coyote Description:** Coyotes are members of the family Canidae (includes foxes, wolves, domestic dogs). They have pointed and erect ears, and long slender snouts, their tail is bushy and black-tipped and is usually carried pointing down. Their fur is typically dark gray but color phases range from blonde to black. Their long hair, especially in winter, can make them appear heavier and larger than they are. Adult coyotes are generally 3.5 to 4.5 feet from nose to tail and stand about 2 feet tall (Bekoff and Gese 2003). Though similar in height to a Labrador retriever, they generally weigh about 20–45 pounds in North Carolina (about the weight of a border collie) due to their narrow body frame. Male coyotes tend to be larger than females. In North Carolina, coyotes may be mistaken for domestic dogs or red wolves, with which they can hybridize. The existence of hybrids, though uncommon, can make identification difficult.



**Hybridization:** Coyotes have been documented to hybridize with domestic dogs and gray wolves (Bekoff and Gese 2003). This seems to occur primarily when densities are low and suitable coyote mates are unavailable (Kays et al. 2009). Often hybrids, especially those with domestic dogs, are less likely to successfully raise young because domestic dogs don't have the same reproductive cycle as coyotes (Bekoff and Gese 2003). However, some genetic studies have found a low level of domestic dog and wolf DNA in some southeastern coyotes so



successful reproduction can occur, though rare. This most likely occurred when the first coyotes were illegally translocated and released and other coyotes were scarce (Adams et al. 2003). When they could not find coyote mates, because so few individuals existed, they sought the closest species they could find, domestic dogs. As coyote density has increased and mates more readily available, this becomes more and more unlikely to occur.

**Habitat:** Coyotes live in all habitat types, from wetlands to sandhill pines, farmland to mountains, forests to urban areas (Bekoff and Gese 2003). Preferred habitats range from agricultural fields to forested regions and suburban neighborhoods. Urban coyotes also tend to have higher use of green spaces within urban areas such as wooded tracts and cemeteries and avoid more human-associated habitat such as yards (Gehrt et al. 2009).

**Diet:** Coyotes are omnivores, meaning they feed on a wide variety of food sources. Their diet tends to be localized, changes seasonally, and focuses on the most abundant or preferred food sources. (Stratman and Pelton 1997, Tremblay et al. 1998, Bekoff and Gese 2003, Schrecengost et al. 2008). For instance, in the Southeast, persimmon become a common food item for coyotes when they ripen in fall (Grogan 1996, Elfeldt 2014). Food sources include fruit, berries, pet food left outside, small mammals (voles, rats, and mice), garbage, deer, carrion, rabbits, birds, snakes, frogs, insects, and other available food sources (Bekoff and Gese 2003, Bollin-Booth 2007, Elfelt 2014, McVey et al. 2013, Swigen et al. 2015). Coyotes can also prey on livestock and domestic pets, although research suggests that consumption of these animals comprise a small percentage of the total diet, if present at all (Grogan 1996, Parker 1999, Poessel et al. 2017).

A project in Alabama, Mississippi, Kentucky, and Tennessee analyzed coyote diets on areas classified as either high deer density or low deer density. They found deer prevalence in scat was higher in the high deer density areas and lower in low deer density areas, which supports that coyotes switch their diet to what is most abundant (Blanton and Hill 1989). The same project noted that fawns were the most frequent major food item in scats (74.2%) during fawning in high deer density areas, but the least frequent major food item in scats (8.8%) on low deer density areas (Blanton and Hill 1989). A more recent study found occurrence of deer was high in coyote scats during a large outbreak of epizootic hemorrhagic disease (EHD), resulting in an abundance of carcasses (Table 1, Morin et al. 2016).

Table 2. Percent occurrence of food items in coyote (*Canis latrans*) scats in studies using molecular identification of species in North Carolina and western Virginia.

Location	Western Virginia	Albermarle Peninsula	Fort Bragg, NC
Source	Morin et al. 2016*	McVey et al. 2013*	Swigen et al. 2015
Samples	n=225	n=64	n=590
Food item			
White-tailed deer	42.0	24.8	8.0
Rabbits	3.0	29.7	5.3
Small rodents	16.0	32.7	7.6
Other Mammals	11.0	7.9	7.6
Vegetation	11.0	3.0	40.7
Other	0.0	2.0	0.5
Insects	13.0		21.4
Birds	4.0		2.9
Antropogenic			5.9
*Used fecal DNA analysis to identify scat species			

**Reproduction:** Coyotes typically mate for life and breeding occurs from January through early March. Coyotes give birth in dens, either ones they have dug themselves, an enlarged animal hole, or another existing cavity such as a hollow tree, culvert pipe, or rocky outcrop (Bekoff and Gese 2003). Pups are born in March through May and the typical litter size averages 4 to 6 pups. Coyote pups are born altricial, meaning blind and helpless. Their eyes open after about 2 weeks and they will start to move around outside of the den as early as 3 weeks. They are weaned between 5–7 weeks and reach adult size at about 9 months of age (Bekoff and Gese 2003).

Coyote reproduction is density-dependent, which means if the density of coyotes is high, coyotes will have less pups, fewer pups survive to adulthood, and age at first breeding is delayed. Whereas if the density of coyotes is low, they will have larger litter sizes, higher pup survivorship, and coyotes breeding at a younger age (Gier 1968, Chambers 1992). This density-dependent reproduction is a key reason that attempts to eliminate or drastically reduce the coyote populations are unsuccessful. Drastic reductions in the density of a population leads to corresponding increases in reproduction.

**Home Range:** Home range size is highly variable and dynamic, influenced by habitat, geography, food availability, reproductive status, social status, sex, and season (Mastro 2011). Home ranges can vary between 1,000 and 16,000 and are smaller during denning and pup rearing season. A study on the Albemarle Peninsula documented home ranges of “resident” coyotes

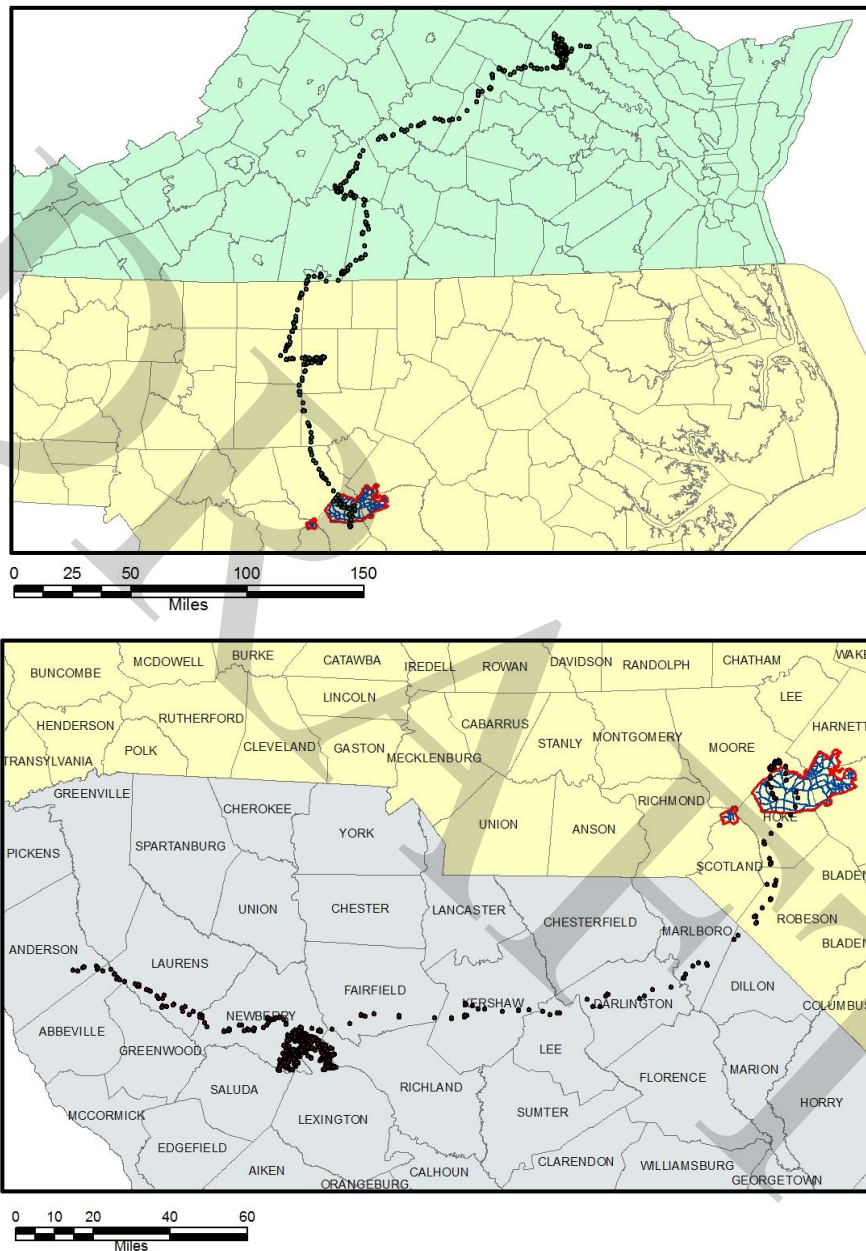
averaged approximately 6,500 acres. Coyotes considered transients in that study roamed an average of 76,100 acres (Hinton 2014). A study on Fort Bragg, North Carolina showed coyote home ranges averaged 21,000 acres. The researchers suggested the large home range size in this area likely reflects the low food availability in that region (Elfelt 2014).

**Territory and Dispersal:** Coyote populations are comprised of residents and transient individuals (Morin 2015). Resident coyotes are territorial and actively keep transient coyotes out of their home range (Bekoff and Gese 2003). If resident coyotes are removed, transient coyotes will move into the vacated area (Windberg and Knowlton 1988, Knowlton et al. 1999, Hinton 2014). This rapid immigration of coyotes into vacant territories is a demonstration of “compensatory immigration” that occurs as a feedback mechanism to high mortality in density dependent populations (Morin 2015). Transient coyotes are a critical component of coyote population dynamics, as these individuals are constantly searching for available territories, a limiting resource for coyotes (Messier and Barrette 1982, Harrison 1992, Windberg and Knowlton 1988, Knowlton et al. 1999, Hinton 2014).

Coyotes are able to rapidly reoccupy a vacant territory through their high dispersal potential and the use of “biding” areas. An example of a biding area is when a transient coyote occupies the interstitial spaces between territories, ready to fill the territory once it becomes vacant (Hinton et al. 2015). However, there are other types of biding areas in highly exploited coyote populations. In areas with high coyote mortality, resident coyotes may be more tolerant of younger coyotes remaining in the natal territory (i.e., the biding area), resulting in delayed dispersal (Messier and Barrette 1982, Patterson and Messier 2001, Atwood and Weeks 2002, Atwood 2006). Delayed dispersal may increase foraging efficiency of parents, alleviate reproductive costs through cooperative breeding, and reduce subadult mortality during high-risk dispersal (Messier and Barrette 1982, Patterson and Messier 2001, Atwood and Weeks 2002, Atwood 2006). Late-dispersing young could increase their chance of assuming a nearby territory or the natal territory when residents are removed, likely improving reproductive fitness (Morin 2015). Lastly, there is often intensive competition for territories containing more productive habitat. If there is high mortality in these productive habitats, there will be rapid territory turnover in these areas (Patterson and Messier 2001, Morin 2015).

Movements can be expansive in the fall and winter as coyotes explore dispersal opportunities, defend territory boundaries, and/or search for potential mates (Parker and Maxwell 1989, Patterson and Messier 2001, Gosselink et al. 2003). Young coyotes usually begin to disperse from their natal territory by late November or December. Dispersal rates are high and dispersal distances can be extensive; records show that some coyotes in North Carolina have dispersed more than 200 miles in just a few months (Figure 4). Their propensity for dispersal is why attempts to eradicate coyotes from an area are unsuccessful; as coyotes are removed, dispersing coyotes will fill the empty void.

Figure 4. Dispersal of GPS-collared juvenile female coyote from Ft. Bragg, North Carolina to Virginia and subadult female coyote from Ft. Bragg, North Carolina to South Carolina. Map courtesy of NCSU.



**Mortality and Survivorship:** The primary sources of coyote mortality are regulated hunting and trapping, nuisance and damage removal, and roadkill (Bekoff and Gese 2003, Stevenson 2015). Coyote pups may be susceptible to predation by other carnivores, like bobcats or black bears, and avian predators like owls, though the extent is unknown. Other sources of coyote mortality

include disease, exposure, dehydration, and starvation. Most of these mortality factors are more common in younger animals than adults, but can affect all age classes (Bekoff and Gese 2003).

Annual survival was found to be higher (60-70%) during the coyotes' colonization period (i.e., when coyotes expanded their range) and decreased (50%) after coyotes become established due to increased human-caused mortality (Crete and Lemieux 1996, Morin 2015). Mortality rates are higher for juvenile and individuals <1 year of age than for adult coyotes, and increases if the coyote disperses (Hilton 1978, Messier and Barrette 1982, Harrison 1986, Crete and Lemieux 1996, Lloyd 1998, Crete et al. 2001, VanDeelen and Gosselink 2006, Atwood 2006, Morin 2015). A study on Fort Bragg, where hunting access is restricted, found adult ( $\geq 2$  years) coyote survival was 86% and survivorship of coyotes between 9 months and 2 years was 75%. The mortality factors that could be identified included roadkill and trapping (Stevenson 2015).

**Coyote Behavior:** Coyotes are most active at dawn and dusk (crepuscular), but can be active throughout the day (Bekoff and Gese 2003). Urban coyotes tend to be more nocturnal than rural coyotes, most likely to avoid human activities (Gehrt 2007). Coyotes are often wary of people and will either spatially or temporally avoid areas in which threats are perceived. For example, lack of harassment or exploitation can result in coyotes shifting to more diurnal activity versus nocturnal activity (Kitchen et al. 2000). Nocturnal activity of coyotes may be an adaptation to minimize contact with humans, despite their eyesight being best adapted to diurnal and crepuscular activity (Kavanua and Ramos 1975, Andelt and Gipson 1979, Holzman et al. 1992). In some cases, coyotes can become acclimated to humans in the absence of threats, and in areas where unnatural human food sources (pet food and garbage) are readily available. If unnatural food sources are not removed, coyotes may become increasingly habituated to humans.

Coyotes will form packs, but in most cases the packs are related individuals, including an alpha male and female who breed, one or more juveniles born the previous year that did not disperse, and the pups from the current year. Some coyotes will be transient or "loner" animals, which do not breed or maintain a territory (Bekoff and Gese 2003). While these transients are often young, dispersing animals, some will remain transient into adulthood, some adults become transient after the death of a mate, or at an old age (Gese et al. 1988, Kamler and Gipson 2000).

Coyotes have an elaborate repertoire of vocalizations (howls, yips, barks), which serves many purposes, including to locate pack members, distract threats away from their den, and to mark and maintain their territory (Brewster et al. 2017). Howls can be heard up to 3.2 km away and howling frequency is not linked to the intensity of the moonlight (Knudson 1946, Wolfe 1974, Walsh and Lehman 1989). In the late summer, pups become very vocal as they practice howling to mimic their parents. Because of the hollow tone of the howl, a pair of coyotes often sounds like a huge group and estimates of coyote numbers in an area based on howling are often greater

than actual coyote numbers (Knowlton 1972). In a study using 427 participants, 90% overestimated the actual number of coyotes howling by nearly 2-fold (Brewster et al. 2017).

The complex vocalization of coyotes may afford them an ability to seem more numerous than they actually are (Harrington 1989, Brewster et al. 2017). Having a false belief of coyote abundance within an area could exacerbate other coyote misperceptions held by the public (Brewster et al. 2017). For example, producers who lose livestock to predators may assume the culprit was the perceived most abundant predator in the area - in our example, coyotes; however, often the offending animals are actually a different species (e.g., feral dogs, Brewster et al. 2017, S. Henke, unpublished data). Misidentification of the depredating animal could lead to continued depredation issues for the producer, as the offending animal (feral dogs) was not identified and removed from the area.

**Diseases and Parasites:** There are a number of diseases and parasites that can infect coyotes and influence coyote population dynamics (Gier et al. 2001, Bekoff and Gese 2003). While coyotes, like all mammals, can contract rabies, they are not a common carrier of rabies in North Carolina and there have been no major outbreaks of rabies among coyotes (Gier et al. 2001). Of coyotes tested for rabies from 1990–2016, 14 tested positive (Figure 5). Prevalence of rabies in individual NC wildlife species is unknown, but rabid coyotes are relatively uncommon compared to domestic animals and other wild animals, like raccoons, skunks and foxes (Figure 5).

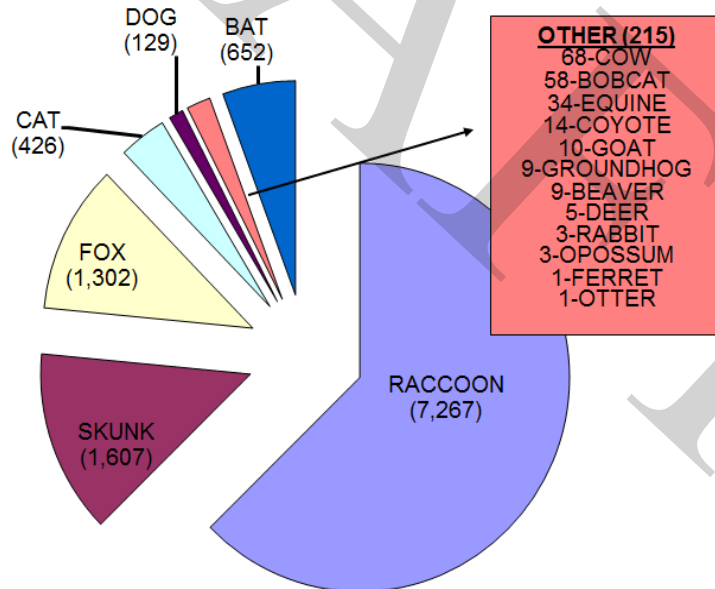


Figure 5. Number of positive rabies cases in North Carolina from 1990 through 2016.

Coyotes can also contract canine distemper (Trainer and Knowlton 1968, Gese et al. 1997, Cypher et al. 1998, Grindler and Krausman 2001). Domestic dogs are the primary reservoir for canine distemper and the virus is of significant concern for other species, like the gray fox (Nicholson and Hill 1984, Gates et al. 2014). Little research has been completed on canine

distemper virus impacts on coyote populations, but it is generally thought that while it can decrease pup survival, it doesn't have a large impact on adults (Gier et al. 1978). Coyotes are also susceptible to canine parvovirus, which, while it does not affect adults, can cause pup mortality (Gese et al. 1997, Grinder and Krausman 2001). This disease, like distemper, can also impact the gray fox, the red fox, and the domestic dog. There is also increasing documentation of canine parvovirus being detected in other species such as members of the weasel family like river otter (Sanders, North Carolina State University, unpublished data). Evidence of parvovirus in coyote populations in North Carolina is scarce, and prevalence in other species in the state is not known.

Research in Michigan also identified bovine tuberculosis in coyotes and suggested they could be sentinels for bovine tuberculosis in other wildlife, such as white-tailed deer (Bruning-Fann et al. 2001, Atwood et al. 2007, Berentsen et al. 2011). Coyotes in other parts of the U.S. have been documented to have antibodies (meaning they've been exposed, but survived the infection) to canine infectious hepatitis, the plague, canine coronavirus, canine parainfluenza virus, canine adenovirus, tularemia, toxoplasmosis, and leptospirosis, though sampling for antibodies to these diseases has not been completed in North Carolina (Davidson et al. 1992, Bekoff and Gese 2003).

Both demodectic and sarcoptic (*Sarcoptes scabiei*) mange can infect coyotes (Gier et al. 2001). Demodectic mange is caused by a mite (*Demodex canis*) that infects the follicle of the hair and causes it to become irritated and inflamed, which often causes hair loss (Gier et al. 2001). Sarcoptic mange is more common and occurs when the *Sarcoptes scabiei* mite burrowing into the epidermal layer of the skin and can result in matted fur with little insulating value from lymph oozing through the skin (Gier et al. 2001). Mange itself is not deadly to coyotes, but the loss of hair during cold winter months can result in animals dying of exposure or the presence of the mites can result in secondary infections from the coyote biting and scratching at the infected sites. There is colloquial evidence of canids like coyotes recovering from mange, but the rate of survival compared to mortality of the disease in the wild is not well understood (Pence et al. 1983). Other external parasites that can infect coyotes includes fleas, ticks, mites, and lice (Gier et al. 2001, Foster et al. 2003).

Internal parasites that infect coyotes includes flukes (trematodes), tapeworms (cestodes), intestinal worms (nematodes, ascarids), hookworms (ancliyostomids), heartworms (filaroids), esophageal worms (spiruroids), lungworms (trichinellids), kidney worms (dioctophymoides), spiny-headed worms (acanthocephalids), protozoans, and coccidian fungus (Dunatchik 1967, Ford 1983, Davidson et al. 1992, Eastman 2000, Gier et al. 2001, Foster et al. 2003). Many internal parasites that infect coyotes haven't been documented to impact the general health of coyotes, but merely provide a host for the parasite's life cycle (Gier et al. 2001). However some internal parasites, like heartworms, can impact body mass and activity levels of coyotes and in

some cases could lead to the death of the animal (Sacks and Blejwas 2000). Most of the internal parasites that infect coyotes do not infect humans, but some may infect domestic dogs or impact other species like foxes. Prevalence of both internal and external parasites in North Carolina coyotes has not been evaluated.

### **Literature Cited**

- Adams, J. R., J.A. Leonard, and L. P. Waits. 2003. Widespread occurrence of a domestic dog mitochondrial DNA haplotype in southeastern U.S. coyotes. *Molecular Ecology* 12:541–546.
- Andelt, W. F., and P. S. Gipson. 1979. Home range, activity, and daily movements of coyotes. *Journal of Wildlife Management* 43(4):944-951.
- Atwood, T. C. 2006. The influence of habitat patch attributes on coyote group size and interaction in a fragmented landscape. *Canadian Journal of Zoology* 84(1):80-87.
- Atwood, T. C., and H. P. Weeks, Jr. 2002. Facultative dyad formation in adult male coyotes. *Northeastern Naturalist* 9(3):353-358.
- Atwood, T. A., K. C. Vercauteren, T. J. Deliberto, H. J. Smith, and J. S. Stevenson. 2007. Coyotes as sentinels for monitoring bovine tuberculosis prevalence in white-tailed deer. *Journal of Wildlife Management* 71:1545–1554.
- Bekoff, M., and E. M. Gese. 2003. Coyote (*Canis latrans*). Pages 467–481 in G. A. Feldhamer, C. Thompson, J. A. Chapman, editors. *Wild mammals of North America: biology, management, and conservation*. Second edition. Johns Hopkins University Press, Baltimore, Maryland, USA.
- Berentsen, A. R., M. R. Dunbar, S. R. Johnson, S. Robbe-Austerman, L. Martinez, and R. L. Jones. 2011. Active use of coyotes (*Canis latrans*) to detect Bovine Tuberculosis in northeastern Michigan, USA. *Veterinary Microbiology* 151:126-132.
- Blanton, K. M., and E. P. Hill. 1989. Coyote use of white-tailed deer fawns in relation to deer density. *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies* 43:470–478.
- Bollin-Booth, H. A. 2007. Diet analysis of the coyote (*Canis latrans*) in metropolitan park systems of northeast Ohio. Thesis, Cleveland State University, Cleveland, USA.
- Brewster, R. K., S. E. Henke, A. Ortega-Santos, J. M. Tomecek, and B. L. Turner. 2017. Do you hear what I hear? Human perception of coyote group size. *Human-Wildlife Interactions* 11(2):167-174.
- Bruning-Fann, C. S., S. M. Schmitt, S.D. Fitzgerald, J. S. Fierke, P. D. Friedrich, J. B. Kaneene, K. A. Clarke, K. L. Butler, J. B. Payeur, D. L. Whipple, T. M. Cooley, J. M. Miller and D. P. Muzo. 2001. Bovine tuberculosis in free-ranging carnivores from Michigan. *Journal of Wildlife Diseases*. 37(1):58-64.
- Chambers, R. E. 1992. Reproduction of coyotes in their northeastern range. Pages 39–52 in A. Boer, editor. *Ecology and management of the eastern coyote*. University of New Brunswick, Fredericton, Canada.
- Crete, M., and R. Lemieux. 1996. Population dynamics of coyotes colonizing the boreal forest of southeastern Quebec. *Journal of Wildlife Resources* 1:99-105.



- Crete, M., J. Ouellet, J. Tremblay, and R. Arsenault. 2001. Suitability of the forest landscape for coyotes in northeastern North America and its implications for coexistence with other carnivores. *Ecoscience* 8(3):311-319.
- Cypher, B. L., J. H. Scrivner, K. L. Hammer, T. P. O'Farrell. 1998. Viral antibodies in coyotes from California. *Journal of Wildlife Diseases*. 34:259-264.
- Davidson, W. R., M. J. Appel, G. L. Doster, O. E. Baker, and J. F. Brown. 1992. Diseases and parasites from commercial sources selling to fox-chasing enclosures. *Journal of Wildlife Disease* 28:581-589.
- Dunatchik, D. D. 1967. The helminth parasites of Michigan coyotes. Thesis, University of Michigan, Ann Arbor, USA.
- Eastman, S. A. 2000. Home ranges and diseases of coyotes (*Canis latrans*) in northwestern New Jersey and northeastern Pennsylvania. Thesis, East Stroudsburg University, East Stroudsburg, USA.
- Elfelt, M. B. 2014. Coyote movement ecology and food habit at Fort Bragg military installation. Thesis, North Carolina State University, Raleigh, USA.
- Ford, S. D. 1983. Ecological studies on coyotes in northwestern Indiana. Dissertation, Purdue University, West Lafayette, USA.
- Foster, G. W., M. B. Main, J. M. Kinsella, L. M. Dixon, S. P. Terrell, and D. J. Forrester. 2003. Parasitic helminthes and arthropods of coyotes (*Canis latrans*) from central Florida, U.S.A. *Comparative Parasitology* 70:162-166.
- Gates, M., R. W. Gerhold, R. Wilkes, W. D. Gulsby, L. Maestas, A. Rosypal, K. V. Miller, D. L. Miller. 2014. Parasitology, virology, and serology of free ranging coyotes (*Canis latrans*) from central Georgia. *Journal of Wildlife Diseases* 50:896-901.
- Gehrt, S. D. 2007. Ecology of coyotes in urban landscapes. *Proceedings of the Wildlife Damage Management Conference* 12:303-311.
- Gehrt, S. D., C. Anchor, and L. A. White. 2009. Home range and landscape use of coyotes in a metropolitan landscape: conflict or coexistence? *Journal of Mammalogy* 90(5):1045-1057.
- Gese, E. M., O. J. Rongstad, and W. R. Mytton. 1988. Home range and habitat use of coyotes in southeastern Colorado. *Journal of Wildlife Management* 52(4):640-646.
- Gese, E. M., R. D. Schlutz, M. R. Johnson, E. S. Williams, R. L. Crabtree, R. L. Ruff. 1997. Serological survey for disease in free-ranging coyotes (*Canis latrans*) in Yellowstone National Park, Wyoming. *Journal of Wildlife Diseases* 33:47-56
- Gier, H. T. 1968. Coyotes in Kansas. Manhattan: Kansas State College Agricultural Experimental Station Bulletin 393.
- Gier, H. T., S. M. Kruckentbert, R. J. Marler. 1978. Parasites and diseases of coyotes. Pages 31-71 in M. Bekoff, editor. *Coyotes: Biology, behavior and management*. Academic Press, New York, New York, USA.
- Gier, H. T., S. M. Kruckenberg, and R. J. Marler. 1978. Parasites and diseases of coyotes. Pages 37-72 in M. Bekoff, editor. *Coyotes: biology, behavior, and management*. 2001, Reprint. Blackburn Press, Caldwell, New Jersey, USA.
- Gosselink, T. E., T. R. Van Deelen, R. E. Warner, and M. G. Joselyn. 2003. Temporal habitat partitioning and spatial use of coyotes and red foxes in east-central Illinois. *Journal of Wildlife Management* 67(1):90-103.
- Grinder, M. P. R. Krausman. 2001. Morbidity-mortality factors and survival of an urban coyote population in Arizona. *Journal of Wildlife Diseases*. 37:312-317.

- Grogan, M. E. 1996. Feeding strategies of the coyote (*Canis latrans*) in western Tennessee. Thesis, University of Memphis, Tennessee, USA.
- Harrington, F. H. 1989. Chorus howling by wolves: acoustic structure, pack size and the Beau Geste effect. *Bioacoustics* 2:117-136.
- Harrison, D. J. 1986. Coyote dispersal, mortality, and spatial interactions with red foxes in Maine. Dissertation, University of Maine, Orono, USA.
- Harrison, D. J. 1992. Social ecology of coyotes in northeastern North America: relationships to dispersal, food resources, and human exploitation. Pages 53-72 in A. N. Boer, editor. *Ecology and management of the eastern coyote*. Wildlife Research Unit, University of New Brunswick, Fredericton, Canada.
- Hill, E. P., P. Sumner, and J. B. Wooding. 1987. Human influences on range expansion of coyotes in the Southeast. *Wildlife Society Bulletin* 15(4):521-524.
- Hilton, H. H. 1978. Systematics and ecology of the eastern coyote. Pages 209-228 in M. Bekoff, editor. *Coyotes: biology, behavior, and management*. Academic Press, New York, New York, USA.
- Hinton, J. W. 2014. Red wolf (*Canis rufus*) and coyote (*Canis latrans*) ecology and interactions in Northeastern North Carolina. Dissertation, North Carolina State University, Raleigh, USA.
- Hinton, J. W., F. T. van Manen, and M. J. Chamberlain. 2015. Space use and habitat selection by resident and transient coyotes (*Canis latrans*). *PLoS ONE* 10(7):e0132203. doi:10.1371/journal.pone.0132203.
- Holzman, S., M. J. Conroy, and J. Pickering. 1992. Home range, movements, and habitat use of coyotes in southcentral Georgia. *Journal of Wildlife Management* 56(1):139-146.
- Kamler, J. F., and P. S. Gipson. 2000. Space and habitat use by resident and transient coyotes. *Canadian Journal of Zoology* 78:2106-2111.
- Kavanau, J. L., and J. Ramos. 1975. Influences of light on activity and phasing of carnivores. *The American Naturalist* 109(968):391-418.
- Kays, R., A. Curtis, and J. J. Kirchman. 2009. Rapid adaptive evolution of northeastern coyotes via hybridization with wolves. *Biology Letters* 6:89-93.
- Kitchen, A. M., E. M. Gese, and E. R. Schauster. 2000. Changes in coyote activity patterns due to reduced exposure to human persecution. *Canadian Journal of Zoology* 78(5):853-857.
- Knowlton, F. F. 1972. Preliminary interpretations of coyote population mechanics with some management implications. *Journal of Wildlife Management* 36:369-382.
- Knowlton, F. F., E. M. Gese, and M. M. Jaeger. 1999. Coyote depredation control: and interface between biology and management. *Journal of Range Management* 52(5):398-412.
- Knudson, V. O. 1946. The propagation of sound in the atmosphere: attenuation and fluctuations. *Journal of the Acoustical Society of America* 18:90-96.
- Lloyd, D. M. 1998. Demographics and condition of coyotes in Illinois. Thesis, Eastern Illinois University, Charleston, USA.
- Mastro, L. 2011. Life history and ecology of coyotes in the Mid-Atlantic states: A summary of the scientific literature. *Southeastern Naturalist* 10(4):721-730.
- McVey, J. M., D. T. Cobb, R. A. Powell, M. K. Stoskopf, J. H. Bohling, L. P. Waits, and C. E. Moorman. 2013. Diets of sympatric red wolves and coyotes in northeastern North Carolina. *Journal of Mammalogy* 94(5):1141-1148.
- Messier, F., and C. Barrette. 1982. The social system of the coyote (*Canis latrans*) in a forested habitat. *Canadian Journal of Zoology* 60(7):1743-1753.

- Moore, G. C., and G. R. Parker. 1992. Colonization by the eastern coyote (*Canis latrans*). Pages 23–37 in A. Boer, editor. Ecology and Management of the Eastern Coyote. Wildlife Research Unit, University of New Brunswick, Fredericton, Canada.
- Morin, D. J. 2015. Spatial ecology and demography of eastern coyotes (*Canis latrans*) in western Virginia. Dissertation, Virginia Tech University, Blacksburg, USA.
- Morin, D. J., S. D. Higdon, J. L. Holub, D. M. Montague, M. L. Fies, L. P. Waits, and M. J. Kelly. 2016. Bias in carnivore diet analysis resulting from misclassification of predator scats bas on field identification. *Wildlife Society Bulletin* 40(4):669-677.
- Nicholson, W. S., E. P. Hill. 1984. Mortality in gray foxes from east-central Alabama. *Journal of Wildlife Management* 48:1429–1432
- Parker, G. R., and J. W. Maxwell. 1989. Seasonal movements and winter ecology of the coyote, *Canis latrans*, in northern New Brunswick. *Canadian Field-Naturalist* 103(1):1-11.
- Parker, T. S. 1999. Food habits of the coyote (*Canis latrans*) in urban and suburban areas of western Tennessee. Thesis, University of Memphis, Memphis, Tennessee, USA.
- Patterson, B. R., and F. Messier. 2001. Social organization and space use of coyotes in eastern Canada relative to prey distribution and abundance. *Journal of Mammalogy* 82(2):463-477.
- Pence, D. B., L. A. Windberg, B.C. Pence, and R. Sprowls. 1983. The epizootiology and pathology of sarcoptic mange in coyotes, *Canis Latrans*, from south Texas.
- Poessel, S. A., E. C. Mock, and S. W. Breck. 2017. Coyote (*Canis latrans*) diet in an urban environment: variation relative to pet conflicts, housing density, and season. *Canadian Journal of Zoology* 95(4):287.
- Sacks, B. N., K. M. Blejwas. 2000. Effects of canine heartworm (*Dirofilaria immitis*) on body condition and activity of free-ranging coyotes (*Canis latrans*). *Canadian Journal of Zoology* 78:1042–1051.
- Schrecengost, J. D., J. C. Kilgo, D. Mallard, H. S. Ray, and K. V. Miller. 2008. Seasonal food habits of the coyote in the South Carolina coastal plain. *Southeastern Naturalist* 7:135–144.
- Stevenson, E. R. 2015. Coyote survival and habitat selection in a longleaf pine ecosystem. Thesis, North Carolina State University, Raleigh, USA.
- Stratman, M. R. and M. R. Pelton. 1997. Food habits of coyotes in northwestern Florida. *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies* 51:269–275.
- Swingen, M. B., C. S. DePerno, and C. E. Moorman. 2015. Seasonal coyote diet composition at a low-productivity site. *Southeastern Naturalist* 14(2):397–404.
- Trainer, D. O. and F. F. Knowlton. 1968. Serologic evidence of diseases in Texas coyotes. *Journal of Wildlife Diseases*. 32: 981-983.
- Tremblay, J., M. Crete, and J. Huot. 1998. Summer foraging behavior of eastern coyotes in rural versus forest landscape: A possible mechanism of source-sink dynamics. *Ecoscience* 5:172–182.
- VanDeelen, T. R., and T. E. Gosselink. 2006. Coyote survival in a row-crop agricultural landscape. *Canadian Journal of Zoology* 84(11):1630-1636.
- Walsh, R. K. and N. Lehman. 1989. Seasonal and diel rate of spontaneous vocalization in coyotes in south Texas. *Journal of Mammalogy* 70:169-171.
- Windberg, L. A., and F. F. Knowlton. 1988. Management implications of coyote spacing patterns in southern Texas. *Journal of Wildlife Management* 52(4):632-640.

Wireback, T. 1990. Coyotes become prey in state. Greensboro News and Record. February 1990.  
Wolfe, G. 1974. Siren-elicited howling response as a coyote census technique. Thesis, Colorado State University, Fort Collins, USA.

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## Appendix C. Report to General Assembly for Mitchell County



**Final Report to the Environmental Review Commission on  
Pilot Coyote Management Assistance Program in Mitchell County**

**January 20<sup>th</sup>, 2017**

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January 20, 2017

Honorable Jimmy Dixon  
N.C. House of Representatives  
300 N. Salisbury Street, Room 416B  
Raleigh, NC 27603-5925

Honorable Chuck McGrady  
N.C. House of Representatives  
300 N. Salisbury Street, Room 304  
Raleigh, NC 27603-5925

Senator Trudy Wade  
N.C. Senate  
300 N. Salisbury Street, Room 521  
Raleigh, NC 27603-5925

Honorables:

The 2015 General Assembly directed the North Carolina Wildlife Resources Commission (NCWRC) to establish and implement a pilot coyote management assistance program in Mitchell County to document and assess private property damage, evaluate control methodologies, and evaluate the potential for a scalable statewide program. I am submitting this final report to the Environmental Review Commission in fulfillment of the requirements of Section 4.35. (a) and Section 4.35. (b) of Session Law 2015-286 (H765).

If you have questions or need additional information, please contact me by phone at (919) 707-0151 or via email at [gordon.myers@ncwildlife.org](mailto:gordon.myers@ncwildlife.org).

Respectfully,

Gordon Myers  
Executive Director

## Introduction

The North Carolina Wildlife Resources Commission (NCWRC) conserves North Carolina's wildlife resources and their habitats and provides programs and opportunities that allow hunters, anglers, boaters and other outdoor enthusiasts to enjoy wildlife-associated recreation. As outlined in our strategic plan, the commission will evaluate and improve the effectiveness of regulatory programs designed to promote wildlife conservation by establishing a comprehensive framework to ensure sustainable wildlife resources. By implementing wildlife management plans, we can attempt to address the impact of predators and other wildlife species.

The 2015 General Assembly directed the NCWRC to establish a coyote management plan to address the impacts of coyotes and the threats that coyotes pose to citizens, industries, and populations of native wildlife species within the State. The Wildlife Resources Commission reported its findings and recommendations to the Environmental Review Commission on March 1, 2016.

In addition, the NCWRC was directed to establish a pilot coyote management assistance program in Mitchell County. In implementing the program, the Commission was required document and assess private property damage associated with coyotes; evaluate effectiveness of different coyote control methodologies, including lethal removal; and evaluate potential for a scalable statewide coyote assistance program. A final report on the results of the pilot program, including proposed legislation was to be submitted to the Environmental Review Commission by January 15th, 2017. This report fulfills the requirement of Section 4.35.(b) of SL 2015-286.

## Background and Approach

Coyotes are typically elusive animals that avoid direct contact with humans and are most active after dusk and before daylight. They are usually only seen at a distance and may be heard more often than seen. Most citizens have little direct personal experience with coyotes, as coyote behavior minimizes their contact with humans. However, the potential for negative coyote/human interactions and associated property damage and economic loss do exist in both rural and urban settings. Management efforts for coyotes must be broad and adaptable in nature to be successful.

The NCWRC established a working group to address the action items outlined in statute (Section 4.35. (a)) based on recommendations and constituent desires determined through social research. An initial meeting with Senator Ralph Hise, Mitchell County officials, livestock owners and livestock producers, and NCWRC staff took place on November 30, 2015 in Spruce Pine. The purpose of this meeting was to determine the most effective approach to meeting



both the legislative and constituent needs related to concerns of coyote depredation on livestock.

The constituents in attendance stated that livestock predation was the primary type of property damage caused by coyotes in Mitchell County, and outlined immediate needs and potential solutions. The findings provided clarity for addressing the specifics of coyote issues in Mitchell County. The following objectives were identified as components necessary of a pilot coyote management assistance program in Mitchell County:

1. Increase understanding of coyote/human/livestock interactions, specifically depredation incidents in Mitchell County;
2. Provide public outreach related to coyote biology and coyote management;
3. Develop a communication system to place landowners in direct contact with individuals qualified to assess and address coyote depredation; and
4. Educate constituents on coyote management options and available coyote depredation management techniques.

## Summary and Evaluation of Objectives

### **1. Increase understanding of coyote/human/livestock interactions, specifically depredation incidents in Mitchell County.**

Coyotes come into contact with humans in a variety of ways, from just crossing a street or a field to chasing and attacking pets or depredating livestock or other private property. The first step in solving any conflict with wildlife is to accurately identify the source of the problem. Because coyote damage is seldom observed by humans as it is happening, heavy reliance must be placed on indirect evidence at the damage site. Not all coyotes develop predation tendencies on livestock, and coyotes that scavenge livestock carcasses may be incorrectly blamed for the deaths of those animals.

The wide range in perspectives about coyotes prompts the need to determine a fundamental understanding of the public's primary issues and concerns, their knowledge of coyote biology and management options, and their understanding of laws and regulations for addressing coyote management situations. To gain an understanding of coyote/human/livestock interactions in Mitchell County and to assess incidence of depredation, a scientific survey was developed and sent to all registered livestock producers in the county.

### Survey Method

We surveyed one hundred and fifty-four (154) Mitchell County residents identified by NC Cooperative Extension staff as livestock owners. The survey asked respondents about specific damage and losses attributed to coyotes in 2015. Livestock owners were asked the number of livestock they own and the numbers and types of predation events they have observed. In addition, the survey evaluated the respondents' perception of the coyote population, their general knowledge of coyotes, and their opinions regarding specific management alternatives. An identical survey was sent to livestock owners in neighboring Yancey County. Yancey County and Mitchell County have similar livestock numbers, thus providing a control group.

The initial mailing of the survey was sent on April 7, 2016. In an effort to improve response rate, a second mailing was sent on May 12, 2016. The survey was closed on June 23, 2016. The survey was mailed in envelopes provided by the NC Cooperative Extension in an effort to capitalize on the relationship between livestock owners and their County Extension Agent.

Results from the Mitchell County survey are presented throughout this report, and both surveys and responses are provided in Appendix 1.

### Data Analysis

Survey data were analyzed using IBM SPSS Statistics 24.0<sup>1</sup> (SPSS Inc. 2016). Frequency distributions and percentages of responses were calculated for each category and for each survey question. For bivariate comparisons, chi-square tests ( $\chi^2$ ) were used to test the null hypotheses that there were no differences between variables. A probability value (P-value) of  $\leq 0.05$  was used to indicate statistically significant relationships. Categories in cross-tabulations were omitted or combined in order to reduce the violation of the assumption that  $<20\%$  of cells had expected values  $<5$  (Delucchi 1983)<sup>2</sup>. However, due to the violation, only the Likelihood Ratio was analyzed, rather than the Pearson Chi-Square. Means were calculated for questions that used a 5 point unconcerned/concerned scale (unconcerned=0, concerned=4), a 5 point not knowledgeable/knowledgeable scale (not knowledgeable=0, knowledgeable=4) or a 5 point unacceptable/acceptable scale (unacceptable=0, acceptable=4). It should be noted that due to rounding, percentages may not total 100% or may appear off when individual categories were combined.

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<sup>1</sup> SPSS Inc. 2016. IBM SPSS Statistics, Version 24.0. SPSS Inc., Chicago, Illinois.

<sup>2</sup> Delucchi, K.L. 1983. The use and misuse of chi-square: Lewis and Burke revisited. *Psychological Bulletin* 94(1):166-176.

## Survey Results & Discussion

Of the 154 surveys, 55 respondents completed and returned the survey (36%). The low sample size and response rate likely leads to some response bias in the results, as individuals who had a passionate opinion about the topic were most likely to respond.

### *Perceptions of Mitchell County livestock owners regarding coyote presence, abundance, and origin.*

Seventy-eight percent (78%) of respondents indicated they were “extremely concerned” about coyotes on or near their farm. Specific threats to which respondents indicated they were “very concerned” were:

1. Coyotes spreading rabies (58%),
2. regular presence near farm (56%),
3. damage to the property (52%),
4. a pet being attacked (50%),
5. a child being attacked (47%), and
6. Potential risk to myself in a face-to-face encounter (23%).

These responses suggest that while there is significant concern about coyotes in Mitchell County, only slightly more than half of survey respondents indicated that they were “very concerned” about any of the specific situations presented.

The highest level of concern was about coyotes spreading rabies. While coyotes can and do carry rabies, the incidence of rabies in coyotes is less than other mammals such as raccoon, fox, and skunk. In 2016 the North Carolina Rabies laboratory tested 3616 animals, 9 of those were coyotes and they all tested negative for the rabies virus.

The next highest rated concern was that coyotes were a regular presence near respondent’s farms (56%). When presented with response options ranging from 0 to 11+ times, thirty-nine (39%) of livestock owners indicated that they had heard a coyote 11+ times within roughly a mile of their farm in the last twelve months. Six percent (6%) of respondents indicated that they had not heard a coyote in the last twelve months. In addition, forty-three (43%) of owners indicated that they had seen a coyote between 2-5 times with 10% indicating they had not seen a coyote in the last twelve months. These results suggest that landowners are more likely to hear rather than see coyotes near their farm and that hearing coyotes is enough to create concern amongst respondents.

Eighty-two percent (82%) of livestock owners indicated they feel the coyote population has increased in the last 10 years. The need for education and outreach programs directed toward all citizens (not just livestock owners) about coyotes and how the established presence of coyotes affects them remains paramount in all management efforts.

Fifty percent (50%) of the survey respondents indicated that they believe coyotes were placed in the county by a government agency. This seems to be a common misconception, at no time did a government agency bring coyotes to Mitchell County or to the State of North Carolina. The need for education and outreach programs directed toward all citizens (including livestock owners) about coyote biology and their interaction with humans and domestic animals is the cornerstone of any coyote management efforts.

*Livestock Ownership*

The majority of livestock owners in Mitchell County responding to the survey own cattle followed by equine and poultry. Some respondents also included cats, dogs, and pigs in their responses. Numbers of producers and numbers of animals owned by livestock type are presented in the table 1.

Table 1: Respondent Livestock Ownership in Mitchell County

Livestock	Number of Producers	Minimum Animals	Maximum Animals	Sum	Mean
Cattle	35	2	80	979	28
Goats	6	2	60	87	15
Equine	14	1	6	35	3
Sheep	1	2	2	2	2
Poultry	10	10	50	279	28
Other species	4	2	4	10	3

*Assessment of Damage to Private Property (specifically livestock) associated with coyotes.*

Fifty-eight percent (58%) of survey respondents indicated that they had not lost any livestock to predators in the last three years and 42% indicated that they had lost livestock to predators in the last three years. Of the 55 respondents, eighteen indicated that they believed coyotes were responsible for the depredation that occurred on their livestock. Other predators reported to have killed livestock included bobcats (4%), feral dogs (13%), and black bears (13%). Seventeen percent (17%) indicated something other than the species provided in the survey killed their livestock (i.e. fox, owl, raccoon, etc.) and 13% indicated that they were not sure what killed their livestock.

Of the eighteen livestock producers that believed they had lost livestock to coyotes, the mean number of animals lost over three years were, poultry (10), cattle (2.19), and goats (1.5). The maximum number of cattle lost over a three-year period by any one owner was six.

*Effectiveness of different coyote control methodologies.*

While coyotes have established a reputation for efficient and effective predation in North Carolina, the extent of coyote predation on livestock is poorly documented. Identifying localized impacts of predation on livestock across North Carolina through additional research is critical to developing effective and efficient statewide damage control methodologies that are applicable at a local level.

Constituents attending the initial meeting in Mitchell County presented multiple recommendations for coyote population reduction, including the use of a bounty system. Historically, bounties have been used with little success to control coyote populations. The use of bounties for controlling unwanted wildlife, including predators, have largely been discontinued because they are ineffective in reducing actual damage and are not economically viable. For example, the North Carolina coyote harvest for 2014-15 totaled 51,118 animals. If each of those were reported for the purpose of collecting a bounty, the cost would exceed \$1.2 million annually at \$25 per animal for animals that are already being removed from the landscape. Additionally, killing individual coyotes that are not causing damage opens territories for other coyotes that may have learned to depredate livestock or cause other type of damage.

Lethal removal targeting offending coyotes can be a very effective method to reduce coyote damage. However, it is important to understand that indiscriminate removal of coyotes can be ineffective and counterproductive. Animal husbandry practice modification and non-lethal control techniques may prove more effective for reducing coyote depredations on livestock than lethal removal. Some of the very effective practices and techniques include: confining or concentrating young or birthing livestock at peak times of vulnerability, removing carrion from pastures, improved fencing, and the use of guard animals. Protective fencing options are available and can exclude or deter coyote depredation in an area. Dogs, donkeys, mules, and llamas are used as effective livestock guards to reduce property loss by coyotes.

To develop a better understanding of what actions Mitchell County livestock producers may have taken to address coyote issues, survey recipients were offered a list of different management actions that they have or have not employed to address coyote “problems” on their farm. The term “problem” was intentionally not defined, as mere coyote presence may be perceived as a problem for respondents that have never experience livestock loss.

The majority of respondents indicated they had not implement the actions presented in the survey. This might suggest that while respondents are concerned about coyotes, their concern and/or actual damage had not risen to a level at which a landowner decided to take action.

Alternatively, this could indicate that respondents were not aware of what actions could be taken.

Of those who did implement some type of management action, the top four were:

1. the livestock owner or family member fired a gun to scare it but not kill it (implemented/problem remained, 39%; implemented/problem solved, 8%),
2. removed outside attractants (e.g. pet food, garbage, etc.) (implemented/problem remained, 38%; implemented/problem solved, 8%), and
3. allowed someone to hunt coyotes on their property (implemented/problem remained, 35%; implemented /problem solved, 6%).
4. Placed a guard animal with my livestock (dog, donkey, llama, etc.) (implemented/problem remained, 31%, implemented/problem solved, 8%).

When non-lethal techniques do not deter depredations, targeted or selected removal of offending coyotes may achieve management objectives. Removing one or two offending individuals in a small area may stop the problem. Trapping is the most effective and efficient means for targeting and removing coyotes that are actively depredating livestock. However, trapping coyotes requires knowledge and a skillset not necessarily possessed by the average individual. Well trained and experienced coyote trappers are typically required to successfully remove problem animals without exacerbating the issue by causing the coyotes to become more difficult to trap due to poor technique.

The concept of a coyote management assistance program might include tools that connect qualified trappers with landowners to remove offending animals from private property. This strategy would require the landowners grant access to their property. It would also require a funding model to address trapping costs. To identify respondent support for certain options related to providing this type of service, respondents were asked about their level of acceptance of the following scenarios.

1. Government officials trapping coyotes on their property.
  - Sixty-five percent (65%) of livestock owners felt it was acceptable, 22% felt it was unacceptable.
2. Contracting with private trappers to trap and remove coyotes on their property.
  - Fifty-six percent (56%) of livestock owners felt it was acceptable, 34% felt it was unacceptable.
3. The County paying private contractors to trap coyotes on their property.
  - Sixty-three percent (63%) of livestock owners felt it was acceptable, 27% felt it was unacceptable.
4. The State paying private contractors to trap coyotes on their property.
  - Sixty-four percent (64%) of livestock owners felt it was acceptable,

23% felt it was unacceptable.

5. A cost share arrangement where the landowner, county and/or State share the cost of trapping coyotes on my property.
  - Twenty-nine percent (29%) of livestock owners felt it was acceptable, 49% felt it was unacceptable.

These results suggest the majority of respondents agree with the concept of allowing government officials and private trappers to trap and remove coyotes from their property provided that the State or County paid for those services (while 56% of respondents thought it was acceptable to contract with trappers – it is not clear who they thought should pay). Respondents were less likely to support a cost share model where the landowner, County and State shared the cost of those services. This is not unexpected given that many survey respondents believe that a government agency is responsible for the coyotes being introduced to Mitchell County. Nevertheless, 29% of respondents indicated that a cost-share model for providing trapping services on their land would be acceptable.

## **2. Provide public outreach related to coyote biology and coyote management;**

NCWRC staff worked with Mitchell County Cooperative Extension and Mitchell county officials to design and implement an educational outreach strategy. Specifically, this effort includes informational packages made available at the County Extension office and structured workshops to educate livestock producers and other concerned citizens regarding coyote biology, management, and damage control options available.

NCWRC partnered with Mitchell County, USDA-Wildlife Services, and the North Carolina Trappers Association to conduct the first Coyote Damage Management Workshop in the State on May 17, 2016 (Appendix II). NCWRC and USDA-Wildlife Services staff presented information about the history and biology of coyotes, legal aspects of coyote management, options to control or minimize damage from coyotes, and how to examine animal carcasses for evidence of predation likely caused by coyotes. Participants were given a hands-on demonstration by a trapping expert regarding setting traps for the capture of coyotes with specific information and strategies related to trapping coyotes that appear to be preying on livestock.

In addition, attendees were given information about the availability of onsite technical guidance provided by NCWRC wildlife biologists. This service focuses on coyote biology and how to minimize predation using lethal and non-lethal control methods including alternative husbandry practices and is available to landowners throughout the state. Based on our interaction with individuals in Mitchell County, this resource is not well known.

Reviews and comments by the workshop attendees indicated that they very much appreciated the workshops. Attendees stated that they learned a considerable amount about coyotes and

coyote management, and developed a better understanding of coyote damage and options for addressing that damage.

The NCWRC replicated this workshop in two other locations (Statesville and Greenville) in 2016. Due to high demand, two workshops were held in Statesville. Livestock producers were well represented at the first Statesville workshop with the other two workshops having greater attendance by citizens with a general concern about coyotes and the potential impact on other wildlife species.

### **3. Develop a communication system to place landowners in direct contact with individuals qualified to assess and address coyote depredation.**

NCWRC staff worked with the local Cooperative Extension office, landowners, and other livestock predation experts to develop a system that livestock producers can access to help them identify depredating animals based on examination of carcasses believed to have been lost due to predation. Because the emphasis should be on assisting producers with reduction in loss due to predation (regardless of the species of predator), identifying the cause of death and attempting to link that cause to a particular species will aid in determining the most effective treatment or management methodology.

This process is ongoing and will improve as coordination and cooperation between local Cooperative Extension Offices, livestock producers, NCWRC staff and other qualified animal damage experts improve through a county centered hub. Little damage/predation was reported during the pilot time period, as supported by the results of the survey, and we were unable to test the effectiveness of the communication system. However, the communication system is and will remain a valuable asset to document and quantify the real impacts of predation on our livestock producers.

### **4. Educate constituents on coyote management options and available coyote depredation management techniques.**

There are currently a number of laws and regulations that provide options for citizens to address coyote depredation issues. Options are briefly outlined below.

#### Hunting

Coyote hunting is allowed year-round, both day and night, and with the aid of electronic calls in Mitchell County. Landowners may hunt coyotes on their property at any time without a hunting license or permit.

#### Trapping



Trapping coyotes is legal in Mitchell County during the established trapping season (November 1<sup>st</sup> – February 28<sup>th</sup>). However, complex county by county trapping laws for other species, specifically foxes, which are illegal to trap in Mitchell County, may lead to confusion regarding the legality of trapping coyotes in certain areas.

### Depredation Shooting/Trapping

Landowners may shoot coyotes at any time on their property. In addition, landowners may obtain a depredation permit to shoot coyotes, either from Wildlife Damage Control Agents or from NCWRC staff when damage is documented - livestock and poultry owners may obtain a coyote depredation permit for shooting or trapping upon request, even if no damage has occurred. The depredation permit can specify other individuals (referred to as 2<sup>nd</sup> party shooters) who can shoot coyotes on their property. Individuals listed as second party shooters on a depredation permit are not legally required to have a hunting license. Depredation permits to shoot coyotes are not routinely requested in most rural areas since year round 24-hour hunting is already legal.

### *Mitchell County livestock owner's knowledge of coyote management options and available coyote depredation management techniques.*

A portion of the survey inquired about livestock owner's knowledge of current regulations regarding take of coyotes. Only half (52%) of the livestock owners were confident that hunting coyotes was legal in Mitchell County and fewer (38%) believed trapping was legal. When asked about a landowner's right to shoot coyotes in the act of doing damage, 40% of the respondents indicated they were somewhat knowledgeable. When asked about an individual's lawful right to obtain a depredation permit to trap coyotes on their property, 62% of the respondents indicated that they were not at all knowledgeable about this option.

Results from the survey confirm a lack of knowledge and understanding of the currently available legal options for landowners to address coyote issues through animal removal. These results highlight the need to provide greater outreach and information material at the county level such that local residents and government officials clearly understand all the options available to them. Better communication regarding rules and regulations that govern coyote take may prove of great value for livestock owners.

## **Future Actions and Recommendations**

Recognizing that coyotes cannot be extirpated from North Carolina's landscape, coyote damage complaints must be addressed on an incident specific basis. Based on survey results, individuals with concerns about coyotes appear to fit into one of two categories: people that have experienced loss or damage believed to be caused by coyotes; and people that are simply

concerned because they are aware coyotes are nearby (they occasionally see or hear them). While both groups had limited knowledge of the options available to address their concerns, only a few of those respondents with potential to lose livestock had taken either preventative or responsive action in Mitchell County. While trying to assess type of predators and their impacts on livestock, efforts were made to investigate potential depredation incidents during the pilot project; due to limited predatory activity, we were unable to test the effectiveness of this service. The structure and necessary components of this service remain in place to be used if predation takes place.

We recommend continuing the outreach started with this pilot program and to expand and enhance access to information related to coyote biology and management at the Cooperative Extension offices. Access to resource professionals and the myriad of options currently available to the private landowner must be appropriately communicated to improve user experience.

Mitchell and Yancey County Cooperative Extension partners involved in the pilot project indicated that printed material and/or easy access to online material that can be printed for constituents is a constructive step towards informing citizens about coyotes, coyote management and addressing coyote damage on their property.

We do not recommend funding a coyote removal program (i.e. bounties) due to the ineffectiveness of indiscriminate coyote removal in resolving depredation. In addition, the cost of such a program is not economically viable and would greatly exceed the economic losses currently being realized.

With the completion of this pilot project and the information obtained from both professional staff and the local landowners and livestock producers, the recommendation for specific actions that should be taken in Mitchell County and in other affected counties are:

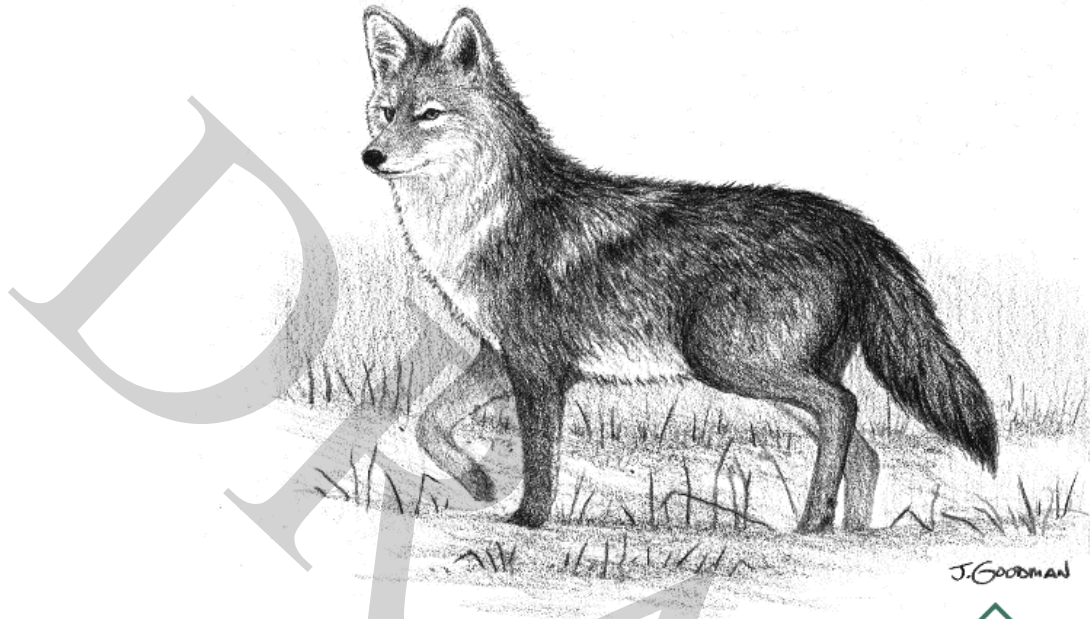
1. Promote the local Cooperative Extension offices as a hub for local citizens to obtain information specifically related to coyote biology and management, and connect the citizens with appropriate professionals to address their needs.
2. Distribute and or make readily available all current coyote management and regulation educational materials produced by the NCWRC.
3. Develop a brochure that clearly outlines landowner's legal rights to address coyote depredation on their property.
4. Continue the Coyote Damage Management workshops targeting smaller geographic areas of the state (i.e. County level workshops) where possible and desired.
5. Ensure that landowners and other professionals are aware of and have access to the damage management assistance resources currently provided by NCWRC.
  - a. Licensed Trappers (<http://www.ncwildlife.org/Trapping/Contact-a-Licensed-Trapper> )
  - b. Wildlife Damage Control Agents (WDCA) (<http://www.ncwildlife.org/Trapping/Wildlife-Damage-Control-Agent>)

- c. Professional assistance from NCWRC biologists upon request to any citizen in the State free of charge to examine their property and provide direction for managing coyotes and coyote depredation.
6. Continue to monitor constituent needs and develop recommendations to address evolving issues as appropriate.

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## APPENDIX 1. Survey Results for Mitchell and Yancey County Livestock Owners

### Survey of Mitchell County Livestock Owners About Coyotes



#### N=55

We need your help to better understand the interactions between livestock owners and coyotes in Mitchell County, North Carolina.

You are receiving this survey because Mitchell County Agriculture Extension identified you as a livestock owner in the County.

Your answers are completely confidential and will be used to inform future management decisions.

This survey should take about 15 minutes to complete. Please complete the following questions and return it in the enclosed business reply envelope, or mail to:

N.C. Wildlife Resources Commission  
1723 Mail Service Center  
Raleigh, NC 27699-1700

1) In Mitchell County, how concerned are you that coyotes are on or near your farm?

Not at all Concerned		Somewhat Concerned		Extremely Concerned
0	1	2	3	4
1.9%	3.7%	16.7%	7.4%	70.4%

2) Within roughly a mile of your farm and in the last 12 months, how many times have you...  
(Check one box in the row or answer "Don't know")

	0	1	Times 2-5	6-10	11+	Don't know
... heard a coyote?	5.6%	3.7%	16.7%	25.9%	38.9%	9.3%
... seen a coyote?	10.2%	16.3%	42.9%	12.2%	12.2%	6.1%

3) In your opinion, how has the coyote population in Mitchell County changed in the last ten years? (Check one)

- 81.8% Increased
- 7.3% Stayed the Same
- 3.6% Decreased
- 7.3% Unsure

4) How do you think coyotes got to North Carolina? (Check all that apply)

- 18.5% They walked here from other states
- 24.1% They were released in NC by hunters
- 50.0% They were released by a government agency
- 3.7% Other (specify): Wildlife, Wildlife Commission
- 25.9% Unsure
- 1.9% They have always been here

5) Is coyote hunting legal in Mitchell County? (Check one)

- 51.9% Yes
- 0% No

48.1% Unsure

6) Is coyote trapping legal in Mitchell County? (Check one)

38.2% Yes

0% No

61.8% Unsure

7) If you wanted more information about coyotes, what source would you go to first?

(Check one)

12.7% A friend or family member

30.9% Agriculture Extension

21.8% General web search

41.8% The NC Wildlife Resources Commission

1.8% Local animal control

3.6% Other (specify): No one to go to, there is no one to help

8) Please circle the number that best represents how knowledgeable you are about a livestock owner's ability to get a permit to trap coyotes.

Not at all knowledgeable		Somewhat knowledgeable		Extremely knowledgeable
0	1	2	3	4
61.8%	16.4%	21.8%	0%	0%

9) Please circle the number that best represents how knowledgeable you are about a landholders' (owners, farmers, etc.) right to shoot coyotes in the act of doing damage.

Not at all knowledgeable		Somewhat knowledgeable		Extremely knowledgeable
0	1	2	3	4
23.6%	10.9%	40.0%	9.1%	16.4%

10) What livestock are present on your farm? (Check all that apply and please estimate the average number of each type you have in a normal year)

74.5% Cattle (# 27.97 (Mean)) 3.6% Sheep (# 2.00 (Mean))

10.9% Goats (# 14.50 (Mean)) 27.3% Poultry (chickens, turkeys, ducks, etc.) (# 27.90, Mean))

27.3% Equine (horses, ponies, mules, donkeys, etc.) (# 2.50 (Mean))

16.4% Other Cats, dogs, pigs/hogs (2.50 (Mean))

14.5% None, I no longer have livestock

11) Have you lost livestock to predators in the last three years?

41.8% Yes 58.2% No

If you answered YES to Question 11, please proceed to Questions 12.

If you answered NO to Question 11, please skip to Question 14.

12) Which species do you believe is responsible for the loss of your livestock in the past 3 years? (Check all that apply)

4.3% Bobcat 13.0% Feral dogs 78.3% Coyote

13.0% Black bear 0% Black Vultures

17.4% Other (specify): fox, mountain lion/big cat, opossum, raccoon, owls

13.0% In some cases, I was unsure what killed the animal

13) If you checked coyotes in question 12, please indicate the numbers of animals of each species you feel you have lost to coyotes in the last 3 years.

2.19 (Mean) Cattle 0 Sheep 1.50 (Mean) Goats

10.00 (Mean) Poultry 0 Equine I did not lose animals to coyotes

1.00 (Mean) Other (please specify): \_\_\_\_\_

14) Based on your experience with coyotes, please rank your concerns for each of the following. (Check one box for each row)

	Not concerned <span style="float: right;">←————→ Very Concerned</span>				
	0	1	2	3	4
Regular presence of coyotes near your farm	9.3%	3.7%	13.0%	18.5%	55.6%
Potential risk to myself in a face-to-face encounter with a coyote	26.4%	18.9%	18.9%	13.2%	22.6%
A child being attacked	13.2%	9.4%	11.3%	18.9%	47.2%
A pet being attacked	9.6%	5.8%	13.5%	21.2%	50.0%

Damage to your property (livestock, crops)	9.6%	7.7%	9.6%	21.2%	51.9%
Coyotes spreading rabies	3.8%	3.8%	19.2%	15.4%	57.7%

15) Which of the following actions, if any, have you taken because a coyote was on your farm?

(Check one box for each row)

	Did not implement this action	Implemented action, but coyote problem remained	Implemented action, and coyote problem was solved
Removed outside attractants (e.g., pet food, garbage, etc.)	54.0%	38.0%	8.0%
Called a wildlife official	93.8%	6.3%	0%
Yelled at or tried to scare it	58.8%	33.3%	7.8%
You or a family member fired a gun to scare it, but not kill it	53.8%	38.5%	7.7%
Confined my livestock or pets	65.3%	24.5%	10.2%
Put up fencing to protect my animals	74.5%	17.6%	7.8%
Placed a guard animal with my livestock (dog, donkey, llama, etc.)	61.5%	30.8%	7.7%
Trapped it myself	94.2%	5.8%	0%
Someone trapped it for me for free	94.1%	5.9%	0%
I paid a person to trap it	96.1%	3.9%	0%
I hired a Wildlife Damage Control Agent	100.0%	0%	0%
I or a family member shot it	71.4%	26.5%	2.0%



Allowed someone to hunt coyotes on my property	59.6%	34.6%	5.8%
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16) For the following scenarios, please indicate the acceptability or unacceptability of each of the following options for removing coyotes from your property.

(Check one box for each row)

Coyote Removal Methods	Highly Unacceptable ←————→ Highly Acceptable 0                      1                      2                      3                      4				
	Government officials trapping coyotes on my property would be...	17.6%	3.9%	13.7%	5.9%
Contracting with private trappers to trap and remove coyotes on my property would be ...	28.0%	6.0%	10.0%	14.0%	42.0%
The County paying private contractors to trap coyotes on my property would be...	23.5%	3.9%	9.8%	9.8%	52.9%
The State paying private contractors to trap coyotes on my property would be ...	21.2%	1.9%	13.5%	7.7%	55.8%
A cost share arrangement where the landowner, county and/or State share the cost of trapping coyotes on my property would be ...	33.3%	15.7%	21.6%	7.8%	21.6%

**DEMOGRAPHICS:** (For statistical purposes only. Your responses are confidential).

17) How many years have you lived in Mitchell County? 61.20 (Mean) years

18) In what year were you born? 67.02 (Mean Age)

19) Are you male or female?  
 92.6% Male    7.4% Female

20) Which of the following best represents your gross household income (before taxes) in 2015?  
(Check one)

- 8.5% Less than \$20,000
- 27.7% \$20,000-39,999
- 10.6% \$40,000-59,999
- 21.3% \$60,000-79,999
- 8.5% \$80,000-100,000
- 8.5% \$100,000-120,000
- 8.5% More than \$120,000
- 6.4% Prefer not to answer

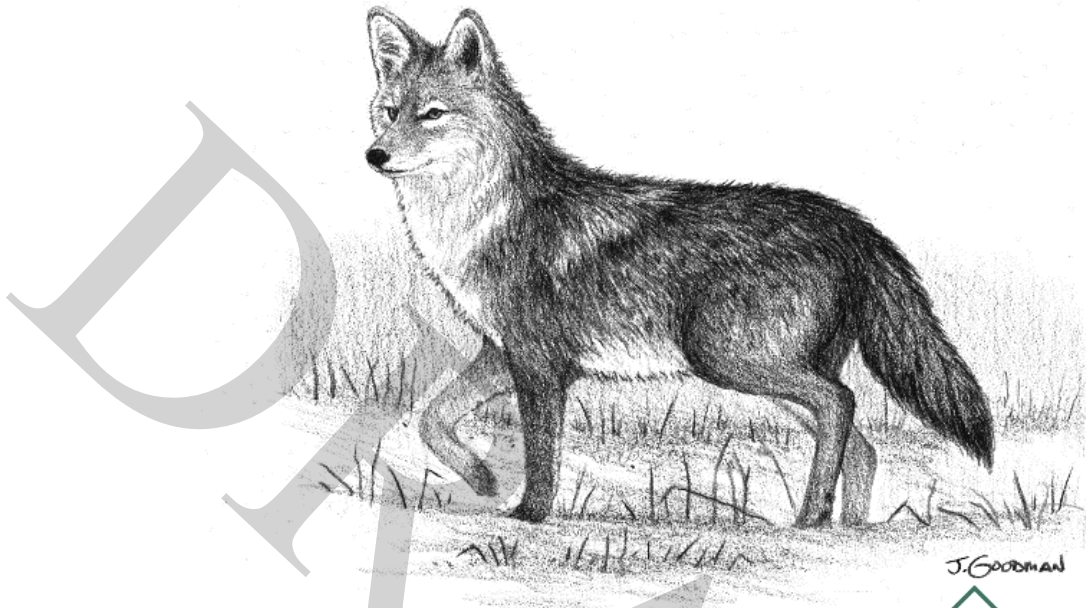
21) What is the highest level of schooling/education that you have completed? (Check one)

- 7.7% Less than a high school education
- 28.8% High school or GED
- 9.6% Vocational, technical, trade school or certificate program
- 13.5% Some college course work (no degree)
- 7.7% Associate’s degree (2 year degree)
- 19.2% Bachelor’s degree (4 year degree)
- 3.8% Some graduate study
- 7.7% Graduate or professional degree
- 1.9% Other- Please specify Hands-on experience

**CONTACT PHONE NUMBERS**

Survey Information .....	828-294-2605
License Information and Purchasing.....	888-248-6834
Violations Reporting .....	800-662-7137
NC Turn-In-Poachers.....	855-945-3847 (1-855-WILDTIP)
Hunter Safety Course Information.....	919-707-0031
Enforcement Operations.....	919-707-0030
Engineering and Land Management .....	919-707-0150
Wildlife Management.....	919-707-0050

**Survey of Yancey County  
Livestock Owners  
About Coyotes**



**N=26**

We need your help to better understand the interactions between livestock owners and coyotes in Mitchell County, North Carolina.

You are receiving this survey because Mitchell County Agriculture Extension identified you as a livestock owner in the County.

Your answers are completely confidential and will be used to inform future management decisions.

This survey should take about 15 minutes to complete. Please complete the following questions and return it in the enclosed business reply envelope, or mail to:

N.C. Wildlife Resources Commission  
1723 Mail Service Center  
Raleigh, NC 27699-1700

Thank you!

1) In Yancey County, how concerned are you that coyotes are on or near your farm?

Not at all Concerned		Somewhat Concerned		Extremely Concerned
0	1	2	3	4
0%	0%	16.0%	24.0%	60.0%

2) Within roughly a mile of your farm and in the last 12 months, how many times have you...  
(Check one box in the row or answer "Don't know")

	0	1	Times 2-5	6-10	11+	Don't know
... heard a coyote?	0%	0%	0%	28.0%	72.0%	0%
... seen a coyote?	8.0%	16.0%	32.0%	28.0%	16.0%	0%

3) In your opinion, how has the coyote population in Yancey County changed in the last ten years?  
(Check one)

92.0% Increased

4.0% Stayed the Same

4.0% Decreased

0% Unsure

4) How do you think coyotes got to North Carolina? (Check all that apply)

32.0% They walked here from other states

8.0% Unsure

48.0% They were released in NC by hunters

4.0% They have always been here

60.0% They were released by a government agency

8.0% Other (specify): Fox hunters; I hear rumors of them being released in fox pens and escaping – they say they run better than a fox when run with hounds

5) Is coyote hunting legal in Yancey County? (Check one)

76.0% Yes

4.0% No

20.0% Unsure

6) Is coyote trapping legal in Yancey County? (Check one)

- 68.0% Yes
- 4.0% No
- 28.0% Unsure

7) If you wanted more information about coyotes, what source would you go to first?

(Check one)

- 8.0% A friend or family member
- 16.0% Agriculture Extension
- 20.0% General web search
- 64.0% The NC Wildlife Resources Commission
- 0% Local animal control
- 0% Other (specify): \_\_\_\_\_

8) Please circle the number that best represents how knowledgeable you are about a livestock owner's ability to get a permit to trap coyotes.

Not at all knowledgeable		Somewhat knowledgeable		Extremely knowledgeable
0	1	2	3	4
50.0%	4.5%	18.2%	18.2%	9.1%

9) Please circle the number that best represents how knowledgeable you are about a landholders' (owners, farmers, etc.) right to shoot coyotes in the act of doing damage.

Not at all knowledgeable		Somewhat knowledgeable		Extremely knowledgeable
0	1	2	3	4
13.0%	13.0%	21.7%	8.7%	43.5%

10) What livestock are present on your farm? (Check all that apply and please estimate the average number of each type you have in a normal year)

- 84.0% Cattle (# 32.20 (Mean)) 16.0% Sheep (# 6.25 (Mean))
- 12.0% Goats (# 13.00 (Mean)) 32.0% Poultry (chickens, turkeys, ducks, etc.) (# 29.13 (Mean))
- 24.0% Equine (horses, ponies, mules, donkeys, etc.) (# 4.00 (Mean))
- 0% Other \_\_\_\_\_
- 8.0% None, I no longer have livestock

- 11) Have you lost livestock to predators in the last three years?  
 50.0% Yes                                      50.0% No

If you answered YES to Question 11, please proceed to Questions 12.  
 If you answered NO to Question 11, please skip to Question 14.

- 12) Which species do you believe is responsible for the loss of your livestock in the past 3 years? (Check all that apply)  
 7.7% Bobcat                      7.0% Feral dogs                      84.6% Coyote  
 30.8% Black bear                      0% Black Vultures  
 7.7% Other (specify): fox \_\_\_\_\_  
 15.4% In some cases, I was unsure what killed the animal

- 13) If you checked coyotes in question 12, please indicate the numbers of animals of each species you feel you have lost to coyotes in the last 3 years.  
3.20 (Mean) Cattle                      0 Sheep                      10.00 (Mean) Goats  
10.00 (Mean) Poultry                      0 Equine                      I did not lose animals to coyotes  
0 Other (please specify): \_\_\_\_\_

- 14) Based on your experience with coyotes, please rank your concerns for each of the following. (Check one box for each row)

	Not concerned <span style="float: right;">←————→ Very Concerned</span>				
	0	1	2	3	4
Regular presence of coyotes near your farm	3.8%	0%	3.8%	38.5%	53.8%
Potential risk to myself in a face-to-face encounter with a coyote	11.5%	23.1%	30.8%	19.2%	15.4%
A child being attacked	3.8%	7.7%	15.4%	26.9%	46.2%
A pet being attacked	0%	0%	28.0%	36.0%	36.0%
Damage to your property (livestock, crops)	3.8%	7.7%	3.8%	26.9%	57.7%
Coyotes spreading rabies	3.8%	3.8%	3.8%	23.1%	65.4%

15) Which of the following actions, if any, have you taken because a coyote was on your farm?

(Check one box for each row)

	Did not implement this action	Implemented action, but coyote problem remained	Implemented action, and coyote problem was solved
Removed outside attractants (e.g., pet food, garbage, etc.)	52.2%	47.8%	0%
Called a wildlife official	95.7%	4.3%	0%
Yelled at or tried to scare it	52.4%	47.6%	0%
You or a family member fired a gun to scare it, but not kill it	45.8%	45.8%	8.3%
Confined my livestock or pets	66.7%	20.8%	12.5%
Put up fencing to protect my animals	66.7%	25.0%	8.3%
Placed a guard animal with my livestock (dog, donkey, llama, etc.)	79.2%	8.3%	12.5%
Trapped it myself	69.6%	26.1%	4.3%
Someone trapped it for me for free	91.3%	8.7%	0%
I paid a person to trap it	100.0%	0%	0%
I hired a Wildlife Damage Control Agent	100.0%	0%	0%
I or a family member shot it	43.5%	43.5%	13.0%
Allowed someone to hunt coyotes on my property	62.5%	29.2%	8.3%
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16) For the following scenarios, please indicate the acceptability or unacceptability of each of the following options for removing coyotes from your property.

(Check one box for each row)

Coyote Removal Methods	Highly Unacceptable ←————→ Highly Acceptable 0                      1                      2                      3                      4				
	Government officials trapping coyotes on my property would be...	23.1%	3.8%	15.4%	11.5%
Contracting with private trappers to trap and remove coyotes on my property would be ...	34.6%	11.5%	26.9%	7.7%	19.2%
The County paying private contractors to trap coyotes on my property would be...	34.6%	11.5%	11.5%	7.7%	34.6%
The State paying private contractors to trap coyotes on my property would be ...	34.6%	11.5%	7.7%	7.7%	38.5%
A cost share arrangement where the landowner, county and/or State share the cost of trapping coyotes on my property would be ...	61.5%	7.7%	11.5%	0%	19.2%

**DEMOGRAPHICS:** (For statistical purposes only. Your responses are confidential).

17) How many years have you lived in Yancey County? 55.38 (Mean) years

18) In what year were you born? 61.81 (Mean Age)

19) Are you male or female?

100.0% Male    0% Female



20) Which of the following best represents your gross household income (before taxes) in 2015?  
(Check one)

- 13.6% Less than \$20,000
- 22.7% \$20,000-39,999
- 31.8% \$40,000-59,999
- 9.1% \$60,000-79,999
- 0% \$80,000-100,000
- 4.5% \$100,000-120,000
- 13.6% More than \$120,000
- 4.5% Prefer not to answer

21) What is the highest level of schooling/education that you have completed? (Check one)

- 3.8% Less than a high school education
- 23.1% High school or GED
- 15.4% Vocational, technical, trade school or certificate program
- 11.5% Some college course work (no degree)
- 7.7% Associate’s degree (2 year degree)
- 30.8% Bachelor’s degree (4 year degree)
- 3.8% Some graduate study
- 3.8% Graduate or professional degree
- 0% Other- Please specify \_\_\_\_\_

**CONTACT PHONE NUMBERS**

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Violations Reporting .....	800-662-7137
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Hunter Safety Course Information.....	919-707-0031
Enforcement Operations.....	919-707-0030
Engineering and Land Management .....	919-707-0150
Wildlife Management.....	919-707-0050

# Coyote Conflict Management Workshop

Tuesday, May 17th, 2016  
5:45 pm to 9:00 pm

## Learn about:

- Coyote biology and population;
- Trapping techniques to address problem coyotes;
- Practical non-lethal methods to prevent /reduce coyote conflicts
- Laws and regulations on taking coyotes.

## **Who Should Attend?**

Anyone interested in learning about the tools available to remove problem coyotes from their property, as well as the non-lethal methods that can be effectively used to prevent conflicts.

## **Workshop Location**

Mitchell County Historic Courthouse  
11 N Mitchell Ave.  
Bakersville, NC 28705

**Costs:** \$10 per person

## **To register:**

Call Mitchell County Extension Center -  
(828) 688-4811

## Agenda

5:45 pm	Registration
6:00 pm	Coyote Biology
6:30 pm	Non-lethal Techniques
6:45 pm	Coyote Trapping Techniques & Safety Consideration
7:15pm	Coyote Trapping Regulations
7:30pm	Break
7:45pm	Coyote Trapping Techniques & Demonstrations
9:00pm	Q & A / adjourn

*Register early; workshop limited to 50 people*



Protecting People | Protecting Agriculture | Protecting Wildlife





## Appendix D. Tools for Addressing Coyote/Livestock Issues

### Tools for Addressing Coyote / Livestock Issues

In most settings, a single management tool will not be enough to prevent and manage coyote problems. The NCWRC recommends producers consider an integrated approach to coyote predation management, using appropriate lethal and nonlethal tools to prevent and address problems with coyotes on their property. Livestock producers should seek out technical guidance as they develop their predation management approach to ensure that their efforts have the best chance for success. Understanding when livestock are most vulnerable to coyotes allows producers to adjust animal husbandry practices to better protect their stock.

The use of nonlethal tools to secure and protect livestock is the best approach to preventing problems from developing with coyotes. Lethal control is most effective at addressing individual problem coyotes causing depredations, and should be implemented in conjunction with preventative management for the best outcomes.

#### **Nonlethal Tools**

*Exclusion:* Complete exclusion of coyotes from areas where livestock are kept is an effective, but sometimes impractical nonlethal management tool. Coyotes are readily able to climb over and dig under poorly constructed fences, so the placement and construction of the fence is critical. Standard livestock fencing is typically not adequate to exclude coyotes. For small areas, solid fencing that is at least 5.5 feet high and that is buried at least two feet deep can be effective. Adding charged electric wires to the top of fences, or installing “coyote roller” devices or barbed wire can increase the effectiveness of these fences at excluding coyotes. Electric fencing can also be effective at deterring coyotes, and the addition of electric wires to existing fencing can be a cost-effective option. Charged wires can be spaced out at regular intervals amongst ground wires, with an additional charged wire placed 6-8 inches outside of the fence to discourage digging under. Other techniques to enhance the effectiveness of fencing include fladry and the installation of frightening devices. The NCWRC recommends producers consider fencing for areas where the likelihood of predation events is high, such as birthing areas or corrals where animals are kept at night.

*Frightening Devices:* During short periods of time frightening devices such as lights, sounds, or repellants can be effective at deterring coyotes from small areas. Coyotes will quickly acclimate to individual frightening devices, so the use and rotation of multiple stimuli is recommended to increase the effectiveness of this tool. Lights are recommended for corrals and night pens to increase their effectiveness at protecting livestock.

*Managing Lambing/Calving:* Most livestock losses associated with coyotes occur when animals are giving birth, when both female adults and newborn animals are vulnerable. Producers should consider several factors that contribute to livestock vulnerability during this period including the timing of lambing/calving, location of lambing/calving, and health of ewes/cows. Predation by coyotes on livestock can be tied to seasonality, with losses more likely to occur in the spring and summer months when coyotes have increased nutritional demands due to pups. Additionally, when births are spread out over many weeks or months, coyotes may be encouraged to stay in the birthing area, leading for a greater likelihood of predation. Shortening the birthing period can be effective at reducing the risk of predation. Hand in hand with timing of birthing is location for birthing. Confinement of sheep and goats in sheds or pens during lambing and calving in smaller pastures close to barns or corrals is recommended to protect animals during their most vulnerable period. Human presence in lambing/calving areas can act as a deterrent to coyotes, as can the use of lights and frightening devices. Pastures where predation has occurred in the past should be avoided for calving, as should pastures with rough terrain and dense vegetation on the borders. In addition to timing and location of lambing/calving, health of ewes and cows can impact the likelihood of predation by coyotes, as coyotes often target smaller, weaker animals. Healthy ewes and cows are more likely to produce healthy young, and are more effective at defending their young from threats including coyotes. Location of birthing can be especially important for first-calf heifers and ewes.

*Livestock Guard Animals:* Livestock guard animals can be very effective at preventing depredation. These animals form strong bonds with their herd/flock and rigorously defend them from coyotes and other predators. Dogs, donkeys, llamas, and mules are commonly used as livestock guard animals. Livestock guard animals are most effective when used in conjunction with other husbandry practices, such as fencing and pasture selection. Multiple livestock guard animals may be required based on the size of the herd/flock and the terrain of the area where livestock are kept.

*Carcass Management:* Coyotes are known scavengers and will be attracted to the presence of carcasses. Overtime, the consumption of livestock remains can habituate coyotes to livestock and increase the potential for depredations. Dead livestock should be removed and disposed of offsite whenever possible.

## **Lethal Tools**

*Trapping:* When non-lethal techniques do not deter depredations, targeted or selected removal of offending coyotes may achieve management objectives. Trapping is the most effective and efficient means for targeting and removing coyotes that are actively depredating livestock.

Removing one or two offending individuals in a small area may stop the problem. Trapping coyotes requires knowledge and a skill set not commonly possessed by the average individual. Well trained and experienced coyote trappers will be required to successfully remove problem animals without exacerbating the issue by causing the coyotes to become more difficult to trap due to poor techniques, resulting in the coyote becoming “trap-smart.” In addition, training and unique skills are needed to efficiently capture coyotes while minimizing the capture of non-target species.

DRAFT

## Appendix E. 2012 Fox Coyote Study Report for the General Assembly



# Fox and Coyote Populations Study Final Report

April 1, 2012



NORTH CAROLINA WILDLIFE RESOURCES COMMISSION



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RESOURCES COMMISSION AT

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NORTH CAROLINA WILDLIFE RESOURCES COMMISSION  
GORDON S. MYERS, EXECUTIVE DIRECTOR  
1701 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1701



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## LETTER OF TRANSMITTAL

*North Carolina Wildlife Resources Commission  
1701 Mail Service Center  
Raleigh, North Carolina 27699-1701*

APRIL 1, 2012

TO: The Honorable, Thom Tillis, Speaker of the House of Representatives  
The Honorable Phil Berger, President Pro Tempore of the Senate  
Representative James H. Langdon, Jr., Co-chair, House Committee on Agriculture  
Representative Efton M. Sager, Co-chair, House Committee on Agriculture  
Senator Don East, Co-chair, Senate Committee on Agriculture, Environment, and Natural Resources  
Senator Brent Jackson, Co-chair, Senate Committee on Agriculture, Environment, and Natural Resources  
Senator David Rouzer, Co-chair, Senate Committee on Agriculture, Environment, and Natural Resources

On behalf of the North Carolina Wildlife Resources Commission, I submit this final report for your consideration.

Respectfully,

Gordon S. Myers, Executive Director

## EXECUTIVE SUMMARY

In June 2011, the North Carolina General Assembly directed the Wildlife Resources Commission (Commission) to study fox and coyote populations and to recommend management methods and controls designed to ensure statewide conservation of fox populations while managing adverse effects of coyote populations. Since that time, the Commission has gathered information about the attitudes and perspectives of numerous stakeholder groups. In addition, the Commission compiled all available information on the harvest and status of foxes and coyotes by hunters and trappers. Included herein is a detailed presentation of the different authorities for regulating take of foxes and coyotes, including the Commission's limited authority for regulating take of foxes, and the resulting significant variation in fox hunting and trapping seasons. The potential impacts (both positive and negative) of a statewide fox trapping season are evaluated.

Foxes have occurred in N.C. throughout recent history, but coyotes are a relatively new arrival. With changes in the landscape of our state; changing perspectives about fox hunting and fox and coyote trapping by hunters, trappers, and the general public; concerns over coyote predation on wild and domestic animals; and human/fox/coyote interactions, publically-acceptable approaches to managing fox and coyotes have changed. Because of these changes, we must determine how best to modify current approaches to regulating take of foxes and coyotes that meet the needs of our diverse citizenry while assuring the sound conservation and management of these species. The Commission's long-term goal is to improve the efficiency and effectiveness of coyote control measures by reducing regulatory barriers for our citizens while ensuring the sound conservation of fox populations.

Based upon this study, the Commission offers the following recommendations:

- Develop a structured decision-making process to guide all regulatory changes
- Maintain and expand hunting opportunities for foxes and coyotes where feasible
- Match new or amended fox trapping seasons with the statewide furbearer trapping season
- Increase public awareness of best management practices for trapping foxes and coyotes
- Authorize the Commission to regulate all gear types used in trapping
- Examine regulations pertaining to the operation of Controlled Fox Hunting Preserves including the live sale of foxes and coyotes
- Increase public awareness of coyotes
- Implement localized fox and coyote abundance surveys
- Consider providing additional urban fox and coyote trapping opportunities
- Consider removing prohibitions on hunting and trapping foxes in Yancey County

## INTRODUCTION

On June 17, 2011, the General Assembly passed a bill (N.C. Session Law 2011-380, House Bill 755) that directed the Wildlife Resources Commission (Commission) to study fox and coyote populations. Signed into law June 27, 2011, the statute called for the Commission to “undertake a study of fox and coyote populations in the State and recommend management methods and controls designed to ensure statewide conservation of fox populations while managing adverse effects of coyote populations.” HB 755 further directed the Commission to “solicit input from interested stakeholders, including hunters, trappers, controlled hunting preserve operators, public health authorities, local governments, the North Carolina Department of Agriculture and Consumer Services, and private landowners.” The Commission was directed to complete its study by April 1, 2012, and submit a report, including any proposed legislation, to the Speaker of the House of Representatives and the President Pro Tempore of the Senate; the Chairs of the House Committee on Agriculture; and the Chairs of the Senate Committee on Agriculture, Environment, and Natural Resources.

Our focus throughout this effort was to compile all data and other information available to the Commission on the history and status of foxes and coyotes in N.C., and feedback from various constituents, on issues and positive approaches to conserve foxes while optimizing management of coyotes. Our long-term goal is to improve the efficiency and effectiveness of coyote control measures by reducing regulatory barriers for our citizens while ensuring the sound conservation of fox populations.

To compile information about their attitudes and opinions on issues related to managing foxes and coyotes, we contacted stakeholders through direct meetings, and telephone and e-mail surveys. Four meetings were held with representative groups of stakeholders, including: meetings held in Raleigh with the N.C Trappers Association and in Goldsboro with fox hunters on December 12, 2011; and meetings with representative controlled fox hunting preserve operators in Williamston on February 8, 2012 and in Troy on February 15, 2012. In total, 34 constituents attended these meetings. To gain additional information from our constituents, we contacted a goat farmer, horse owner, and representatives of the Quality Deer Management Association, Quail Unlimited, N.C. Cattlemen’s Association, N.C. League of Municipalities, N.C. Farm Bureau, N.C. County Commissioners Association, Association of Local Health Directors, N.C. State Health Director, and N.C. Department of Agriculture and Consumer Services either by telephone or e-mail and asked a series of nine questions related to management of foxes and coyotes in N.C. (Appendix A).

From these efforts, the Commission received direct feedback from trappers, hunters, and controlled fox hunting preserve operators and survey feedback from representatives of Quail Unlimited, Quality Deer Management Association, N.C. Cattlemen’s Association, N.C. Cattlemen’s Beef Council, N.C. Farm Bureau, a goat farmer, a horse owner, Wilkes County Animal Control, N.C. Division of Public Health, N.C. Alliance of Public Health Agencies, Orange County Animal Services, and N.C. Department of Agriculture and Consumer Services, Veterinary Services Division and Forest Service.

Additional information and data provided herein on the distribution, status, and harvest of foxes and coyotes were compiled from Commission records.

## REGULATORY AUTHORITY

Over the years, numerous laws and rules have been adopted that result in diverse regulatory authorities and a broad range of legal options for managing fox and coyote populations. In many cases, this suite of diverse options creates confusion among the public and has created some barriers to effectively conserving fox populations while managing coyotes, which to most of our citizens are overabundant. Because one of the Commission's goals is to remove regulatory barriers and increase the options available to our citizens to manage foxes and coyotes, especially on private property, a thorough review of these regulatory authorities is important.

**Commission Authority to Regulate Fox Hunting** – Foxes are classified as game (NCGS § 113 129). However, according to NCGS § 113 291.4, “*All of the regulatory powers granted the Wildlife Resources Commission generally with respect to game, wild animals, and wildlife apply to foxes unless there are specific overriding restrictions in this section.*” Under current overriding restrictions, the Commission may not regulate the taking of foxes with the use of dogs except in areas where this would be detrimental to turkey restoration projects. Because turkey restoration now is completed statewide, the Commission may not restrict the use of dogs to take foxes anywhere in the state, including west of the line delineated in NCGS § 113-291.5, an area in which the Commission has authority to regulate all other aspects of hunting with dogs. NCGS § 113 291.4 specifically states that foxes may be taken with dogs year-round and during both night and day.

The Commission does not have the authority to regulate fox hunting with firearms, except to:

1. continue the fox hunting and trapping season for Caswell, Clay, Graham, Henderson, Hyde, Macon, and Tyrrell counties that was established in the early 1980s,
2. establish fox population control measures in areas where State Health Director has notified the Commission of the presence of a contagious animal disease in a local fox population, and
3. set bag limits for foxes taken with firearms east of I-77 and Mitchell and Caldwell counties.

The Commission may not allow the use of electronic calling devices for foxes.

The Commission has the authority to regulate take with archery equipment because there is no prohibition in § 113 291.4 or § 113 291.4.A against the use of archery equipment to take foxes.

**Commission Authority to Regulate Fox Trapping** – Foxes are not classified as fur-bearers, but rather as game. Therefore, the Commission has no authority over fox trapping except as specifically authorized in NCGS § 113 291.4, which states, “*If, on the basis of its studies and other information available, the Wildlife Resources Commission determines the population of foxes in an area is fully adequate to support a harvesting of that population, the Wildlife Resources Commission may, upon passage of local legislation permitting same, open a season for taking foxes by trapping.*” Any such local season open to fox trapping is open to fox hunting as well (NCGS § 113 291.4).

In regards to dead foxes, this same statute gives the Commission the authority to:

1. provide for the sale of foxes lawfully taken in areas of open season;

2. implement a system of tagging foxes and fox furs with a special fox tag;
3. charge two dollars and twenty five cents (\$2.25) for each tag furnished to hunters, trappers, and fur dealers;
4. limit the number of tags furnished to any individual as to area and as to number in accordance with area, bag, possession, or season limits;
5. require reporting and controlled disposition, not including sale, of foxes killed accidentally by dog hunters, motor vehicles, and in other situations; and
6. impose strict controls on the disposition of depredating foxes taken by owners of property, and authorize sale under controlled conditions of foxes taken under depredation permits.

**Commission Authority to Regulate Coyote Hunting** – Coyotes are classified as wild animals (NCGS § 113 129), but not game. Under this classification the Commission has the authority to set hunting seasons and bag limits (NCGS § 113 291.2) and designate manner of taking, including the use of artificial lights and electronic calls (NCGS § 113 291.1).

**Commission Authority to Regulate Coyote Trapping** – The Commission uses the same authority (NCGS § 113 291.2) to set trapping seasons and bag limits as for hunting seasons. Trap types for wild animals are specified in NCGS § 113 291.6. Trappers trap coyotes under the authority of their trapping license, although this license specifies that it is necessary for fur-bearing species (NCGS § 113 270.5).

**Commission Authority to Regulate Controlled Fox Hunting Preserves** – Persons who wish to operate a controlled fox hunting preserve must purchase a Controlled Hunting Preserve Operator License. Currently there are 144 Controlled Fox Hunting Preserves across N.C. (Figure 1). Pursuant to NCGS § 113 273, operators of controlled fox hunting preserves may purchase live foxes and coyotes from licensed trappers who live trap foxes and coyotes during any open season for trapping them and may, at any time, take live foxes from their preserves for sale to other licensed operators. Except for the purchase of live animals, the Commission is authorized to set standards for, and to license the operation of, controlled fox hunting preserves (NCGS § 113 273).

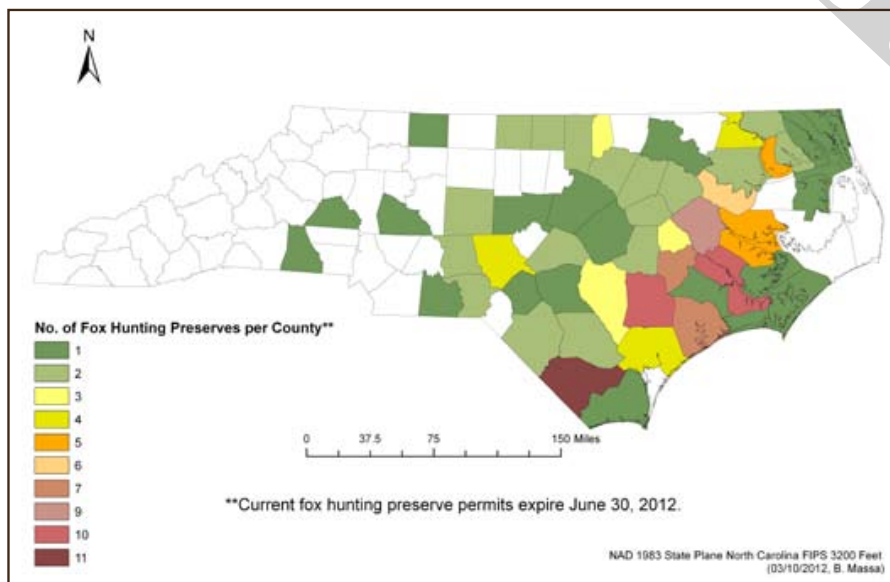


Figure 1. Distribution of 144 Controlled Fox Hunting Preserves in North Carolina, 2012.

**Commission Authority to Regulate Nuisance Foxes and Coyotes** – The Commission has the authority under NCGS § 113 274 to issue depredation permits to take foxes or coyotes that are “undesirable, harmful, predatory, excess, or surplus.” The Commission has the authority to regulate the manner of taking and the disposition of wildlife taken with or without a permit. Although the conditions for receiving a depredation permit are outlined in the Commission’s rules, NCGS § 113 274 states, “*Livestock or poultry owners shall be issued a depredation permit for coyotes upon request.*” Therefore, the Commission does not have authority to regulate issuance of depredation permits to livestock or poultry owners.

**Commission Authority to Regulate Use of Snares for Trapping** – NCGS § 113.291.1(b)(2) specifically prohibits the use of snares as a manner of take. However, NCGS § 113.291.6(h) specifies that “[a] person who has been issued a depredation permit for coyotes under G.S. 113 274(c) may use a Collarum™ trap, or similar trap approved by the Wildlife Resources Commission, solely for the purpose of taking coyotes under that permit.” Thus, the Collarum™-type trap is the only currently approved type of trap using a snare that is legal as a manner of take in N.C.

**Commission Authority to Regulate Foxes and Coyotes for Public Health** – Pursuant to NCGS § 113 291.4, “*Upon notification by the State Health Director of the presence of a contagious animal disease in a local fox population, the Commission is authorized to establish such population control measures as are appropriate until notified by public health authorities that the problem is deemed to have passed.*” This reference to a “contagious animal disease” could apply to a canine-specific disease, such as distemper, or one with human health implications, such as rabies. Regulatory authority in regards to rabies is clarified in NCGS § 130A 201, which gives the Commission the authority to “... develop a plan pursuant to G.S. 113 291.2 (a1) to reduce the threat of rabies exposure to humans and domestic animals by foxes, ...” Additional details on the Commission’s authority and expectations on our agency are provided in NCGS § 113 291.2. Essentially, the Commission is authorized to implement a broad range of actions in response to a rabies emergency if declared by the State Health Director.

**Resulting Variations in Hunting and Trapping Seasons** – Under North Carolina General Statutes foxes are classified as game animals and all fox hunting and trapping seasons can only be established or changed by the General Assembly. Therefore, fox seasons cannot be established or altered by the Commission.

Fox hunting with dogs is allowed any time of year in all N.C. counties except Alamance, Caswell, Cleveland, Duplin, Lincoln, Madison, Wayne and Yancey which, through local law, either prohibit fox hunting altogether or establish a season. Eighty-five counties have a fox hunting season with weapons for all or part of the county (Figures 2 and 3). As specified in NCGS § 113 291.4, “*When the season is open for trapping, foxes may also be taken by the use of methods lawful for taking game animals, including the use of firearms.*” Therefore hunting is allowed in all counties in which trapping is allowed, but trapping is not allowed in all counties that allow hunting. Forty-seven counties allow hunting, but not trapping. Some of these fox hunting seasons are established in statute; some are established through session law. When considering season dates alone, there are at least 27 unique fox hunting seasons among 85 different counties across the state.

Fox trapping seasons must be established by the General Assembly. Thirty-eight counties or parts thereof and one municipality have established fox trapping seasons. However, these 39 local jurisdictions do not all have the



same season. Due to differences in season dates, trap-size restrictions, trap-type restrictions, tagging requirements, live sale prohibitions, bag limits and swivel requirements, the 38 counties and one municipality have 22 unique trapping seasons (Figure 4).

In North Carolina, coyotes are classified as a nongame animal. Coyote hunting seasons and bag limits are established in Commission rules. Currently, coyotes may be taken by firearms, archery equipment and dogs during the daytime six days a week in all counties of the state, unless such take is restricted by local law. Coyotes may be taken by archery equipment and dogs on Sundays on private land. Coyotes may be trapped during the two furbearer seasons set forth in the Commission’s rules. These seasons include all counties of the state. In addition, coyotes may be trapped anytime there is an open season for trapping foxes. Farmers can receive a depredation permit upon request to trap coyotes outside the trapping season. Depredation permits can also be issued for property owners experiencing damage from coyotes, or if there is a threat to public safety. Through these measures and within established statutory authority the Commission has maximized options for citizens to control coyote numbers. Currently, the Commission is promulgating rules to allow hunting coyotes at night with a light.

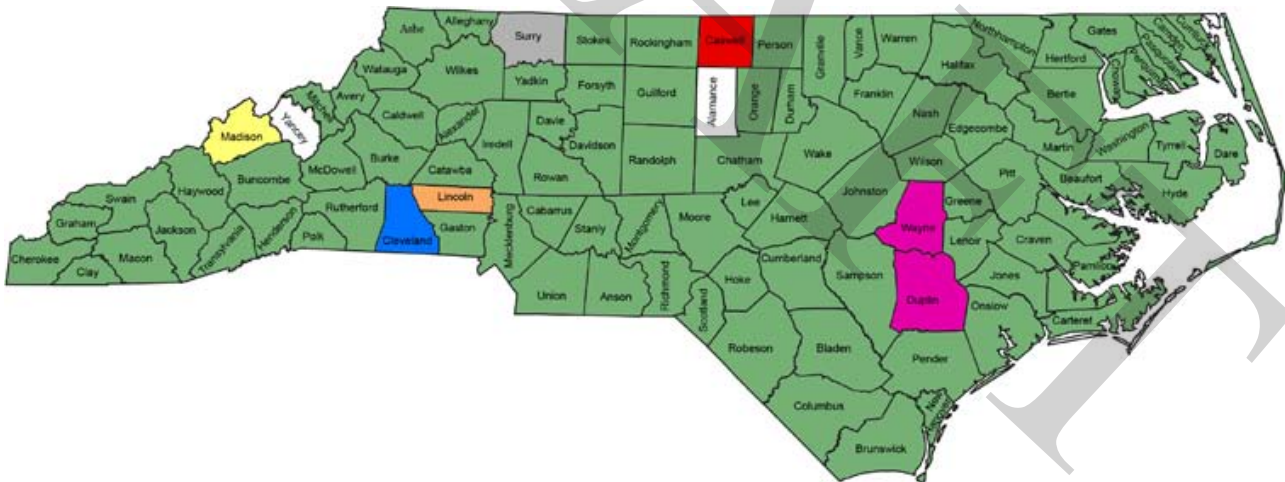


Figure 2. Counties with a fox hunting season with dogs in 2012, as legislated by the North Carolina General Assembly. Differences in color indicate differences among the fox hunting season (6 fox hunting seasons with dogs in 98 counties). Counties in white are currently closed to fox hunting with dogs.

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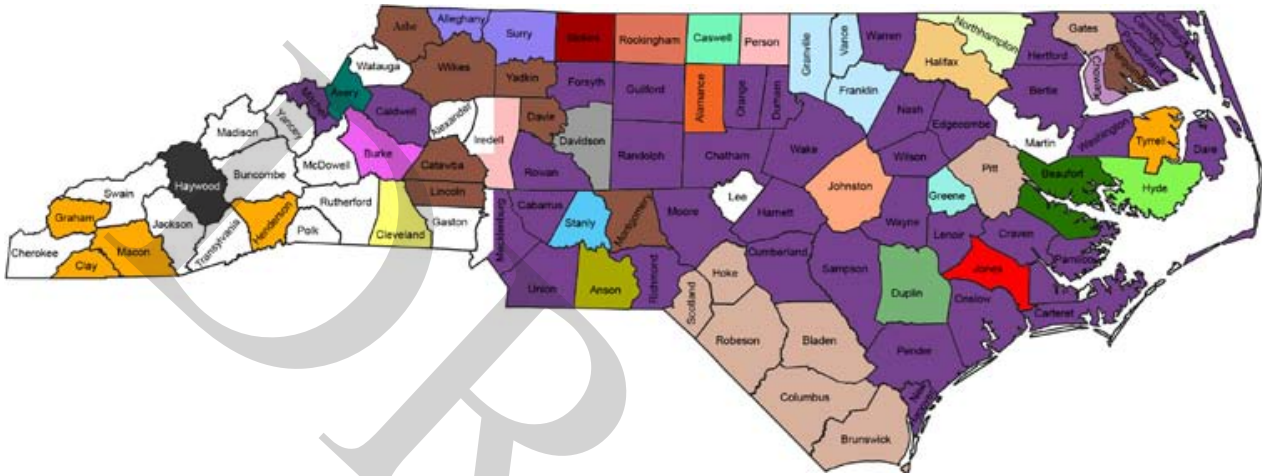


Figure 3. Counties and areas with a fox hunting season allowing weapons in 2012, as legislated by the North Carolina General Assembly. Differences in color indicate differences among the fox hunting seasons (27 fox hunting seasons in 85 counties). Counties in white are currently closed to fox hunting with weapons.

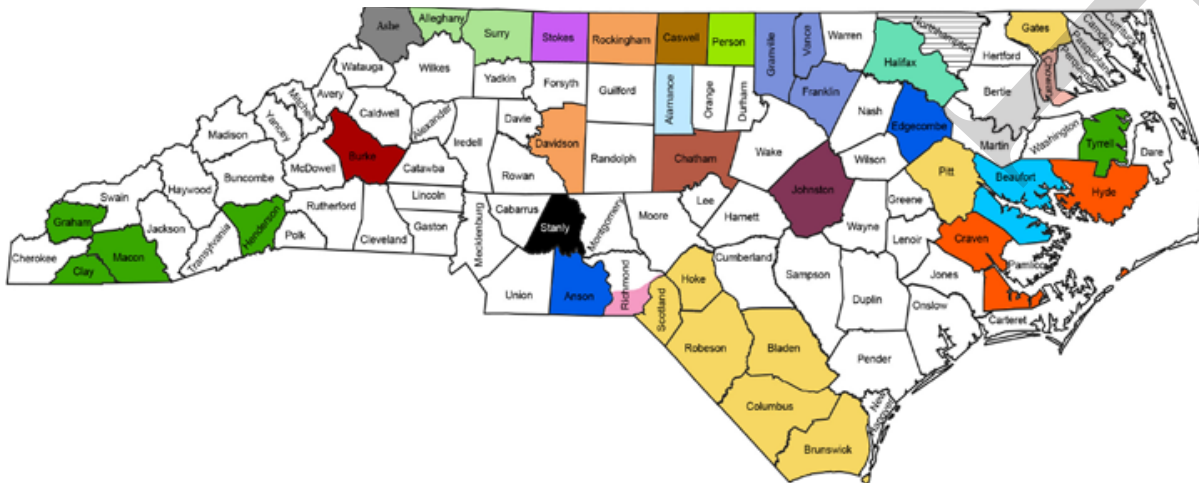


Figure 4. Counties and areas with a fox trapping season in 2012, as legislated by the North Carolina General Assembly. Differences in color indicate differences among the fox trapping seasons (22 fox trapping seasons in 38 counties). Counties in white are currently closed to a fox trapping season.

## SPECIES ACCOUNTS

**Gray Fox** – The gray fox is North Carolina’s only native fox. They have adapted well to human development and are common in suburban areas. Gray foxes are slightly smaller than red foxes and are much darker in color. They are sometimes confused with red foxes because of a reddish or rusty coloration on the sides of their necks and legs. The overall coloration is best described as a salt-and-pepper gray with a dark streak extending down the back, along the top of the tail and ending in a black tail tip. Adults may weigh as much as a red fox (seven to 15 pounds) but their shorter legs and shorter fur make them appear smaller. Gray foxes are unique in that they can climb trees.

In North Carolina, gray foxes inhabit all areas of the state from the Outer Banks to the Appalachian Mountains. Although viable populations are found in all of North Carolina’s major habitat types, gray foxes are most numerous in the more productive areas of the Piedmont and northern Coastal Plain. They are often present in large tracts of wooded areas and also thrive in open farmland.

Gray foxes eat many types of food items including mice, rabbits, birds, eggs, and insects. They also eat a significant amount of wild fruits such as persimmons and grapes, and agricultural crops such as corn and peanuts.

Gray fox home range sizes vary considerably — from just over 70 acres to over 6,000 acres — depending on habitat quality, population density and the reproductive status of individual foxes. As coyotes become more abundant and expand their range into areas inhabited by foxes, red foxes are sometimes displaced, but gray fox populations do not seem to be affected. Because gray foxes have the ability to climb trees, it is possible for them to escape from coyotes.

Gray foxes are typically nocturnal although they will forage during daylight hours. They mate once a year during January and February. The gestation period is 59 days and pups are born in March through April. Three to five pups are born in a den, which may be only a hollow log or tree stump. During the late fall and early winter, gray foxes establish new home ranges. The average life expectancy is one to two years, with few living longer than six years in the wild. The annual mortality rate may be 50% or more. Canine distemper may be the most important mortality factor for gray foxes, with local populations rising and falling in response to the prevalence of this disease.

Most issues and concerns that people have about gray foxes are related to depredation on domestic poultry and concerns about diseases, especially rabies. Properly enclosing poultry can usually prevent depredations. Gray foxes can contract rabies, but interactions between people and gray foxes are rare. Gray foxes seen during the daytime are not necessarily diseased; they are often responding to the presence of outdoor pet food and the concentration of small animals around bird feeders, or moving about as needed to take care of their pups.



*The gray fox, North Carolina’s only native fox, is unique in that it can climb trees.*  
(photo: Illinois Department of Natural Resources)

Gray foxes are economically important and a valuable natural resource. Foxes have long been hunted with hounds and they are an important furbearer to trappers. Gray fox fur became popular during the late 1970s for fur coats and collars and demand for their fur continues to some extent today. The number of licensed trappers and trapping effort varies over time and is largely related to the price paid for pelts in the fur market and prices paid for live animals sold to controlled fox hunting preserves. Based upon Commission records and records from other states, regulated hunting and trapping do not appear to affect overall gray fox population numbers. Relatively few foxes are annually taken from the population and because much of the state is in private ownership, there are numerous areas not open to hunting or trapping. Populations are maintained because foxes have a high reproduction rate and young disperse annually to colonize areas where others have been harvested.

**Red Fox** – The red fox is the most widely distributed canid (i.e., wild dog) in the world. There are no records of red foxes occurring in the eastern United States south of Rhode Island before the European red fox was introduced for sport hunting during colonial days. Red foxes are now common across N.C. and populations in most areas continue to remain stable, despite outbreaks of disease and sustained harvest levels. Red foxes have high reproductive rates, but as coyotes become more abundant they may be displaced.

The red fox is named for its reddish coloration. The tail, body and top of the head are all some shade of yellow-orange to reddish-orange. The undersides are light, the tips of the ears and lower legs are black, and the tail is bushy with a white tip. Adults are the size of a small dog and weigh from seven to 15 pounds.

Like many other wildlife species, red foxes prefer a diversity of habitats rather than large tracts of one habitat type. Preferred habitats include farmland, pastures, brushy fields, and open forest stands, where they frequently hunt the edges of these open habitats. Red foxes eat a variety of prey, but mice, meadow voles, and rabbits form the bulk of their diet.

They will also eat insects, birds, eggs, fruits, berries, animals they discover that are already dead, and garbage.

Red fox home ranges may vary in size with the abundance of food, the degree of competition with other animals, and the diversity of habitats. The average home range is between 1,000 and 5,000 acres. Most red fox activity occurs at night, but daytime movements are not uncommon. The gestation period is about 52 days and pups are born during late February through April. An average litter includes five pups, which are born in a den that the adults dig themselves or that was dug by another animal. Males bring food to the female until the pups can be left alone. The life expectancy of a red fox is about five years, although due to the many mortality factors, most do not live that long. Sarcoptic mange and canine distemper may be the most important mortality factors for red foxes, with local populations rising and falling in response to these diseases.



Most conflicts that occur between people and red foxes also involve depredation on domestic poultry and concerns about diseases, especially rabies. Properly enclosing poultry will usually prevent depredations. While red foxes can contract rabies, interactions between people and red foxes are rare because red foxes are shy and non-aggressive animals. While red foxes are primarily nocturnal, it is not unusual to see a red fox during the daytime. However, daytime sightings of red foxes are not a sign that the animal is diseased. Such sightings usually occur because foxes are responding to an abundance of food or moving about as needed to take care of their pups. For the same reasons as the gray fox, the red fox is economically important and a valuable natural resource. Red foxes can be a beneficial predator on mice and groundhogs on farms and in other rural situations. However, red foxes may also prey on domestic poultry in both rural and suburban areas.

**Coyote** – Although they are a relatively new arrival to our state, coyotes are now established in all 100 counties across N.C. Prior to the 1800s, coyotes were restricted to the prairies and grasslands of the Midwest. But as Europeans arrived and settled across North America, subsequent landscape changes and elimination of wolves allowed the coyote to expand its range toward the eastern United States. Extensive efforts have been devoted to controlling coyotes across the U.S., but despite these extensive control attempts coyotes have continued to expand their range.

The first reported sighting of a coyote in N.C. was in Gaston County in 1938. The first confirmed coyotes that were collected came from Johnston County (1955) and Wake County (1970). Until the late 1980s, coyotes seen in North Carolina were likely due to illegal importation and release. By 1990, coyotes began to appear in western North Carolina as a result of natural range expansion from Tennessee, Georgia, and South Carolina.

Coyotes in North Carolina are smaller than wolves, have pointed and erect ears, and long slender snouts. The tail is long, bushy and black-tipped and is usually carried pointing down. Their color is typically dark gray, but can range from blonde to black. Adults are about the size of a medium-sized dog and may weigh between 20 and 45 pounds. In N.C., coyotes may be mistaken for dogs or red wolves, and the existence of both dog-coyote hybrids and red wolf-coyote hybrids can make identification difficult.

Coyotes feed on a wide variety of food sources, depending on what is most readily available and easy to obtain. Primary foods include fruit, berries, pet food left outside, small mammals (voles, rats, and mice), deer, rabbits, birds, snakes, frogs, and insects. Coyotes will also prey on livestock and domestic pets.

Coyote home ranges can vary from between 1,000 and 16,000 acres depending on season, habitat and food availability. Preferred habitats range from agricultural fields to forested regions and suburban neighborhoods. Coyotes usually dig their own den, but they will sometimes enlarge an old animal hole or use a natural hole in a rocky ledge as a den. Dens are usually hidden from view and used by coyotes to birth their young and sleep. Coyotes



mate for life and breeding occurs from January through early March. Pups are born in March and April and the typical litter size is six to eight pups. The family unit usually begins to disperse by late November or December. In many cases, one pup stays behind as a “helper” for the next year’s litter. Coyotes are territorial and actively keep non-family members outside of their home range. Dispersal rates are high and distances can be extensive; several coyotes in North Carolina have dispersed more than 200 miles in just a few months. When an individual coyote or family group leaves or is removed, new coyotes will usually move into the vacated territory. These territories frequently overlap with a transient coyote that is searching for a mate or its own territory. This transient nature of the population makes estimating the number of coyotes in a particular area difficult, which, in turn, makes controlling coyote populations difficult.

Coyotes readily adapt to suburban and urban environments once thought unsuitable and they exhibit great plasticity in their behavior and diet. The coyote is arguably the hardiest and most adaptable species on this continent. They are naturally wary of people and will avoid areas in which threats are perceived. They will also become acclimated to humans in the absence of threats, such as hunting and trapping, and in areas where typically unnatural food, such as pet food, garbage and unsupervised small pets, are readily available.

For decades, hounds men have pursued coyotes for sport and in 2003 the General Assembly passed legislation (NCGS § 113 273) allowing controlled fox hunting preserves owners to buy live coyotes and hunt them within the enclosures. The number of licensed trappers and trapping effort varies over time and is largely related to the price paid for pelts in the fur market and prices paid for live animals sold to licensed fox pen enclosures.

Coyotes can be useful in keeping prey species such as rodents and groundhogs in balance with their habitat, and removing feral cats, which negatively impact many wildlife species, especially birds. However, coyotes are currently a focus of attention in N.C. because they also prey on livestock, other wildlife species, such as deer, that are important to our citizens, and domestic pets.

Despite intensive control efforts in other states that have had high coyote populations, they continue to thrive. Historically, bounties have been used in various states as one possible way to control coyotes. In all cases, the use of bounties has been an ineffective and inefficient tool for controlling coyote populations.

**Harvest Records and Abundance Data** – Current harvest data for foxes and coyotes include estimated take by hunters as derived through hunter harvest surveys of license holders (Table 1), reported take under depredation permits (Table 1), and take by trappers as reported through annual surveys (Table 2). Currently, we have annual data on fox and coyote harvest by trappers; hunter harvest surveys were conducted on average every three years until 2011. Beginning in 2011, the hunter harvest surveys, which include both still hunters and hounds men, are being conducted annually. These annual surveys will allow the Commission to more accurately track harvest by hunters and to improve our estimates of hunting effort. The Commission realizes that not all groups agree with these data, but they provide the most comprehensive information we have on the current status of foxes and coyotes and form a solid basis for Commission conclusions and recommendations provided herein.

Estimates of take by hunters have a large standard error so results must be interpreted with caution, but based on these data there does not appear to be a change in trend for fox harvest by hunters, while harvest of coyotes by

hunters has increased since 2005 (Table 1). Based on these data it also appears that statewide fox harvest under depredation permits varies annually with no clear trend, whereas coyote take under depredation permits continues to increase. Take of foxes by trappers has varied by year peaking in 2007-08 and decreasing since then (Table 2). Take of coyotes by trappers continues to increase (Table 2).

Using these same data, we can compare estimated take between the coastal, piedmont, and mountain regions (Table 3). Based upon these data, take of foxes by hunters and trappers in 2007-08 was similar, but in 2010-11 hunters took substantially more foxes in the piedmont and coastal regions than trappers. Hunters have historically and continue to take significantly more coyotes than trappers.

Many variables influence the number of foxes or coyotes taken by hunters or trappers, including fur prices, the value of an animal on the live market, access, and available time. For foxes, reported take by trappers has closely tracked prices paid for fox pelts (Figure 5). In more recent years, coyotes taken in N.C. have historically been most valuable through sale to controlled fox hunting preserves (i.e., live market). Based on information from preserve operators and trappers during 2011-12, live coyotes sold for between \$75 and \$125, gray foxes sold for between \$25 and \$40, and red foxes sold for between \$40 and \$85.

An important consideration in discussions about the interface between fox and coyote hunters and trappers is the relative take spatially across the landscape. To evaluate this relationship, we compared reported take of foxes by trappers and hunters from our 2010-11 surveys of each constituent group. Based on the results of this comparison (Table 4), it appears that the overall removal of foxes from the landscape by both trappers and hunters is low. For example, in the coastal plain in 2010-11, one fox was removed by a trapper per each 5 mi<sup>2</sup> open to trapping, whereas one fox was removed by a hunter per 10 mi<sup>2</sup> open to fox hunting. Even noting that not all areas in each open county are trapped or hunted, and that over twice as many counties are open to fox hunting, these data are indicative of low trapping or hunting pressure being placed on the fox population across our state. On a finer scale, impact of trappers on the fox resource can also be evaluated by comparing the average number of animals taken by an individual trapper. Using our annual trapper harvest survey data, we compared the average number of coyotes, gray foxes, and red foxes harvested by licensed trappers (Table 5). Based upon these data from 2002-03 through 2010-11, the average take of coyotes by individual trappers has increased, while the take of both gray and red foxes has decreased.

**Table 1. Statewide fox and coyote take under depredation permit and hunting, 2002 – 2011.**

Year	Reported Depredation		Hunting <sup>1</sup>			
	Estimated Coyote Depredation Take <sup>2</sup>	Estimated Fox Depredation Take <sup>2</sup>	Estimated # Fox Hunters	Estimated Fox Harvest	Estimated # Coyote Hunters	Estimated Coyote Harvest
2002-03	15	289	No Survey Conducted			
2003-04	18	74	No Survey Conducted			
2004-05	28	92	No Survey Conducted			
2005-06	54	143	7,356 (±4,309)	9,808 (±5,337)	19,506 (±3,343)	19,422 (±4,826)
2006-07	37	133	No Survey Conducted			
2007-08	69	184	6,068 (±772)	6,472 (±1,468)	23,967 (±1,487)	36,144 (±6,039)
2008-09	98	121	No Survey Conducted			
2009-10	127	114	No Survey Conducted			
2010-11	38 <sup>3</sup>	100 <sup>3</sup>	4,960 (±955)	7,416 (±3,242)	32,388 (±2,322)	36,041 (±7,327)

<sup>1</sup> Estimates are from the voluntary Hunter Harvest Surveys of license holders. The number of hunters and harvest are estimates and based on number of hunters responding to survey. As of 2010-11, hunter harvest surveys are conducted annually. Hunters include both still hunters and hounds men.

<sup>2</sup> Based on quarterly reports from Wildlife Damage Control Agents.

<sup>3</sup> Not all quarterly reports have been received for 2011, so reported take by Wildlife Damage Control Agents is preliminary.

**Table 2. Statewide fox and coyote take by trappers, 2002 – 2011.**

Year	Trapping				
	# Licensed Trappers <sup>1</sup>	Coyote Harvest <sup>2</sup>	Gray Fox Captures <sup>3</sup>	Red Fox Captures <sup>3</sup>	Total Fox <sup>3</sup>
2002-03	1,138	133	1,078	287	1,365
2003-04	1,286	325	2,831	587	3,418
2004-05	1,547	593	2,770	631	3,401
2005-06	1,744	567	2,392	613	3,005
2006-07	1,867	847	3,020	695	3,715
2007-08	2,027	1,434	5,560	1,180	6,740
2008-09	2,233	1,747	4,212	838	5,050
2009-10	2,120	2,092	3,313	769	4,082
2010-11	2,186	2,843	3,995	872	4,867

<sup>1</sup> Number of licensed trappers based on the sale of resident, county and non-resident trapping licenses during each trapping season.

<sup>2</sup> Coyote trapping harvest is based on number reported by licensed trappers responding to the annual voluntary trapper harvest survey.

<sup>3</sup> Fox captures are based on annual voluntary trapper harvest survey and include harvested foxes and foxes incidentally captured/released in counties currently closed to fox trapping.



**Table 3. Estimated regional fox and coyote harvest, 2002-03 through 2010-11.**

	Year	Fox Harvest				Coyote Harvest			
		Coastal	Piedmont	Mountain	Unknown	Coastal	Piedmont	Mountain	Unknown
Trapping <sup>1</sup>	2002-03	84	0	2	0	Not Surveyed			
	2003-04	2	167	0	0	2	0	0	0
	2004-05	1,947	1,350	72	34	168	211	181	33
	2005-06	1,487	1,397	54	1	159	255	139	0
	2006-07	1,937	1,693	84	1	332	338	177	0
	2007-08	3,930	2,659	99	77	529	547	355	3
	2008-09	2,639	2,043	246	5	608	575	564	0
	2009-10	2,082	1,761	108	98	721	743	330	27
	2010-11	2,666	1,940	196	0	1,100	1,108	603	0
	Hunting <sup>2</sup>	2007-08	3,641	2,427	405	0	4,045	16,520	15,579
2010-11		2,432	4,328	642	0	10,261	15,805	9,874	0

<sup>1</sup> Regional trapping harvest based on annual voluntary survey of all licensed trappers. Survey started in 2002-03. Fox trapping harvest includes harvested foxes and foxes incidentally captured/released in counties closed to fox trapping.

<sup>2</sup> Regional hunting harvest estimates based on voluntary hunter harvest survey. No regional harvest estimates available prior to 2007-08.

**Table 4. Estimated regional fox harvest per square mile by licensed trappers and licensed hunters, 2010-11. Area based on counties open to fox trapping (36 counties) and fox hunting (100 counties).**

Region	Fox Trapper Harvest <sup>1</sup>	Counties Open to Fox Trapping		Fox Hunter Harvest <sup>3</sup>	Counties Open to Fox Hunting	
		Open to Fox Trapping	Trapper Harvest/mi <sup>2</sup>		Open to Fox Hunting	Hunter Harvest/mi <sup>2</sup>
Coastal Plain	1,842	15	0.19	2,432	39	0.11
Piedmont	1,357	15	0.60	4,231	37	0.25
Mountains	59	6	0.01	681	24	0.07

<sup>1</sup> Regional fox trapping harvest based on annual voluntary survey of all licensed trappers.

<sup>2</sup> Regional hunting harvest estimates based on voluntary hunter harvest survey of license holder for the 2010-11 season. All counties open to fox hunting either by weapon and/or hound hunting.

**Table 5. Average number of coyotes, gray foxes, and red foxes incidentally captured or harvested by licensed trappers in North Carolina, 2002-03 – 2010-11.**

Captures per Active Trapper <sup>1</sup>			
Year	Coyote	Gray Fox	Red Fox
2002-03	3.5	14.2	4.7
2003-04	3.4	14.8	5.0
2004-05	4.5	13.1	4.6
2005-06	4.2	11.0	4.9
2006-07	4.7	13.5	4.5
2007-08	5.6	17.1	5.1
2008-09	6.4	14.4	4.3
2009-10	6.6	10.0	3.6
2010-11	7.2	11.8	3.7

<sup>1</sup>Captures per active trapper based on response from the annual voluntary trapper harvest survey conducted of all trapping license holders. Captures include harvested foxes and foxes incidentally captured/released in counties currently closed to fox trapping.

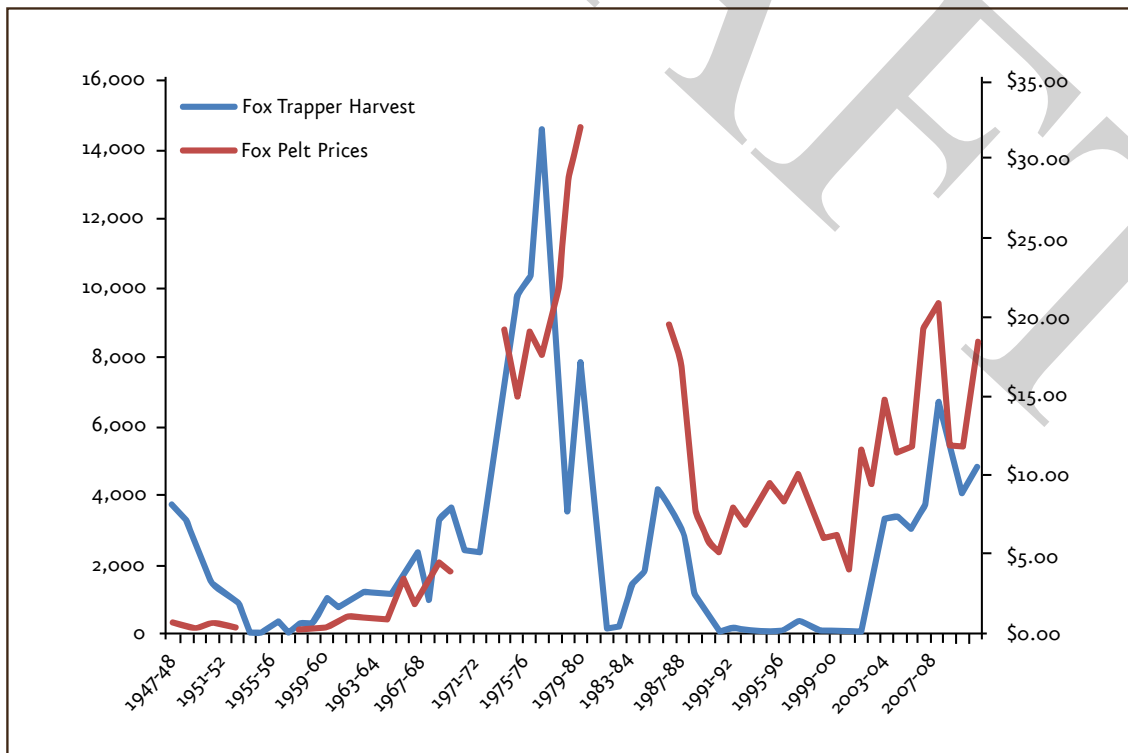


Figure 5. Reported harvest of foxes by trappers and fox pelt prices in North Carolina, 1947 - 2011.

Increases in human populations, development, and associated land use changes continue rapidly in N.C. Using geospatial analyses, the Conservation Trust for North Carolina (CTNC) projected that by 2030 many areas that were rural in 1940 “will be overtaken by population growth and development such that by 2030, roughly half of the state will be settled at a density equivalent to being urban, suburban, or sprawling exurban” (Figures 6-8). During this time period, the CTNC predicts that there will be a 534% increase in housing units in N.C. Certainly, this level of development will impact all aspects of coyote and fox management in N.C., including the ability of hunters and trappers to pursue these species. Regarding the hunting and trapping of foxes, the Commission believes that this increased development will likely impact opportunities for hunting foxes with dogs more negatively than trapping.

Based upon current human development, the Commission predicted areas across N.C. that may not currently be suitable for fox hunting based on conditions outside of the Commission’s control (Figure 9). Areas believed to be unsuitable include federal and state parks and municipalities; and Yancey County where fox hunting is prohibited. Areas of relatively high traffic volume (where the average annual daily traffic volume is greater than the median average annual daily traffic volume) or where human density is relatively high (i.e., greater than one person for every two acres); and water bodies were also excluded. In this predictive analysis, other areas were considered to be suitable for hunting foxes with dogs. In addition, we also predicted counties that may not be suitable for fox hunting but that could be opened to fox trapping.

In this analysis, the Commission made a number of assumptions. We assumed that the traffic below the median value is suitable for fox hunting. Because the median value for traffic volume in N.C. of 210 cars per day averaged over 2010 is considered a low volume of traffic, this assumption is likely true. However, fox hunting could occur at greater traffic volumes. We assumed that human densities greater than one person per two acres is unsuitable for fox hunting. This is a low human density and the assumption is based on previous predictions associated with hunting deer with dogs. It may be that hunting foxes with dogs can be done at higher human densities. Lastly, we assumed that there are no other factors that limit or prohibit fox hunting with dogs. Likely there are many other factors, including landowner attitudes and opinions, which are not accounted for in this analysis. Further studies are required to gain a better understanding of what makes an area suitable or not suitable for hunting foxes with dogs. Counties in which we suggest that trapping could be allowed are those in which at least 25% of the land area is predicted to be unsuitable for hunting foxes with dogs.

Our goal in this analysis is to point out that increases in human development have and will continue to impact hunting foxes with dogs and the Commission and all stakeholders must evaluate these changes and look for possible ways to optimize both hunting and trapping opportunities across space and time.

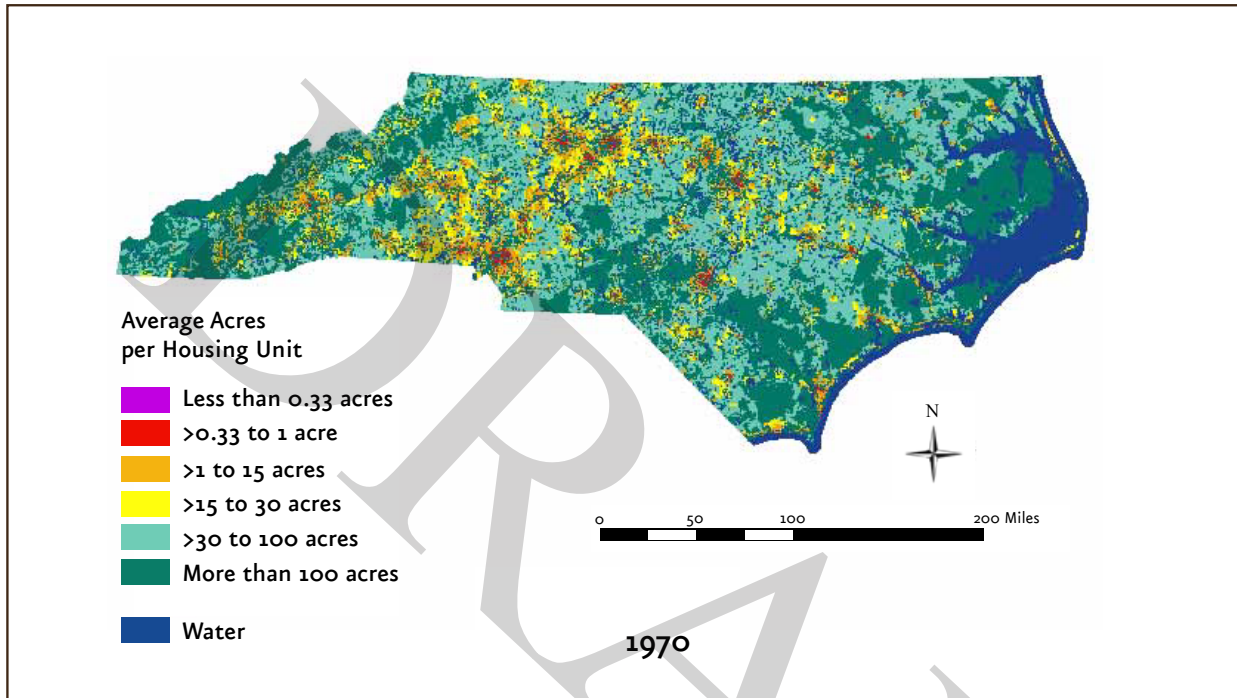


Figure 6. Human housing density in North Carolina, 1970 (from R.B. Hammer and V.C. Radeloff, University of Wisconsin-Madison, courtesy of the Conservation Trust for North Carolina).

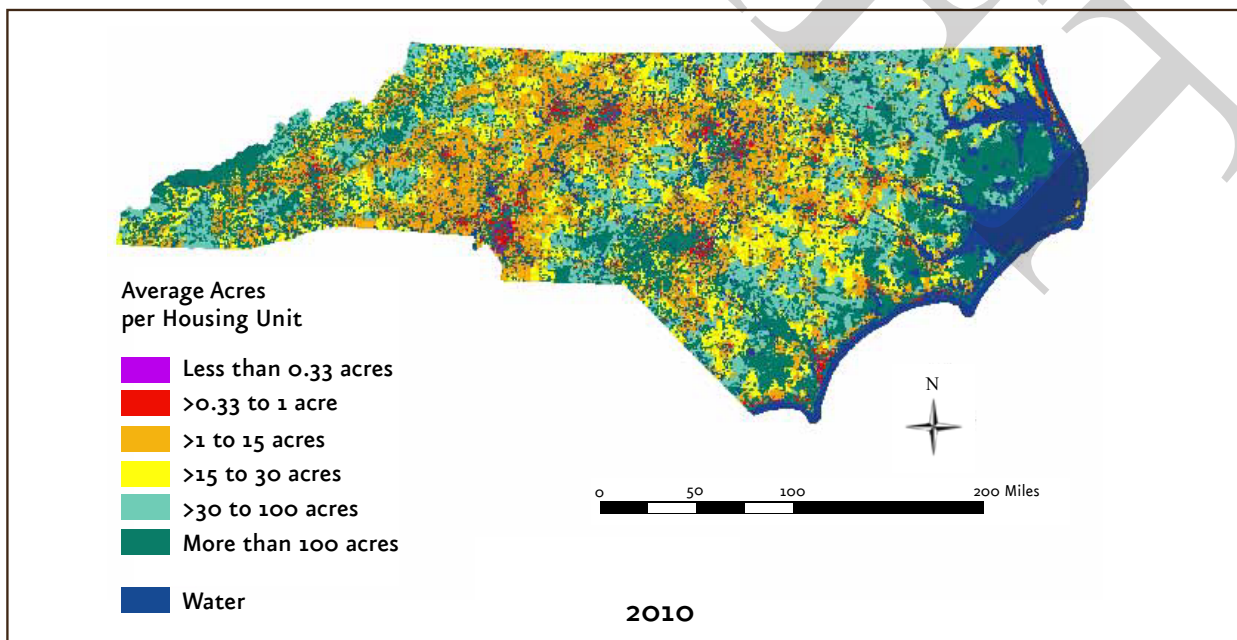


Figure 7. Projected human housing density in North Carolina, 2010 (from R.B. Hammer and V.C. Radeloff, University of Wisconsin-Madison, courtesy of the Conservation Trust for North Carolina).

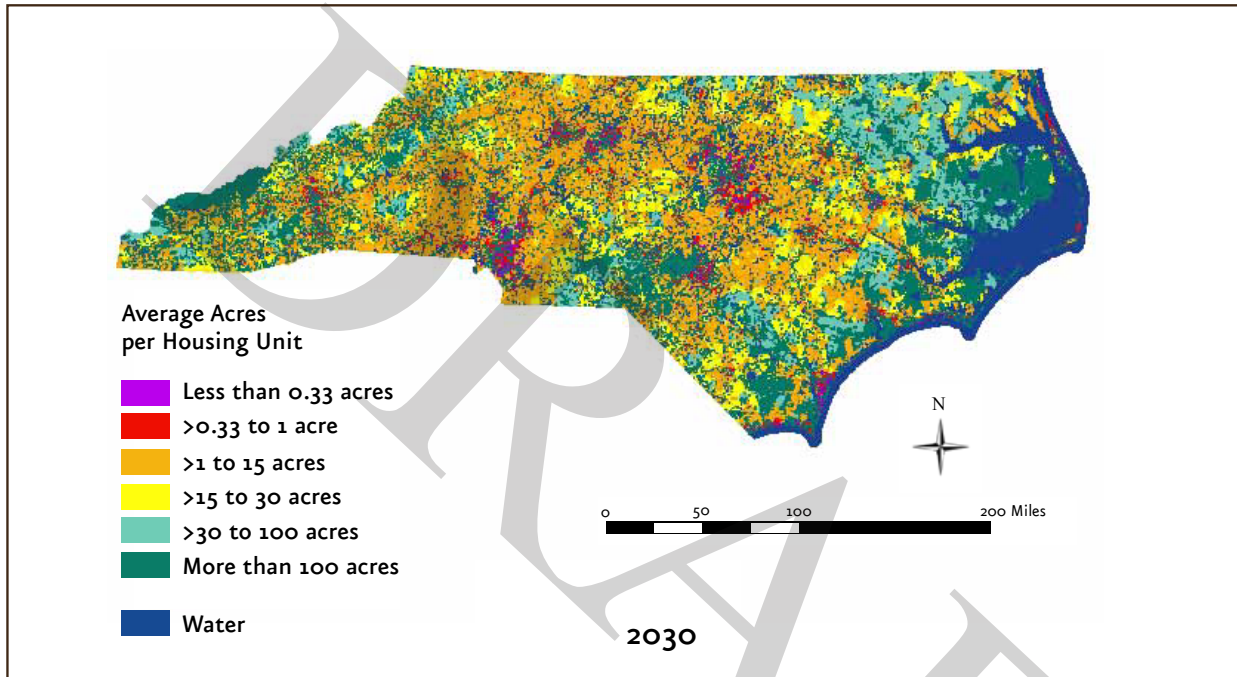


Figure 8. Projected human housing density in North Carolina, 2030 (from R.B. Hammer and V.C. Radeloff, University of Wisconsin-Madison, courtesy of the Conservation Trust for North Carolina).

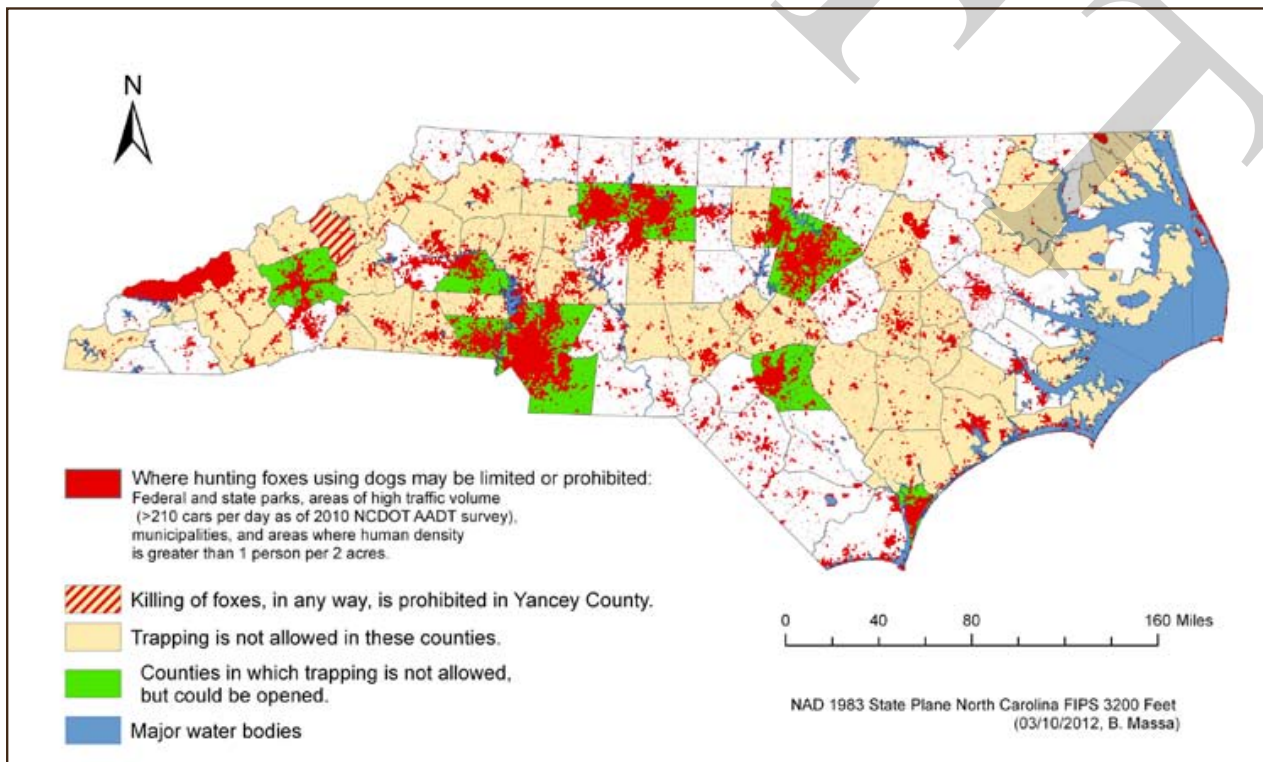


Figure 9. Predicted areas where hunting foxes with dogs may be limited, unsuitable, or prohibited.

## STAKEHOLDER FEEDBACK

In efforts to compile information about attitudes and opinions of our constituents on issues related to managing foxes and coyotes, the Commission received invaluable feedback from the direct meetings, and telephone and e-mail surveys. While there were some divergent opinions, generally, trappers, fox hunters, and controlled fox hunting preserve operators believe that issues related to the conservation and management of both foxes and coyotes are important. Other constituents were mostly concerned with what they view as an overabundant and increasing coyote population.

**Fox Hunters** – Fox hunters do not believe foxes are widely abundant across our state. They believe the Commission caters to trappers and therefore do not trust the Commission to regulate fox harvest. Nor do they trust Commission data regarding the status of fox populations. Fox hunters see trapping as the greatest threat to fox populations. They specifically indicated that they prefer the current scenario where foxes are regulated locally through the General Assembly and oppose transference of regulatory authority over foxes to the Commission.

**N.C. Trappers Association** – Representatives of the N.C. Trappers Association indicated that they see foxes as a public trust resources and their goal is to have equal access among all constituents to fox resources. They believe that foxes are abundant in most areas of the state, many of which can't support hunting foxes with dogs, but could be trapped. Trappers see opportunities for removing coyotes as a primary reason for establishing a statewide fox trapping season. They recommend listing foxes as furbearers and transferring authority to the Commission for regulating the harvest of foxes using the best available scientific data.

**Controlled Fox Hunting Preserve Operators** – There were varying opinions among attendees at these two meetings on the most important issues pertaining to conservation of foxes and management of coyotes. In general, they believe preserves positively contribute to fox and coyote management. While many attendees recommended strengthening regulations on operational details of fox hunting preserves, others opposed any additional regulations. Similar to fox hunters, this group also believes that allowing additional fox trapping would be detrimental to fox populations. They believe the best ways to control coyotes is to allow for a longer trapping season for coyotes, to allow them to be shot on sight, and to provide for hunting them at night. While being generally opposed to opening additional trapping opportunities, most attendees acknowledged getting foxes and coyotes from trappers for release into their preserves. Attendees at these meeting also oppose transferring authority to regulate foxes from the General Assembly to the Commission.

**Non-governmental Wildlife Organizations** – Responses to survey questions from both Quail Unlimited and the Quality Deer Management Association are included in this category. The management of foxes and coyotes is important to both of these organizations. They believe the most important issues related to management of foxes are the timing of seasons, public awareness, trapping regulations, urban development, habitat loss, and gaining additional knowledge about population status. For this group, the most important issues related to management of coyotes are public education, urban development, the inability to use snares, and the need for additional trapping opportunities. Opinions on relative abundance of foxes and coyotes differ. They consistently believe coyotes are too abundant, but that the acceptability of current abundance of foxes depends on the species and location. These groups believe that management of foxes and coyotes is important across the entire state, not just in specific

areas. When asked about regulatory authority, these groups did not clearly differentiate between the Commission's regulatory authority for coyotes versus the General Assembly's regulatory authority for foxes. These stakeholders are not satisfied with how either foxes or coyotes are being managed in our state and indicated support for increasing opportunities to trap and hunt both species, transferring regulatory authority over foxes to the Commission, increasing options for the public to handle fox and coyote depredations, increasing education and outreach efforts, and increasing coordination and collaboration among agencies, organizations, and the public. Both organizations indicated a strong interest in being involved in future efforts to manage foxes and coyotes in our state.

**Non-governmental Agricultural Stakeholders** – Responses to survey questions from a goat farmer, horse owner, the N.C. Cattleman's Association, N.C. Cattlemen's Beef Council, and N.C. Farm Bureau are included in this category. While the management of foxes and coyotes is important to all these stakeholders, they clearly consider coyote issues to be of greater importance. They believe the most important issues related to management of foxes and coyotes are disease transmission from foxes, specifically rabies, and predation by coyotes on livestock. Opinions on relative abundance of foxes and coyotes differ. They consistently believe coyotes are too abundant statewide, but they indicated little knowledge or concern about abundance of foxes. When asked about regulatory authority, these groups indicated that they do not know about differences between the Commission's regulatory authority for coyotes and the General Assembly's regulatory authority for foxes. Satisfaction among these stakeholders concerning how foxes and coyotes are being managed in our state also varied. Regarding fox management, respondents supported increasing education and outreach efforts, and increasing coordination and collaboration among agencies, organizations, and the public. Pertaining to coyote management, these stakeholders indicated support for increasing opportunities to trap and hunt coyotes, increasing options for the public to handle fox and coyote depredations, increasing education and outreach efforts, and increasing coordination and collaboration among agencies, organizations, and the public. All respondents indicated a strong interest in being involved in future efforts to manage foxes and coyotes in our state.

**N.C. Department of Agriculture and Consumer Services** – Responses to survey questions from the Veterinary Services Division and Forest Service are included in this category. The management of foxes and coyotes is important to both of these agencies. They believe the most important issues related to management of foxes and coyotes are balancing all wildlife species, disease transmission, livestock depredation, and habitat protection. These stakeholders believe that both fox and coyote populations are "about right" to "too abundant." These groups believe that management of foxes and coyotes is important across the entire state, especially State Forests. When asked about regulatory authority, these groups clearly understand and differentiate between the Commission's regulatory authority for coyotes versus the General Assembly's regulatory authority for foxes. The Veterinary Services Division is satisfied with how foxes are managed in our state, but the Forest Service is not satisfied. Regarding fox management, the N.C. Forest Service indicated support for increasing opportunities to trap and hunt foxes, transferring regulatory authority over foxes to the Commission, increasing options for the public to handle fox and coyote depredations, increasing education and outreach efforts, and increasing coordination and collaboration among agencies, organizations, and the public. These stakeholders are uniformly dissatisfied with how coyotes are being managed in our state and indicated support for increasing opportunities to trap and hunt coyotes, transferring regulatory authority over foxes to the Commission, increasing options for the public to handle coyote depredations, increasing education and outreach efforts, and increasing coordination and collaboration among agencies, organizations, and the public. Both organizations indicated a strong interest in being involved in future efforts to manage foxes and coyotes in our state.

**Public Health Agencies** – Responses to survey questions from the N.C. Division of Public Health and N.C. Alliance of Public Health Agencies are included in this category. The management of foxes and coyotes is important to both of these organizations. They believe the most important issues related to management of foxes and coyotes are education and outreach about population status, distribution, and regulations on possession; rabies control; and habitat protection. These stakeholders are unsure about the abundance of foxes but generally believe that coyotes are too abundant. When asked about regulatory authority, these groups' responses indicated that they do not understand differences between the Commission's regulatory authority for coyotes and the General Assembly's regulatory authority for foxes. When asked if they are satisfied with how foxes and coyotes are managed in N.C., they indicated a concern only with public exposure to rabies, but gave no recommendations for improving management activities. Both organizations expressed interest in being involved in future efforts to manage foxes and coyotes in our state.

**County Animal Control Agencies** – Responses to survey questions from the Orange County Animal Services and Wilkes County Animal Control are included in this category. These constituents believe the most important issues related to management of foxes and coyotes are increasing population of coyotes, rabies control, and safety of pets. Wilkes County Animal Control believes that fox populations are "about right," while coyotes populations are "too abundant." As county animal control agencies, both respondents indicated a focus within their individual county. When asked about regulatory authority, these groups' responses indicated that they do not understand differences between the Commission's regulatory authority for coyotes and the General Assembly's regulatory authority for foxes. When asked if they are satisfied with how foxes and coyotes are managed in N.C., they recommended improving management by increasing education and outreach efforts; increasing coordination and collaboration among agencies, organizations, and the public; controlling population density; and developing a model tracking system. Neither organization expressed interest in being involved in future efforts to manage foxes and coyotes in our state.

## RECOMMENDATIONS

Based upon the results of this study as reported herein, we make the following recommendations.

1) Fox trapping seasons vary substantially across our state. There would be significant benefits to establishing a uniform fox trapping season.

Allowing trapping of foxes during the statewide furbearer trapping season would increase the harvest of coyotes. From 2006-2012, the average number of coyotes harvested per county with an established fox trapping season was 31% to 112% higher than in counties without a fox trapping season. From 2004-2011 in Alamance, Ashe, Craven, Davidson, Johnston, and Person counties the average coyote harvest for the two years after opening a fox trapping season increased from 168% to 3,087% from the coyote harvest during the two years immediately prior to opening a fox trapping season.

Inclusion of foxes in the statewide furbearer trapping season would remove regulatory barriers while increasing options available for landowners to resolve fox and coyotes related conflicts. Landowners could manage fox and



coyote populations locally during trapping season potentially reducing their costs for resolving conflicts.

Allowing the trapping of foxes during furbearer trapping season would simplify regulatory complexity and increase enforcement effectiveness. There are currently 22 unique fox trapping seasons across 38 counties. This regulatory complexity is confusing for our citizens and makes it difficult to interpret local trapping laws.

Finally, allowing the take of foxes during the statewide furbearer trapping season would decrease safety risks to trappers. Where no fox trapping season exists, trappers must place themselves in close proximity to the fox in order to remove it from the trap. If foxes were included in the season, they could be dispatched before being removed from the trap.

Successful wildlife conservation requires effective involvement of stakeholders. In regards to fox hunting and trapping, allocation of resources among constituent groups a critical issue. Neither hunters nor trappers, the primary constituent groups utilizing fox and coyote resources, trust the other, nor do fox hunters trust the Commission. Foxes are state-trust resources, like many other species including deer, turkeys, bears, and rabbits, and as such can be regulated and managed by the Commission pursuant to NCGS § 143-239 in ways that ensure sound resource conservation while addressing wishes of our citizens. Management of foxes by the Commission would require transferring authority from the General Assembly. **However, before authority for regulating hunting and trapping of foxes should be transferred to the Commission much of the subjectivity in the current dialogue must be removed by developing a structured decision making process that includes formalized adaptive feedback mechanisms for all regulatory changes. Otherwise, such a transfer of authority is unlikely to be successful. The Commission recommends development of this structured decision making process.**

2) Hunting opportunities should be maintained and, where feasible and appropriate, expanded for both coyotes and foxes. Current efforts by the Commission to establish a night hunting season for coyotes is consistent with the findings of this study.

3) While authority to establish fox trapping seasons is retained by the General Assembly, the Commission recommends that any new or changed fox or coyote trapping season coincide with the current statewide furbearer trapping season (November 1 – February 28).

4) The Commission recommends increased education and outreach regarding Best Management Practices for trapping red foxes, ([http://www.fishwildlife.org/files/RedFox\\_BMP.pdf](http://www.fishwildlife.org/files/RedFox_BMP.pdf)) gray foxes, ([http://www.fishwildlife.org/files/Grayfox\\_BMP.pdf](http://www.fishwildlife.org/files/Grayfox_BMP.pdf)) and coyotes ([http://www.fishwildlife.org/files/EasternCoyote\\_BMP.pdf](http://www.fishwildlife.org/files/EasternCoyote_BMP.pdf)).

5) The Commission recommends that the General Assembly amend NCGS § 113.291.1(b)(2) and amend NCGS § 113.291.6 to give the Commission the authority to regulate the use of all gear types in trapping.

6) Activities associated with controlled fox hunting preserves have been of particular interest to numerous stakeholders over recent years. Based on feedback from this study, the Commission, in conjunction with a representative group of preserve operators, will initiate a review of all NCAC rules pertaining to Controlled Fox Hunting Preserves and in situations where opportunities for improvement are identified, initiate rulemaking to effect these changes. This review will include considerations found in the publication “Guidelines for Establishing Hound

Running Pen Regulations with Recommendations to Running Pen Operators for Pen Management” prepared by the Southeastern Association of Fish and Wildlife Agencies’ Fur Resources Committee.

In 2013 while this review is being completed, Commission staff will examine rulemaking options for monitoring the sale of live coyotes and foxes to controlled fox hunting preserves, and evaluating disease concerns resulting from increased movement of foxes and coyotes to controlled fox hunting preserves.

7) Although foxes have been a part of our landscape for a very long time, coyotes are a relatively new arrival. As with any newly colonizing species, there is both fact and myth associated with coyotes. In many instances, especially those in urban settings, nuisance situations resulting from interactions between humans and foxes or coyotes can be reduced or eliminated by managing food sources, other attractants, and habitats conditions that attract foxes and coyotes. Coyotes are highly adaptable and most N.C. citizens have very limited exposure to or knowledge about them. They can be a human and wildlife disease vector, and can have significant impacts on livestock, wildlife, and pets. For these reasons, the Commission, working with other stakeholders identified through this study, will develop and initiate an additional education and outreach effort focusing on the biology and status of coyotes in N.C. and the Southeast, approaches for landowners to manage foxes or coyotes on their property, and available options for dealing with negative human/fox/coyote interactions.

8) The Commission’s current data collection efforts provide population trend information, but the data are limited with respect to fox or coyote population density in localized areas. We also have limited data on take of foxes or coyotes by hunters, including actual harvest or hunter/trapper effort. The Commission will initiate efforts to reliably determine the status and distribution of foxes and coyotes generally across the state and in specific areas identified by constituents. In addition, an approach for collecting effort data for fox hunters and trappers will be developed. Because 94% of the lands in N.C. are privately owned, the Commission will initiate a human dimensions survey of private landowners and the general public to determine their attitudes and opinions concerning the hunting, trapping, status, and management of foxes and coyotes.

9) A wide range of stakeholders have vested interests in the annual and long-term outcomes of activities that impact fox and coyote populations. With that in mind, the Commission recommends development of a structured process through which stakeholders can collaborate on cooperative approaches to manage these important species. In addition to the Commission, agencies and organizations involved in these efforts should include representatives of the N.C. Department of Agriculture and Consumer Services, N.C. Division of Public Health, N.C. Trappers Association, N.C. Wildlife Preserve Association, N.C. Cattlemen’s Association, N.C. League of Municipalities, U.S. Fish and Wildlife Service, and the USDA – Wildlife Services.

10) The Commission recommends that the General Assembly consider opening fox trapping seasons to run from November 1 through February 28 in Buncombe, Cabarrus, Catawba, Cumberland, Durham, Forsyth, Gaston, Guilford, Mecklenburg, New Hanover, Union, and Wake counties (Figure 9). Opening these seasons will increase the removal of coyotes and provide opportunities for fox trapping in areas with high human development while limiting the potential for conflicts between fox hunters and fox trappers. This would also allow the Commission to monitor impacts of the removals on distribution and abundance of both foxes and coyotes.

11) The Commission recommends that the General Assembly consider removing prohibitions on hunting and trapping foxes in Yancey County.

**APPENDIX A**

## Questions for Fox Study Stakeholders:

- 1) Are issues related to the management of foxes and coyotes important to your organization?
  - A) If yes, what are the top three most important issues related to management of foxes?
  - B) If yes, what are the top three most important issues related to management of coyotes?
- 2) Do you believe fox populations in N.C. are not abundant enough, about right, or too abundant?
- 3) Do you believe coyote populations in N.C. are not abundant enough, about right, or too abundant?
- 4) Are there particular areas in the state where fox management is most important to your organization?
  - A) If yes, where?
- 5) Are there particular areas in the state where coyote management is most important to your organization?
  - A) If yes, where?
- 6) Are you currently aware of how foxes and coyotes are regulated in N.C.?
  - A) If yes, who is primarily responsible for regulating foxes in N.C.?
  - B) If yes, who is primarily responsible for regulating coyotes in N.C.?
- 7) Are you satisfied with how foxes are currently managed in N.C.?
  - A) If no, which of these recommendations below do you support to improve management of foxes?
    - i) Increase opportunities to trap foxes
    - ii) Increase opportunities to hunt foxes
    - iii) Transfer complete regulatory authority for foxes to the WRC
    - iv) Increase options for the public to handle depredation by foxes
    - v) Increase education and outreach efforts
    - vi) Increase coordination and collaboration among state agencies, NGOs, and the public
    - vii) Other?
- 8) Are you satisfied with how coyotes are currently managed in N.C.?
  - A) If no, which of these recommendations below do you support to improve management of coyotes?
    - i) Increase opportunities to trap coyotes
    - ii) Increase opportunities to hunt coyotes
    - iii) Increase options for the public to handle depredation by coyotes
    - iv) Increase education and outreach efforts
    - v) Increase coordination and collaboration among state agencies, NGOs, and the public
    - vi) Other?
- 9) Would you like to be involved in future efforts to manage foxes and coyotes in N.C.?

## Appendix F. County Fox Harvest Seasons Legislated by the General Assembly

# COUNTY FOX HARVEST SEASONS LEGISLATED BY THE NORTH CAROLINA GENERAL ASSEMBLY



Updated: July 25<sup>th</sup>, 2011

**DIVISION OF WILDLIFE MANAGEMENT**  
**NORTH CAROLINA WILDLIFE RESOURCES COMMISSION**



The North Carolina Wildlife Resources Commission (WRC) has very limited authority to regulate fox hunting and trapping seasons. The North Carolina General Assembly (NCGA) has elected to classify foxes only as game animals rather than game and furbearers as bobcat, opossum and raccoon are designated. This classification means that the WRC may not allow foxes to be taken by trapping during regular trapping seasons.

There are numerous statutes that have been approved by the NCGA regulating wildlife related activities. These laws supersede any accompanying rules that have been promulgated by the WRC. Many of these laws passed by the NCGA apply only to a specific county, counties or parts of counties and generally are referred to as “local laws”. Some of these laws are listed by county in the WRC's’ annual Inland Fishing, Hunting, and Trapping Regulations Digest. The number and complexity of the “local laws” enacted by the NCGA over the past 20 years which allow the taking of foxes with weapons and traps make them unsuitable to include in the annual digest.

This document provides a general listing of current statutes pertaining to allowing the harvest of foxes by the NCGA. It includes all known “local laws” as well as a listing of those counties that fall under the fox firearms season set by G.S. 113-291-4A. “Local laws” which prohibit an activity or harvest are listed in the Regulations Digest.

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### **Chapter 113.**

#### **Conservation and Development.**

#### **SUBCHAPTER I. GENERAL PROVISIONS.**

#### **SUBCHAPTER IV. CONSERVATION OF MARINE AND ESTUARINE AND WILDLIFE RESOURCES.**

#### **Article 22.**

#### **§ 113-291.4. Regulation of foxes; study of fox and fur-bearer populations.**

- (a) All of the regulatory powers granted the Wildlife Resources Commission generally with respect to game, wild animals, and wildlife apply to foxes unless there are specific overriding restrictions in this section.
- (b) Except for any closed season under subsection (h), foxes may be taken with dogs both night and day on a year-round basis.
- (c) Foxes may not be taken with firearms except:
  - (1) As provided in subsection (f) or (i) of this section or G.S. 113-291.4A(a).
  - (2) As an incidental method of humanely killing them following any lawful method of taking that does not result in death.
  - (3) When they are lawfully shot under laws and rules pertaining to the destruction of animals committing depredations to property.
- (d) Foxes may not be taken with the aid of any electronic calling device.
- (e) The Wildlife Resources Commission is directed to improve its capabilities for studying fox and fur-bearer populations generally and, on the basis of its present knowledge and future studies, to implement management methods and impose controls designed to produce optimum fox and fur-bearer populations in the various areas of the State.
- (f) If, on the basis of its studies and other information available, the Wildlife Resources Commission determines the population of foxes in an area is fully adequate to support a harvesting of that population, the Wildlife Resources Commission may, upon passage of local legislation permitting same, open a season for taking foxes by trapping. When the

season is open for trapping, foxes may also be taken by the use of methods lawful for taking game animals, including the use of firearms. Any bag, possession, or season limits imposed on foxes taken from the area in question will apply in the aggregate to all foxes killed without regard to the method of taking.

- (f1) In those counties in which open seasons for taking foxes with weapons and by trapping were established between June 18, 1982, and July 1, 1987, in accordance with the procedure then set forth in subsection (f) of this section, the Wildlife Resources Commission is authorized to continue such seasons from year to year so long as the fox populations of such counties remain adequate to support the resulting harvest. The counties referred to in this subsection are as follows: Caswell, Clay, Graham, Henderson, Hyde, Macon, Stokes and Tyrrell.
- (g) The Wildlife Resources Commission may provide for the sale of foxes lawfully taken in areas of open season as provided in subsection (f), under a system providing strict controls. The Wildlife Resources Commission must implement a system of tagging foxes and fox furs with a special fox tag, and the Commission may charge two dollars and twenty-five cents (\$2.25) for each tag furnished to hunters, trappers, and fur dealers. The fox tag or tags must be procured before taking foxes by any method designed to kill foxes or when the intent is to harvest foxes. The number of tags furnished to any individual may be limited as to area and as to number in accordance with area, bag, possession, or season limits that may be imposed on foxes. No person may continue to hunt or trap foxes under this fox harvesting provision unless he still has at least one valid unused fox tag lawful for use in the area in question. A person hunting foxes with dogs not intending to kill them need not have any fox tag, but any fox accidentally killed by that hunter must be disposed of without sale as provided below, and no foxes not tagged may be sold. The Wildlife Resources Commission may by rule provide reporting and controlled-disposition requirements, not including sale, of foxes killed accidentally by dog hunters, motor vehicles, and in other situations; it may also impose strict controls on the disposition of foxes taken by owners of property under the laws and rules relating to depredations, and authorize sale under controlled conditions of foxes taken under depredation permits.
- (h) In any area of the State in which the Wildlife Resources Commission determines that hunting of foxes with dogs has an appreciably harmful effect upon turkey restoration projects, it may declare a closed season for an appropriate length of time upon the taking with dogs of all species of wild animals and birds. Except as otherwise provided in G.S. 113-291.1(d) or (d1), this subsection does not prohibit lawful field trials or the training of dogs.
- (i) Upon notification by the State Health Director of the presence of a contagious animal disease in a local fox population, the Commission is authorized to establish such population control measures as are appropriate until notified by public health authorities that the problem is deemed to have passed. (1979, c. 830, s. 1; 1981 (Reg. Sess., 1982), c. 1203, ss. 1-3; 1985, c. 476, s. 2; 1987, c. 726, s. 1, c. 827, s. 98; 1989, c. 504, s. 2, c. 616, s. 4, c. 727, s. 113; 1991, c. 483, s. 1(a), (b); 1993, c. 208, s. 4.)

**§ 113-291.4A. Open seasons for taking foxes with firearms.**

- (a) There is an open season for the taking of foxes with firearms in all areas of the State east of Interstate Highway 77 and in Mitchell and Caldwell Counties from the beginning of the season established by the Wildlife Resources Commission for the taking of rabbits and quail through January 1 of each year. The selling, buying, or possessing for sale of any fox or fox part taken pursuant to this subsection is prohibited, and is punishable as provided by G.S. 113-294(a) or (j).
- (b) The Wildlife Resources Commission shall establish appropriate bag and season limits that may be imposed upon the taking of foxes pursuant to this act, and may make reasonable rules governing the possession of foxes killed by motor vehicles or other accidental means. (1989, c. 616, s. 1; 1989 (Reg. Sess., 1990), c. 811; 1995, c. 32, s. 1; 1999-456, s. 32.)

**15A NCAC 10B .0212(a)(3) Foxes (Gray and Red)**

(a) Seasons.

- (1) There shall be no closed season on taking foxes with dogs;
- (2) Foxes may be taken with weapons or traps the first to fourth Saturday in January in the following counties:

Caswell	Henderson
Clay	Macon
Graham	Tyrrell

- (3) Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by bow and arrow in all areas of the State east of Interstate Highway 77 and in Mitchell County.

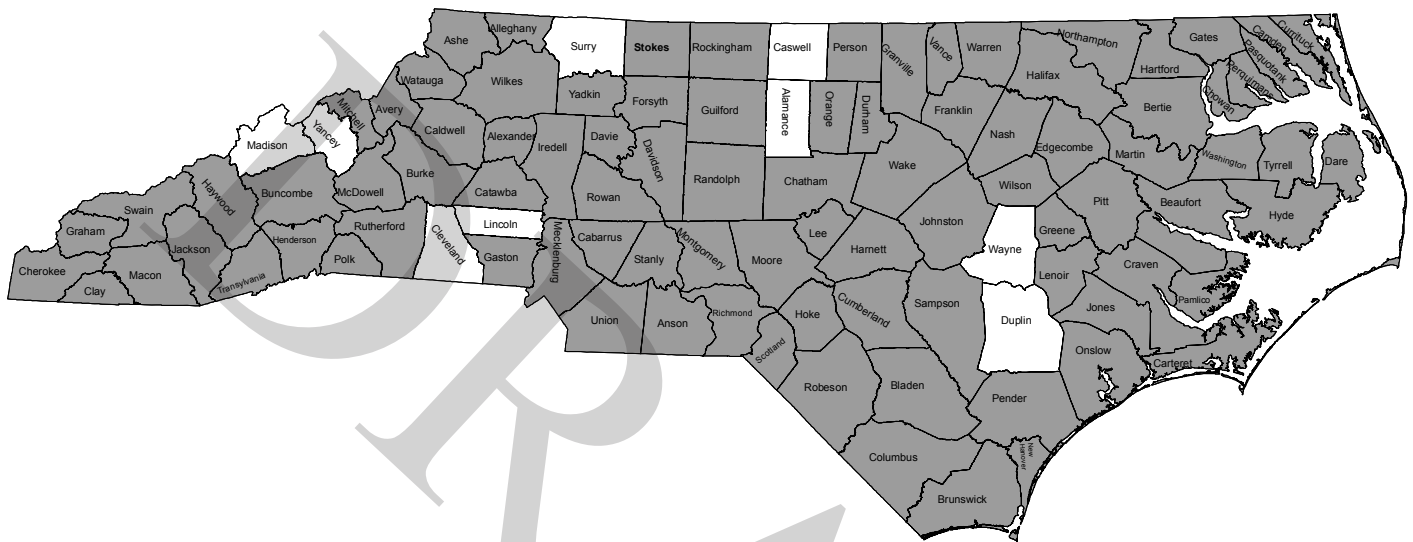
(b) Bag Limit.



- (1) Except in areas of open season for taking foxes with weapons or traps, foxes may not be intentionally killed by any method;
- (2) In areas of open season in all areas east of Interstate Highway 77 as set by the Legislature and in Subparagraph (a)(2) and (a)(3) of this Rule, the following bag limit applies: Daily, two; season, 10.

Note: Where local laws governing the taking of foxes conflict with these Regulations, the local laws shall prevail.

## Counties with No Closed Season on Taking Foxes with Dogs

Foxes may be taken with dogs both night and day on a daily, year-round basis.

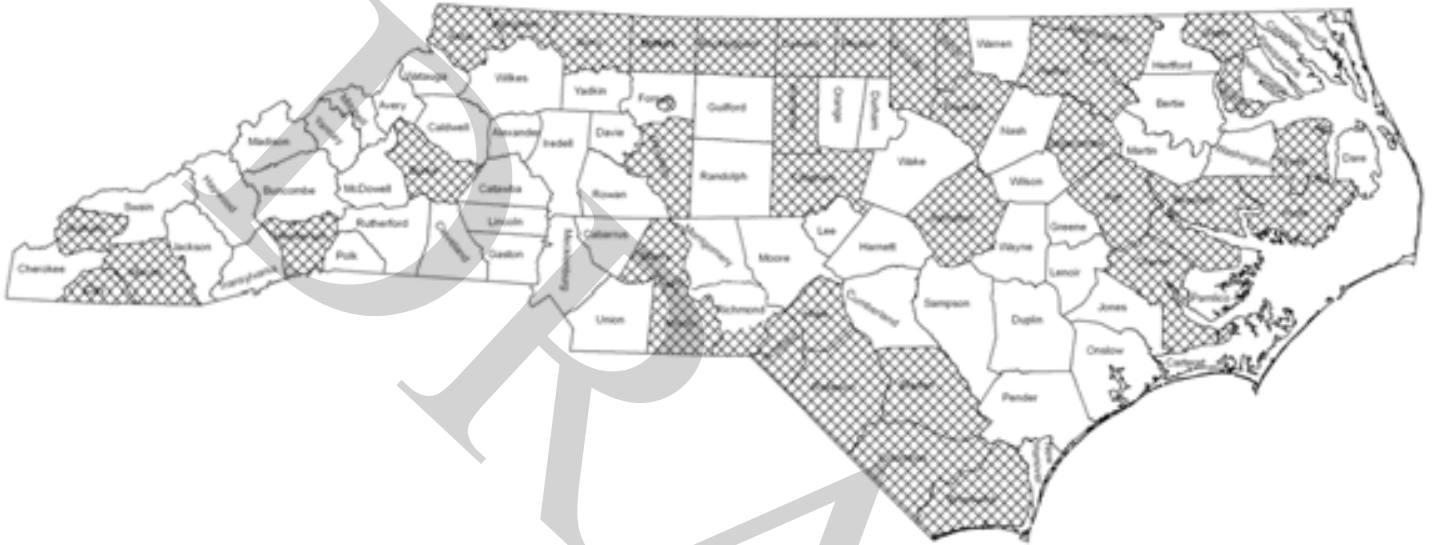


-  Counties with no restrictions on taking fox with dogs.
-  Counties with restrictions on taking fox with dogs.

**NOTE: See general listing for restrictions in Alamance, Caswell, Cleveland, Duplin, Lincoln, Madison, New Hanover, Surry, Wayne and Yancey counties**

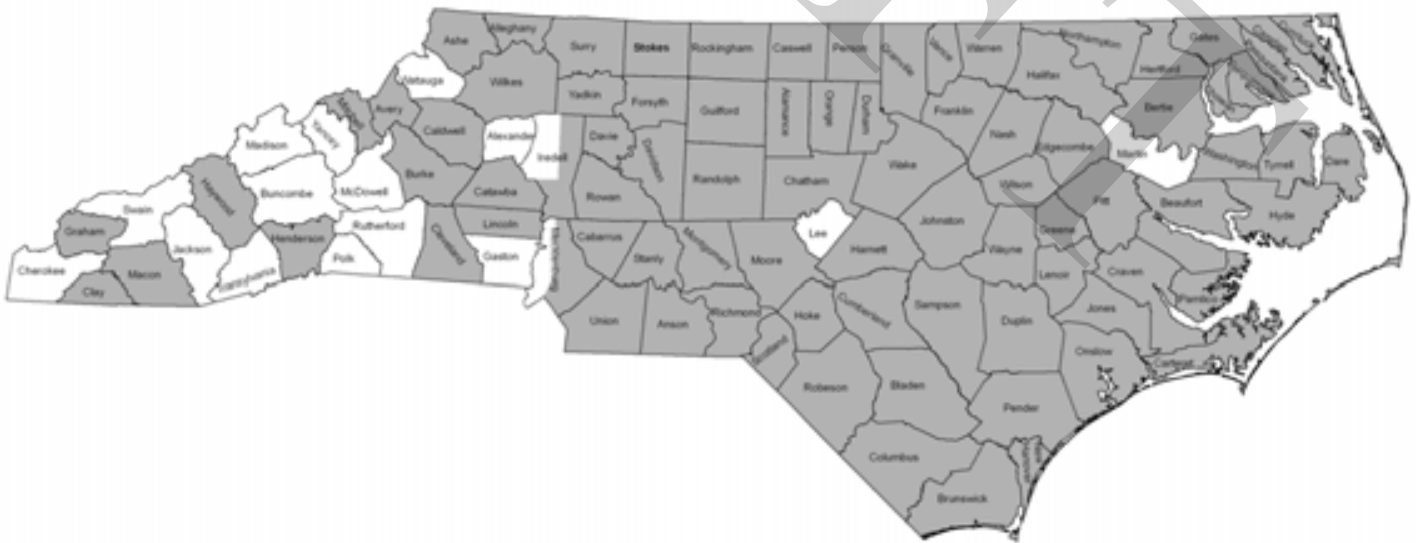


**Counties with Fox Trapping Seasons**  
(See general listing for stipulations pertaining to each county.)



- Counties and areas with a fox trapping season.
- Counties and areas with no fox trapping season.

**Counties with Fox Hunting Seasons with Weapons**  
(See general listing for stipulations pertaining to each county.)



- Counties and areas with a fox hunting season.
  - Counties and areas with no fox hunting season.
- NOTE: Restrictions on taking red foxes in Cleveland, Haywood, Lincoln and Madison counties.**

**Fox Tags:** Fox tags are required in all counties with an open season on foxes, unless an exemption is stated in local law.

However, licensed trappers are exempt from tagging requirements if live-trapped foxes are trapped for purpose of sale to licensed controlled fox hunting preserves.

**Coyotes:** It is legal to trap coyotes during the furbearer trapping seasons established by the Wildlife Resources Commission (WRC). To find out the trapping season in your area, please see page 39 in the WRC Hunting and Trapping regulation digest or visit <http://www.ncwildlife.org/Trapping/> and click on “Trapping Regulations.”

It is also legal to trap coyotes during any fox-trapping season established by statute or by local law, using methods described in statute, even when those fox-trapping seasons open prior to and extend after the regular trapping seasons.

**ALAMANCE**

S.L. 1979, c. 825, sec.2 - Prohibits pursuing, hunting, taking or killing deer or foxes with dogs.

S.L. 1989, c.825 - Opens season for taking foxes with weapons during the season for taking rabbits as established by regulation by the Wildlife Resources Commission. Opens season for trapping foxes from January 2 through January 31. A season bag limit of 30 applies in the aggregate to all foxes taken during the weapons and trapping seasons. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

S.L.2008, c. 44, H2123 - Notwithstanding any other provision of law, there is an open season for trapping foxes and coyotes with rubber cleat traps from June 1 through February 28 of each year. The North Carolina Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**ALLEGHENY**

S.L. 2011-32, SB46 - Notwithstanding any other provision of law, there is an open season for taking foxes and coyotes with lawful weapons or traps from October 15 through March 1 of each year.

No season bag limit applies to foxes and coyotes taken under this act.

**ANSON**

Former G.S. 113-111, as amended by S.L. 1955, c.286 - Authorized the hunting and killing of foxes at any time by any lawful method. This allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. The 1955 act prohibits importation and release of foxes in the county. Sale of foxes taken under the year-round hunting authorization is not permitted.

S.L. 1989, c.879 - Opens season for taking foxes with weapons from November 18-January 1 each year. Opens season for taking foxes with foothold traps from January 2-January 31 of each year. Wildlife Resources Commission shall provide for the sale of foxes taken pursuant to this act. A season bag limit of 30 applies in the aggregate to all foxes taken.

**ASHE**

Former G.S. 113-111, as amended by G.S. 113-133.1 (e) - Allows foxes to be taken at any time by any lawful method; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. Sale of foxes taken under this act is not permitted.

S.L. 2007, S364, as amended by S.L. 2010 H1893 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from November 1 through February 28 of each year. A season bag limit of 10 applies in the aggregate to all foxes taken during the trapping season established in this act. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act and pursuant to former G.S. 113-111, as retained to the extent of its application to Ashe County pursuant to G.S. 113-133.1(e).

**AVERY**

S.L. 1985,c.180 - Authorizes foxes to be taken with weapons from December 1 through February 1 each year, and sets a season bag limit of 30. Wildlife Resources Commission shall provide for the sale of foxes taken pursuant to this act.

**BEAUFORT**

S.L. 1987, c.98 - Authorized the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate

season bag limit, for both the weapons and trapping season, is ten. The Wildlife Resources Commission shall provide for sale of foxes taken lawfully pursuant to this act.

S.L. 1997.c.132, as amended by S.L. 2001, c. 19 - Authorizes the trapping season for foxes from the day after the close of gun deer season until February 28 of each year. Eliminates the bag limits on hunting or trapping foxes and raccoons and the requirement to tag foxes prior to or after sale. Notwithstanding any other provision of law, foxes and raccoons may be taken during any trapping season established by the Wildlife Resources Commission or by the provisions of this act with steel-jaw or leghold traps with trap chains of up to 18 inches in length.

It is lawful to use snares when trapping fur-bearing animals during seasons for trapping furbearing animals as established by the Wildlife Resources Commission and by the provisions of this act.

**BERTIE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**BLADEN**

S.L. 1985.c.722 as amended by S.L. 1985 c. 880 - Permits the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is

thirty. The Wildlife Resources Commission shall provide for sale of foxes taken lawfully pursuant to this act.

**BRUNSWICK**

S.L. 1993, c. 208 - Opens the season for taking foxes with weapons from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**BURKE**

S.L. 1989, c.163 - Notwithstanding any other provision of law, there is an open season for hunting, taking, or killing foxes with firearms and bow and arrow during the season for hunting any game animal as established by the Wildlife Resources Commission. Notwithstanding any other provision of law, there is an open season for hunting, taking, or killing foxes by trapping from January 1 through January 31 of each year. The Wildlife Resources Commission shall provide for sale of foxes taken lawfully pursuant to this act.

**CABARRUS**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CALDWELL**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CAMDEN**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CARTERET**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CASWELL**

P-L.L. 1937, c. 411- Fixes the open season for fox hunting from September 1 to June 30.

S.L. 1991.c.908 as amended by S.L. 1993.c.727 - Notwithstanding any other provision of law, there is an open season for taking foxes with rubber cleat traps from June 1 through February 28 each year. Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from January 5 through February 10 of each year. Notwithstanding any other provision of law, there is an open season for taking foxes with weapons

from November 2 through February 10 of each year. A season bag limit of 30 applies to all foxes taken during the trapping season. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully under this act.

These two acts read together allow hunting foxes with dogs from September 1 through June 30 and allows hunting foxes with weapons from November 2 through February 10.

**CATAWBA**

Former G.S. 113-111, as amended by S.L. 1955,c.1037 - Authorizes the hunting and killing of foxes at any time by any lawful method. Sale of foxes taken under this act is not permitted.

**CHATHAM**

S.L. 1995, c.80 - Notwithstanding any other provision of law relating to trapping of foxes, there will be open season for taking foxes with traps of the leghold type no larger than one and one-half, with coil spring and with trap chain and at least three swivels set on dry land with solid anchor. No trap larger than number one and one-half coil spring may be used. This season shall be from December 1 to February 15 of each year. No person shall place traps on the land of another without first obtaining written permission from the landowner or lessee. There shall be no bag limit for foxes taken during the trapping season. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully.

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10.

Foxes taken under this season may not be bought or sold.

**CHOWAN**

Ch. 301 of 1999 S.L. adds Chowan to S.L. 1989,c.128 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons from December 1 through January 1 of each year.

S.L. 2011-40, SB261 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act.

**CLAY**

G.S. 113-291.4, (f), (f1), and (g) - Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**CLEVELAND**

P.L. 1907, c.388 - Provides an open season on gray foxes from December 2 to the last day of February. Sale of foxes taken under this act is not permitted.

S.L. 1951, c.1101 - Prohibits hunting red foxes at any time.

These two acts read together apparently ban all hunting of red foxes, including with dogs, and opens season for hunting gray foxes during authorized hours by all lawful hunting methods (rifle, shotgun, bow and arrow, and dogs) from December 2 to the last day of February. Sale of harvested foxes is not permitted

**COLUMBUS**

S.L. 1993, c. 208 amended by S.L. 2004-66, HB 1346 - Opens the season for taking foxes with weapons from December 1 through January 1, and by trapping from January 2 through January 31. Leghold trap set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**CRAVEN**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

S.L. 2008, c. 8, S1989 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from January 2 through February 28 of each year. No season bag limits applies to foxes taken under this act. The North Carolina Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**CUMBERLAND**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CURRITUCK**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**DARE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**DAVIDSON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

S.L. 2009, c.43, H551 -

Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act.

**DAVIE**

G.S. 113-111, as amended by S.L. 1947, c.333 - Authorized the hunting and killing of foxes at any time by any lawful method. The amending law prohibits importation and release of foxes and authorizes the board of

county commissioners to pay a bounty on foxes. Sale of harvested foxes is not permitted.

**DUPLIN**

S.L. 1965, c.774 - Provided an open season from August 2 to March 15 for hunting foxes with dogs, and permits the use of guns and dogs when the season is open for any other game. Sale of foxes taken under this act is not permitted.

**DURHAM**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**EDGECOMBE:**

S.L. 1991, c.483 s.4 - Opens a season for taking foxes by trapping from January 2 or the last day of deer season, whichever is later, through January 31 of each year. The Wildlife Resources Commission shall provide for sale of foxes. Aggregate bag limit is 30.

**FORSYTH**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**FRANKLIN**

S.L. 1993, c. 208 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping from October 1 through January 31 each

year. The Wildlife Resources Commission shall provide for the sale of lawfully taken foxes.

**GATES**

S.L. 1989, c.128 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons from December 1 through January 1 of each year. Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from January 2 or the last day of deer season, whichever is later, through January 31 of each year. During this season, all leghold traps set on dry land with solid anchor shall have at least three swivels in the trap chain and no leghold traps larger than size one and one-half may be used. A season bag limit of 30 applies in the aggregate to all foxes taken during the weapons and trapping seasons established in this act. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**GRAHAM**

G.S. 113-291.4, (f), (f1), and (g) - Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**GRANVILLE**

S.L. 1963, c.670 - Provides that foxes may be taken by use of dogs year-round, day or night, and by "any manner" during the open season. ("Any manner" should be interpreted to mean during authorized hunting hours by any lawful hunting method in addition to dogs: rifle, shotgun, and bow and arrow. "Open season" should be interpreted to mean when the season is open for any game animal or game bird in the county.)

Sale of foxes taken under this local act is not permitted.

S.L. 1993, c.208 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping from October 1 through January 31 each year. The Wildlife Resources Commission shall provide for the sale of lawfully taken foxes.

**GREENE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

S.L. 1975, c.219, as amended by S.L. 1987, c.132 - Prohibits hunting foxes with firearms “during the two-week deer season.”

The current interpretation of this act is that during any gun deer season, the use of firearms to hunt foxes is prohibited.

**GUILFORD**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**HALIFAX**

P-L.L. 1925, c.571,s.3 - Makes it lawful to “hunt foxes at any time.” This should be interpreted to allow year-round dog hunting, day or night (because of the statewide law), and year-round hunting during authorized hunting hours by other normal hunting methods: rifle, shotgun, and

bow and arrow. Sale of foxes taken under this act is not permitted.

S.L. 1995, c.279 - Notwithstanding any other law, there is an open season for taking foxes by trapping from January 7 through February 10 of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully under this act. A bag limit of 30 applies in the aggregate to all foxes taken during the fox season established in this act.

**HARNETT**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**HAYWOOD**

Former G.S. 113-111, as modified by S.L. 1963, c.322 - Provides generally that foxes may be taken “at any time by any lawful method”—but red foxes may not be taken with guns.

This should be interpreted to authorize year-round taking of red foxes with dogs and with bow and arrow, and year-round taking of gray foxes by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (Because of the statewide law, dog hunting of both gray and red foxes may be day or night. Other takings would be limited to authorized hunting hours.) Sale of foxes taken under this act is not permitted.

**HENDERSON**

Former G.S. 113-111 - Allows foxes to be taken “at any time by any lawful method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and

arrow, and dogs. (The statewide law would allow dog hunting at night.) Sale of foxes taken under this act is not permitted.

G.S. 113-291.4, (f), (f1), and (g) – Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**HERTFORD**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**HOKE**

S.L. 1985, c.108 - Authorizes the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**HYDE**

S.L. 1989, c.229 - Notwithstanding any other provision of law, there is a season for taking, hunting, or killing foxes with bow and arrow, rifle, shotgun, and dogs from November 15 through January 1 of each year. Notwithstanding any other provision of law, there is a season for taking, hunting, or killing foxes with traps

from January 2 through the last day of February of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act. A season bag limit of 20 applies in the aggregate to all foxes taken during the fox seasons established in this act.

S.L. 1997, c.132, as amended by S.L. 2001, c. 19 - Authorizes the trapping season for foxes from the day after the close of gun deer season until February 28 of each year. Eliminates the bag limits on hunting or trapping foxes and raccoons and the requirement to tag foxes prior to or after sale. Notwithstanding any other provision of law, foxes and raccoons may be taken during any trapping season established by the Wildlife Resources Commission or by the provisions of this act with steel-jaw or leghold traps with trap chains of up to 18 inches in length.

It is lawful to use snares when trapping fur-bearing animals during seasons for trapping furbearing animals as established by the Wildlife Resources Commission and by the provisions of this act.

#### **IREDELL**

S.L. 1985, c.664, H1418 - Provides that foxes may be taken by use of "weapons" in the Townships of Fallstown, Davidson, and Coddle Creek from December 1 through January 1 each year. ("Weapons" would mean rifle, shotgun, and bow and arrow.) The Wildlife Resources Commission must provide for sale of foxes taken legally under the local act.

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may

not be bought or sold. This applies only to that portion of the county east of I-77.

#### **JOHNSTON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

S.L. 2007, H1185 - Notwithstanding any other provision of law, there is an open season from December 1 through February 20 of each year for taking foxes with weapons and by trapping, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act.

#### **JONES**

S.L. 1989, c.134 - Notwithstanding any other provision of law, there is a season for taking, hunting, or killing of foxes with firearms from November 1 through December 31 of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

#### **LEE**

S.L. 1977, c. 636 - Classifies the fox as a game animal which may be taken only with dogs at any time during day or night and prohibits the purchase or sale of foxes or parts thereof, except for live foxes for restocking purposes.

#### **LENOIR**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10.

Foxes taken under this season may not be bought or sold.

#### **LINCOLN**

P-L.L. 1925, c. 449, sections 1 and 2 - Provides an open season for hunting red foxes with dogs only from October 1 to March 1.

S.L. 1955, c.878 - Provides that one may "hunt, take or kill gray foxes at any time..." This should be interpreted to allow year-round hunting of gray foxes, day or night (because of statewide law); year-round hunting of gray foxes during authorized hunting hours with shotgun, rifle, and bow and arrow; and day and night hunting of red foxes with dogs from October 1 to March 1. Sale of foxes taken under this act is not permitted.

#### **MACON**

G.S. 113-291.4, (f), (f1), and (g) - Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

#### **MADISON**

S.L. 1951, c. 1040- Prohibits hunting red foxes at any time.

#### **MARTIN**

S.L. 1977, c. 636 - Classifies the fox as a game animal which may be taken only with dogs at any time during the day or night, and prohibits the purchase or sale of foxes or parts thereof, except for live foxes for restocking purposes.

#### **MECKLENBURG**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate

Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold. This applies only to that portion of the county east of I-77.

#### **MITCHELL**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **MONTGOMERY**

S.L. 1977, c.1142.s1 - Provides that (1) there is “no closed season for hunting foxes with dogs or guns”; (2) it is unlawful to “buy or sell a dead fox, fox pelt or other part of a fox”; and(3) foxes may be taken with dogs during the day or night. (The specification of “dogs or guns” would prevent use of the bow and arrow.)

#### **MOORE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **NASH**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **NEW HANOVER**

S.L. 1971, c.559 - Prohibits hunting foxes with dogs in that portion of Federal Point Township which lies south of Snow’s Cut (the Intracoastal Waterway).

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **NORTHAMPTON**

S.L. 1993, c.727 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from January 5 through February 10 of each year. Notwithstanding any other provision of law, there is an open season for taking foxes with weapons from November 2 through February 10 of each year. No provisions for sale are provided.

#### **ONslow**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **ORANGE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **PAMLICO**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **PASQUOTANK**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **PENDER**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

#### **PERQUIMANS**

Former G.S. 113-111 - Allows foxes to be taken “at any time by any lawful method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.) Sale of foxes taken under this act is not permitted.

#### **PERSON**

S.L. 1985, c.108, as amended by S. O. 1985 (2<sup>nd</sup> Sess. 1986), c.890 and further amended by house bill 820 in 2005 - Authorizes the taking of foxes



by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from September 1 through September 30 and from December 1 through February 20 of each year. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one half may be used. There is no season bag limit. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**PITT**

S.L. 1993, c. 208 amended by S.L. 2004-199, SB 1225 - Opens the season for taking foxes with weapons from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**RANDOLPH**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**RICHMOND**

S.L. 2001, c. 133, H903 - Notwithstanding any other provision of law, there is a season for taking foxes with box-type traps only from January 2 through January 31 of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant

to this act. A season bag limit of 30 applies in the aggregate to gray and red foxes taken during the fox season established in this act. This act applies only to that portion of Richmond County located north of U.S. Highway 74 and west of U.S. Highway 1.

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**ROBESON**

S.L. 1985, c.108 - Authorizes the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**ROCKINGHAM**

S.L. 1985, c.179, as amended by S.L. 2011-136, HB463 - Authorizes the taking of foxes by firearms, bow and arrow, or crossbow during any open small game season each year. There is an open season for taking foxes by trapping from November 1 through February 28 of each year. During this season, all leghold traps set on dry shall be in accordance with State law. No bag limit applies to foxes taken under this act. No tags shall be required for the sale of the fur of foxes taken in accordance with this act.

**ROWAN**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**SAMPSON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**SCOTLAND**

S.L. 1985, c.108 - Authorizes the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The local act applies in that portion of Scotland County northeast of N.C. Highway 381 from the Richmond County line to the South Carolina border. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10.

Foxes taken under this season may not be bought or sold.

**STANLY**

S.L. 1989.c.879 - Opens season for taking foxes with weapons from November 18-January 1 of each year. Opens season for taking foxes with foothold traps from January 2-January 31 of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken pursuant to this act. A season bag limit of 10 applies in the aggregate to all foxes taken.

**STOKES**

Former G.S. 113-111, as amended by S.L. 1955, c.685 - Allows foxes to be taken “at any time by any lawful method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.). The sale of foxes taken under this act is not permitted.

S.L. 2008, c. 102, H2760 – Notwithstanding any other provision of law, there is an open season from the first Saturday in January through the last Saturday in January of each year for taking foxes with weapons and by trapping, with no tagging requirements prior to or after sale. No bag limits applies to foxes taken under this act.

**SURRY**

P-L. L. 1925.c.474.s.6 - Provides that gray and red foxes may be taken only from October 15 through March 1. This should be interpreted to authorize fox hunting with dogs, day and night, during the open season, and normal hunting methods: rifle, shotgun, and bow and arrow. The sale of foxes taken under this act is not permitted.

S.L. 2011-32, SB46 - Notwithstanding any other provision of law, there is an open season for

taking foxes and coyotes with lawful weapons or traps from October 15 through March 1 of each year. No season bag limit applies to foxes and coyotes taken under this act.

**TYRRELL**

Former G.S. 113-111 - Allows foxes to be taken “at any time by any lawful method” this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs.(Sale under this provision is not permitted).

G.S. 113-291.4, (f), (f1), and (g) – Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**UNION**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**VANCE**

S.L. 1993, c. 208 as amended by S.L. 2004-44 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping from October 1 through January 31 each year. The Wildlife Resources Commission shall provide for the sale of lawfully taken foxes.

**WAKE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all

areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WARREN**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WASHINGTON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WAYNE**

S.L. 1981, c. 697, as amended by S.L. 1987, c. 958 - Prohibits hunting foxes in any manner from March 16 to August 1. Amendment exempts persons training dogs to hunt foxes in a dog training facility larger than 500 acres that is enclosed with a dog-proof fence.

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WILKES**

Former G.S. 113-111, as amended by S.L. 1971, c.385 - Allows foxes to be taken “at any time by any lawful method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.) The 1971 act prohibits the use of electronic calling devices in taking foxes in Wilkes County. The sale of foxes taken under this act is not permitted.

**WILSON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate

Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WINSTON-SALEM**

S.L. 2010, H1893 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping with cage traps only during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act.

**YADKIN**

Former G.S. 113-111, as amended by S.L. 1953, c.199 - Allows foxes to be taken “at any time by any lawful

method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.) The 1953 act prohibits importation and release of foxes in Yadkin County. The sale of foxes taken under this act is not permitted.

**YANCY**

S.L. 1965, c. 522 - Prohibits killing foxes in any manner.

**Appendix F. County Fox Harvest Seasons Legislated by the General Assembly**

**COUNTY FOX HARVEST SEASONS  
LEGISLATED BY THE  
NORTH CAROLINA GENERAL ASSEMBLY**



Updated: July 2017

**DIVISION OF WILDLIFE MANAGEMENT  
NORTH CAROLINA WILDLIFE RESOURCES COMMISSION**

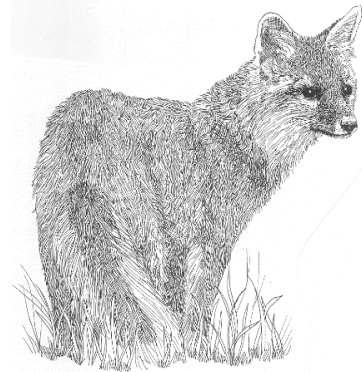


## “How do I find out if I can hunt or trap foxes in my county?”

The state law regarding foxes, coupled with the diversity of local laws, has resulted in 27 fox hunting seasons with weapons in 85 counties, and 23 fox trapping seasons in 43 counties.

This document was created to help guide sportsmen on the legal aspects of taking foxes. It provides maps and a table indicating which counties are open or closed to fox hunting and/or trapping. In addition, a listing of current statutes and local laws by county is included starting on page 12.

The North Carolina Wildlife Resources Commission (WRC) has very limited authority to regulate fox hunting and trapping seasons. Only the General Assembly has the authority to allow fox trapping in a county through passage of a local law. The North Carolina General Assembly (NCGA) has elected to classify foxes only as a game animals rather than game and furbearers as bobcat, opossum and raccoon are designated ([§ 113 291.4](#)). This classification means that the WRC may not allow foxes to be taken by trapping during regular trapping seasons.



There are numerous session laws that have been approved by the NCGA relating to foxes. Many of these laws passed by the NCGA apply only to a specific county, counties or parts of counties and generally are referred to as “local laws”. The number and complexity of the “local laws” enacted by the NCGA over the past 40 years which allow the taking of foxes with weapons and traps make them unsuitable to include in the annual regulations digest, thus this separate document was created.

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## Tagging Requirements for both Hunters and Trappers

**Fox Tags:** It is unlawful to buy, sell, barter, trade, or otherwise transfer possession or ownership of the carcass or pelt of any fox without having affixed to such carcass or pelt an individual fox tag. **To purchase fox tags, please call 1-888-248-6834.**

A fox tag or tags must be procured *before* taking foxes by any method designed to kill foxes or when the intent is to harvest foxes in the following counties:

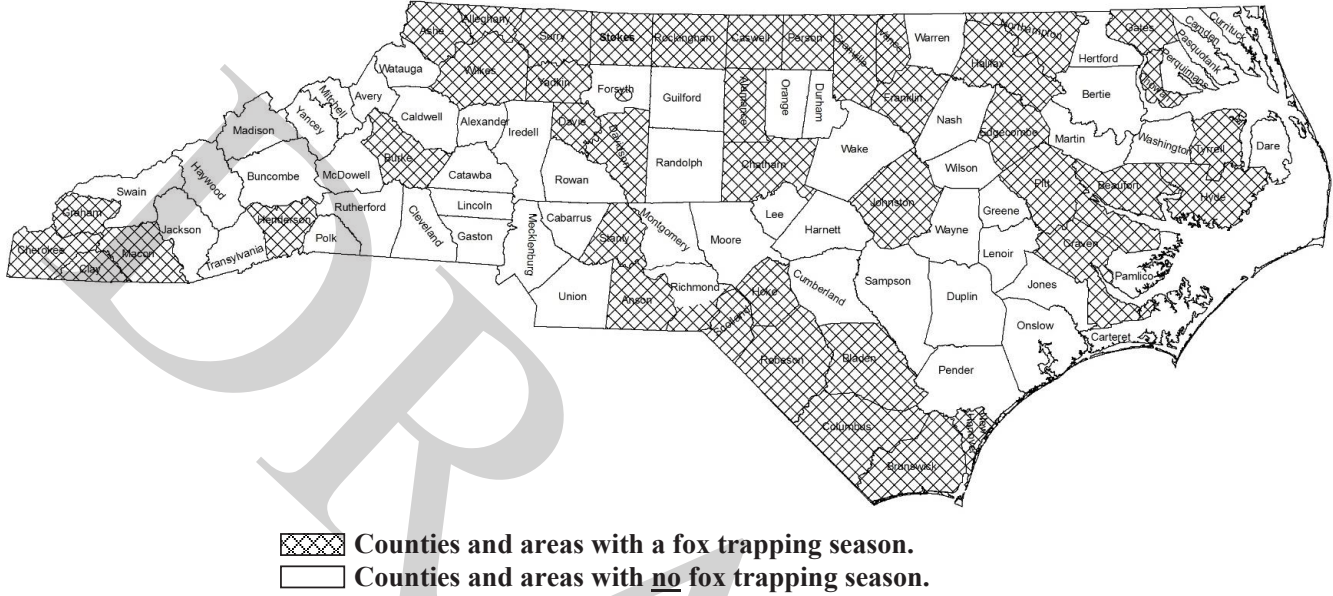
- Clay
- Graham
- Henderson
- Macon
- Tyrrell

**Fox Tag Exemptions:** Licensed trappers are exempt from tagging requirements if live-trapped foxes are trapped for purpose of sale to licensed controlled fox hunting preserves.

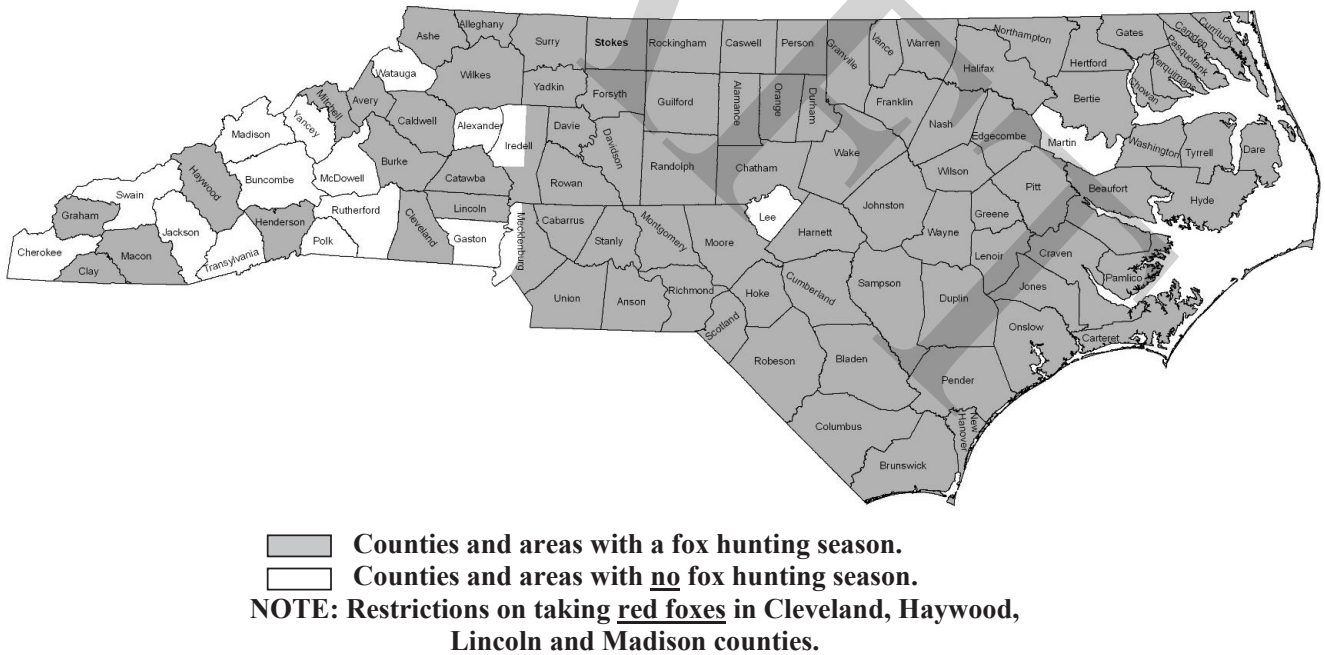
Trappers are exempt from fox tagging requirements in the following counties/areas:

- Beaufort
- Chowan
- Cherokee
- Davidson
- Davie
- Hyde
- Johnston
- New Hanover
- Rockingham
- Stokes
- Wilkes
- Winston-Salem
- Yadkin

**Counties with Fox Trapping Seasons**  
 (See general listing for stipulations pertaining to each county.)

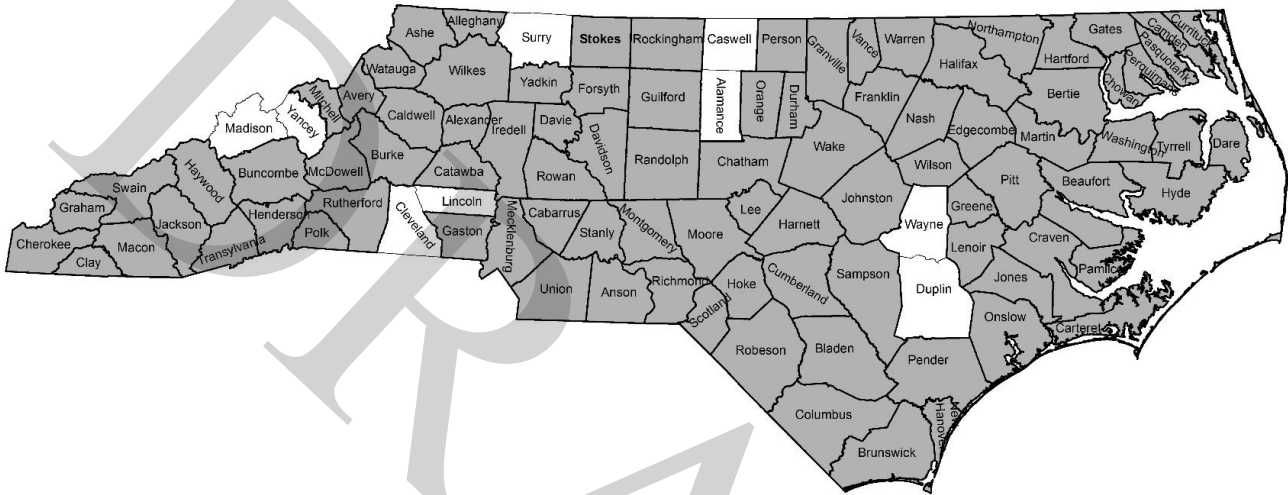


**Counties with Fox Hunting Seasons with Weapons**  
 (See general listing for stipulations pertaining to each county.)



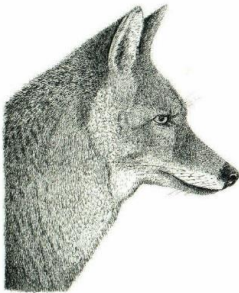
### Counties with No Closed Season on Taking Foxes with Dogs

Foxes may be taken with dogs both night and day on a daily, year-round basis.



- Counties with no restrictions on taking fox with dogs.
- Counties with restrictions/prohibitions on taking fox with dogs.

**NOTE:** See general listing for restrictions in Alamance, Caswell, Cleveland, Duplin, Lincoln, Madison, New Hanover, Surry, Wayne and Yancey counties



**Coyotes:** It is legal to trap coyotes during the regulated trapping seasons established by the Wildlife Resources Commission (WRC). To find out the trapping season in your area, please see page 38 in the WRC Hunting and Trapping regulation digest or visit <http://www.ncwildlife.org/Trapping/> and click on “Seasons & Limits.”

It is also legal to trap coyotes during any fox-trapping season established by statute or by local law, using methods described in statute, even when those fox-trapping seasons open prior to and extend after the regulated trapping seasons.

All counties in North Carolina are listed in this table and are in alphabetical order. Due to space constraints in this table, please see general listings on page 12 for specific stipulations for your county.

County	Fox Trapping Season		Fox Hunting Season w/Weapon	
	Dates	Local Restrictions	Dates	Local Restrictions
Alamance County	Jan. 2 -Jan. 31	Season bag limit=30 (aggregate of hunting & trapping)	Nov. 18 – end. of Feb.	Season bag limit=30 (aggregate of hunting & trapping)
	Jun. 1 - Feb. 28	Rubber cleat traps required		
Alexander County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Alleghany County	Oct. 15 - Mar. 1		Oct. 15 - Mar. 1	
Anson County	Jan. 2 -Jan. 31	Season bag limit=30 (aggregate of hunting & trapping)	Nov. 18 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)
			Year-round	Sale of foxes prohibited
Ashe County	Nov. 1 - Feb. 28	Bag limit=10	Year-round	Sale of foxes prohibited
Avery County	No Fox Trapping Season		Dec. 1 - Feb. 1	Season bag limit=30
Beaufort County	Dec. 1 – Jan. 1	Foothold traps must have trap chains no longer than 18 inches in length	Dec. 1 - Jan. 1	
	Jan. 2 – end of Feb.			
Bertie County	No Fox Trapping Season		Nov. 19 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Bladen County	Jan. 2- Jan. 31	Foothold traps must ≤ 1.5 in size & have 3 swivels in trap chain  Season bag limit=30 (aggregate of hunting & trapping)	Dec. 1 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)
Brunswick County	Jan. 2- Jan. 31	Foothold traps must ≤ 1.5 in size & have 3 swivels in trap chain  Season bag limit=30 (aggregate of hunting & trapping)	Dec. 1 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)
Buncombe County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Burke County	Jan. 1 - Jan. 31		During any season for a game animal	



County	Fox Trapping Season		Fox Hunting Season w/Weapon	
	Dates	Local Restrictions	Dates	Local Restrictions
Cabarrus County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Caldwell County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Camden County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Carteret County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Caswell County	Jun. 1 - Feb. 28	Rubber cleat traps required Season bag limit=30	Nov. 2 - Feb. 10	
Catawba County	No Fox Trapping Season		Year-round	Sale of foxes prohibited
Chatham County	Dec. 1 - Feb. 15	Foothold traps must $\leq$ 1.5 in size w/coil spring & have 3 swivels in trap chain	Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Cherokee County	Nov. 1 – end of Feb.		No Fox Hunting Season w/Weapon	
Chowan County	Dec. 1 – end of Feb.		Dec. 1 – end of Feb.	
Clay County	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited
Cleveland County	No Fox Trapping Season		Dec. 2 - end of Feb.	Gray Foxes only Sale of foxes prohibited
Columbus County	Jan. 2 - Jan. 31	Foothold traps must $\leq$ 1.5 in size & have 3 swivels in trap chain Season bag limit=30 (aggregate of hunting & trapping)	Dec. 1 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)
Craven County	Jan. 2 - Feb. 28		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Cumberland County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited

County	Fox Trapping Season		Fox Hunting Season w/Weapon	
	Dates	Local Restrictions	Dates	Local Restrictions
Currituck County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Dare County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Davidson County	Nov. 1 - end of Feb.		Nov. 1 - end of Feb.	
Davie County	Oct. 1 – Feb. 28		Year-round	Sale of foxes prohibited
Duplin County	No Fox Trapping Season		During any open season for a game animal	Sale of foxes prohibited
Durham County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Edgecombe County	Jan. 2 - Jan. 31	Season bag limit=30 (aggregate of hunting & trapping)	Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Forsyth County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Franklin County	Oct. 1 - Jan. 31		Oct. 1 - Jan. 31	
Gaston County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Gates County	Jan. 2 - Jan. 31	Foothold traps must $\leq$ 1.5 in size & have 3 swivels in trap chain Season bag limit=30 (aggregate of hunting & trapping)	Dec. 1 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)
Graham County	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited
Granville County	Oct. 1 - Jan. 31		Oct. 1 - Jan. 31	
			During any open season for game birds or animal	Sale of foxes is prohibited

County	Fox Trapping Season		Fox Hunting Season w/Weapon	
	Dates	Local Restrictions	Dates	Local Restrictions
Greene County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited Use of firearm to hunt foxes prohibited during deer gun season
Guilford County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Halifax County	Jan. 7 - Feb. 10	Season bag limit=30	Year-round	Sale of foxes prohibited
Harnett County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Haywood County	No Fox Trapping Season		Year-round for gray foxes by any normal hunting means	Sale of foxes prohibited
			Year-round for red foxes only w/archery or dogs	Sale of foxes prohibited
Henderson County	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited
			Year-round	Sale of foxes prohibited
Hertford County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Hoke County	Jan. 2 - Jan. 31	Foothold traps must $\leq$ 1.5 in size & have 3 swivels in trap chain  Season bag limit=30 (aggregate of hunting & trapping)	Dec. 1 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)
Hyde County	Dec. 1 – Jan. 2	Foothold traps must have trap chains no longer than 18 inches in length	Nov. 15 - Jan. 1	
	Jan. 2 – end of Feb.			

County	Fox Trapping Season		Fox Hunting Season w/Weapon	
	Dates	Local Restrictions	Dates	Local Restrictions
Iredell County	No Fox Trapping Season		Dec. 1 - Jan. 1	Only in Fallstown, Davidson, and Coddle Creek townships
			Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Jackson County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Johnston County	Dec. 1 - Feb. 20		Dec. 1 - Feb. 20	
Jones County	No Fox Trapping Season		Nov. 1 - Dec. 31	Firearm only
Lee County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Lenoir County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Lincoln County	No Fox Trapping Season		Year-round	Gray Foxes only
				Sale of foxes prohibited
McDowell County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Macon County	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited
Madison County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Martin County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Mecklenburg County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Mitchell County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Montgomery County	No Fox Trapping Season		Year-round	Dogs or guns only
Moore County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Nash County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited

County	Fox Trapping Season		Fox Hunting Season w/Weapon	
	Dates	Local Restrictions	Dates	Local Restrictions
New Hanover County	Dec. 1 – end of Feb.		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Northampton County	Jan. 5 - Feb. 10		Nov. 2 - Feb. 10	
Onslow County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Orange County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Pamlico County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Pasquotank County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Pender County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Perquimans County	No Fox Trapping Season		Year-round	Sale of foxes prohibited
Person County	Sept. 1 – Sept. 30 & Dec. 1 – Feb. 20	Foothold traps must ≤ 1.5 in size & have 3 swivels in trap chain	Dec. 1 - Jan. 1	
Pitt County	Jan. 2 - Jan. 31	Foothold traps must ≤ 1.5 in size & have 3 swivels in trap chain  Season bag limit=30 (aggregate of hunting & trapping)	Dec. 1 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)
Polk County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Randolph County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Richmond County	Jan. 2 - Jan. 31	Box Traps Only Season limit=30	Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited

County	Fox Trapping Season		Fox Hunting Season w/Weapon	
	Dates	Restrictions	Dates	Restrictions
Robeson County	Jan. 2 - Jan. 31	Leghold traps must ≤ 1.5 in size & have 3 swivels in trap chain  Season bag limit=30 (aggregate of hunting & trapping)	Dec. 1 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)
Rockingham County	Nov. 1 - Feb. 28		Oct. 16 – end of Feb.	
Rowan County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Rutherford County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Sampson County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Scotland County	Jan. 2 - Jan. 31	Leghold traps must ≤ 1.5 in size & have 3 swivels in trap chain  Season bag limit=30 (aggregate of hunting & trapping)  Only in portion northeast of N.C. Hwy. 381	Dec. 1 - Jan. 1	Season bag limit=30 (aggregate of hunting & trapping)  Only in portion northeast of N.C. Hwy. 381
			Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Stanly County	Jan. 2 - Jan. 31	Season bag limit=10 (aggregate of hunting & trapping)  Foothold traps only	Nov. 18 - Jan. 1	Season bag limit=10 (aggregate of hunting & trapping)
Stokes County	Jan. 6 - Jan. 27		Jan. 6 - Jan. 27	
			Year-round	Sale of foxes prohibited
Surry County	Oct. 15 - Mar. 1		Oct. 15 - Mar. 1	Sale of foxes prohibited
Swain County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Transylvania County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	

County	Fox Trapping Season		Fox Hunting Season w/Weapon	
	Dates	Restrictions	Dates	Restrictions
Tyrrell County	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited	Jan. 6 - Jan. 27	Daily bag limit=2 Season bag limit=10 Sale of live foxes prohibited
			Year-round	Sale of foxes prohibited
Union County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Vance County	Oct. 1 - Jan. 31		Oct. 1 - Jan. 31	
Wake County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Warren County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Washington County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Watauga County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	
Wayne County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Wilkes County	Nov. 1 – end of Feb.		Year-round	Sale of foxes prohibited
Wilson County	No Fox Trapping Season		Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited
Winston-Salem	Nov. 1 – end of Feb.	Cage Traps Only	Nov. 18 - Jan. 1	Daily bag limit=2 Season bag limit=10 Sale of foxes prohibited  Local Firearm Discharge Ordinances Applies
Yadkin County	Oct. 1 – Feb. 28		Year-round	Sale of foxes prohibited
Yancey County	No Fox Trapping Season		No Fox Hunting Season w/Weapon	

**Counties are listed in alphabetical order. If your county is not listed, you cannot trap or hunt foxes with a weapon in your county.**

**ALAMANCE**

S.L. 1979, c. 825, sec.2 - Prohibits pursuing, hunting, taking or killing deer or foxes with dogs.

S.L. 1989, c.825 - Opens season for taking foxes with weapons during the season for taking rabbits as established by regulation by the Wildlife Resources Commission. Opens season for trapping foxes from January 2 through January 31. A season bag limit of 30 applies in the aggregate to all foxes taken during the weapons and trapping seasons. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

S.L.2008, c. 44, H2123 - Notwithstanding any other provision of law, there is an open season for trapping foxes and coyotes with rubber cleat traps from June 1 through February 28 of each year. The North Carolina Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**ALLEGHENY**

S.L. 2011-32, SB46 - Notwithstanding any other provision of law, there is an open season for taking foxes and coyotes with lawful weapons or traps from October 15 through March 1 of each year. No season bag limit applies to foxes and coyotes taken under this act.

**ANSON**

Former G.S. 113-111, as amended by S.L. 1955, c.286 - Authorized the hunting and killing of foxes at any time by any lawful method. This allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. The 1955 act prohibits importation and release of foxes in the county. Sale of foxes taken under the year-round hunting authorization is not permitted.

**ANSON**

S.L. 1989, c.879 - Opens season for taking foxes with weapons from November 18-January 1 each year. Opens season for taking foxes with foothold traps from January 2-January 31 of each year. Wildlife Resources Commission shall provide for the sale of foxes taken pursuant to this act. A season bag limit of 30 applies in the aggregate to all foxes taken.

**ASHE**

Former G.S. 113-111, as amended by G.S. 113-133.1 (e) - Allows foxes to be taken at any time by any lawful method; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. Sale of foxes taken under this act is not permitted.

S.L. 2007, S364, as amended by S.L. 2010 H1893 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from November 1 through February 28 of each year. A season bag limit of 10 applies in the aggregate to all foxes taken during the trapping season established in this act. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act and pursuant to former G.S. 113-111, as retained to the extent of its application to Ashe County pursuant to G.S. 113-133.1(e).

**AVERY**

S.L. 1985,c.180 - Authorizes foxes to be taken with weapons from December 1 through February 1 each year, and sets a season bag limit of 30. Wildlife Resources Commission shall provide for the sale of foxes taken pursuant to this act.

**BEAUFORT**

S.L. 1987, c.98 - Authorized the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is ten. The Wildlife Resources Commission shall provide for sale of foxes taken lawfully pursuant to this act.

S.L. 1997,c.132, as amended by S.L. 2001, c. 19 - Authorizes the trapping season for foxes from the day after the close of gun deer season until February 28 of each year. Eliminates the bag limits on hunting or trapping foxes and raccoons and the requirement to tag foxes prior to or after sale. Notwithstanding any other provision of law, foxes and raccoons may be taken during any trapping season established by the Wildlife Resources Commission or by the provisions of this act with steel-jaw or leghold traps with trap chains of up to 18 inches in length.

It is lawful to use snares when trapping fur-bearing animals during seasons for trapping furbearing animals as established by the Wildlife Resources Commission and by the provisions of this act.

**BERTIE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.



**BLADEN**

S.L. 1985, c. 722 as amended by S.L. 1985 c. 880 - Permits the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is thirty. The Wildlife Resources Commission shall provide for sale of foxes taken lawfully pursuant to this act.

**BRUNSWICK**

S.L. 1993, c. 208 - Opens the season for taking foxes with weapons from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**BURKE**

S.L. 1989, c. 163 - Notwithstanding any other provision of law, there is an open season for hunting, taking, or killing foxes with firearms and bow and arrow during the season for hunting any game animal as established by the Wildlife Resources Commission. Notwithstanding any other provision of law, there is an open season for hunting, taking, or killing foxes by trapping from January 1 through January 31 of each year. The Wildlife Resources Commission shall provide for sale of foxes taken lawfully pursuant to this act.

**CABARRUS**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CALDWELL**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CAMDEN**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CARTERET**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CASWELL**

P-L.L. 1937, c. 411 - Fixes the open season for fox hunting from September 1 to June 30.

S.L. 1991, c. 908 as amended by S.L. 1993, c. 727 - Notwithstanding any other provision of law, there is an

open season for taking foxes with rubber cleat traps from June 1 through February 28 each year. Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from January 5 through February 10 of each year. Notwithstanding any other provision of law, there is an open season for taking foxes with weapons from November 2 through February 10 of each year. A season bag limit of 30 applies to all foxes taken during the trapping season. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully under this act.

These two acts read together allow hunting foxes with dogs from September 1 through June 30 and allows hunting foxes with weapons from November 2 through February 10.

**CATAWBA**

Former G.S. 113-111, as amended by S.L. 1955, c. 1037 - Authorizes the hunting and killing of foxes at any time by any lawful method. Sale of foxes taken under this act is not permitted.

**CHATHAM**

S.L. 1995, c. 80 - Notwithstanding any other provision of law relating to trapping of foxes, there will be open season for taking foxes with traps of the leghold type no larger than one and one-half, with coil spring and with trap chain and at least three swivels set on dry land with solid anchor. No trap larger than number one and one-half coil spring may be used. This season shall be from December 1 to February 15 of each year. No person shall place traps on the land of another without first obtaining written permission from the landowner or lessee. There shall be no bag limit for foxes taken during the trapping season. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully.

**CHATHAM continued...**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CHEROKEE**

S.L. 2015-13, HB 65 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**CHOWAN**

Ch. 301 of 1999 S.L. adds Chowan to S.L. 1989, c.128 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons from December 1 through January 1 of each year.

S.L. 2011-40, SB261 -

Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act.

**CLAY**

G.S. 113-291.4, (f), (f1), and (g) - Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**CLEVELAND**

P.L. 1907, c.388 - Provides an open season on gray foxes from December 2 to the last day of February. Sale of foxes taken under this act is not permitted.

S.L. 1951, c.1101 - Prohibits hunting red foxes at any time.

These two acts read together apparently ban all hunting of red foxes, including with dogs, and opens season for hunting gray foxes during authorized hours by all lawful hunting methods (rifle, shotgun, bow and arrow, and dogs) from December 2 to the last day of February. Sale of harvested foxes is not permitted

**COLUMBUS**

S.L. 1993, c. 208 amended by S.L. 2004-66, HB 1346 - Opens the season for taking foxes with weapons from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**CRAVEN**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

S.L. 2008, c. 8, S1989 -

Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from January 2 through February 28 of each year. No season bag limits

applies to foxes taken under this act. The North Carolina Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**CUMBERLAND**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**CURRITUCK**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**DARE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**DAVIDSON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**DAVIDSON continued...**

S.L. 2009, c.43, H551 -

Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act.

**DAVIE**

S.L. 2017-73, HB272 -

Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from October 1 through February 28 of each year, with no tagging requirements prior to or after sale. No bag limits applies to foxes taken under this act. The North Carolina Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

G.S. 113-111, as amended by S.L. 1947, c.333 - Authorized the hunting and killing of foxes at any time by any lawful method. The amending law prohibits importation and release of foxes and authorizes the board of county commissioners to pay a bounty on foxes. Sale of harvested foxes is not permitted.

**DUPLIN**

S.L. 1965, c.774 - Provided an open season from August 2 to March 15 for hunting foxes with dogs, and permits the use of guns and dogs when the season is open for any other game. Sale of foxes taken under this act is not permitted.

**DURHAM**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10.

Foxes taken under this season may not be bought or sold.

**EDGECOMBE:**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10.

Foxes taken under this season may not be bought or sold.

S.L. 1991, c.483 s.4 - Opens a season for taking foxes by trapping from January 2 or the last day of deer season, whichever is later, through January 31 of each year. The Wildlife Resources Commission shall provide for sale of foxes. Aggregate bag limit is 30.

**FORSYTH**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**FRANKLIN**

S.L. 1993, c. 208 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping from October 1 through January 31 each year. The Wildlife Resources Commission shall provide for the sale of lawfully taken foxes.

**GATES**

S.L. 1989, c.128 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons from December 1 through January 1 of each year. Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from January 2 or the last day of deer

season, whichever is later, through January 31 of each year. During this season, all leghold traps set on dry land with solid anchor shall have at least three swivels in the trap chain and no leghold traps larger than size one and one-half may be used. A season bag limit of 30 applies in the aggregate to all foxes taken during the weapons and trapping seasons established in this act. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**GRAHAM**

G.S. 113-291.4, (f), (fl), and (g) - Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**GRANVILLE**

S.L. 1963, c.670 - Provides that foxes may be taken by use of dogs year-round, day or night, and by "any manner" during the open season. ("Any manner" should be interpreted to mean during authorized hunting hours by any lawful hunting method in addition to dogs: rifle, shotgun, and bow and arrow. "Open season" should be interpreted to mean when the season is open for any game animal or game bird in the county.) Sale of foxes taken under this local act is not permitted.

S.L. 1993, c.208 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping from October 1 through January 31 each year. The Wildlife Resources Commission shall provide for the sale of lawfully taken foxes.

**GREENE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by

**GREENE continued...**

firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

S.L. 1975, c.219, as amended by S.L. 1987, c.132 - Prohibits hunting foxes with firearms “during the two-week deer season.”

The current interpretation of this act is that during any gun deer season, the use of firearms to hunt foxes is prohibited.

**GUILFORD**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**HALIFAX**

P-L.L. 1925, c.571.s.3 - Makes it lawful to “hunt foxes at any time.” This should be interpreted to allow year-round dog hunting, day or night (because of the statewide law), and year-round hunting during authorized hunting hours by other normal hunting methods: rifle, shotgun, and bow and arrow. Sale of foxes taken under this act is not permitted.

S.L. 1995, c.279 - Notwithstanding any other law, there is an open season for taking foxes by trapping from January 7 through February 10 of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully under this act. A bag limit of 30 applies in the aggregate to all foxes taken during the fox season established in this act.

**HARNETT**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**HAYWOOD**

Former G.S. 113-111, as modified by S.L. 1963.c.322 - Provides generally that foxes may be taken “at any time by any lawful method”—but red foxes may not be taken with guns.

This should be interpreted to authorize year-round taking of red foxes with dogs and with bow and arrow, and year-round taking of gray foxes by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (Because of the statewide law, dog hunting of both gray and red foxes may be day or night. Other takings would be limited to authorized hunting hours.) Sale of foxes taken under this act is not permitted.

**HENDERSON**

Former G.S. 113-111 - Allows foxes to be taken “at any time by any lawful method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.) Sale of foxes taken under this act is not permitted.

G.S. 113-291.4, (f), (f1), and (g) – Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**HERTFORD**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**HOKE**

S.L. 1985, c.108 - Authorizes the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**HYDE**

S.L. 1989, c.229 - Notwithstanding any other provision of law, there is a season for taking, hunting, or killing foxes with bow and arrow, rifle, shotgun, and dogs from November 15 through January 1 of each year. Notwithstanding any other provision of law, there is a season for taking, hunting, or killing foxes with traps from January 2 through the last day of February of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act. A season bag limit of 20 applies in the aggregate to all foxes taken during the fox seasons established in this act.

S.L. 1997, c.132, as amended by S.L. 2001, c. 19 - Authorizes the trapping season for foxes from the day after the close of gun deer season until February 28 of each year. Eliminates the bag limits on hunting or trapping foxes and raccoons and the

requirement to tag foxes prior to or after sale. Notwithstanding any other provision of law, foxes and raccoons may be taken during any trapping season established by the Wildlife Resources Commission or by the provisions of this act with steel-jaw or leghold traps with trap chains of up to 18 inches in length.

It is lawful to use snares when trapping fur-bearing animals during seasons for trapping furbearing animals as established by the Wildlife Resources Commission and by the provisions of this act.

**IREDELL**

S.L. 1985, c.664, H1418 - Provides that foxes may be taken by use of “weapons” in the Townships of Fallstown, Davidson, and Coddle Creek from December 1 through January 1 each year. (“Weapons” would mean rifle, shotgun, and bow and arrow.) The Wildlife Resources Commission must provide for sale of foxes taken legally under the local act.

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold. This applies only to that portion of the county east of I-77.

**JOHNSTON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

S.L. 2007, H1185 - Notwithstanding any other provision of law, there is

an open season from December 1 through February 20 of each year for taking foxes with weapons and by trapping, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act.

**JONES**

S.L. 1989, c.134 - Notwithstanding any other provision of law, there is a season for taking, hunting, or killing of foxes with firearms from November 1 through December 31 of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**LEE**

S.L. 1977, c. 636 - Classifies the fox as a game animal which may be taken only with dogs at any time during day or night and prohibits the purchase or sale of foxes or parts thereof, except for live foxes for restocking purposes.

**LENOIR**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**LINCOLN**

P-L.L. 1925, c. 449, sections 1 and 2 - Provides an open season for hunting red foxes with dogs only from October 1 to March 1.

S.L. 1955, c.878 - Provides that one may “hunt, take or kill gray foxes at any time...” This should be interpreted to allow year-round hunting of gray foxes, day or night (because of statewide law); year-round hunting of gray foxes during authorized hunting hours with shotgun, rifle, and bow and arrow;

and day and night hunting of red foxes with dogs from October 1 to March 1. Sale of foxes taken under this act is not permitted.

**MACON**

G.S. 113-291.4, (f), (f1), and (g) – Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**MADISON**

S.L. 1951, c. 1040- Prohibits hunting red foxes at any time.

**MARTIN**

S.L. 1977, c. 636 - Classifies the fox as a game animal which may be taken only with dogs at any time during the day or night, and prohibits the purchase or sale of foxes or parts thereof, except for live foxes for restocking purposes.

**MECKLENBURG**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold. This applies only to that portion of the county east of I-77.

**MITCHELL**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**MONTGOMERY**

S.L. 1977, c.1142.s1 - Provides that (1) there is “no closed season for hunting foxes with dogs or guns”; (2) it is unlawful to “buy or sell a dead fox, fox pelt or other part of a fox”; and(3) foxes may be taken with dogs during the day or night. (The specification of “dogs or guns” would prevent use of the bow and arrow.)

**MOORE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all Areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**NASH**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**NEW HANOVER**

S.L. 1971, c.559 - Prohibits hunting foxes with dogs in that portion of Federal Point Township which lies south of Snow’s Cut (the Intracoastal Waterway).

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**NEW HANOVER**

S.L. 2015-13, HB 65 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**NORTHAMPTON**

S.L. 1993, c.727 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from January 5 through February 10 of each year. Notwithstanding any other provision of law, there is an open season for taking foxes with weapons from November 2 through February 10 of each year.

**ONslow**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**ORANGE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**PAMLICO**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate

Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**PASQUOTANK**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**PENDER**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**PERQUIMANS**

Former G.S. 113-111 - Allows foxes to be taken “at any time by any lawful method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.) Sale of foxes taken under this act is not permitted.

**PERSON**

S.L. 1985, c.108, as amended by S. O. 1985 (2<sup>nd</sup> Sess. 1986), c.890 and further amended by house bill 820 in 2005 - Authorizes the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from September 1 through September 30 and from December 1 through February 20 of each year. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain,

**PERSON continued...**

and no leghold trap larger than size one and one half may be used. There is no season bag limit. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**PITT**

S.L. 1993, c. 208 amended by S.L. 2004-199, SB 1225 - Opens the season for taking foxes with weapons from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**RANDOLPH**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**RICHMOND**

S.L. 2001, c. 133, H903 - Notwithstanding any other provision of law, there is a season for taking foxes with box-type traps only from January 2 through January 31 of each year. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act. A season bag limit of 30 applies in the aggregate to gray and red foxes taken during the fox season established in this act. This act applies only to that portion of Richmond County located north of U.S. Highway 74 and west of U.S. Highway 1.

**RICHMOND**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**ROBESON**

S.L. 1985, c.108 - Authorizes the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**ROCKINGHAM**

S.L. 1985, c.179, as amended by S.L. 2011-136, HB463 - Authorizes the taking of foxes by firearms, bow and arrow, or crossbow during any open small game season each year. There is an open season for taking foxes by trapping from November 1 through February 28 of each year. During this season, all leghold traps set on dry shall be in accordance with State law. No bag limit applies to foxes taken under this act. No tags shall be required for the sale of the fur of foxes taken in accordance with this act.

**ROWAN**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10.

Foxes taken under this season may not be bought or sold.

**SAMPSON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**SCOTLAND**

S.L. 1985, c.108 - Authorizes the taking of foxes by rifle, shotgun, and bow and arrow from December 1 through January 1, and by trapping from January 2 through January 31. Leghold traps set on dry land with solid anchor must have at least three swivels in the trap chain, and no leghold trap larger than size one and one-half may be used. The aggregate season bag limit, for both the weapons and trapping season, is 30. The local act applies in that portion of Scotland County northeast of N.C. Highway 381 from the Richmond County line to the South Carolina border. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**STANLY**

S.L. 1989, c.879 - Opens season for taking foxes with weapons from November 18-January 1 of each year. Opens season for taking foxes with foothold traps from January 2-January 31 of each year. The Wildlife Resources Commission...

**STANLY continued...**

shall provide for the sale of foxes taken pursuant to this act. A season bag limit of 10 applies in the aggregate to all foxes taken.

**STOKES**

Former G.S. 113-111, as amended by S.L. 1955, c.685 - Allows foxes to be taken “at any time by any lawful method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.). The sale of foxes taken under this act is not permitted.

S.L. 2008, c. 102, H2760 – Notwithstanding any other provision of law, there is an open season from the first Saturday in January through the last Saturday in January of each year for taking foxes with weapons and by trapping, with no tagging requirements prior to or after sale. No bag limits applies to foxes taken under this act.

**SURRY**

P-L. L. 1925, c.474,s.6 - Provides that gray and red foxes may be taken only from October 15 through March 1. This should be interpreted to authorize fox hunting with dogs, day and night, during the open season, and normal hunting methods: rifle, shotgun, and bow and arrow. The sale of foxes taken under this act is not permitted.

S.L. 2011-32, SB46 - Notwithstanding any other provision of law, there is an open season for taking foxes and coyotes with lawful weapons or traps from October 15 through March 1 of each year. No season bag limit applies to foxes and coyotes taken under this act.

**TYRRELL**

Former G.S. 113-111 - Allows foxes to be taken “at any time by any lawful method” this allows year-round taking during authorized

hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (Sale under this provision is not permitted).

G.S. 113-291.4, (f), (f1), and (g) – Opens a special permit season from the first to the fourth Saturday in January with traps or weapons with a daily bag limit of 2 and a season bag limit of 10. Permit holder must have fox tags in possession prior to taking of foxes that must be tagged prior to sale. Sale of live foxes under this statute is not permitted.

**UNION**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**VANCE**

S.L. 1993, c. 208 as amended by S.L. 2004-44 - Notwithstanding any other provision of law, there is an open season for taking foxes with weapons and by trapping from October 1 through January 31 each year. The Wildlife Resources Commission shall provide for the sale of lawfully taken foxes.

**WAKE**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WARREN**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all

areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WASHINGTON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WAYNE**

S.L. 1981, c. 697, as amended by S.L. 1987, c. 958 - Prohibits hunting foxes in any manner from March 16 to August 1. Amendment exempts persons training dogs to hunt foxes in a dog training facility larger than 500 acres that is enclosed with a dog-proof fence.

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WILKES**

Former G.S. 113-111, as amended by S.L. 1971, c.385 - Allows foxes to be taken “at any time by any lawful method”; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.) The 1971 act prohibits the use of electronic calling devices in taking foxes in Wilkes County. The sale of foxes taken under this act is not permitted



**WILKES continued...**

S.L. 2015-13, HB 65 -

Notwithstanding any other provision of law, there is an open season for taking foxes by trapping during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act. The Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**WILSON**

15A NCAC 10B .0212 - Foxes may be taken the Saturday next preceding Thanksgiving through January 1 by firearms or bow and arrow in all areas of the State east of Interstate Highway 77 and in Caldwell and Mitchell Counties with a daily bag limit of 2 and season limit of 10. Foxes taken under this season may not be bought or sold.

**WINSTON-SALEM**

S.L. 2010, H1893 - Notwithstanding any other provision of law, there is an open season for taking foxes by trapping with cage traps only during the trapping season set by the Wildlife Resources Commission each year, with no tagging requirements prior to or after sale. No bag limit applies to foxes taken under this act.

**YADKIN**

S.L. 2017-73, HB272 -

Notwithstanding any other provision of law, there is an open season for taking foxes by trapping from October 1 through February 28 of each year, with no tagging requirements prior to or after sale. No bag limits applies to foxes taken under this act. The North Carolina Wildlife Resources Commission shall provide for the sale of foxes taken lawfully pursuant to this act.

**YADKIN**

Former G.S. 113-111, as amended by S.L. 1953,c.199 - Allows foxes to be taken "at any time by any lawful method"; this allows year-round taking during authorized hunting hours by normal hunting methods: rifle, shotgun, bow and arrow, and dogs. (The statewide law would allow dog hunting at night.) The 1953 act prohibits importation and release of foxes in Yadkin County. The sale of foxes taken under this act is not permitted.

**YANCY**

S.L. 1965, c. 522 - Prohibits killing foxes in any manner.

## Appendix G. Cooperative Service Agreement between the Commission and APHIS WS

WS-ER (6/15)

Agreement No.: 17-7237-5332 RA  
WBS Element: AP.RA.RX37.72.0174

**COOPERATIVE SERVICE AGREEMENT**  
**between**  
**NORTH CAROLINA WILDLIFE RESOURCES COMMISSION (NC WRC)**  
**and**  
**UNITED STATES DEPARTMENT OF AGRICULTURE**  
**ANIMAL AND PLANT HEALTH INSPECTION SERVICE**  
**WILDLIFE SERVICES (APHIS WS)**

### ARTICLE 1

The purpose of this Cooperative Service Agreement is to provide the NC WRC with predator management services to protect rare, threatened, and endangered avian, mammalian, amphibian, and reptilian species on public and private lands within the coastal counties of North Carolina. APHIS WS activities are described in the Work and Financial Plans (Attachments A and B).

### ARTICLE 2

APHIS WS has statutory authority under the Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C.426-426b) as amended, and the Act of December 22, 1987 (101Stat. 1329-331, 7 U.S.C. 426c), to cooperate with States, local jurisdictions, individuals, public and private agencies, organizations, and institutions while conducting a program of wildlife services involving mammal and bird species that are reservoirs for zoonotic diseases, or animal species that are injurious and/or a nuisance to, among other things, agriculture, horticulture, forestry, animal husbandry, wildlife, and human health and safety.

### ARTICLE 3

APHIS WS and NC WRC mutually agree:

1. The parties' authorized representatives who shall be responsible for carrying out the provisions of this Agreement shall be:

NC WRC:

Gordon Myers, Executive Director  
NCSU Centennial Campus  
1751 Varsity Dr.  
Raleigh, NC 27606

APHIS WS:

USDA APHIS WS  
Keith P Wehner, State Director  
6213-E Angus Drive  
Raleigh, NC 27617

2. To meet as determined necessary by either party to discuss mutual program interests, accomplishments, needs, technology, and procedures to maintain or amend the Work Plan (Attachment A). Personnel authorized to attend meetings under this Agreement shall be NC WRC Executive Director or his designee, the State Director or his designee, and/or those additional persons authorized and approved by the NC WRC Executive Director, and the State Director.
3. APHIS WS shall perform services more fully set forth in the Work Plan (Attachment A), which is attached hereto and made a part hereof. The parties may mutually agree in writing, at any time during the term of this Agreement, to amend, modify, add or delete services from the Work Plan.

#### ARTICLE 4

NC WRC agrees:

1. To authorize APHIS WS to conduct direct control activities to protect threatened and endangered birds, reptiles and mammals throughout the coastal counties of North Carolina. These activities are defined in the Work Plan (Attachment A). APHIS WS will be considered an invitee on the lands controlled by NC WRC. NC WRC will be required to exercise reasonable care to warn APHIS WS as to dangerous conditions or activities in the project areas.
2. To reimburse APHIS WS for actual costs of services provided under this Agreement up to but not exceeding the amount specified in the Financial Plan (Attachment B). NC WRC will begin processing for payment invoices submitted by APHIS WS within 30 days of receipt. The NC WRC ensures and certifies that it is not currently debarred or suspended and is free of delinquent Federal debt.
3. To designate to APHIS WS the NC WRC authorized individual whose responsibility shall be the coordination and administration of activities conducted pursuant to this Agreement.
4. To notify APHIS WS verbally or in writing as far in advance as practical of the date and time of any proposed meeting related to the program.
5. APHIS WS shall be responsible for administration and supervision of the program.
6. There will be no equipment with a procurement price of \$5,000 or more per unit purchased directly with funds from the cooperator for use solely on this project. All other equipment purchased for the program is and will remain the property of APHIS WS.
7. To coordinate with APHIS WS before responding to all media requests.

## ARTICLE 5

APHIS WS Agrees:

1. To conduct activities on public and private lands as described in the Work and Financial Plans.
2. Designate to NC WRC the authorized APHIS WS individual who shall be responsible for the joint administration of the activities conducted pursuant to this Agreement.
3. To bill NC WRC for actual costs incurred by APHIS WS during the performance of services agreed upon and specified in the Work Plan. APHIS WS shall keep records and receipts of all reimbursable expenditures hereunder for a period of not less than one year from the date of completion of the services provided under this Agreement and NC WRC shall have the right to inspect and audit such records.
4. To obtain the appropriate state and federal permits for all wildlife removal activities, including consultation with U.S. Fish and Wildlife Service on disposition of any canid captured in Beaufort, Dare, Hyde, Tyrrell, and Washington counties.
5. During and for three years after the term hereof, the State Auditor and NC WRC shall have access to persons and records related to this agreement to verify accounts and data affecting fees or performance, as provided in N.C.G.S. 143-49(9).
6. To coordinate with NC WRC before responding to all media requests.

## ARTICLE 6

This Agreement is contingent upon the passage by Congress of an appropriation from which expenditures may be legally met and shall not obligate APHIS WS upon failure of Congress to so appropriate. This Agreement may also be reduced or terminated if Congress only provides APHIS WS funds for a finite period under a Continuing Resolution.

## ARTICLE 7

APHIS WS assumes no liability for any actions or activities conducted under this Cooperative Service Agreement except to the extent that recourse or remedies are provided by Congress under the Federal Tort Claims Act (28 U.S.C. 1346(b), 2401(b), and 2671-2680).

## ARTICLE 8

Pursuant to Section 22, Title 41, United States Code, no member of or delegate to Congress shall be admitted to any share or part of this Agreement or to any benefit to arise therefrom.

#### **ARTICLE 9**

Nothing in this Agreement shall prevent APHIS WS from entering into separate agreements with any other organization or individual for the purpose of providing wildlife damage management services exclusive of those provided for under this agreement.

#### **ARTICLE 10**

NC WRC certifies that APHIS WS has advised NC WRC that there may be private sector service providers available to provide wildlife management services that NC WRC is seeking from APHIS WS.

#### **ARTICLE 11**

The performance of wildlife damage management actions by APHIS WS under this agreement is contingent upon a determination by APHIS WS that such actions are in compliance with the National Environmental Policy Act, Endangered Species Act, and any other applicable federal statutes. APHIS WS will not make a final decision to conduct requested wildlife damage management actions until it has made the determination of such compliance.

#### **ARTICLE 12**

This Cooperative Service Agreement may be amended at any time by mutual agreement of the parties in writing. Also, this Agreement may be terminated at any time by mutual agreement of the parties in writing, or by one party provided that party notifies the other in writing at least 120 days prior to effecting such action. Further, in the event the NC WRC does not provide necessary funds, APHIS WS is relieved of the obligation to provide services under this agreement.

#### **ARTICLE 13**

This document and any documents incorporated specifically by reference represent the entire agreement between the parties. This document, Work Initiation Documents signed by both parties, and the attachments hereto are incorporated as though set forth verbatim.


#### **ARTICLE 14**

The work for this agreement shall be conducted in North Carolina. Legal conflicts that cannot be resolved otherwise will be brought before a federal court with jurisdiction in North Carolina.

In accordance with the Debt Collection Improvement Act of 1996, the Department of Treasury requires a **Taxpayer Identification Number** for individuals or businesses conducting business with the agency.

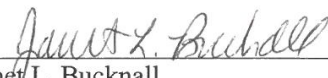
**NC WRC Taxpayer Identification Number (TIN) 73-6502734**

**NC WILDLIFE RESOURCES COMMISSION**

BY:  \_\_\_\_\_ Date 7-12-2017  
Gordon Myers, Executive Director  
1751 Varsity Drive  
Raleigh, NC 27606

**UNITED STATES DEPARTMENT OF AGRICULTURE  
ANIMAL AND PLANT HEALTH INSPECTION SERVICE  
WILDLIFE SERVICES**

BY:  \_\_\_\_\_ Date 7/12/2017  
Keith P. Wehner, State Director  
USDA APHIS WS  
6213-E Angus Drive  
Raleigh, NC 27617

BY:  \_\_\_\_\_ Date 7/14/2017  
Janet L. Bucknall  
Director, Eastern Region  
USDA APHIS WS  
920 Main Campus Drive, Suite 200  
Raleigh, NC 27606

## ATTACHMENT A WORK PLAN

### Introduction

The U.S. Department of Agriculture (USDA) is authorized to protect American agriculture and other resources from damage associated with wildlife. The primary authority for APHIS WS is the Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C.426-426b) as amended, and the Act of December 22, 1987 (101Stat. 1329-331, 7 U.S.C. 426c). Wildlife Services activities are conducted in cooperation with other Federal, State and local agencies; private organizations and individuals.

The APHIS WS program uses an Integrated Wildlife Damage Management (IWDM) approach in which a series of methods may be used or recommended to reduce wildlife damage. IWDM is described in Chapter 1, 1-7 of the Animal Damage Control Program Final Environmental Impact Statement (USDA, 1994). These methods include the alteration of cultural practices as well as habitat and behavioral modification to prevent damage. However, controlling wildlife damage may require that the offending animal(s) are killed or that the populations of the offending species be reduced.

### Purpose

NC WRC has requested assistance from APHIS-WS in controlling predators along North Carolina's coastal counties to protect rare, threatened, and endangered species, including but not limited to shore-nesting birds and nesting sea turtles.

### Planned APHIS WS Activities

APHIS WS will use an IWDM approach to manage predator damage throughout North Carolina coastal counties. Individual projects will be initiated and conducted at the written request of the NC WRC Technical Point of Contact in collaboration with US Fish and Wildlife Services personnel, as needed.

### Effective Dates

The agreement shall become effective on July 12, 2017 and shall expire on June 30, 2018.

**ATTACHMENT B  
FINANCIAL PLAN**

Personnel Costs .....	\$31,450
Travel.....	\$2,500
Vehicle Usage .....	\$4,373
Supplies/Equipment.....	\$1,000
Subtotal (Direct Costs) .....	\$39,323
Pooled Job Costs (11%).....	\$4,326
Indirect Costs (16.15%).....	\$6,351
TOTAL .....	\$50,000

The distribution of the budget from this Financial Plan may vary as necessary to accomplish the purpose of this agreement, but may not exceed \$50,000.

Financial Point of Contact

NC WRC: Gordon Myers (919) 707-0050

APHIS WS: Catherine Saunders, Budget Analyst (919) 326-6917

Technical Point of Contact

NC WRC: Kyle Briggs (919) 707-0016



## Appendix H. Red Wolf Settlement Agreement

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF NORTH CAROLINA  
NORTHERN DIVISION

CASE NO.: 2:13-CV-60-BO

RED WOLF COALITION, )  
DEFENDERS OF WILDLIFE, and )  
ANIMAL WELFARE INSTITUTE, )  
 )  
Plaintiffs, )

v. )

JIM COGDELL, JOHN LITTON CLARK, )  
JOE C. BARKER, III, WES SEEGARS, NAT )  
T. HARRIS, JR., JOSEPH BUDD, DAVID W. )  
HOYLE, JR., WENDELL (DELL) MURPHY, )  
MARK CRAIG, THOMAS A. BERRY, )  
GARRY SPENCE, JOHN T. COLEY, IV, )  
VERNON (RAY) CLIFTON, JR., THOMAS )  
L. FONVILLE, RICHARD EDWARDS, )  
MICHELL HICKS, TIMOTHY L. SPEAR, in )  
their official capacities as Commissioners of )  
the North Carolina Wildlife Resources )  
Commission; GORDON S. MYERS, in his )  
official capacity as Executive Director of the )  
North Carolina Wildlife Resources )  
Commission, )

Defendants. )

### SETTLEMENT AGREEMENT

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This Settlement Agreement (“Agreement”) is entered into by and between Plaintiffs RED WOLF COALITION, DEFENDERS OF WILDLIFE, AND ANIMAL WELFARE INSTITUTE and Defendants JIM COGDELL, JOHN LITTON CLARK, JOE C. BARKER, III, WES SEEGARS, NAT T. HARRIS, JR., JOSEPH BUDD, DAVID W. HOYLE, JR., WENDELL (DELL) MURPHY, MARK CRAIG, THOMAS A. BERRY, GARRY SPENCE, JOHN T.

COLEY, IV, VERNON (RAY) CLIFTON, JR., THOMAS L. FONVILLE, RICHARD EDWARDS, MICHELL HICKS, TIMOTHY L. SPEAR, in their official capacities as Commissioners of the North Carolina Wildlife Resources Commission (“NCWRC”) and GORDON S. MYERS, in his official capacity as Executive Director of the NCWRC:

WHEREAS, in 1967, the red wolf was designated an endangered species under the Endangered Species Preservation Act of 1966, the precursor to the federal Endangered Species Act of 1973 (“ESA”), 16 U.S.C. §§ 1531 *et seq.*;

WHEREAS, in 1987, four pairs of red wolves bred in captivity were released into the Alligator River National Wildlife Refuge in eastern North Carolina as a nonessential experimental population under Section 10(j) of the ESA, 16 U.S.C. § 1539(j);

WHEREAS, in the Complaint, Plaintiffs contend that Defendants are in violation of the ESA by authorizing coyote hunting in Dare, Hyde, Tyrrell, Beaufort, and Washington counties (hereinafter, “Red Wolf Recovery Area”);

WHEREAS, the NCWRC has worked with the United States Fish and Wildlife Service (“USFWS”) to broaden collaboration in the conservation and management of all canid species, including red wolves, on the Albemarle Peninsula;

WHEREAS, the NCWRC has the authority to regulate hunting of non-endangered wildlife in the State of North Carolina and has used this authority to allow the hunting of coyotes;

WHEREAS, Defendants contend that the Court lacks jurisdiction over them on various grounds including sovereign immunity and lack of subject matter jurisdiction, and further contend that they are not in violation of the ESA; and

WHEREAS, Plaintiffs and Defendants agree that they have reached a settlement that they consider to be a just, fair, adequate, and equitable resolution of the disputes set forth in Plaintiffs' Complaint;

NOW, THEREFORE, IT IS STIPULATED BY AND BETWEEN THE PARTIES AS FOLLOWS:

1. Defendants shall initiate temporary and permanent rulemaking to modify **15A NCAC 10B .0219** to read as set forth in Attachment A to this Agreement.

a. The rulemaking described in ¶1 and Attachment A of this Agreement shall be undertaken pursuant to Chapter 150B of the North Carolina General Statutes, following the below outlined timeline:

**Temporary Rule**

- Within 21 business days after Court's Order modifying injunction:  
NCWRC votes on Notice of Text
- 7 business days after vote on Notice of Text:  
NCWRC initiates public comment period
- 15 business days after initiation of public comment period:  
Public comment period closes
- Within 37 business days after vote on Notice of Text:  
NCWRC reviews comments and adopts rule
- 17 business days after rule adopted:  
Approved rule becomes effective

**Permanent Rule**

- Within 7 business days after Court's Order modifying injunction:  
NCWRC submits fiscal note to Office of State Budget and Management ("OSBM")
- Within 21 business days after approval of fiscal note by OSBM:  
NCWRC votes on Notice of Text
- Within 30 business days after vote on Notice of Text:  
NCWRC initiates public comment period
- 60 days after initiation of public comment period:  
Public comment period closes
- Within 15 business days from end of comment period:  
NCWRC reviews comments and adopts rule
- 45 days after NCWRC adopts rule:  
Approved rule becomes effective

b. Defendants shall notify Plaintiffs immediately if they become aware of any letters of objection filed pursuant to the North Carolina Administrative Procedure Act, any disapproval bills introduced in the North Carolina General Assembly, or any other developments that may delay or hinder implementation of the temporary or final rules described in ¶1.

2. If the Rule set out in Attachment A is adopted as a temporary and final regulation within the timeline set out in ¶1, or within the soonest feasible time thereafter in the case of a delay unavoidable by Defendants, Plaintiffs shall, within 15 days of the effectiveness of such final regulations, move for voluntary dismissal of their action against Defendants with prejudice. Such dismissal shall not prejudice Plaintiffs' ability to bring suit for any future violations of the ESA by the NCWRC Commissioners or its Executive Director. In the event that Plaintiffs bring suit against Defendants for any future violations of the ESA related to their authorization of coyote hunting in the Red Wolf Recovery Area, this Agreement shall terminate and be null and void.

3. Defendants shall implement as soon as practicable but not later than November 1, 2014, a telephonic and electronic system to facilitate reporting requirements for the shooting of coyotes and the incidental shooting of red wolves or red wolf-coyote hybrids. Such reporting requirements shall include, but not be limited to:

- a. Date, time, location (e.g., hunt area), presence of radio collar, and measurements for all coyotes, red wolves, or red wolf-coyote hybrids shot;
- b. Coyote gunshot shall be reported to the NCWRC within 24 hours; and
- c. Red wolf gunshot shall be reported to the USFWS or NCWRC within 24 hours, consistent with the requirements of 50 C.F.R. § 17.84(c).

4. Defendants shall implement as soon as practicable but not later than November 1, 2014, a “Canid Cooperator Program” (similar to NCWRC’s existing “Black Bear Cooperator Program”) whereby coyote hunters may voluntarily submit hair samples from gunshot coyotes, red wolves, and red wolf-coyote hybrids for scientific analysis.

5. For a period of five years starting from the date the reporting program provided for in ¶3 is implemented, Defendants shall prepare and provide to Plaintiffs every six (6) months a written report compiling all the data received from the reports submitted by hunters pursuant to the reporting requirements described in ¶3, as well as any data from the “Canid Cooperator Program” defined in ¶4.

6. Defendants shall, on or before November 1, 2014, issue a permit authorizing the USFWS to trap, sterilize, and release coyotes on private land within the Red Wolf Recovery Area. Such trapping, sterilization, and release shall require the written permission of the landowner and may require GPS tracking technology, according to a protocol agreed upon between the USFWS and Defendants. In the event that the NCWRC and USFWS are unable to reach agreement on such a protocol, Defendants shall issue by November 1, 2014, a permit to the USFWS allowing it to trap, sterilize, and release coyotes on any lands for which it obtains the written permission of the owner of the land on which the coyote is trapped. If, after issuing a permit to the USFWS to trap, sterilize, and release coyotes based on landowner permission, Defendants reach agreement with the USFWS on a different protocol for the program, Defendants may substitute a new permit establishing the agreed-upon protocol.

7. Defendants shall initiate permanent rulemaking to list the red wolf (*Canis rufus*) as a threatened species under 15A NCAC 10I .0104 because the wild red wolf population in

North Carolina is treated as a threatened species pursuant to 16 U.S.C. § 1539(j)(C). Such rulemaking shall be completed by August 1, 2015.

8. Defendants shall undertake outreach efforts to educate the public about the status of red wolves, legal fines and penalties for the unauthorized take of red wolves, the similarity in appearance between red wolves and coyotes, and reporting requirements for the take of red wolves under state and federal law. These efforts shall include, but not be limited to:

- a. Inclusion of a section on red wolves and coyotes in the annual North Carolina Inland Fishing, Hunting, and Trapping Regulations Digest (“Digest”);
- b. Insertion of text in the Digest cautioning hunters to ensure they have properly identified their target species;
- c. Emails to the NCWRC’s email database regarding the similarity of appearance and potential for mistaken identity between coyotes and red wolves;
- d. Distribution of printed or electronic materials to hunters that provide information to distinguish between red wolves and coyotes, and inform hunters about the “Canid Cooperator Program,” as defined in ¶4 of this Agreement, as well as standardized methods for taking measurements and hair samples of gunshot coyotes, red wolves, and hybrids; and
- e. Emails to the NCWRC’s email database and publication of articles on the NCWRC website to educate the public about red wolves that have been injured or killed as a result of gunshot and to seek the public’s assistance in identifying those responsible for illegal takes.

9. Any notices required or provided for by this Agreement shall be made in writing and sent to the following.

For Plaintiffs:

Sierra B. Weaver  
Southern Environmental Law Center  
601 West Rosemary Street, Suite 220  
Chapel Hill, NC 27516-2356  
919-967-1450  
sweaver@selcnc.org

For Defendants:

Erica Garner  
General Counsel

NC Wildlife Resources Commission  
1701 Mail Service Center  
Raleigh, NC 27699-1701  
919-707-0014  
erica.garner@ncwildlife.org

10. Within 15 days of the execution of this Agreement, the parties will file a joint motion to modify the terms of the Preliminary Injunction entered by the Court on May 13, 2014. The parties will request that the injunction be modified to reflect the terms of Attachment A and that the case be stayed with the modified injunction in place until the dismissal by Plaintiffs provided for in ¶2. Throughout the duration of the stay, the parties shall file status reports with the Court every six (6) months.

11. The parties agree that they will bear their own attorney fees and costs associated with work performed up to and including entry and execution of this Agreement. The parties reserve the right to seek attorney fees and costs incurred subsequent to entry of this Agreement.

12. The parties agree to cooperate fully, to execute any and all supplementary documents necessary to effectuate this Agreement, and to take all additional actions that may be necessary to give full force and effect to the terms of this Agreement.

13. The undersigned agree that this Agreement does not constitute an admission of fault, wrongdoing, or liability by any party. Defendants do not waive their claim of sovereign immunity by entering this Agreement.

14. In the event of breach of this Agreement, the parties have an action at law in any court having jurisdiction over the matter, provided that any breach regarding the provisions subject to rulemaking according to ¶1 of this Agreement shall be subject to the continuing jurisdiction of the Court. By entering into this Agreement, Defendants are not waiving any defense to such action. This Agreement is not enforceable by third parties.

15. The parties agree that this Agreement was negotiated in good faith and that this Agreement constitutes a settlement of claims that were denied and disputed by the parties. By entering into this Agreement, the parties do not waive any claim or defense.

16. The parties hereby acknowledge that the individual executing the Agreement on his/her behalf is authorized to execute this Agreement on his/her behalf and to bind the respective entities to the terms contained herein and that he or she has read this Agreement, conferred with his or her attorney, fully understands its contents, consents to the settlement of the claims on the terms set forth herein, and does so in reliance upon his or her own judgment and advice of his or her attorney and not in reliance on any other representations or promises of the parties or their representatives or attorneys. The parties represent that any necessary corporate and governmental approvals necessary for the binding execution of this Settlement Agreement have been obtained. The persons executing this Settlement Agreement warrant and represent that they have full authority to sign this Settlement Agreement on behalf of the party or parties for whom they are acting. This Settlement Agreement shall be binding upon the parties, their successors and assigns.

17. The Defendants do not waive any statutory or regulatory authority or duties granted to them under State law by entering this Agreement.

18. The Agreement and all of its terms shall terminate and be null and void in the event of discontinuation of the Red Wolf Reintroduction Program in the Red Wolf Recovery Area or in the event that the Court denies the parties' joint motion to modify the terms of the Preliminary Injunction entered by the Court on May 13, 2014.

IN WITNESS WHEREOF, this Agreement is executed in counterparts effective on the last date of execution indicated on the subsequent signature pages.



RED WOLF COALITION

By: Chim Wheeler  
Title: Executive Director  
Date: 10.15.14

DRAFT

DEFENDERS OF WILDLIFE



By: Michael Senatore

Title: General Counsel

Date: 10/16/14


DRAFT

ANIMAL WELFARE INSTITUTE

By: Cathy Lin  
Title: President  
Date: 10/15/14

DRAFT

JIM COGDELL, JOHN LITTON CLARK, JOE C. BARKER, III, WES SEEGARS, NAT T. HARRIS, JR., JOSEPH BUDD, DAVID W. HOYLE, JR., WENDELL (DELL) MURPHY, MARK CRAIG, THOMAS A. BERRY, GARRY SPENCE, JOHN T. COLEY, IV, VERNON (RAY) CLIFTON, JR., THOMAS L. FONVILLE, RICHARD EDWARDS, MICHELL HICKS, TIMOTHY L. SPEAR, in their official capacities as Commissioners of the North Carolina Wildlife Resources Commission; GORDON S. MYERS, in his official capacity as Executive Director of the North Carolina Wildlife Resources Commission

By:   
Title: Executive Director  
Date: 15 OCTOBER, 2014

## ATTACHMENT A

15A NCAC 10B .0219 is amended as follows:

### 15A NCAC 10B .0219 COYOTE

(a) This Rule applies to hunting coyotes. In all counties of the State, except those counties specified in Paragraph b, the following apply:

- (1) There is no closed season for taking coyotes.
- (2) Coyotes may be taken on private lands anytime during the day or night.
- (3) Coyotes may be taken on public lands without a permit from the hours of one-half hour before sunrise until one-half hour after sunset, and from one-half hour after sunset to one-half hour before sunrise by permit only.

(b) In the counties of Dare, Hyde, Washington, Tyrrell and Beaufort, the following apply:

- (1) Coyote hunting on public lands is prohibited, except that coyotes may be taken on State-owned game lands by the holder of a permit or license for a specific special hunt opportunity for coyotes authorized by G.S. 113-264(d). Any special hunt for coyotes pursuant to G.S. 113-264(d) shall only allow hunting from the hours of one-half hour before sunrise until one-half hour after sunset. Contests or competition coyote hunts on public lands are prohibited. If, within a calendar year, two or more red wolves are shot by one or more hunters with a valid special hunt permit for coyotes on State game lands within the five counties subject to this rule, all special hunt opportunities for coyotes on State game lands within those five counties shall be suspended for one calendar year.
- (2) There is no closed season for taking coyotes on private lands. Coyotes may be taken on private lands from the hours of one-half hour before sunrise until one-half hour after sunset only.
- (3) Coyotes may be taken on private lands by permit only, and any take shall be reported within 24 hours to the Commission.
- (4) Coyote hunting permits are in addition to hunting licenses. Individuals exempted from license requirements under the provisions specified in G.S. 113-276 must still acquire the coyote hunting permits to hunt coyotes in the counties specified in this Paragraph b. Coyote hunting permits are valid for one calendar year and subject to annual renewal. These permits are non-transferable. Permit holders must submit their harvest reports in order to be eligible for permit renewal.

(c) There are no bag limit restrictions on coyotes.

(d) Manner of Take. Hunters may use electronic calls and artificial lights.

**EXHIBIT F-1**  
**February 28, 2018**  
**North Carolina Wildlife Resources Commission**  
**Land Acquisition Investigation Form**  
**– PHASE I: INITIAL INVESTIGATION –**

<b>WRC Staff Contact:</b>	Paul Thompson/Kip Hollifield
<b>Date First Presented to Commission:</b>	
<b>Tract Name:</b>	Corpening Estate Tracts - Addition to Johns River Game Land
<b>PIN:</b>	PIN: 1797337302 (22.4 ac. tract) ; PIN: 1797743175 (58.0 acre tract)
<b>County:</b>	Burke
<b>Acreage:</b>	Approx 80.4 acres
<b>Tax Value:</b>	22.4 acre tract: \$64,121 ; 58.0 acre tract: \$122,365
<b>Property Owner/Representative:</b>	James Corpening Estate/Susan Haire (executrix)
<b>Phone:</b>	828-437-3335
<b>Email Address:</b>	<a href="mailto:susan@starneslawfirm.com">susan@starneslawfirm.com</a>
<b>Address:</b>	118 North Sterling Street, Morganton, NC 28655

**Primary Purpose:**

<input checked="" type="checkbox"/>	Resource Protection
<input checked="" type="checkbox"/>	Resource Management
<input checked="" type="checkbox"/>	User Access
<input type="checkbox"/>	WRC Facility

**Program Potential:**

<input checked="" type="checkbox"/>	Game Land
<input type="checkbox"/>	Wildlife Conservation Area
<input type="checkbox"/>	Access Area
<input type="checkbox"/>	None

**Type of Acquisition:**

<input checked="" type="checkbox"/>	Purchase
<input type="checkbox"/>	Lease
<input type="checkbox"/>	Easement

**Type of Parcel:**

<input checked="" type="checkbox"/>	Tract
<input type="checkbox"/>	Riparian Corridor

**Grant Potential:**

<input type="checkbox"/>	CWMTF
<input checked="" type="checkbox"/>	Federal Aid (PR, WB, etc.)
<input checked="" type="checkbox"/>	Endowment
<input type="checkbox"/>	Donation

**Owner Interest:**

<input checked="" type="checkbox"/>	High
<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Low
<input type="checkbox"/>	No

**Tax Value:**

<input type="checkbox"/>	Year Assessed
<input type="checkbox"/>	PUV?

**Stewardship Considerations:**

<input type="checkbox"/>	PR Source:
<input type="checkbox"/>	State Match:

**Funding Considerations:**

<input type="checkbox"/>	Donation
<input type="checkbox"/>	Bargin Sale
<input type="checkbox"/>	Partner Contribution

**Recommendation:**

<input checked="" type="checkbox"/>	Pursue
<input type="checkbox"/>	Do Not Pursue
<input type="checkbox"/>	Defer

**Additional Comments:**

The State Property Office plans to close on the Johns River FERC tracts on 3/5/18. Tract 2123 (989 acres) of this acquisition has no practical legal access. Legal access to the tract would require crossing private property via an easement and constructing a bridge across Johns River. The traditional access to Tract 2123 crosses the James Corpening Estate property, but this access is by "hand shake agreement" only. The executrix of the Corpening estate is very interested in selling a portion of the estate property to NCWRC. This property would bring WRC ownership of Tract 2123 to Corpening Bridge Rd. (SR 1438) and includes the traditional access road that serves the property. Additionally, the Corpening Estate includes an inholding of approximately 22.4 acres within Tract 2123 which is served by the same traditional access road. The executrix advises they are also willing to sell this inholding property to NCWRC. Both of these properties are key acquisitions that ensure practical access to Tract 2123 and eliminate the conflicts that would arise from having this private inholding within the property. Purchase of both these properties would be much less than constructing a bridge across Johns River and would ensure excellent access to Tract 2123 for both the public and for administrative purposes.

EXHIBIT F-1

North Carolina Wildlife Resources Commission  
Land Acquisition Investigation Form  
– PHASE I: INITIAL INVESTIGATION –

Tract Name:	Corpening Estate Tracts-Addition to Johns River Game Land
County:	Burke

**Resources Assessment and Biological Benefits (brief):**

The 58 acre Corpening Estate tract has direct access from DOT maintained Corpening Bridge Road (SR # 1438) with approximately 1 mile of road frontage, and will provide public and WRC access to the Johns River FERC tract 2123 (989 acres). Currently, the only ROW easement to the 2123 FERC tract would require the construction of a bridge across the Johns River through the current 50' ROW easement. The 22.4 acre Corpening Estate inholding tract, which includes the traditional access road, will provide unimpeded access to the remainder of the 2123 FERC tract. Both tracts will collectively add approximately .6 miles of Johns River frontage and will be highly significant as part of the total conservation and public access project planned for the Johns River corridor. Collectively, the tracts consists of approximately 45 acres of mixed pine-hardwood and 25 acres of open ground currently leased for commercial nursery operations. The remaining acreage consists of shrub scrub and floodplain forest. Management objectives on this tract will include restoring/maintaining mixed pine-hardwood stands through a combination of timber harvest and prescribe burning. The acreage in commercial nursery operations will be restored to more desirable herbaceous ESH after the standing crop is harvested. Common game species found on these tracts include wild turkey, white-tailed deer, raccoon, mourning dove, and gray squirrel. Waterfowl are found seasonally along Johns River and at times will offer some hunting opportunity. There are excellent fishing opportunities for smallmouth bass, trout, rockbass, bluegill, and redbreast sunfish. Johns River is the longest free flowing river remaining in the Catawba River Basin in NC, harboring approximately 70 aquatic species. Priority aquatic species found either in Johns River or on this tract include: brook floater (currently under USFW review for updated federal status), notched rainbow, eastern creekshell, Carolina foothills crayfish. Broad River stream crayfish, Broad River spiny crawfish, seagreen darter, and V-lip redhorse. Priority terrestrial species likely found on this tract as either permanent residents or transients include: American woodcock, American Kestrel, field sparrow, prairie warbler, spotted slalmander, marbled salamander, three-lined slalmander, Eastern box turtle, smooth earth snake, mole knignsnake, and eastern kingsnake. Public recreational opportunities will include hunting, fishing, hiking, canoeing, bird watching, photography, and general nature study.

**Additional Information:** The 58.0 acre tract currently contains an agricultural lease. I advised the executrix that if WRC acquires the subject properties the current lease holder would be allowed to harvest the standing crop (shrubby) when mature, but that the lease would not be renewed. Additionally, the 58.0 acre tract is a portion of a 137 acre tract, that the executrix advised they would be willing to sell the 58.0 acre portion of to NCWRC.

Tract Name  
Date  
Staff Completing Form

Corpening Estate Tracts-Addition to Johns River Game Land  
February 6, 2018  
Thompson/Hollifield

Species	0.593
	Terrestrial
Overall Biodiversity	2
SGCN Species	2
Game Species	2
	Wetland
Overall Biodiversity	1
SGCN Species	1
Game Species	2
	Aquatic
Overall Biodiversity	2
SGCN Species	2
Game Species	2

Comments
Moderate terrestrial biodiversity is based on a diversity of habitat types and their juxtaposition. Moderate aquatic diversity based on the presence of multiple tributary streams and Johns River. Wetland habitat is limited to lower lying areas along the Johns River and streams.

Habitat	0.611
Size	0
Quality	2
Diversity	2
Rare/Important	2
Connectivity	3
Buffer	2

Comments
The quality of the habitat is good, as is diversity. The property provides high priority access to future Johns River GL and will also provide connectivity by removing an inholding tract.

Public Access	0.889
Hunting/Viewing	3
Fishing	3
Boating	2

Comments
The property provides excellent access for hunting/wildlife viewing on Johns River GL. The property will also provide excellent access for fishing and boating, most likely limited to kayak and canoes.

Wildlife Uses	0.800
Hunting	3
Viewing	3
Fishing	3
Boating	2
Education	1

Comments
The property offers good hunting opportunity as well as some opportunity for wildlife viewing. Opportunities for fishing and boating will be excellent along the Johns River. Educational opportunities are minimal.

Other Values	0.778
Timber Harvest	3
Local Economy	2
Quality of Life	2

Comments
The tract can produce good timber and will offer priority access to Johns River GL. This will provide some benefit to the local economy and provide quality of life benefits to local residents.

Feasibility & Logistics	0.800
Existing Infrastructure	2
Compatibility of Multiple Uses on Tract	2
Compatibility with Adjoining Land	2
Inholding/Corridor	3
Proximity to Users	3

Comments
The tracts currently have a maintained access road that will provide unimpeded access to FERC tract 2123. Acquisition of these tracts will alleviate current adjoiner issues, and conflicts among game land users and future adjoiners should be minimal. The tracts are very close in proximity to GL users in the Morganton/Lenoir area.

Restoration/Mitigation Potential	0.750
Species Restoration	2
Habitat Restoration	2
Access Improvement	3
Threat Mitigation	2

Comments
Restoration and habitat management potential on the tract is good, thus the rank is moderate. The property will provide high priority access to Johns River GL. There are few threats to the properties.

Threats	0.067
Number	1
Severity	0
Imminence	0
Manageability	0
Management Cost	0

Comments
The executrix of the Corpening Estates Tracts has shown high interest and willingness to offer these tracts to NCWRC, so threats are minimal.

Overall Score	5.154
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## Instructions for filling out Phase I Worksheet

### General

1. Fill in the gray cells in Cover Sheet and Page 2. The rest of these instructions pertain to the Worksheet.
2. The worksheet is for assessing opportunistic land acquisitions. Responses should reflect current conditions.
3. The worksheet is protected so that you can only edit certain cells. These are shaded gray.
4. The gray cells in the worksheet will change color after you have entered text or a numeric value.
5. Ratings for each metric must be an integer from 0 to 3. If you enter anything else, you will get a warning.
6. Except for the Threats category, 0 represents an undesirable condition (i.e., tract is not suitable for acquisition) and 3 represents a preferred condition (i.e., the tract is valuable and worth pursuing). For subjective metrics, start with a mindset that the parcel provides average/moderate conditions (i.e., rating of 2). Don't automatically give a rating of 3 without justification.

### Species

1. If necessary, get assistance from staff in other Divisions/Programs or other sources (GIS, NHP, LCC models, etc.).
2. The scores are meant to be based on best professional judgment, not an exact count of species.
3. Rating: 3 = High species count; 2 = Moderate species count; 1 = Low species count; 0 = Very low species count.
4. Overall biodiversity means all species of each group.
5. SGCN species are those listed in the 2015 NC Wildlife Action Plan.
6. Game species are those managed for sport or take. For game species, also consider population size.

### Habitat

1. Quality refers to habitat condition. Diversity refers to the variety of habitat types.
2. Rare/Important refers to critical habitat for listed or SGCN species. Consider quantity and quality.
3. Connectivity means the parcel provides a corridor to other conservation lands or connectivity in river systems.
4. Buffer means the parcel provides additional conservation land around a critical habitat type or allows managers to appropriately use tools such as prescribed fire without impacting adjoining land.
5. For all metrics except Size: 3 = High; 2 = Moderate; 1 = Low; 0 = None
6. Size: 3 = >3,000 acres; 2 = 1,000 - 3,000 acres; 1 = 100 - 1,000 acres; 0 = <100 acres

### Public Access

1. The parcel provides public access to fish/wildlife resources on that parcel or to adjoining land or water.
2. Rating: 3 = Excellent existing access or provides critical access; 2 = Average; 1 = Poor; 0 = None

### Wildlife Uses

1. Recreational or educational use of resources.
2. Rating: 3 = High; 2 = Moderate; 1 = Low; 0 = None

### Other Values

1. Timber Harvest is not the value of timber, but the potential to produce, manage and harvest timber.
2. Local Economy is the ability of the parcel to act as an economic driver by attracting substantial public use (e.g., unique wildlife viewing, hunting, etc.).
3. Quality of Life is the indirect/secondary benefit to the local community by providing green space or walking/hiking opportunities.
4. Rating: 3 = High; 2 = Moderate; 1 = Low; 0 = None

### Feasibility & Logistics

1. Existing Infrastructure includes road system, buildings, etc. Consider quantity and quality. If a liability and has to be removed/repaired, score 0 or 1.
2. Compatibility of Multiple Uses is the ability of the parcel to provide hunting, viewing, fishing, etc. at the same time.
3. Compatibility with Adjoining Land should consider things like public safety, noise, prescribed burns, etc. Consider both the impact of wildlife users and management on adjoining land and adjoining landowners on the parcel.
4. Inholding/Corridor - Does the parcel fill in a hole in existing WRC ownership or does it provide a wildlife corridor?
5. Proximity to Users refers to location of parcel to targeted user groups (e.g., new game land near population center).
6. Rating: 3 = High; 2 = Moderate; 1 = Low; 0 = None

### Restoration/Mitigation Potential

1. Restoration Potential is the ability to improve species, habitat or access through natural processes or management actions.  
Potential: 3 = High; 2 = Moderate; 1 = Low; 0 = None
2. Threat Mitigation is the degree to which the threat can be avoided, minimized or delayed by acquiring the parcel.  
Mitigation: 3 = Avoids Threats; 2 = Minimizes Threats; 1 = Delays Threats; 0 = None

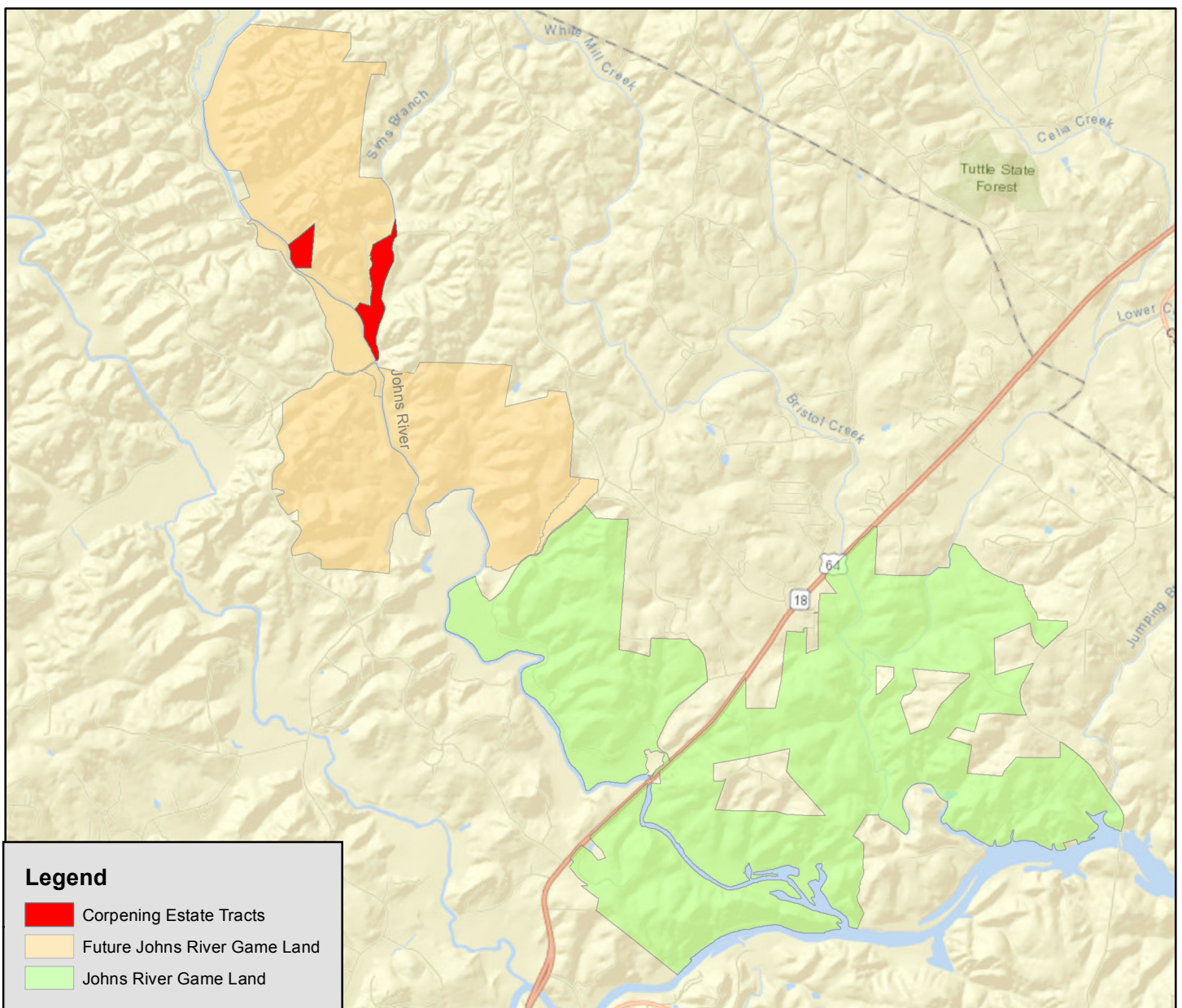
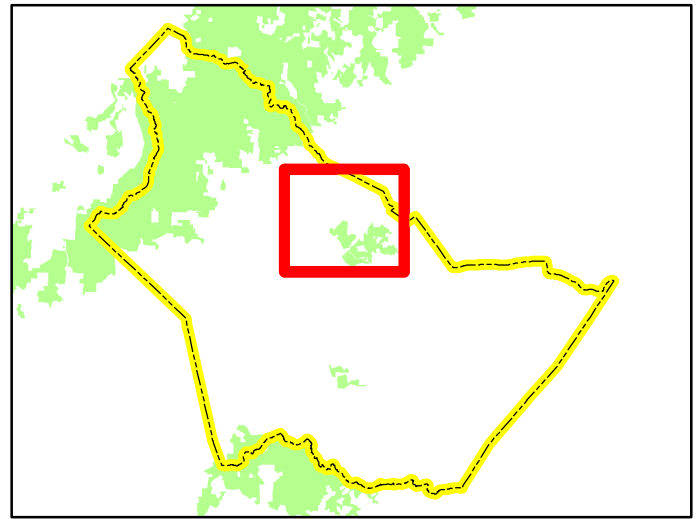
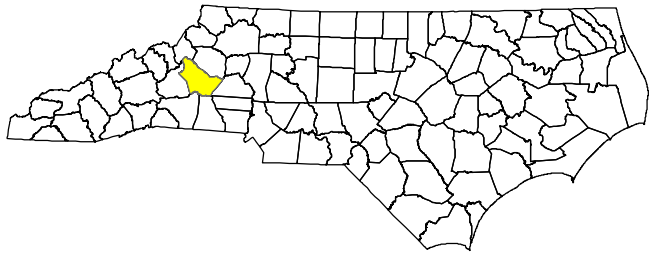
### Threats

1. Threats reduce the value of a parcel, so the overall Threat score will be subtracted from the total score of the other metrics.
2. Number of Threats: 3 = Many; 2 = Some; 1 = Few; 0 = None
3. Severity of Threats: 3 = Critical; 2 = High; 1 = Moderate; 0 = Low
4. Imminence (time or distance) of Threats: 3 = Extant; 2 = Very Near; 1 = Moderately Near; 0 = Distant
5. Manageability of Threats: 3 = Unmanageable; 2 = Low; 1 = Moderate; 0 = High
6. Management Cost to Control Threats: 3 = High; 2 = Moderate; 1 = Low; 0 = Minimal




### Scoring

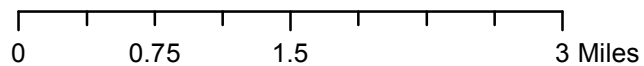
1. Scoring for each section is normalized (range 0 - 1).
2. The overall score is calculated by adding individual section scores and subtracting the Threat score.
3. The overall score will not calculate unless there is at least one ranking filled in for each section, even if a zero.
4. The overall score ranges from 7 (all values high and no threats) to -1 (all values zero and high threats).

Corpening Estate Tracts  
Johns River Game Land  
Burke County  
+/- 80.4 Acres

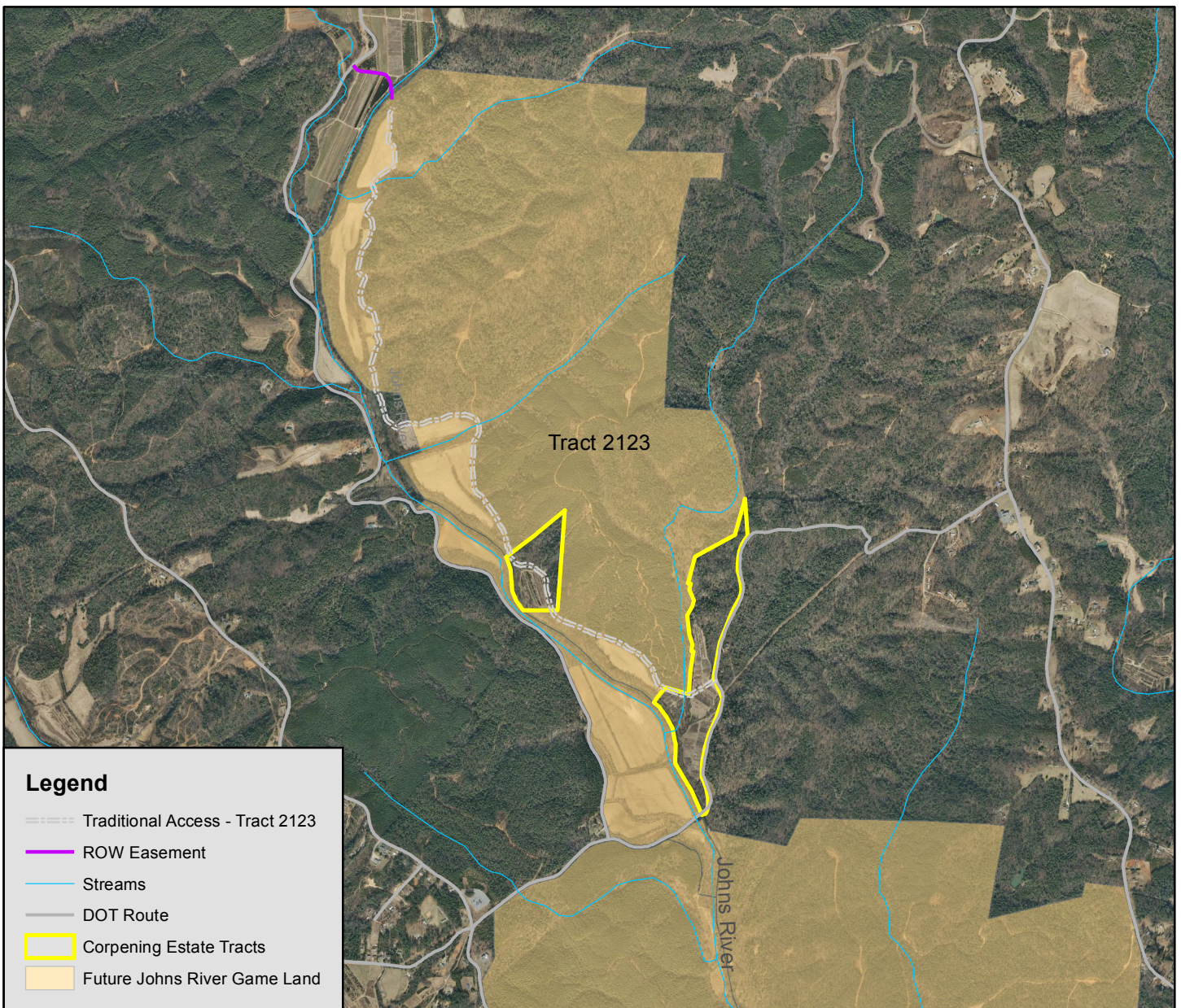
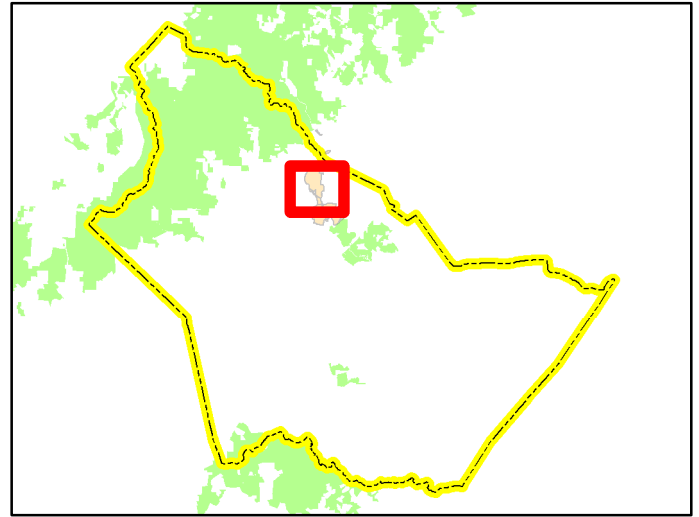
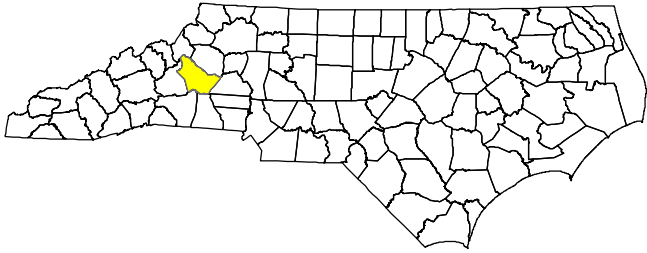


**Legend**

-  Corpening Estate Tracts
-  Future Johns River Game Land
-  Johns River Game Land

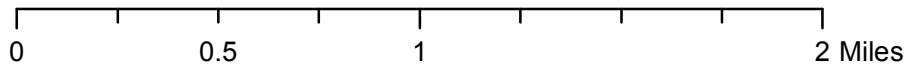


Corpening Estate Tracts  
Johns River Game Land  
Burke County  
+/- 80.4 Acres



**Legend**

- Traditional Access - Tract 2123
- ROW Easement
- Streams
- DOT Route
- ▭ Corpening Estate Tracts
- ▭ Future Johns River Game Land



**EXHIBIT F-2**  
**February 28, 2018**  
**North Carolina Wildlife Resources Commission**  
**Land Acquisition Investigation Form**  
**– PHASE 1.5: INITIAL INVESTIGATION –**

<b>WRC Staff Contact:</b>	David Turner
<b>Date First Presented to Commission:</b>	
<b>Tract Name:</b>	Aydlette Swamp/Dempsey Sawyer Swamp
<b>County:</b>	Camden
<b>Acreage:</b>	Parcel Acreage=2,727.49 / Deed Acreage=2,354 / Tax Card=2,097
<b>Appraisal/Timber/Asking:</b>	\$762,000, \$860,000/\$450,00-\$900,000/\$1,981,000
<b>Property Owner/Representative:</b>	Great Dismal Swamp Restoration Bank, LLC. Billy Griggs - Griggs Outer Banks Properties
<b>Phone:</b>	252-202-2174
<b>Email Address:</b>	billygriggs@griggsouterbanksproperties.com
<b>Address:</b>	

**Primary Purpose:**

<input checked="" type="checkbox"/>	Resource Protection
<input type="checkbox"/>	Resource Management
<input type="checkbox"/>	User Access
<input type="checkbox"/>	WRC Facility

**Program Potential:**

<input checked="" type="checkbox"/>	Game Land
<input type="checkbox"/>	Wildlife Conservation Area
<input type="checkbox"/>	Access Area
<input type="checkbox"/>	None

**Type of Acquisition:**

<input checked="" type="checkbox"/>	Purchase
<input type="checkbox"/>	Lease
<input type="checkbox"/>	Easement

**Type of Parcel:**

<input checked="" type="checkbox"/>	Tract
<input type="checkbox"/>	Riparian Corridor

**Grant Potential:**

<input checked="" type="checkbox"/>	CWMTF
<input type="checkbox"/>	Federal Aid (PR, WB, etc.)
<input checked="" type="checkbox"/>	Enviva Forest Conservation Fund
<input checked="" type="checkbox"/>	NAWCA
<input checked="" type="checkbox"/>	National Coastal Wetlands Conservation Grant
<input checked="" type="checkbox"/>	Environmental Enhancement Grant Program

**Owner Interest:**

<input checked="" type="checkbox"/>	High
<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Low
<input type="checkbox"/>	No

**Tax Value:**

	Year Assessed
514,094	

**Stewardship Considerations:**

PR	Source:
75/25	Match:

**Funding Considerations:**

<input type="checkbox"/>	Donation
<input type="checkbox"/>	Bargin Sale
<input checked="" type="checkbox"/>	Partner Contribution

**Recommendation:**

<input checked="" type="checkbox"/>	Pursue
<input type="checkbox"/>	Do Not Pursue
<input type="checkbox"/>	Defer

**Additional Comments:**

Two adjacent parcels make up the Aydlette Swamp/Dempsey Sawyer Swamp Tract. There are no vehicle accesses to these parcels. Access is by boat only through a private, yet unrestricted, boat slip on Garlington Island Road or by the WRC Coinjock BAA 6 miles away. Significant differences in acreage in Camden County parcel data, deeds, and tax cards exists. Owners are asking \$1100/acre with a total asking price of \$1,981,000. With the stated asking price, acreage computes to 1,800 acres. These acreage discrepancies have been discussed with the realtor and the attached maps represent what he is reported to be selling.

These parcels lie adjacent to the northern boundary of the Harrison Tract of North River Game Land. The NCWRC is currently working with Ducks Unlimited to purchase the Hubbard-Pinkerton Tract on the southern boundary with the Harrison Tract.

EXHIBIT F-2

North Carolina Wildlife Resources Commission  
Land Acquisition Investigation Form  
– PHASE I: INITIAL INVESTIGATION –

Tract Name:	Aydlette Swamp/Dempsey Sawyer Swamp
County:	Camden

**Resources Assessment and Biological Benefits (brief):**

The Aydlette Swamp/Dempsey Sawyer Swamp lies adjacent to the Harrison Tract of North River Game Land. The North River constitutes the eastern boundary and Indiantown Town Creek borders the tract to the north. Nearly all of both tracts are part of the North River/Crooked Creek Wetlands Significant Natural Heritage Area designated by the NC Natural Heritage Program. Their 2016 Natural Area report describes the areas as "a large segment of the mucky swamps that line the North River. It has a large expanse of Nonriverine Swamp Forest with mixed canopy of swamp black gum, cypress, and red maple. At least one moderate size patch of Peatland Atlantic White Cedar Forest is present. The Nonriverine Swamp Forest gives way gradually to Tidal Cypress--Gum Swamp near the shoreline, and small patches of Tidal Freshwater Marsh are present".

Based upon data found in the NC Conservation Planning Tool, the property has an average Biodiversity Relative Conservation Values of 7.9 (0- low-10 high values). The Biodiversity/Wildlife Habitat Index prioritizes aquatic and terrestrial habitat, landscape function and connectivity.

Investigation of the tract was done by boat along the North River and limited timber resources could be seen. NC Gap data and aerial imagery suggests that stand of Atlantic white cedar exists which could interest no-conservation minded entities to purchase the property, although timbering the site may prove extremely difficult. Along the North River and as far as could be seen are scattered large bald cypress that appeared to be hollow which could act as black bear denning sites. If acquired, the tracts would be incorporated into the North River Bear Sanctuary. The combined properties boasts over 11 miles of creek and river frontage.

Acquisition of the tract will protect a source of black bears in southern Camden County, establish a water quality buffer between agricultural fields and the North River and creeks, and protect black duck nesting habitat. Red-cockaded woodpecker cavities are documented on the property but due to the wet nature of the tracts and anticipated sea-level rise, it is expected that the cavity trees will die. North River is identified as an Anadromous Fish Spawning Area; river herring are known to spawn along the shoreline.

Tract Name	Aydlette Swamp/Dempsey Sawyer Swamp
Date	July 6, 2017
Staff Completing Form	David Turner

<b>Species</b>	<b>0.778</b>
	Terrestrial
Overall Biodiversity	3
SGCN Species	3
Game Species	1
	Wetland
Overall Biodiversity	3
SGCN Species	3
Game Species	1
	Aquatic
Overall Biodiversity	3
SGCN Species	3
Game Species	1

<b>Habitat</b>	<b>0.889</b>
Size	2
Quality	3
Diversity	2
Rare/Important	3
Connectivity	3
Buffer	3

<b>Public Access</b>	<b>0.111</b>
Hunting/Viewing	1
Fishing	0
Boating	0

<b>Wildlife Uses</b>	<b>0.133</b>
Hunting	1
Viewing	0
Fishing	0
Boating	0
Education	1

<b>Other Values</b>	<b>0.111</b>
Timber Harvest	0
Local Economy	0
Quality of Life	1

<b>Feasibility &amp; Logistics</b>	<b>0.467</b>
Existing Infrastructure	0
Compatibility of Multiple Uses on Tract	0
Compatibility with Adjoining Land	3
Inholding/Corridor	3
Proximity to Users	1

<b>Restoration/Mitigation Potential</b>	<b>0.083</b>
Species Restoration	0
Habitat Restoration	0
Access Improvement	0
Threat Mitigation	1

<b>Threats</b>	<b>0.533</b>
Number	2
Severity	2
Imminence	1
Manageability	3
Management Cost	0

<b>Overall Score</b>	<b>2.039</b>
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<b>Comments</b>
<p><b>Species:</b> There are 40 Species of Greatest Conservation Need (SGCN) species identified as possibly occurring on the tracts by the North Carolina Wildlife Habitat Threat Data Viewer and Analysis Tool. Red-cockaded woodpeckers were not identified by the tool but are known to be present on the southern extent of the parcel. Some of the notable species that may occur there include the American black duck, rainbow snake, glossy crayfish snake, eastern ribbonsnake, Swainson's warbler, black-throated green warbler, bald eagle, and Rafinesque's big-eared bat. Game species are limited to gray squirrels, waterfowl, black bears, and furbearers.</p> <p><b>Habitat:</b> These two tracts are large intact examples Coastal Plain Non-riverine Wet Flat Forests, Peatland Atlantic White Cedar Forests, and Tidal Swamp Forests. The Nonriverine Swamp Forest carries a S3 and G3 classification by the NC Natural Heritage Program recognizing that the forest type is vulnerable to extinction. The parcels link to other game land parcels and provide a continuous corridor along the western side of the North River.</p> <p><b>Public Access:</b> Public access is limited to the proposed acquisition as there are no roads to the properties. Access is by boat only through a private, yet unrestricted, boat slip on Garlington Island Road or by the WRC Coinjock BAA 6 miles away.</p> <p><b>Wildlife Uses:</b> This category received a low score because of the limited access as well as the fact that fishing, boating, and wildlife viewing can occur on the public waterway without state acquisition of the tract. Waterfowl hunting likely occurs at low levels from the public waterway. Due to the wet habitat types, the deer population is thought to be extremely low and hunter effort would be low due to difficulty in walking.</p> <p><b>Other Values:</b> As a conservation oriented agency, the NCWRC would not timber these tracts. Removing the property from the county's tax system would have a negative effect on the local economy. If protected and not logged, the parcels will have a positive effect on water quality and bird and fishery resources.</p> <p><b>Feasibility and logistics:</b> Access negatively effects this score since there is no road infrastructure or vehicular accesses thereby limiting the proximity to users. This acquisition will provide a travel corridor for black bears. If acquired, this tract will consolidate boundary on a 250 acre block owned by the NCWRC.</p> <p><b>Restoration/Mitigation Potential:</b> The realtor has advertised the timber potential on this tract but access will be a limiting factor in getting the timber out. Acquisition of the tract will mitigate the timber harvest threat. Sea-level rise is a threat that is predicted to have a significant impact on the landscape and cannot be mitigated through acquisition.</p> <p><b>Threats:</b> USACE Sea Level Rise Calculator using an intermediate sea level rise of 1.74 feet by year 2050 maps the entire property as inundated with water.</p>

## Instructions for filling out Phase I Worksheet

### General

This form is for assessing opportunistic land acquisitions. Responses should reflect current conditions. The worksheet is protected so that you can only edit certain cells. These are shaded gray. The gray cells will change color after you have entered text or a numeric value. Ratings for each metric must be an integer from 0 to 3. If you enter anything else, you will get a warning. Except for the Threats category, 0 represents an undesirable condition (i.e., tract is not suitable for acquisition) and 3 represents a preferred condition (i.e., the tract is valuable and worth pursuing).  
**Fill out all gray scoring cells (columns B, C, D).**

### Species

If necessary, get assistance from staff in other Divisions/Programs or other sources (GIS, NHP, LCC models, etc.). The scores are meant to be based on best professional judgment, not an exact count of species. 3 = High species count; 2 = Moderate species count; 1 = Low species count; 0 = Very low species count. Overall biodiversity means all species of each group. SCGN species are those listed in the 2015 NC Wildlife Action Plan. Game species are those managed for sport or take. For game species, also consider population size.

### Habitat

Quality refers to habitat condition. Diversity refers to the variety of habitat types. Rare/Important refers to critical habitat for listed or SCGN species. Consider quantity and quality. Connectivity means the parcel provides a corridor to other conservation lands or connectivity in river systems. Buffer means the parcel provides additional conservation land around a critical habitat type or allows managers to appropriately use tools such as prescribed fire without impacting adjoining land. For all metrics except Size: 3 = High; 2 = Moderate; 1 = Low; 0 = None  
Size: 3 = >3,000 acres; 2 = 1,000 - 3,000 acres; 1 = 100 - 1,000 acres; 0 = <100 acres

### Public Access

3 = Excellent existing access or provides critical access; 2 = Average; 1 = Poor; 0 = None

### Wildlife Uses

3 = High; 2 = Moderate; 1 = Low; 0 = None

### Other Values

3 = High; 2 = Moderate; 1 = Low; 0 = None

### Feasibility & Logistics

3 = High; 2 = Moderate; 1 = Low; 0 = None

### Restoration/Mitigation Potential

Restoration Potential is the ability to improve species, habitat or access through natural processes or management actions. 3 = High; 2 = Moderate; 1 = Low; 0 = None  
Threat Mitigation is the degree to which the threat can be avoided, minimized or delayed by acquiring the parcel. 3 = Avoids Threats; 2 = Minimizes Threats; 1 = Delays Threats; 0 = None

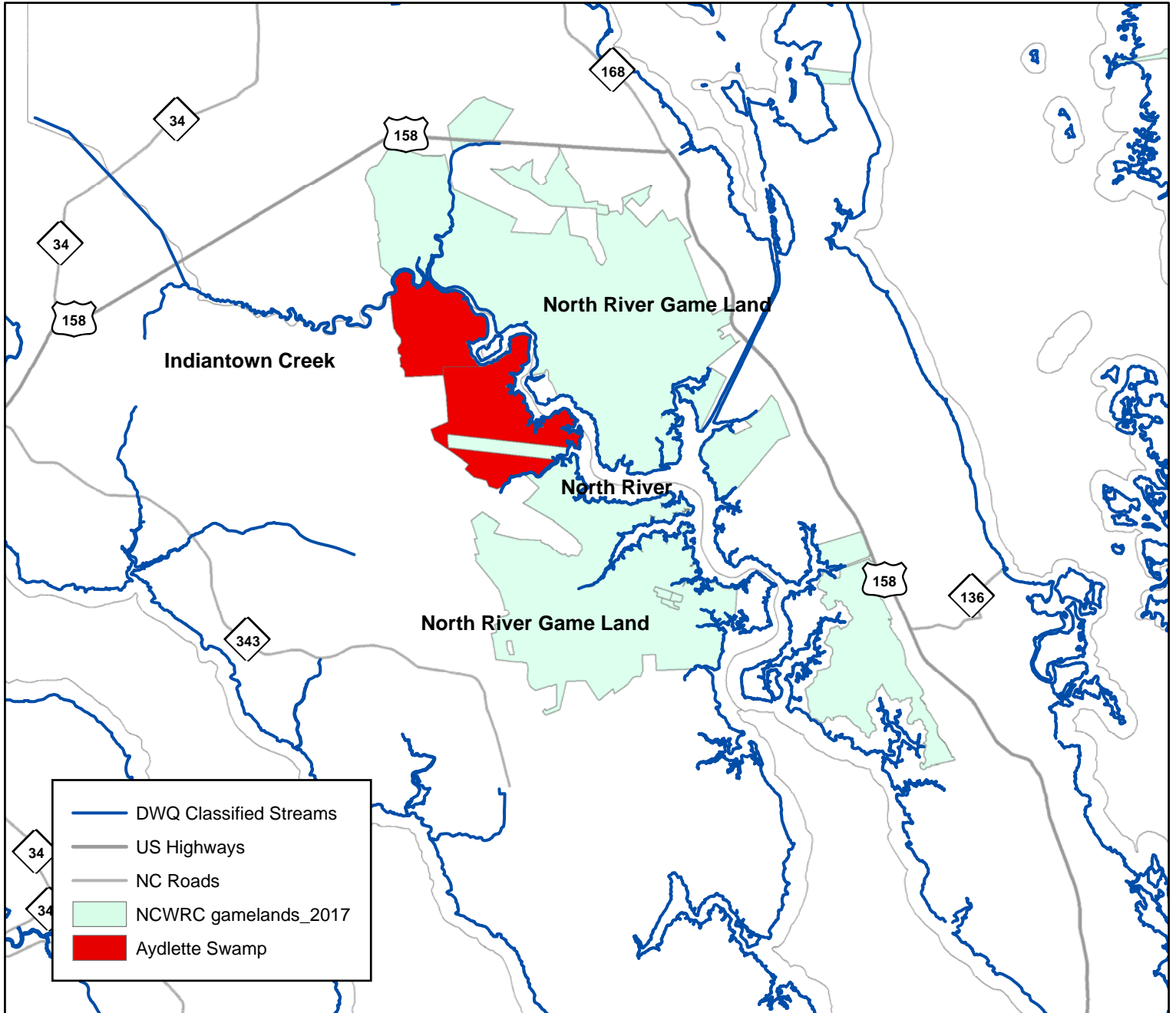
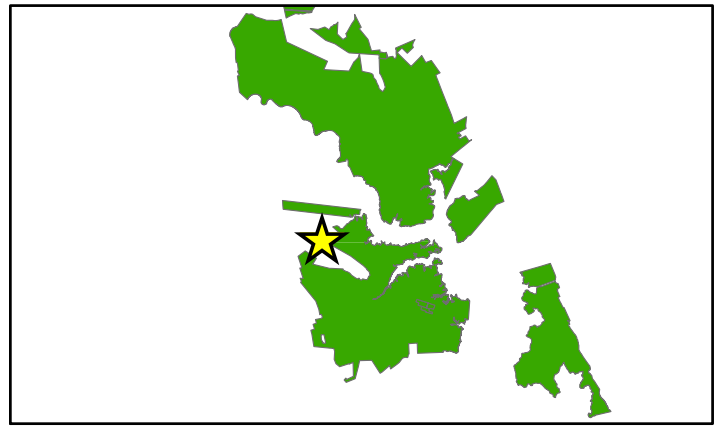
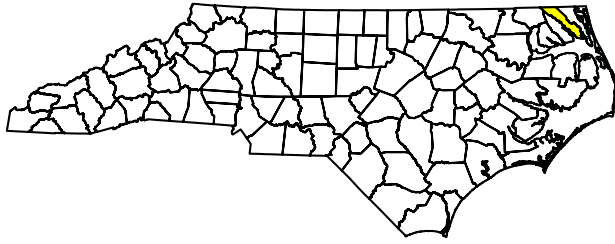
### Threats

Threats reduce the value of a parcel, so the overall Threat score will be subtracted from the total score of the other metrics. Number: 3 = Many; 2 = Some; 1 = Few; 0 = None  
Severity: 3 = Critical; 2 = High; 1 = Moderate; 0 = Low  
Imminence (time or distance): 3 = Extant; 2 = Very Near; 1 = Moderately Near; 0 = Distant  
Manageability: 3 = Unmanageable; 2 = Low; 1 = Moderate; 0 = High  
Management Cost: 3 = High; 2 = Moderate; 1 = Low; 0 = Minimal

### Scoring

Scoring for each section is normalized (range 0 - 1). The overall score is the sum of the individual section scores, minus the Threat score. The overall score will not calculate unless there is at least one ranking filled in for each section, even if a zero. The overall score ranges from 7 (all values high and no threats) to -1 (all values zero and high threats).

**Aydlette Swamp Tract  
North River Game Land  
Camden County  
2,727 Acres**



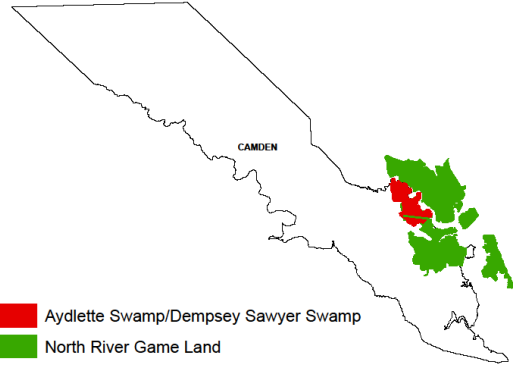
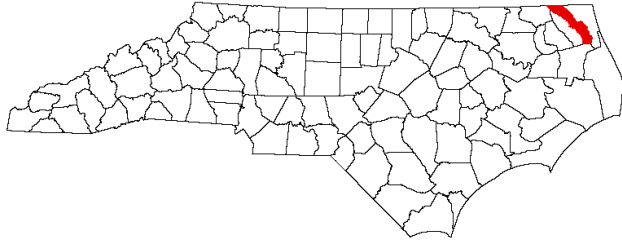
August 23, 2017



0 4 8 Miles

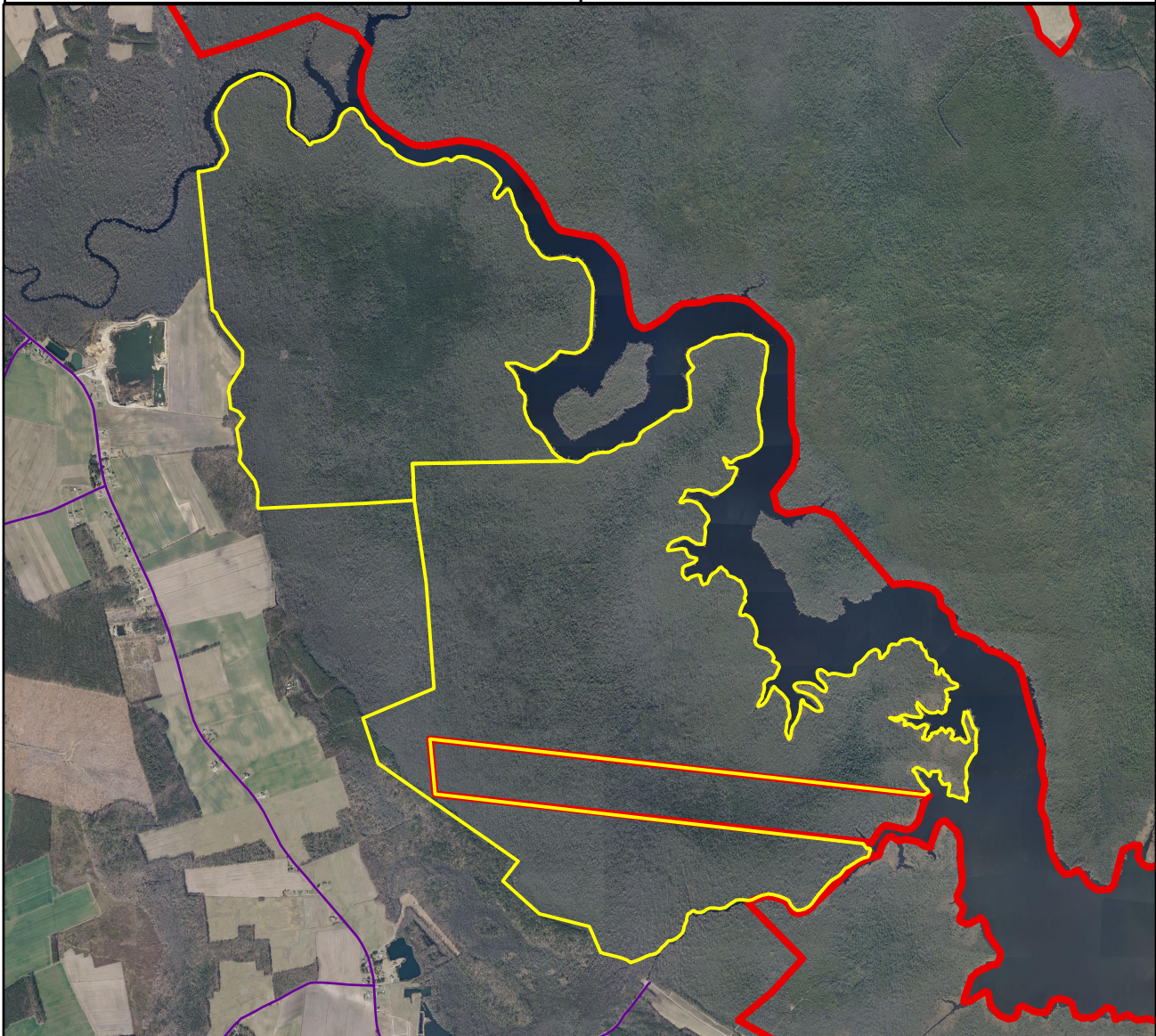




**Aydlette Swamp/Dempsey Sawyer Swamp  
Camden County  
+/- 2,727 Acres**



 Aydlette Swamp/Dempsey Sawyer Swamp  
 North River Game Land



 Aydlette Swamp/Dempsey Sawyer Swamp

 North River Game Land

0 0.375 0.75 1.5 Miles



**EXHIBIT F-3**  
**February 28, 2018**  
**North Carolina Wildlife Resources Commission**  
**Land Acquisition Investigation Form**  
**– PHASE I: INITIAL INVESTIGATION –**

<b>WRC Staff Contact:</b>	Carissa Shelton, Paul Thompson, Kip Hollifield, Kristopher Smith
<b>Date First Presented to Commission:</b>	2/28/2018
<b>Tract Name:</b>	Camp McCall - South Mtns. Game Land
<b>County:</b>	Rutherford
<b>Acreeage:</b>	2 Tracts: 111.7 ac. (ParNo: 1614982); 134.72 ac. (ParNo 1623249) = 246.42 ac.
<b>Tax Value:</b>	1614982: Land=\$219,200, Buildings=\$166,500, 1623249: Land=\$222,800, Total=\$608,500
<b>Deed Book/Page</b>	1614982: 704/307; 1623249: 704/307
<b>Property Owner/Representative:</b>	Owner: Camp McCall Inc./United Methodist Church; Real Estate Agent: Brian Craver
<b>Phone:</b>	office: 704-319-5072; mobile: 980-253-7855
<b>Email Address:</b>	<a href="mailto:Brian.Craver@foundarycommercial.com">Brian.Craver@foundarycommercial.com</a>
<b>Address:</b>	Foundary Commercial, 121 West Trade Street, Suite 2500, Charlotte, NC 28202

**Primary Purpose:**

<input checked="" type="checkbox"/>	Resource Protection
<input checked="" type="checkbox"/>	Resource Management
<input checked="" type="checkbox"/>	User Access
<input checked="" type="checkbox"/>	WRC Facility

**Program Potential:**

<input checked="" type="checkbox"/>	Game Land
<input type="checkbox"/>	Wildlife Conservation Area
<input type="checkbox"/>	Access Area
<input checked="" type="checkbox"/>	Educational Facility

**Type of Acquisition:**

<input checked="" type="checkbox"/>	Purchase
<input type="checkbox"/>	Lease
<input type="checkbox"/>	Easement

**Type of Parcel:**

<input checked="" type="checkbox"/>	Tract
<input type="checkbox"/>	Riparian Corridor

**Grant Potential:**

<input type="checkbox"/>	CWMTF
<input checked="" type="checkbox"/>	Federal Aid (PR, WB, etc.)
<input type="checkbox"/>	Endowment
<input type="checkbox"/>	Donation

**Owner Interest:**

<input checked="" type="checkbox"/>	High
<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Low
<input type="checkbox"/>	No

**Tax Value:**

<input type="checkbox"/>	Year Assessed
<input type="checkbox"/>	PUV?

**Stewardship Considerations:**

<input type="checkbox"/>	Source:
<input type="checkbox"/>	Match:

**Funding Considerations:**

<input type="checkbox"/>	Donation
<input type="checkbox"/>	Bargin Sale
<input type="checkbox"/>	Partner Contribution

**Recommendation:**

<input checked="" type="checkbox"/>	Pursue
<input type="checkbox"/>	Do Not Pursue
<input type="checkbox"/>	Defer

**Additional Comments:**

The Camp McCall property is immediately adjacent South Mountains Game Land and would make both a good educational facility and a good addition to South Mountains Game Land. The property contains buildings/facilities that would serve well as an educational facility. Any of the subject property not needed for the educational facility can be entered directly into the Game Lands Program. Access to the facilities/buildings is excellent and provided directly from S.R. 1729 (Camp McCall Rd.). Additional access is provided directly from N.C. 226. If a portion of the property is entered into the Game Lands Program, access can be provided from either S.R. 1729 or N.C. 226 or both. The asking price from the entire property, including buildings/facilities, is \$650,000 (see attached letter from realtor). It is believed that an offer of \$500,000 would be accepted. Additional information regarding the potential for providing an educational facility on the property is below.

### **Potential for Providing an Educational Facility:**

The Camp McCall property would provide educational and hands on training opportunities for increased awareness of and participation in hunting, shooting and wildlife associated recreation; because, the recruitment and retention of hunters is critical to the long-term conservation and management of N.C.'s wildlife resources. The mission of McCall Hunting Heritage Complex is to educate North Carolina citizens about wildlife resources through increased awareness, knowledge and skills that result in understanding, commitment, informed decisions and constructive actions to ensure the stewardship of the state's wildlife resources. The facility and programs would focus on audiences from: 1) Adults and youth with interest in hunting, 2) Surrounding Schools – FFA and Wildlife Biology classes, 3) Youth organizations – Scouts, 4-H, 4) Audiences with special needs, and 5) Wildlife Conservation College and University groups – Leopold Club, etc.

The location of the Camp McCall property would allow for easy access for participants from large, urban areas (Charlotte, Asheville, and Hickory) to be within an hour to hour and half drive of the facility. Extending further out, the facility would also serve those in Winston Salem, Greensboro, Western North Carolina, and Upstate South Carolina.

Currently, the property has three buildings used for lodging of approximately 70 participants, functioning as a Methodist Camp. The first lodging facility on the property has two kitchenettes with ADA compliant bath/restroom facilities, sleeping approximately 20 participants. The main lodge has bunks for 30+ participants, a small dining hall/meeting hall, and a commercial grade kitchen. The third building, and most recent construction, has bunks for approximately 20 participants and a laundry. The upper level of this building is a two-bed, one-bath apartment which could serve as living quarters for the camp director. There are also two large, outdoor restroom facilities on the property, an office as you enter the property, and two maintenance sheds. There is also a large pavilion and small amphitheater. The property's current recreational uses have been to function as a camp for youth. There is an approximately 2-acre swimming pond that could be utilized as a fishing pond. There is approximately 6 acres of flat recreational area that could be utilized for a number of programs, including archery and small-bore ranges. A small trail system also runs across the property. Some updates and renovations would need to be made to utilize the overnight accommodations for meeting code and ADA requirements for public use.

Programming that would be offered at the facility would include, but not limited to, as single day use: Hunter Education Classes, Getting Started Outdoors (GSO): Hunter Education Programming, Learn to shoot Programs: Marksmanship (pistol, rifle, archery, muzzleloader), Archery Programming: Target and 3-D, Fish for Fun programming, Youth Hunts, Specialty Hunts, Disabled Hunts, Wildlife Watching programs, Beyond BOW, Turkey, Deer, Waterfowl Seminars, Educator Programs – NC WILD, Project WILD, CATCH, etc. , Outdoor skills

EXHIBIT F-3

North Carolina Wildlife Resources Commission  
Land Acquisition Investigation Form  
– PHASE I: INITIAL INVESTIGATION –

Tract Name:	Camp McCall Tract - South Mountains Game Land
County:	Rutherford

**Resources Assessment and Biological Benefits (brief):**

The +/- 247 acre Camp McCall Tract has direct access from DOT maintained Camp McCall Road (S.R. 1729). The tract consists largely of both Southern Appalachian Oak and Southern/Central Appalachian Oak Forest with the remainder in Southern/Central Appalachian Cove Forest. The tract has a small component of Appalachian Hemlock-Hardwood Forest. There are approximately 4.5 acres of open space which is maintained and contains the camp facilities. The timber has been harvested on the majority of the westerly portion of the property. Approximately 0.5 mile of Somey Creek flows north to south along the eastern side of tract. The Little First Broad River originates from the western side of this tract and includes 0.7 miles of both headwaters and main creek body. There is an approximately 2 acre pond with functioning dam and water control device that has served for recreational activities. The pond has historically been drained each fall/winter. Management objectives will include restoring or maintaining the oak and cove forest priority habitats that are located on this tract. Common wildlife species found on this tract include wild turkey, white-tailed deer, raccoon, and gray squirrel. Priority species likely found on the tracts as either permanent residents or transients include: South Mountain gray-cheeked salamander (*Plethodon meridianus*), timber rattlesnake (*Crotalus horridus*), Eastern box turtle (*Terapene carolina*), northern long-eared bat (*Myotis septentrionalis*), prairie warbler (*Setophaga discolor*), and Acadian flycatcher (*Empidonax virescens*). Although not identified on this tract, the Broad River Stream Crayfish (*Cambarus lenati*), Broad River Spiny Crayfish (*Cambarus spicatus*), and Seagreen darter (*Etheostoma thalassinum*) have been found in Somey Creek approximately 0.5 mi. downstream from the tract. The tract adjoins Lone Mountain Natural Area with C2/R2 ratings and also adjoins the Rollins/South Mountains natural area with C1/R2 ratings.

Tract Name	Camp McCall Tract- South Mountains Game Land
Date	February 20, 2018
Staff Completing Form	Thompson/Hollifield

<b>Species</b>	<b>0.556</b>
	Terrestrial
Overall Biodiversity	2
SGCN Species	2
Game Species	2
	Wetland
Overall Biodiversity	1
SGCN Species	1
Game Species	1
	Aquatic
Overall Biodiversity	2
SGCN Species	2
Game Species	2

<b>Comments</b>
Moderate terrestrial biodiversity is based on a diversity of habitat types and their juxtaposition. Moderate aquatic diversity based on the presence of both Somey Creek and Little First Broad. Wetland habitat is limited on this tract.

<b>Habitat</b>	<b>0.667</b>
Size	1
Quality	2
Diversity	2
Rare/Important	2
Connectivity	3
Buffer	2

<b>Comments</b>
The quality of the habitat is good, as is diversity. The property can provide good access and connectivity to South Mountains Game Land.

<b>Public Access</b>	<b>0.444</b>
Hunting/Viewing	3
Fishing	1
Boating	0

<b>Comments</b>
The property provides excellent access for hunting/wildlife viewing on South Mountains GL and can provide some fishing opportunities.

<b>Wildlife Uses</b>	<b>0.600</b>
Hunting	3
Viewing	2
Fishing	1
Boating	0
Education	3

<b>Comments</b>
The property offers good hunting opportunity as well as some opportunity for wildlife viewing. Opportunities for fishing is limited. Educational opportunities are excellent.

<b>Other Values</b>	<b>0.778</b>
Timber Harvest	3
Local Economy	2
Quality of Life	2

<b>Comments</b>
The tract can produce good timber and will offer access to South Mountains GL. This will provide some benefit to the local economy and provide quality of life benefits to local residents.

<b>Feasibility &amp; Logistics</b>	<b>0.800</b>
Existing Infrastructure	3
Compatibility of Multiple Uses on Tract	2
Compatibility with Adjoining Land	2
Inholding/Corridor	2
Proximity to Users	3

<b>Comments</b>
The tract currently has a maintained access road that will provide unimpeded access to the tract. The tracts are very close in proximity to GL users in the Morganton, Marion, and Rutherfordton areas.

<b>Restoration/Mitigation Potential</b>	<b>0.750</b>
Species Restoration	2
Habitat Restoration	2
Access Improvement	3
Threat Mitigation	2

<b>Comments</b>
Restoration and habitat management potential on the tract is good, thus the rank is moderate. If the current tract is placed on the open market, there is potential for it to be sold rather quickly.

<b>Threats</b>	<b>0.467</b>
Number	2
Severity	2
Imminence	2
Manageability	0
Management Cost	1

<b>Comments</b>
This tract will likely be sold quickly on the open market due to the favorable asking price.

<b>Overall Score</b>	<b>4.128</b>
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## Instructions for filling out Phase I Worksheet

### General

1. Fill in the gray cells in Cover Sheet and Page 2. The rest of these instructions pertain to the Worksheet.
2. The worksheet is for assessing opportunistic land acquisitions. Responses should reflect current conditions.
3. The worksheet is protected so that you can only edit certain cells. These are shaded gray.
4. The gray cells in the worksheet will change color after you have entered text or a numeric value.
5. Ratings for each metric must be an integer from 0 to 3. If you enter anything else, you will get a warning.
6. Except for the Threats category, 0 represents an undesirable condition (i.e., tract is not suitable for acquisition) and 3 represents a preferred condition (i.e., the tract is valuable and worth pursuing). For subjective metrics, start with a mindset that the parcel provides average/moderate conditions (i.e., rating of 2). Don't automatically give a rating of 3 without justification.

### Species

1. If necessary, get assistance from staff in other Divisions/Programs or other sources (GIS, NHP, LCC models, etc.).
2. The scores are meant to be based on best professional judgment, not an exact count of species.
3. Rating: 3 = High species count; 2 = Moderate species count; 1 = Low species count; 0 = Very low species count.
4. Overall biodiversity means all species of each group.
5. SGCN species are those listed in the 2015 NC Wildlife Action Plan.
6. Game species are those managed for sport or take. For game species, also consider population size.

### Habitat

1. Quality refers to habitat condition. Diversity refers to the variety of habitat types.
2. Rare/Important refers to critical habitat for listed or SGCN species. Consider quantity and quality.
3. Connectivity means the parcel provides a corridor to other conservation lands or connectivity in river systems.
4. Buffer means the parcel provides additional conservation land around a critical habitat type or allows managers to appropriately use tools such as prescribed fire without impacting adjoining land.
5. For all metrics except Size: 3 = High; 2 = Moderate; 1 = Low; 0 = None
6. Size: 3 = >3,000 acres; 2 = 1,000 - 3,000 acres; 1 = 100 - 1,000 acres; 0 = <100 acres

### Public Access

1. The parcel provides public access to fish/wildlife resources on that parcel or to adjoining land or water.
2. Rating: 3 = Excellent existing access or provides critical access; 2 = Average; 1 = Poor; 0 = None

### Wildlife Uses

1. Recreational or educational use of resources.
2. Rating: 3 = High; 2 = Moderate; 1 = Low; 0 = None

### Other Values

1. Timber Harvest is not the value of timber, but the potential to produce, manage and harvest timber.
2. Local Economy is the ability of the parcel to act as an economic driver by attracting substantial public use (e.g., unique wildlife viewing, hunting, etc.).
3. Quality of Life is the indirect/secondary benefit to the local community by providing green space or walking/hiking opportunities.
4. Rating: 3 = High; 2 = Moderate; 1 = Low; 0 = None

### Feasibility & Logistics

1. Existing Infrastructure includes road system, buildings, etc. Consider quantity and quality. If a liability and has to be removed/repaired, score 0 or 1.
2. Compatibility of Multiple Uses is the ability of the parcel to provide hunting, viewing, fishing, etc. at the same time.
3. Compatibility with Adjoining Land should consider things like public safety, noise, prescribed burns, etc. Consider both the impact of wildlife users and management on adjoining land and adjoining landowners on the parcel.
4. Inholding/Corridor - Does the parcel fill in a hole in existing WRC ownership or does it provide a wildlife corridor?
5. Proximity to Users refers to location of parcel to targeted user groups (e.g., new game land near population center).
6. Rating: 3 = High; 2 = Moderate; 1 = Low; 0 = None

### Restoration/Mitigation Potential

1. Restoration Potential is the ability to improve species, habitat or access through natural processes or management actions.  
Potential: 3 = High; 2 = Moderate; 1 = Low; 0 = None
2. Threat Mitigation is the degree to which the threat can be avoided, minimized or delayed by acquiring the parcel.  
Mitigation: 3 = Avoids Threats; 2 = Minimizes Threats; 1 = Delays Threats; 0 = None

### Threats

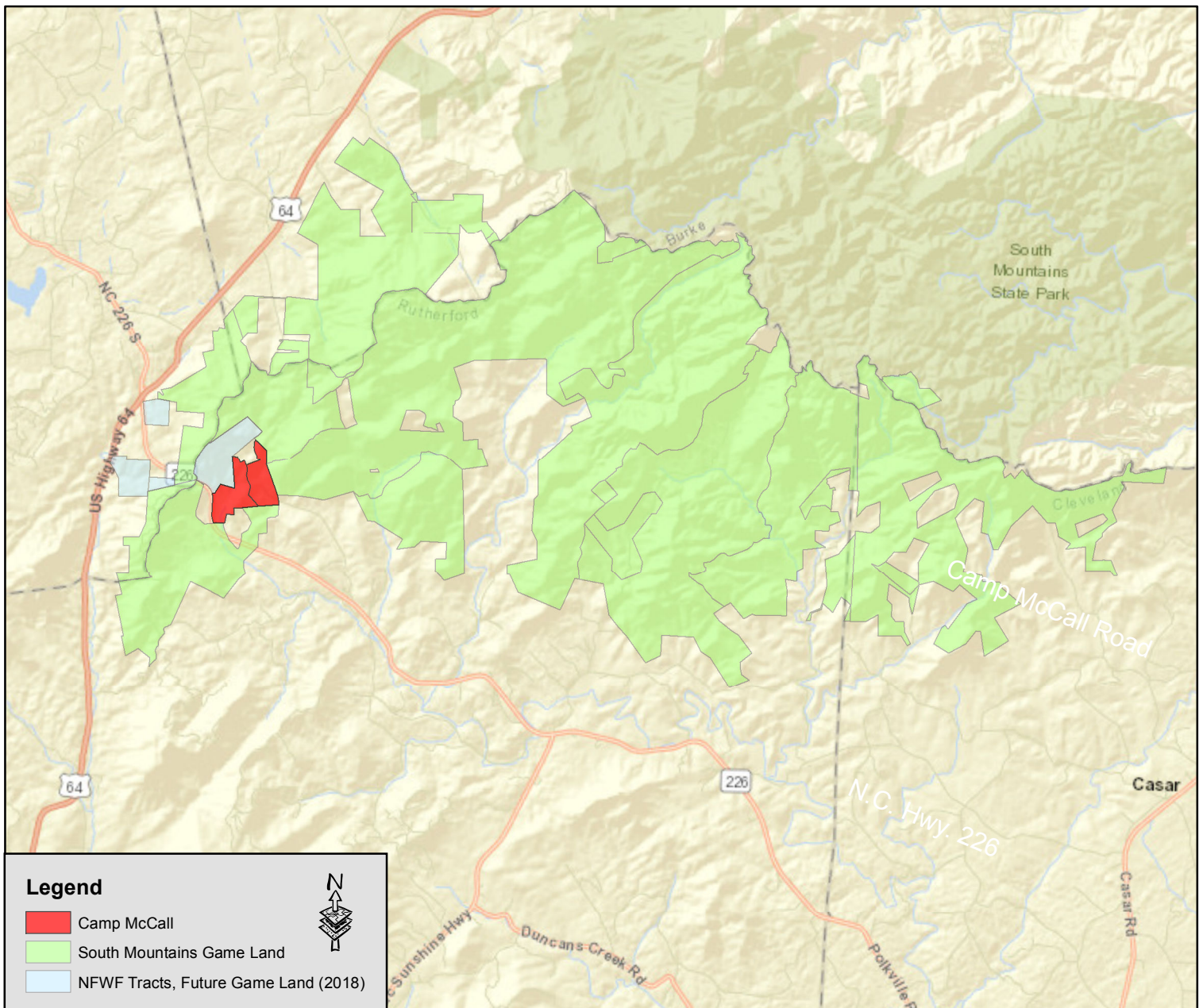
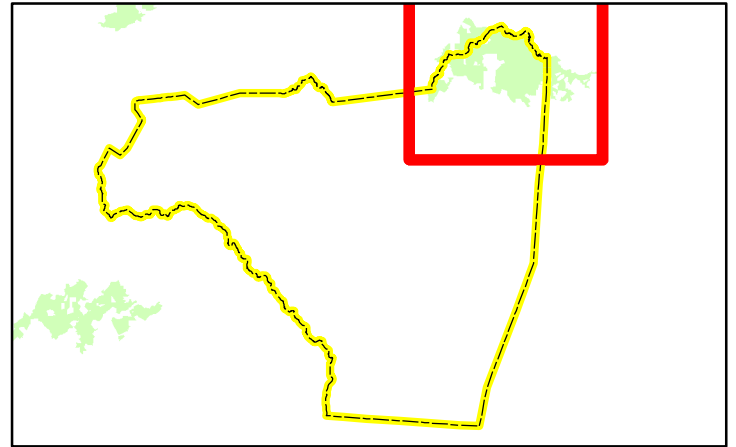
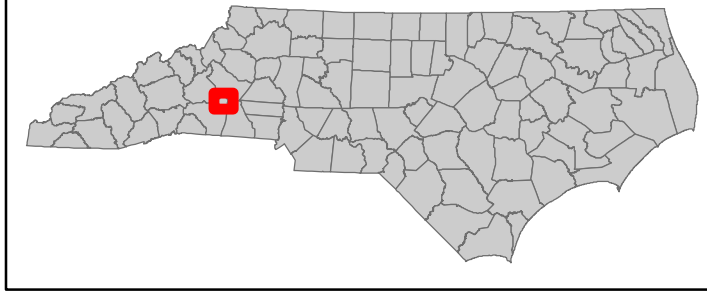
1. Threats reduce the value of a parcel, so the overall Threat score will be subtracted from the total score of the other metrics.
2. Number of Threats: 3 = Many; 2 = Some; 1 = Few; 0 = None
3. Severity of Threats: 3 = Critical; 2 = High; 1 = Moderate; 0 = Low
4. Imminence (time or distance) of Threats: 3 = Extant; 2 = Very Near; 1 = Moderately Near; 0 = Distant
5. Manageability of Threats: 3 = Unmanageable; 2 = Low; 1 = Moderate; 0 = High
6. Management Cost to Control Threats: 3 = High; 2 = Moderate; 1 = Low; 0 = Minimal

### Scoring

1. Scoring for each section is normalized (range 0 - 1).
2. The overall score is calculated by adding individual section scores and subtracting the Threat score.
3. The overall score will not calculate unless there is at least one ranking filled in for each section, even if a zero.
4. The overall score ranges from 7 (all values high and no threats) to -1 (all values zero and high threats).

# Camp McCall Tract, South Mountains Game Land, Rutherford Co.

Camp McCall Tract, +/- 246 Acres



## Legend

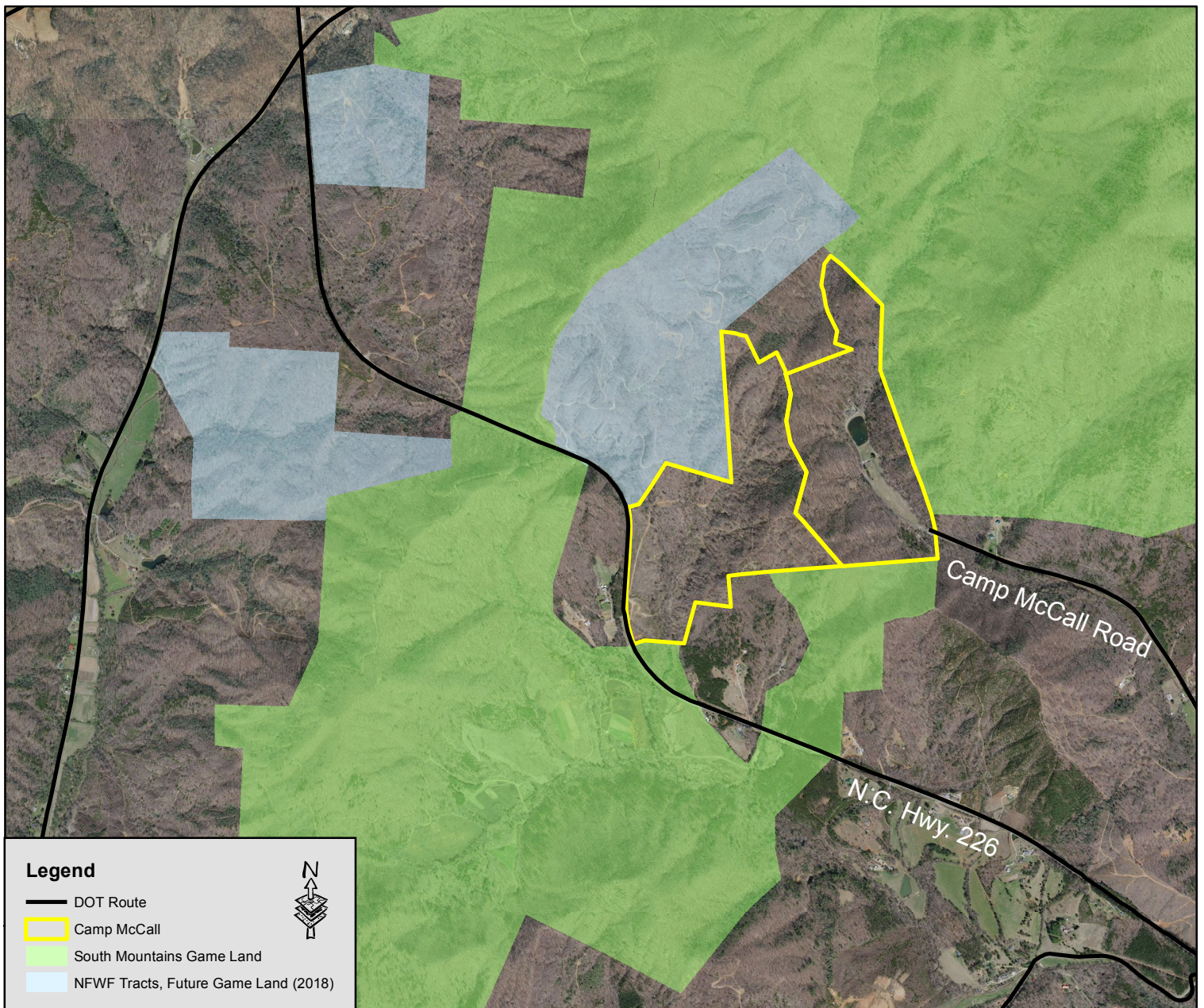
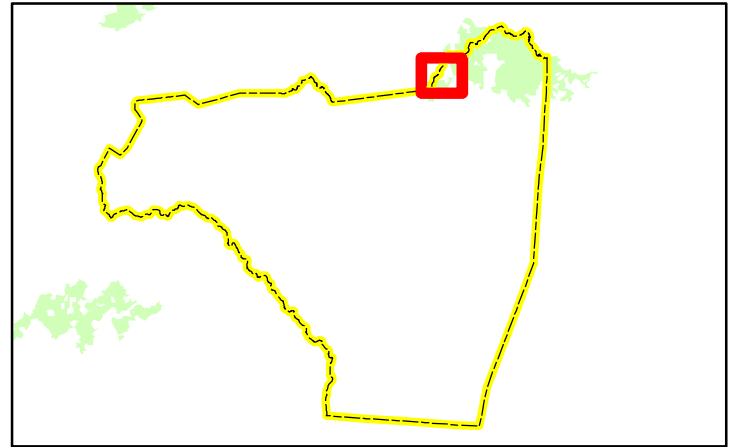
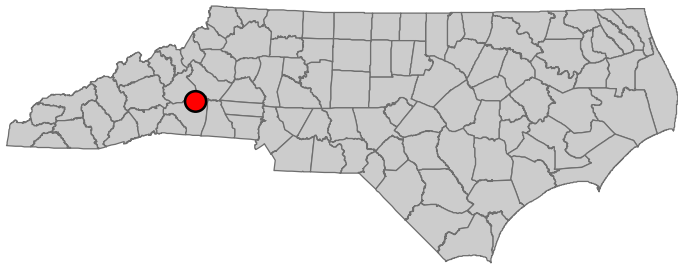
- Camp McCall
- South Mountains Game Land
- NFWF Tracts, Future Game Land (2018)



0 2.5 5 10 Miles

# Camp McCall Tract, South Mountains Game Land, Rutherford Co.

Camp McCall Tract, +/- 246 Acres

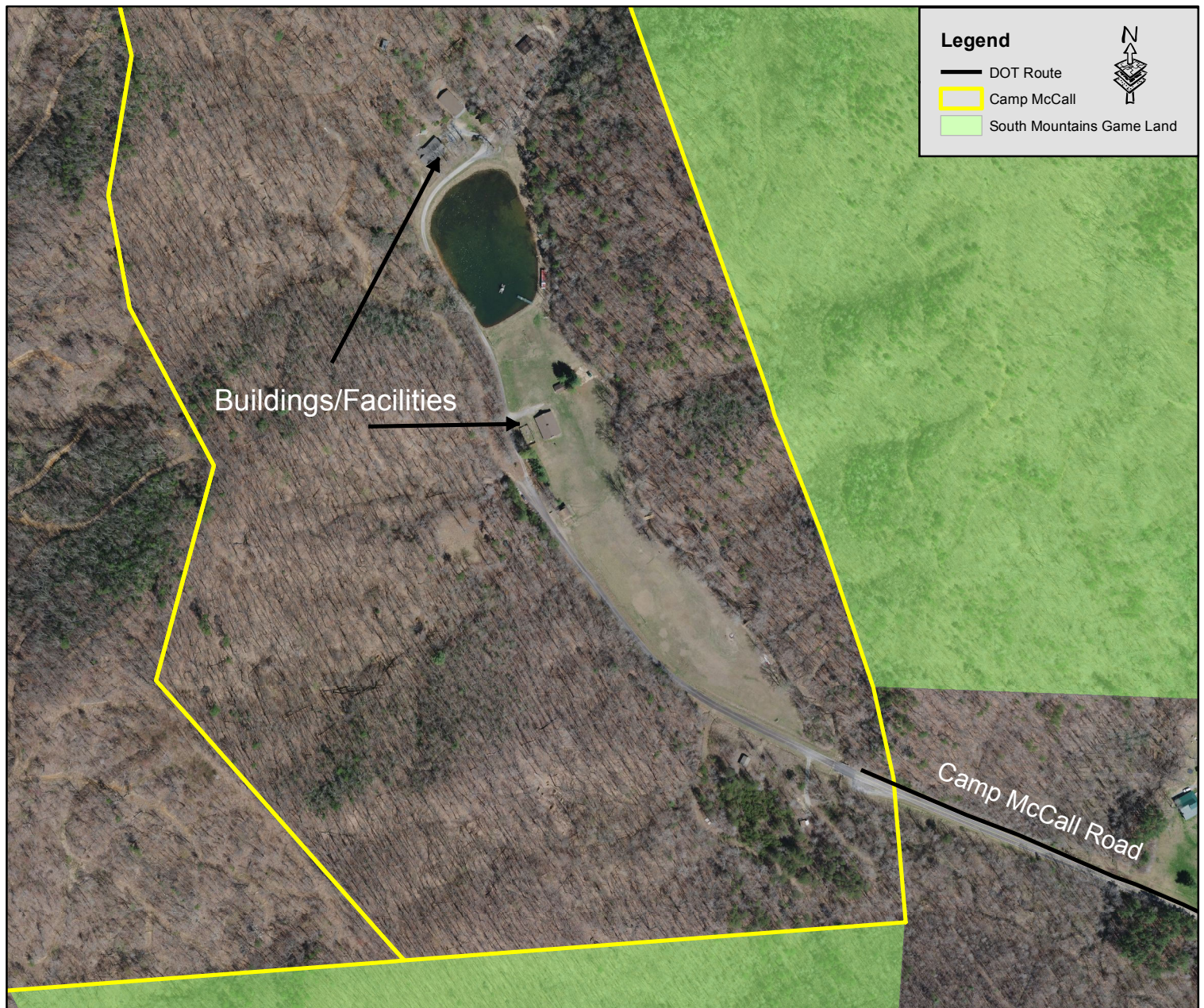
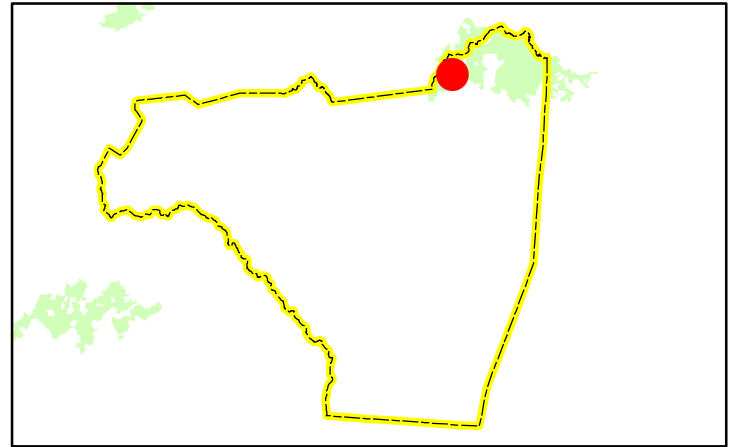
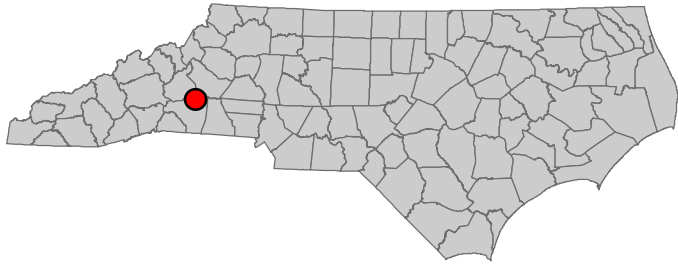


0 0.5 1 2 Miles



# Camp McCall Tract, South Mountains Game Land, Rutherford Co.

Camp McCall Tract, +/- 246 Acres



Buildings/Facilities

Camp McCall Road

0 0.075 0.15 0.3 Miles

# EXHIBIT G

February 28, 2018



## ◊ North Carolina Wildlife Resources Commission ◊

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February 28, 2018

### MEMORANDUM

TO: Brian McRae, Section Chief  
Land and Water Access

FROM: Chris Jordan, Game Lands and Forest Resources Manager  
Land and Water Access

SUBJECT: Permanent Right of Way Easements at Sandhills Game Land

NCDOT seeks to purchase permanent Right-of-Way easements as part of the Millstone Road bridge replacement project.

NCDOT is requesting two Permanent Right-of-Way Easement that total 0.064 acres. Permanent easements are requested because the culvert and protective rip-rap are permanent impacts that are outside the existing right-of-way. These easements are also needed to allow permanent access to the culvert for future maintenance needs.

Staff recommends seeking Commission approval to grant the easements to NCDOT with compensation to be fair market value as determined by the NC State Property Office.

Land and Water Access

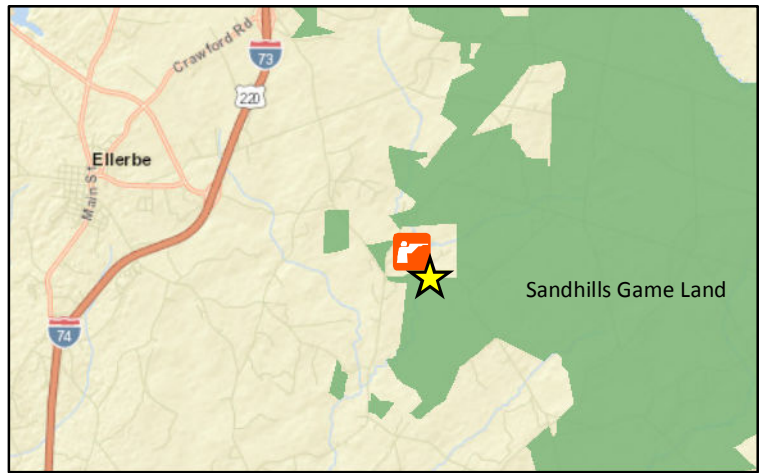
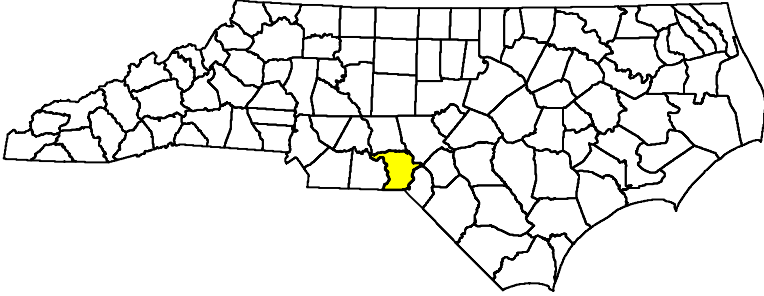
Mailing Address: 1720 Mail Service Center, Raleigh, N.C. 27699-1720



Physical Address: 1751 Varsity Drive, Raleigh, N.C. 27606

Phone: 919-707-0150

Fax: 919-707-0162

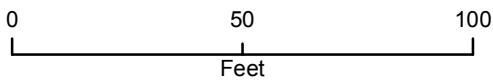
**Bridge Replacement  
Richmond County  
0.064 Acres**



-  Replacement Property
-  NC DOT Right-of-Way



**February 20, 2018**



# EXHIBIT H

February 28, 2018



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◻ North Carolina Wildlife Resources Commission ◻

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Gordon Myers, Executive Director

February 20, 2018

MEMORANDUM

TO: Brian McRae  
Land and Water Access

FROM: David Stewart  
Land and Water Access

SUBJECT: Nicholson-NCWRC Reciprocal Easements  
NCWRC Wood Tract, Nantahala Game Land. Jackson County

Mrs. Wanda Nicholson of 800 Grays Ridge Road, Tuckasee NC 28783, has recently requested an easement, across NCWRC land, to her 10.89-acre tract of land in Jackson County (PIN 8506-14-8147). The property has been in her family for several generations but due to the wishes of her grandfather, a legal easement was not pursued. A hand-shake agreement was made between Mrs. Nicholson's grandfather and Mr. Wood, owner of the Wood Tract at that time. In the eyes of the grandfather, that was binding enough. Now that the grandfather has passed away and Mrs. Nicholson owns the property, she would like to memorialize an access and utility easement between herself and NCWRC along an existing access road that runs between Highway 281 and the Nicholson property, for approximately one half mile across the game land.

Mrs. Nicholson's easement will provide access to her property and will facilitate plans to build one home on the property. Mrs. Nicholson also requests an easement to run underground utilities across this same access road to her property. The easement is important to Mrs. Nicholson since this route is the only direct and reasonable access to her property and will

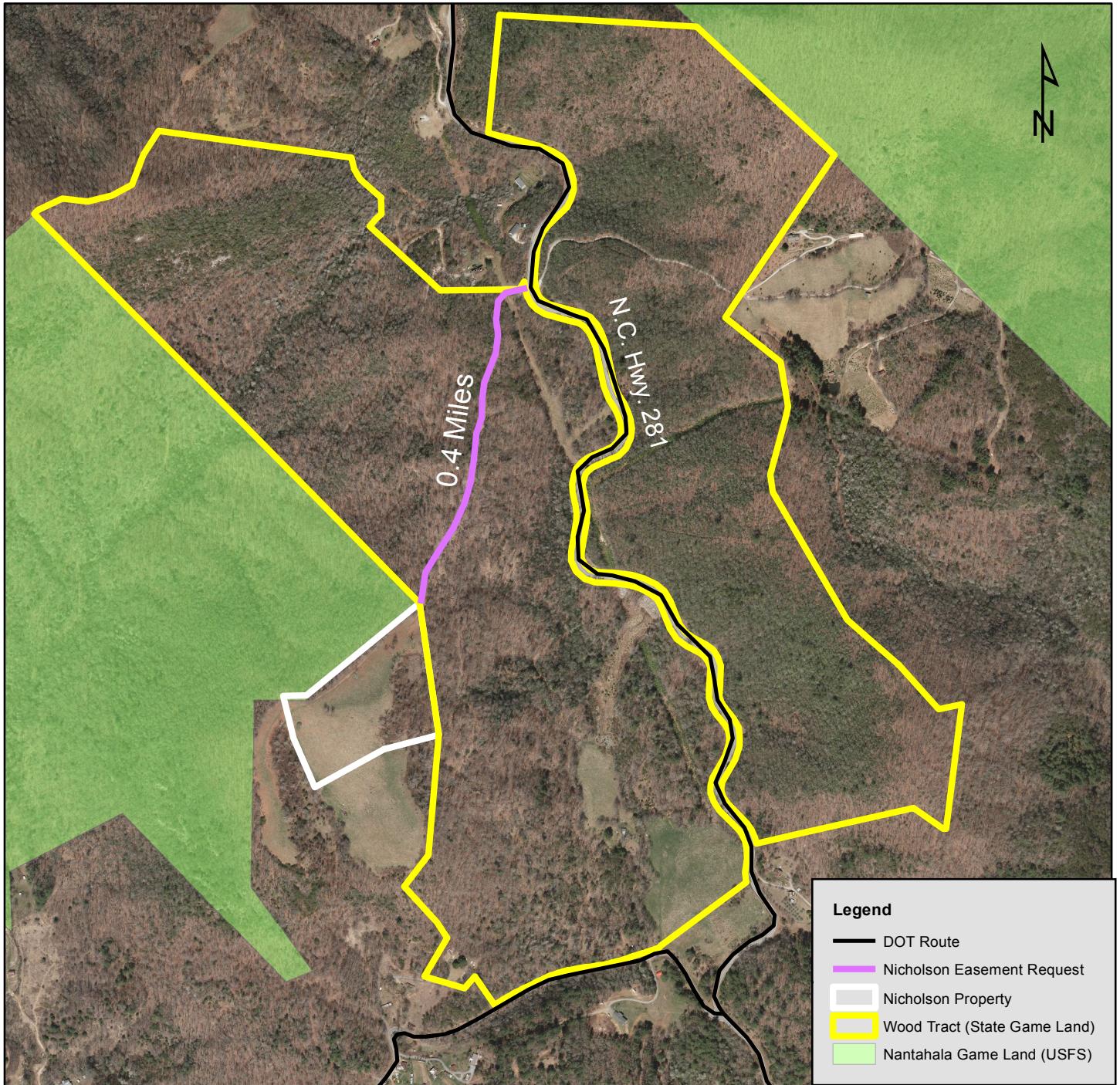
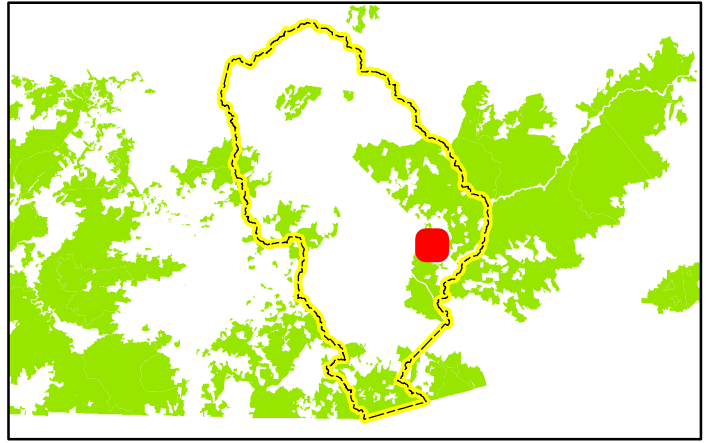
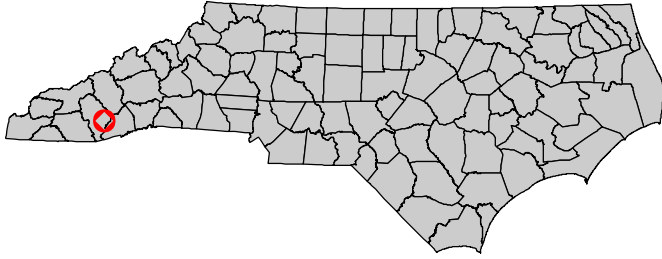
facilitate plans to build a home on her property. The access road will most likely be maintained as an open road to the public for game land access. NCWRC can also use the road for management projects such as timber harvest and prescribed fire/fire control.

Mr. Nicholson did not request an exact width for the easement. Her request is that the easement be wide enough for routine daily travel and wide enough that large trucks taking supplies for home construction and fire trucks. Staff recommends granting an easement that is approximately 0.5 miles long and 20 feet wide and include the provision for underground utilities provided that:

1. WRC bear no associated expense
2. the easement serve no commercial purpose
3. the easement includes a damage liability clause and restrictions as necessary to prevent
4. interference with the operation and maintenance game land
5. The easement is for one home only, no sub-divided lots
6. Mrs. Nicholson pay fair market value for the easement

Per request from the Commission on December 7, staff inquired with Ms. Nicholson and she is not interested in selling her property.

Nicholson Easement Request,  
Wood Tract, Nantahala Game Land,  
Jackson Co.



**Legend**

- DOT Route
- Nicholson Easement Request
- Nicholson Property
- Wood Tract (State Game Land)
- Nantahala Game Land (USFS)

0 0.125 0.25 0.5 Miles

# EXHIBIT I

February 28, 2018



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## North Carolina Wildlife Resources Commission

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Gordon Myers, Executive Director

February 20, 2018

### MEMORANDUM

TO: Brian McRae, Chief  
Land and Water Access Section

FROM: Brent Wilson, Coastal Ecoregion Supervisor  
Land and Water Access Section

SUBJECT: Outer Banks Dare Challenge Project

The Outer Banks Dare Challenge is a non-profit dedicated to assisting people who have life-controlling problems. A major focus of this group in recent years has been the opioid crisis that has impacted much of the nation. To assist with the opioid crisis in eastern North Carolina, Outer Banks Dare Challenge needs to expand and build upon its existing infrastructure. Therefore, Dare Challenge as inquired about obtaining 4 acres of Roanoke Island Marshes Game Land that are directly adjacent to their current property (see attached maps “WRC Property Disposition Dare County”).

Approximately 120 acres of Roanoke Island Marshes Game Land was acquired in 2004 with a Clean Water Trust Fund award. As a result, these 120 acres were dedicated as a Primary Area of a North Carolina Nature Preserve. For the Commission to dispose of the 4 acres of interest, Clean Water Management Trust Fund and the Natural Heritage Program need to authorize this parcel be de-dedicated as a Nature Preserve.

Clean Water Management Trust Fund and the Natural Heritage Program have two main criteria they consider when evaluating an area to be de-dedicated as a Nature Preserve:

1. Mitigation for the de-dedicate area be at a 3:1 ratio
2. Financial value of the mitigation needs to be of equal or greater value

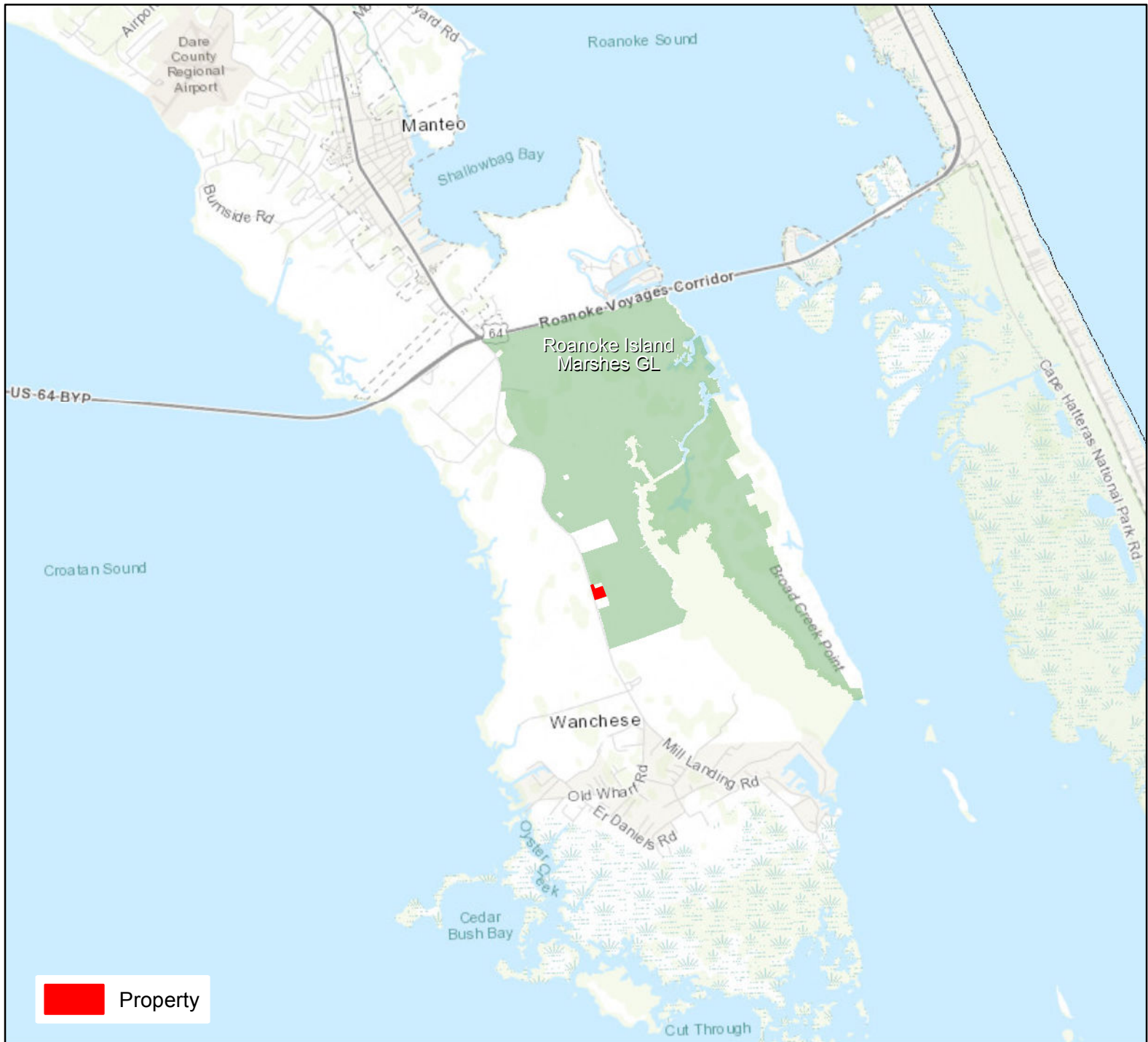
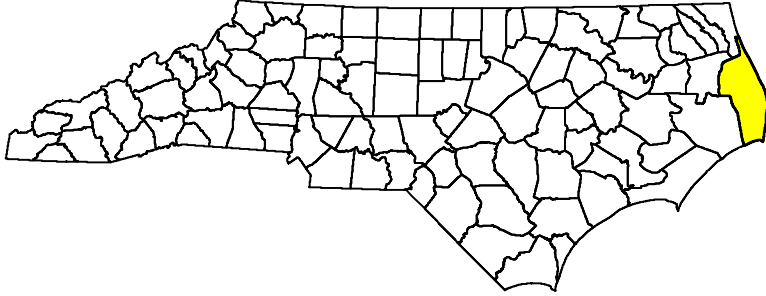
To meet the above mitigation needs, Dare Challenge has found a private property owner willing to donate 12 (or more) acres of wetlands to the Commission. This parcel is in Currituck County and will have a 20-foot-wide easement that provides public access from Albemarle Sound (see attached maps "Proposed Parcel Currituck County").

Staff request approval to:

- Obtain appraisals of both parcels to determine financial value of the lands in question. Appraisals will be paid for by Dare Challenge.
- Work with NC State Property Office to swap the 4 acre parcel at Roanoke Island Marshes Game Land with the 12+ acre parcel in Currituck County if the appraisals indicate that the Currituck parcel is equal or greater in value than the game land parcel.



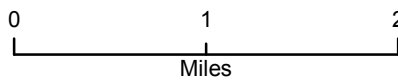
# WRC Property Disposition Dare County 4.2 Acres



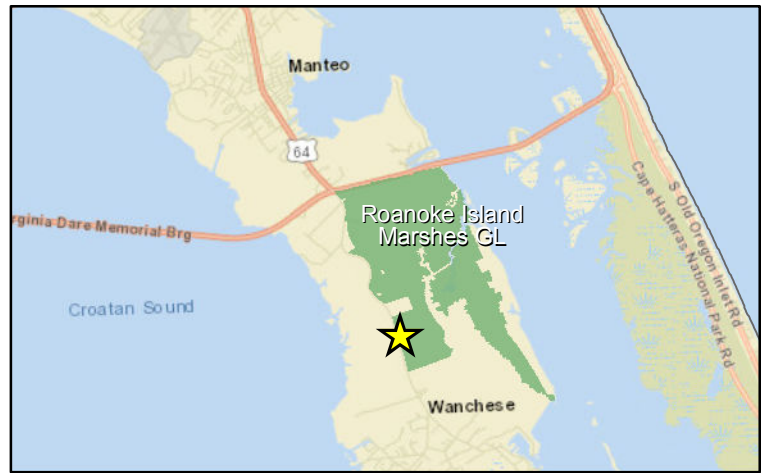
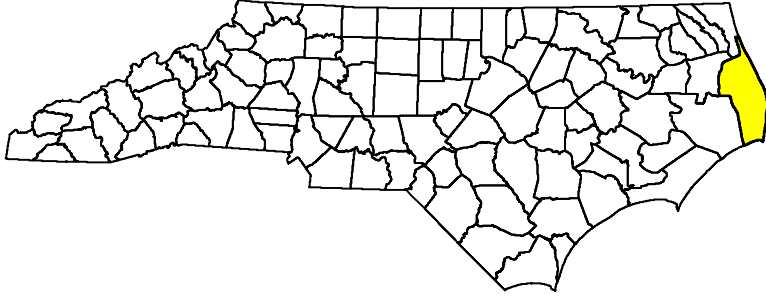
 Property



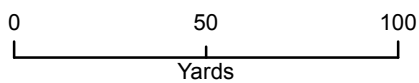
February 20, 2018



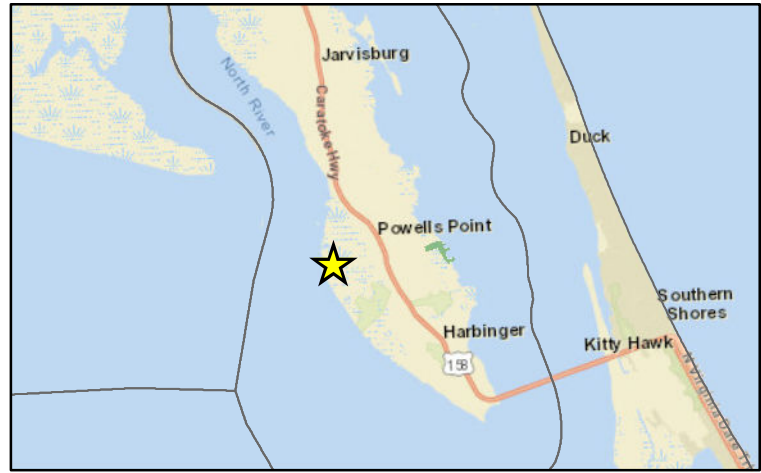
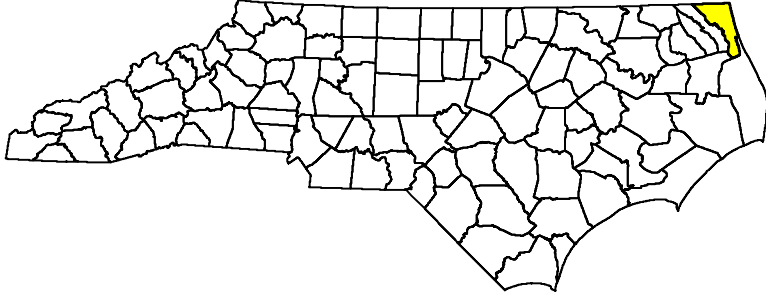
**WRC Property Disposition  
Dare County  
4.2 Acres**



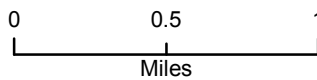
**February 20, 2018**



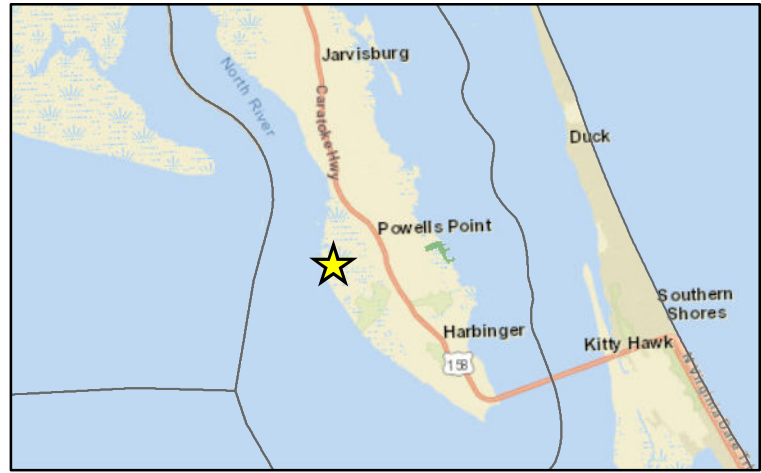
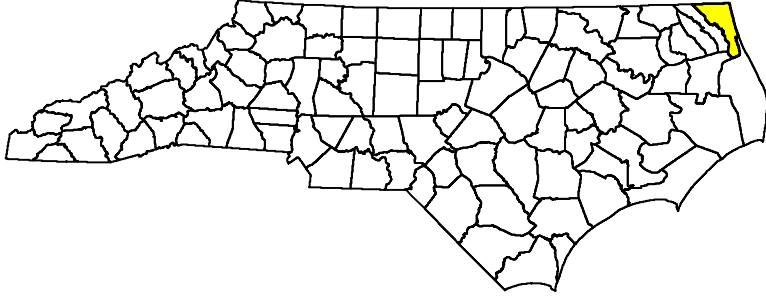
# Proposed Parcel Currituck County 12 Acres



February 20, 2018



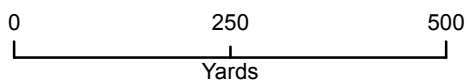
**Proposed Parcel  
Currituck County  
12 Acres**



Owner: Wells, Amy D  
& Bennett, Roland K



**February 20, 2018**



# EXHIBIT J

February 27, 2018



## ◊ North Carolina Wildlife Resources Commission ◊

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February 27, 2018

### MEMORANDUM

TO: Gary Gardner, Section Chief  
Engineering

FROM: Steve Bailey, Design Engineer

SUBJECT: McDowell County Shooting Range  
Ashworth Road, Marion, NC McDowell County

WRC proposes to partner with McDowell County at their property off Ashworth Road to design and build a shooting range that the county will then operate. The range will include a minimum of a 100-yard rifle range, a 25-yard pistol range and a 3-D archery course. The project will include road work, bridge construction, parking, shooting shelters, berms, an office, and other needed safety features.

The total estimated project cost for the 100-yard range option would \$1,891,002.10 if the whole project was contracted out. Pittman-Robertson would fund \$1,418,251.85. \$472,750.53 from the WRC Endowment Fund interest will meet the 25% state funds match. We also have the potential for in-kind donation of the McDowell County property to WRC to utilize as in-kind match and reduce the need for state funding or allow for a larger rifle range to be built as the county would prefer. Performing the design and major parts of the construction with WRC resources would reduce the cost by an estimated \$250,000.

Staff recommends seeking WRC approval to proceed with the McDowell County Shooting Range under an executed MOA.

Land and Water Access

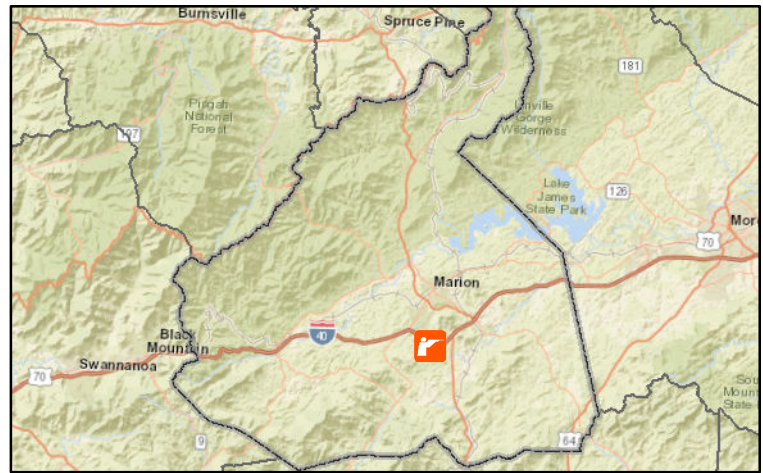
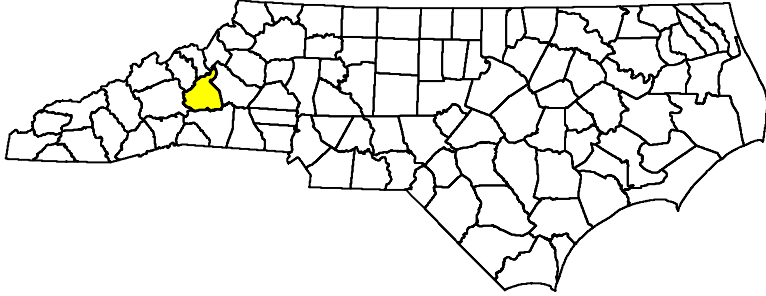
Mailing Address: 1720 Mail Service Center, Raleigh, N.C. 27699-1720



Physical Address: 1751 Varsity Drive, Raleigh, N.C. 27606

Phone: 919-707-0150

Fax: 919-707-0162

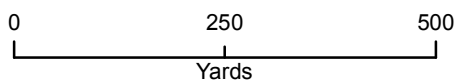
# Proposed Shooting Range McDowell County

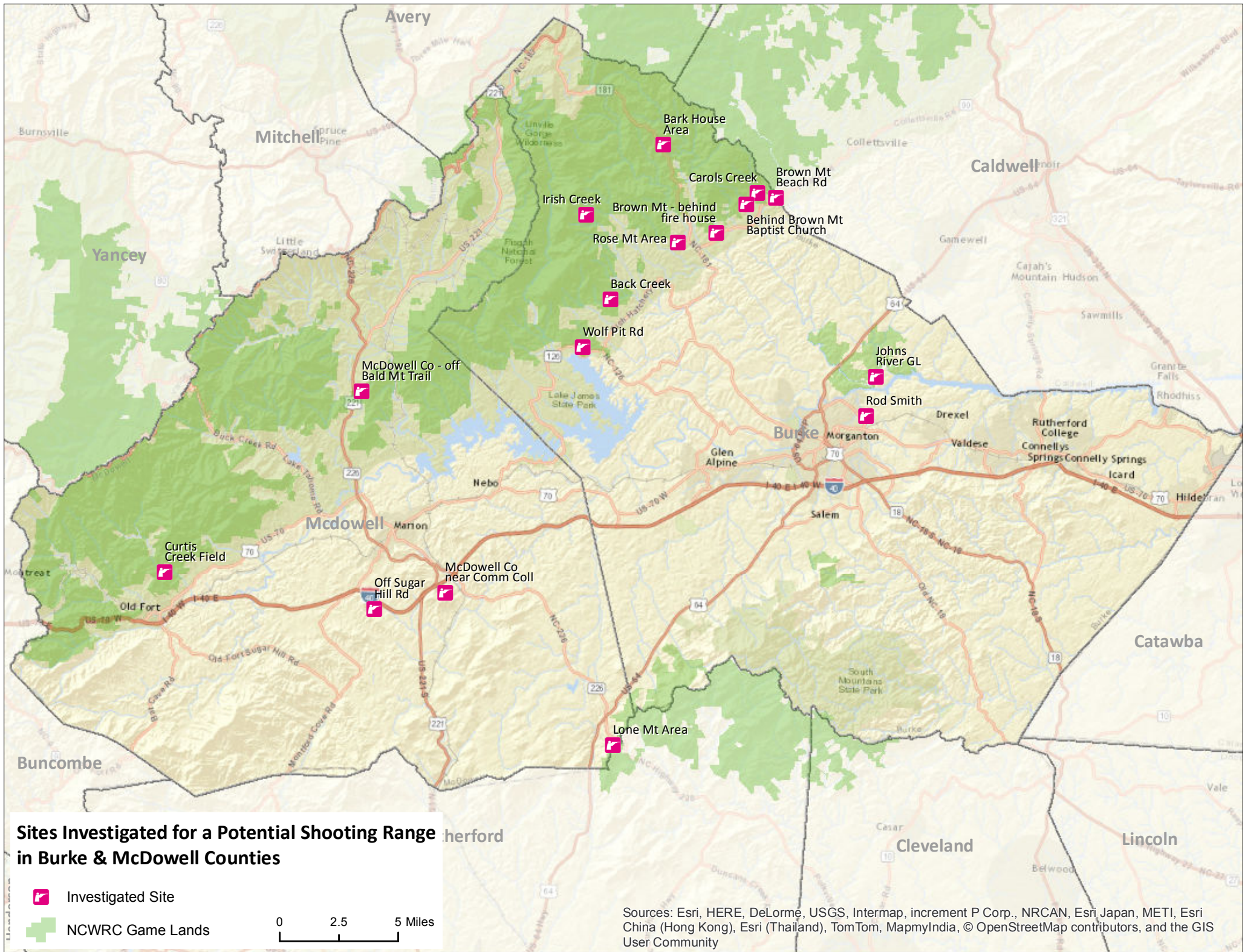


-  Proposed Shooting Range
-  McDowell County Property





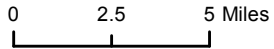
February 20, 2018





**Sites Investigated for a Potential Shooting Range in Burke & McDowell Counties**

-  Investigated Site
-  NCWRC Game Lands



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

## Range Usage Data

<u>WRC Staffed Ranges</u>	<u>2017</u>	<u>% Increase from 2016</u>
Wayne E Smith Cold Mountain Shooting Range	8,620	41%
John Lentz Hunter Education Complex	6,484	44%
Flintlock Shooting Range	7,941	84%

### Partnership Ranges

Holly Shelter Shooting Range	10,978
Foothills Public Shooting Complex	16,332

Lowest usage month for both ranges	January
Highest usage month for both ranges	November

## Area Population Data

Population within 30 mile radius	819,891
Population within 50 mile radius	1,206,282



# McDowell County Ashworth Road Site Summary

## Highlights

- Easy access from I-40 – 35 miles from Asheville and 45 miles from Hickory
- County provided land
- County partnership to operate after construction
- Overwhelming community support – Sen. Hise, Rep. Meadows, County Commission, Chamber of Commerce
- Excellent sound study results

## Challenges

- Terrain will require significant grading and fill
- Entrance road will be nearly 1 mile and require a new bridge
- County requests the longest yardage range possible for the site (push for 1000 yd)
- Construction costs are up 20% according to the State Construction Office

## Public Meeting Held February 6<sup>th</sup> in Marion

- Approximately 60-65 attendees
- Chairman of the County Commission David Walker spoke
- Only 1 verbal opposition – neighboring property owner
- 53 comment cards returned – all in favor except 1
- In attendance were 3 County Commissioners, County Manager, County Planner, Director of the McDowell County Chamber of Commerce, McDowell High School 4-H Leader, Members of the Planning Commission

# Cost Estimates

Cost estimate assuming all design and construction is contracted out and WRC Funds are used

Range Lenth	Estimated Cost for Base Bid	Cost Increase over 100 YD	PR	State
100 YD	\$ 1,891,002.10		\$ 1,418,251.58	\$ 472,750.53
150 YD	\$ 2,218,894.60	\$ 327,892.50	\$ 1,664,170.95	\$ 554,723.65
200 YD	\$ 2,557,519.90	\$ 666,517.80	\$ 1,918,139.93	\$ 639,379.98

## McDowell County Contributions

Property – 225 acres purchased for \$1,334,000.

Range Operations – at least \$1,200,000 over 25 year project life (salary, utilities, minor maintenance)

Range Lenth	Estimated Cost for Base Bid	Cost Increase over 100 YD	Pittman-Robertson Hunter Ed Funds	State Match w/ Property Donation as In-kind Match
100 YD	\$ 1,891,002.10		\$ 1,418,251.58	\$ -
150 YD	\$ 2,218,894.60	\$ 327,892.50	\$ 1,664,170.95	\$ -
200 YD	\$ 2,557,519.90	\$ 666,517.80	\$ 1,918,139.93	\$ -

## Potential ways to save PR funding costs

- County pursuing DOT assistance for road construction
- Reduce road width – site usage may not allow this work
- Perform design work in-house
- Perform site grading construction with WRC staff

**Ashworth Road Shooting Range - McDowell County**  
**ESTIMATED CONSTRUCTION COSTS**  
**CONCEPT PLAN PHASE - 100 YD RIFLE RANGE, 25 YD PISTOL**  
February 20, 2018

ITEM	QTY		UNIT COST	ITEM COST
<b>Access Road</b>				
Clearing and Grubbing	5.9	AC	\$ 4,000.00	\$ 23,600.00
Grading - Rd	9000	CY	\$ 8.00	\$ 72,000.00
Gravel Base - Rd (20')	105500	SF	\$ 1.50	\$ 158,250.00
Asphalt - Esmt Area (2")	52000	SF	\$ 2.30	\$ 119,600.00
Bridge Crossing	1	LS	\$ 120,000.00	\$ 120,000.00
Erosion Control	1	LS	\$ 53,950.00	\$ 53,950.00
Subtotal				\$ 547,400.00
<b>Range Site Work</b>				
Clearing and Grubbing	6	AC	\$ 4,000.00	\$ 24,000.00
Grading - Range	26000	CY	\$ 8.00	\$ 208,000.00
Gravel Base - Parking	9600	SF	\$ 1.50	\$ 14,400.00
Asphalt - Parking (2")	9600	SF	\$ 2.30	\$ 22,080.00
Erosion Control/Landscaping	1	EA	\$ 51,937.00	\$ 51,937.00
Conc Sidewalk	4000	SF	\$ 3.50	\$ 14,000.00
Back Stops	1	LS	\$ 43,600.00	\$ 43,600.00
Storm Drainage	1	LS	\$ 34,500.00	\$ 34,500.00
Site Ammenities/Signage	1	LS	\$ 32,200.00	\$ 32,200.00
Subtotal				\$ 444,717.00
<b>Range Ammenities and Safety</b>				
Concrete Pad for Sheds	2910	SF	\$ 15.00	\$ 43,650.00
Shed Framing and Roof	2910	SF	\$ 35.00	\$ 101,850.00
Shooting Bench	16	EA	\$ 500.00	\$ 8,000.00
Baffles	480	LF	\$ 350.00	\$ 168,000.00
Subtotal				\$ 321,500.00
<b>Office and Utilities</b>				
Office Building	1	LS	\$ 80,000.00	\$ 80,000.00
Storage Building	1	LS	\$ 10,000.00	\$ 10,000.00
Septic System	1	LS	\$ 5,000.00	\$ 5,000.00
Well	1	LS	\$ 6,000.00	\$ 6,000.00
Electrical	1	LS	\$ 40,000.00	\$ 40,000.00
Subtotal				\$ 141,000.00
Subtotal				\$ 1,454,617.00
Design and CA (15%)				\$ 218,192.55
Contingency (15%)				\$ 218,192.55
<b>Total</b>				<b>\$ 1,891,002.10</b>
Alternate - Pave Remainder of Acc	53500	SF	\$ 2.30	\$ 123,050.00
<b>Total with Alternate</b>				<b>\$ 2,014,052.10</b>

**ASSUMPTIONS**

- Pave access road on property not owned by County
- Pave parking area
- 100yd rifle range and 25 yd pistol range
- No rock excavation included
- Site can be graded to balance
- Access road improved to 20' driving surface

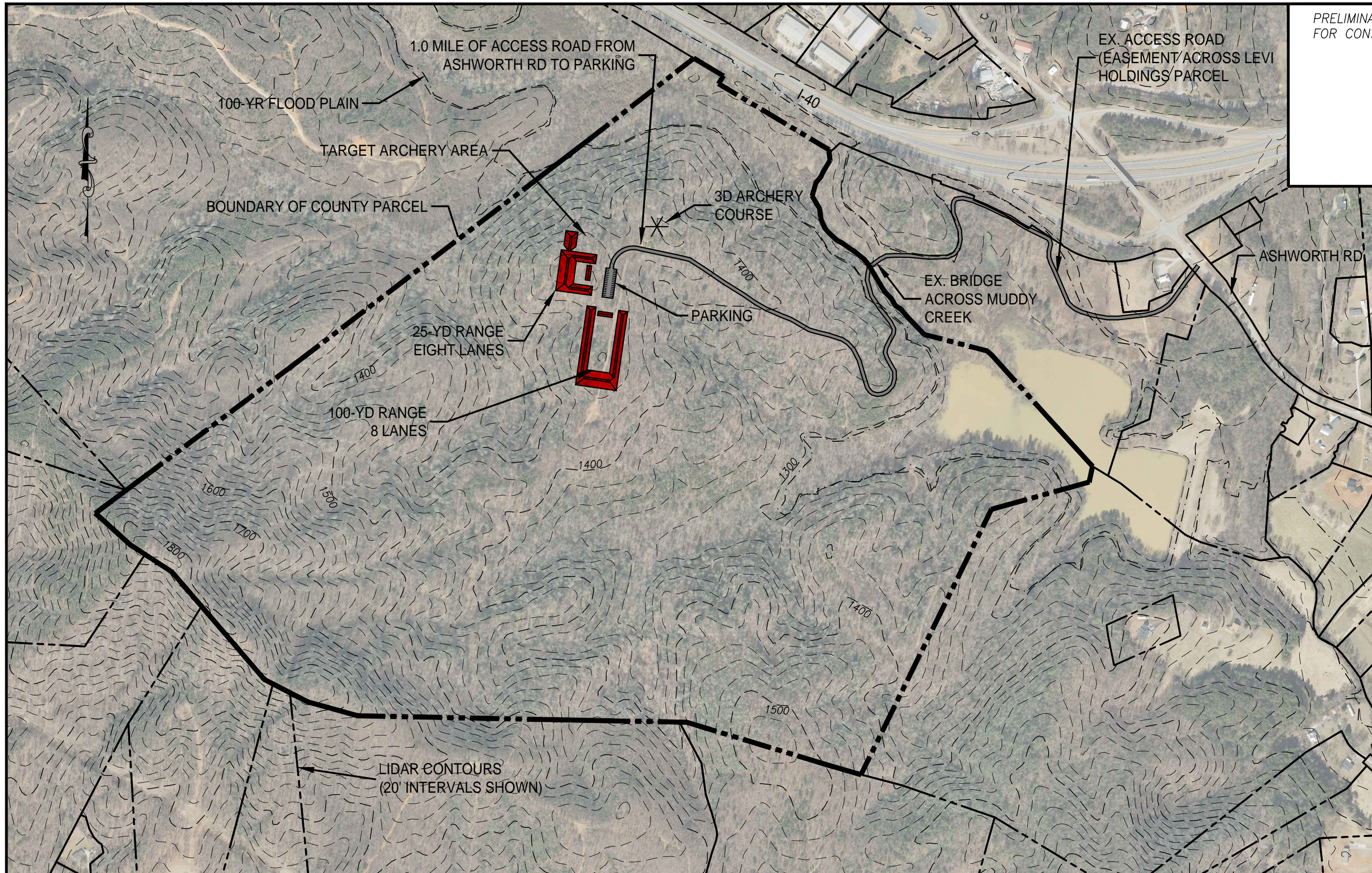
**Ashworth Road Shooting Range - McDowell County**  
**ESTIMATED CONSTRUCTION COSTS**  
**CONCEPT PLAN PHASE - 200 YD RIFLE RANGE, 25 YD PISTOL**  
February 20, 2018

ITEM	QTY		UNIT COST	ITEM COST
<b>Access Road</b>				
Clearing and Grubbing	5.9	AC	\$ 4,000.00	\$ 23,600.00
Grading - Rd	9000	CY	\$ 8.00	\$ 72,000.00
Gravel Base - Rd (20')	105500	SF	\$ 1.50	\$ 158,250.00
Asphalt - Esmt Area (2")	52000	SF	\$ 2.30	\$ 119,600.00
Bridge Crossing	1	LS	\$ 120,000.00	\$ 120,000.00
Erosion Control	1	LS	\$ 53,950.00	\$ 53,950.00
Subtotal				\$ 547,400.00
<b>Range Site Work</b>				
Clearing and Grubbing	9.4	AC	\$ 4,000.00	\$ 37,600.00
Grading - Range	85232	CY	\$ 8.00	\$ 681,856.00
Gravel Base - Parking	9600	SF	\$ 1.50	\$ 14,400.00
Asphalt - Parking (2")	9600	SF	\$ 2.30	\$ 22,080.00
Erosion Control/Landscaping	1	EA	\$ 51,937.00	\$ 51,937.00
Conc Sidewalk	5500	SF	\$ 3.50	\$ 19,250.00
Back Stops	1	LS	\$ 43,600.00	\$ 43,600.00
Storm Drainage	1	LS	\$ 34,500.00	\$ 34,500.00
Site Ammenities/Signage	1	LS	\$ 32,200.00	\$ 32,200.00
Subtotal				\$ 937,423.00
<b>Range Ammenities and Safety</b>				
Concrete Pad for Sheds	2910	SF	\$ 15.00	\$ 43,650.00
Shed Framing and Roof	2910	SF	\$ 35.00	\$ 101,850.00
Shooting Bench	16	EA	\$ 500.00	\$ 8,000.00
Baffles	576	LF	\$ 350.00	\$ 201,600.00
Subtotal				\$ 355,100.00
<b>Office and Utilities</b>				
Office Building	1	LS	\$ 80,000.00	\$ 80,000.00
Storage Building	1	LS	\$ 10,000.00	\$ 10,000.00
Septic System	1	LS	\$ 5,000.00	\$ 5,000.00
Well	1	LS	\$ 6,000.00	\$ 6,000.00
Electrical	1	LS	\$ 40,000.00	\$ 40,000.00
Subtotal				\$ 141,000.00
Subtotal				\$ 1,980,923.00
Design and CA (15%)				\$ 297,138.45
Contingency (15%)				\$ 297,138.45
<b>Total</b>				<b>\$ 2,575,199.90</b>
Alternate - Pave Remainder of Acce:	53500	SF	\$ 2.30	\$ 123,050.00
<b>Total with Alternate</b>				<b>\$ 2,698,249.90</b>

**ASSUMPTIONS**

- Pave access road on property not owned by County
- Pave parking area
- 100yd rifle range and 25 yd pistol range
- No rock excavation included
- Site can be graded to balance
- Access road improved to 20' driving surface

PRELIMINARY - NOT FOR CONSTRUCTION

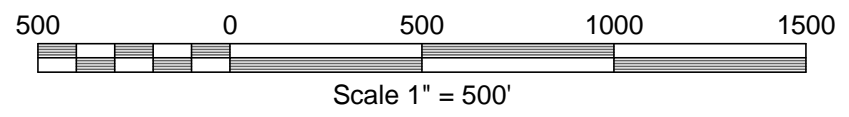


NORTH CAROLINA WILDLIFE RESOURCES COMMISSION  
 DESIGN SERVICES SECTION  
 MAIN OFFICE  
 1720 MAIL SERVICE CENTER  
 RALEIGH, NC 27699  
 Phone: 919.707.0150  
 Fax: 919.707.0162  
 www.ncwildlife.org



**MCDOWELL COUNTY**  
**SHOOTING RANGE - ASHWORTH**  
 McDowell County, NC  
**CONCEPT PLAN #1**

Date: 1/30/2018  
 File Name: MCDOWELL ASHWORTH  
 Surveyed: WRC  
 Designed: SPB  
 Drawn: SPB  
 Approved:  
 Sheet No. C-1.0



PRELIMINARY – NOT FOR CONSTRUCTION

40-YD TARGET ARCHERY RANGE

FIVE STATION 3D ARCHERY COURSE

25-YD RANGE EIGHT LANES

PARKING

EX. ACCESS ROAD TO BE IMPROVED

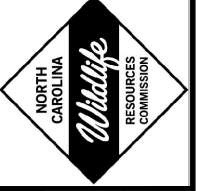
100-YD RANGE 8 LANES

LIDAR CONTOURS (4' INTERVALS SHOWN)



Scale 1" = 100'

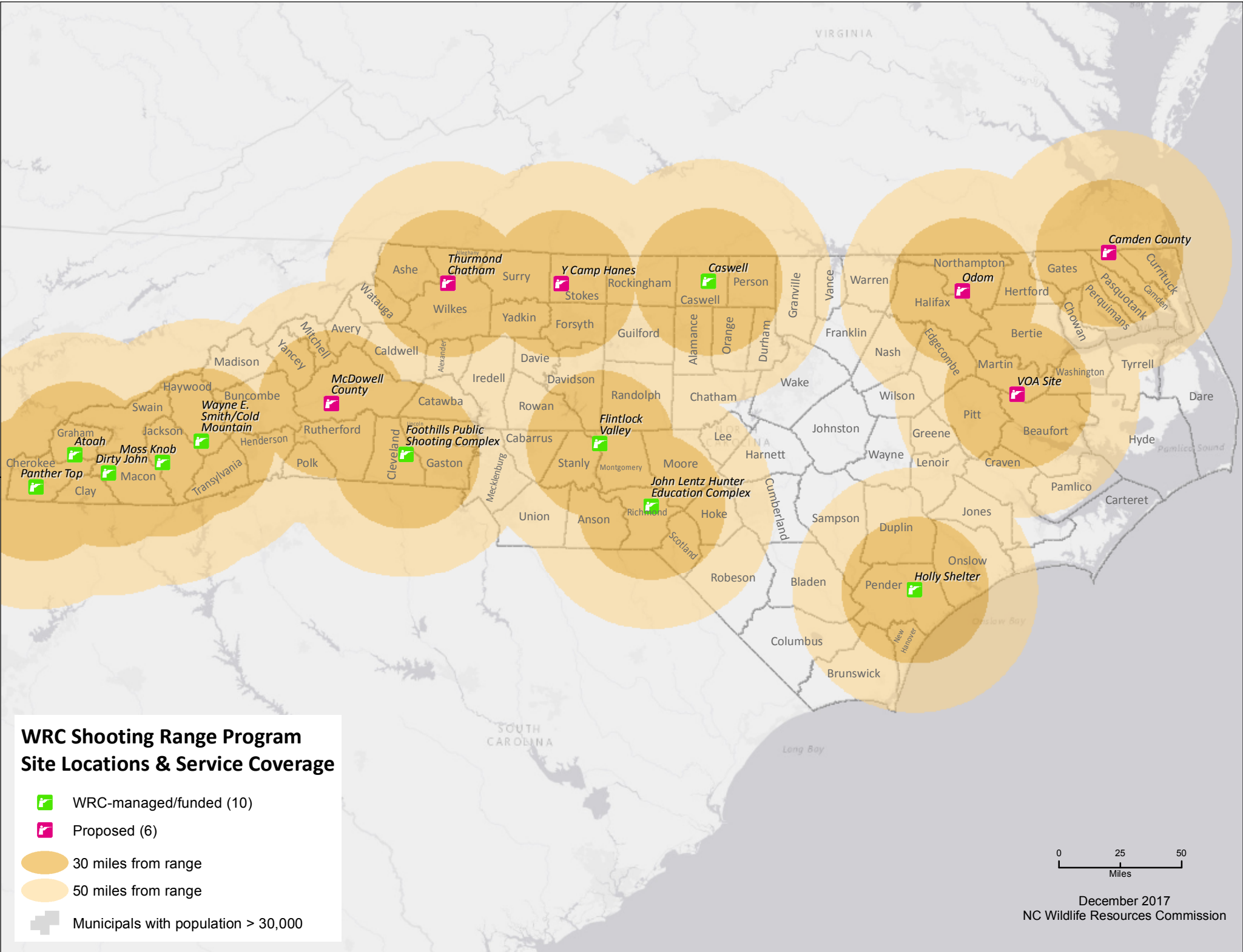
NORTH CAROLINA WILDLIFE RESOURCES COMMISSION  
DESIGN SERVICES SECTION  
MAIN OFFICE  
1720 MAIL SERVICE CENTER  
RALEIGH, NC 27699  
Phone: 919.707.0150  
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MCDOWELL COUNTY  
SHOOTING RANGE - ASHWORTH  
MCDOWELL COUNTY, NC

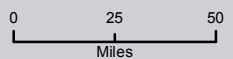
CONCEPT PLAN #1

Date: 1/30/2018  
File Name: MCDOWELL ASHWORTH  
Surveyed: WRC  
Designed: SPB  
Drawn: SPB  
Approved:  
Sheet No. C-1.1



### WRC Shooting Range Program Site Locations & Service Coverage

- WRC-managed/funded (10)
- Proposed (6)
- 30 miles from range
- 50 miles from range
- Municipals with population > 30,000



## Local Area Support

Senator Ralph Hise



Congressman Mark Meadows



### Letters of Support From:

McDowell County Commissioners

McDowell County Chamber of Commerce

McDowell County Sheriff Dudley Greene

North Carolina Cooperative Extension Service – McDowell County

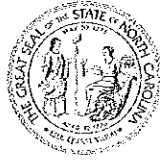
McDowell Technical Community College Law Enforcement Training Center

Carolina West Shooting Club

McDowell Economic Development Association

McDowell High School 4-H Leader





North Carolina General Assembly  
Senate

SENATOR RALPH HISE  
47TH DISTRICT

OFFICE: 312 LEGISLATIVE OFFICE BUILDING  
300 N. SALISBURY STREET  
RALEIGH, NC 27603-5925  
PHONE: (919) 733-3460  
FAX: (919) 754-3253  
EMAIL: ralph.hise@ncleg.net

February 2, 2018

N.C. Wildlife Resources Commission:

I am submitting this letter in support of the proposed shooting range at the Ashworth Road site in McDowell County. Constituents across my district have expressed their support for the proposed site, and I have heard no opposition. Law enforcement, concealed weapon permit holders, sportsmen, McDowell County 4-H, as well as the public at large who have an interest in personal protection and gun safety will all benefit from the use of this site as a shooting range. Along with a host of other stakeholders – McDowell County Sheriff, Law Enforcement Training Center of McDowell Tech, McDowell County Board of Commissioners McDowell County Planning Board, NC Cooperative Extension Service, and McDowell Chamber of Commerce – I believe the proposed shooting range would be a tremendous asset to the county and region as a whole.

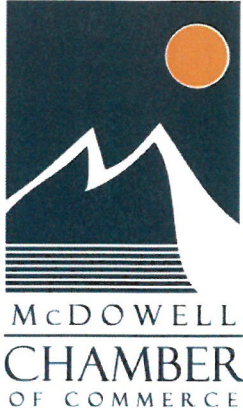
I fully and unreservedly support the proposed shooting range at the Ashworth Road site and will continue to advocate for this project in any way I can.

Sincerely,

A handwritten signature in black ink, appearing to read "Ralph E. Hise, Jr.", written over a horizontal line.

Ralph E. Hise, Jr.  
North Carolina Senate





# McDOWELL CHAMBER OF COMMERCE

1170 West Tate St., Marion, NC 28752  
Tel: 828-652-4240 • Fax: 828-659-9620

[mountains@mcdowellchamber.com](mailto:mountains@mcdowellchamber.com) • [www.mcdowellchamber.com](http://www.mcdowellchamber.com)

January 25, 2016

Ashley R. Wooten, Manager  
McDowell County  
60 East Court Street  
Marion, NC 28752

Dear Mr. Wooten:

On behalf of our board of directors, I want to express our strong support for McDowell County's request to the NC Wildlife Resources Commission for the purpose of developing a shooting range in McDowell County.

The NC Wildlife Resource Commission's Shooting Range Program has generated a high degree of interest and excitement among our board members and others in our community. This project offers an excellent diversity of recreational opportunities for all ages, as well as a safe and educational environment for recreational shooting.

Overall, it's hard to imagine an outdoor setting which offers better accessibility, safety, and education than a facility such as this.

We appreciate the County's initiatives in providing the community with enhanced recreational choices which encourage outdoor lifestyles. The NC Wildlife Resource Commission Shooting Range is a tremendous undertaking but is worthy of the determined efforts by McDowell County Government and a growing number of advocates among the public.

We remain enthusiastically in favor of progress in this endeavor.

Best Regards,

A handwritten signature in black ink, appearing to read "S. Bush". The signature is stylized and fluid, with a large loop at the end.

Steve Bush  
Executive Director

**SHERIFF DUDLEY GREENE**

**593 SPAULDING ROAD, MARION, NC 28752**

Fax: (828) 652-8910 Main: (828) 652-2235 Jail: (828) 652-2236 Investigations: (828) 652-2237

February 5, 2016

Mark Hamlett, PE  
Section Chief  
NC Wildlife Resources Commission  
1720 Mail Service Center  
Raleigh, NC 27699-1720

Re: Proposed McDowell County Shooting Range

Dear Mr. Hamlett,

I am writing to join the McDowell County Board of Commissioners in support of the NC Wildlife Resources Commission's proposal to develop and establish a shooting range for McDowell County. McDowell County has many avid sportsmen and some 2,600 Concealed Weapon Permit holders with no public facility for these individuals to maintain their familiarity and skills with their firearm, which is vital to safe operations. As a result, I receive frequent inquiries about where these individuals might be able to go for that purpose and I suspect many are frustrated to the point of not staying in practice as they should or possibly utilize areas that are less than ideal for that purpose.

In addition, our office responds to many calls from concerned citizens about individuals shooting or target practicing in various neighborhoods throughout the county and I believe a safely configure, properly placed, and established range in a proper location would alleviate many of those concerns.

Please do not hesitate to contact me with any additional questions or if I can provide additional information and/or assistance.

Thank you.

Respectfully,



Sheriff Dudley Greene

cc: Ashley Wooten, County Manager

McDowell County Center  
County Administration Building, Room 249  
60 E Court Street  
Marion, NC 28752-4098  
Phone 828-652-8104 or 828-652-7121  
Fax 828-652-8104  
<http://mcdowell.ce.ncsu.edu/>

I would like to express the support of McDowell County 4-H for the proposed shooting range in McDowell County.

4-H Shooting Sports, a shooting education and youth development program, is the fastest growing program that 4-H offers. Last year over 600 youth in North Carolina competed in our regional contests. Participation has grown every year and is projected to keep growing. The central and eastern regions hold their contest at state supported ranges. The west region must use private clubs to hold their events. With the addition of a range in McDowell County we would be able to have comparable facilities to those in other regions. Also, we have not been able to hold a state shooting sports volunteer training in the west region in almost 4 years. Because of this we have less trained volunteers to help teach our youth. With this addition of a shooting range in McDowell County we can work to get more volunteers adequately trained in our area.

McDowell County 4-H has had a shooting sports program for 9 years. When we were first getting started the hardest part was finding a safe adequate place for our youth to practice. As the times have changed, suitable locations are very hard to find. With the addition of a new shooting range our youth will have a safe public place to practice.

Thank you very much for all your time and hard work in working to construct a safe public shooting range in our area. If myself, or McDowell County 4-H can be of any assistance please let us know.

Thanks,



Chad Ray  
Extension Agent,  
4-H Youth and Development  
(828) 652-8104  
[Chad\\_Ray@ncsu.edu](mailto:Chad_Ray@ncsu.edu)



# LAW ENFORCEMENT TRAINING CENTER

MCDOWELL TECHNICAL COMMUNITY COLLEGE

Director Stacy E. Buff

February 12, 2016

Ashley R. Wooten, ICMA-CM  
County Manager  
McDowell County, NC

Dear Mr. Wooten,

I currently serve as the Director of Law Enforcement Training at McDowell Technical Community College. I am very pleased that our local government has the initiative to seek out projects that will impact our community in such a positive way. The proposed partnership between McDowell County and the North Carolina Wildlife Resources Commission will be an asset to our county. Our residents enjoy the opportunity to hunt and fish in such a beautiful area of North Carolina. In addition to hunting and fishing, many of our residents participate in competition shooting. We value the importance of the second amendment and the right of our citizens to enjoy firearms for sports as well as protection. The key to any firearm is safe and proper handling and storage. As a father, I want my children to grow into responsible gun owners. As our nation changes, locations to enjoy responsible firearms shooting practice has diminished. As Director of Law Enforcement Training, I receive calls routinely, requesting the use of our college firing range. Of course, due to legal and liability purposes, our range is only available through registered college courses. In addition, our range is reserved most days. I wholeheartedly support our county's decision to partner with the NCWRC to provide a safe environment for our community to enjoy responsible shooting sports.

This range could also provide an available location for our local law enforcement officers to maintain routine shooting practice. Currently, because of liability purposes, our local officers must have a certified firearms instructor with them, in order to use their agency ranges. The proposed range would give our local officers a location to gain much needed practice and training during times that are conducive to their schedule. Once again, please know that our Law Enforcement Training Center at McDowell Technical Community College supports this project and will be available to assist in any way that may be needed. I may be contacted at (828)652-0663.

Sincerely,

  
Stacy E. Buff, Director  
Law Enforcement Training

54 College Drive, Marion, NC 28752 Phone: (828)652-0677 Fax: (828)659-9710

Email: [letc@mcdowelltech.edu](mailto:letc@mcdowelltech.edu) Web: [www.mcdowellletc.com](http://www.mcdowellletc.com)



# McDowell County

60 East Court Street • Marion, North Carolina 28752  
Telephone: (828) 652-7121 • Fax: (828) 659-3484  
Website: [www.mcdowellgov.com](http://www.mcdowellgov.com)

January 25, 2016

**McDowell County Board of Commissioners**  
60 East Court Street  
Marion, NC 28752

**Re: Support for Shooting Range**

Honorable Commissioners:

We the members of the McDowell County Planning Board want to offer our full support in the efforts to secure a shooting range for McDowell County. We understand the positive impacts this would have not only for McDowell County, but the region as a whole. We stand ready to assist the Board of Commissioners and North Carolina Wildlife Resources Commission in any way possible to make this a reality.

As always thank you for the opportunity to serve in this capacity, and we look forward to helping this project move forward.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dennis J. Whitson".

Dennis J. Whitson  
Vice Chairman, McDowell County Planning Board

Carolina West Shooting Club  
615 Rutherford Drive  
PO Box 729  
Nebo, NC 28761

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To Whom it May Concern,

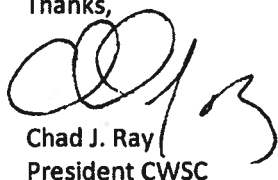
I am writing on behalf of Carolina West Shooting Club in support of a local public shooting range in McDowell County. Carolina West Shooting Club was founded in 2007, and has over 200 members. Our range was created to help combat the issue of area residents not having a safe adequate place to shoot. Our range has grown tremendously over the years, larger than any of the founding members ever could have expected.

As president part of my duties are to talk with potential members. I receive multiple phone calls a week from residents in McDowell and surrounding counties that are looking for a place to shoot safely. Some join our club while others are unable because of financial constraints. Having a public range would give these citizens another option.

Carolina West currently has to use a waiting list with potential members having to wait over a year in some instances to become a member. If a public range was available this demand could be met easier and faster.

I hope you will be able to build this public range to serve the citizens of McDowell County. If myself or any of our members can be of assistance to you please let us know.

Thanks,



Chad J. Ray  
President CWSC

**McDowell Economic Development Association, Inc.**

Post Office Box 1289, Marion, North Carolina 28752

Phone: (828) 652-9391 Fax: (828) 652-8775

February 21, 2016

Ashley Wooten, McDowell County Manager  
County Administration Building  
10 East Court St.  
Marion, NC 28752

Dear Mr. Wooten:

The following serves as a letter of endorsement for the recent decision by the McDowell County Board of Commissioners to pursue an outdoor shooting/firing range. The McDowell Economic Development Board received a presentation from County staff and reviewed materials provided by the State of North Carolina. The Economic Development Association board unanimously endorsed the project location.

The basis for the endorsement is the recreational value coupled with the economic impact of the facility on local businesses. We understand that the facility will be constructed in a manner that will minimize any impact to the local land and citizens. The opportunity presented by this endeavor is significant and we stand ready to assist as needed.

Thank you for this initiative and please thank the County Board. Again, if we can be of service do not hesitate to call.

Sincerely,



Charles R. Abernathy  
MEDA Director





# EXHIBIT K-1

February 28, 2018

## Summary of Comments For 2018-2019 Game Land Rule Proposals

Proposal	Proposed Text	Position Count	Comment Types
G1	Create a Designated Camping Area on the Shocco Creek Game Land to allow hunter camping during open hunting seasons. Camping will be restricted to September 1 through the last day of February, and March 31 through May 14. This will be a small primitive campground, primarily for tents and pop-ups, with no amenities.	4 :No Position 177 :Agree 49 :Disagree	21 :Online 200 :Comment Card 9 :Letter/Email
G2	Prohibit target shooting on the Sand Banks tract of Chowan Swamp Game Land.	3 :No Position 192 :Agree 44 :Disagree	20 :Online 210 :Comment Card 9 :Letter/Email
G3	Allow for the take of feral swine on game lands during the open season for any game bird using any legal manner of take allowed during those open game seasons.	2 :No Position 281 :Agree 47 :Disagree	75 :Online 238 :Comment Card 17 :Letter/Email
G4	Remove the rule that prohibits the hunting of quail and woodcock, and the training of dogs on birds on the CURE portion of the Sandhills Game Land.	5 :No Position 180 :Agree 56 :Disagree	28 :Online 203 :Comment Card 10 :Letter/Email
G5	Remove the restriction on grouse hunting, quail hunting, woodcock hunting and all bird dog training on the CURE portion of South Mountains Game Land (SMGL) in Cleveland, McDowell and Rutherford counties.	5 :No Position 178 :Agree 56 :Disagree	24 :Online 201 :Comment Card 14 :Letter/Email
G6	Prohibit the pursuing or chasing of deer or bear with dogs for the purposes of training or hunting on the Little Macedonia Tract of Green Swamp Game Land.	5 :No Position 178 :Agree 82 :Disagree	39 :Online 215 :Comment Card 11 :Letter/Email
G7	Designate the Little Macedonia Tract of Green Swamp Game Land as a permit only area for bear, deer and turkey.	3 :No Position 169 :Agree 59 :Disagree	20 :Online 202 :Comment Card 9 :Letter/Email
G8	Establish the Headwaters State Forest Game Land in Transylvania County as a six-day-per-week area with an introductory Either-Sex Deer Season.	3 :No Position 178 :Agree 49 :Disagree	24 :Online 195 :Comment Card 11 :Letter/Email
G9	Establish the Dan River Game Land in Rockingham County as a permit only area and prohibit target shooting. Further, prohibit horseback riding except on those areas posted for equestrian use. People age 16 or older horseback riding on this game land must possess a Game Land license.	8 :No Position 171 :Agree 47 :Disagree	19 :Online 197 :Comment Card 10 :Letter/Email
G10	Allow deer of either sex to be taken during the first 12 open days of the applicable Deer with Visible Antlers Season instead of the first six open days and the last six open days of the applicable Deer with Visible Antlers Season. These game lands would still be in the Moderate Gun Either-Sex Season and the total number of open either-sex days during the gun season would not change under this proposal: G A M E L A N D S Coastal Carteret County Piedmont Alcoa Brinkleyville Butner-Falls of Neuse Chatham Embro Harris Hyco Lee Lower Fishing Creek Mayo Pee Dee River Sandy Creek Shocco Creek Tillery Mountain Thurmond Chatham National Uwharrie	8 :No Position 184 :Agree 68 :Disagree	44 :Online 202 :Comment Card 14 :Letter/Email
G11	Allow deer of either sex to be taken during the first six open days of the applicable Deer with Visible Antlers Season instead of the last six open days of the applicable Deer with Visible Antlers Season. These game lands would still be in the Conservative Gun Either-Sex Season and the total number of open either-sex days during the gun season would not change under this proposal: G A M E L A N D S Coastal Dare Sutton Lake Piedmont R.Wayne Bailey-Caswell Mountain Elk Knob Mitchell River Pond Mountain Rendezvous Mountain State Forest Three Top Mountain	6 :No Position 179 :Agree 64 :Disagree	41 :Online 194 :Comment Card 14 :Letter/Email
G12	Allow deer of either sex to be taken during the first open day of the applicable Deer with Visible Antlers Season instead of the last open day of the applicable Deer with Visible Antlers Season. These game lands would still be in the Introductory Gun Either-Sex Season and the total number of open either-sex days during the gun season would not change under this proposal: G A M E L A N D S Piedmont Perkins Mountain Buffalo Cove Cold Mountain Green River Sandy Mush South Mountains Toxaway William H. Silver National Nantahala Pisgah	6 :No Position 175 :Agree 80 :Disagree	49 :Online 199 :Comment Card 13 :Letter/Email
G13	Change the gun, archery and blackpowder seasons to match the proposed Western Deer Season Zone for the following game lands: G A M E L A N D S Mountain South Mountains Buffalo Cove	4 :No Position 173 :Agree 78 :Disagree	53 :Online 189 :Comment Card 13 :Letter/Email

G14	<p>Nicholson Creek Game Land and Rockfish Creek Game Land in Hoke County: • Allow deer of either sex to be taken with archery equipment during open days from the Saturday on or nearest September 10 through the third Friday before Thanksgiving, instead of through the fourth Friday before Thanksgiving. This would result in three extra days of the archery season on these game lands. • Allow deer of either sex to be taken with blackpowder firearms during open days beginning on the third Saturday before Thanksgiving, instead of the fourth Saturday before Thanksgiving, through the first Wednesday thereafter. This would result in a loss of three days of the blackpowder season on these game lands. • Allow deer of either sex to be taken during the first open day of the applicable Deer with Visible Antlers Season instead of the last open day of the applicable Deer with Visible Antlers Season. These game lands would still be in the Introductory Gun Either-Sex Season and the total number of open eithersex days during the gun season would not change under this proposal.</p>	<p>4 :No Position 141 :Agree 68 :Disagree</p>	<p>17 :Online 184 :Comment Card 12 :Letter/Email</p>
G15	<p>Sandhills Game Land, J. Robert Gordon Field Trial Grounds in Richmond County: • Allow deer of either sex to be taken with archery equipment during open days from the Saturday on or nearest September 10 through the third Friday before Thanksgiving, instead of through the fourth Friday before Thanksgiving. This would result in three extra days of the archery season on this area of Sandhills Game Land. • Allow deer of either sex to be taken with blackpowder firearms during the open days beginning on the third Saturday before Thanksgiving, instead of the fourth Saturday before Thanksgiving, through the third Wednesday before Thanksgiving. This would result in a loss of three days for the blackpowder season on this area of the Sandhills Game Land. • Allow Deer with Visible Antlers to be taken with all legal weapons from the second Saturday before Thanksgiving, instead of the second Monday before Thanksgiving, through the Saturday following Thanksgiving. This would result in one extra day of the Deer with Visible Antlers Season on this area of Sandhills Game Land.</p>	<p>4 :No Position 151 :Agree 67 :Disagree</p>	<p>23 :Online 187 :Comment Card 12 :Letter/Email</p>
G16	<p>Sandhills Game Land in Hoke, Moore, Richmond and Scotland counties, excluding the J. Robert Gordon Field Trial Grounds: • Allow deer of either sex to be taken with archery equipment during open days from the Saturday on or nearest September 10 through the third Friday before Thanksgiving, instead of through the fourth Friday before Thanksgiving. This would result in three extra days for the “first” archery season on this game land. • Allow deer of either sex to be taken with blackpowder firearms during open days beginning on the third Saturday before Thanksgiving, instead of the fourth Saturday before Thanksgiving, through the first Wednesday thereafter. This would result in a loss of three days for the “first” blackpowder season on this game land. • Allow deer of either sex to be taken with archery equipment and blackpowder firearms during open days from the third Monday after Thanksgiving through the first Saturday in January, instead of through January 1st. Depending on the year, this will result in extra days for the “second” archery season on this game land.</p>	<p>5 :No Position 148 :Agree 70 :Disagree</p>	<p>25 :Online 185 :Comment Card 13 :Letter/Email</p>
O	Propose a Regulation (Game Lands)		<p>32 :Online 13 :Comment Card 6 :Letter/Email</p>





Proposal	District 1	District 2	District 3	District 4	District 5	District 6	District 7	District 8	District 9	Out of State
G13	0 :Online 17 :Comment Card 0 :Letter/Email	1 :Online 14 :Comment Card 1 :Letter/Email	7 :Online 29 :Comment Card 1 :Letter/Email	3 :Online 25 :Comment Card 0 :Letter/Email	4 :Online 14 :Comment Card 2 :Letter/Email	5 :Online 8 :Comment Card 0 :Letter/Email	1 :Online 5 :Comment Card 0 :Letter/Email	13 :Online 21 :Comment Card 4 :Letter/Email	19 :Online 56 :Comment Card 3 :Letter/Email	0 :Online 0 :Comment Card 2 :Letter/Email
G14	<b>Position Count:</b> 6 :Agree 11 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 17 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 14 :Agree 1 :Disagree 1 :No Position  <b>Comment Types:</b> 1 :Online 14 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 25 :Agree 8 :Disagree 0 :No Position  <b>Comment Types:</b> 3 :Online 29 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 18 :Agree 11 :Disagree 1 :No Position  <b>Comment Types:</b> 5 :Online 25 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 13 :Agree 4 :Disagree 1 :No Position  <b>Comment Types:</b> 3 :Online 13 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 7 :Agree 3 :Disagree 1 :No Position  <b>Comment Types:</b> 2 :Online 9 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 3 :Agree 2 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 5 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 23 :Agree 1 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 20 :Comment Card 4 :Letter/Email	<b>Position Count:</b> 30 :Agree 27 :Disagree 0 :No Position  <b>Comment Types:</b> 3 :Online 52 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 2 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 0 :Comment Card 2 :Letter/Email
G15	<b>Position Count:</b> 6 :Agree 11 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 17 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 14 :Agree 2 :Disagree 1 :No Position  <b>Comment Types:</b> 2 :Online 14 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 25 :Agree 8 :Disagree 0 :No Position  <b>Comment Types:</b> 3 :Online 29 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 17 :Agree 11 :Disagree 1 :No Position  <b>Comment Types:</b> 4 :Online 25 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 13 :Agree 4 :Disagree 1 :No Position  <b>Comment Types:</b> 3 :Online 13 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 14 :Agree 3 :Disagree 1 :No Position  <b>Comment Types:</b> 6 :Online 12 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 4 :Agree 2 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 5 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 23 :Agree 2 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 20 :Comment Card 4 :Letter/Email	<b>Position Count:</b> 33 :Agree 24 :Disagree 0 :No Position  <b>Comment Types:</b> 3 :Online 52 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 2 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 0 :Comment Card 2 :Letter/Email
G16	<b>Position Count:</b> 5 :Agree 11 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 16 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 15 :Agree 2 :Disagree 1 :No Position  <b>Comment Types:</b> 2 :Online 14 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 26 :Agree 9 :Disagree 1 :No Position  <b>Comment Types:</b> 6 :Online 29 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 17 :Agree 12 :Disagree 1 :No Position  <b>Comment Types:</b> 4 :Online 26 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 14 :Agree 3 :Disagree 1 :No Position  <b>Comment Types:</b> 3 :Online 13 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 13 :Agree 2 :Disagree 1 :No Position  <b>Comment Types:</b> 5 :Online 11 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 4 :Agree 2 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 5 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 23 :Agree 2 :Disagree 0 :No Position  <b>Comment Types:</b> 1 :Online 20 :Comment Card 4 :Letter/Email	<b>Position Count:</b> 29 :Agree 27 :Disagree 0 :No Position  <b>Comment Types:</b> 3 :Online 51 :Comment Card 2 :Letter/Email	<b>Position Count:</b> 2 :Agree 0 :Disagree 0 :No Position  <b>Comment Types:</b> 0 :Online 0 :Comment Card 2 :Letter/Email
O (Game Lands)	<b>Position Count:</b> 1 :Other  <b>Comment Types:</b> 1 :Online 0 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 7 :Other  <b>Comment Types:</b> 7 :Online 0 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 6 :Other  <b>Comment Types:</b> 6 :Online 0 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 4 :Other  <b>Comment Types:</b> 1 :Online 2 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 2 :Other  <b>Comment Types:</b> 0 :Online 2 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 4 :Other  <b>Comment Types:</b> 2 :Online 2 :Comment Card 0 :Letter/Email	<b>Position Count:</b> 2 :Other  <b>Comment Types:</b> 0 :Online 1 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 10 :Other  <b>Comment Types:</b> 4 :Online 3 :Comment Card 3 :Letter/Email	<b>Position Count:</b> 14 :Other  <b>Comment Types:</b> 10 :Online 3 :Comment Card 1 :Letter/Email	<b>Position Count:</b> 1 :Other  <b>Comment Types:</b> 1 :Online 0 :Comment Card 0 :Letter/Email

# EXHIBIT K-2b

February 28, 2018



## PROPOSED CHANGES IN GAME LAND REGULATIONS FOR 2018-2019 AND RULE TEXT FOR COMMISSION ACTION

- G1) Create a Designated Camping Area on the Shocco Creek Game Land to allow hunter camping during open hunting seasons.  
*15A NCAC 10D .0103 Hunting on game lands (page 22)*
- G2) Prohibit target shooting on the Sand Banks tract of Chowan Swamp Game Land.  
*15A NCAC 10D .0103 Hunting on game lands (page 9)*
- G3) Allow for the take of feral swine on game lands during the open season for any game bird using any legal manner of take allowed during those open game seasons.  
*15A NCAC 10D .0103 Hunting on game lands (page 26)*
- G4) Remove the rule that prohibits the hunting of quail and woodcock, and the training of dogs on birds on the CURE portion of the Sandhills Game Land.  
*15A NCAC 10D .0103 Hunting on game lands (page 21)*
- G5) Remove the restriction on grouse hunting, quail hunting, woodcock hunting, and all bird dog training on the CURE portion of South Mountains Game Land (SMGL) in Cleveland, McDowell, and Rutherford counties.  
*15A NCAC 10D .0103 Hunting on game lands (page 22)*
- G6) Prohibit the pursuing or chasing of deer or bear with dogs for the purposes of training or hunting on the Little Macedonia Tract of Green Swamp Game Land.  
*15A NCAC 10D .0103 Hunting on game lands (page 12)*
- G7) Designate the Little Macedonia Tract of Green Swamp Game Land as a permit-only area for bear, deer, and turkey.  
*15A NCAC 10D .0103 Hunting on game lands (page 12)*
- G8) Establish the Headwaters State Forest Game Land in Transylvania County as a six-day-per-week area with an introductory either-sex deer season.  
*15A NCAC 10D .0103 Hunting on game lands (page 13)*
- G9) Establish the Dan River Game Land in Rockingham County as a permit only area and prohibit target shooting. Further, prohibit horseback riding except on those areas posted

for equestrian use. People age 16 or older horseback riding on this game land must possess a Game Land license.

*15A NCAC 10D .0103 Hunting on game lands (page 10)*

G10) Shift the 12 open days of the Moderate Gun Either-Sex Season for the game lands listed below to the beginning of the applicable Gun Seasons:

Alcoa Game Land in Montgomery County; Brinkleyville Game Land in Halifax County; Butner-Falls of Neuse Game Land in Durham, Granville, and Wake counties; Carteret County Game Land in Carteret County; Chatham Game Land in Chatham County; Embro Game Land in Halifax and Warren counties; Harris Game Land in Chatham, Harnett, and Wake counties; Hyco Game Land in Person County; Lee Game Land in Lee County; Lower Fishing Creek Game Land in Edgecombe and Halifax counties; Mayo Game Land in Person County; Pee Dee River Game Land in Anson, Montgomery, Richmond, and Stanly counties; Sandy Creek Game Land in Nash and Franklin counties; Shocco Creek Game Land in Franklin, Halifax, Nash, and Warren counties; Thurmond Chatham Game Land in Alleghany and Wilkes counties; Tillery Game Land in Halifax County; Uwharrie Game Land in Davidson, Montgomery, and Randolph counties

*15A NCAC 10D .0103 Hunting on game lands (pages 5-25)*

G11) Shift the 6 open days of the Conservative Gun Either-Sex Season for the game lands listed below to the beginning of the applicable Gun Seasons:

R. Wayne Bailey-Caswell Game Land in Caswell County; Dare Game Land in Dare County; Elk Knob Game Land in Watauga County; Mitchell River Game Land in Alleghany and Surry counties; Pond Mountain Game Land in Ashe County; Rendezvous Mountain State Forest Game Land in Wilkes County; Sutton Lake Game Land in New Hanover and Brunswick counties; Three Top Mountain Game Land in Ashe County

*15A NCAC 10D .0103 Hunting on game lands (pages 5-25)*

G12) Shift the open day of the Introductory Gun Either-Sex Season for the game lands listed below to the beginning of the applicable Gun Seasons:

Buffalo Cove Game Land in Caldwell and Wilkes counties; Cold Mountain Game Land in Haywood County; Green River Game Land in Henderson and Polk counties; Nantahala Game Land in Transylvania County; Perkins Game Land in Davie County; Pisgah Game Land in Avery, Buncombe, Burke, Caldwell, Haywood, Henderson, Madison, McDowell, Mitchell, Transylvania, Watauga, and Yancey counties; Sandy Mush Game Land in Buncombe and Madison counties; South Mountains Game Land in Burke, Cleveland, McDowell, and Rutherford counties; Toxaway Game Land in Transylvania County; William H. Silver Game Land in Haywood County

*15A NCAC 10D .0103 Hunting on game lands (pages 5-25)*

G13) ~~Change the gun, archery, and blackpowder seasons at South Mountains and Buffalo Cove game lands to match the proposed Western Deer Season Zone.~~

~~*15A NCAC 10D .0103 Hunting on game lands (pages 6 and 24)*~~

G14) ~~Change the opening date and duration of the blackpowder season and~~ shift the open day of the Introductory Gun Either-Sex Season to the beginning of the applicable Gun Seasons at Nicholson Creek Game Land and Rockfish Creek Game Land in Hoke County.

*15A NCAC 10D .0103 Hunting on game lands (pages 17 and 19)*

G15) ~~Change the opening date and duration of the blackpowder season and~~ align the opening date of the Gun Season to the rest of the Game Land for the Sandhills Game Land, J. Robert Gordon Field Trial Grounds in Richmond County.

*15A NCAC 10D .0103 Hunting on game lands (page 20)*

G16) ~~Change the opening date and duration of the blackpowder season and change the closing date of the “second” archery and blackpowder seasons from January 1 to the first Saturday in January for Sandhills Game Land in Hoke, Moore, Richmond, and Scotland counties, excluding the J. Robert Gordon Field Trial Grounds.~~

*15A NCAC 10D .0103 Hunting on game lands (page 20)*



1 **15A NCAC 10D .0103 HUNTING ON GAME LANDS**

2 (a) Safety Requirements. No person while hunting on any designated game land shall be under the influence of alcohol  
3 or any narcotic drug, or fail to comply with restrictions enacted by the National Park Service regarding the use of the  
4 Blue Ridge Parkway where it adjoins game lands listed in this Rule.

5 (b) Traffic Requirements. No person shall park a vehicle on game lands in such a manner as to block traffic or gates,  
6 or otherwise prevent vehicles from using any roadway.

7 (c) Tree Stands. It is unlawful to erect or to occupy, for the purpose of hunting, any tree stand or platform attached  
8 by nails, screws, bolts, or wire to a tree on any game land designated herein. This prohibition does not apply to lag-  
9 screw steps or portable stands that are removed after use with no metal remaining in or attached to the tree.

10 (d) Time and Manner of Taking. Hunting is allowed on game lands only during the open season for game animals  
11 and game birds, unless hunting is allowed by permit. Individual game lands or parts thereof may be closed to hunting  
12 or limited to specific dates by this Chapter. Persons shall hunt only with weapons lawful for the open game animal or  
13 game bird seasons. On managed waterfowl impoundments, persons shall:

- 14 (1) not enter the posted impoundment areas earlier than 4:00 a.m. on the permitted hunting dates;
- 15 (2) not hunt after 1:00 p.m. on such hunting dates;
- 16 (3) not set decoys out prior to 4:00 a.m.;
- 17 (4) remove decoys by 3:00 p.m. each day; and
- 18 (5) not operate any vessel or vehicle powered by an internal combustion engine.

19 On designated youth waterfowl days occurring after the end of the regular waterfowl seasons only, youths may hunt  
20 on managed waterfowl impoundments from ½ hour before sunrise to sunset. Restrictions (1), (3), and (5) in this  
21 Paragraph shall apply. On waterfowl impoundments that have a posted "Scouting-only Zone," trapping during the  
22 trapping season and waterfowl hunting on designated waterfowl hunting days are the only activities allowed on the  
23 portion of the impoundment outside of the posted "Scouting-only Zone." No person shall attempt to obscure the sex  
24 or age of any bird or animal taken by severing the head or any other part thereof, or possess any bird or animal that  
25 has been so mutilated. No person shall place, or cause to be placed on any game land, salt, grain, fruit, or other foods  
26 without prior written authorization of the Commission or its agent. A decision to grant or deny authorization shall be  
27 made based on the best management practices for the wildlife species in question. No person shall take or attempt to  
28 take any game birds or game animals attracted to such foods.

29 (e) Definitions:

- 30 (1) For purposes of this Section, "Dove Only Area" refers to a Game Land on which doves may be  
31 taken and dove hunting is limited to Mondays, Wednesdays, Saturdays, Thanksgiving Day,  
32 Christmas Day, and New Year's Days within the federally-announced season.
- 33 (2) For purposes of this Section, "Three Days per Week Area" refers to a Game Land on which any  
34 game may be taken during the open seasons and hunting is limited to Mondays, Wednesdays,  
35 Saturdays, Thanksgiving Day, Christmas Day, and New Year's Days, except for game lands in this  
36 Rule that specifically allow hunting on Tuesdays, Thursday, and Fridays. Falconry may also be  
37 practiced on Sundays. These "open days" also apply to either-sex deer hunting seasons listed under

1 each game land. Raccoon and opossum hunting may continue until 7:00 a.m. on Tuesdays, until  
2 7:00 a.m. on Thursdays, and until midnight on Saturdays.

3 (3) For purposes of this Section, "Six Days per Week Area" refers to a Game Land on which any game  
4 may be taken during the open seasons.

5 (f) Hunting with Dogs on Game Lands. Deer shall not be taken with the use of dogs on game lands in counties or  
6 parts of counties where taking deer with dogs is prohibited as described in 15A NCAC 10B .0109.

7 (g) Bear Sanctuaries. On Three Days per Week Areas and Six Days per Week Areas, bears shall not be taken on lands  
8 designated and posted as bear sanctuaries except when authorized by permit only pursuant to this Chapter. Feral Swine  
9 shall not be taken with the use of dogs on bear sanctuaries. Dogs shall not be trained or allowed to run unleashed  
10 between March 1 and the Monday on or nearest October 15 on bear sanctuaries in and west of the counties and parts  
11 of counties described in 15A NCAC 10B .0109.

12 (h) The listed seasons and restrictions apply in the following game lands:

13 (1) Alcoa Game Land in Davidson, Davie, Montgomery, Rowan, and Stanly counties

14 (A) Six Days per Week Area

15 (B) Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the  
16 applicable Deer With Visible Antlers Season through the second Friday thereafter in that  
17 portion in Montgomery county, and deer of either sex may be taken all the open days of  
18 the applicable Deer With Visible Antlers Season in those portions in Davidson, Davie,  
19 Rowan, and Stanly counties.

20 (C) On the Lick Creek Tract, deer and bear hunting is archery only.

21 (2) Alligator River Game Land in Tyrrell County

22 (A) Six Day per Week Area

23 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
24 Antlers Season.

25 (C) Bear may only be taken the first three hunting days during the November Bear Season and  
26 the first three hunting days during the second week of the December Bear Season.

27 (3) Angola Bay Game Land in Duplin and Pender counties

28 (A) Six Days per Week Area

29 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
30 Antlers Season.

31 (C) Target shooting is prohibited.

32 (4) Bachelor Bay Game Land in Bertie, Martin, and Washington counties

33 (A) Six Days per Week Area

34 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
35 Antlers Season.

36 (5) Bertie County Game Land in Bertie County

37 (A) Six Days per Week Area

- 1 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
2 Antlers Season.
- 3 (6) Bladen Lakes State Forest Game Land in Bladen County
- 4 (A) Three Days per Week Area
- 5 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
6 Antlers Season.
- 7 (C) Except for blackpowder firearms, rifles larger than .22 caliber rimfire shall not be used.
- 8 (D) On the Singletary Lake Tract, the use of dogs for hunting deer and bear is prohibited.
- 9 (E) Wild turkey hunting on the Singletary Lake Tract is by permit only.
- 10 (F) Camping is restricted to September 1 through the last day of February and March  
11 31 through May 14 in areas both designated and posted as camping areas.
- 12 (G) The use of dogs for pursuing or taking foxes is prohibited March 15 through July 15.
- 13 (7) Brinkleyville Game Land in Halifax County
- 14 (A) Six Days per Week Area
- 15 (B) Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the  
16 applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 17 (C) Horseback riding is prohibited.
- 18 (8) Brunswick County Game Land in Brunswick County
- 19 (A) Hunting is by permit only.
- 20 (B) The use of dogs for hunting deer is prohibited.
- 21 (9) Buckhorn Game Land in Orange County
- 22 (A) Hunting is by permit only.
- 23 (B) Horseback riding is prohibited.
- 24 (10) Buckridge Game Land in Tyrrell County.
- 25 (A) Three Days per Week Area
- 26 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
27 Antlers Season.
- 28 (C) Bear may only be taken the first three hunting days during the November Bear Season and  
29 the first three hunting days of the second week of the December Bear Season. If any of  
30 these days falls on a Tuesday, Friday or Saturday, bear hunting is allowed on those days.
- 31 (D) Target shooting is prohibited.
- 32 (11) Buffalo Cove Game Land in Caldwell and Wilkes Counties
- 33 (A) Six Days per Week Area
- 34 (B) The Deer With Visible Antlers season for deer consists of the open hunting days from the  
35 Monday before Thanksgiving Day through the third Saturday after Thanksgiving. Deer  
36 may be taken with ~~bow and arrow~~ archery equipment on open days beginning the Saturday  
37 on or nearest September 10 to the third Saturday thereafter, and Monday on or nearest

- 1                                   October 15 to the Saturday before Thanksgiving and during the Deer With Visible Antlers  
2                                   Season. Deer may be taken with blackpowder firearms on open days beginning the Monday  
3                                   on or nearest October 1 through the Saturday of the second week thereafter, and during the  
4                                   Deer With Visible Antlers season.
- 5                                   (C)    Deer of either sex may be taken the ~~last first~~ open ~~Saturday day~~ of the applicable Deer With  
6                                   Visible Antlers Season.
- 7                                   (D)    Horseback riding is prohibited except on designated trails May 16 through August 31 and  
8                                   all horseback riding is prohibited from September 1 through May 15.
- 9                                   (12)   Bullard and Branch Hunting Preserve Game Lands in Robeson County
- 10                                  (A)    Three Days per Week Area
- 11                                  (B)    Deer of either sex may be taken all the open days of the applicable Deer With Visible  
12                                  Antlers Season.
- 13                                  (13)   Butner - Falls of Neuse Game Land in Durham, Granville, and Wake counties
- 14                                  (A)    Six Days per Week Area
- 15                                  (B)    Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the  
16                                  applicable Deer With Visible Antlers ~~Season.~~ Season through the second Friday thereafter.
- 17                                  (C)    Waterfowl shall be taken only on:
- 18   (i)     the opening and closing days of the applicable waterfowl seasons;
- 19   (ii)    Thanksgiving, Christmas, New Year's, and Martin Luther King, Jr. Days; and
- 20   (iii)   Tuesdays, Thursdays, and Saturdays of the applicable waterfowl seasons.
- 21   On the posted waterfowl impoundments a special permit is required for all waterfowl  
22   hunting after November 1.
- 23                                  (D)    Horseback riding is prohibited.
- 24                                  (E)    Target shooting is prohibited.
- 25                                  (F)    Wild turkey hunting is by permit only, except on those areas posted as an archery zone.
- 26                                  (G)    The use of dogs for hunting deer is prohibited on that portion west of NC 50 and south of  
27                                  Falls Lake.
- 28                                  (H)    The use of bicycles is restricted to designated areas, except that this restriction does not  
29                                  apply to hunters engaged in the act of hunting during the open days of the applicable  
30                                  seasons for game birds and game animals. On designated bicycle riding areas, the use of  
31                                  bicycles is allowed from May 15 through August 31, and on Sundays only from September  
32                                  1 through May 14.
- 33                                  (I)    Camping and the presence of campers and tents in designated Hunter Camping Areas are  
34                                  limited to September 1 through the last day of February and March 31 through May 14.
- 35                                  (J)    Camping is allowed at any time in the designated Mountains-to-Sea Trail Camping Area  
36                                  and shall not exceed a maximum stay of two consecutive nights. Campfires are prohibited  
37                                  in this camping area.

- 1 (14) Buxton Woods Game Land in Dare County:
- 2 (A) Six Days per Week Area
- 3 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible
- 4 Antlers Season.
- 5 (C) Target shooting is prohibited.
- 6 (15) Cape Fear River Wetlands Game Land in Pender County
- 7 (A) Six Days per Week Area
- 8 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible
- 9 Antlers Season.
- 10 (C) Turkey Hunting is by permit only on that portion known as the Roan Island Tract.
- 11 (D) The use of dogs for hunting deer is prohibited on the portion of the game land that is west
- 12 of the Black River, north of Roan Island, east of Lyon Swamp Canal to Canetuck Road,
- 13 and south of NC 210 to the Black River.
- 14 (E) Target shooting is prohibited.
- 15 (16) Carteret County Game Land in Carteret County
- 16 (A) Six Days per Week Area
- 17 (B) Deer of either sex may be taken the first ~~six open day of days and the last six open days of~~
- 18 ~~the~~ applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 19 (C) The use of dogs for hunting deer is prohibited.
- 20 (17) R. Wayne Bailey-Caswell Game Land in Caswell County
- 21 (A) Three Days per Week Area
- 22 (B) Deer of either sex may be taken the ~~last first six open day days~~ of the applicable Deer With
- 23 Visible Antlers ~~Season.~~ Season through the second Wednesday thereafter.
- 24 (C) Horseback riding is allowed only during June, July, and August, and on Sundays during
- 25 the remainder of the year except during open turkey and deer seasons. Horseback riding is
- 26 allowed only on roads opened to vehicular traffic and on those gated roads and trails that
- 27 are posted for equestrian use. People age 16 or older horseback riding on this game land
- 28 shall possess a Game Lands license.
- 29 (D) The area encompassed by the following roads is permit-only for all quail and woodcock
- 30 hunting, and all bird dog training: From Yanceyville south on NC 62 to the intersection of
- 31 SR 1746, west on SR 1746 to the intersection of SR 1156, south on SR 1156 to the
- 32 intersection of SR 1783, east on SR 1783 to the intersection of NC 62, north on NC 62 to
- 33 the intersection of SR 1736, east on SR 1736 to the intersection of SR 1730, east on SR
- 34 1730 to NC 86, north on NC 86 to NC 62.
- 35 (E) On the posted waterfowl impoundment, waterfowl hunting is by permit only after
- 36 November 1.

- 1 (F) Camping and the presence of campers and tents in designated Hunter Camping Areas are  
2 limited to September 1 through the last day of February and March 31 through May 14.
- 3 (G) Target shooting is prohibited, except at the R. Wayne Bailey-Caswell Shooting Range.
- 4 (18) Chatham Game Land in Chatham County
- 5 (A) Six Days per Week Area
- 6 (B) Deer of either sex may be taken the first ~~six open day days~~ and the last ~~six open days~~ of the  
7 applicable Deer With Visible Antlers ~~Season.~~ Season through the second Friday thereafter.
- 8 (C) Wild turkey hunting is by permit only.
- 9 (D) Horseback riding is allowed only during June, July, and August; and on Sundays during  
10 the remainder of the year except during open turkey and deer seasons.
- 11 (E) Target shooting is prohibited.
- 12 (19) Chowan Game Land in Chowan County
- 13 (A) Six Days per Week Area
- 14 (B) Deer of either sex may be taken all the days of the applicable Deer With Visible Antlers  
15 Season.
- 16 (20) Chowan Swamp Game Land in Bertie, Gates, and Hertford counties.
- 17 (A) Six Days per Week Area
- 18 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
19 Antlers Season.
- 20 (C) Bear hunting is restricted to the first three hunting days during the November bear season  
21 and the first three hunting days during the second week of the December bear season except  
22 that portion of Chowan Swamp Game Land in Gates County that is east of Highway  
23 158/13, south of Highway 158, west of Highway 32, and north of Catherine Creek and the  
24 Chowan River where the bear season is the same as the season dates for the Gates County  
25 bear season.
- 26 (D) Camping is restricted to September 1 through the last day of February and March 31  
27 through May 14 in areas both designated and posted as camping areas.
- 28 (E) Horseback riding is prohibited except during May 16 through August 31 and on Sundays  
29 only September 1 through May 15 on those roads that are open to vehicular traffic and on  
30 those gated roads and trails posted for equestrian use.
- 31 (F) Target shooting is prohibited in the area west of Sand Banks Road, east of the Chowan  
32 River and north of US 13/158 to the NC-VA state line.
- 33 (21) Cold Mountain Game Land in Haywood County
- 34 (A) Six Days per Week Area
- 35 (B) Horseback riding is prohibited except on designated trails May 16 through August 31 and  
36 all horseback riding is prohibited from September 1 through May 15.

- 1 (C) Deer of either sex may be taken the ~~last~~ first open ~~Saturday~~ day of the applicable Deer With  
2 Visible Antlers Season.
- 3 (22) Columbus County Game Land in Columbus County.
- 4 (A) Three Days per Week Area
- 5 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
6 Antlers Season.
- 7 (23) Croatan Game Land in Carteret, Craven, and Jones counties
- 8 (A) Six Days per Week Area
- 9 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
10 Antlers Season.
- 11 (C) Waterfowl shall be taken only on the following days:
- 12 (i) the opening and closing days of the applicable waterfowl seasons;
- 13 (ii) Thanksgiving, Christmas, New Year's, and Martin Luther King, Jr. Days; and
- 14 (iii) Tuesdays and Saturdays of the applicable waterfowl seasons.
- 15 (D) Beginning on the first open waterfowl day in October through the end of the waterfowl  
16 season, waterfowl hunting from designated Disabled Sportsmen blinds on the Catfish Lake  
17 Waterfowl Impoundment is by permit only.
- 18 (E) Dove hunting is by permit only for the first two open days of dove season on posted areas.  
19 During the rest of dove season, no permit is required to hunt doves.
- 20 (24) Currituck Banks Game Land in Currituck County
- 21 (A) Six Days per Week Area
- 22 (B) Permanent waterfowl blinds in Currituck Sound on these game lands shall be hunted by  
23 permit only from November 1 through the end of the waterfowl season.
- 24 (C) Licensed hunting guides may accompany the permitted individual or party provided the  
25 guides do not use a firearm.
- 26 (D) The boundary of the game land shall extend 5 yards from the edge of the marsh or shoreline.
- 27 (E) Dogs are allowed only for waterfowl hunting by permitted waterfowl hunters on the day of  
28 their hunt.
- 29 (F) No screws, nails, or other objects penetrating the bark shall be used to attach a tree stand  
30 or blind to a tree.
- 31 (G) Deer of either sex may be taken all the days of the applicable Deer With Visible Antlers  
32 season.
- 33 (25) Dan River Game Land in Rockingham County
- 34 (A) Hunting and trapping is by permit only.
- 35 (B) Horseback riding is prohibited except on those areas posted for equestrian use. People age  
36 16 or older horseback riding on this game land must possess a Game Lands license.
- 37 (C) Target shooting is prohibited.

- 1           ~~(25)~~(26) Dare Game Land in Dare County
- 2                   (A)     Six Days per Week Area
- 3                   (B)     Deer of either sex may be taken the ~~last six~~ first open ~~day~~ days of the applicable Deer With
- 4                   Visible Antlers ~~Season.~~ Season through the first Friday thereafter.
- 5                   (C)     No hunting is allowed on posted parts of bombing range.
- 6                   (D)     The use and training of dogs is prohibited from March 1 through June 30.
- 7           ~~(26)~~(27) Dover Bay Game Land in Craven County
- 8                   (A)     Six Days per Week Area
- 9                   (B)     Deer of either sex may be taken all the days of the applicable Deer With Visible Antlers
- 10                  season.
- 11           ~~(27)~~(28) DuPont State Forest Game Lands in Henderson and Transylvania counties
- 12                   (A)     Hunting is by permit only.
- 13                   (B)     The training and use of dogs for hunting is prohibited except by special hunt permit holders
- 14                  during scheduled permit hunts.
- 15           ~~(28)~~(29) Elk Knob Game Land in Watauga County
- 16                   (A)     Six Days per Week Area
- 17                   (B)     Deer of either sex may be taken the ~~last six~~ first open ~~day~~ day of the applicable Deer With
- 18                   Visible Antlers Season through the first Friday thereafter.
- 19           ~~(29)~~(30) Embro Game Land in Halifax and Warren counties
- 20                   (A)     Six Days per Week Area
- 21                   (B)     Deer of either sex may be taken the first ~~six~~ open day ~~and the last six open days~~ of the
- 22                   applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 23                   (C)     Horseback riding is prohibited.
- 24           ~~(30)~~(31) Goose Creek Game Land in Beaufort and Pamlico counties
- 25                   (A)     Six Days per Week Area
- 26                   (B)     Deer of either sex may be taken all the open days of the applicable Deer With Visible
- 27                   Antlers Season.
- 28                   (C)     Except as provided in Part (D) of this Subparagraph, waterfowl in posted waterfowl
- 29                   impoundments shall be taken only on the following days:
- 30                           (i)     the opening and closing days of the applicable waterfowl seasons;
- 31                           (ii)    Thanksgiving, Christmas, New Year's, and Martin Luther King, Jr. Days; and
- 32                           (iii)   Tuesdays and Saturdays of the applicable waterfowl seasons.
- 33                   (D)     Beginning on the first open waterfowl season day in October and through the end of the
- 34                   waterfowl season, waterfowl hunting is by permit only on the following waterfowl
- 35                   impoundments: Pamlico Point, Campbell Creek, Hunting Creek, Spring Creek, Smith
- 36                   Creek, and Hobucken.



- 1 (E) On Pamlico Point and Campbell Creek Waterfowl Impoundments all activities, except  
2 waterfowl hunting on designated waterfowl hunting days and trapping during the trapping  
3 season, are restricted to the posted Scouting-only Zone during the period November 1  
4 through March 15.
- 5 (F) Camping is restricted to September 1 through the last day of February and March 31  
6 through May 14 in areas both designated and posted as camping areas.
- 7 (G) Hunting and vehicular access on the Parker Farm Tract is restricted from September 1  
8 through January 1 and April 1 through May 15 to individuals that possess a valid hunting  
9 opportunity permit.
- 10 ~~(31)~~(32) Green River Game Land in Henderson, and Polk counties
- 11 (A) Six Days per Week Area
- 12 (B) Deer of either sex may be taken the ~~last~~ first open ~~Saturday~~ day of the applicable Deer With  
13 Visible Antlers Season.
- 14 (C) Horseback riding is prohibited.
- 15 ~~(32)~~(33) Green Swamp Game Land in Brunswick County
- 16 (A) Six Days per Week Area
- 17 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
18 Antlers Season.
- 19 (C) On that portion north of Big Macedonia Road, east of Makatoka Road, south of Little  
20 Macedonia Road, and west of Green Swamp Road, hunting for bear, deer, and turkey is by  
21 permit only.
- 22 (D) Pursuing or chasing deer or bear with dogs for the purposes of training or hunting is  
23 prohibited on that portion of the game land that is north of Big Macedonia Road, east of  
24 Makatoka Road, south of Little Macedonia Road, and west of Green Swamp Road.
- 25 ~~(33)~~(34) Gull Rock Game Land in Hyde County
- 26 (A) Six Days per Week Area
- 27 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
28 Antlers Season.
- 29 (C) Waterfowl on posted waterfowl impoundments shall be taken only on the following days:  
30 (i) the opening and closing days of the applicable waterfowl seasons; and  
31 (ii) Thanksgiving, Christmas, New Year's, and Martin Luther King, Jr. Days; and  
32 (iii) Tuesdays and Saturdays of the applicable waterfowl season.
- 33 (D) Camping is restricted to September 1 through the last day of February and March 31  
34 through May 14 in areas designated and posted as camping areas.
- 35 (E) Bear may only be taken the first three hunting days during the November Bear Season and  
36 the first three hunting days during the second week of the December Bear Season, except  
37 for that portion designated as bear sanctuary.

1 ~~(34)~~(35) Harris Game Land in Chatham, Harnett, and Wake counties

- 2 (A) Six Days per Week Area
- 3 (B) Deer of either sex may be taken the first ~~six open day~~ days and the last ~~six open days~~ of the
- 4 applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 5 (C) Waterfowl shall be taken only on the following days:
- 6 (i) Tuesdays, Fridays, and Saturdays of the applicable waterfowl seasons;
- 7 (ii) Thanksgiving, Christmas, and New Year's Days; and
- 8 (iii) the opening and closing days of the applicable waterfowl seasons.
- 9 (D) The use or construction of permanent hunting blinds shall be prohibited.
- 10 (E) Wild turkey hunting is by permit only, except on those areas posted as an archery zone.
- 11 (F) Target shooting is prohibited.
- 12 (G) Horseback riding is prohibited.

13 (36) Headwaters State Forest Game Land in Transylvania County

- 14 (A) Six Days per Week Area
- 15 (B) Deer of either sex may be taken the first open day of the applicable Deer With Visible
- 16 Antlers Season

17 ~~(35)~~(37) Hill Farm Game Land in Stokes County- hunting and trapping is by permit only.

18 ~~(36)~~(38) Holly Shelter Game Land in Pender County

- 19 (A) Six Days per Week Area
- 20 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible
- 21 Antlers Season.
- 22 (C) Waterfowl may be taken only on the following days:
- 23 (i) the opening and closing days of the applicable waterfowl seasons;
- 24 (ii) Thanksgiving, Christmas, New Year's, and Martin Luther King, Jr. Days; and
- 25 (iii) Tuesdays and Saturdays of the applicable waterfowl seasons.
- 26 (D) Camping is restricted to September 1 through the last day of February and March 31
- 27 through May 14 in areas designated and posted as camping areas.
- 28 (E) On that portion north of the Bear Garden Road, west of Shaw Road to Baby Branch, east
- 29 of the Northeast Cape Fear River, south of NC 53 and west of NC 50, deer hunting and
- 30 bear hunting are permit only.
- 31 (F) The use of dogs for hunting deer and bear is prohibited:
- 32 (i) all open days on that portion of the game land that is south of Baby Branch
- 33 extending west to Stag Park Road, west of Shaw Road, north of Meeks Road
- 34 extending west to Stag Park Road and east of Stag Park Road; and
- 35 (ii) on Tuesdays, Thursdays, and Fridays, with the exception of Thanksgiving,
- 36 Christmas, and New Year's days, and except for the area north of Bear Garden
- 37 Road, west of Shaw Road to Baby Branch, east of the Northeast Cape Fear River,

1 south of NC 53 and west of NC 50, where the use of dogs for deer and bear hunting  
2 is by permit only.

3 (G) Hunting and vehicular access on the Pender 4 Tract is restricted from September 1 to the  
4 last day of February and April 1 to May 15 to individuals that possess valid hunting  
5 opportunity permits, unless otherwise authorized by the Wildlife Resources Commission.

6 (H) Hunters who possess a Disabled Access Permit may operate an All Terrain Vehicle on and  
7 within 100 yards of trails designated for Disabled Sportsman Access.

8 (I) Target shooting is prohibited, except on the Holly Shelter Shooting Range.

9 (J) Geocaching is restricted to closed days for taking bear, deer, turkey, and waterfowl.

10 ~~(37)~~(39) Hyco Game land in Person County

11 (A) Six Days per Week Area

12 (B) Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the  
13 applicable Deer With Visible Antlers Season through the second Friday thereafter.

14 (C) Target shooting is prohibited.

15 ~~(38)~~(40) J. Morgan Futch Game Land in Tyrrell County - Permit Only Area.

16 ~~(39)~~(41) Johns River Game Land in Burke County

17 (A) Hunting is by permit only.

18 (B) During permitted deer hunts, deer of either sex may be taken by permit holders.

19 (C) Entry on posted waterfowl impoundments is prohibited October 1 through March 31,  
20 except by lawful waterfowl hunting permit holders and only on those days written on the  
21 permits.

22 (D) The use or construction of permanent hunting blinds is prohibited.

23 ~~(40)~~(42) Jordan Game Land in Chatham, Durham, Orange, and Wake counties

24 (A) Six Days per Week Area

25 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
26 Antlers Season.

27 (C) Waterfowl may be taken only on:

28 (i) Mondays, Wednesdays, and Saturdays of the applicable waterfowl seasons;

29 (ii) Thanksgiving, Christmas, and New Year's Days; and

30 (iii) the opening and closing days of the applicable waterfowl seasons.

31 (D) Horseback riding is prohibited except on those areas posted as American Tobacco Trail  
32 and other areas posted for equestrian use. Unless otherwise posted, horseback riding is  
33 permitted on posted portions of the American Tobacco Trail anytime the trail is open for  
34 use. On all other trails posted for equestrian use, horseback riding is allowed only during  
35 June, July, and August, and on Sundays the remainder of the year except during open turkey  
36 and deer seasons. People age 16 or older who ride horseback on trails occurring entirely  
37 within the game land boundaries shall possess a Game Lands license.

- 1 (E) Target shooting is prohibited.
- 2 (F) Wild turkey hunting is by permit only, except on those areas posted as an Archery Zone.
- 3 (G) The use of bicycles is restricted to designated areas, except that this restriction does not
- 4 apply to hunters engaged in the act of hunting during the open days of the applicable
- 5 seasons for game birds and game animals.
- 6 ~~(41)~~(43) Juniper Creek Game Land in Brunswick and Columbus counties
- 7 (A) Six Days per Week Area
- 8 (B) Deer of either sex may be taken all the open days of the Deer With Visible Antlers Season.
- 9 (C) Camping is restricted to September 1 through the last day of February and March 31
- 10 through May 14 in areas both designated and posted as camping areas.
- 11 ~~(42)~~(44) Kerr Scott Game Land in Wilkes County
- 12 (A) Six Days per Week Area
- 13 (B) Use of centerfire rifles is prohibited.
- 14 (C) Use of blackpowder firearms, shotguns, or rifles for hunting deer during the applicable
- 15 Deer With Visible Antlers Season is prohibited.
- 16 (D) Tree stands shall not be left overnight; and no screws, nails, or other objects penetrating
- 17 the bark shall be used to attach a tree stand or blind to a tree.
- 18 (E) Deer of either sex may be taken on all open days of the applicable Deer With Visible
- 19 Antlers season.
- 20 (F) Hunting on posted waterfowl impoundments is by permit only.
- 21 (G) The use of firearms for hunting wild turkey is prohibited.
- 22 ~~(43)~~(45) Lantern Acres Game Land in Tyrrell and Washington counties
- 23 (A) Six Days per Week Area
- 24 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible
- 25 Antlers Season.
- 26 (C) Wild turkey hunting is by permit only.
- 27 (D) The use of dogs for hunting deer on the Godley Tract is prohibited.
- 28 (E) Waterfowl hunting on posted waterfowl impoundments is by permit only.
- 29 ~~(44)~~(46) Lee Game Land in Lee County
- 30 (A) Six Days per Week Area
- 31 (B) Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the
- 32 applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 33 (C) Target shooting is prohibited.
- 34 ~~(45)~~(47) Light Ground Pocosin Game Land in Pamlico County
- 35 (A) Six Days per Week Area
- 36 (B) Deer of either sex may be taken all the open days of the applicable Deer with Visible
- 37 Antlers Season.

- 1           ~~(46)~~(48) Linwood Game Land in Davidson County
- 2                   (A)     Six Days per Week Area
- 3                   (B)     Deer of either sex may be taken on all of the open days of the applicable Deer With Visible
- 4                             Antlers Season.
- 5           ~~(47)~~(49) Lower Fishing Creek Game Land in Edgecombe and Halifax counties
- 6                   (A)     Six Days per Week Area
- 7                   (B)     Deer of either sex may be taken the first ~~six open day days~~ and the last ~~six open days~~ of the
- 8                             applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 9                   (C)     Horseback riding is prohibited.
- 10                  (D)     The use of dogs for hunting deer is prohibited.
- 11           ~~(48)~~(50) Mayo Game Land in Person County
- 12                   (A)     Six Days per Week Area
- 13                   (B)     Deer of either sex may be taken the first ~~six open day days~~ and the last ~~six open days~~ of the
- 14                             applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 15                   (C)     Waterfowl shall be taken only on:
- 16                             (i)     Tuesdays, Thursdays, and Saturdays applicable waterfowl seasons;
- 17                             (ii)    Christmas and New Year's Days; and
- 18                             (iii)   the opening and closing days of the applicable waterfowl seasons.
- 19                  (D)     Target shooting is prohibited.
- 20           ~~(49)~~(51) Mitchell River Game Land in Surry County
- 21                   (A)     Three Days per Week Area
- 22                   (B)     Deer of either sex may be taken the ~~last first six open day days~~ of the applicable Deer ~~with~~
- 23                             With Visible Antlers Season through the second Wednesday thereafter.
- 24                   (C)     Horseback riding is prohibited except on designated trails May 16 through August 31, and
- 25                             all horseback riding is prohibited from September 1 through May 15.
- 26           ~~(50)~~(52) Nantahala Game Land in Cherokee, Clay, Graham, Jackson, Macon, Swain, and Transylvania
- 27                             counties
- 28                   (A)     Six Days per Week Area
- 29                   (B)     Deer of either sex may be taken the first last open Saturday day of the applicable Deer With
- 30                             Visible Antlers Season in that portion located in Transylvania County.
- 31           ~~(51)~~(53) Needmore Game Land in Macon and Swain counties.
- 32                   (A)     Six Days per Week Area
- 33                   (B)     Horseback riding is prohibited except on designated trails May 16 through August 31, and
- 34                             all horseback riding is prohibited from September 1 through May 15.
- 35                   (C)     On posted dove fields, dove hunting on the opening day of dove season is by permit only.
- 36           ~~(52)~~(54) Neuse River Game Land in Craven County
- 37                   (A)     Six Days per Week Area

1 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
2 Antlers Season.

3 ~~(53)~~(55) New Lake Game Land in Hyde and Tyrrell counties

4 (A) Six Days per Week Area

5 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
6 Antlers Season.

7 ~~(54)~~(56) Nicholson Creek Game Land in Hoke County

8 (A) Three Days per Week Area

9 (B) Deer of either sex may be taken with ~~bow and arrow~~ archery equipment on open hunting  
10 days from the Saturday on or nearest September 10 to the fourth Friday before  
11 Thanksgiving Day.

12 (C) Deer of either sex may be taken with blackpowder firearms on open hunting days beginning  
13 the fourth Saturday before Thanksgiving Day through the Wednesday of the second week  
14 thereafter.

15 (D) The Deer With Visible Antlers season consists of the open hunting days from the second  
16 Saturday before Thanksgiving through the third Saturday after ~~Thanksgiving~~.  
17 Thanksgiving Day.

18 (E) Deer of either sex may be taken the ~~last~~ first open day of the applicable Deer With Visible  
19 Antlers Season.

20 (F) The use of dogs for hunting deer is prohibited.

21 (G) Wild turkey hunting is by permit only.

22 (H) On Lake Upchurch, the following activities are prohibited:

23 (i) Operating any vessel or vehicle powered by an internal combustion engine; and

24 (ii) Swimming.

25 (I) Target shooting is prohibited.

26 ~~(55)~~(57) North River Game Land in Camden and Currituck counties

27 (A) Six Days per Week Area

28 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
29 Antlers Season.

30 (C) The boundary of the Game Land shall extend five yards from the edge of the marsh or  
31 shoreline.

32 (D) Hunting on the posted waterfowl impoundment is by permit only.

33 ~~(56)~~(58) Northwest River Marsh Game Land in Currituck County

34 (A) Six Days per Week Area

35 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
36 Antlers Season.

- 1 (C) The boundary of the Game Land shall extend five yards from the edge of the marsh or  
2 shoreline.
- 3 ~~(57)~~(59) Pee Dee River Game Land in Anson, Montgomery, Richmond, and Stanly counties
- 4 (A) Six Days per Week Area
- 5 (B) Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the  
6 applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 7 (C) Use of centerfire rifles is prohibited in that portion in Anson and Richmond counties North  
8 of US-74.
- 9 (D) Target shooting is prohibited.
- 10 (E) Horseback riding is allowed only on roads opened to vehicular traffic and only during the  
11 following times:
- 12 (i) during June, July, and August; and
- 13 (ii) on Sundays during the other months or parts of months when deer and turkey  
14 seasons are closed.
- 15 ~~(58)~~(60) Perkins Game Land in Davie County
- 16 (A) Three Days per Week Area
- 17 (B) Deer of either sex may be taken the ~~last~~ first open Saturday day of the applicable Deer With  
18 Visible Antlers Season.
- 19 (C) Horseback riding is prohibited from November 1 through January 1.
- 20 ~~(59)~~(61) Pisgah Game Land in Avery, Buncombe, Burke, Caldwell, Haywood, Henderson, Madison,  
21 McDowell, Mitchell, Transylvania, Watauga, and Yancey counties
- 22 (A) Six Days per Week Area
- 23 (B) Deer of either sex may be taken the ~~last~~ first open Saturday day of the applicable Deer With  
24 Visible Antlers Season.
- 25 (C) Horseback riding is prohibited on the Black Bear (McDowell County), Linville River  
26 (Burke County), and Little Tablerock Tracts (Avery, McDowell, and Mitchell counties).
- 27 ~~(60)~~(62) Pond Mountain Game Land in Ashe County
- 28 (A) Six Days per Week Area
- 29 (B) Deer of either sex may be taken the ~~last six~~ first open day days of the applicable Deer ~~with~~  
30 With Visible Antlers Season through the first Friday thereafter.
- 31 (C) Horseback riding is prohibited except on designated trails from May 16 through August 31  
32 and Sundays from September 1 through October 31. All horseback riding is prohibited  
33 from November 1 through May 15.
- 34 ~~(61)~~(63) Pungo River Game Land in Hyde County
- 35 (A) Six Days per Week Area
- 36 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
37 Antlers Season.

- 1           ~~(62)~~(64) Rendezvous Mountain State Forest Game Land in Wilkes County
- 2                   (A)     Three Days per Week Area
- 3                   (B)     Deer of either sex may be taken the ~~last six~~ first open day ~~days~~ of the applicable Deer With
- 4                               Visible Antlers Season through the second Wednesday thereafter.
- 5                   (C)     Bear hunting is prohibited.
- 6           ~~(63)~~(65) Rhodes Pond Game Land in Cumberland and Harnett counties
- 7                   (A)     Hunting is by permit only.
- 8                   (B)     Swimming is prohibited on the area.
- 9           ~~(64)~~(66) Roanoke River Wetlands in Bertie, Halifax, Martin, and Northampton counties
- 10                   (A)     Hunting is by Permit only.
- 11                   (B)     Vehicles are prohibited on roads or trails except those operated on Commission business
- 12                               or by permit holders.
- 13                   (C)     Camping is restricted to September 1 through the last day of February and March 31
- 14                               through May 14 in areas both designated and posted as camping areas, provided, however,
- 15                               that camping is allowed at any time within 100 yards of the Roanoke River on the state-
- 16                               owned portion of the game land.
- 17           ~~(65)~~(67) Roanoke Island Marshes Game Land in Dare County-Hunting is by permit only.
- 18           ~~(66)~~(68) Robeson Game Land in Robeson County
- 19                   (A)     Three Days per Week Area
- 20                   (B)     Deer of either sex may be taken all the open days of the applicable Deer With Visible
- 21                               Antlers Season.
- 22           ~~(67)~~(69) Rockfish Creek Game Land in Hoke County
- 23                   (A)     Three Days per Week Area
- 24                   (B)     Deer of either sex may be taken with ~~bow and arrow~~ archery equipment on open hunting
- 25                               days from the Saturday on or nearest September 10 to the fourth Friday before
- 26                               Thanksgiving Day.
- 27                   (C)     Deer of either sex may be taken with blackpowder firearms on open hunting days beginning
- 28                               the fourth Saturday before Thanksgiving Day through the Wednesday of the second week
- 29                               thereafter.
- 30                   (D)     The Deer With Visible Antlers season consists of the open hunting days from the second
- 31                               Saturday before Thanksgiving Day through the third Saturday after ~~Thanksgiving.~~
- 32                               Thanksgiving Day.
- 33                   (E)     Deer of either sex may be taken the first ~~last~~ open day of the applicable Deer With Visible
- 34                               Antlers Season.
- 35                   (F)     The use of dogs for hunting deer is prohibited.
- 36                   (G)     Wild turkey hunting is by permit only.
- 37                   (H)     Taking fox squirrels is prohibited.



- 1 (I) Target shooting is prohibited.
- 2 ~~(68)~~(70) Rocky Run Game Land in Onslow County - Hunting is by permit only.
- 3 ~~(69)~~(71) Sampson Game Land in Sampson County
- 4 (A) Three Days per Week Area
- 5 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible
- 6 Antlers Season.
- 7 (C) Target shooting is prohibited.
- 8 ~~(70)~~(72) Sandhills Game Land in Hoke, Moore, Richmond, and Scotland counties
- 9 (A) Three Days per Week Area
- 10 (B) Hunting is prohibited on the J. Robert Gordon Field Trial Grounds from October 22
- 11 through March 31 except as follows:
- 12 (i) deer ~~of either-sex~~ may be taken with archery equipment on all the open days of
- 13 the ~~bow and arrow~~ archery season through the fourth Friday before Thanksgiving
- 14 Day; with blackpowder firearms and archery equipment all the open days of the
- 15 blackpowder firearms season through the third ~~Saturday~~ Wednesday before
- 16 ~~Thanksgiving; Thanksgiving Day~~; and only deer with visible antlers may be taken
- 17 with all legal weapons from the second ~~Monday~~ Saturday before Thanksgiving
- 18 Day through the Saturday following ~~Thanksgiving; Thanksgiving Day~~;
- 19 (ii) dove may be taken all open days from the opening day of the dove season through
- 20 the third Saturday thereafter;
- 21 (iii) squirrel (gray and fox) may be taken all the open days from second Monday before
- 22 ~~Thanksgiving; Thanksgiving Day~~ through the Saturday following ~~Thanksgiving;~~
- 23 Thanksgiving Day;
- 24 (iv) rabbit may be taken all open days from the second Saturday preceding
- 25 Thanksgiving Day through the Saturday following ~~Thanksgiving; Thanksgiving~~
- 26 Day;
- 27 (v) waterfowl may be taken on open days during any waterfowl season;
- 28 (vi) wild animals and wild birds may be taken as part of a Disabled Sportsmen
- 29 Program Permit Hunt; and
- 30 (vii) raccoon and opossum may be taken on open days from sunrise Monday on or
- 31 nearest October 15 through the last day of February.
- 32 (C) The Deer With Visible Antlers season is the open hunting days from the second Saturday
- 33 before Thanksgiving Day through the third Saturday after ~~Thanksgiving; Thanksgiving~~
- 34 Day except on the J. Robert Gordon Field Trial Grounds.
- 35 (D) The ~~bow and arrow~~ archery season is all open days from the Saturday on or nearest to Sept.
- 36 10 to the fourth Friday before Thanksgiving Day and, except on the J. Robert Gordon Field
- 37 Trial Grounds, the third Monday after Thanksgiving Day through January 1. Deer may be

1 taken with archery equipment on all open hunting days during the ~~bow and arrow archery~~  
2 season, the Deer with Visible antlers season, and the blackpowder firearms season as stated  
3 in this Subparagraph.

4 (E) Blackpowder firearms season is all the open days from the fourth Saturday preceding  
5 Thanksgiving Day through the Wednesday of the second week thereafter and, except on  
6 the J. Robert Gordon Field Trial Grounds, the third Monday after Thanksgiving Day  
7 through January 1. Deer may be taken with blackpowder firearms on all open hunting days  
8 during the blackpowder firearms season and the Deer With Visible Antlers season.

9 (F) Either-sex deer hunting during the Deer With Visible Antlers Season is by permit only.

10 (G) In addition to the regular hunting days, waterfowl may be taken on the opening and closing  
11 days of the applicable waterfowl seasons.

12 (H) Wild turkey hunting is by permit only.

13 ~~(I) The following areas are permit only for all quail and woodcock hunting, and dog training~~  
14 ~~on birds:~~

15 ~~(i) In Richmond County: that part east of US 1;~~

16 ~~(ii) In Scotland County: that part west of SR 1328 and north of Gardner Farm Lane~~  
17 ~~and that part east of SR 1328 and north of Scotland Lake Lane.~~

18 ~~(I)~~ Horseback riding on field trial grounds from October 22 through March 31 is prohibited  
19 unless participating in authorized field trials.

20 ~~(J)~~ Camping and the presence of campers and tents in designated Hunter Camping Areas are  
21 limited to September 1 through the last day of February and March 31 through May 14.

22 ~~(K)~~ Target shooting is prohibited, except at the John F. Lentz Hunter Education Complex.

23 ~~(71)~~(73) Sandy Creek Game Land in Nash and Franklin Counties

24 (A) Six Days per Week Area

25 (B) Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the  
26 applicable Deer With Visible Antlers ~~Season. Season through the second Friday thereafter.~~

27 (C) Horseback riding is prohibited.

28 (D) The use of dogs for hunting deer is prohibited.

29 ~~(72)~~(74) Sandy Mush Game Land in Buncombe and Madison counties.

30 (A) Three Days per Week Area

31 (B) Deer of either sex may be taken the ~~last~~ first open Saturday day of the applicable Deer with  
32 Visible Antlers season.

33 (C) Horseback riding is prohibited except on designated trails May 16 through August 31 and  
34 all horseback riding is prohibited from September 1 through May 15.

35 (D) Dogs shall only be trained on Mondays, Wednesdays, and Saturdays and only as allowed  
36 in 15A NCAC 10D .0102(f).

- 1 (E) Dove hunting is by permit only from the opening day through the second Saturday of dove  
2 season.
- 3 ~~(73)~~(75) Second Creek Game Land in Rowan County- hunting is by permit only.
- 4 ~~(74)~~(76) Shocco Creek Game Land in Franklin, Halifax, Nash, and Warren counties
- 5 (A) Six Days per Week Area
- 6 (B) Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the  
7 applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 8 (C) Horseback riding is prohibited.
- 9 (D) Camping is restricted to September 1 through the last day of February and March 31  
10 through May 14 in areas both designated and posted as camping areas.
- 11 ~~(75)~~(77) South Mountains Game Land in Burke, Cleveland, McDowell, and Rutherford counties
- 12 (A) Six Days per Week Area
- 13 (B) The Deer With Visible Antlers season consists of the open hunting days from the Monday  
14 before Thanksgiving Day through the third Saturday after Thanksgiving. Deer may be  
15 taken with ~~bow and arrow~~ archery equipment on open days beginning the Saturday on or  
16 nearest September 10 to the third Saturday thereafter, and Monday on or nearest October  
17 15 to the Saturday before Thanksgiving Day and during the Deer With Visible Antlers  
18 season. Deer may be taken with blackpowder firearms on open days beginning the Monday  
19 on or nearest October 1 through the Saturday of the second week thereafter, and during the  
20 Deer With Visible Antlers season.
- 21 (C) Deer of either sex may be taken the first last open Saturday day of the applicable Deer With  
22 Visible Antlers Season.
- 23 (D) Horseback riding is prohibited except on designated trails May 16 through August 31 and  
24 all horseback riding is prohibited from September 1 through May 15.
- 25 ~~(E) That part of South Mountains Game Land in Cleveland, McDowell, and Rutherford~~  
26 ~~counties is closed to all grouse hunting, quail hunting, woodcock hunting, and all bird dog~~  
27 ~~training.~~
- 28 ~~(76)~~(78) Stones Creek Game Land in Onslow County
- 29 (A) Six-Day per Week Area
- 30 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
31 Antlers Season.
- 32 (C) The use of dogs for hunting deer is prohibited on Mondays, Wednesdays, and Fridays.
- 33 (D) Swimming in all lakes is prohibited.
- 34 (E) Waterfowl on posted waterfowl impoundments may be taken only on the following days:
- 35 (i) the opening and closing days of the applicable waterfowl seasons;
- 36 (ii) Thanksgiving, Christmas, New Year's, and Martin Luther King, Jr. Days; and
- 37 (iii) Tuesdays and Saturdays of the applicable waterfowl seasons.

- 1 (F) Target shooting is prohibited.
- 2 (G) Geocaching is restricted to closed days for taking bear, deer, turkey, and waterfowl.
- 3 ~~(77)~~(79) Suggs Mill Pond Game Land in Bladen and Cumberland counties
- 4 (A) Hunting and trapping is by permit only.
- 5 (B) Camping is restricted to September 1 through the last day of February and March 31
- 6 through May 14 in areas both designated and posted as camping areas.
- 7 (C) Entry is prohibited on scheduled hunt or trapping days except for:
- 8 (i) hunters or trappers holding special hunt or trapping permits; and
- 9 (ii) persons using Campground Road to access Suggs Mill Pond Lake at the dam.
- 10 (D) During the period of November 1 through January 31, except on Sundays, the use of vessels
- 11 on Suggs Mill Pond Lake and Little Singletary Lake is limited to waterfowl hunting only
- 12 by waterfowl hunters possessing a valid and current Hunting Opportunity Permit issued by
- 13 the Wildlife Resources Commission pursuant to G.S. 113-264(d).
- 14 (E) During the period of November 1 through March 15, the use of vessels on managed
- 15 waterfowl impoundments is limited to waterfowl hunting only by waterfowl hunters
- 16 possessing a valid and current Hunting Opportunity Permit issued by the Wildlife
- 17 Resources Commission pursuant to G.S. 113-264(d).
- 18 ~~(78)~~(80) Sutton Lake Game Land in New Hanover and Brunswick counties
- 19 (A) Six Days per Week Area
- 20 (B) Deer of either sex may be taken the ~~last six~~ first open day ~~days~~ of the applicable Deer With
- 21 Visible Antlers Season through the first Friday thereafter.
- 22 (C) Target shooting is prohibited.
- 23 ~~(79)~~(81) Tar River Game Land in Edgecombe County – hunting is by permit only.
- 24 ~~(80)~~(82) Texas Plantation Game Land in Tyrrell County - hunting is by permit only.
- 25 ~~(81)~~(83) Three Top Mountain Game Land in Ashe County
- 26 (A) Six Days per Week Area
- 27 (B) Deer of either sex may be taken the ~~last~~ first ~~six~~ open day ~~days~~ of the applicable Deer With
- 28 Visible Antlers Season through the first Friday thereafter.
- 29 (C) Horseback riding is prohibited.
- 30 ~~(82)~~(84) Thurmond Chatham Game Land in Alleghany and Wilkes counties
- 31 (A) Six Days per Week Area
- 32 (B) Deer of either sex may be taken the first ~~six~~ open day ~~days~~ and the last ~~six~~ open days of the
- 33 applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 34 (C) Horseback riding is prohibited except on designated trails May 16 through August 31, and
- 35 all horseback riding is prohibited from September 1 through May 15. People age 16 or
- 36 older horseback riding on this game land shall possess a Game Lands license.

1 (D) The maximum period of consecutive overnight camping at any designated campground is  
2 14 days within any 30 day period from May 1 through August 31. After 14 consecutive  
3 days of camping all personal belongings must be removed from the game land.

4 ~~(83)~~(85) Tillery game Land in Halifax County

- 5 (A) Six Days per Week Area
- 6 (B) Deer of either sex may be taken the first ~~six open day days and the last six open days~~ of the  
7 applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 8 (C) Horseback riding is prohibited.
- 9 (D) The use of dogs for hunting deer is prohibited.
- 10 (E) Wild turkey hunting is by permit only.

11 ~~(84)~~(86) Toxaway Game Land in Jackson and Transylvania counties

- 12 (A) Six Days per Week Area
- 13 (B) Deer of either sex may be taken the ~~last~~ first open Saturday day of the applicable Deer With  
14 Visible Antlers Season.
- 15 (C) Horseback riding is prohibited except on designated trails May 16 through August 31 and  
16 all horseback riding is prohibited from September 1 through May 15.

17 ~~(85)~~(87) Uwharrie Game Land in Davidson, Montgomery, and Randolph counties

- 18 (A) Six Days per Week Area
- 19 (B) Deer of either sex may be taken the first ~~six open day days and the last open six days~~ of the  
20 applicable Deer With Visible Antlers Season through the second Friday thereafter.
- 21 (C) On the posted waterfowl impoundment, waterfowl may be taken only on the following  
22 days:
  - 23 (i) the opening and closing days of the applicable waterfowl seasons;
  - 24 (ii) Thanksgiving, Christmas, New Year's, and Martin Luther King, Jr. Days; and
  - 25 (iii) Mondays, Wednesdays and Saturdays of the applicable waterfowl seasons.
- 26 (D) Target shooting is prohibited, except at the Flintlock Valley Shooting Range.

27 ~~(86)~~(88) Vance Game Land in Vance County

- 28 (A) Six Days per Week Area
- 29 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
30 Antlers Season.
- 31 (C) The use of dogs, centerfire rifles, and handguns for hunting deer is prohibited on the  
32 Nutbush Peninsula tract.

33 ~~(87)~~(89) Van Swamp Game Land in Beaufort and Washington counties

- 34 (A) Six Days per Week Area
- 35 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
36 Antlers Season.

1 (C) Bear may only be taken the first three hunting days during the November Bear Season and  
2 the first three hunting days during the second week of the December Bear Season.

3 ~~(88)~~(90) Voice of America Game Land in Beaufort County- hunting and trapping is by permit only.

4 ~~(89)~~(91) White Oak River Game Land in Onslow County

5 (A) Three Days per Week Area

6 (B) Deer of either sex may be taken all the open days of the applicable Deer With Visible  
7 Antlers Season.

8 (C) Except as provided in Part (D) of this Subparagraph, waterfowl in posted waterfowl  
9 impoundments shall be taken only on the following days:

10 (i) the opening and closing days of the applicable waterfowl seasons;

11 (ii) Thanksgiving, Christmas, New Year's, and Martin Luther King, Jr. Days; and

12 (iii) Tuesdays and Saturdays of the applicable waterfowl seasons.

13 (D) Beginning on the first open waterfowl season day in October and through the end of the  
14 waterfowl season, a permit is required for hunting posted waterfowl impoundments.

15 (E) The Huggins Tract and Morton Tracts have the following restrictions:

16 (i) access on Hargett Avenue and Sloan Farm Road requires a valid Hunting  
17 Opportunity Permit issued by the Wildlife Resources Commission pursuant to  
18 G.S. 113-264(d);

19 (ii) hunting is by permit only; and

20 (iii) the use of dogs for hunting deer is prohibited.

21 (F) Wild turkey hunting is by permit only.

22 ~~(90)~~(92) Whitehall Plantation Game Land in Bladen County

23 (A) Hunting and trapping is by permit only.

24 (B) Camping is restricted to September 1 through the last day of February and March 31  
25 through May 14 in areas both designated and posted as camping areas.

26 ~~(91)~~(93) William H. Silver Game Land in Haywood County

27 (A) Six Days per Week Area

28 (B) Deer of either sex may be taken the ~~last~~ first open Saturday ~~day~~ of the applicable Deer With  
29 Visible Antlers Season.

30 (i) On permitted type hunts, deer of either sex may be taken on the hunt dates indicated on the permit. Completed  
31 applications shall be received by the Commission not later than the first day of September next preceding the dates of  
32 hunt. Permits shall be issued by random computer selection, shall be mailed to the permittees prior to the hunt, and  
33 are nontransferable. A hunter making a kill shall validate the kill and report the kill to a wildlife cooperator agent or  
34 by phone.

35 (j) The following game lands and refuges are closed to all hunting except to those individuals who have obtained a  
36 valid and current permit from the Wildlife Resources Commission:

37 (1) Bertie, Halifax and Martin counties—Roanoke River Wetlands;

- 1           (2)     Bertie County—Roanoke River National Wildlife Refuge;
- 2           (3)     Bladen County—Suggs Mill Pond Game Lands;
- 3           (4)     Burke County—John's River Waterfowl Refuge;
- 4           (5)     Dare County—Dare Game Lands (Those parts of bombing range posted against hunting);
- 5           (6)     Dare County—Roanoke Sound Marshes Game Lands; and
- 6           (7)     Henderson and Transylvania counties—DuPont State Forest Game Lands.

7 (k) Access to Hunting Creek Swamp Waterfowl Refuge in Davie County requires written permission from the  
8 Commission. Written permission may be granted only when entry onto the Waterfowl Refuge will not compromise  
9 the primary purpose for establishing the Waterfowl Refuge and the person requesting entry can demonstrate a valid  
10 need or the person is a contractor or agent of the Commission conducting official business. "Valid need" includes  
11 issues of access to private property, scientific investigations, surveys, or other access to conduct activities in the public  
12 interest.

13 (l) Feral swine may be taken by licensed hunters during the open season for any game animal or game bird using any  
14 legal manner of take allowed during those seasons. Dogs may not be used to hunt feral swine except on game lands  
15 that allow the use of dogs for hunting deer or bear, and during the applicable deer or bear season.

16 (m) Youth Waterfowl Day. On the day declared by the Commission to be Youth Waterfowl Day, youths may hunt  
17 on any game land and on any impoundment without a special hunt permit, including permit-only areas, except where  
18 prohibited in Paragraph (h) of this Rule.

19 (n) Permit Hunt Opportunities for Disabled Sportsmen. The Commission may designate special hunts for participants  
20 of the disabled sportsman program by permit. The Commission may schedule these permit hunts during the closed  
21 season. Hunt dates and species to be taken shall be identified on each permit. If the hunt has a limited weapon choice,  
22 the allowed weapons shall be stated on each permit.

23 (o) As used in this Rule, horseback riding includes all equine species.

24 (p) When waterfowl hunting is specifically permitted in this Rule on Christmas and New Years' Day and those days  
25 fall on Sundays, the open waterfowl hunting day shall be the following day.

26  
27 *History Note: Authority G.S. 113-134; 113-264; 113-291.2; 113-291.5; 113-296; 113-305;*  
28 *Eff. February 1, 1976;*  
29 *Temporary Amendment Eff. October 3, 1991;*  
30 *Amended Eff. July 1, 1998; July 1, 1997; July 1, 1996; September 1, 1995; July 1, 1995;*  
31 *September 1, 1994; July 1, 1994;*  
32 *Temporary Amendment Eff. October 1, 1999; July 1, 1999;*  
33 *Amended Eff. July 1, 2000;*  
34 *Temporary Amendment Eff. July 1, 2002; July 1, 2001;*  
35 *Amended Eff. August 1, 2002 (approved by RRC on 06/21/01 and 04/18/02);*  
36 *Temporary Amendment Eff. June 1, 2003;*

1                    *Amended Eff. June 1, 2004 (this replaces the amendment approved by RRC on July 17,*  
2                    *2003);*  
3                    *Amended Eff. August 1, 2018; August 1, 2017; August 1, 2016; May 1, 2015; August 1, 2014;*  
4                    *January 1, 2013; August 1, 2012; August 1, 2011; August 1, 2010; May 1, 2009; May 1, 2008; May*  
5                    *1, 2007; October 1, 2006; August 1, 2006; May 1, 2006; February 1, 2006; June 1, 2005; October*  
6                    *1, 2004*



# EXHIBIT L-1

February 28, 2018



## Proposed Rules for Amendment Under 15A NCAC 10F .0300 – Local Water Safety Regulations

### Title 15A NCAC 10F .0300 – Local Water Safety Regulations

As part of the 2016 Periodic Review process all Water Safety Rules – 15A NCAC 10F .0300 have been reviewed. Of these seven water safety Rules presented for amendment, two are required to be readopted because they were classified as being necessary with substantive public interest – 15A NCAC 10F .0353 Mountain Island Lake – Mecklenburg, Gaston, and Lincoln counties and 15A NCAC 10F .0366 Macon County. All 7 Rules are proposed for amendments to incorporate the following changes into the North Carolina Administrative Code:

- Revise language and terms for consistency
- Clarify no-wake zone boundaries by including coordinates
- Correct names of locations
- Remove applicant’s responsibility for maintenance of markers
- Remove the word “motorboat” as the statutory definition of “vessel” includes motorboats
- Include or remove appropriate federal approval for placement of markers

Staff recommends approval to proceed with publishing Notice of Text in the *NC Register*, to hold one public hearing, and to open the comment period for the following Rules. The complete Rule text can be found in Appendix A of **Exhibit L-2**, the fiscal note review.

#### **15A NCAC 10F .0307 CATAWBA, IREDELL, LINCOLN, AND MECKLENBURG COUNTIES**

Update language for consistency, correct names and add coordinates, add authority of Lake Norman Marine Commission, cite Session Law 1969-1089 that created the Lake Norman Marine Commission.

#### **15A NCAC 10F 0342 CATAWBA COUNTY**

Remove 15A NCAC 10F .0342 (a)(1) and (a)(2) because there no longer are water safety hazards in those locations. Clarify descriptions and add coordinates, remove maintenance, remove federal authority of United States Coast Guard and add federal authority of U.S. Army Corps of Engineers.

#### **15A NCAC 10F .0353 MOUNTAIN ISLAND LAKE – MECKLENBURG, GASTON AND LINCOLN COUNTIES (for readoption – substantive public interest)**

Revise language for consistency, correct descriptions and add coordinates, remove “motorboat”, remove maintenance.

**15A NCAC 10F .0360 GRAHAM COUNTY**

Correct location names, add coordinates, remove maintenance, add authority of TVA and U.S. Army Corps of Engineers.

**15A NCAC 10F .0366 MACON COUNTY (readoption – substantive public interest)**

Describe location of no-wake zone, add coordinates.

**15A NCAC 10F .0373 TRANSYLVANIA COUNTY**

Revise language for consistency, add coordinates, remove federal authority of U. S. Army Corps of Engineers.

**15A NCAC 10F .0375 DUKE ENERGY CORPORATION HYDROELECTRIC STATION SAFETY ZONES**

Revise language for consistency.

**EXHIBIT L-2**  
**February 28, 2018**



**Fiscal Note Review of  
Proposed Wildlife Resources Commission No-Wake Zone Rules**

**Rule Amendments:** 15A NCAC 10F .0307 Catawba, Iredell, Lincoln, and Mecklenburg counties  
15A NCAC 10F .0342 Catawba County  
15A NCAC 10F .0353 Mountain Island Lake Marine Commission  
15A NCAC 10F .0360 Graham County  
15A NCAC 10F .0366 Macon County  
15A NCAC 10F .0373 Transylvania County  
15A NCAC 10F .0375 Duke Energy Corporation Hydroelectric Station Safety Zones

**Contact:** Carrie Ruhlman, Policy Analyst  
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**Impact:** State Government: Yes  
Local Government: Yes  
Private: No  
Substantial Impact: No

**Authority:** G.S. 75A-3: 75A-15

All 10F Rules were reviewed as part of the 2016 Periodic Review process. Five of the 7 rules proposed for amendment at this time are not required to be readopted. 15A NCAC 10F .0366 Macon County and 15A NCAC 10F .0353 Mountain Island Lake – Mecklenburg, Gaston, and Lincoln Counties are required to be readopted, as they were determined to be “necessary with substantive public interest.” All rules are being updated to incorporate the following changes:

- updating language and terms for consistency;
- clarifying no-wake zone boundaries;
- removing the maintenance of markers; and
- including appropriate federal approval for placement of markers.

Proposed rules can be found in the Appendix.

**State Impact Analysis:** The proposed amendments to these rules are anticipated to have a minimal economic impact on the state.

The only proposed amendment that will have a fiscal impact is the deletion of maintenance for markers. This amendment applies to four Rules: 15A NCAC 10F .0342, .0353, .0360, and .0366.

The agency will assume responsibility for marker replacement. In general, replacement is only required when a marker is missing or has been damaged, as these markers typically last 5 – 10 years. Thus, the agency expects only minimal fiscal impacts due to the proposed amendments to these 4 rules. Based on approximate costs for materials and labor, it is estimated that the agency could incur an annual cost of approximately \$5,900 annually to replace missing or damaged markers statewide  $((\$150/\text{marker} + \$150 \text{ materials}/\text{marker}) \times 10 \text{ markers}/\text{year}) = \$3,000/\text{year} + ((\$29/\text{hr} \times 2 \text{ techs} = \$58/\text{hr}) \times (5 \text{ hrs}/\text{marker} \times 10 \text{ markers}/\text{year} = 50 \text{ hrs}/\text{yr}) = \$2,900/\text{year}) = \$5,900/\text{year}$ .<sup>1</sup>

**Local Impact Analysis:** The proposed amendments to these rules will not impose any costs on local governments. Due to the Commission assuming responsibility for marker replacement, local governments may incur benefits of approximately \$590 annually  $((\$150/\text{marker} + \$150 \text{ materials}/\text{marker}) + (\$58/\text{hr} \times 5 \text{ hours}) = \$590)$  in materials savings and staff time not spent on replacement of individual markers.<sup>2</sup>

**Private Impact:** The proposed amendments to these rules have no anticipated private impact. However, a potential benefit of clarifying no-wake zone boundaries is increased boater safety.

### **Substantial Economic Impact**

There will be no substantial economic impact.

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<sup>1</sup> Hourly rates for agency staff reflect total compensation for boating technician II.

<sup>2</sup> Estimates based on Commission staff and materials costs.

APPENDIX

15A NCAC 10F .0307 is proposed for amendment as follows:

**15A NCAC 10F .0307 ~~CATAWBA, IREDELL, LINCOLN~~ CATAWBA, IREDELL, LINCOLN, AND MECKLENBURG COUNTIES**

(a) Regulated Area. This Rule applies to the waters of Lake Norman ~~which is located in the counties of Catawba, Iredell, Lincoln and Mecklenburg~~ Mecklenburg counties:

- (1) within 50 yards of the shoreline at Jetton Park in Mecklenburg County, from a point on the west side of the park at 35.47082 N, 80.90427 W, south and around the point at 35.46703 N, 80.90360 W, then northeast to a point at 35.47262 N, 80.89727 W;
- (2) within 50 yards of ~~Brown's Cove~~ the end of the docks at Blythe Landing Park, west of N.C. Highway 73 in Huntersville;
- (3) the waters of Bluff Point Cove in Cornelius shore to shore, east of a line from a point 50 yards west of the south shore of the cove mouth at 35.45327 N, 80.89520 W to a point 50 yards west of the north shore of the cove mouth at 35.45487 N, 80.89440 W; and
- (4) the waters of the Hager Creek cove in Iredell County, east of a line at the cove mouth from a point on the south shore at 35.55117 N, 80.95250 W to a point on the north shore of the cove mouth at 35.56162 N, 80.95230 W.

~~(b) Speed Limit Near Shore Facilities. No person shall operate a vessel at greater than no wake speed within 50 yards of any marked boat launching area, bridge, dock, pier, marina, boat storage structure, or boat service area on the waters of Lake Norman.~~

~~(b) No person shall operate a vessel at greater than no wake speed within the regulated areas described in Paragraph (a) of this Rule.~~

~~(c) Speed Limit Near Parks: No person shall operate a vessel greater than no wake speed within 50 yards of the following parks as designated by markers:~~

- ~~(1) Jetton Park;~~
- ~~(2) Brown's Cove Park.~~

~~(d) Specific Speed Zones: No person shall operate a vessel at greater than no wake speed in the following designated waters:~~

- ~~(1) the entire area of Bluff Point Cove;~~
- ~~(2) that cove immediately north of the inlet of Hager Creek.~~

~~(e)(c) Restricted Swimming Areas. No person operating or responsible for the operation of a vessel shall permit it to enter any marked swimming area on the waters of Lake Norman.~~

~~(f)(d) Placement and Maintenance of Markers. Each of the boards of commissioners of the above named counties The Lake Norman Marine Commission or a county in that Commission is the designated a suitable agency for placement and maintenance of navigational aids and regulatory markers of a general nature on the waters of Lake Norman-Norman, within the boundaries of each respective county. Provided the said counties exercise their~~

~~supervisory responsibility, they may delegate the actual process of placement or maintenance of such markers to some other agency, corporation, group, or individual.~~

~~With regard to marking the restricted zones described above, markers may be placed and maintained by the individuals using the protected areas and facilities in accordance with the Uniform Waterway Marking System and supplementary standards as set forth in Rule .0301(g)(1) to (8) of this Section.~~

~~(g) (e) Markers Reflecting County Regulation. Where any Any marker conforming or required to conform to the uniform system Uniform System that is placed in or near Lake Norman advising the public of the provisions of any a regulation by local act or of county ordinances ordinance made under the authority of any local act and that is not within the enforcement jurisdiction of the Commission shall bear the legend "County Regulation" to indicate the regulation is not enforceable by the Commission.~~

~~(1) — Such provisions are not within the enforcement jurisdiction of the Commission; and—~~

~~(2) — The Commission has not passed regulations of an identical or closely similar nature to that of the provisions in question, such marker to be deemed in conformity with the uniform system must bear on it the legend "County Regulation" at such a place or at such places as needed to indicate which provisions are not enforceable by the Commission as a matter of state law.~~

~~(h) (f) Miscellaneous Restrictions. In addition to the acts prohibited by Paragraph (f) of Rule .0301 of this Section, it is shall be unlawful to commit any such act with respect to any marker placed or erected under the authority of Chapter 1205 of the 1965 Session Laws of the State of North Carolina by any one of the above named counties or by them jointly the Lake Norman Marine Commission or one of the counties in that Commission.~~

*History Note: Authority G.S. 75A-3; 75A-15; S.L. 1965, c. 1205; S.L. 1969, c.1089;*

*Eff. February 1, 1976;*

*Amended Eff. July 1, 1998; October 1, 1992; May 1, 1989; March 25, 1978;*

*Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. December 6, 2016.*

15A NCAC 10F .0342 is proposed for amendment as follows:

**15A NCAC 10F .0342 CATAWBA COUNTY**

(a) Regulated Areas. This Rule applies to the following waters of Lake Hickory:

~~(1) the public fishing pier located at the old Wildlife Club off 12th Street Drive, NW, City of Hickory; (2) — the shores of the Dixie Boat Club, Inc.;~~

~~(3) (1) that the area within 50 yards of the Moore's Ferry Boat Marina and Boathouse in the City of Hickory on 44th Avenue, Circle NW; at 44<sup>th</sup> Avenue Circle, NW; and~~

~~(4) (2) the cove entering the Lake Hickory RV Resort/Marina as delineated by appropriate markers. Resort boating access area, south of a line from a point on the east shore at 35.80767 N, 81.22795 W, to a point on the west shore at 35.80818 N, 81.22899 W, and the waters of the cove west and south of the Lake Hickory RV Resort shore to shore, south-southeast of a line from a point on the west shore of the cove mouth at 35.80675 N, 81.23275 W to a point on the east shore of the cove mouth at 35.80722 N, 81.23145 W.~~

(b) Speed Limit. No person shall operate a vessel at greater than no-wake speed in the waters of the regulated areas specified in Paragraph (a) of this Rule.

(c) Placement ~~and Maintenance~~ of Markers. The governing board of the City of Hickory and the Catawba County Board of Commissioners are the designated ~~suitable~~ agencies for placement ~~and maintenance~~ of the markers implementing this Rule, subject to the approval of ~~the United States Coast Guard and~~ the United States Army Corps of Engineers.

*History Note: Authority G.S. 75A-3; 75A-15;*

*Eff. September 1, 1982;*

*Amended Eff. March 1, 1992; May 1, 1989;*

*Temporary Amendment Eff. February 1, 1999;*

*Amended Eff. July 1, 2000;*

*Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. December 6, 2016.*

15A NCAC 10F .0353 is proposed for reoption with substantive changes as follows:

**15A NCAC 10F .0353 MOUNTAIN ISLAND LAKE: ~~LAKE~~ - MECKLENBURG, GASTON AND LINCOLN COUNTIES**

(a) Regulated Area. This Rule applies to Mountain Island ~~Lake, which is located~~ Lake in Mecklenburg, Gaston and Lincoln ~~counties.~~ counties:

- (1) ~~Latta Plantation Park—The~~ the cove lying north of and adjacent to the ~~Historic Latta Plantation Park and adjacent to the Mecklenburg County Park and Duke Power Company properties. Park in Mecklenburg County, southeast of a line from a point on the southwest shore at 35.35772 N, 80.92474 W to a point on the northeast shore at 35.36019 N, 80.91935 W;~~
- (2) ~~Duck Cove—The~~ the waters of Duck Cove as delineated by appropriate markers. Duck Cove is adjacent to Mecklenburg County's in Cowan's Ford Wildlife Refuge and west of the portion of Neck Road that runs through Cowan's Ford Wildlife Refuge. Refuge in Mecklenburg County, beginning at the mouth of the cove at 35.38097 N, 80.97894 W;
- (3) ~~Nance Cove~~ the waters in a portion of the south prong of Nance Cove in Mecklenburg County, south of a line from a point on the west shore at 35.33982 N, 80.95313 W to a point on the east shore at 35.34010 N, 80.95185 W; and the waters of the west prong of Nance Cove between SR 2253, otherwise known as Nance Cove Road, and SR 5510 otherwise known as Haymarket Road, south of a line at the mouth of the cove's west prong from a point on the west shore at 35.34547 N, 80.955677 W to a point on the east shore at 35.34506 , 80.95578 W;
  - (A) ~~—The waters of the southern portion of Nance Cove extending north from the back of the cove, at or near Shuffletown Landing, up the cove toward the main channel of Mountain Island Lake, extending to a point that is roughly even with the boundary line between Lots 166 and 167 in the Overlook subdivision, which lots are just north of the Overlook Swim & Tennis Club, and where the cove is approximately 368 feet wide.~~
  - (B) ~~—The waters of the western arm or sub-cove of Nance Cove, which lies west of Shadow Cove Lane and the northern-most portion of Nance Cove Road and east of Haymarket Road.~~
- (4) ~~North Carolina Highway 16 Bridge B— an~~ the area extending approximately within 50 yards in all directions from shore to shore, northeast and southwest of the NC Highway 16 Bridge also known as the Rozelles Ferry Bridge N.C. Highway 16, otherwise known as Brookshire Boulevard bridge in Mecklenburg and Gaston counties;
- (5) ~~the portion of Neck Cove in Mecklenburg County beginning at a point shore to shore, north of a line from a point on the western-west shore at 35.367061 N, 80.932632 W 35.36706 N, 80.93263 W to a point on the eastern-east shore at 35.367085N, 80.931129 35.36708 N, 80.93113 W; and extending the entire length of the cove.~~
- (6) Gar Creek in Mecklenburg County, east of a line from a point on the north shore at 35.348851 N, 80.927461 W 35.34885 N, 80.92746 W to a point on the south shore at 35.348082 N, 80.927736 W



35.34804 N, 80.92774 W, and west to of a line from a point on the north shore at 35.348854N, 80.926821W to a point on the south shore at 35.34844 N, 80.925803W. 35.34887 N, 80.92686 W to a point on the south shore at 35.34840 N, 80.92585 W;

- (7) Whispering Cove in Mecklenburg County, south of a line beginning at from a point on the western west shore at 35.341223N, 80.975715W 35.34119 N, 80.97570 W to a point on the eastern east shore at 35.340806N, 80.974785W and extending the entire length of the cove. 35.34079 N, 80.97477 W; and
- (8) North Carolina Highway 73 Bridge an area extending approximately 50 yards in all directions from the NC Highway 73 Bridge: east of a line from a point on the north shore at 35.428079N, 80.95799W to a point on the south shore at 35.427177N, 80.957424W to a line from a point on the north shore at 35.427845N, 80.955441W to a point on the south shore at 35.427008N, 80.955422W. shore to shore within 50 yards north and south of the N.C. Highway 73 bridge in Mecklenburg and Gaston counties.

(b) Speed Limit. No person shall operate any ~~motorboat or~~ vessel at greater than no-wake speed within the regulated area described in Paragraph (a) of this Rule.

(c) Placement ~~and Maintenance~~ of Markers. The ~~Board~~ Boards of Commissioners ~~for of~~ Mecklenburg County, ~~for~~ of Gaston County and ~~for of~~ Lincoln County are the designated ~~as suitable~~ agencies for placement ~~and maintenance~~ of markers implementing this Rule for regulated areas within their territorial ~~jurisdiction in accordance with the Uniform System~~ jurisdictions.

*History Note: Authority G.S. 75A-3; 75A-15;*  
*Eff. May 1, 1988;*  
*Temporary Amendment Eff. April 1, 2000;*  
*Amended Eff. January 1, 2015; July 1, 2000.*

15A NCAC 10F .0360 is proposed for amendment as follows:

**15A NCAC 10F .0360 GRAHAM COUNTY**

(a) Regulated Area. This Rule applies to the following waters and portions of waters described as follows: waters in Graham County:

- (1) Lake Santeetlah Boat Dock on Lake Santeetlah in Graham County. Santeetlah Marina cove on Santeetlah Lake, shore to shore north of a line from a point on the west shore at 35.36435 N, 83.85841 W to a point on the northeast shore at 35.36532 N, 83.85529 W;
- (2) Entrance of Fontana Boat Dock Fontana Village Resort Marina cove in Fontana Lake in Graham County on Fontana Lake, shore to shore west of a line from a point on the north shore at 35.44294 N, 83.78900 W to a point on the south shore at 35.44077 N, 83.78936 W;
- (3) within 50 yards of the Thomas Prince Boat Dock Marina at 237 Prince Boat Dock Road in Almond, and its docks and mooring areas on Fontana Lake in Graham County. Lake;
- (4) within 50 yards of Crisp's Crisp Boat Dock, Dock on Town Branch off Panther Creek on Fontana Lake in Graham County. Lake, near the northern end of SR 1234 otherwise known as Lower Panther Creek Road in Robbinsville; and
- (5) within 50 yards of the Deyton Camp Boat Dock on Santeetlah Lake at 270 Deyton Camp Road off the main channel of the Tallulah prong of Santeetlah Lake. Road otherwise known as SR 1153, in Robbinsville.

(b) Speed Limit. No person shall operate a vessel at greater than no-wake speed within ~~50 yards of~~ the regulated areas as described in Paragraph (a) of this Rule.

(c) Cheoah Point Swimming Area, Lake Santeetlah - No person shall operate a vessel within the Cheoah Point Swimming Area which begins at the head of Cheoah Point ~~Cove and extends to the mouth of the Cove as designated by marker buoys and float lines.~~ Cove. No one shall operate a vessel at greater than no-wake speed east of the mouth of Cheoah Point Cove, beginning at a point at 35.37246 N, 83.87081 W.

(d) Placement ~~and Maintenance~~ of Markers. The Graham County Board of Commissioners is the designated as a suitable designated agency for the placement and maintenance of markers implementing this Rule. Rule, subject to the authority of the Tennessee Valley Authority and the United States Army Corps of Engineers.

*History Note: Authority G.S. 75A-3; 75A-15;*

*Eff. May 1, 1989;*

*Amended Eff. February 1, 1996; February 1, 1994; September 1, 1989;*

*Temporary Amendment Eff. January 1, 1998;*

*Amended Eff. May 1, 2004; July 1, 1998;*

*Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. December 6, 2016.*

15A NCAC 10F .0366 is proposed for reoption with substantive changes as follows:

**15A NCAC 10F .0366 MACON COUNTY**

(a) Regulated Area. This Rule applies to the following waters of Nantahala Lake:

- (1) Lakes End Cove west of SR 1310 otherwise known as Wayah Road in Tipton, shore to shore, beginning at shore north of a line from a point on the northwest-west shore at 35.19602 N, 83.64184 W to a point on the southeast-east shore at 35.19544 N, ~~83.64053 W~~ 83.64053 W; and
- (2) ~~That the area within 100 yards from of a point at 35.16570 N, 83.64686 W at from~~ the end of the Mountain Shadows Community ~~Dock-dock, in Tipton.~~

(b) Speed Limit. No person shall operate a vessel at greater than no-wake speed in the waters of the regulated area specified in Paragraph (a) of this Rule.

(c) Placement ~~and Maintenance~~ of Markers. The Board of Commissioners of Macon County is the designated a ~~suitable~~ agency for placement ~~and maintenance~~ of the markers implementing this Rule.

*History Note: Authority G.S. 75A-3; 75A-15;  
Eff. June 1, 1994;  
Amended Eff. October 1, 2016; June 1, 2005.*

15A NCAC 10F. 0373 is proposed for amendment as follows:

**15A NCAC 10F .0373    TRANSYLVANIA COUNTY**

(a) Regulated Area. ~~This Rule applies to Lake Toxaway.~~ Toxaway in Transylvania County;

(b) Speed Limit. No person shall operate a vessel at greater than no-wake speed within ~~50 yards of the Lake Toxaway Marina.~~ the Lake Toxaway Country Club Marina cove, south of a line from a point on the west shore at 35.14136 N, 82.95424 W to a point on the east shore at 35.14126 N, 82.95303 W.

(c) Placement and Maintenance of Markers. ~~The Board of Commissioners of Transylvania County is the designated a suitable agency for placement and maintenance of markers implementing this Rule, subject to the approval of the United States Army Corp of Engineers.~~ Rule.

*History Note:*     *Authority G.S. 75A-3; 75A-15;*

*Eff. November 1, 2007;*

*Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. December 6, 2016.*

15A NCAC 10F. 0375 is proposed for amendment as follows:

**15A NCAC 10F .0375 DUKE ENERGY CORPORATION HYDROELECTRIC STATION SAFETY ZONES**

(a) Regulated Area. This Rule applies to the area one hundred feet upstream or downstream from the stations and ~~dams (and dams, and~~ associated structures, abutments and equipment of these stations and ~~dams) dams,~~ listed in Paragraph (f) of this Rule.

(b) Fishing. Except as otherwise provided in this Paragraph or in Paragraph (c) of this Rule, no person may enter the waters within the regulated areas described in Paragraph (a) of this Rule. Persons engaged in fishing within the regulated areas described in Paragraph (a) of this Rule may enter these waters in connection with such fishing activities provided that they shall wear at all times a ~~U.S. Coast Guard~~ United States Coast Guard - approved personal ~~floatation~~ flotation device in serviceable condition and of appropriate size for the wearer.

(c) Boating. Any person in or upon a boat, raft or other floating object that enters the regulated area described in Paragraph (a) of this Rule shall wear at all times a ~~U.S. Coast Guard~~ United States Coast Guard - approved personal ~~floatation~~ flotation device in serviceable condition and of appropriate size for the wearer. No vessel may tie off to any part of the dam structure or the accessory ~~portions thereof~~ portions, nor anchor or otherwise secure a vessel within regulated areas described in Paragraph (a) of this ~~Rule, or to anchor or otherwise secure a vessel in these areas.~~ Rule.

(d) Paragraph (c) of this Rule does not apply to persons who enter with consent of Duke Energy Corporation for the purpose of maintaining, repairing or evaluating facilities of Duke Energy Corporation; law enforcement or emergency personnel; or North Carolina state employees acting in an official capacity.

(e) Placement and Maintenance of Markers. Duke Energy Corporation is ~~the~~ designated as a suitable entity for placement and maintenance of buoys and other signs implementing this Rule.

(f) Duke Energy Corporation hydroelectric stations and dams affected by this Rule:

- (1) Bridgewater Hydroelectric Station (~~Paddy~~ including Paddy Creek Dam, Linville Dam and Catawba Dam) Dam in the Catawba River in Burke and McDowell counties;
- (2) Cowans Ford Hydroelectric Station (~~Cowans Ford Dam~~) including Cowans Ford Dam in the Catawba River in Lincoln and Mecklenburg counties;
- (3) Lookout Hydroelectric Station (~~Lookout Dam~~) including Lookout Dam in the Catawba River in Catawba and Iredell counties;
- (4) Mountain Island Hydroelectric Station (~~Mountain Island Dam~~) including Mountain Island Dam in the Catawba River in Gaston and Mecklenburg counties;
- (5) Oxford Hydroelectric Station (~~Oxford Dam~~) including Oxford Dam in the Catawba River in Alexander and Catawba counties;
- (6) Rhodhiss Hydroelectric Station (~~Rhodhiss Dam~~) including Rhodhiss Dam in the Catawba River in Burke and Caldwell counties; and
- (7) Tuxedo Hydroelectric Station (~~Tuxedo Dam~~) including Tuxedo Dam in the Green River in Henderson County.

*History Note: Authority G.S. 75A-3; 75A-15;  
Eff. January 1, 2008;  
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. December  
6, 2016.*

# EXHIBIT M-1

February 28, 2018



## WATER SAFETY RULEMAKING 15A NCAC 10F .0320 ONSLOW COUNTY

Pursuant to NCGS 75A-15(b), the Onslow County Board of Commissioners advertised and held a public hearing and submitted a formal application for a no-wake zone shore to shore, 50 yards east and 390 yards northwest of the boating access area off SR 1688, on Queens Creek in Hubert. Enforcement submitted a Matrix, attached, with a recommendation that the no-wake zone extend for that distance northwest of the boating access area to a point around a blind curve in Queens Creek. There are multiple docks and heavy congestion by trout anglers leaving the creek to the east.

Onslow County has agreed to purchase a CAMA permit and place two buoys and anchors for a cost of no more than \$1100.00. A Fiscal Note has been reviewed by the Office of State Budget and Management. (Exhibit M-2).

Staff recommends approval to submit a Notice of Text in the *NC Register* with one public hearing and an open comment period. After the comment period closes the Commission will consider adoption of the Rule.

15A NCAC 10F .0320 (a) (4) - No Wake Zone - Proposed  
Queen Creek, Hubert, Onslow County



34.70103 N  
77.19287 W

34.70101 N  
77.19216 W

34.69949 N  
77.18880 W

34.69881 N  
77.18884 W

Queen Creek

Sussex Ln SR-1688

SR-1686

SR-1687

 Proposed No Wake Zone

0 25 50 100 Yards



**Resolution Requesting Establishment  
of a No Wake Zone**

**WHEREAS**, the Kingsbridge Homeowners Association has requested a No Wake Zone be established throughout a 1250 linear foot section of Queens Creek in the vicinity of the Kingsbridge Subdivision, and

**WHEREAS**, the beginning of the No Wake Zone being 34.69, -77 and the end of the No Wake Zone being 34.7, -77.19, and

**WHEREAS**, the North Carolina Wildlife Resources Commission is the agency responsible for establishing No Wake Zones, and

**WHEREAS**, the North Carolina Wildlife Resources Commission has found the requested No Wake Zone to be reasonable due to the volume of boat traffic, combined with the constrictions and curvature of the river channel, in the identified section of Queens Creek, and

**WHEREAS**, the County advertised a formal public hearing in the Jacksonville Daily News on October 25 and November 1, 2017, and

**WHEREAS**, the Board of Commissioners conducted a public hearing on the potential establishment of a No Wake Zone at its regular scheduled meeting held on November 6, 2017,

**NOW, THEREFORE, BE IT RESOLVED** that the Onslow County Board of Commissioners hereby requests that a No Wake Zone be established along an approximately 1,250 linear foot segment of Queens Creek in the vicinity of the Kingsbridge Subdivision formally referenced above.

**BE IT FURTHER RESOLVED** that, if approved, the County and the North Carolina Wildlife Resources Commission will arrange for the installation and maintenance of required signage, buoys, and/or markings that are consistent with the Uniform Waterway Marker System to delineate the No Wake Zone.

Adopted this 6<sup>th</sup> day of November, 2017.

Attest:

ONSLOW COUNTY  
BOARD OF COMMISSIONERS

  
Julie S. Wand, Clerk to the Board



  
Jack Bright, Chairman

**NO-WAKE ZONING MATRIX**

**SECTION 1:**

Name of organization/entity: Onslow County

Primary contact information: Jessica Fiester, Depy Director Planning and Development 910-989-3093

Exact location of requested no-wake zone:

Body of water: Queens Creek begin no wake 34.69, -77.18 end no wake zone 34.70, -77.19

Location: near Kingsbridge Subdivison near corner of Sussex Lane and East Ivybridge Dr. in Hubert

Popular name of area, if any: \_\_\_\_\_

Width of No-Wake Zone: Narrowest Point: 80ft. Widest Point: 160ft.

Brief Description of area (example: bridge overpass, obstructed views, Intracoastal Waterway; etc) County is requesting no-wake zone within 50 yards of the boating access area to mitigate hazards to water safety caused by boats that are launched and pulled out there

**Attach map of designated no-wake zone**

Ensure proposed no-wake zone map/and or location is agreed upon by point of contact

**Attach detailed reason given from point of contact for the request**

See above

Is the proposed no-wake zone located within an area that is regulated by the U.S Army Corp of Engineers or the Division of Coastal Management (CAMA) i.e.; Intracoastal Waterway?

YES  CAMA permit will be required – county responsibility

NO

**(When dealing with the point of contact, please advise that placement of markers in these waters is subject to prior approval of above agency in waters where applicable. NCWRC has no authority to supersede these rules.)**

**SECTION 2:**

**PUBLIC SAFETY HAZARD**

What public safety hazard exists? Boats launching from ramp

Is this a public swimming or recreational area?

NO

YES  would the establishment of a swimming area or placement of regulatory buoys be more appropriate? YES  NO

**SECTION 3:**

**NAVIGATIONAL HAZARDS**

Identify any and all potential hazards associated with the proposed no-wake zone (check all that apply)

OBSTRUCTIONS  (Identify) \_\_\_\_\_

NARROW CHANNEL  (give approximate width)  
160ft.

SHALLOW WATER  (give average depth) \_\_\_\_\_

OBSTRUCTED VISION  (for approximately how great a distance)  
1,250ft.

STRUCTURES (Check all applicable)

- |   |   |
|---|---|
| <input type="checkbox"/> DAM                                | <input type="checkbox"/> LOCK                     |
| <input type="checkbox"/> SPILLWAY                           | <input type="checkbox"/> JETTY                    |
| <input type="checkbox"/> FLOOD CONTROL STRUCTURE            | <input type="checkbox"/> SUBMERGED STRUCTURE      |
| <input type="checkbox"/> TRESTLE                            | <input type="checkbox"/> SANDBAR                  |
| <input type="checkbox"/> POWER LINE                         | <input type="checkbox"/> SHOAL                    |
| <input type="checkbox"/> FUELING DOCK                       | <input checked="" type="checkbox"/> PRIVATE DOCKS |
| <input type="checkbox"/> RESTURANT DOCKS                    | <input type="checkbox"/> BRIDGE                   |
| <input checked="" type="checkbox"/> ACCESS AREA/BOAT LAUNCH | <input type="checkbox"/> PIER                     |

OTHER (list and describe) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SECTION 4:**

If approved, will the no-wake zone extend into a designated channel?

NO

YES  (if yes, identify on map)

What is the total distance boaters will travel at a no-wake speed  
\_\_1,370ft.\_\_\_\_\_

Estimated time to travel for boaters through the proposed no-wake zone at no-wake speed \_5  
minutes\_\_

**SECTION 5:**

List any other known incidents, safety concerns or problems that have occurred? \_\_Trout  
fisherman use this channel heavily when the trout are in the area.\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Rate traffic density in this area from light to heavy

**LIGHT 1 2 3 4 5 6 7 8 9 10 HEAVY**

Is traffic density specific to weekend/and or holidays? \_Specific to when trout are  
present\_\_\_\_\_

Does traffic density or ability to maneuver a vessel due to traffic cause safety issues? YES   
NO

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Rate the likelihood of an incident occurring in this area compared to other similar areas on this same body of water **VERY UNLIKELY** 1 2 **3** 4 5 6 7 8 9 10 **MORE LIKELY**

**SECTION 6:**

OFFICER RECOMENDATION

YES:

NO:

Reason for decision: \_The residents that launch and retrieve vessels from the boat ramp will benefit from a no wake zone for the safety of the people using the ramp. There are plans to put in a dock beside the ramp and an enforceable no wake zone would reduce damage to the dock and vessels tied there. There are 8 personal docks along the channel and several of the docks had their own "no wake" signs posted. When the trout are in that part of Queens Creek vessel traffic increases significantly. There is also a sharp bend in the channel that poses a safety risk for boaters. If the no wake zone was established it would greatly reduce the chance of a boating incident in this area of the channel.

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Officer: Barbara Marshburn and Kayla Herrera

1 15A NCAC 10F .0320 is proposed for amendment as follows:

2  
3 **15A NCAC 10F .0320 ONSLOW COUNTY**

4 (a) Regulated Areas. This Rule applies to the following waters ~~and portions of waters:~~ in Onslow County:

5 (1) ~~Old Settler's Beach: those waters of Onslow County contained within the canals located in the Old~~  
6 ~~Settler's Settlers Beach subdivision in the Town of Surf City, extended from east of the Pender~~  
7 ~~Onslow-Pender County line northwardly or northeasterly to the canal adjacent to or near the~~  
8 ~~property of Topsail Island Developers, Inc., and more specifically those canals extending along the~~  
9 ~~cul-de-sac lots from the Pender County line northwardly or northeasterly to the most northwardly~~  
10 ~~of said canals above referred to, said canals extended from First Street to the canal lying northwardly~~  
11 ~~or northeasterly of Ninth Street, to include those waters of the approach canal at Old Settler's Beach~~  
12 ~~from marker number 53 in the Intracoastal Waterway south to Broadway Street; line, and the waters~~  
13 ~~of the approach canal from the Intracoastal Waterway between markers 53 and 57, extending south-~~  
14 ~~southwest to the Onslow-Pender County line;~~

15 (2) ~~New River: those the waters of New River, near River in the City of Jacksonville shore to shore,~~  
16 ~~between a point 100 yards upstream, and 300 yards downstream, of the Seaboard Coast Line~~  
17 ~~Railroad trestle; north from a line at a point on the east shore at 34.74356 N, 77.43775 W to a point~~  
18 ~~on the west shore at 34.74358 N, 77.43924 W; and south from a line at a point on the east shore at~~  
19 ~~34.74695 N, 77.43719 W, to a point on the west shore at 34.74562 N, 77.44114 W; and those the~~  
20 ~~waters of the New River shore to shore between north of the SR 1402 bridge otherwise known as~~  
21 ~~the Old Bridge Street bridge and south of the U.S. Highway 17 Business bridge otherwise known~~  
22 ~~as Marine Boulevard bridge; and US 17 (Riverview Street) bridges and upstream from the US 17~~  
23 ~~bridge along the south shore to a point 50 yards beyond the Jacksonville Marina; and within 50~~  
24 ~~yards of the shoreline at the Marina Café and Marina, from the U.S. Highway 17 Business bridge~~  
25 ~~otherwise known as Marine Boulevard bridge to a point on the west shore at 34.75461 N, 77.43819~~  
26 ~~W; and~~

27 (3) ~~Wheeler's Point: those waters in the creek from Wheeler's Point northerly to SR 1558 near the town~~  
28 ~~of Sneads Ferry;~~

29 (4) ~~Swansboro Harbor: those waters of White Oak River and Swansboro Bay between the Atlantic~~  
30 ~~Intracoastal Waterway and the NC Highway 24 bridge, Swansboro.~~

31 (3) ~~the waters of Queens Creek near the boating access area at the north end of SR 1688, otherwise~~  
32 ~~known as Sussex Lane in Hubert, shore to shore west of a line from a point on the south shore at~~  
33 ~~34.69881 N, 77.18884 W to a point on the north shore at 34.69949 N, 77.18880 W and south-~~  
34 ~~southeast of a line from a point on the west shore at 34.70103 N, 77.19287 W to a point on the east~~  
35 ~~shore at 34.70101 N, 77.19216 W.~~

36 (b) Speed Limit. No person shall operate any motorboat ~~or vessel~~ at greater than no-wake speed within the regulated  
37 areas described in Paragraph (a) of this Rule.

1 (c) Placement ~~and Maintenance~~ of Markers. The Board of Commissioners of Onslow County is the designated a  
2 ~~suitable~~-agency for placement ~~and maintenance~~-of the markers implementing this Rule, subject to the approval of the  
3 United States Coast Guard and the United States Army Corps of Engineers.  
4

5 *History Note: Authority G.S. 75A-3; 75A-15;*  
6 *Eff. May 1, 1976;*  
7 *Amended Eff. July 1, 1993; June 1, 1989; October 1, 1984; May 1, 1982.*

February 28, 2018



**Fiscal Note Review of  
Proposed Wildlife Resources Commission No-Wake Zone Rule  
15A NCAC 10F .0320 – Onslow County**

Contact: Betsy Haywood, No Wake Zone Coordinator  
1701 Mail Service Center  
Raleigh, N.C 27699-1701  
(919) 707-0013  
betsy.haywood@ncwildlife.org

Impact: State Government: No  
Local Government: Yes  
Private Impact: Minimal  
Substantial Impact: No

Authority: G.S. 75A-3; 75A-15

Onslow County applied for rulemaking to establish a no-wake zone within 50 yards of the Boating Access Area (BAA) in Hubert on Queens Creek, to mitigate hazards to boater safety. There is a sharp bend in the narrow channel with diminished sight lines and heavy boat traffic especially during trout fishing season. Moreover, there are multiple docks surrounding the ramp at the BAA with current plans to add an additional dock.

Onslow County will purchase two buoys and anchors and will mark the no-wake zone at an estimated cost of \$1100.00. Two no-wake buoys and anchors cost \$300.00 per buoy and anchor, for a total of \$600.00. In addition, Onslow County will spend no more than \$400.00 for the Coastal Area Management Act (CAMA) permit required under G.S. 113A-118 before placing structures in waters of a coastal county. Two technicians will spend two hours each placing and marking the no-wake zone (4 hours x \$25.00/hr \* = \$100.00).

**State Impact Analysis:** None.

**Local Impact Analysis:** Onslow County will incur the expense of no more than \$1100.00 for the CAMA permit and purchase and placement of the markers for the Queens Creek BAA in Hubert.

**Private Impact:** The rule has minimal private fiscal impact. The regulated community will not incur any direct financial cost because of this rule change, but their behavior will be restricted in the waters at the BAA and swim area. However, the benefit of that restriction in this part of Queens Creek is increased boater safety.

**Substantial Economic Impact:** There will be no substantial economic impact to the public.

\*total compensation



# APPENDIX 1

## 15A NCAC 10F .0320 ONSLOW COUNTY

(a) Regulated Areas. This Rule applies to the following waters ~~and portions of waters:~~ in Onslow County:

- (1) ~~Old Settler's Beach: those waters of Onslow County contained within the canals located in the Old Settler's~~ Settlers Beach subdivision in the Town of Surf City, extended from east of the Pender Onslow-Pender County line northwardly or northeasterly to the canal adjacent to or near the property of Topsail Island Developers, Inc., and more specifically those canals extending along the cul-de-sac lots from the Pender County line northwardly or northeasterly to the most northwardly of said canals above referred to, said canals extended from First Street to the canal lying northwardly or northeasterly of Ninth Street, to include those waters of the approach canal at Old Settler's Beach from marker number 53 in the Intracoastal Waterway south to Broadway Street; line, and the waters of the approach canal from the Intracoastal Waterway between markers 53 and 57, extending south-southwest to the Onslow-Pender County line;
- (2) ~~New River: these the waters of New River, near River in the City of Jacksonville shore to shore, between a point 100 yards upstream, and 300 yards downstream, of the Seaboard Coast Line Railroad trestle; north from a line at a point on the east shore at 34.74356 N, 77.43775 W to a point on the west shore at 34.74358 N, 77.43924 W; and south from a line at a point on the east shore at 34.74695 N, 77.43719 W, to a point on the west shore at 34.74562 N, 77.44114 W; and these the waters of the New River shore to shore between north of the SR 1402 bridge otherwise known as the Old Bridge Street bridge and south of the U.S. Highway 17 Business bridge otherwise known as Marine Boulevard bridge; and US 17 (Riverview Street) bridges and upstream from the US 17 bridge along the south shore to a point 50 yards beyond the Jacksonville Marina; and within 50 yards of the shoreline at the Marina Café and Marina, from the U.S. Highway 17 Business bridge otherwise known as Marine Boulevard bridge to a point on the west shore at 34.75461 N, 77.43819 W;~~
- (3) ~~Wheeler's Point: those waters in the creek from Wheeler's Point northerly to SR 1558 near the town of Sneads Ferry; the waters of a cove on New River south of the east end of SR 1558 otherwise known as Davis Lane in Sneads Ferry, shore to shore north of the mouth of the cove at 34.57165 N, 77.39471 W; and~~
- (4) ~~Swansboro Harbor: those waters of White Oak River and Swansboro Bay between the Atlantic Intracoastal Waterway and the NC Highway 24 bridge, Swansboro.~~
- (4) the waters of Queens Creek near the boating access area at the north end of SR 1688 otherwise known as Sussex Lane in Hubert, shore to shore west of a line from a point on the south shore at 34.69881 N, 77.18884 W to a point on the north shore at 34.69949 N, 77.18880 W and south-southeast of a line from a point on the west shore at 34.70103 N, 77.19287 W to a point on the east shore at 34.70101 N, 77.19216 W.

(b) Speed Limit. No person shall operate any motorboat ~~or vessel~~ at greater than no-wake speed within the regulated areas described in Paragraph (a) of this Rule.

(c) Placement ~~and Maintenance~~ of Markers. The Board of Commissioners of Onslow County is the designated ~~a suitable~~ agency for placement ~~and maintenance~~ of the markers implementing this Rule, subject to the approval of the United States Coast Guard and the United States Army Corps of Engineers.

*History Note: Authority G.S. 75A-3; 75A-15;  
Eff. May 1, 1976;  
Amended Eff. July 1, 1993; June 1, 1989; October 1, 1984; May 1, 1982.*