

# *Habitat, Nongame and Endangered Species Committee*

## **Meeting Agenda**



**October 12, 2020  
2:00 – 4:00 p.m.**

**Commission Room/Zoom Meeting  
Centennial Campus, Raleigh**

### *Welcome/Open Meeting*

- NWAC Membership
- Quay Award
- Presentation of the State Listing Process & Purpose
- Presentation of the proposed N.C Bird Atlas project

*Mark Craig*

Sara Schweitzer

Shannon Deaton

Todd Ewing

John Carpenter and  
Scott Anderson

### *Additional Topics*

*Mark Craig*

### *Adjourn*



## RECOMMENDED NONGAME WILDLIFE ADVISORY COMMITTEE APPOINTMENTS FOR 2020

Government Affiliate – Two seats are up for re-appointment as of June 30, 2020.

- 1. Sarah McRae** **Recommended for re-appointment**  
**U.S. Fish and Wildlife Service**  
Length of NWAC membership: 2020  
Current Position: Endangered Species Classification Biologist  
Expertise: Freshwater mollusks, ESA programs, natural resource science and policy
- 2. Judith Ratcliffe** **Recommended for re-appointment**  
**NC Department of Natural & Cultural Resources,**  
**Office of Land & Water Stewardship**  
Length of NWAC membership: 2015  
Current Position: Environmental Senior Specialist, Zoologist  
Expertise: Ichthyology, freshwater mollusks, aquatic insects, stream ecology

Expert Affiliate – Two seats are open for consideration as of June 30, 2020.

- 1. Dr. Michael V. Cove**  
**North Carolina Museum of Natural Sciences**  
Current Position: Curator of Mammals  
Expertise: mammals, Florida Keys and Costa Rican ecosystems, predator management, habitat restoration, occupancy modeling, use of GIS modeling to assess habitat suitability
- 2. Marquette Crockett** **Recommended for re-appointment**  
**Southern Appalachian Highlands Conservancy**  
Length of NWAC membership: 2018  
Current Position: Highlands of Roan Stewardship Director  
Expertise: Western region amphibians, reptiles, mammals, birds, fish, plants

**3. Michael Fisher**

**Beekeeper**

Current Position: Beekeeper

Expertise: Member of the Buncombe County beekeeper association, member of the North Carolina state beekeeper association, and Chairperson for the Buncombe County Crime stopper.

**4. Matthew P. Guillette**

**North Carolina State University**

Current Position: Wildlife/Environmental Biologist

Expertise: Crocodylians, herpetofauna, environmental contaminants effects studies, wildlife health, wildlife diversity and conservation, scientific writing and communication

**5. Dr. Christopher Moorman**

**North Carolina State University**

Current Position: Professor, NCSU Faculty Scholar, Interim Associate Head of the Department of Forestry and Environmental Resources

Expertise: Academic administration, global change and wildlife, forest wildlife management, fire ecology, avian ecology, wildlife conservation and management in agricultural lands and urban environments

**6. Dr. Wm. David Webster**

**Recommended for re-appointment**

**University of North Carolina – Wilmington**

Length of NWAC membership: 1999

Current Position: Senior Associate Dean, College of Arts and Sciences

Expertise: mammals; mountain, piedmont, and coastal ecology; academic programs

At-large Affiliate – One seat is up for consideration as of June 30, 2020.

**1. Dr. Carol Price**

**NC Aquariums and NC State University**

**Center for Marine Science & Technology**

Current Position: Conservation Research Coordinator

Expertise: Marine biology, conservation science, environmental impacts of marine aquaculture, communication and outreach, sea turtle and gopher frog biology, fisheries science

**2. Dr. Liz Rutledge**

**Recommended for re-appointment**

**NC Wildlife Federation**

Length of NWAC membership: since 2017

Current Position: Wildlife Specialist

Expertise: grant writing, wildlife policy, wildlife conservation education and outreach

## **2020 Guidelines for reviewing Thomas L. Quay Wildlife Diversity Award Nominations**

This annual award given by the NC Wildlife Resources Commission recognizes an individual for outstanding contributions to nongame conservation within North Carolina and who are considered leaders in wildlife resource conservation. In 2006 the award was named for a retired professor of zoology at NC State University, Dr. Thomas L. Quay, an internationally respected ornithologist whose influence fostered and inspired generations of wildlife biologists. Annually the Commission is looking to recognize individuals who are continuing the legacy of Dr. Quay in NC nongame conservation.

### Recipient Selection

- The award is given to an individual or an organization within the state whose actions significantly and positively impact North Carolina's wildlife diversity or nongame resources.
- The award recognizes achievements in wildlife diversity by volunteers or professionals over a long period of time.
- Eligible achievements may be in the conservation of nongame fish, wildlife, or their habitats and focused on a single species or a biological community, especially species or habitats as identified in the North Carolina Wildlife Action Plan.

### Selection Steps and Process

1. Nominees will be considered as long as there is a minimum of two valid candidates submitted or carried over from the two previous years.
2. Nominations will be forwarded to the WRC Habitat, Nongame and Endangered Species (HNGES) Committee following the end of the annual nomination period. Each HNGES Committee member is requested to review all nominations and vote for the most deserving nominees (three maximum) before April 2020.
3. The 3 nominees receiving the most votes will be forwarded to appropriate agency staff to immediately conduct field evaluations and will report findings/summary to the next Nongame Wildlife Advisory Committee (NWAC) meeting in April 2020.
4. NWAC will select one of three nominees to recommend to the HNGES for their April 2020 Committee meeting.
5. The HNGES Committee will then make a final recommendation to the Commission on the recipient of this award.
6. The recommended award recipient will be considered for approval at the April 2020 Commission business meeting as recommended by HNGES.
7. The annual award will be presented at the July 2020 WRC Commission business meeting.

**Thomas L. Quay Wildlife Diversity Award Nominees**  
Habitat, Nongame and Endangered Species Committee Consideration  
For 2020 Award Recipient

**Note:** *See attached summary of nominees as noted in nomination*

**2020 Nominees**

1. Teena Marie Koury

**2019 Nominees**

2. Louis Moore Bacon
3. Allen Boynton

## Thomas L. Quay 2020 nominees

### Summary of nominees

#### 1. **Teena Marie Koury**

Year nominated 2020

Nominated by: Eddie Bridges, NC Wildlife Habitat Foundation

Current position: landowner, and member of the Board for NC Wildlife Habitat Foundation

Contributions to Wildlife Diversity:

- Owns and operates 4000 acre farm which focus on wildlife habitat and food, through crops, food plots, timber management, and controlled burns.
- Member of NC Wildlife Habitat Foundation (NCWHF) as vice chair, and makes a huge contribution to the financial status
- Chairperson for the NCWHF Extravaganza, annual fundraiser, has raised over 2 million in its 23 years and formed the endowment account that now funds NC conservation projects.
- Due to Extravaganza fundraising, several projects associated with NCWRC have been funded such as game lands acquisitions, and quail habitat at Hoffman.

#### 2. **Louis Moore Bacon**

Year nominated 2019

Nominated by: Jeff Trandahl, EO & COE of National Fish and Wildlife Foundation

Current position: American Investor

Contributions to Wildlife Diversity:

- Advocate for the conservation and protection of natural resources in the United States and abroad for more than 25 years.
- Founder of The Moore Charitable Foundation (MCF), which supports conservation non-profits to ensure the preservation of land, water and wildlife habitats for future generations.
- The Orton Foundation, MCF's North Carolina affiliate, has played a leading role in helping to reestablish the state's iconic longleaf pine forests and the ecosystems they support.
- Founding funder of the Waterkeeper Alliance, a global movement that has grown from 18 loosely affiliated Keepers to a group of more than 300 local organizations that fight polluters and champion clean water.
- Donated more than 6,442 acres at Orton Plantation to the North Carolina Coastal Land Trust, one of the largest conservation easement gifts in its history.

3. **Allen Boynton**

Year nominated 2019

Nominated by: David H. Allen of NCWRC with help from Andrea Shipley, Scott Anderson, and Kendrick Weeks (NCWRC staff)

Current position: Retired, North Carolina Wildlife Resources Commission

Contributions to Wildlife Diversity:

- The Wildlife Society certified Wildlife Biologist who has led by example and developed future generations of conservationists with close to 40 year of experience working with two state agencies (Virginia for 18 and North Carolina for 20).
- Headed up a successful elk reintroduction effort (Virginia)
- Principal biologist working to restore Peregrine Falcon to western North Carolina, premier biologist to initiate bat monitoring in NC, and co-led the development of NC species conservation plans for state listed species.
- Instrumental in organizing and mediating a stakeholder committee in development of NCWRC's Alligator Management Plan.
- Facilitated separate State Wildlife Grants for Cooperative Research and participated in the Blue Ribbon Panel on Sustaining America's Diverse Fish & Wildlife Resources.
- Contributed over 1,286 observations of 627 species on iNaturalist, and identified species in 7,419 posts.

**THOMAS L. QUAY WILDLIFE DIVERSITY AWARD  
NOMINATION FORM 2019**

To submit a nomination, send one copy of this form with a detailed essay (see note below) to [melinda.huebner@ncwildlife.org](mailto:melinda.huebner@ncwildlife.org). Electronic submissions are preferred. Please type "Thomas L. Quay Award Nomination" in the subject line. Hard copies can be mailed or faxed to:

- Mail to N.C. Wildlife Resources Commission, Inland Fisheries Division, c/o Melinda Huebner, 1722 Mail Service Center, Raleigh, N.C. 27699-1700
- Fax to 919-707-0028

Please provide the following information:


1. Name of Nominee: TEENA MARIE KOURY

2. Nominee's Address Phone Number and Email: 

3. A detailed essay of the nominee's contributions to wildlife conservation, including a description of the nominee's background, professional achievements, organizational affiliations, past award or recognitions, and any other information that will aid the committee's selection of a recipient.

**NOTE: The essay should be limited to a maximum of two pages (8 ½ x 11 inch paper, with 1-inch margins, single spaced and 12-point font). Submissions that exceed the 2-page limit will be disqualified and returned to the nominator.**

4. Nominated By: Eddie C. Bridges

5. Complete Address Phone Number and Email: 

6. A resume for the nominee may be requested later. Do not send any supporting documents with this nomination form.

**The deadline for receiving nominations is January 31, 2019.**

The Nongame Wildlife Advisory Committee of the N.C. Wildlife Resources Commission will consider each nomination and make recommendations to Wildlife Commissioners who will select the recipient of the award. In the case of insufficient nominations, the Committee reserves the right not to name a recipient.

Direct any questions about the nomination process to Melinda Huebner at 919-707-0028 or [melinda.huebner@ncwildlife.org](mailto:melinda.huebner@ncwildlife.org).



Teena Marie Koury, Thomas L Quay Award Nominee

Teena Koury is a very dedicated wildlife conservationist and outdoor enthusiast.

Teena owns and operates a 4,000 acre farm located in Caswell and Person County. The farm is managed with a main focus on prime wildlife habitat. Crops and food plots are planted on the farm, not for harvest, but to provide for the abundant wildlife present there.

Good timber management practices are in place and some controlled burning is done to provide for new growth to increase the food supply.

The farm has several stocked ponds where young people are allowed to hold fishing events.

Teena is a member of the board of directors of the North Carolina Wildlife Habitat Foundation. She serves as the vice chairman and is the only woman on the board.

Teena's leadership has contributed greatly to the financial status of the North Carolina Wildlife Habitat Foundation. Since the beginning of the North Carolina Wildlife Extravaganza, our annual fund raiser event, now in its 23rd year, she has served as chair person for that event, which has now raised more than two million dollars. It has created a one million dollar endowment account, which provides the funds we invest in various conservation projects.

A substantial amount of these funds have been gifted to the North Carolina Wildlife Resources Commission for a variety of wildlife conservation projects.

Among the projects funded, we have purchased several tracts of land and donated them to the NCWRC to be added to the Game Lands program. We have provided funding for several trout stream restoration projects on game lands. Funded a Bass Reseserch project on Jordan Lake, a quail habitat project on the Field Trial grounds at Hoffman, purchased two track mobile units for handicapped hunter use.

All of these funds were made available as a result of Teena Koury's fund raising efforts at the North Carolina Wildlife Extravaganza.

There is considerably more to what Teena Koury contributes to wildlife conservation in North Carolina. Much of her generosity is unknown, but we believe the accomplishments listed above more than qualifies her as a recipient of the Thomas Quay Award.



## Sportsman of the Year

Teena Marie Koury  
Burlington, NC

Growing up on a farm in Burlington, North Carolina, I can remember spending every waking hour outdoors: riding my pony, digging up potatoes, or helping my brother help John Wayne fight off bad guys. I learned so many things at a very young age, while helping my father work in his garden and watching my mother, who loves to cook, make our dinner using what we had planted. To be a good sportsman one must first plant the seed to harvest what you want. I firmly believe that conservation and the sports of hunting and fishing should work hand in hand. When it comes to conservation, without our laws and caring individuals who protect our land, water, and animals, we couldn't enjoy these sports. The sportsman's love for these treasured resources gets them involved in groups such as the NCWF, NWTF, NCBA, NCWRC, DU, QU, TU, RMEF, NCTA, NCWHF, as well as others. In turn, these groups help replenish our lands and species. Along with these groups, I would like to personally thank some individuals that have worked silently with me in preserving nature: Johnny Morris with Bass Pro Shops, Richard Childress with Richard Childress Racing, Bob Timberlake with Bob Timberlake Galleries, and, last but not least, Eddie Bridges with the NCWHF. It is because of such organizations and individuals who have given unselfishly of themselves that our children are able to see turkey, deer, and now elk. It is now our responsibility to take our children outdoors and teach them to enjoy and respect our great land. Hopefully their children will be able to enjoy what I have always enjoyed—Mother Nature.

During the past 40 years of presenting these awards, Teena Koury is the only woman to receive The Governor's Conservation Achievement Award.

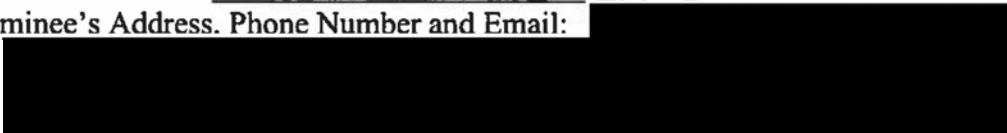

# LOUIS MOORE BACON

## THOMAS L. QUAY WILDLIFE DIVERSITY AWARD NOMINATION FORM 2019

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- Mail to N.C. Wildlife Resources Commission, Inland Fisheries Division, c/o Melinda Huebner, 1722 Mail Service Center, Raleigh, N.C. 27699-1700
- Fax to 919-707-0028

Please provide the following information:

1. Name of Nominee: Louis Moore Bacon
2. Nominee's Address, Phone Number and Email: 
3. A detailed essay of the nominee's contributions to wildlife conservation, including a description of the nominee's background, professional achievements, organizational affiliations, past award or recognitions, and any other information that will aid the committee's selection of a recipient.  
  
**NOTE: The essay should be limited to a maximum of two pages (8 ½ x 11 inch paper, with 1-inch margins, single spaced and 12-point font). Submissions that exceed the 2-page limit will be disqualified and returned to the nominator.**
4. Nominated By: Jeff Trandahl, EO + CEO of National Fish and Wildlife Foundation
5. Complete Address, Phone Number and Email of the person making the nomination: 
6. A resume for the nominee may be requested later. Do not send any supporting documents with this nomination form.

**The deadline for receiving nominations is January 31, 2019.**

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Direct any questions about the nomination process to Melinda Huebner at 919-707-0028 or [melinda.huebner@ncwildlife.org](mailto:melinda.huebner@ncwildlife.org).

## **THOMAS L. QUAY WILDLIFE DIVERSITY AWARD 2019**

Louis Bacon has advocated for the conservation and protection of natural resources in the United States and abroad for more than 25 years. His commitment to wildlife in North Carolina is exceptional. No one is more deserving of the 2019 Thomas L. Quay Wildlife Diversity Award. A North Carolina native, Mr. Bacon was raised as an avid outdoor sportsman, developing a love and respect for the natural world that sparked his lifelong passion for land and water conservation. In 1992, he founded The Moore Charitable Foundation (MCF), which supports conservation non-profits to ensure the preservation of land, water and wildlife habitats for future generations. Since its inception, MCF has provided significant funding to more than 250 local, national and international conservation organizations.

The Orton Foundation, MCF's North Carolina affiliate, supports conservation efforts specifically in the Cape Fear River basin, including the work of Audubon North Carolina, North Carolina Coastal Land Trust, The Nature Conservancy North Carolina, Cape Fear River Watch, North Carolina Coastal Federation, Brunswick County Ducks Unlimited, Southern Environmental Law Center, National Wild Turkey Federation and other environmental groups. Through its collaboration with these groups, Mr. Bacon's Orton Foundation has played a leading role in helping to reestablish the state's iconic longleaf pine forests and the ecosystems they support.

In 1999, Mr. Bacon was a founding funder of the Waterkeeper Alliance, a global movement that has grown from 18 loosely affiliated Keepers to a group of more than 300 local organizations that fight polluters and champion clean water. Mr. Bacon's 20 years of support of North Carolina's Waterkeepers and Riverkeepers has helped preserve, protect and restore the state's river and coastal wetlands, another key goal of Mr. Bacon's philanthropy.

Mr. Bacon has focused on restoring and protecting the Cape Fear area's precious and historic forests and wildlife habitats. This incredibly rich and diverse ecosystem is home to a wide range of plant and animal life, including longleaf pine, endemic venus flytraps and tuber plants, cypress trees, alligators, otters, black bear, a huge population of migrating shorebirds and a host of fish species, including critically endangered sturgeon.

In December 2013, with one of the largest conservation easement gifts in its history, Mr. Bacon donated more than 6,442 acres at Orton Plantation to the North Carolina Coastal Land Trust. The easement is characterized by a variety of natural features, including forestland, creeks, streams and ponds. Conserved forestland includes stands of longleaf pine and wiregrass, mixed longleaf and loblolly pine, and cypress-gum swamp. Wildlife habitat includes the federally endangered Red-cockaded Woodpecker (RCW), quail, wild turkey and other upland game birds.

The donation followed the expansion of the historic boundary of Orton Plantation to include woodlands, agricultural fields, restored rice fields, water courses and gardens on an adjacent 1,100 acres that are now part of a new nomination to the National Register of Historic Places.

Guided by Mr. Bacon's conservation ethos, the focus of Orton's forest and wildlife management is the restoration of the longleaf pine and wire grass ecosystem through best practices in forest management such as controlled burning. Since 2012, Orton has managed burns of about 6,000 acres of longleaf pine forests per year and has planted 2,500 acres of longleaf pine saplings.

With the assistance of nationally recognized consultants, long-term management plans are being developed for the diverse forest systems, as well as for the threatened and endangered plant and animal communities.

In particular, the endangered RCW is reliant on longleaf pine ecosystems. In 2010, Orton had a handful of RCW nesting sites. By conducting annual controlled burns and restoring the savannah and open pine canopies where the woodpeckers hollow out cavities in the trunks of living trees, Orton expects to support 20 to 30 woodpecker colonies of three to five birds by 2020. In addition, in November 2012, Orton Plantation, the U.S. Fish and Wildlife Service (USFWS) and the North Carolina Wildlife Resources Commission signed a Safe Harbor Agreement to protect and manage 8,500 acres of habitat at Orton for the RCW. The forests are now home to seven colonies and growing at a rapid pace, with approximately ten new cavities added per year.

In collaboration with local, state and federal agencies, neighboring properties, conservation groups, and professional consultants, Orton hopes to help restore an American treasure, the longleaf pine, and protect the habitat that hundreds of native wildlife species call home.

Mr. Bacon's strategy of protecting threatened species and habitat through the donation of conservation easements has been widely praised. He made his first easement donation in 1997 on Robins Island in New York's Great Peconic Bay, and in 2012 he gave a 167,000 acre easement over the Trinchera Blanca Ranch to the US Fish and Wildlife Service – the largest single easement ever donated to the USFWS and the largest ever in Colorado. He was the 2010 recipient of Colorado Association of Conservation Districts' Ranch Conservationist of the Year award. In 2013, he received the prestigious Audubon Medal, The Peconic Land Trusts' Annual Conservation Legacy Award, and the National Fish and Wildlife Foundation Chairman's Leadership Award. In April 2014, he was named the Stanback Volunteer Conservationist of the Year by North Carolina's land trust community. That same year, Mr. Bacon received the esteemed Land Trust Alliance President's Award from 1,700 land trusts and the land conservation community for his continued leadership. In April 2016, the Theodore Roosevelt Conservation Partnership presented Mr. Bacon with its Lifetime Conservation Achievement Award.

Mr. Bacon received his B.A. in American Literature from Middlebury College and his M.B.A. in Finance from Columbia Business School. Mr. Bacon currently serves on the Board of Trustees of Middlebury College and the Board of Overseers at Columbia Business School. Mr. Bacon is also a member of the Board of Directors of the Foreign Policy Association and a member of the Center for Public Leadership at Harvard Kennedy School.

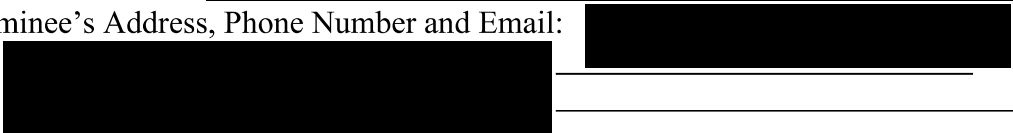

# ALLEN BOYNTON

## THOMAS L. QUAY WILDLIFE DIVERSITY AWARD NOMINATION FORM 2019

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- Mail to N.C. Wildlife Resources Commission, Inland Fisheries Division, c/o Melinda Huebner, 1722 Mail Service Center, Raleigh, N.C. 27699-1700
- Fax to 919-707-0028

Please provide the following information:

1. Name of Nominee: Allen Boynton
2. Nominee's Address, Phone Number and Email: 
3. A detailed essay of the nominee's contributions to wildlife conservation, including a description of the nominee's background, professional achievements, organizational affiliations, past award or recognitions, and any other information that will aid the committee's selection of a recipient.  
  
**NOTE: The essay should be limited to a maximum of two pages (8 ½ x 11 inch paper, with 1-inch margins, single spaced and 12-point font). Submissions that exceed the 2-page limit will be disqualified and returned to the nominator.**
4. Nominated By: David H. Allen with help from Andrea Shipley, Scott Anderson and Kendrick Weeks
5. Complete Address, Phone Number and Email of the person making the nomination: 
6. A resume for the nominee may be requested later. Do not send any supporting documents with this nomination form.

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## **Nomination of Allen Boynton for Thomas L. Quay Wildlife Diversity Award**

Allen Boynton's start in the world of conservation came young in life, influenced by his mother's love of the natural world and squirrel hunting outings. In the years since, Allen has devoted his life to the conservation and restoration of wildlife to the southeastern region of the United States. Moreover, Allen has been a trusted mentor, supporter, and friend to those who worked with and for him. Leading by example, Allen has helped develop future generations of would be conservationists and naturalists through his patient demeanor, big-picture thinking, uncanny strategic abilities, kind and empathetic mediation, demonstration of working well under pressure, and down to earth practicality, encouraging us all to find our passion and balance in life.

With close to 40 years' experience with two state wildlife agencies (18 years in VA and 20 years in NC), it's difficult to concisely summarize all of Allen's achievements. As a TWS Certified Wildlife Biologist, Allen's body of work truly epitomizes how great a positive impact one individual can have on wildlife conservation. Back in his Virginia days, Allen headed up a successful elk reintroduction effort in the state, often collaborating with neighboring states on their elk reintroductions. Allen was the principal biologist working to restore Peregrine Falcon to western NC; his successful involvement in a complicated project yielded him the Management Excellence Award from the Southeastern Section of The Wildlife Society. While working for NC Wildlife Resources Commission (NCWRC), Allen was the premier biologist to initiate bat monitoring in the state and he co-led the work to develop NC species conservation plans for state listed species, starting with American alligator. He was instrumental in organizing and mediating a stakeholder committee who developed NCWRC's Alligator Management Plan, by successfully navigating competing interests and shaping a contentious process. Allen worked hard to develop separate State Wildlife Grants for Cooperative Research and participated in the Blue Ribbon Panel on Sustaining America's Diverse Fish & Wildlife Resources, which seeks to find a new model for conservation funding. There's so much more that could be mentioned of Allen's professional accomplishments, but we cannot overlook his non-professional influences.

Allen is a passionate and avid birder, photographer, and iNaturalist user. He has traveled the world over for his love of bird watching and retirement has only increased this inclination. He has personally contributed over 1,286 observations of 627 species on iNaturalist, identifying species in 7,419 posts (<https://www.inaturalist.org/users/150629>). Allen is a longtime, ardent supporter of the Mount Rogers Naturalist Rally and received the honor of being the keynote speaker at the 44<sup>th</sup> Spring Rally in 2018. Combining his love of the rally, Mt. Rogers, and birds, Allen has often led bird trips since 2008. Allen's Eastern screech owl call is top notch, by the way.

His wry grin, uplifting and supportive manners, and boundlessly kind friendship, make Allen not only a great biologist, but also a person of the highest caliber. Allen's dedication and commitment to his lifelong passion for wildlife, his mentorship and leadership, and his professional achievements make him deserving of all of life's rewards, especially the Thomas L. Quay Wildlife Diversity Award.



# North Carolina Protected Animal List

A Brief Description of Purpose and  
Process



## PROTECTED WILDLIFE SPECIES OF NORTH CAROLINA



American alligator - threatened



Eastern hellbender - state special concern



Yellow lance - state endangered



N.C. Wildlife Resources Commission  
[www.ncwildlife.org](http://www.ncwildlife.org)  
October 2017

# Why We Produce a Protected Animal List

*“The General Assembly finds that the recreation and aesthetic needs of the people, the interests of science, the quality of the environment, and the best interests of the State require that endangered and threatened species of wild animals and wild animals of special concern be protected and conserved, that their numbers should be enhanced and that conservation techniques be developed for them;...” from § 113-332*



# Protected Animal List(s)

- Endangered – native or once native wild animal, continued existence in NC is in jeopardy
- Threatened – native or once native wild animal that may become endangered in the foreseeable future
- Special Concern - native or once native wild animal that needs monitoring





# Wild Animal

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... any native or once-native nongame amphibian, bird, crustacean, fish, mammal, mollusk or reptile not otherwise legally classified by statute or regulation such as game and fur bearing animals, except those inhabiting and depending upon coastal fishing waters, marine and estuarine resources, marine mammals found in coastal fishing waters, sea turtles found in coastal fishing waters...



# Protections for Listed Species

It is unlawful:...To take, possess, transport, sell, barter, trade, exchange, export, or offer for sale, barter, trade, exchange or export, or give away for any purpose including advertising or other promotional purpose any animal on a protected wild animal list, except as authorized according to the regulations of the Commission, ...§ 113-337

To Take. - All operations during, immediately preparatory, and immediately subsequent to an attempt, whether successful or not, to capture, kill, pursue, hunt, or otherwise harm or reduce to possession any fisheries resources or wildlife resources.  
§ 113-130



# Protections for Listed Species

...the Wildlife Resources Commission shall develop a conservation plan for the recovery of protected wild animal species. In developing a conservation plan for a protected wild animal species, the Wildlife Resources Commission shall consider the range of conservation, protection, and management measures that may be applied to benefit the species and its habitat. The conservation plan shall include a comprehensive analysis of all factors that have been identified as causing the decline of the protected wild animal species and all measures that could be taken to restore the species... from § 113-333

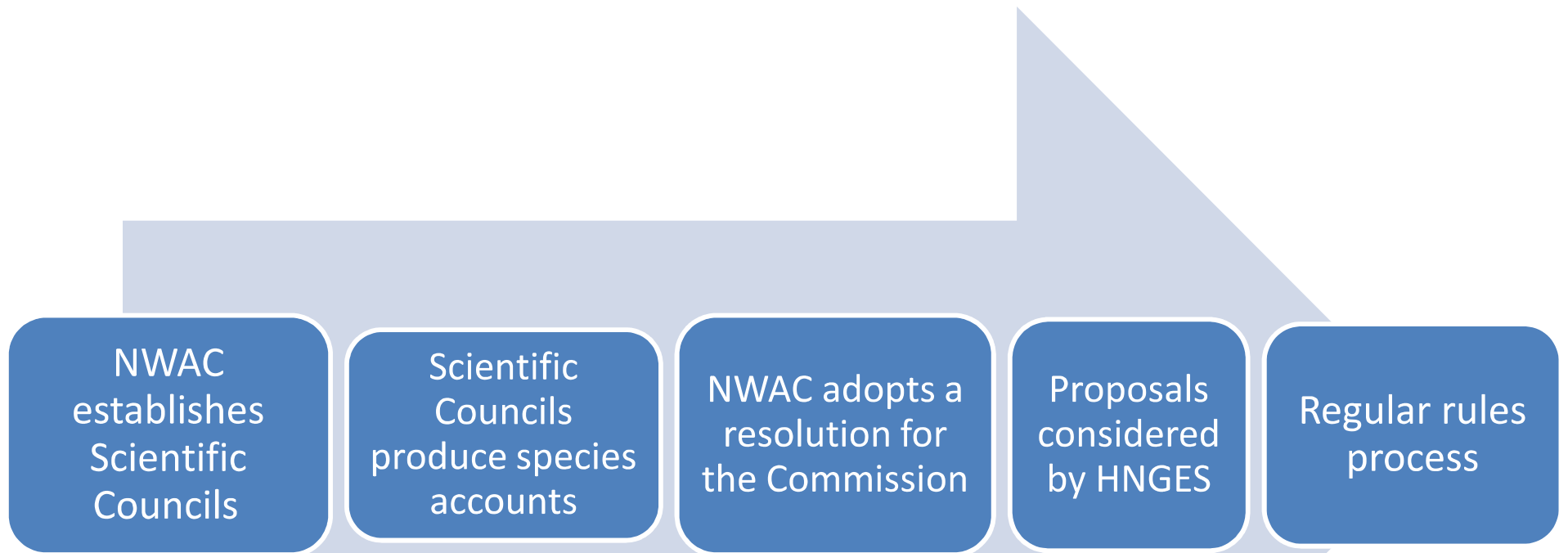


# Protections for Listed Species

- ...however, nothing in this Article shall be construed to limit the rights of a landholder in the management of his lands for agriculture, forestry, development or any other lawful purpose without his consent...           § 113-332
- ...the Wildlife Resources Commission shall not adopt any rule that restricts the use or development of private property. ..       § 113-333

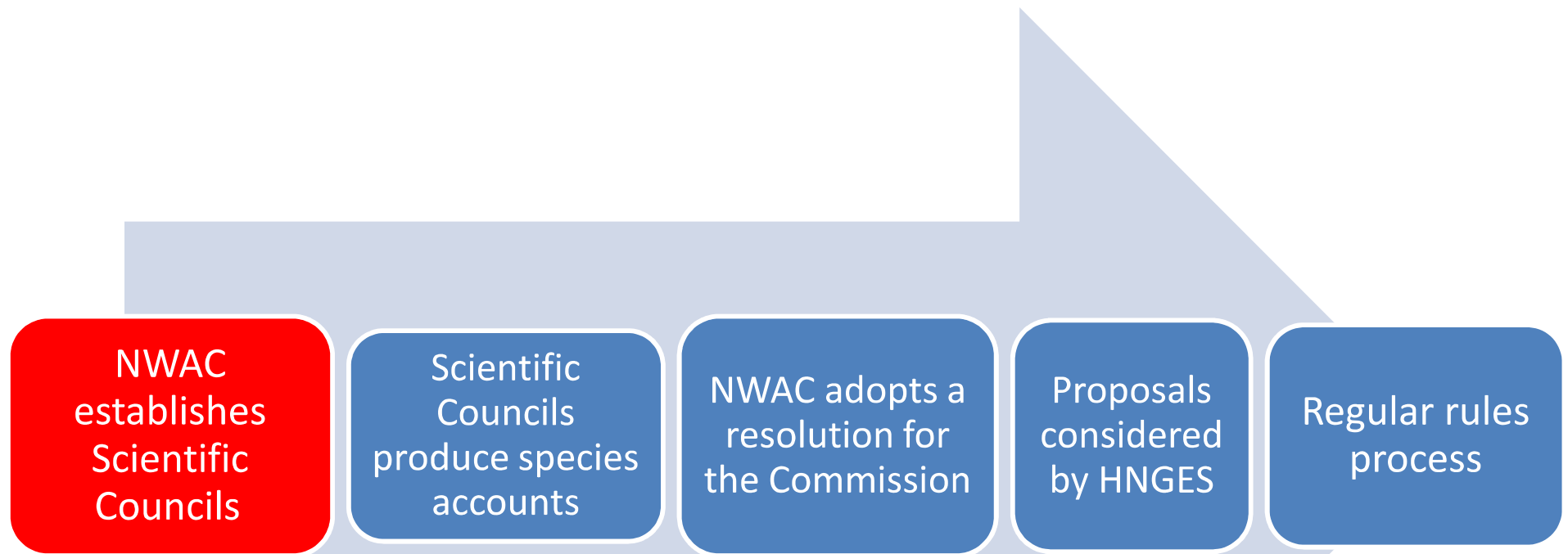


# The State Listing Process

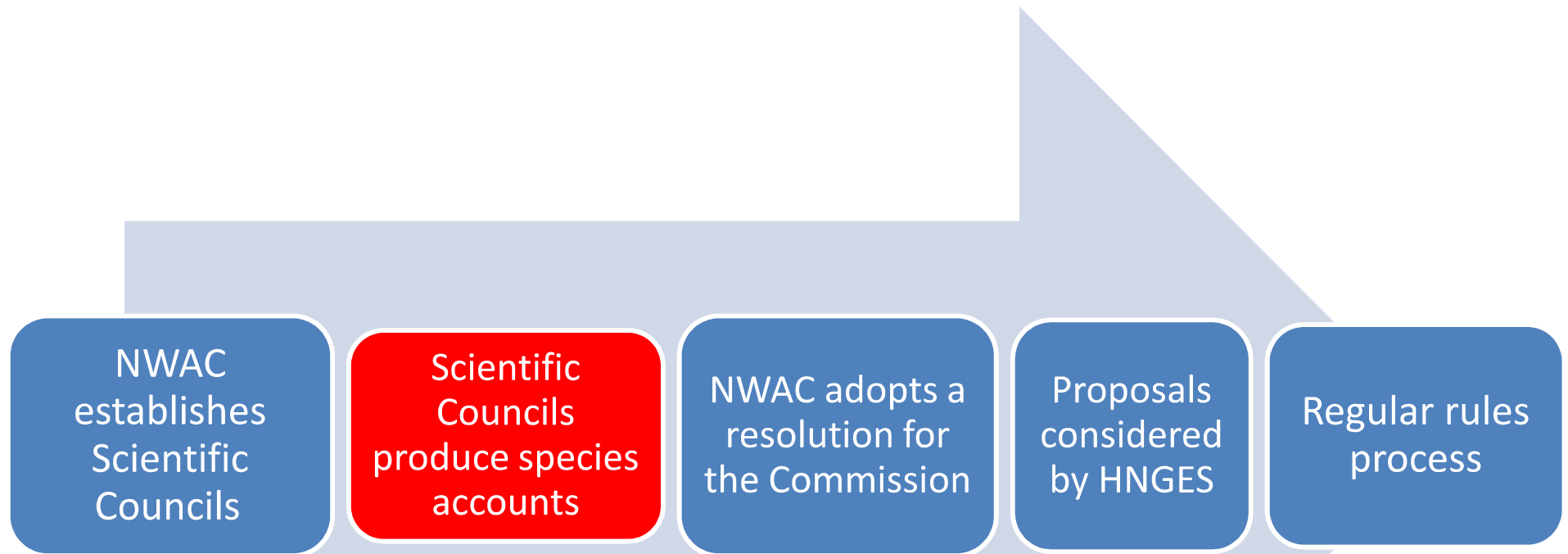




# The State Listing Process



# The State Listing Process



Use any of the criteria A–E	Endangered	Threatened	Special Concern
<b>A. Population reduction</b> Declines measured over the past 10 to 50 years			
<b>A1</b>	≥ 90%	≥ 70%	≥ 50%
<b>A2, A3 &amp; A4</b>	≥ 80%	≥ 50%	≥ 30%
<b>A1.</b> Population reduction observed, estimated, or inferred in the past where causes of the reduction are clearly reversible <b>AND</b> understood <b>AND</b> have ceased, based on and specifying any of the following:			
<b>(a)</b> direct observation			
<b>(b)</b> an index of abundance appropriate to the taxon			
<b>(c)</b> a decline in area of occupancy, extent of occurrence, and/or habitat quality			
<b>A2.</b> Population reduction observed, estimated, or inferred in the past where causes of the reduction may not have ceased <b>OR</b> may not be understood <b>OR</b> may not be reversible, based on (a) to (c) under A1.			
<b>A3.</b> Population reduction projected to be met in the future (up to a maximum of 50 years) based on (b) to (c) under A1.			
<b>A4.</b> An observed, estimated, inferred, or projected population reduction (up to a maximum of 50 years) where the time period must include both the past and the future, and where causes of the reduction may not have ceased <b>OR</b> may not be understood <b>OR</b> may not be reversible, based on (a) to (c) under A1.			
<b>B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)</b>			
<b>B1.</b> Extent of occurrence	< 100 km <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
<b>B2.</b> Area of occupancy	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>
<b>AND both of the following:</b>			
<b>(a)</b> Severely Fragmented or Number of locations	= 1	≤ 5	≤ 10
<b>(b)</b> Continuing decline in any of: <b>(i)</b> extent of occurrence; <b>(ii)</b> area of occupancy; <b>(iii)</b> area, extent and/or quality of habitat; <b>(iv)</b> number of locations or subpopulations; <b>(v)</b> number of mature individuals.			
<b>C. Small population size and decline</b>			
Number of mature individuals	< 750	< 3,500	< 10,000
<b>AND either C1 or C2:</b>			
<b>C1.</b> An estimated continuing decline of at least: (up to a max. of 50 years in future)	25% in 3 years or 1 generation	20% in 5 years or 2 generations	10% in 10 years or 3 generations
<b>C2.</b> A continuing decline and number of mature individuals in each subpopulation:	< 150	< 700	< 1,400
<b>D. Very small or restricted population</b>			
<b>Either:</b>			
<b>D1.</b> Number of mature individuals	< 150	< 700	< 1,400
OR			
<b>D2.</b> Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to E or EX in a very short time.			<b>D2.</b> typically: AOO <20 km <sup>2</sup> or number of locations ≤ 5
<b>E. Quantitative Analysis</b>			
Indicates the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations (50 years max.)	≥ 20% in 20 years or 5 generations (50 years max.)	≥ 10% in 50 years

# Species Accounts

- Current and Proposed Status
- Biological Information
- Species Range
- Rationale for Suggested Status

## *Cambarus spicatus* – Broad River Spiny Crayfish

**Current USFWS Status:** FSC – Federal Species of Concern

**Current IUCN Status:** Data Deficient (DD)

**Current NatureServe G-Rank:** G3 – Vulnerable (last reviewed 1 July 2009, last changed 19 Feb 1996)

**Current NC Natural Heritage S-Rank:** S2 – Imperiled

**Current NC Status:** SC – Special Concern

**Proposed NC Status:** T – Threatened

**Range, Ecology, and Life History:** *Cambarus spicatus* is a species of crayfish endemic to the Foothills and Piedmont regions of North Carolina and South Carolina. The species is restricted to 2<sup>nd</sup> - 4<sup>th</sup> order (small to moderate-drainage) streams in the Broad River basin. In North Carolina, *C. spicatus* is restricted to the First Broad and Pacolet River basins in the Appalachian foothills. Three disjunct populations of *C. spicatus* exist in NC and SC; the First Broad population in NC (considered to be the species' stronghold), the Pacolet River population in NC and SC, and the Little River population in SC (Loughman et al. 2020). *Cambarus spicatus* is not considered a common species and is usually collected in small numbers (Loughman et al. 2020). The species prefers stream benthos dominated by slab rocks, boulders, and cobble, and is typically found in streams that are free from excessive silt and sediment loads that degrade and limit the availability these habitats (Loughman and Williams 2020). Little is known about the reproductive cycle of this species, however collections of reproductive males suggest breeding occurs from November through May. Juveniles and young-of-the-year (YOY) typically inhabit organic material in 2<sup>nd</sup> order streams (NCWRC, unpublished data).

### **Criterion A: Population Decline – No change**

Simmons and Fraley (2010) noted that the Broad River Spiny Crayfish has disappeared from several locations and may be experiencing a decline. The First Broad River population appears to be experiencing a decline in extent of occurrence (EOO). The known EOO prior to 2010 was 937 km<sup>2</sup>. Known EOO since has declined to 804 km<sup>2</sup>. This represents a 14% decline which is below the threshold to be considered for a status change.

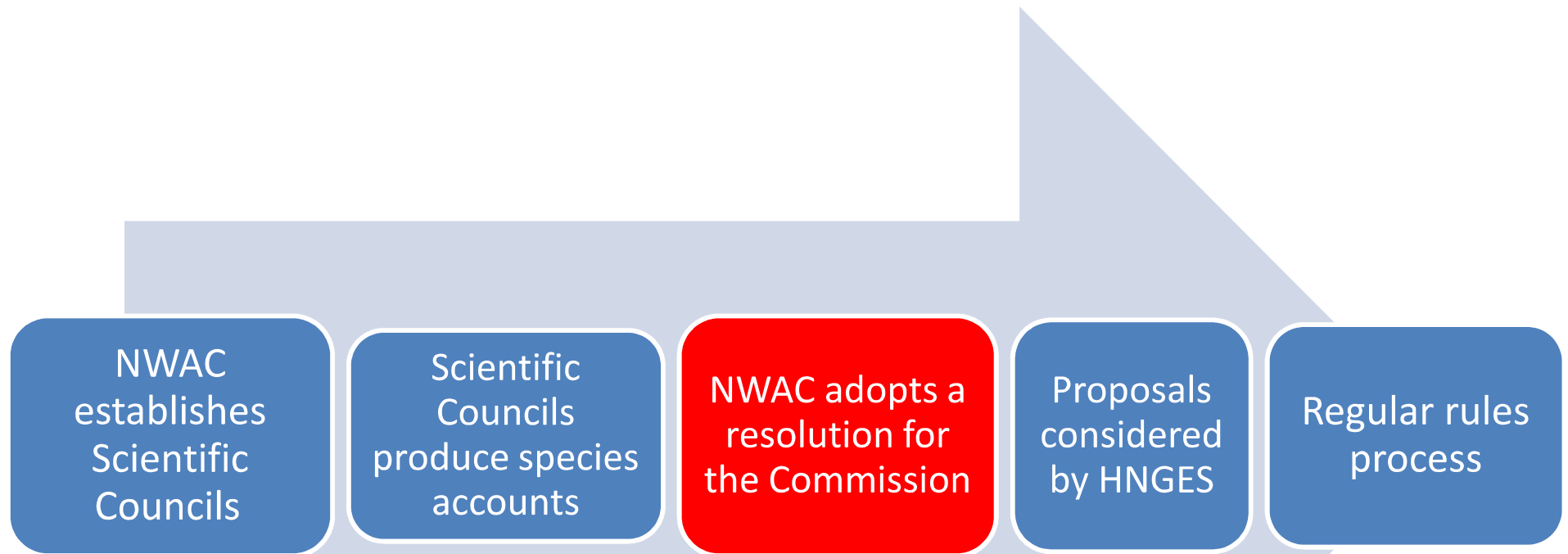
### **Criterion B: Geographic Range – Threatened (B1 and B2)**

Examination of data from the NCWRC Aquatics Database indicate that the Extent of Occurrence (EOO) = 804 km<sup>2</sup> and Area of Occupancy (AOO) = 66 km<sup>2</sup>. *Cambarus spicatus* is presently known to occur in 10 locations (= 10 HUC12s; Figure 1). The species is severely fragmented with no current connectivity between the First Broad and North Pacolet River populations in NC due to habitat degradation throughout large reaches of the Broad River basin (NCDEQ 2018). The species appears to be exhibiting a decline in geographic extent. The number of known locations has declined from 12 to 10 since 2010 (Figure 1). Both of the HUC12s where it has not been recently collected were each sampled several times at various locations. The Broad River Spiny Crayfish's is now narrowly distributed (EOO less than 5000 km<sup>2</sup> and AOO less than 500 km<sup>2</sup>). This combination of narrow distribution, decline in number of locations, decline in EOO as noted in Criterion A, and fragmentation exceeds the criteria for this species to be considered threatened.

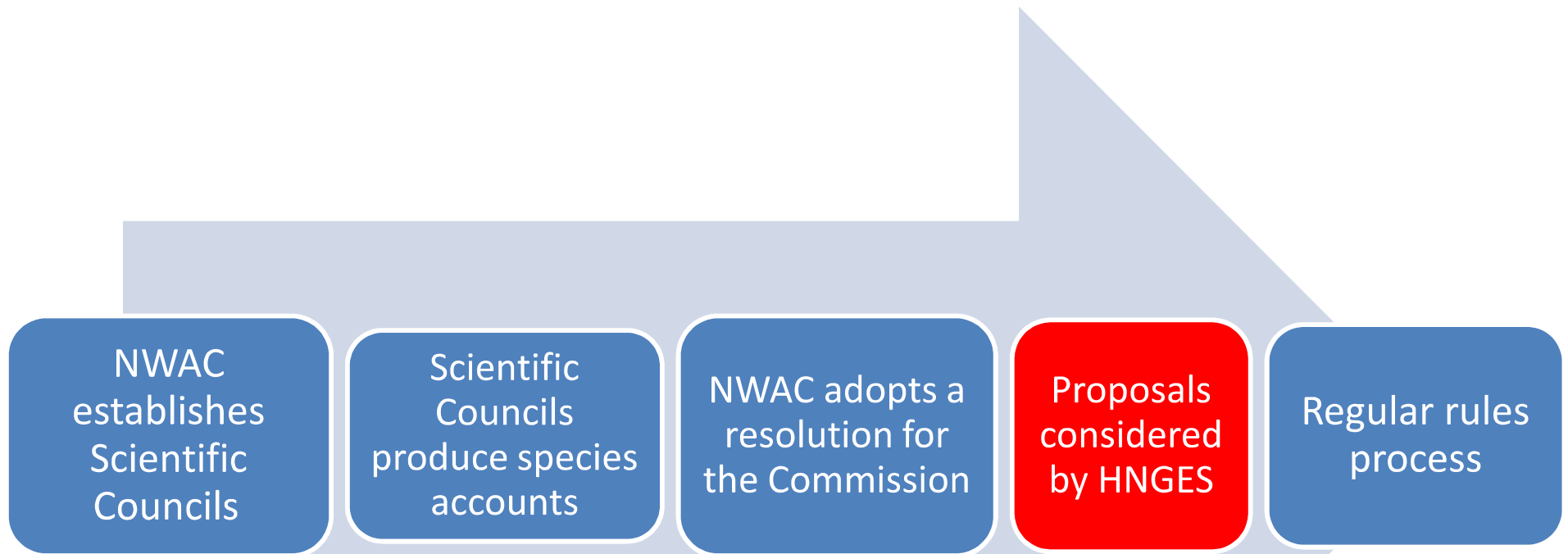
### **Criterion C: Small Population Size and Decline – Data Deficient**

This species appears to be rare both in terms of distribution and numbers. Simmons and Fraley (2010) found it in 4 of 27 stream sites sampled in the Broad River basin while Russ and Fraley (2014) found it in

# The State Listing Process



# The State Listing Process

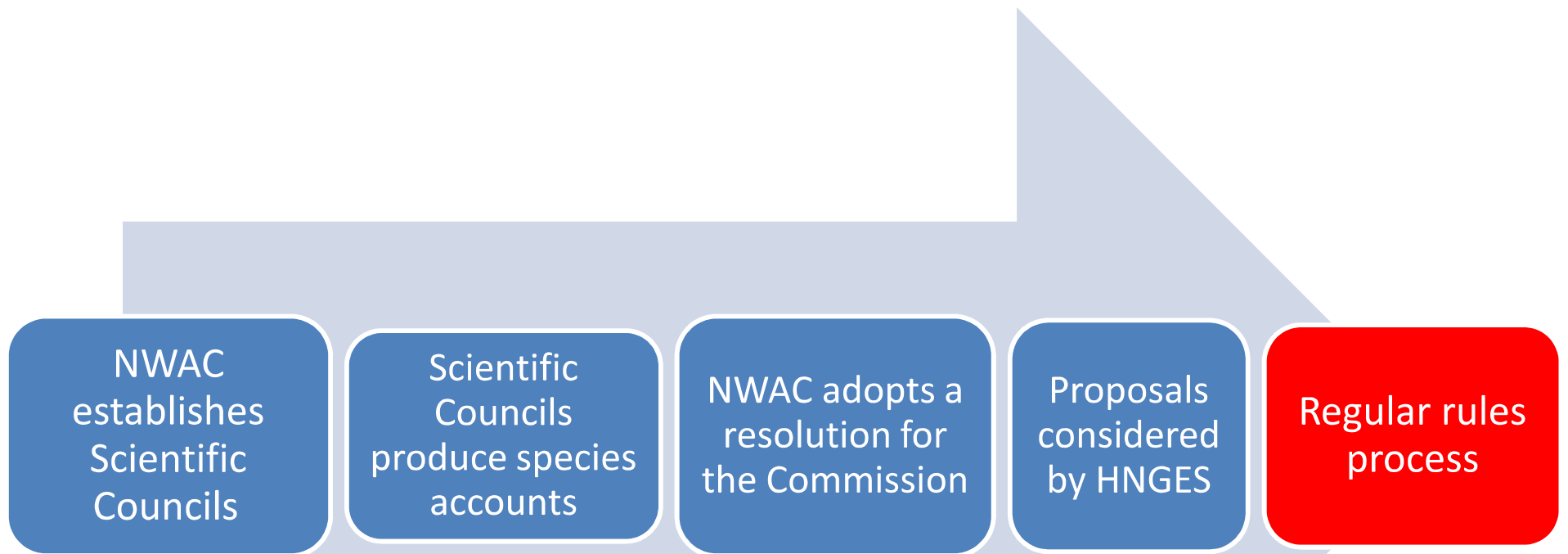


# What the Commission Considers

- Whether any other state or federal agency or private entity is taking steps to protect the wild animal which is the subject of the proposal;
- Whether there is present or threatened destruction, modification, or curtailment of its habitat;
- If there is over-utilization for commercial, recreational, scientific, or educational purposes;
- Whether there is critical population depletion from disease, predation, or other mortality factors;
- Whether alternative regulatory mechanisms exist; and
- The existence of other man-made factors affecting continued viability of the animal in North Carolina.



# The State Listing Process





# Schedule

- Crustaceans (2020)
- Amphibians and Reptiles (2020)
- Fish (2022)
- Mammals (2022)
- Birds (2024)
- Mollusks (2024)
- Technical Corrections (Annually)



# Questions





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**John Carpenter**  
Coastal Landbird Biologist



**Scott Anderson**  
Bird Conservation Biologist

# North Carolina's Diverse Birds

Many Habitats, Many Species

**>470**  
bird species



[ncbirdatlas.org](http://ncbirdatlas.org)



# North Carolina's Diverse Birds

The need for data is higher than resources available.

# 99

species of greatest  
conservation need



[ncbirdatlas.org](http://ncbirdatlas.org)



Christine Kelly



Dick Daniels



Carlos Delgado



ncbirdatlas.org

# Birds in Decline Nationwide

## Many declines undetected

### RESEARCH

#### BIODIVERSITY LOSS

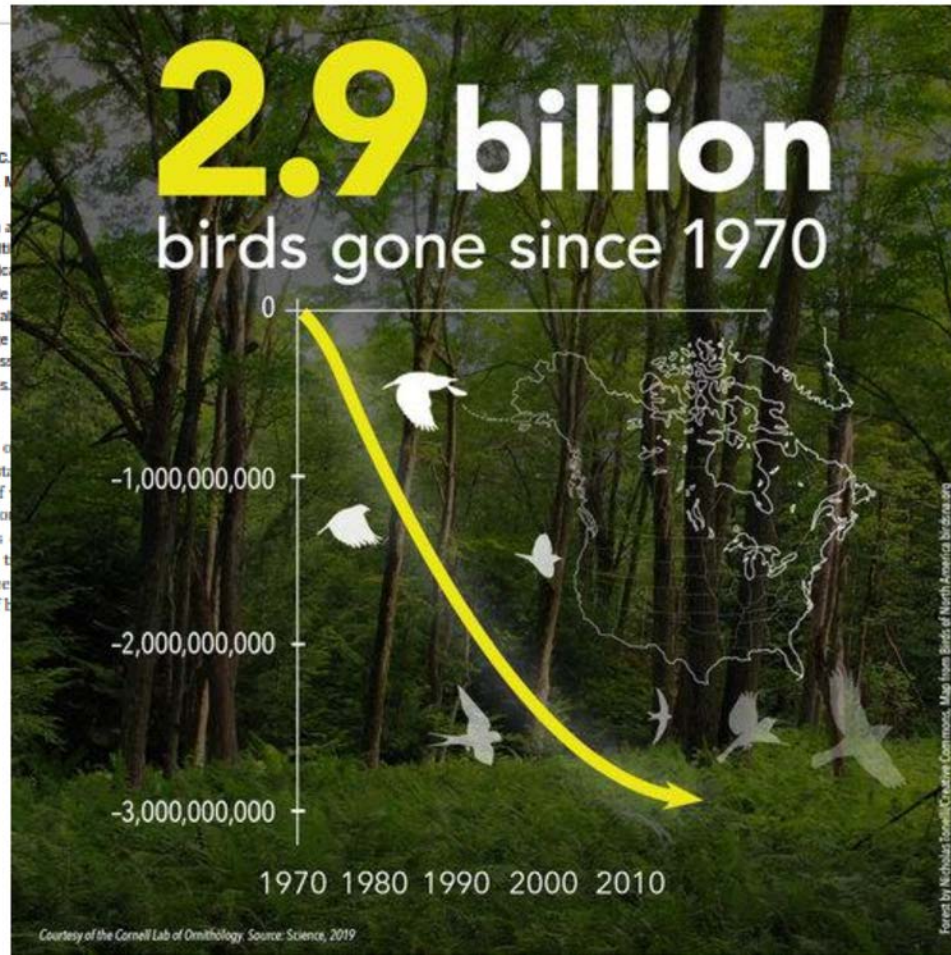
### Decline of the North American avifauna

Kenneth V. Rosenberg<sup>1,2\*</sup>, Adriaan M. Dokter<sup>1</sup>, Peter J. Blancher<sup>3</sup>, John R. Sauer<sup>4</sup>, Adam C. Paul A. Smith<sup>3</sup>, Jessica C. Stanton<sup>5</sup>, Arvind Panjabi<sup>7</sup>, Laura Helft<sup>1</sup>, Michael Parr<sup>2</sup>, Peter P. M.

Species extinctions have defined the global biodiversity crisis, but extinction begins with loss in abundance of individuals that can result in compositional and functional changes of ecosystems. Using multiple independent monitoring networks, we report population losses across much of the North American continent over 48 years, including once-common species and from most biomes. Integration of range-wide trajectories and size estimates indicates a net loss approaching 3 billion birds, or 29% of 1970 abundance. A continent-wide weather radar network also reveals a similarly steep decline in biomass passage of birds over a recent 10-year period. This loss of bird abundance signals an urgent need to address the causes of decline, avert future avifaunal collapse and associated loss of ecosystem integrity, function, and services.

**S**lowing the loss of biodiversity is one of the defining environmental challenges of the 21st century (1–5). Habitat loss, climate change, unregulated harvest, and other forms of human-caused mortality (6, 7) have contributed to a thousandfold increase in global extinctions in the Anthropocene compared to the presumed prehuman back-

ground (8). In the United States and Canada (70% of species), drawing from multiple standardized bird-monitoring datasets, some of which provide close to 50 years of population data, we integrate range-wide estimates of population size and 48-year population trends along with their associated uncertainties to quantify net change in numbers of birds





ncbirdatlas.org

# Birds in Decline Nationwide

## Many declines undetected

### RESEARCH

#### BIODIVERSITY LOSS

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ground in the United States and Canada (76% of species), drawing from multiple state bird-monitoring datasets, some of which date close to 50 years of population monitoring. Integrated range-wide estimates of population size and 48-year population trends, along with their associated uncertainties, quantify net change in numbers of birds



# What is a Bird Atlas?



[ncbirdatlas.org](http://ncbirdatlas.org)



**Henslow's Sparrow** (*Centronyx henslowii*)

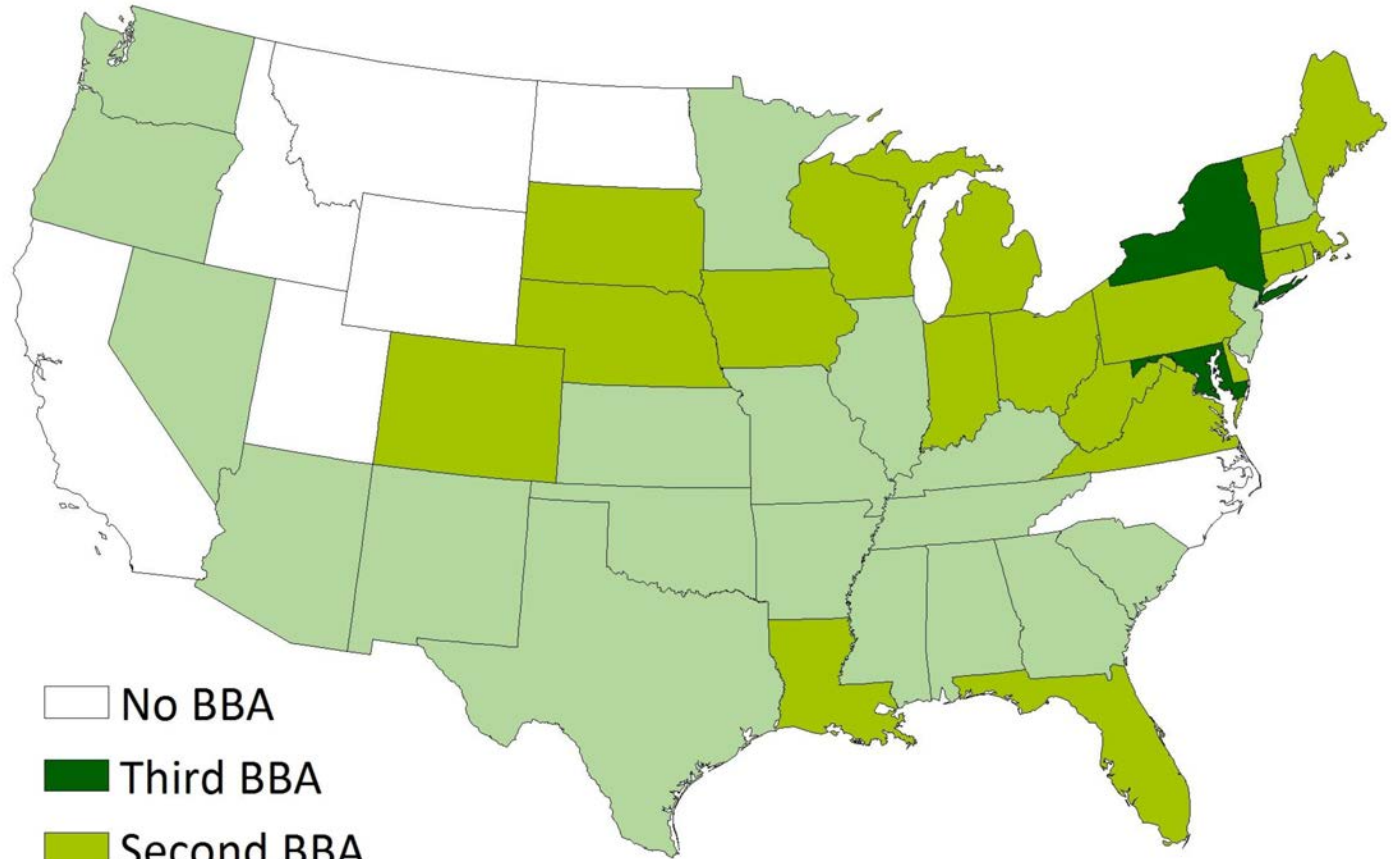




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# Nationwide Breeding Bird Atlases

41 lower US states have completed an atlas



-  No BBA
-  Third BBA
-  Second BBA
-  First BBA

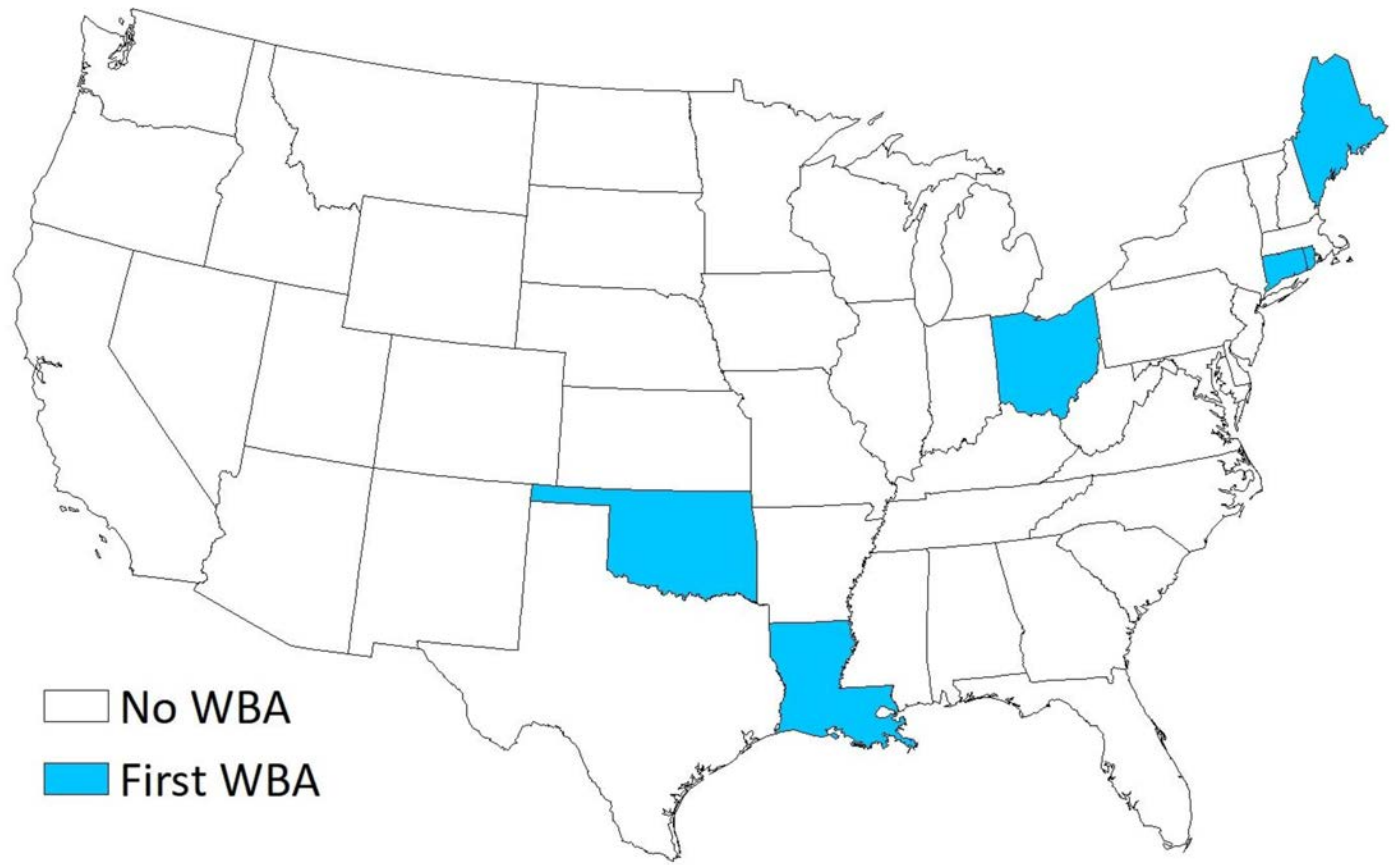




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# Nationwide Winter Bird Atlases

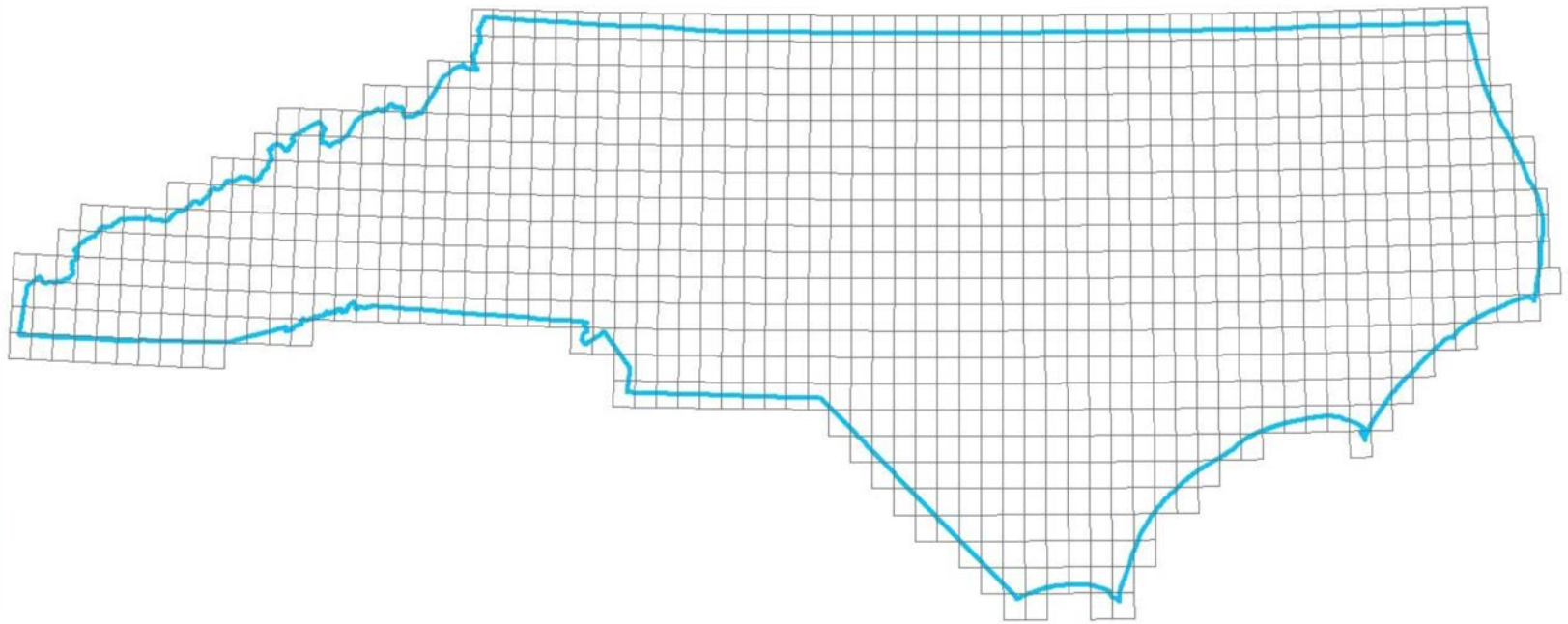
6 lower US states have attempted a winter bird atlas





# What is a Bird Atlas?

systematic, standardized survey of the entire state



[ncbirdatlas.org](http://ncbirdatlas.org)

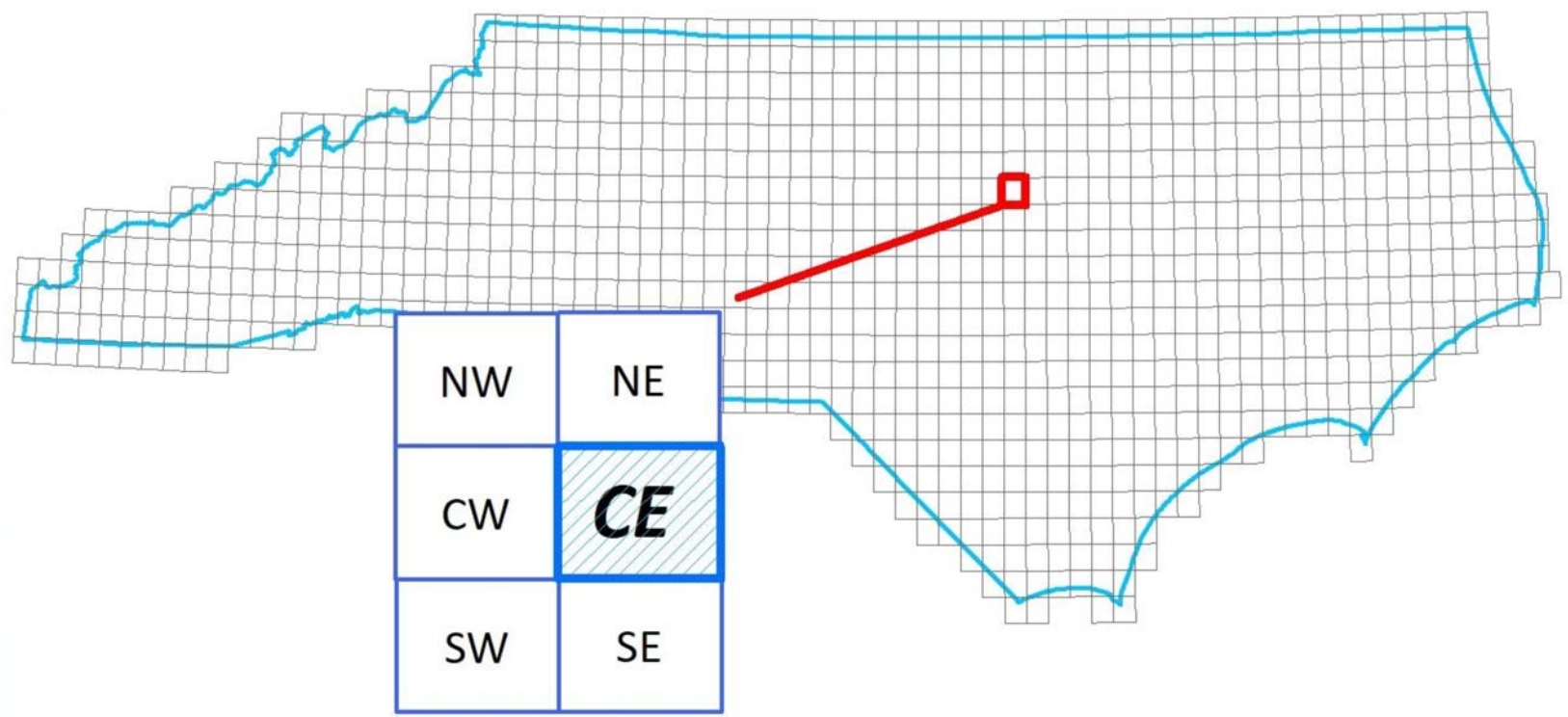




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systematic, standardized survey of the entire state

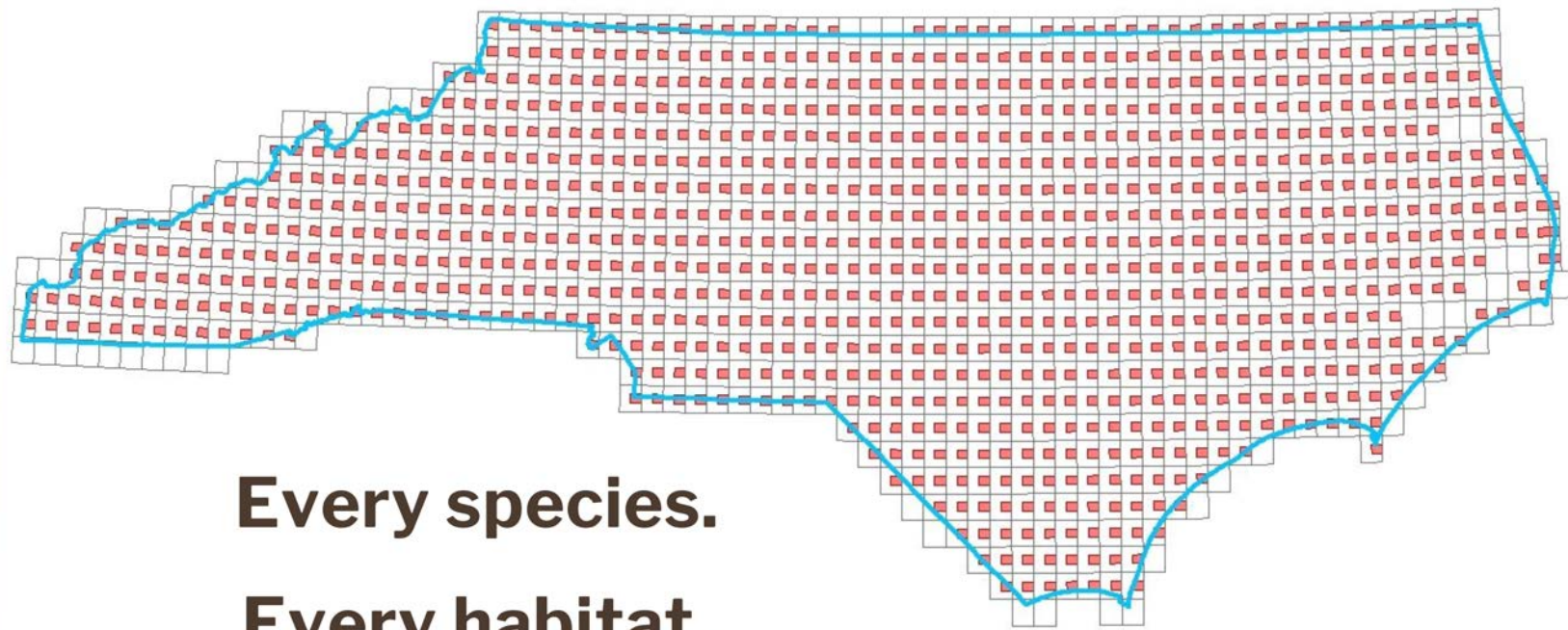




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# What is a Bird Atlas?

systematic, standardized survey of the entire state



**Every species.**  
**Every habitat.**



# Why a Bird Atlas?



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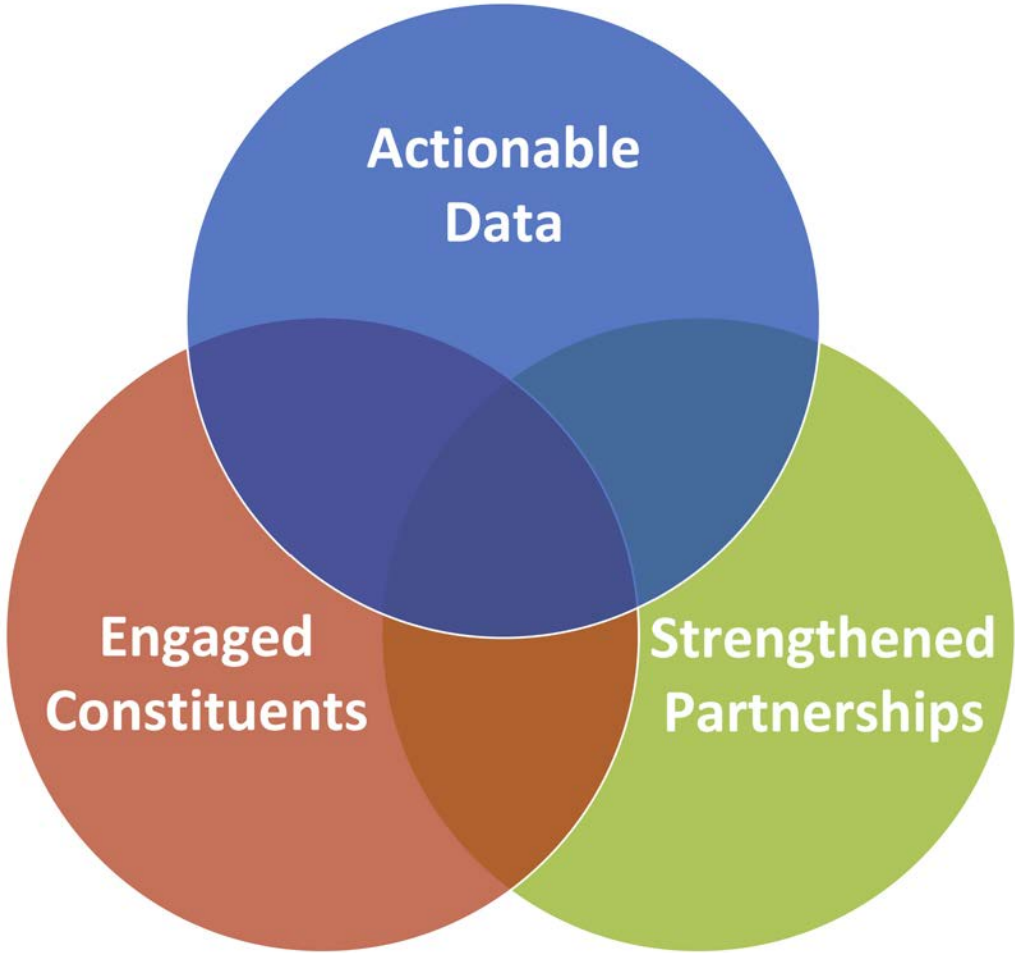
**Piping Plover** (*Charadrius melodus*)



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# Why a Bird Atlas?

Three main benefits

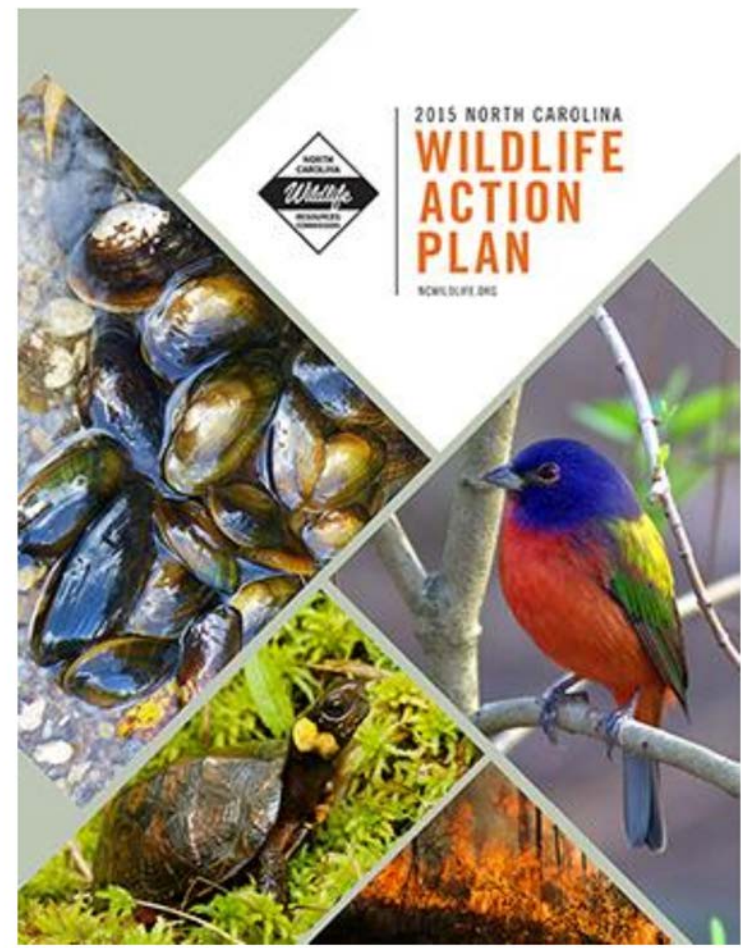




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# Why a Bird Atlas?

Increase Data Quality and Quantity



More than half of the birds in the NC Wildlife Action Plan have imprecise population estimates.

## What is *our* plan?







# Why a Bird Atlas?

Increase Data Quality and Quantity



[ncbirdatlas.org](http://ncbirdatlas.org)





[ncbirdatlas.org](http://ncbirdatlas.org)

# Why a Bird Atlas?

Increase Data Quality and Quantity

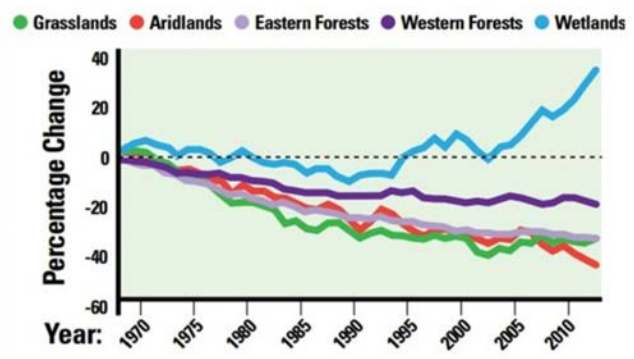




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Increase Data Quality and Quantity

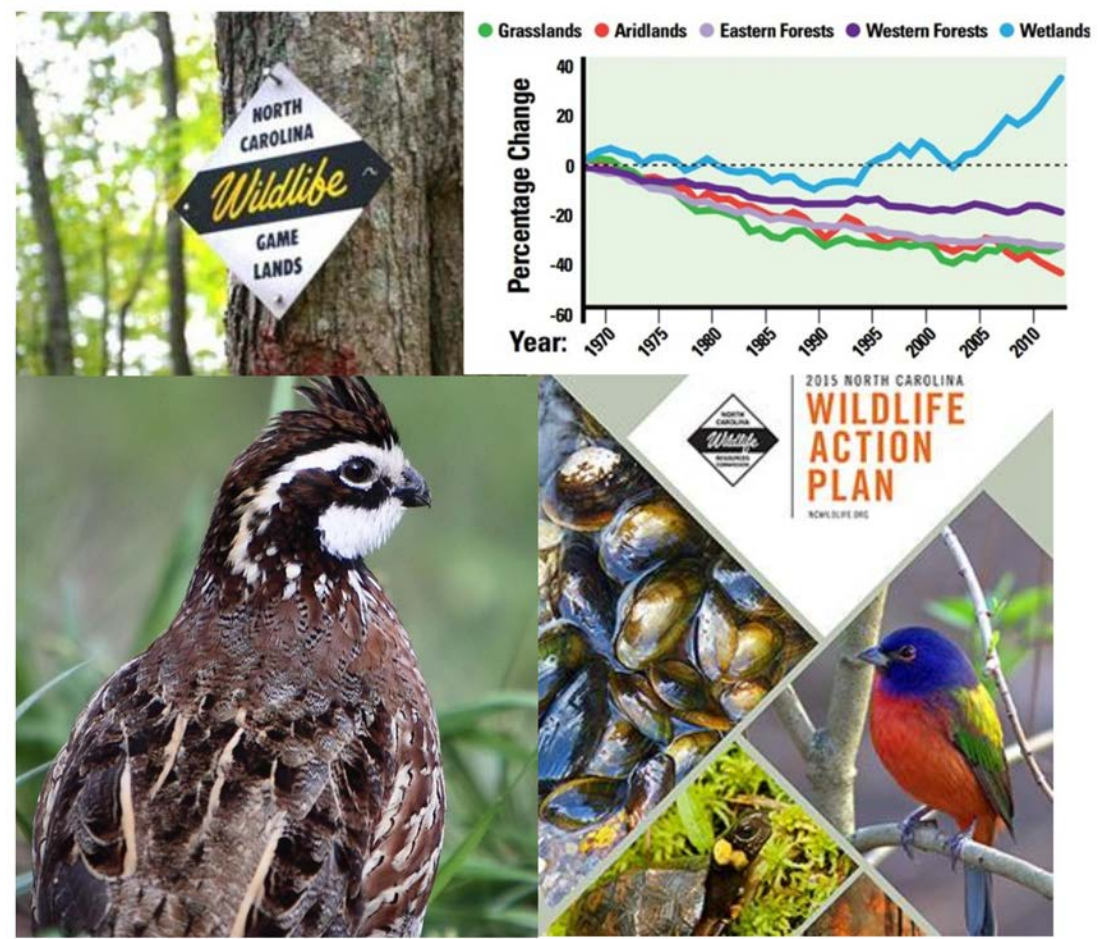




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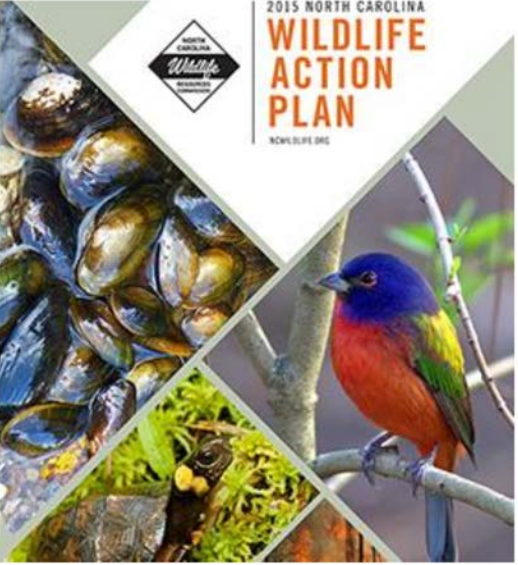
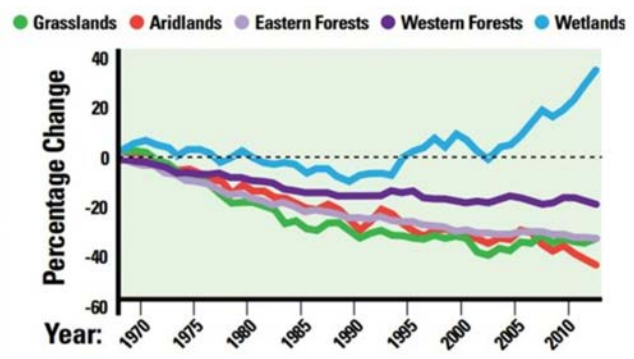




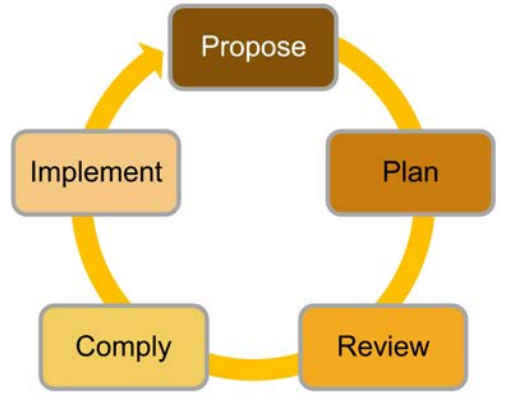
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# Why a Bird Atlas?

Increase Data Quality and Quantity



2015 NORTH CAROLINA  
**WILDLIFE ACTION PLAN**  
NCWILDLIFE.ORG

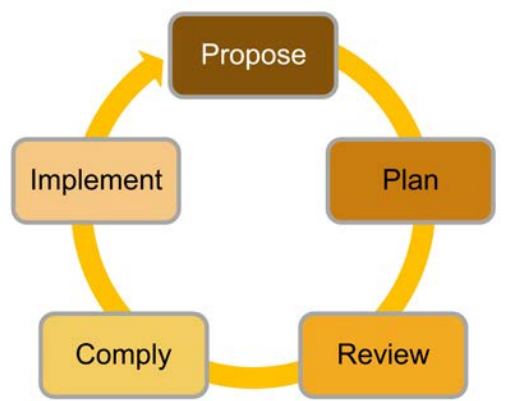
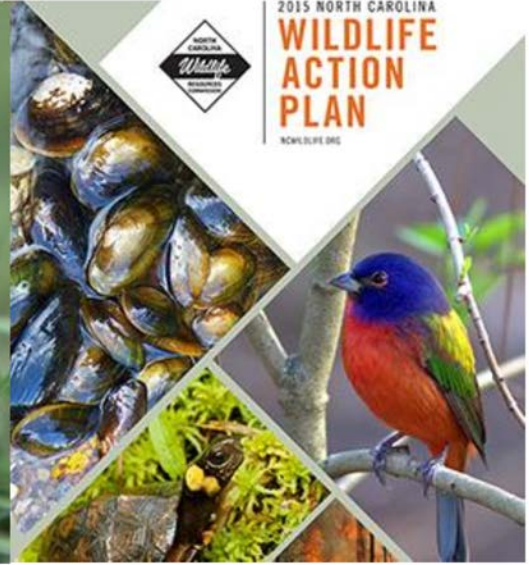
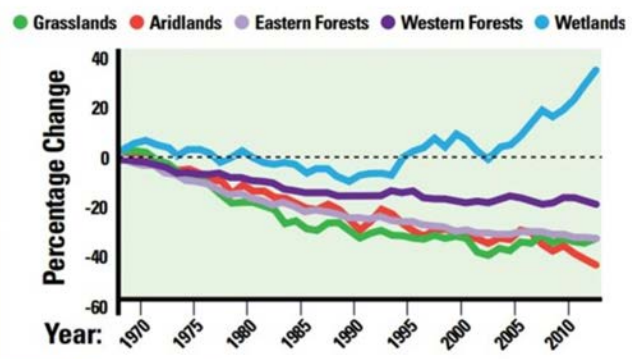




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# Why a Bird Atlas?

Increase Data Quality and Quantity



Conservation Plan for the Henslow's sparrow (*Ammodramus henslowii*) in North Carolina



February 19, 2019  
NC Wildlife Resources Commission





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# Why a Bird Atlas?

An Example: Loggerhead Shrike



**SGCN**

**↓ 79%**  
RANGE-WIDE

**Knowledge gaps**



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# Why a Bird Atlas?

Data Source: Birds of North Carolina



- Scaled only to county level
- Status unknown in many areas



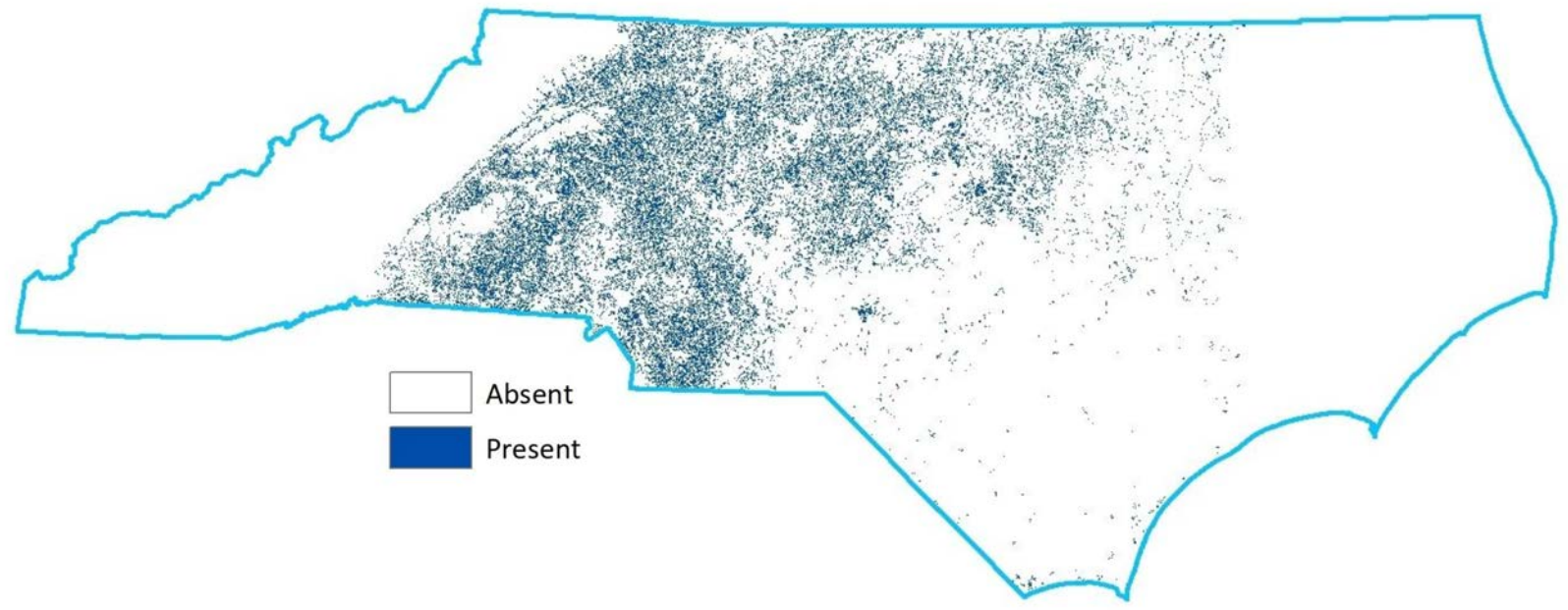




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# Why a Bird Atlas?

Data Source: USGS Southeast GAP



- Presence/absence only
- Inaccurate

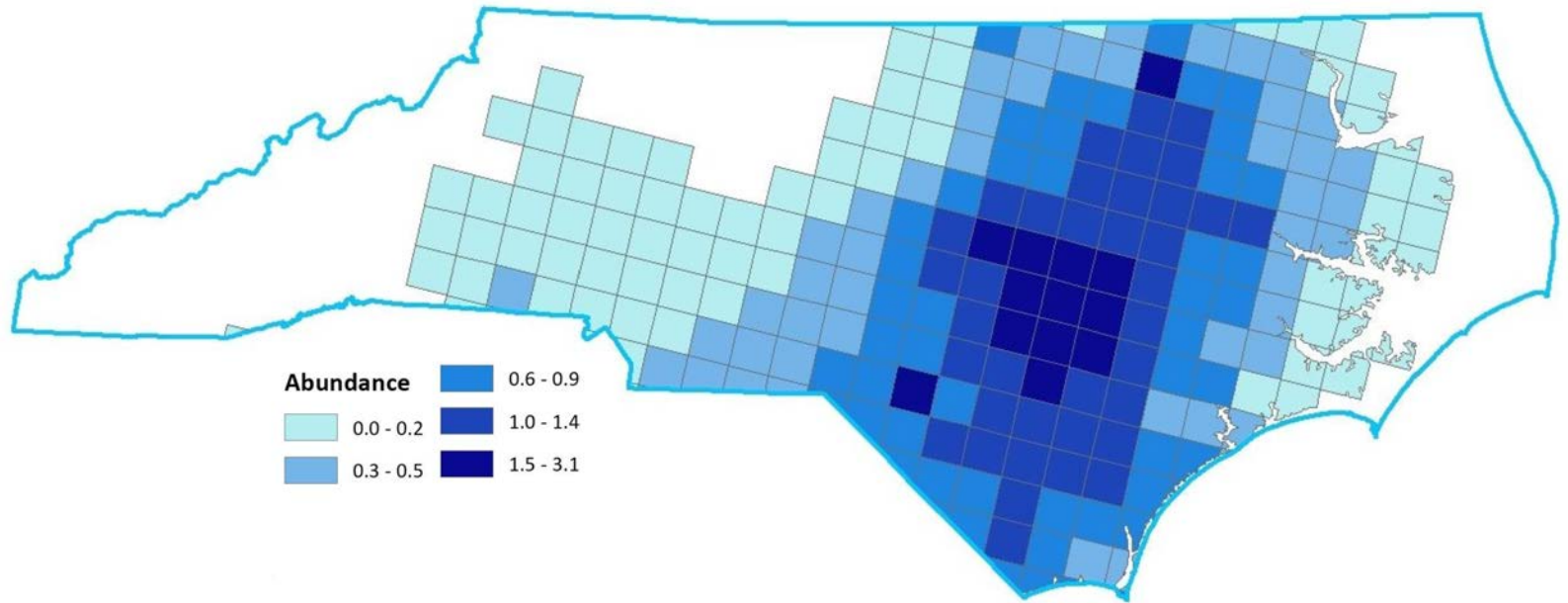




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# Why a Bird Atlas?

Data Source: USGS Breeding Bird Survey



- Road and seasonal biases
- Large scale = 20 km

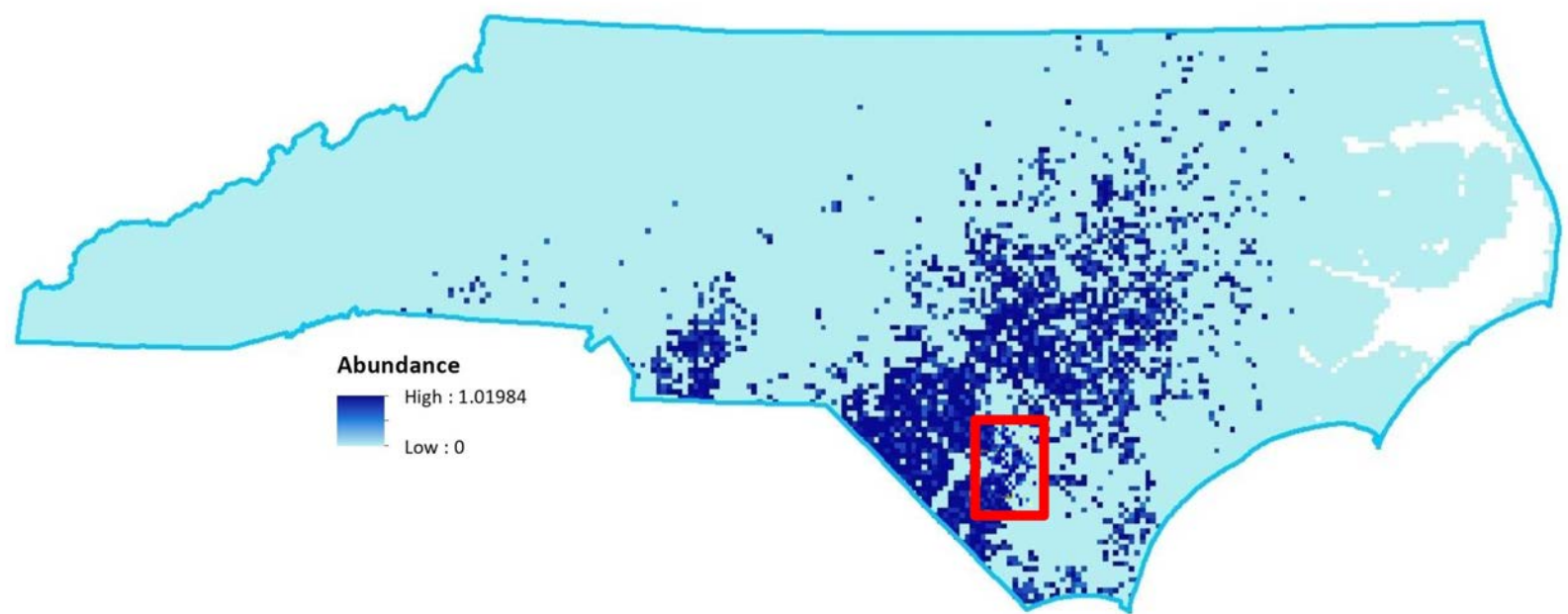




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# Why a Bird Atlas?

Data Source: eBird



- Data collection biases

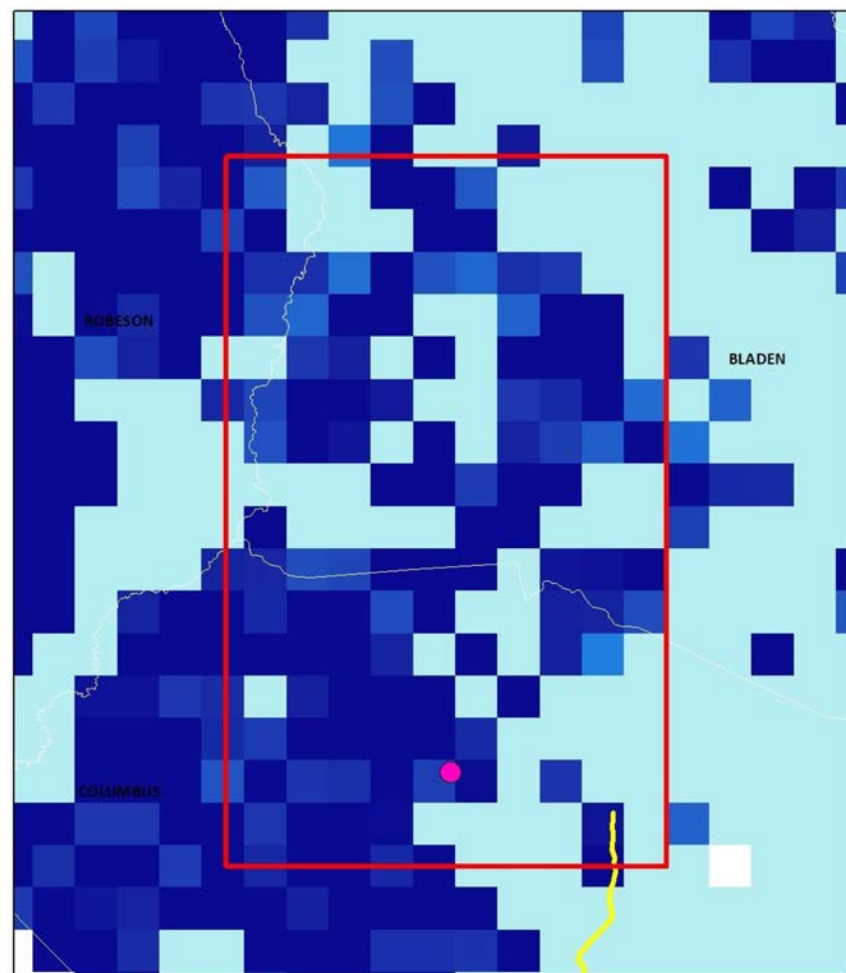




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# Why a Bird Atlas?

Data Source: eBird



**Abundance**  
High : 1.01984  
Low : 0

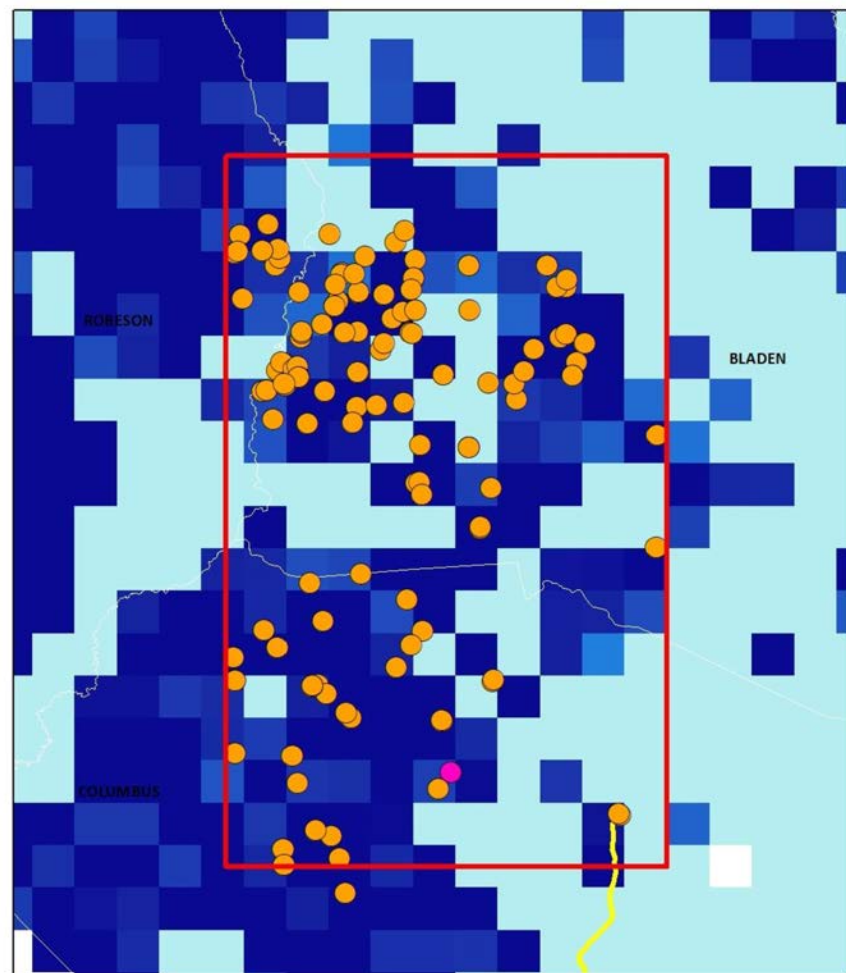




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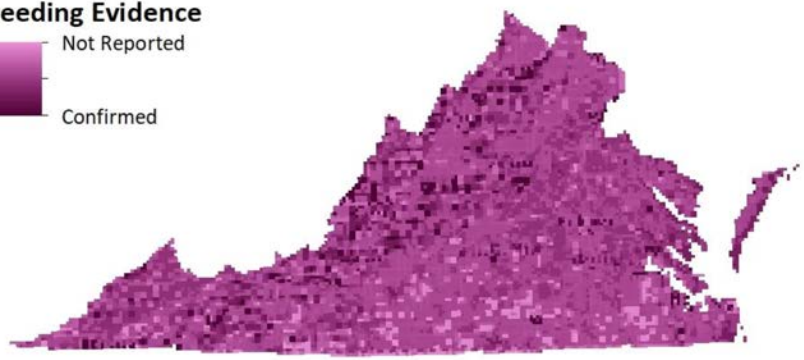
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# Why a Bird Atlas?

Guaranteed Data Products

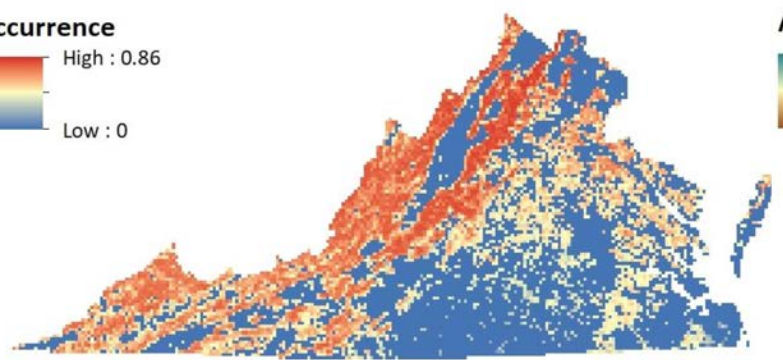
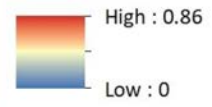


### Breeding Evidence

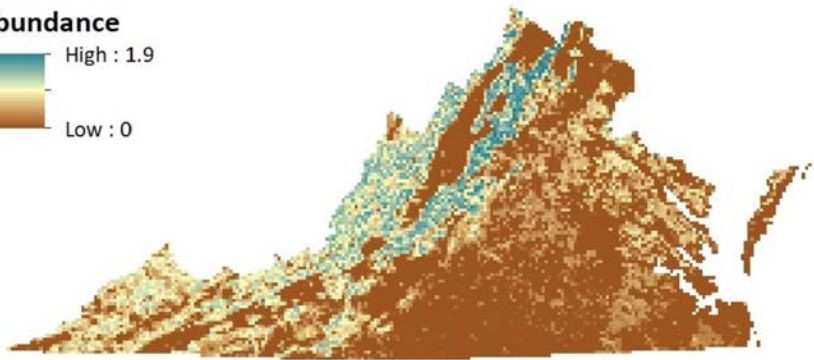
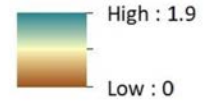


# 93% of NC's SGCN species!

### Occurrence



### Abundance

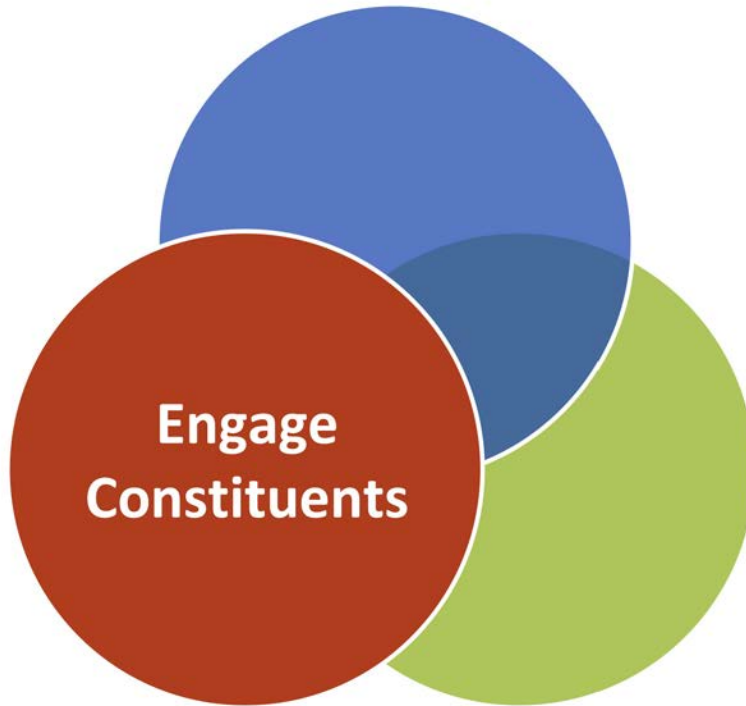




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# Why a Bird Atlas?

## Constituents



- Build a new conservation coalition
- Expand Agency visibility
- Reduce need for state funds to match federal dollars
- Expand the use of eBird

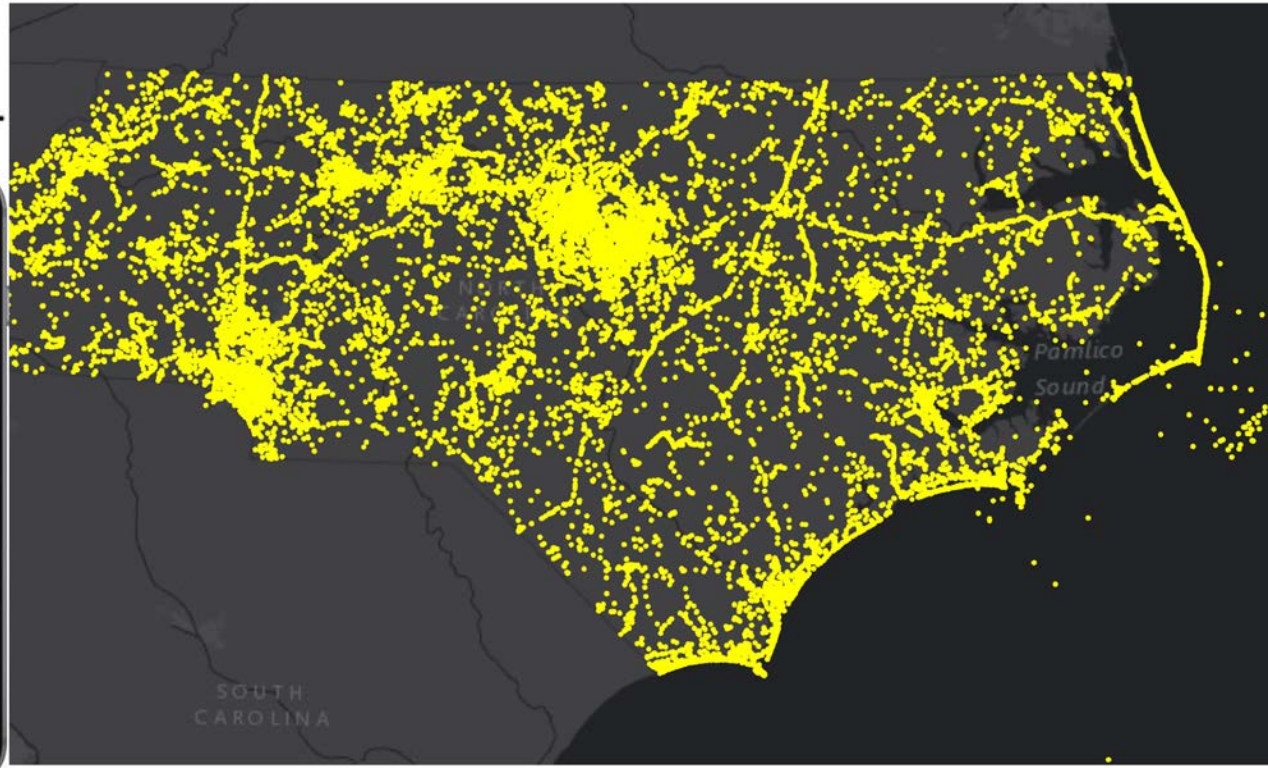




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# eBird

# eBird





# Building a Conservation Coalition



- Traditional Avid Birders to Novices
- Hunters and Non-Hunters
- Private Landowners and Urban-Dwellers



# Is This Realistic?



**3,000**

volunteer hours needed/year

**48,000**

hours logged in eBird in 2019

[ncbirdatlas.org](http://ncbirdatlas.org)



[ncbirdatlas.org](http://ncbirdatlas.org)

# If We Build It, Will They Come?

Does the NC birding community want a bird atlas?



**91%**  
agree





[ncbirdatlas.org](http://ncbirdatlas.org)

# Why a Bird Atlas?

Partnerships





# Gauging Interest

Do partners support a Bird Atlas?



92%  
agree



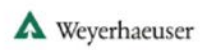
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# Gauging Interest

## Do partners support a Bird Atlas?



NC Wildlife Resources Commission  
1701 Mail Service Center  
Raleigh, NC 27699-1700

August 21, 2020

### Letter of Support for North Carolina Bird Atlas

Dear Board of Commissioners,

I am writing in support of the proposed North Carolina Bird Atlas project because it helps fill gaps in species occurrences and across North Carolina. For landowners and managers, this valuable information to conserve bird species, especially those declining in range and

Weyerhaeuser Company is supportive of the success of this project for sustainability. Our working forests are managed for more than biological diversity on every activity we conduct. This project is a management. Weyerhaeuser is a participant in the Sustainable Forestry and objectives of this rigorous standard. SFI, Inc. is a partner in managed forests.

Weyerhaeuser manages almost 11 million acres across the state throughout the southeastern U.S. Moreover, throughout the U.S. SFI certified working forests providing important habitat for the objective of forest management and forest landowners need to understand the interactions of wildlife, including birds, and for

Weyerhaeuser owns or manages nearly 560,000 acres in North Carolina it represents a small fraction of habitat for the avian community and have several ongoing partnerships with state and federal agencies conserving wildlife and their habitat. Having a better understanding of relationships helps private landowners guide management actions gained from this project is incorporated in our management actions who may model their conservation practices based upon those

Weyerhaeuser Company is pleased to register support for the project (3573) or Dr. Daniel Greene (662-245-5220) if we can provide any

Regards,

Andrew Brown  
Weyerhaeuser Company



### United States Department of the Interior

**U.S. FISH & WILDLIFE SERVICE**  
Migratory Bird Field Office  
South Atlantic - Gulf Region  
155 L.A. Keiser Drive, Ste. A  
Columbia, NC 27925



July 28, 2020

John P. Carpenter  
NC Wildlife Resources Commission  
Wildlife Diversity Biologist, Eastern Landbirds  
1701 Mail Service Center  
Raleigh, NC 27699-1700

Dear Mr. Carpenter:

This letter is in support of the North Carolina Bird Atlas Project. The North Carolina Wildlife Resources Commission and the U.S. Fish and Wildlife Service share a joint responsibility to advance bird conservation for all North Carolinians. Birds are good indicators of the health of ecosystems all across North Carolina and beyond. The completion of the North Carolina Bird Atlas Project will inform bird conservation for decades to come. In addition, the Atlas Project will also provide an opportunity for North Carolinians to engage in the advancement of the bird conservation wherever they may live across the state.

The U.S. Fish and Wildlife Service's network of public lands and staff across North Carolina are well positioned to generate awareness and provide logistical support as part of our shared joint responsibility to conserve migratory birds entrusted to public natural resource agencies.

In closing, completion of the North Carolina Bird Atlas Project will serve to advance the missions of the North Carolina Wildlife Resources Commission "to manage, restore, develop, cultivate, conserve, protect, and regulate the....wildlife resources of the State..." and the U.S. Fish and Wildlife Service South Atlantic-Gulf Region by providing information on the status of bird across

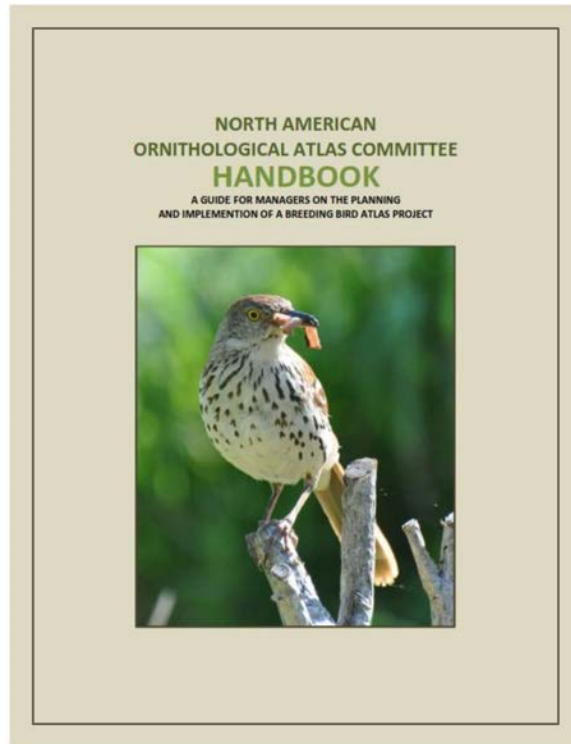




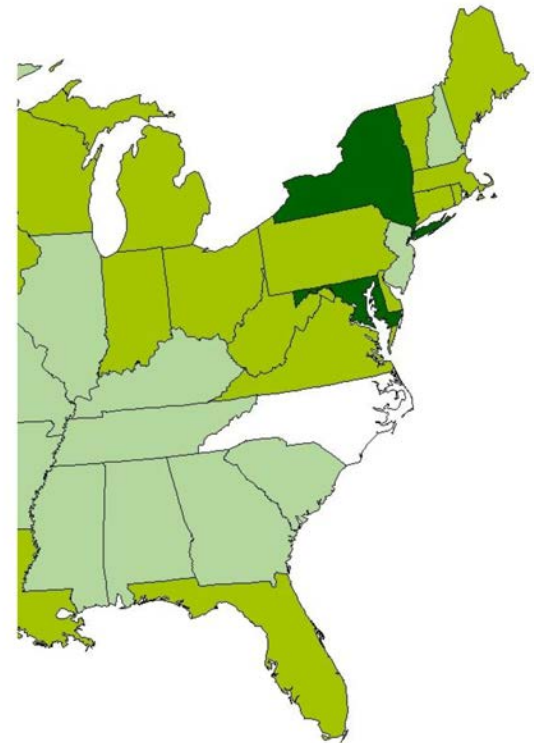
ncbirdatlas.org

# Why a Bird Atlas?

## Other factors



# eBird





ncbirdatlas.org

# A Unique Model for Conservation

funding depends on volunteer participation



**\$1.8**  
million

**\$19K**  
per species

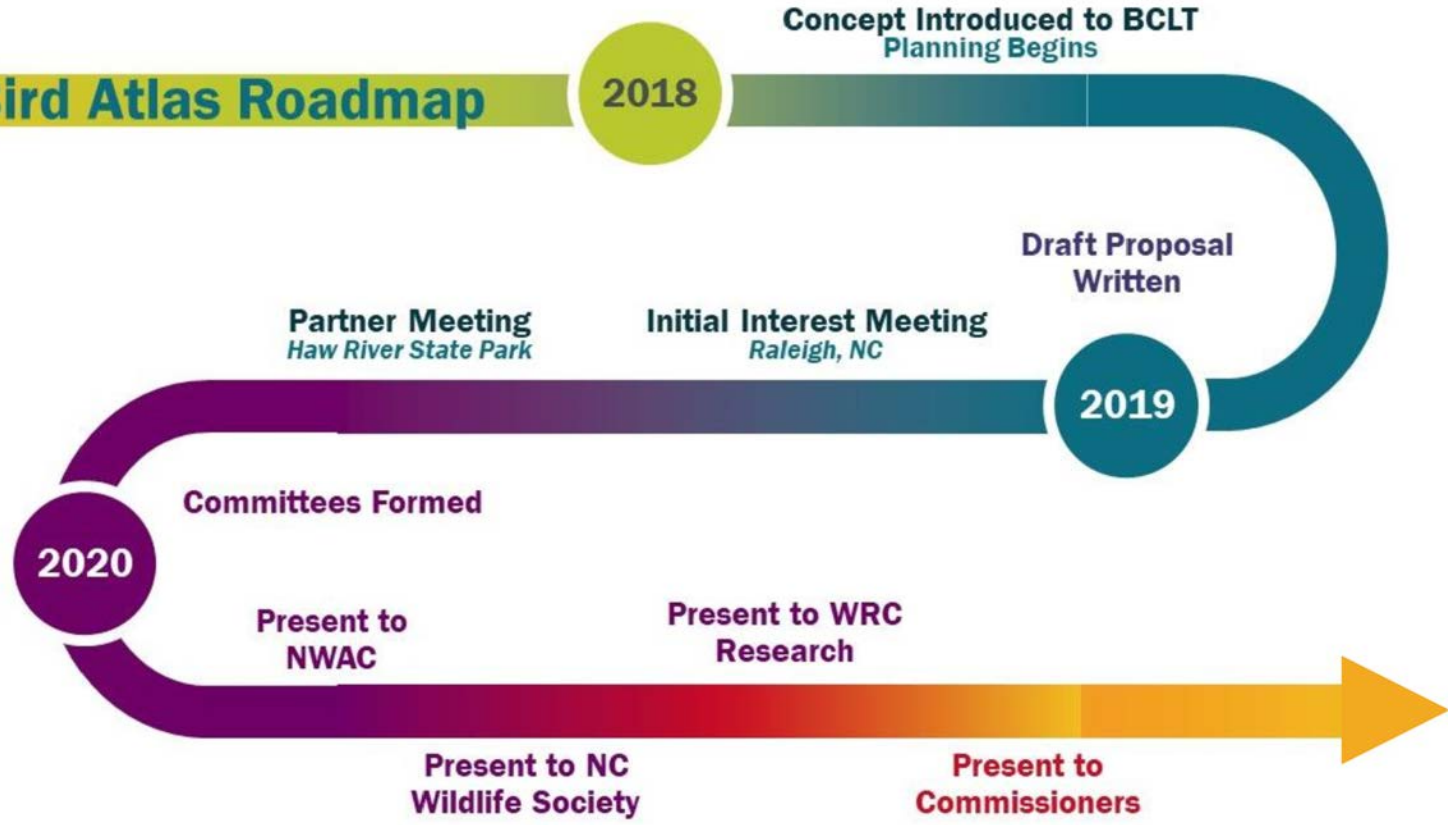
	2021	2022	2023	2024	2025	2026	Total
	Pilot	Survey	Survey	Survey	Survey	Analysis & Publication	
<b>Expenses</b>	<b>\$225,382</b>	<b>\$258,538</b>	<b>\$317,096</b>	<b>\$317,096</b>	<b>\$377,096</b>	<b>\$287,043</b>	<b>\$1,782,249</b>
Total Vol Hrs	2,625	2,625	3,552	3,552	3,552	742	18,530
Total Vol Miles	22,748	30,164	34,799	34,799	34,799	14,832	187,473
<b>Anticipated Match</b>	<b>\$85,369</b>	<b>\$85,369</b>	<b>\$100,850</b>	<b>\$100,850</b>	<b>\$120,850</b>	<b>\$74,338</b>	<b>\$567,623</b>





# Actions Completed

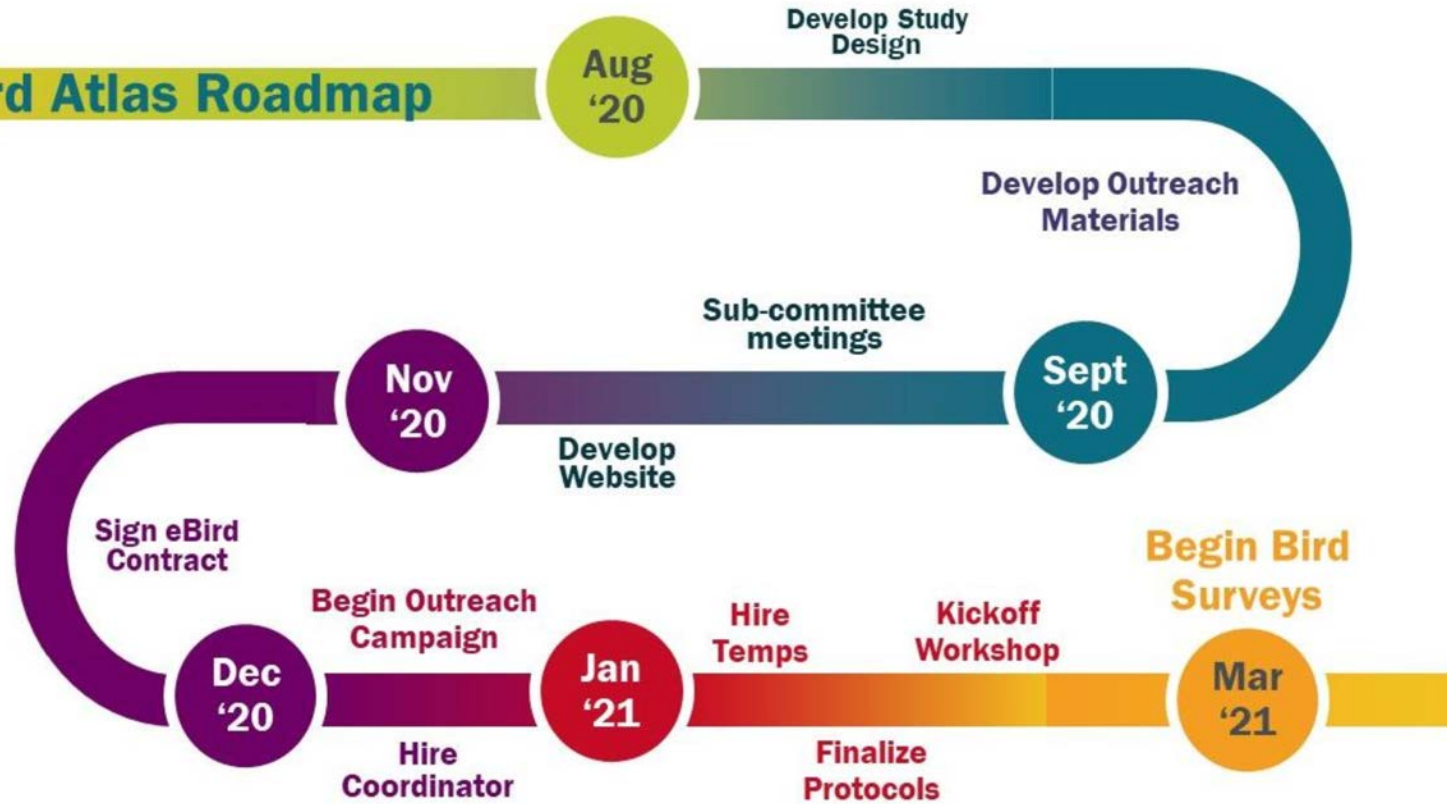
## NC Bird Atlas Roadmap





# First Year Timeline

## NC Bird Atlas Roadmap





[ncbirdatlas.org](http://ncbirdatlas.org)



# Thank you

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