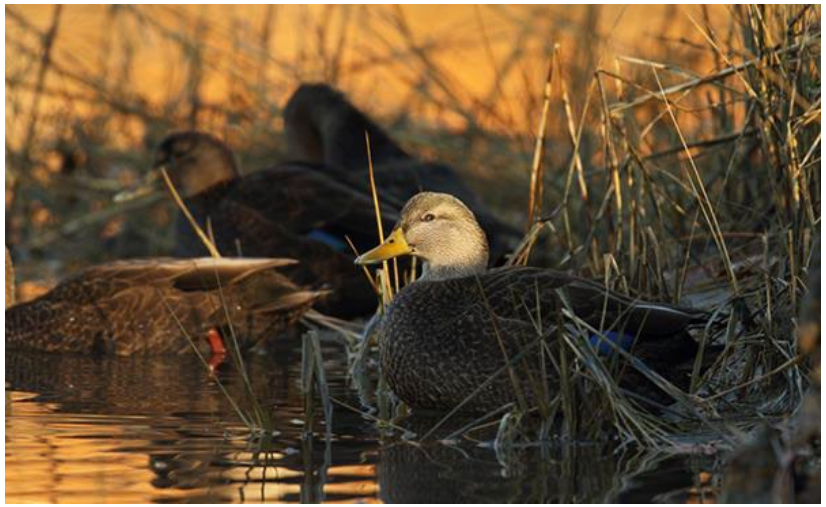
CT's Second Bird Atlas



Min Huang-Migratory Bird Program Leader CT DEEP
Adjunct Research Scientist Department of Natural Resources and the Environment, University of Connecticut

CACIWC Annual Meeting, November 16, 2024

CONNECTICUT
BIRD ATLAS

WE ARE DONE!!

CONNECTICUT
BIRD ATLAS

Informing Conservation Actions for Birds

How Does The Atlas Benefit Towns?!!

- Informing local land use decisions if birds are important to you.
  - **Critical land acquisition**
  - Active management (young forest, seral stage management, grasslands)
  - **Planning**
- Regional scale perspective on what parts of the State are important to which species
  - Maintain Core forest
  - Minimize fragmentation
- **“Canary in the coal mine”**

CT Atlas Objectives

Conduct 2nd CT Bird Atlas

Document changes in breeding bird distribution and assemblages since first Atlas

- Block maps and predictive maps

Quantify relative abundance of breeding birds in the State

Document wintering bird assemblages and relative importance of areas across the State

Interactive website for all data

Wait for it…..

Scope of Project

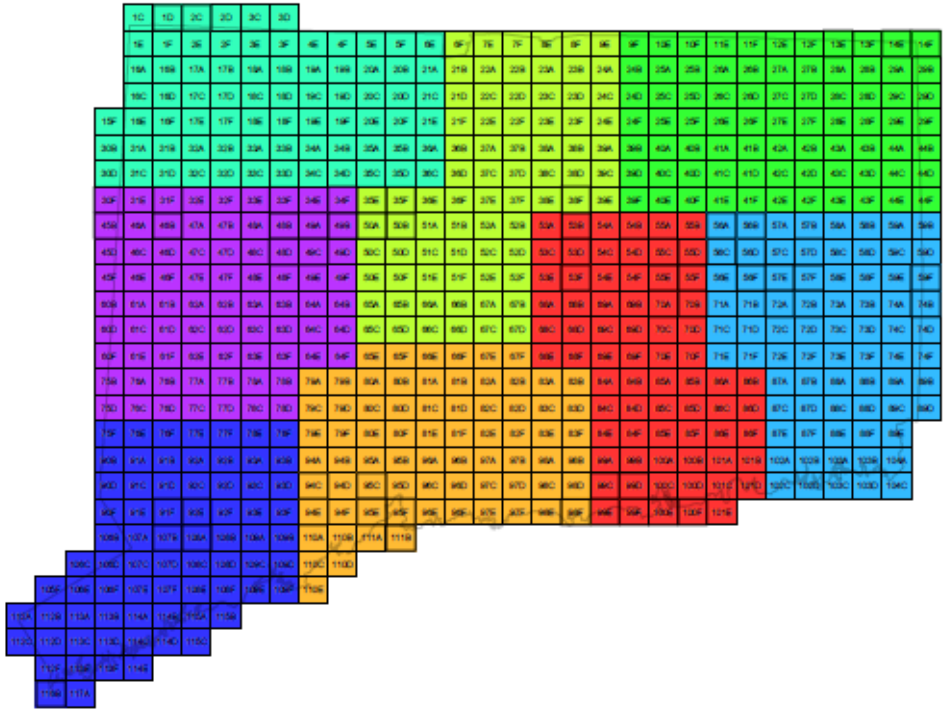
- Breeding bird distribution and abundance
- Stopover habitat use
- Wintering distribution
- Predict distributions across landscape
- Interactive web site for updating and data retrieval

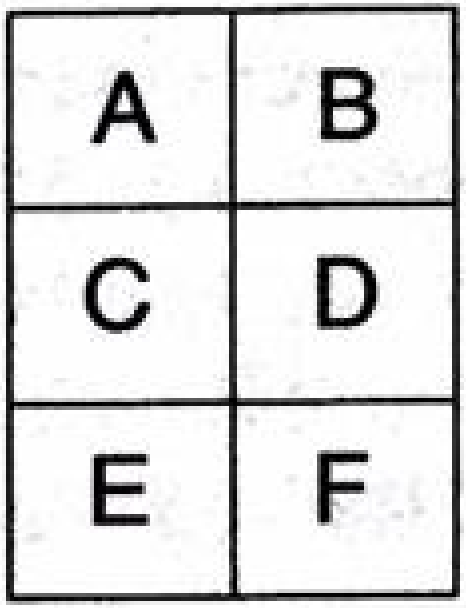
Breeding Bird Distribution and Abundance

- Traditional Breeding Bird Atlas surveying
  - Identical blocks as the first BBA
  - 601 blocks across the state (~7 square miles)
  - Behavioral cues to determine breeding or merely presence
- Point Counts to Estimate Abundance

601 Atlas Blocks

601 blocks





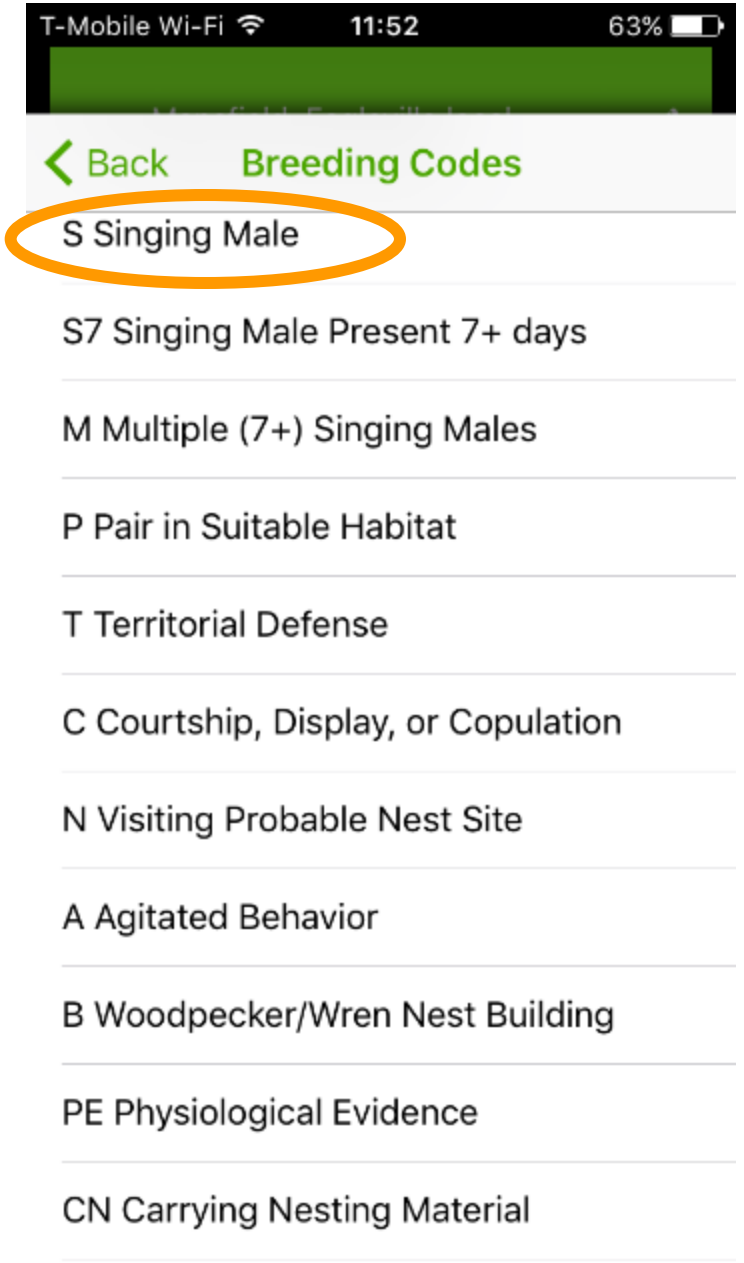
Breeding surveys

- Spend up to 20 hours birding
- Visit all habitats within a block
- Make a list of all species seen
- Record evidence of breeding using standard codes

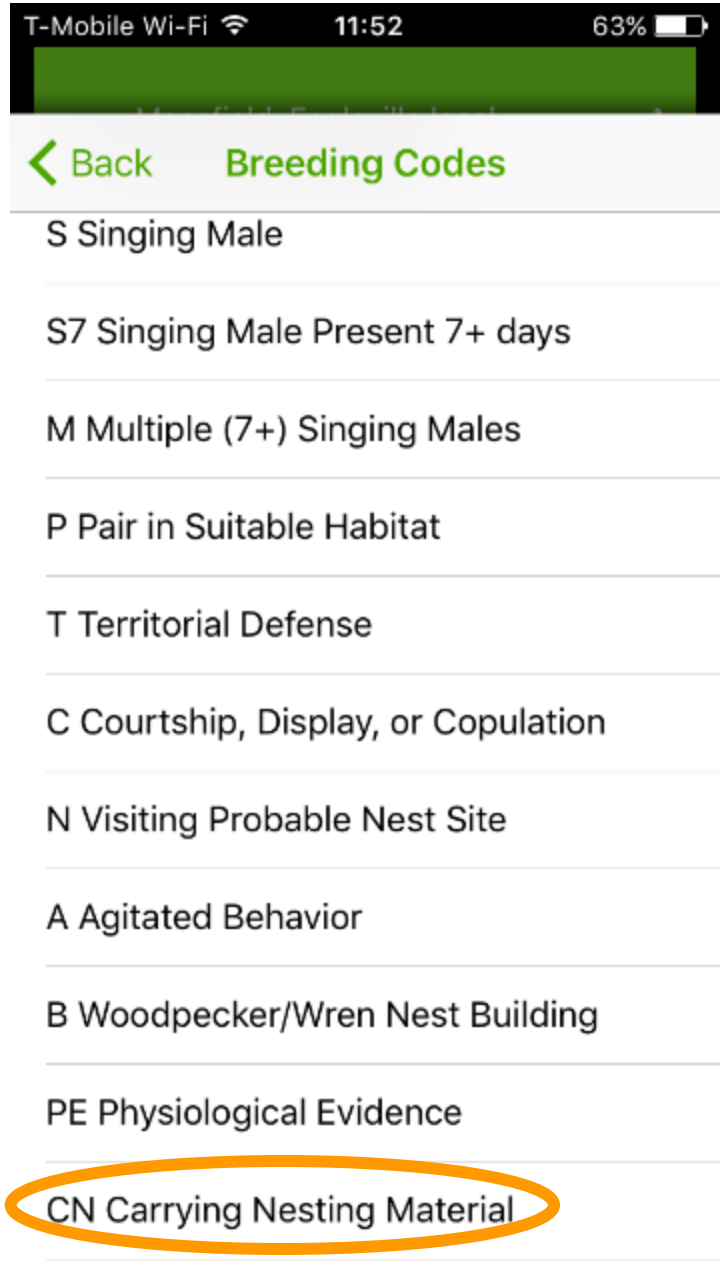
NORAC

North American
Ornithological Atlas Committee

Breeding surveys



Breeding surveys



Point Counts

- Over 2,300 point counts conducted across the state
- Enables us to derive relative abundance estimates for all our breeding species
- Predictive occurrence maps

Wintering Birds

- Atlasing techniques using same 601 blocks
- November-December
- January-February

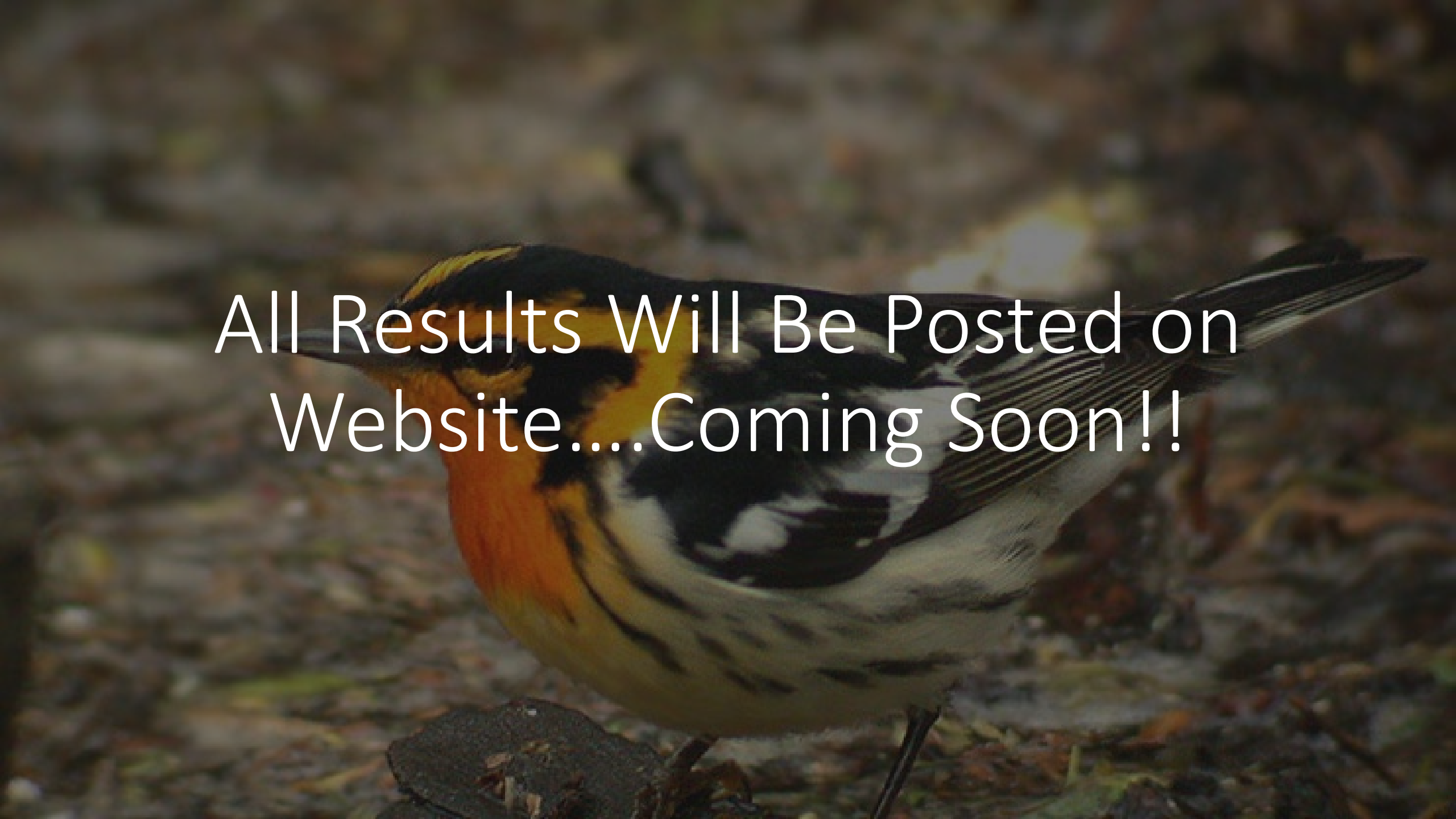
Audubon
CHRISTMAS BIRD COUNT

Wintering Birds

- **1 hour walking surveys**
- 5-10 ‘sites’ within each block
- Tally all birds

Wintering Birds

- Technicians conducting 0.5km transect surveys
- 30 minute walking surveys through forest, agriculture, and urban/suburban areas


All Results Will Be Posted on Website….Coming Soon!!

CONNECTICUT BIRD ATLAS

Marsh Wren

Cistothorus palustris

Family: Wrens Troglodytidae

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam purus orci, iaculis non porta in, placerat sed nulla. Suspendisse scelerisque tellus neque, eget rutrum metus ornare id.

Historical Information

historical text here

Breeding

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam purus orci, iaculis non porta in, placerat sed nulla. Suspendisse scelerisque tellus neque, eget rutrum metus ornare id.

historical text here

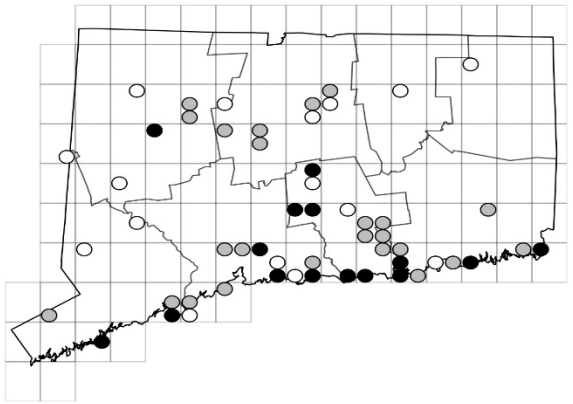
CONNECTICUT BIRD ATLAS

Breeding

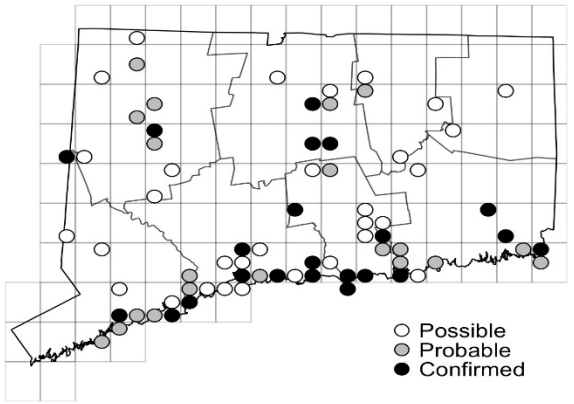
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam purus orci, iaculis non porta in, placerat sed nulla. Suspendisse scelerisque tellus neque, eget rutrum metus ornare id.

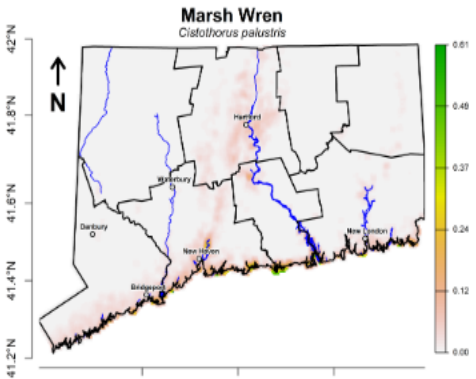
Marsh Wren
Cistothorus palustris

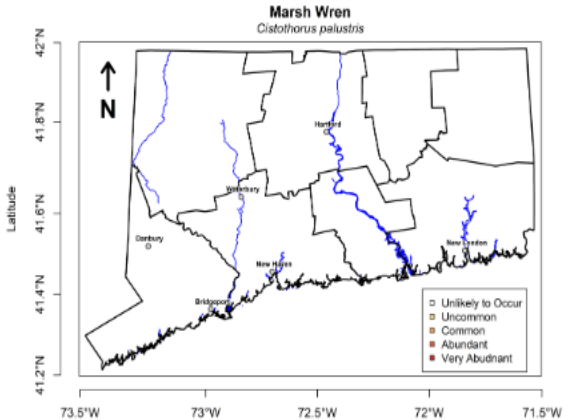
Atlas 1982-1986

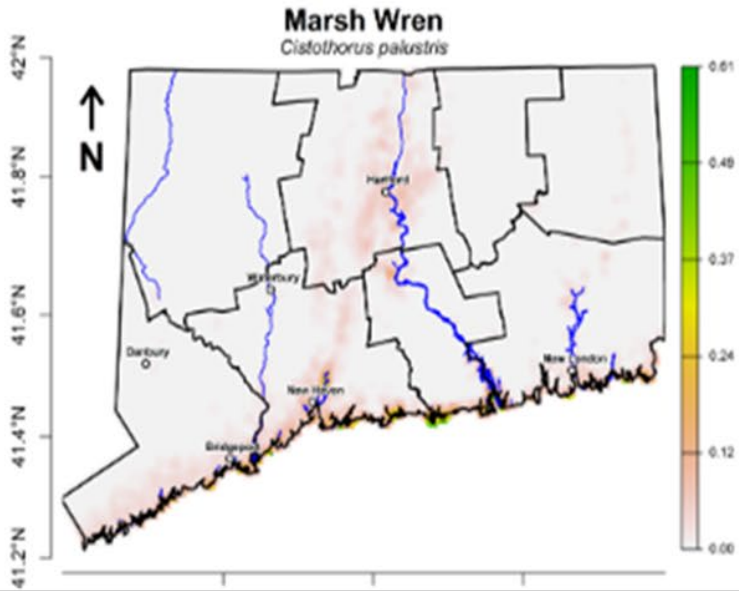


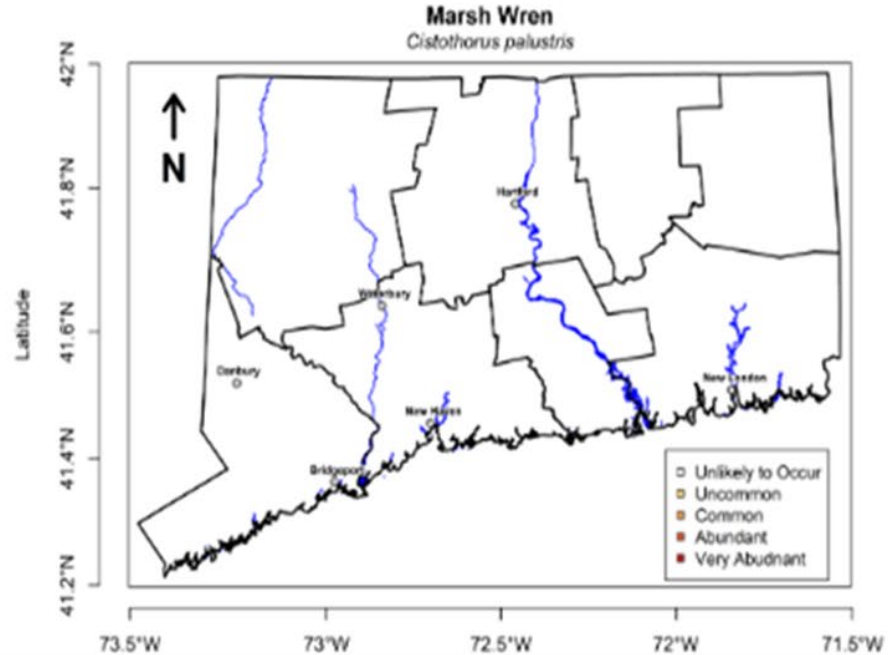
Atlas 2018-2021








Marsh Wren
Cistothorus palustris
N
42°N
41.8°N
41.6°N
41.4°N
41.2°N
Hartford
Waterbury
Danbury
New Haven
Bridgeport
New London
0.61
0.49
0.37
0.24
0.12
0.00


Marsh Wren
Cistothorus palustris
N
Latitude
42°N
41.8°N
41.6°N
41.4°N
41.2°N
Hartford
Waterbury
Danbury
New Haven
Bridgeport
New London
Unlikely to Occur
Uncommon
Common
Abundant
Very Abudnant
73.5°W
73°W
72.5°W
72°W
71.5°W

73°W 72.5°W 72°W

Longitude

CONNECTICUT BIRD ATLAS

Historical Information

Breeding

Winter

Status

More Information

Breeding Phenology

This figure shows Marsh Wren detections during the Atlas by breeding code. More information on breeding codes can be found here.

CONNECTICUT BIRD ATLAS

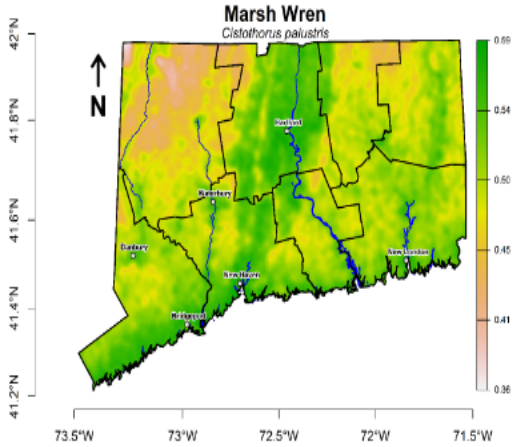
Historical Information

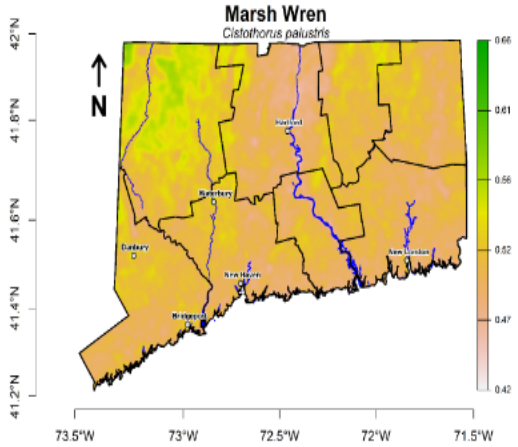
Breeding

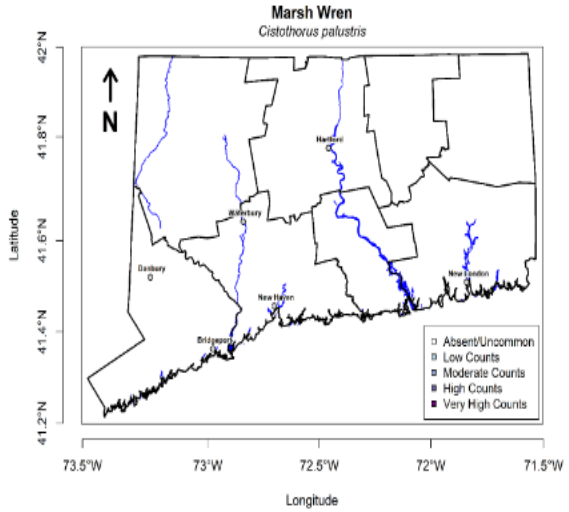
Winter

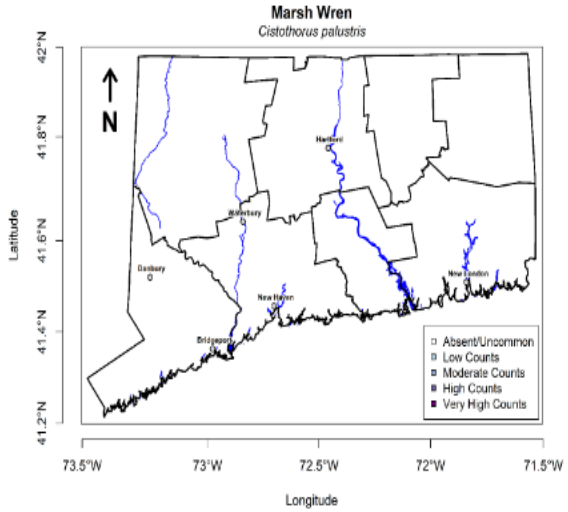
Status

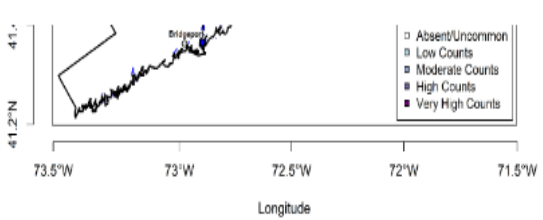
More Information

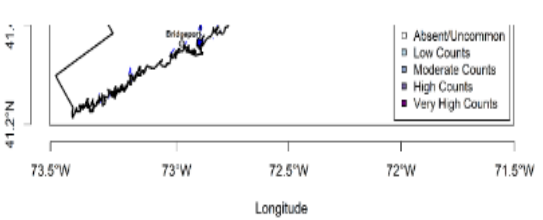












Status

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam purus orci, iaculis non porta in, placerat sed nulla. Suspendisse scelerisque tellus neque, eget rutrum metus ornare id.

More Information

These links will take you to species specific webpages about Marsh Wren
Some websites will require an account to view certain pages.

All About Birds: Basic information about birds hosted by the Cornell Lab of Ornithology.

Audubon: The National Audubon Society is a bird-focused conservation organization and a resource for general information about birds and bird conservation.

eBird: eBird is a citizen science project hosted by the Cornell Lab of Ornithology.

Photos and sound recordings from the Macaulay Library

Sound recordings on xeno-canto: xeno-canto is a citizen science database of wildlife recordings.

Wikipedia

Thanks for visiting the Marsh Wren page. Would you like to go **back to main page?**

Preferred Citation

The State of CT's Breeding Birds

Many big changes in the distribution and occurrence of many species since the initial Atlas in 1982-86.

Some species extirpated

Some new species breeding in the State since initial Atlas

Wetland associated species doing better, relatively than other groups

Habitat is the

to wildlife

Waterbirds

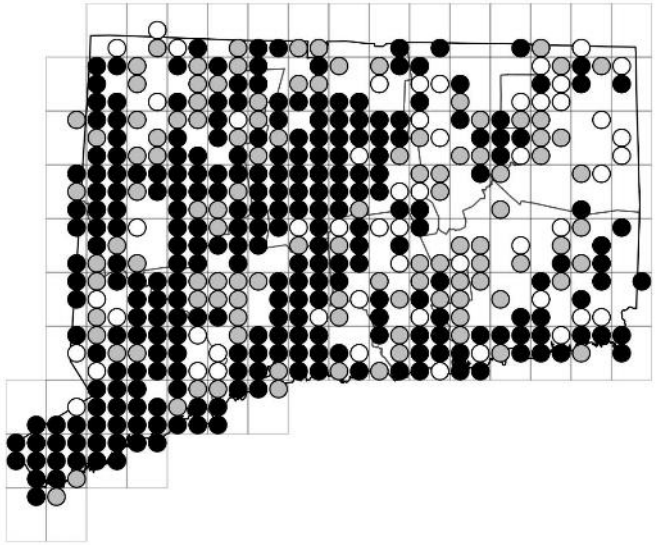
- In general, increasing breeding distribution
- Declines in some ‘sensitive’ species
- As with many guilds, generalists doing better than specialists

~17% decrease in breeding distribution

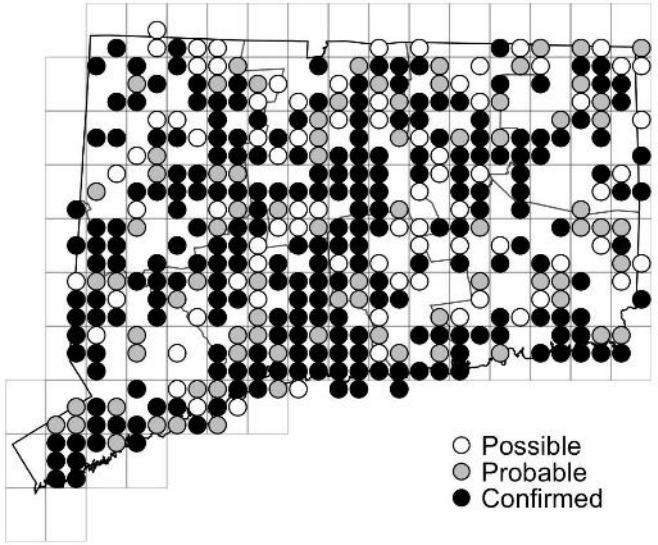
Mallard

Anas platyrhynchos

Atlas 1982-1986



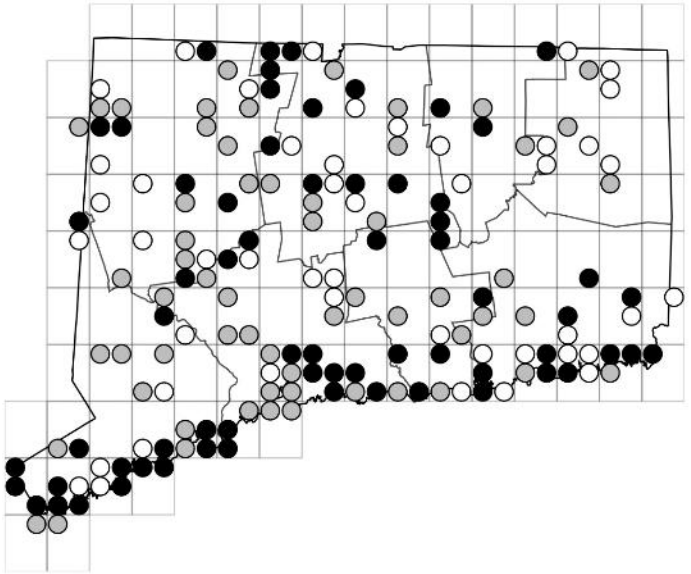
Atlas 2018-2021



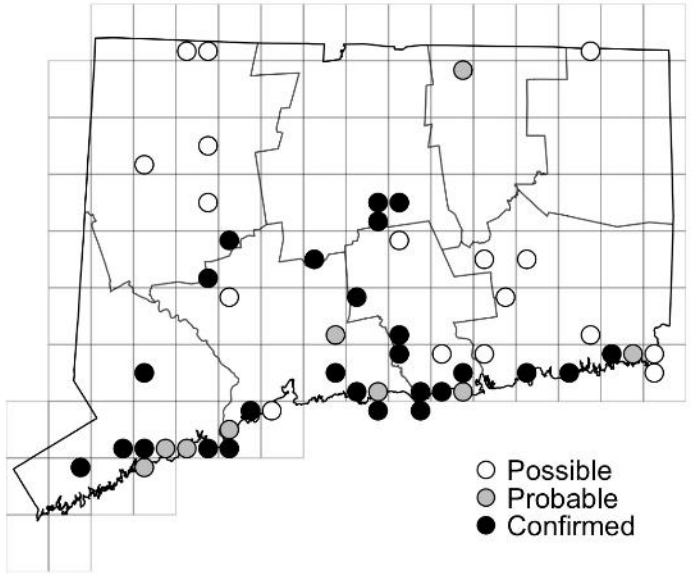
~71% decrease in breeding distribution

American Black Duck
Anas rubripes

Atlas 1982-1986

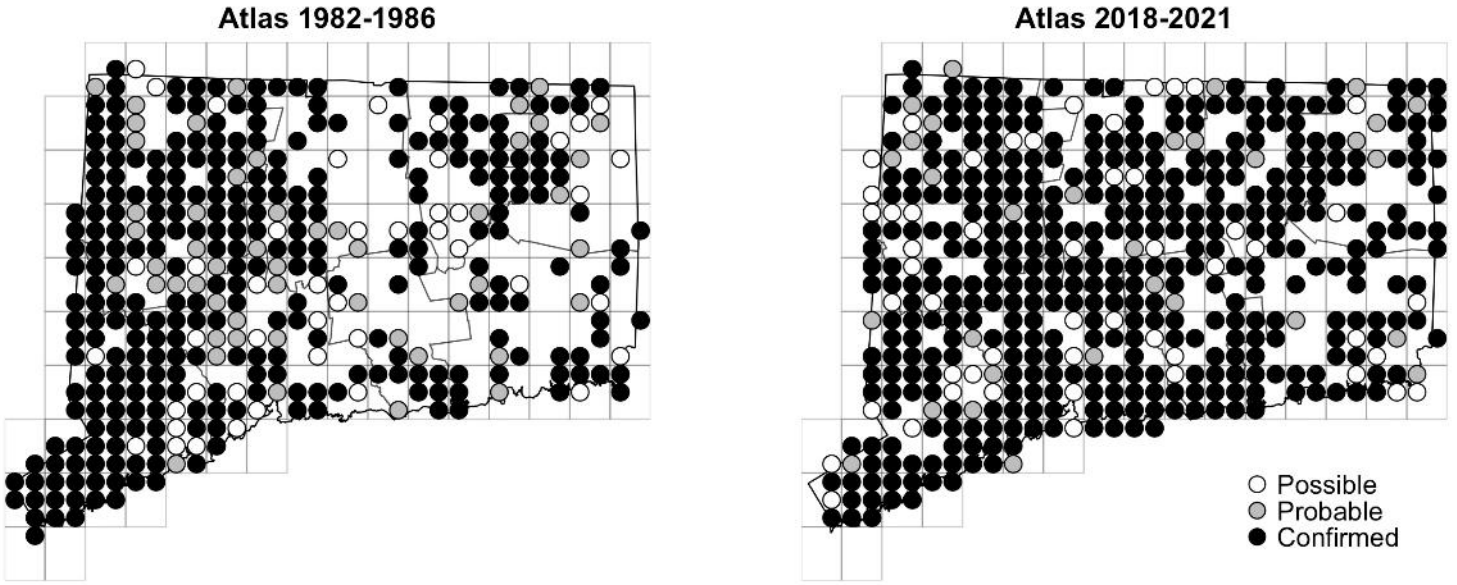


Atlas 2018-2021



~37% increase in breeding distribution

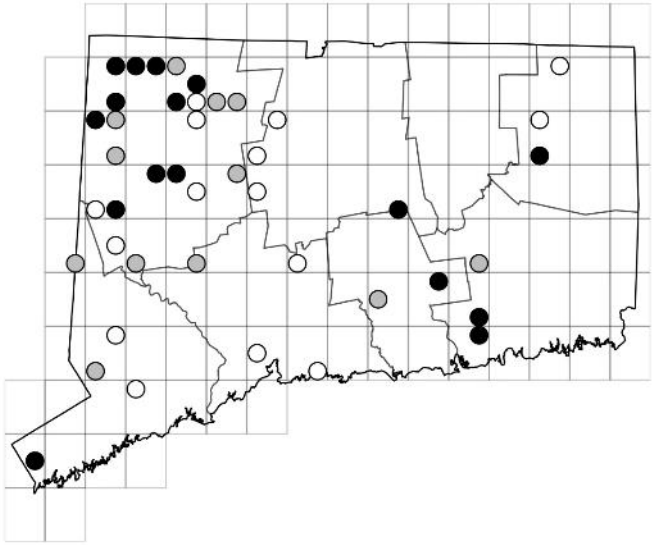
Canada Goose
Branta canadensis



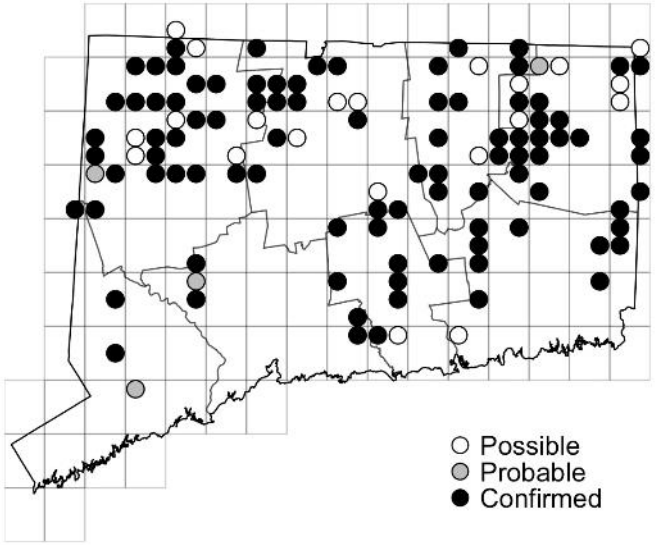
~240% increase in breeding distribution

Hooded Merganser
Lophodytes cucullatus

Atlas 1982-1986



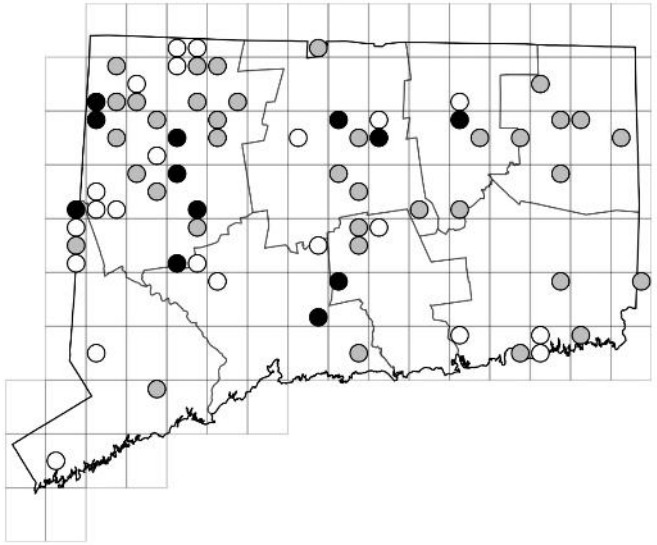
Atlas 2018-2021



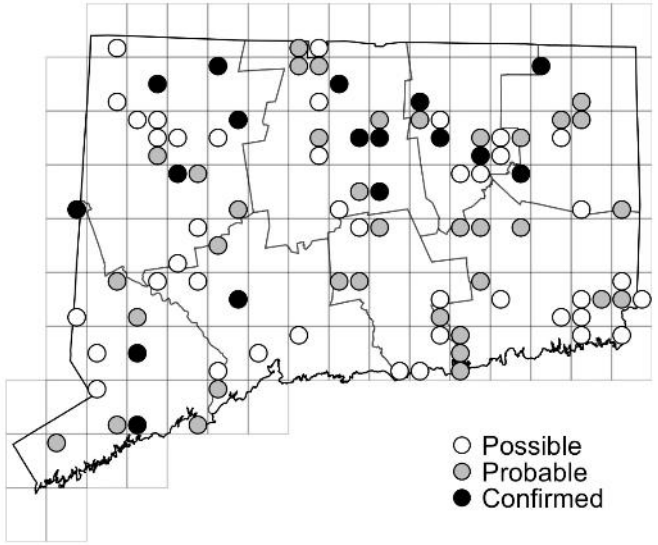
~4% increase in breeding distribution

Virginia Rail
Rallus limicola

Atlas 1982-1986



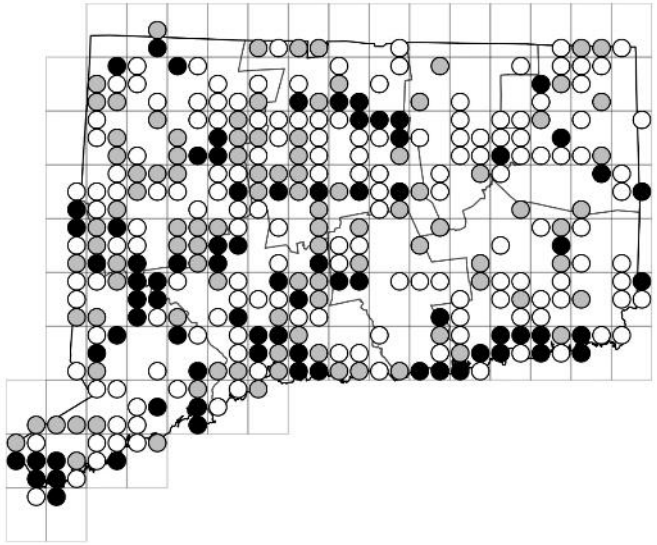
Atlas 2018-2021



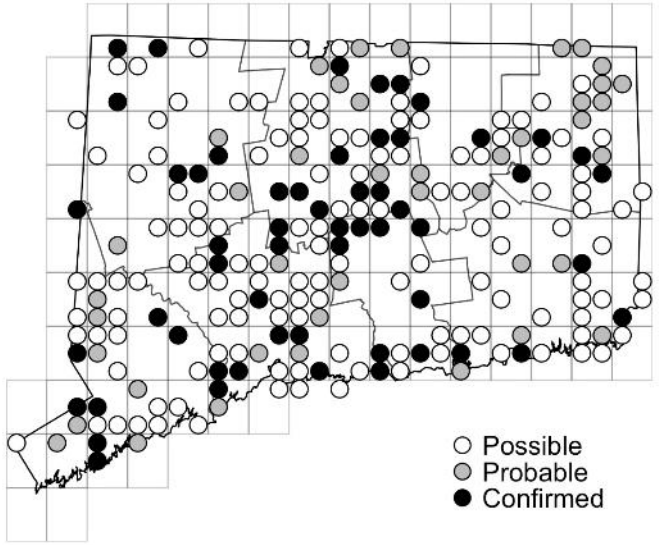
~39% decrease in breeding distribution

Green Heron
Butorides virescens

Atlas 1982-1986



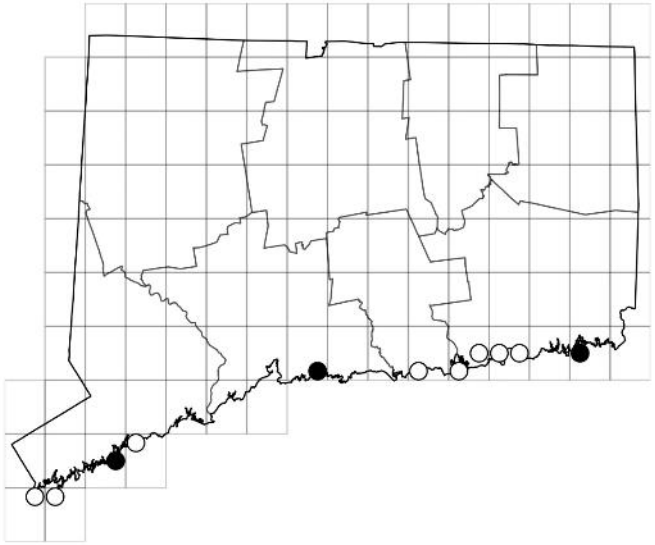
Atlas 2018-2021



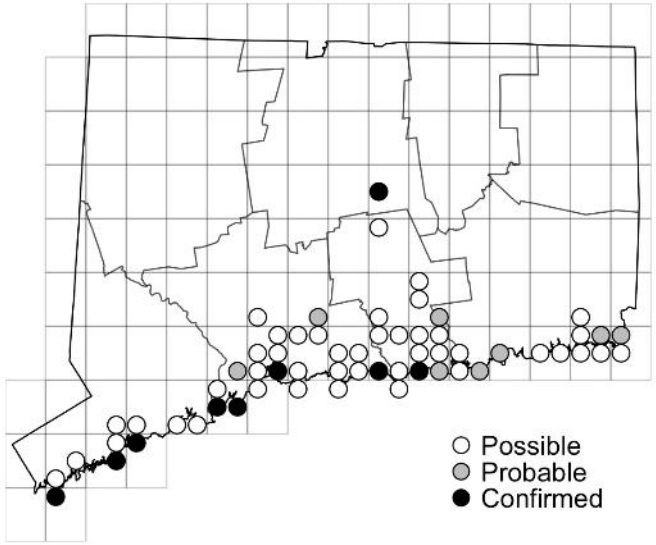
~90% increase in breeding distribution

Great Egret
Ardea alba

Atlas 1982-1986



Atlas 2018-2021



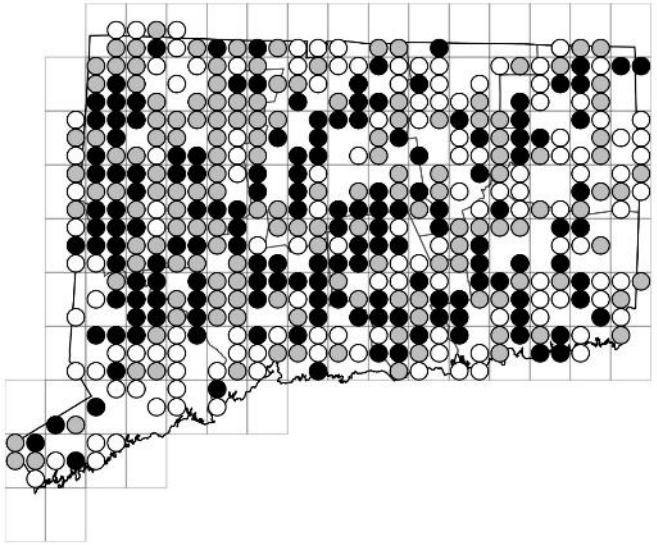
Raptors

Similar to waterbirds, generalists tend to do better

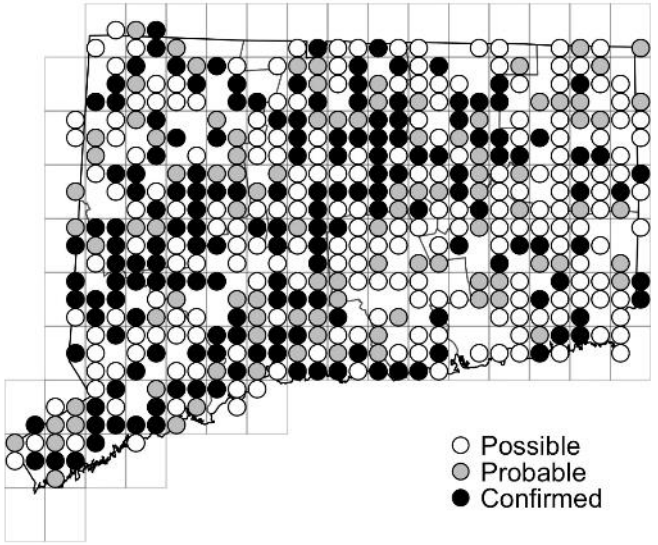
~15% increase in breeding distribution

Red-tailed Hawk
Buteo jamaicensis

Atlas 1982-1986



Atlas 2018-2021

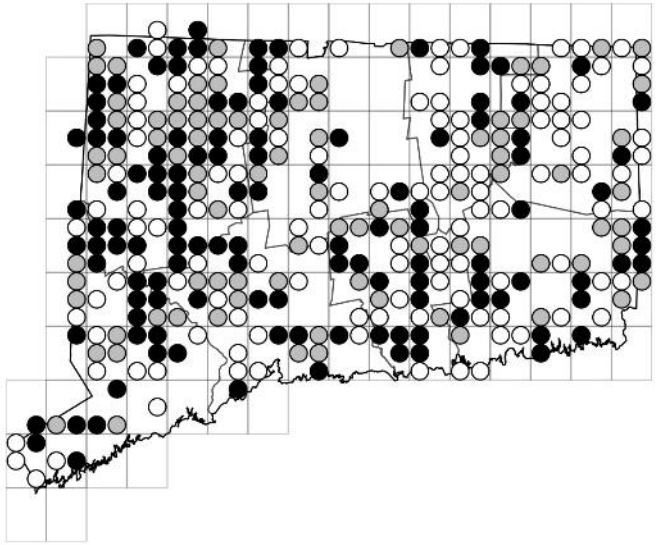


~42% decrease in breeding distribution

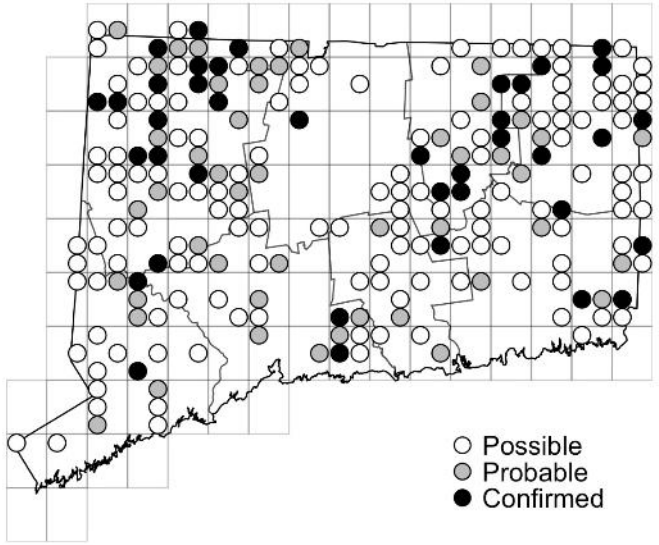
Broad-winged Hawk

Buteo platypterus

Atlas 1982-1986



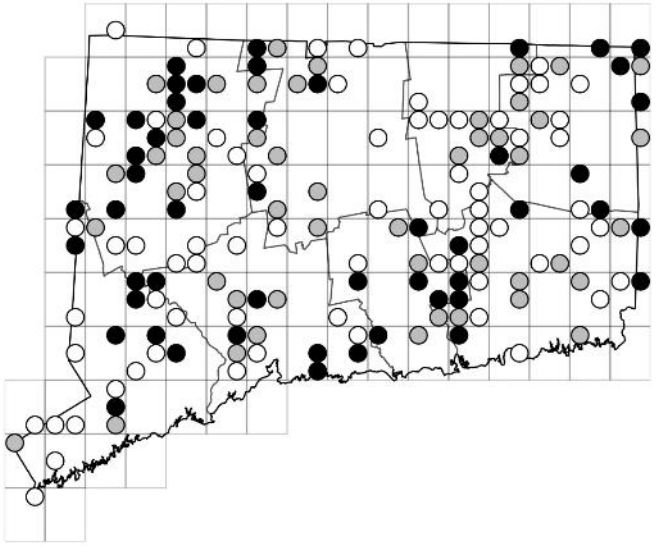
Atlas 2018-2021



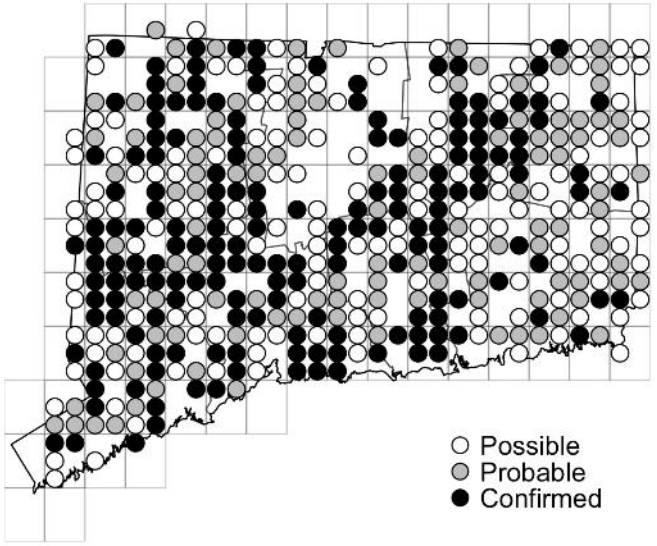
~60% increase in breeding distribution

Red-shouldered Hawk
Buteo lineatus

Atlas 1982-1986



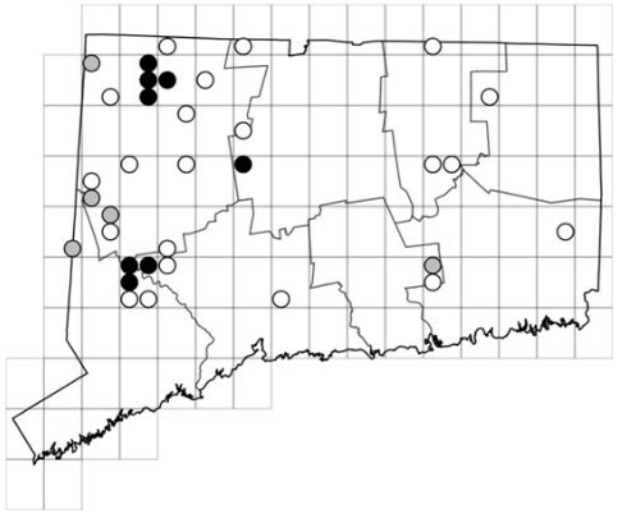
Atlas 2018-2021



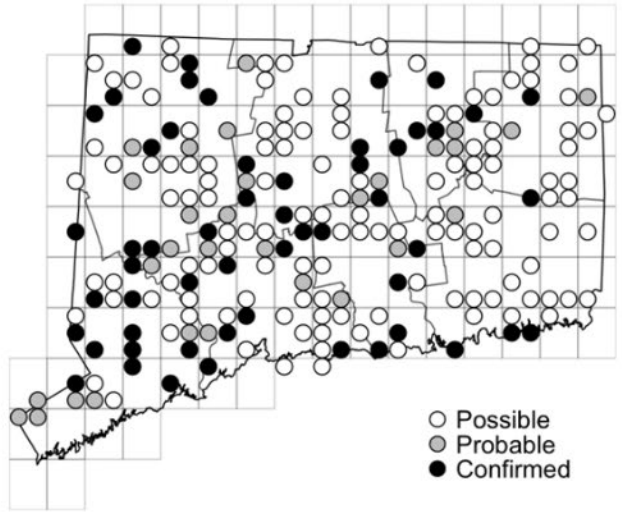
~500% increase in breeding distribution

Cooper's Hawk
Accipiter cooperii

Atlas 1982-1986



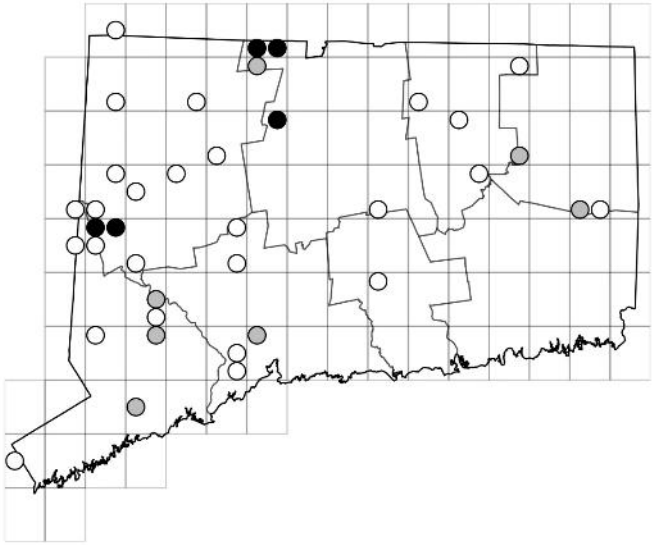
Atlas 2018-2021



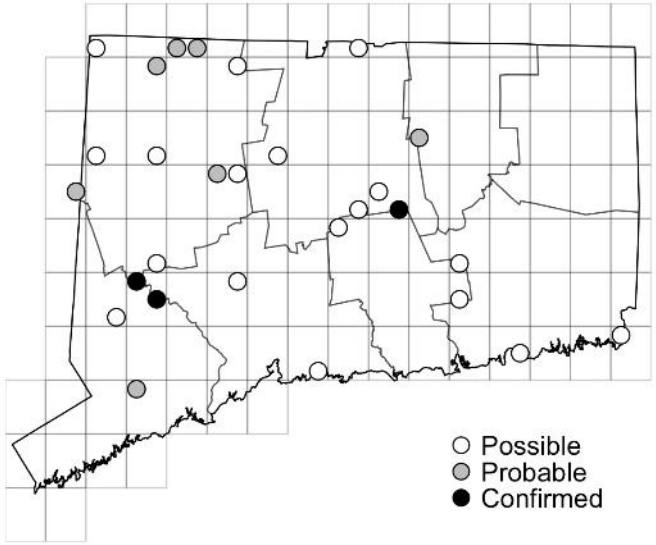
~17% decrease in breeding distribution

Sharp-shinned Hawk
Accipiter striatus

Atlas 1982-1986



Atlas 2018-2021



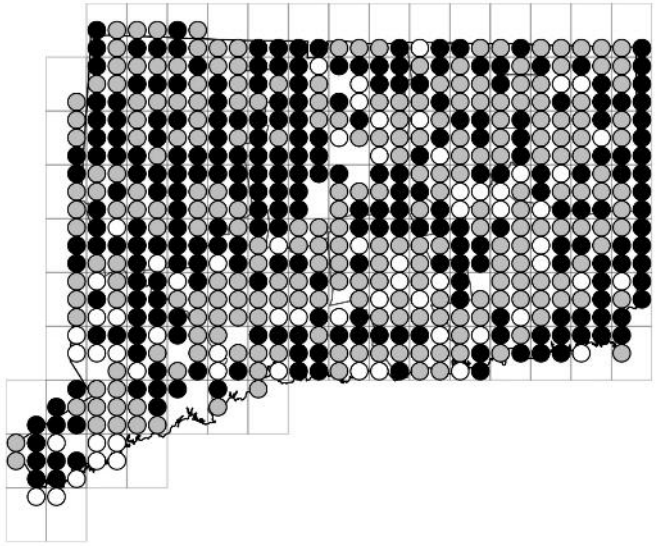
Shrubland and Open Habitat Species

Marked declines across the board

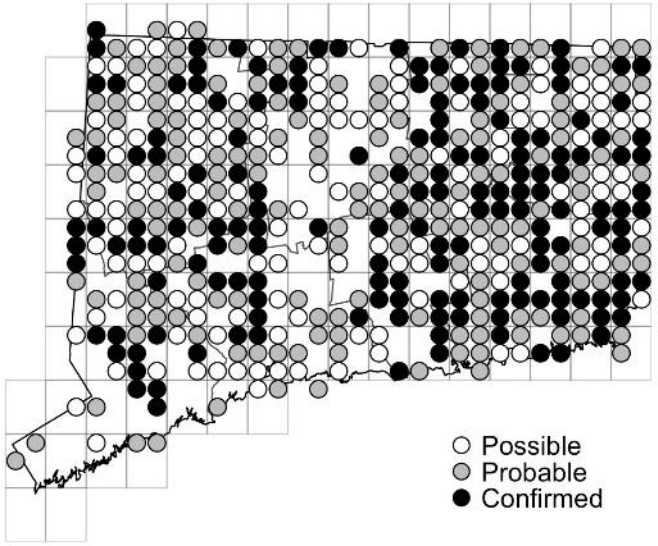
~35% decrease in breeding distribution

Eastern Towhee
Pipilo erythrophthalmus

Atlas 1982-1986



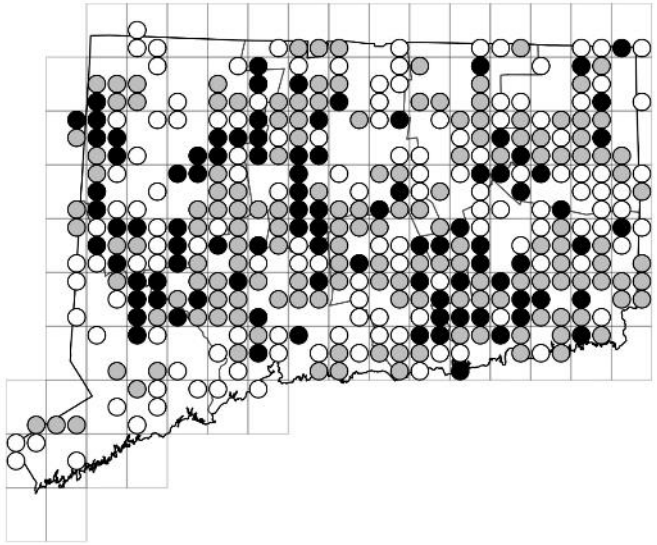
Atlas 2018-2021



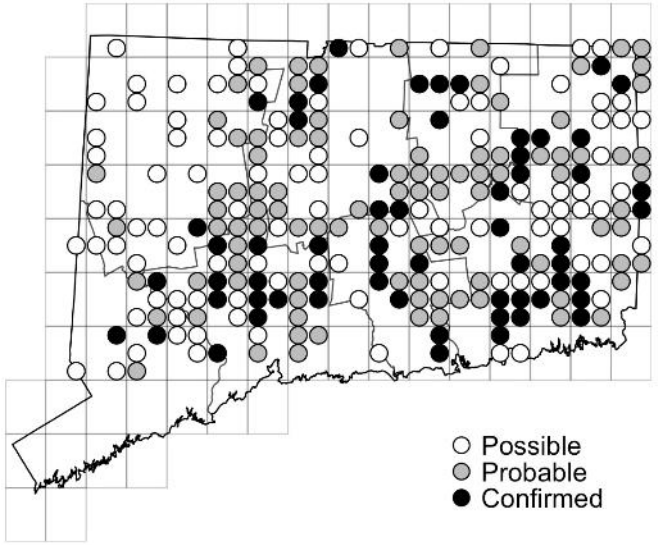
~58% decrease in breeding distribution

Prairie Warbler
Setophaga discolor

Atlas 1982-1986

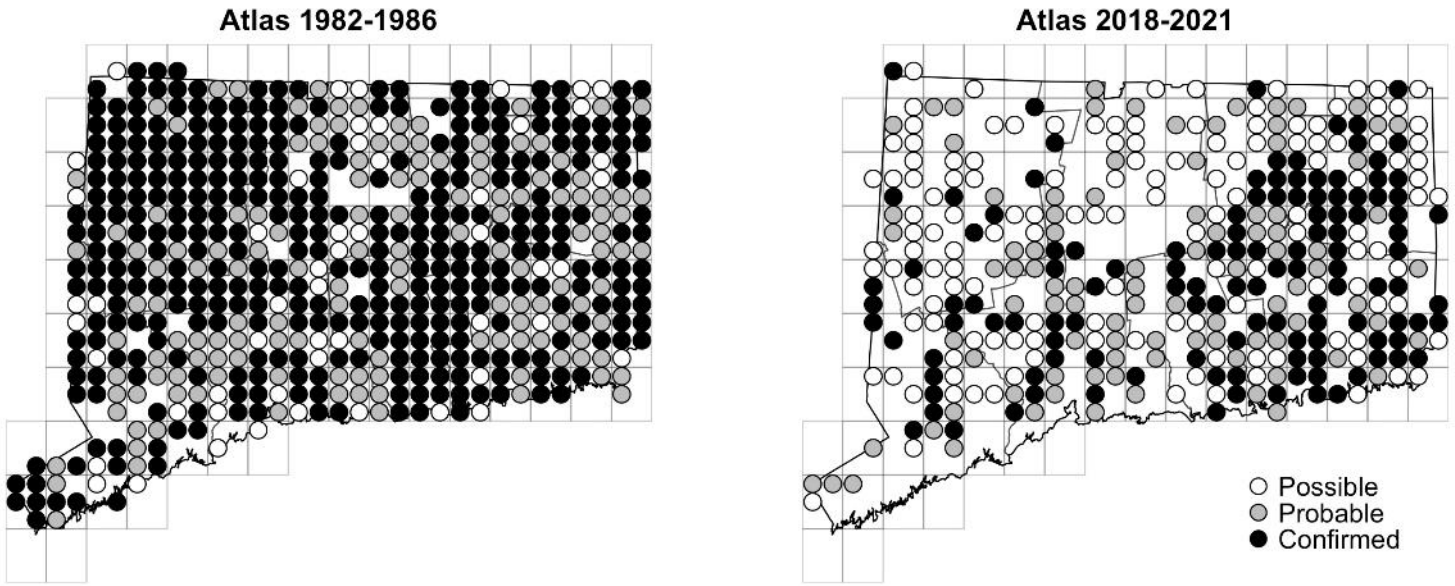


Atlas 2018-2021



~57% decrease in breeding distribution

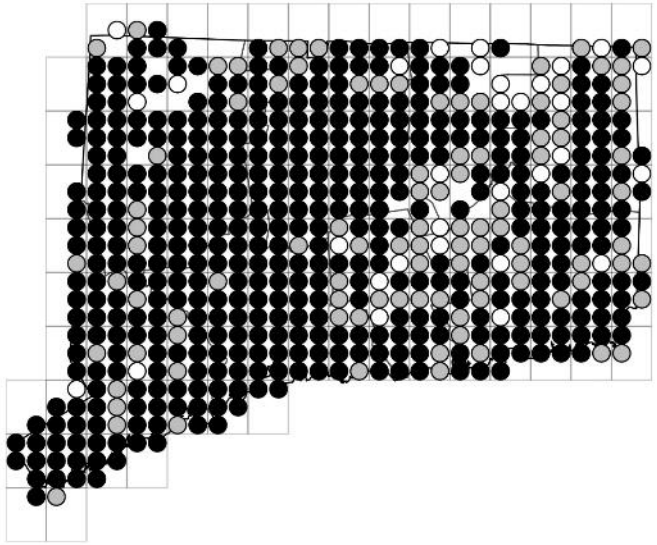
Blue-winged Warbler
Vermivora cyanoptera



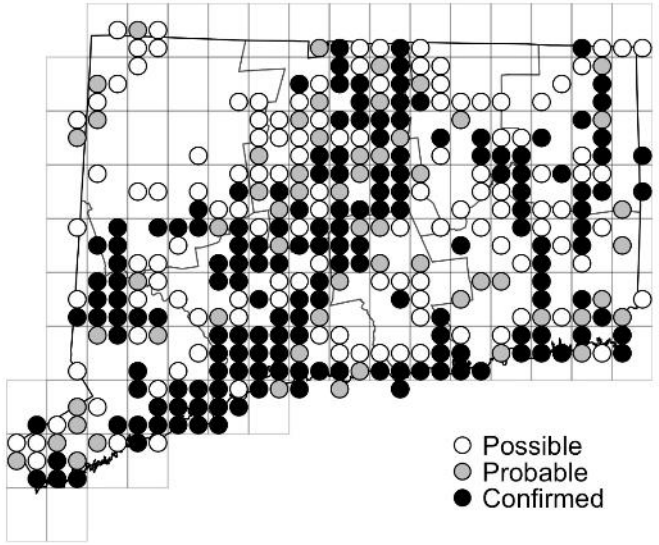
~58% decrease in breeding distribution

Northern Mockingbird
Mimus polyglottos

Atlas 1982-1986



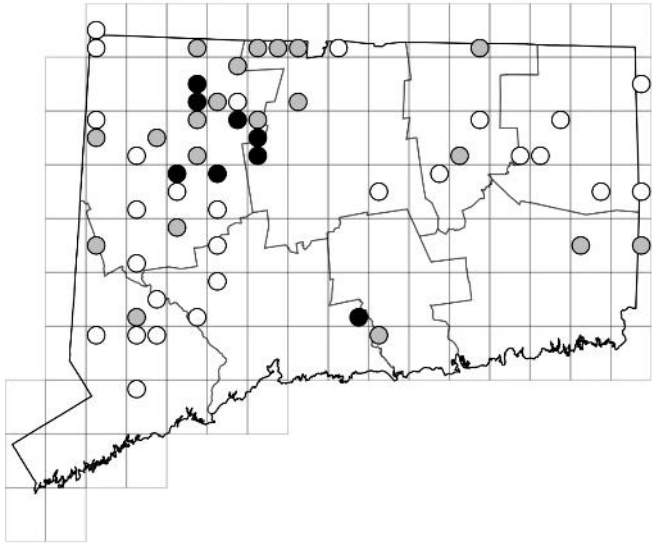
Atlas 2018-2021



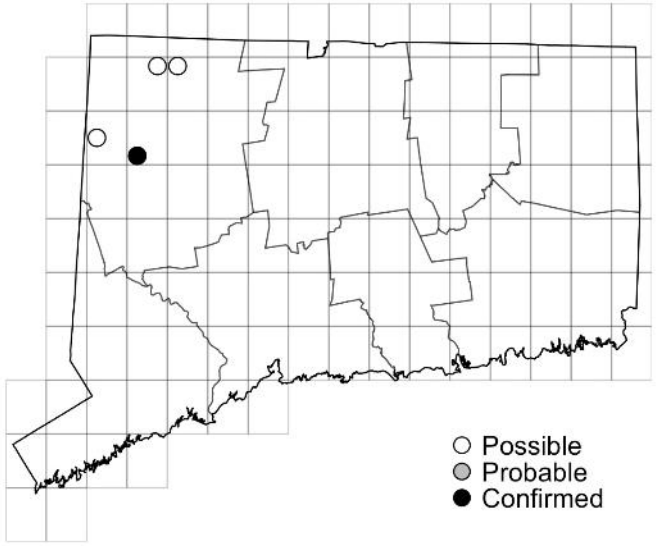
~96% decrease in breeding distribution

Nashville Warbler
Oreothlypis ruficapilla

Atlas 1982-1986



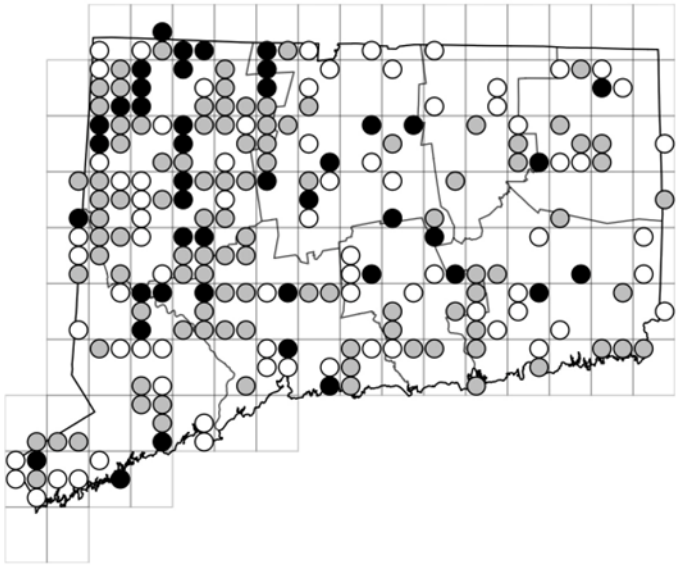
Atlas 2018-2021



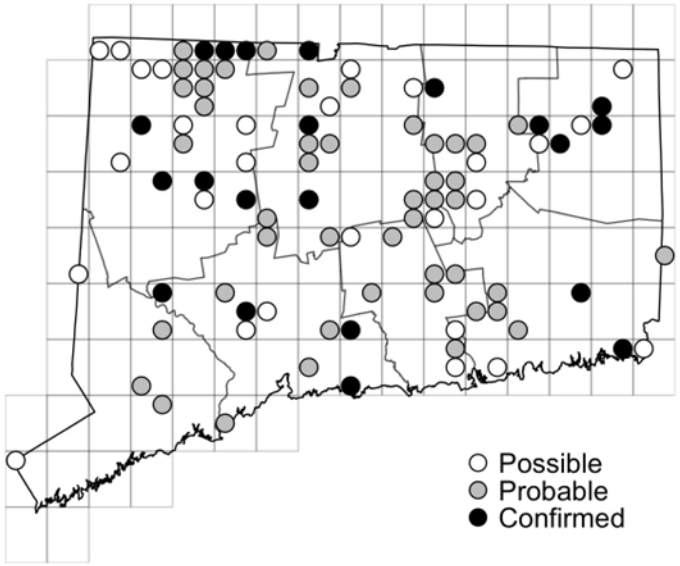
~32% decrease in breeding distribution

American Woodcock
Scolopax minor

Atlas 1982-1986



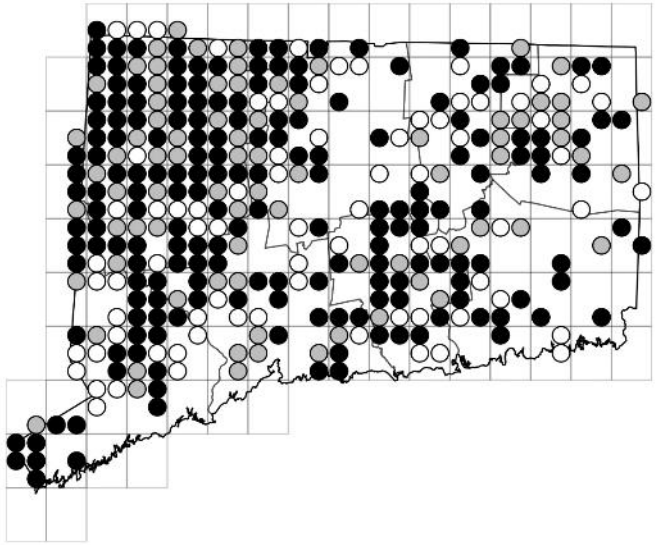
Atlas 2018-2021



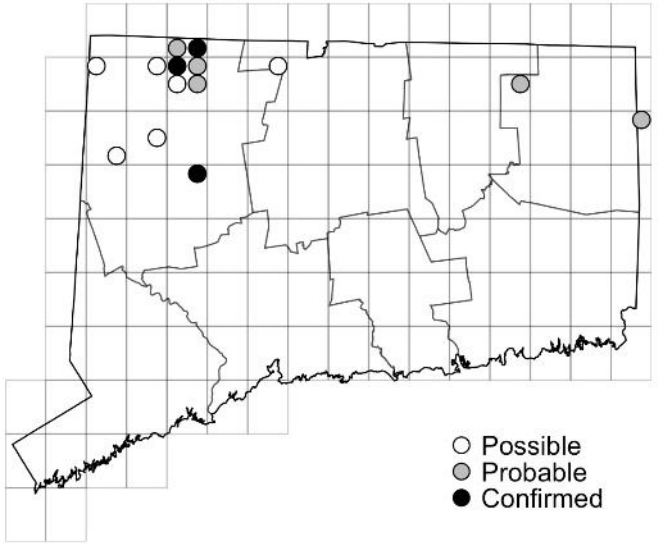
~97% decrease in breeding distribution

Ruffed Grouse
Bonasa umbellus

Atlas 1982-1986

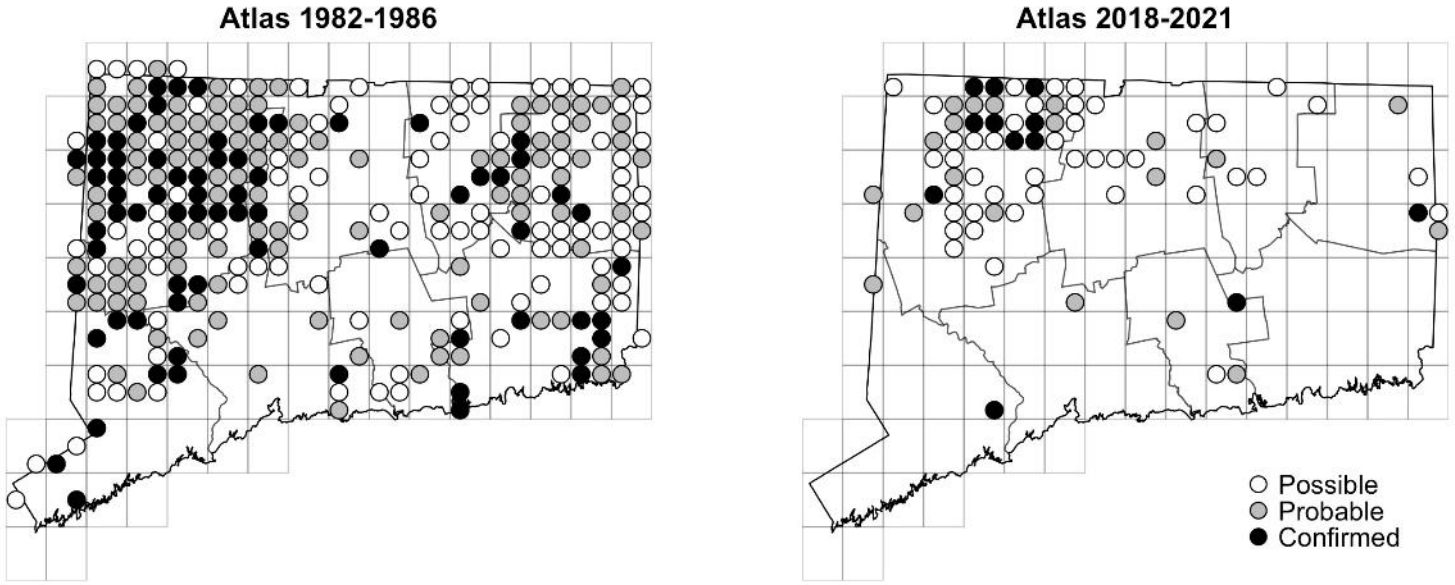


Atlas 2018-2021



~65% decrease in breeding distribution

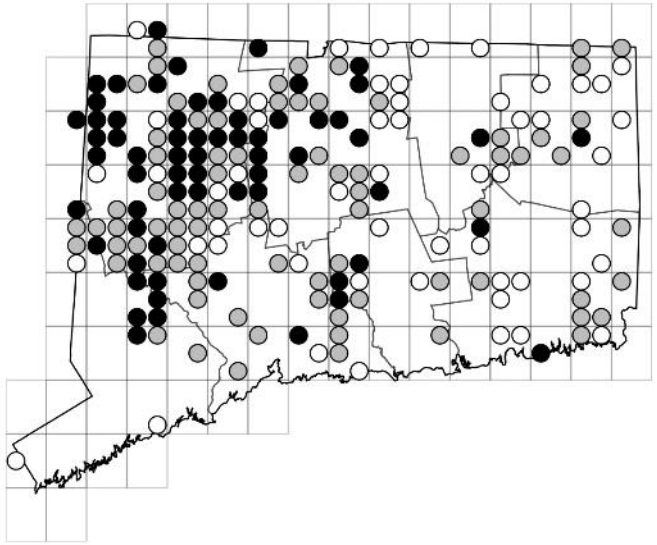
Purple Finch
Haemorhous purpureus



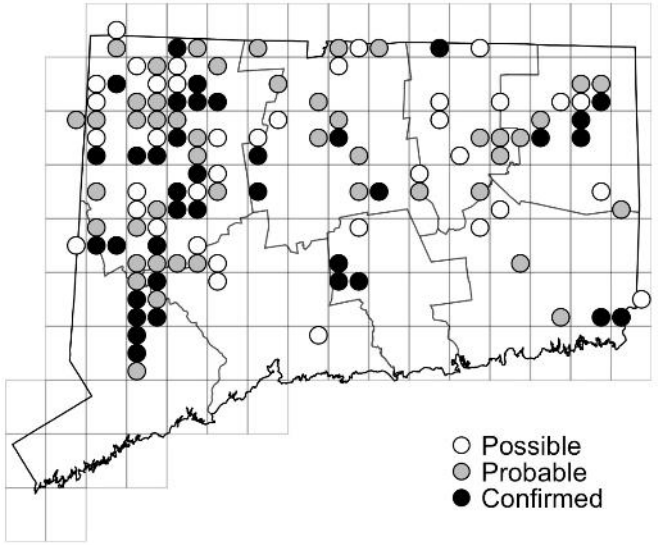
~44% decrease in breeding distribution

Bobolink
Dolichonyx oryzivorus

Atlas 1982-1986



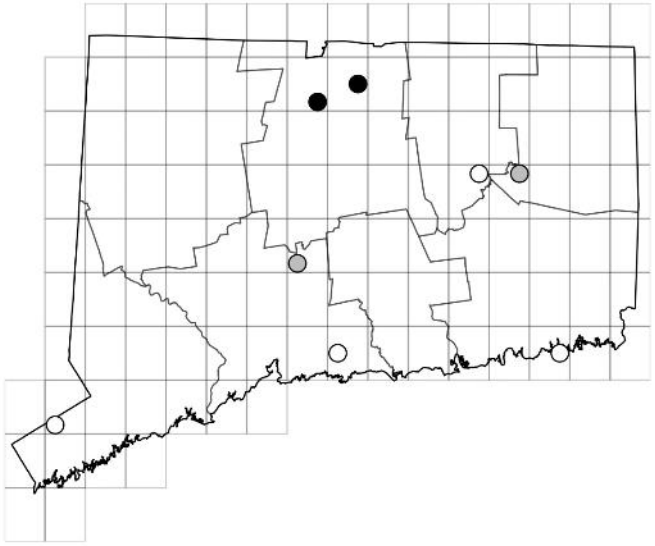
Atlas 2018-2021



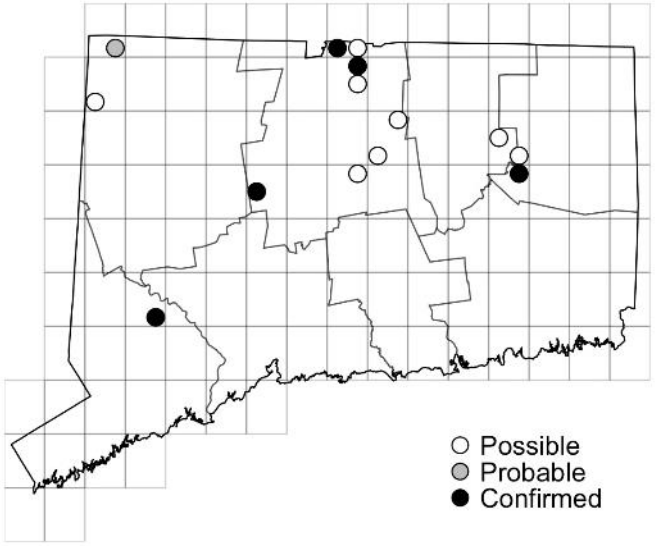
~200% increase in breeding distribution

Grasshopper Sparrow
Ammodramus savannarum

Atlas 1982-1986



Atlas 2018-2021

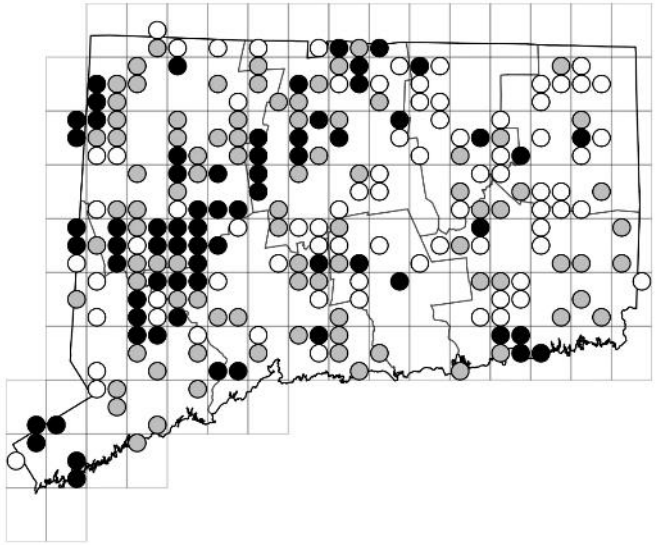


~90% decrease in breeding distribution

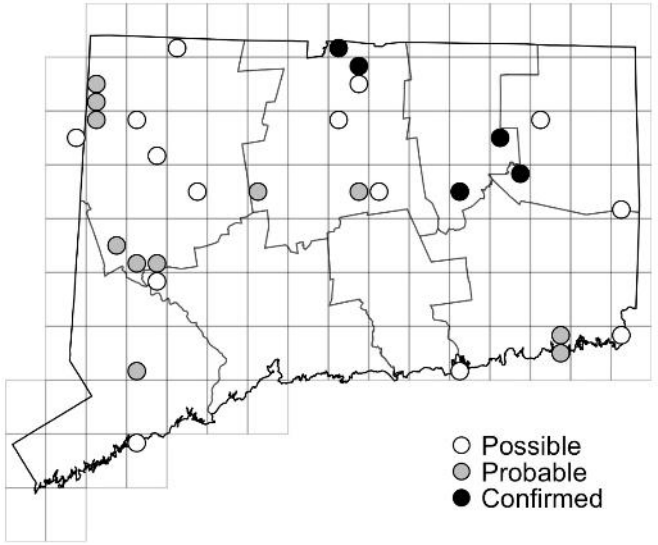
Eastern Meadowlark

Sturnella magna

Atlas 1982-1986



Atlas 2018-2021

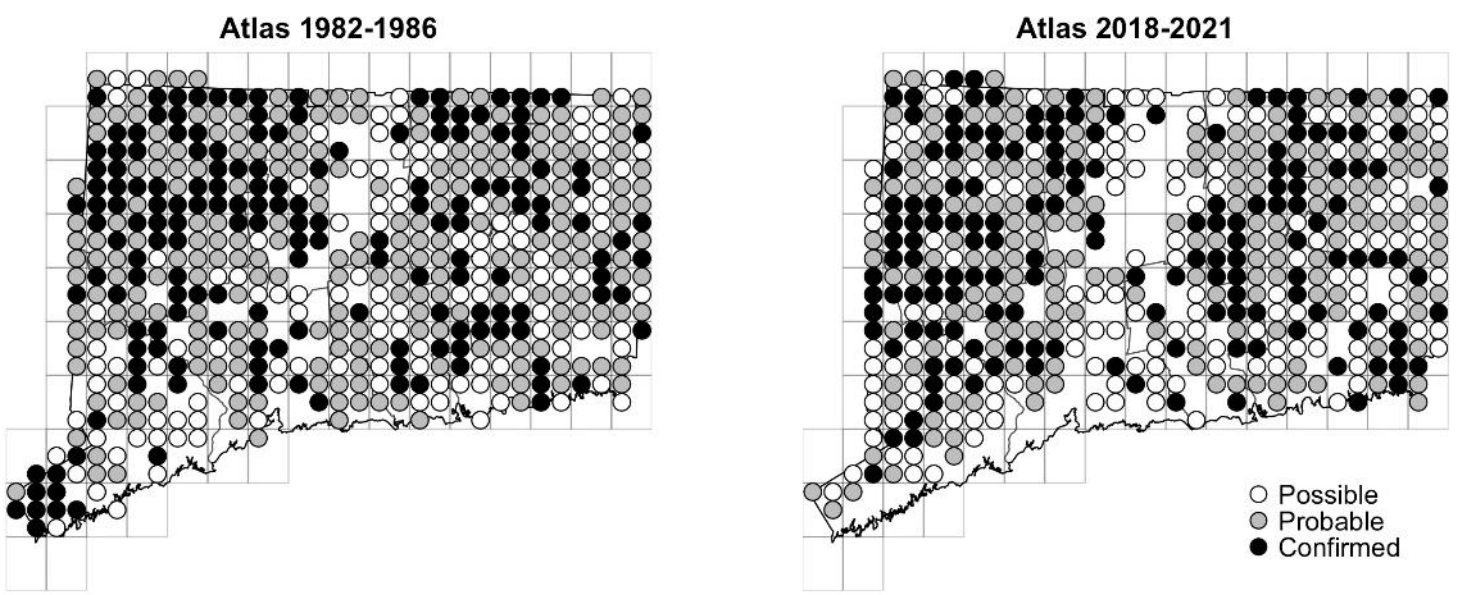


Forest Interior

Declines in some species, stability in others

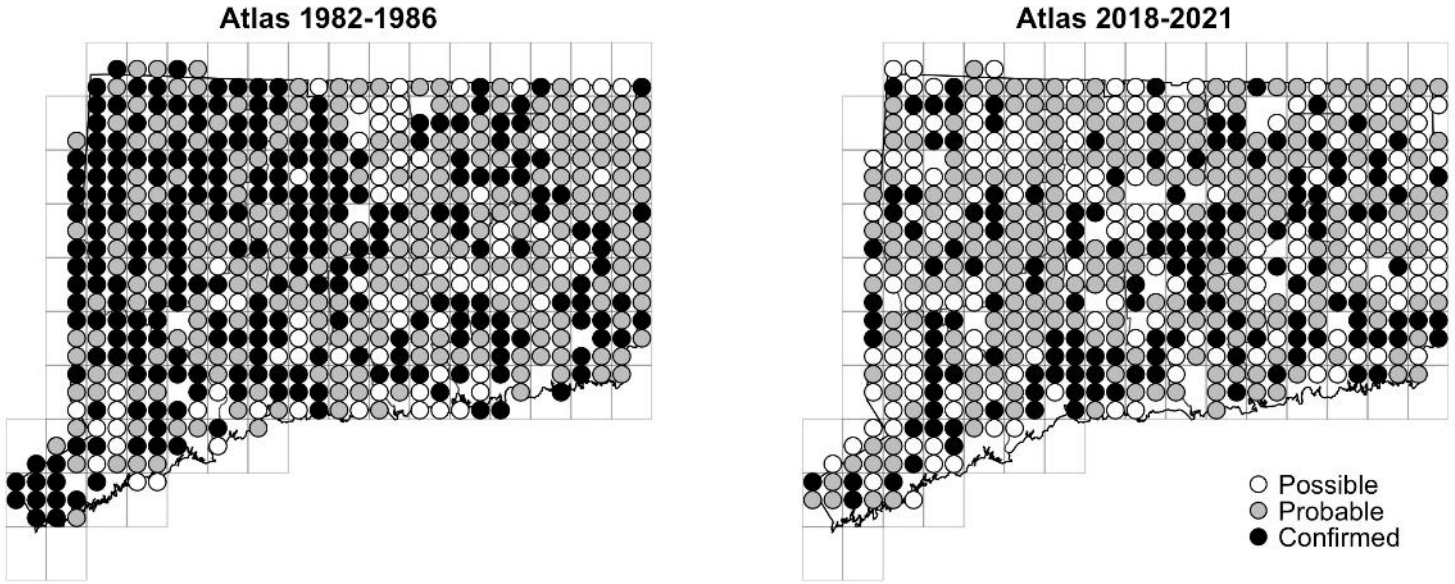
~16% decrease in breeding distribution

Veery
Catharus fuscescens



~24% decrease in breeding distribution

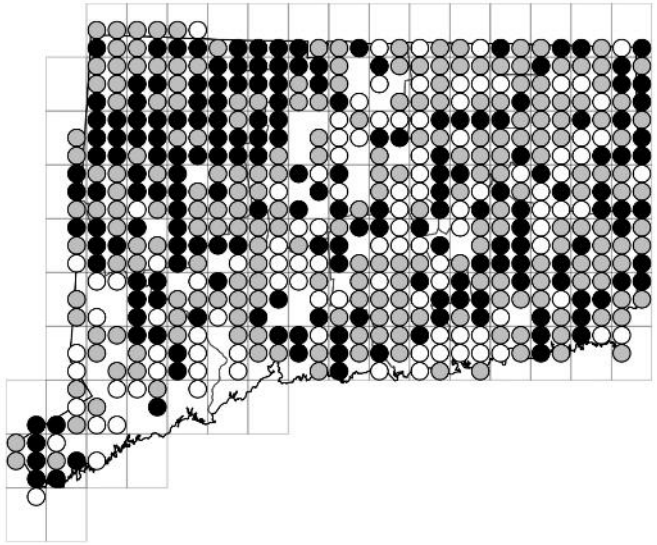
Wood Thrush
Hylocichla mustelina



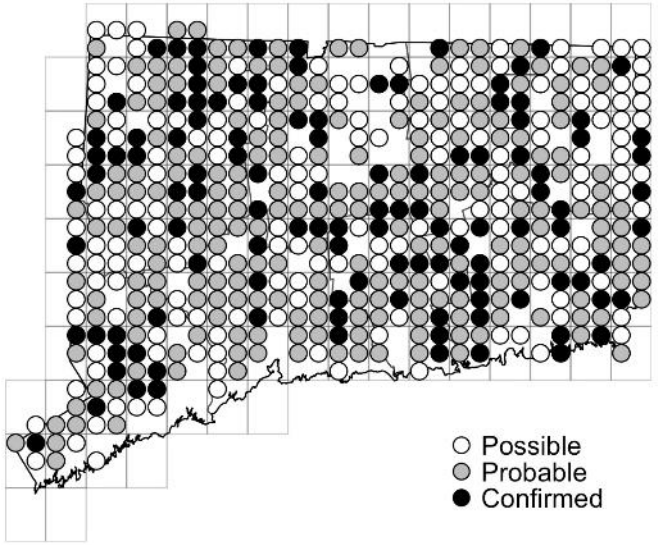
~21% decrease in breeding distribution

Scarlet Tanager
Piranga olivacea

Atlas 1982-1986



Atlas 2018-2021

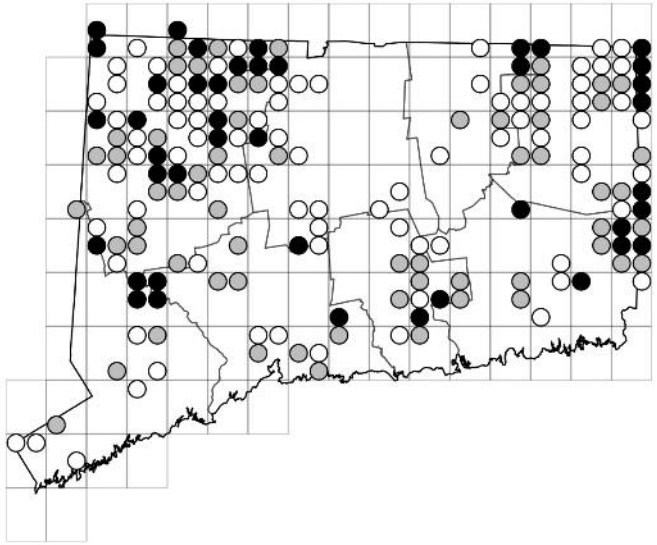


~16% decrease in breeding distribution

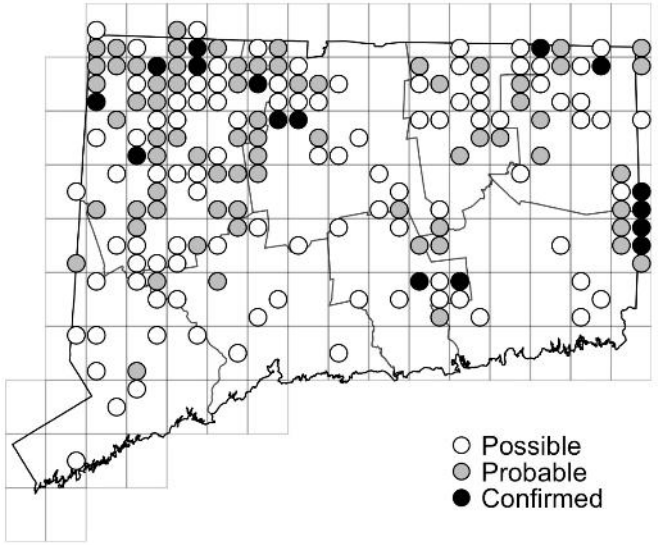
Black-throated Green Warbler

Setophaga virens

Atlas 1982-1986

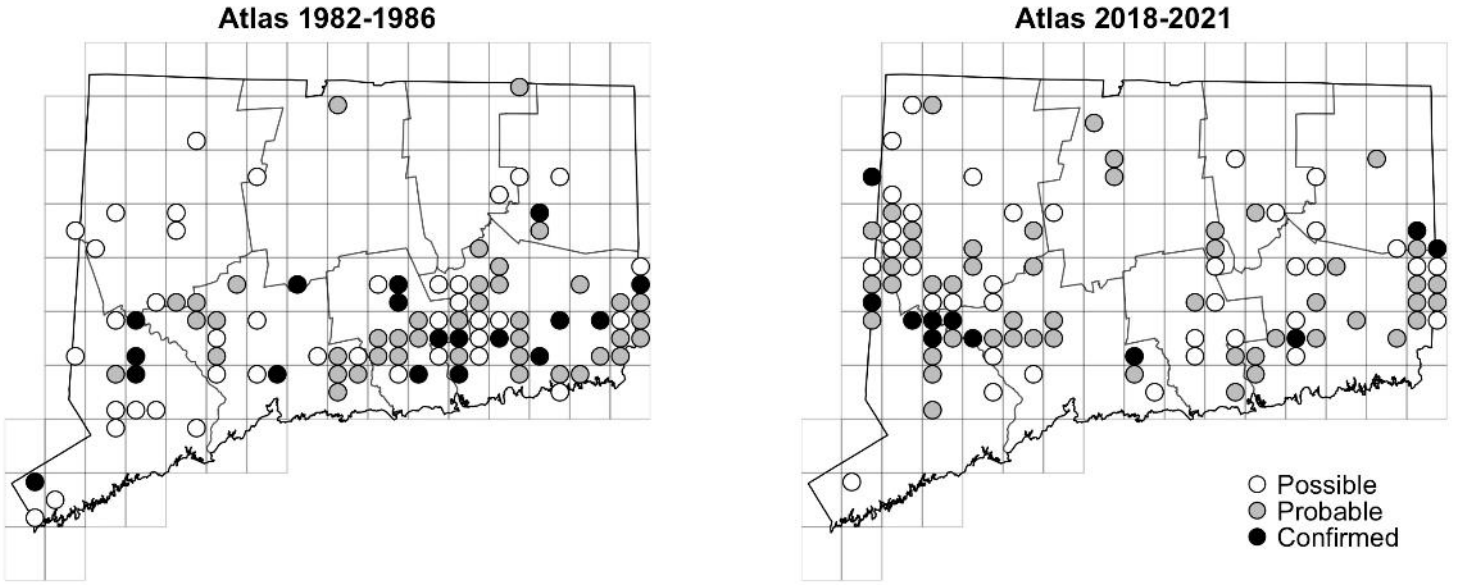


Atlas 2018-2021



~1% increase in breeding distribution

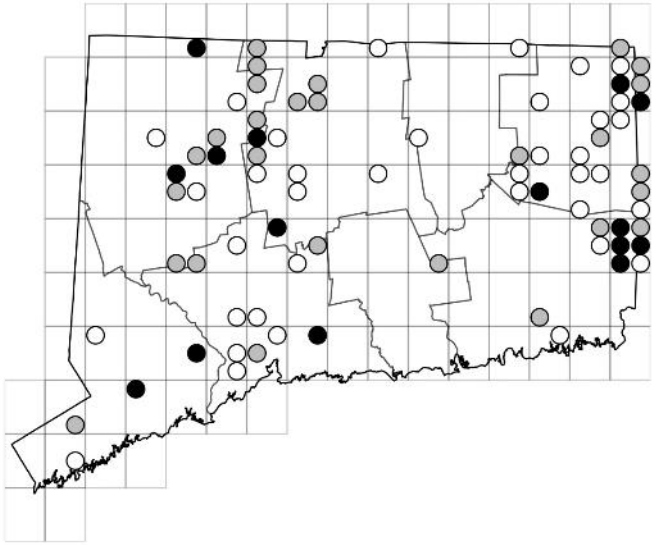
Hooded Warbler
Setophaga citrina



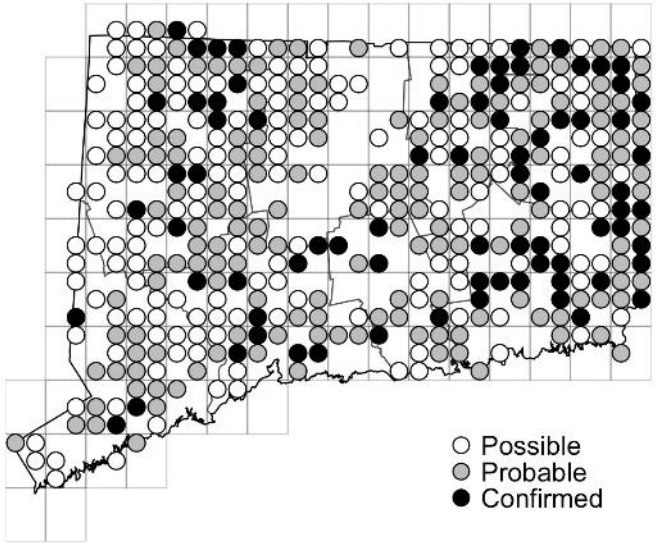
~400% increase in breeding distribution

Pine Warbler
Setophaga pinus

Atlas 1982-1986



Atlas 2018-2021



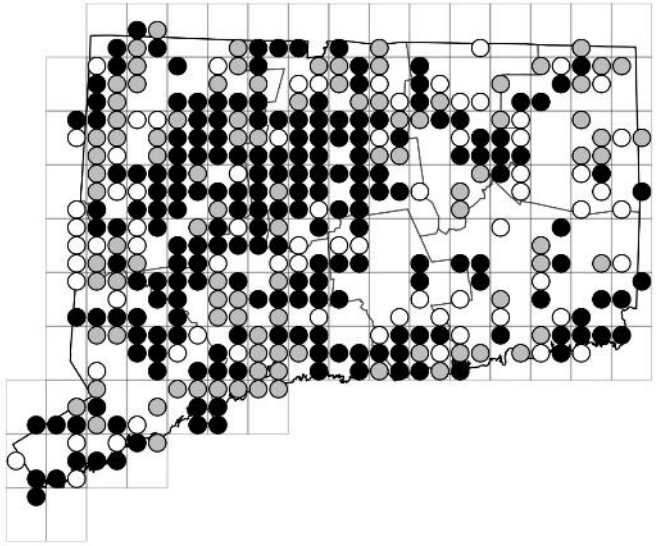
Shorebirds

- Some gains due to management emphasis

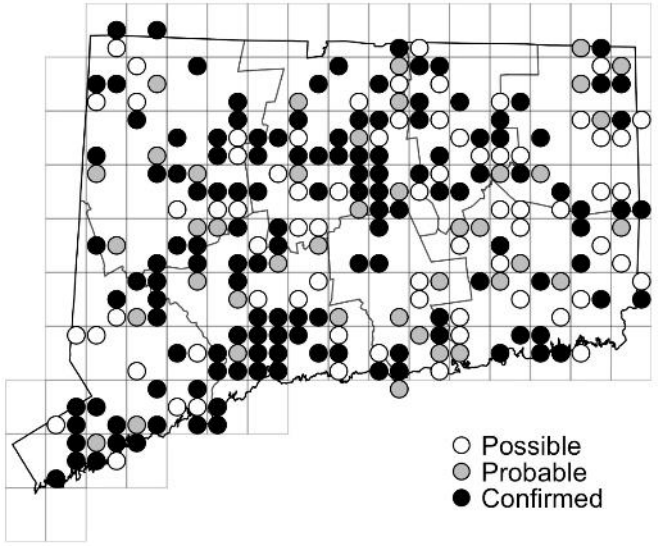
~41% decrease in breeding distribution

Killdeer
Charadrius vociferus

Atlas 1982-1986



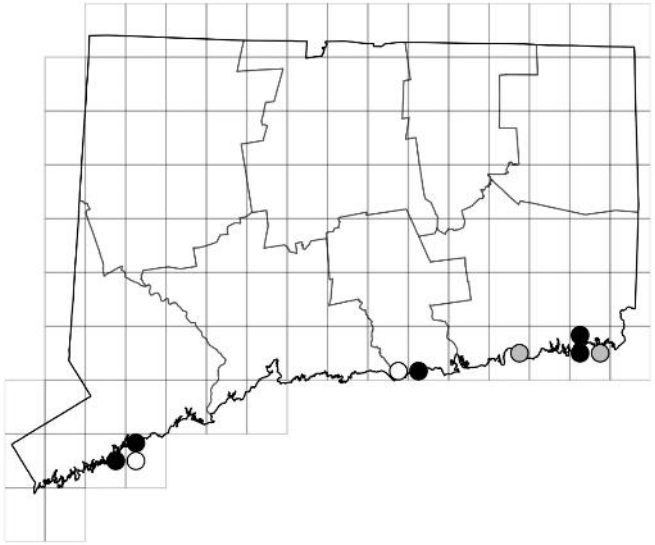
Atlas 2018-2021



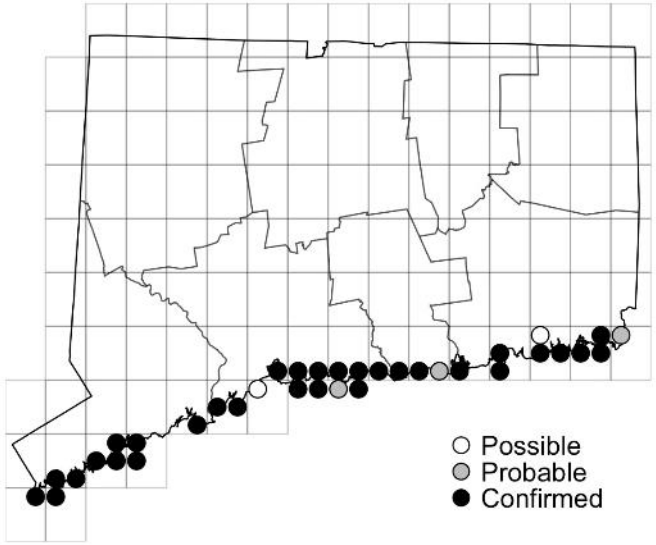
~400% increase in breeding distribution

American Oystercatcher
Haematopus palliatus

Atlas 1982-1986



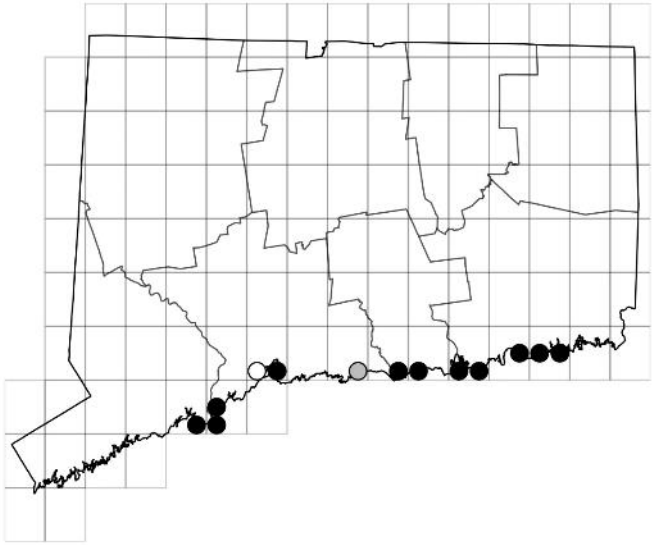
Atlas 2018-2021



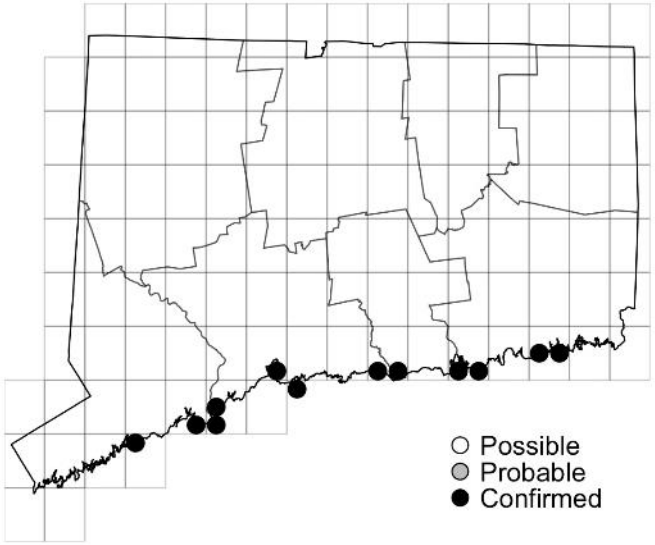
~1% decrease in breeding distribution

Piping Plover
Charadrius melodus

Atlas 1982-1986



Atlas 2018-2021



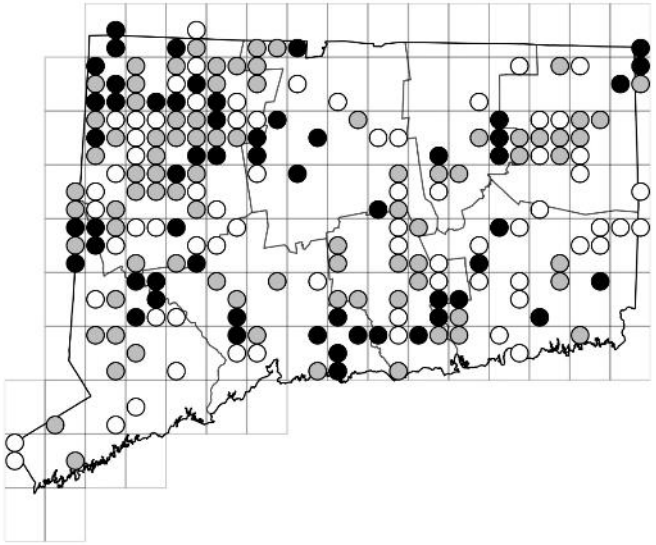
Nightbirds

Declines in most species

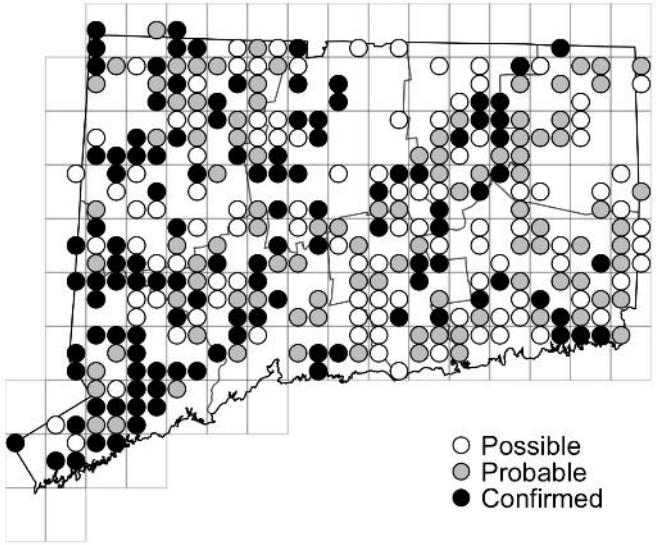
~52% increase in breeding distribution

Barred Owl
Strix varia

Atlas 1982-1986



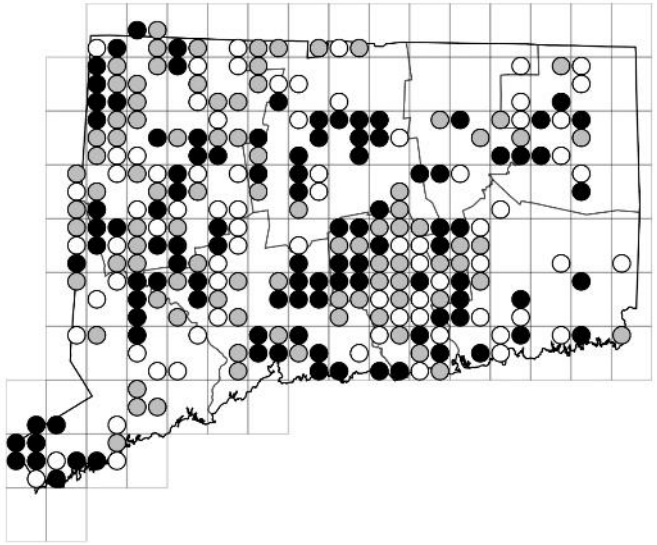
Atlas 2018-2021



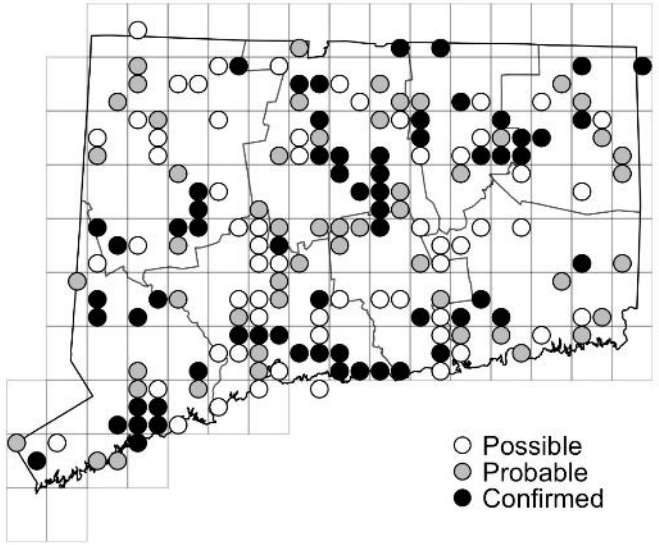
~43% decrease in breeding distribution

Great Horned Owl
Bubo virginianus

Atlas 1982-1986

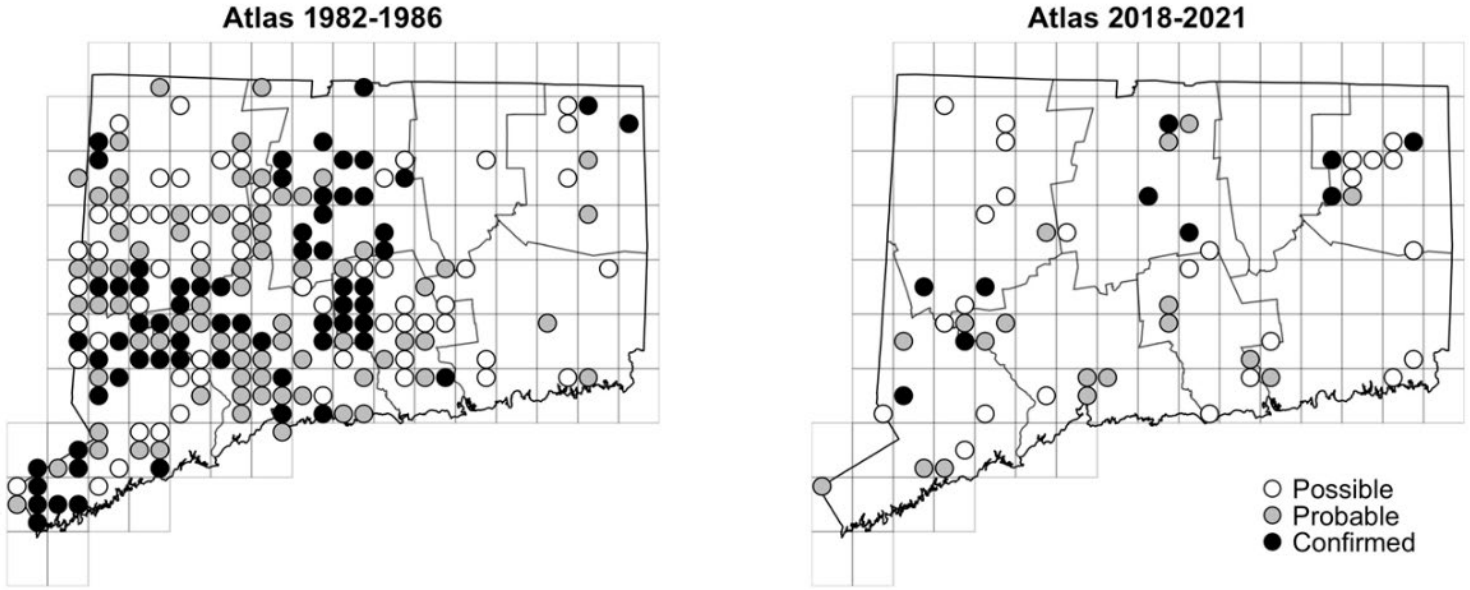


Atlas 2018-2021



~80% decrease in breeding distribution

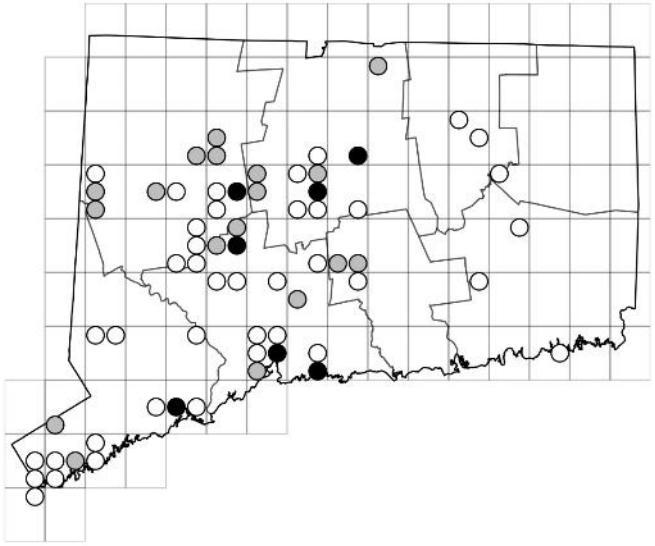
Eastern Screech-Owl
Megascops asio



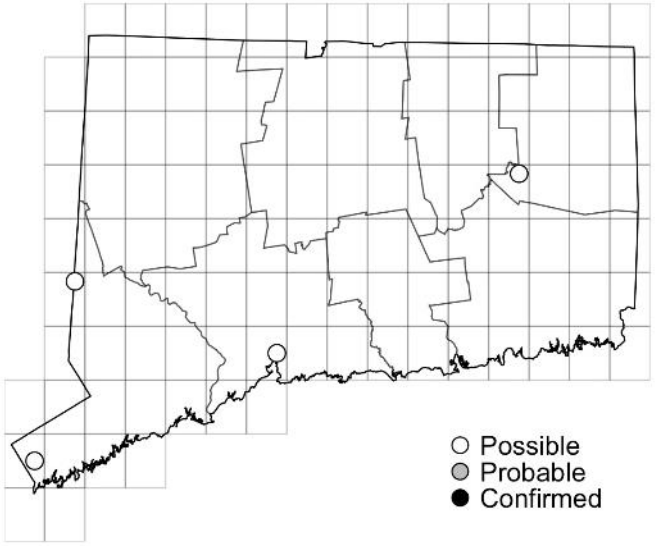
~400% decrease in breeding distribution

Common Nighthawk
Chordeiles minor

Atlas 1982-1986



Atlas 2018-2021



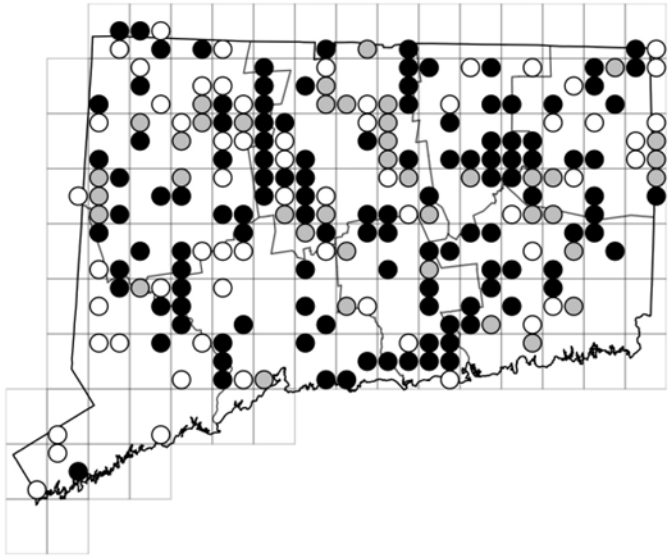
Aerial Insectivores

- Declines across the group, but some good news

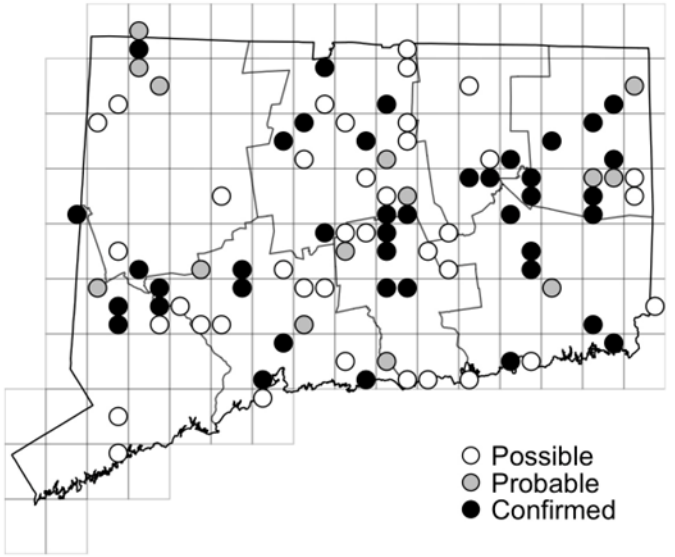
~66% decrease in breeding distribution

Bank Swallow
Riparia riparia

Atlas 1982-1986



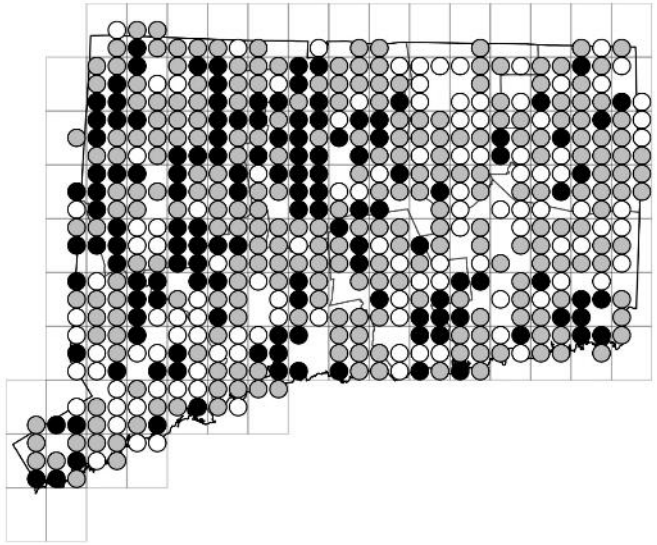
Atlas 2018-2021



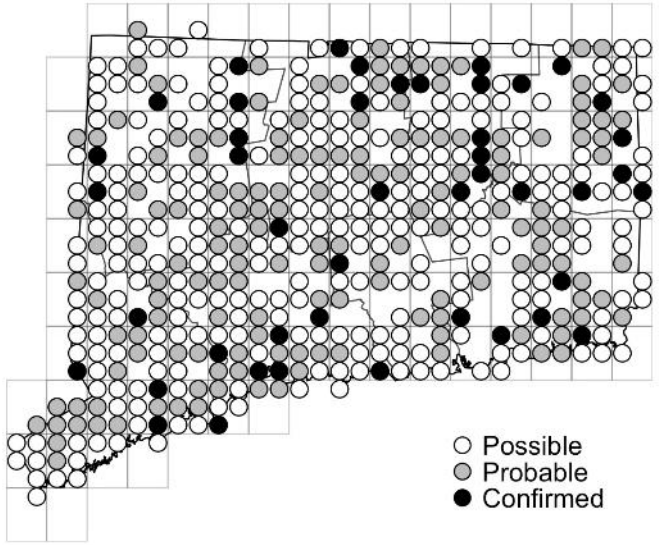
~49% decrease in breeding distribution

Chimney Swift
Chaetura pelagica

Atlas 1982-1986

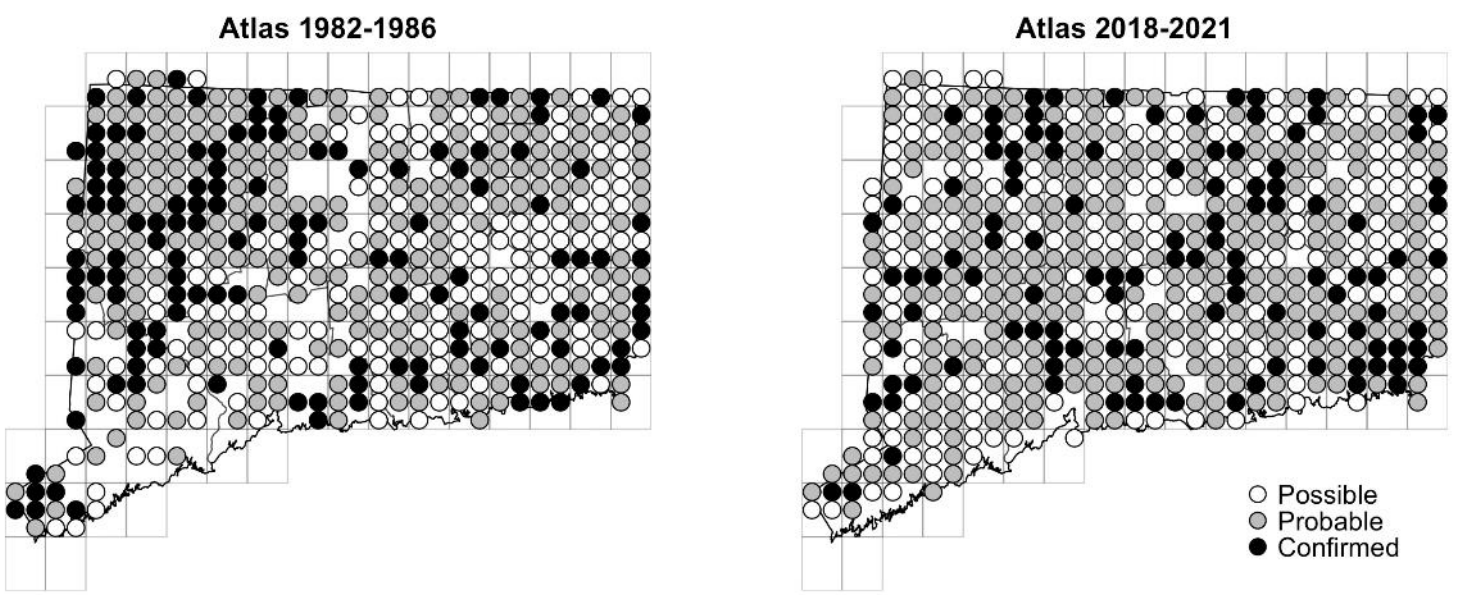


Atlas 2018-2021



Stable breeding distribution

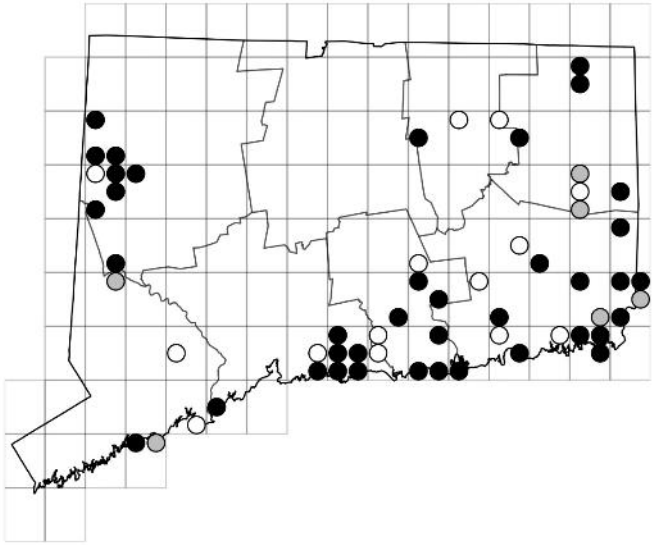
Eastern Wood-Pewee
Contopus virens



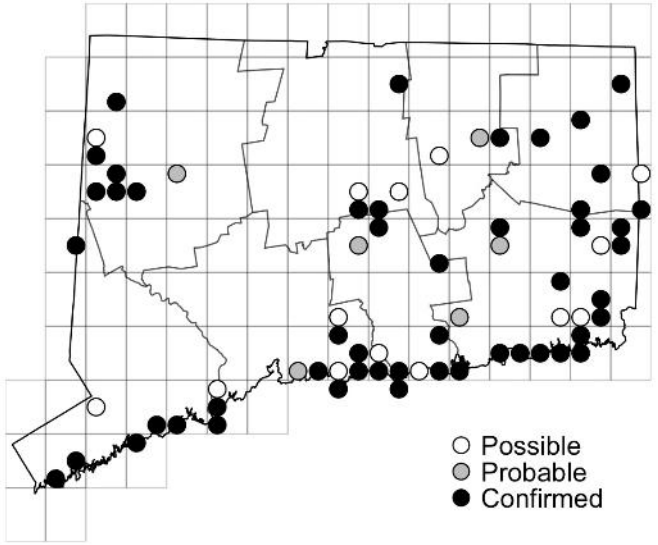
~26% increase in breeding distribution

Purple Martin
Progne subis

Atlas 1982-1986



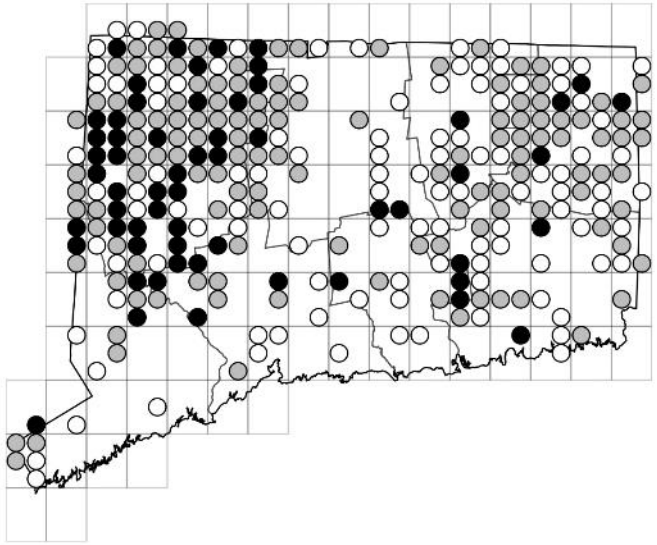
Atlas 2018-2021



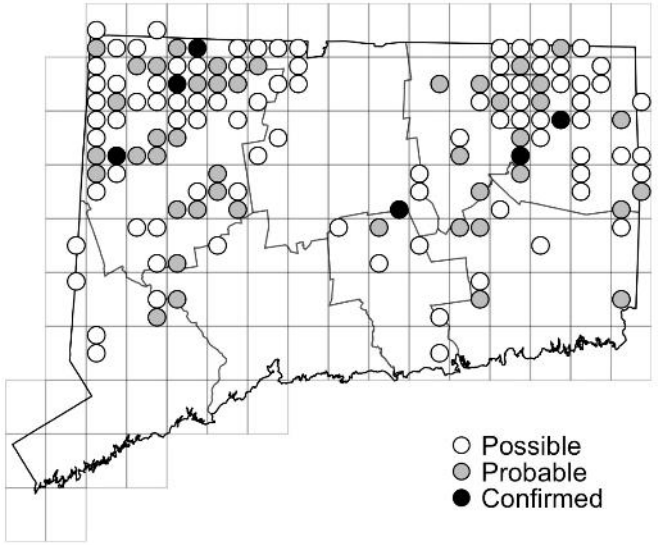
~74% decrease in breeding distribution

Least Flycatcher
Empidonax minimus

Atlas 1982-1986



Atlas 2018-2021

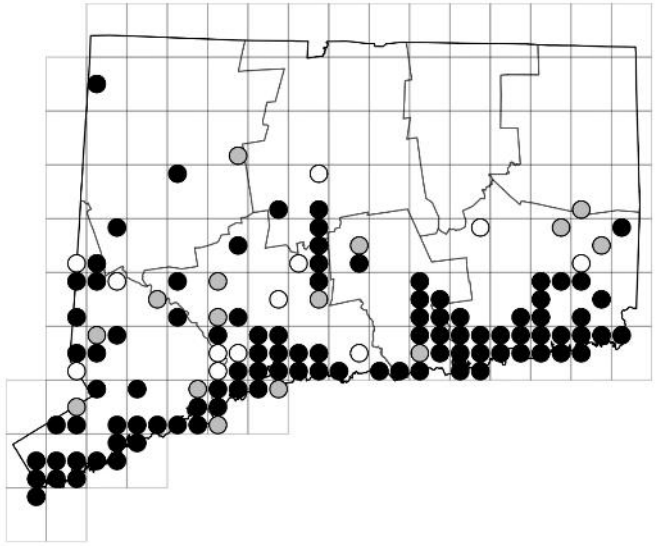


Invasives

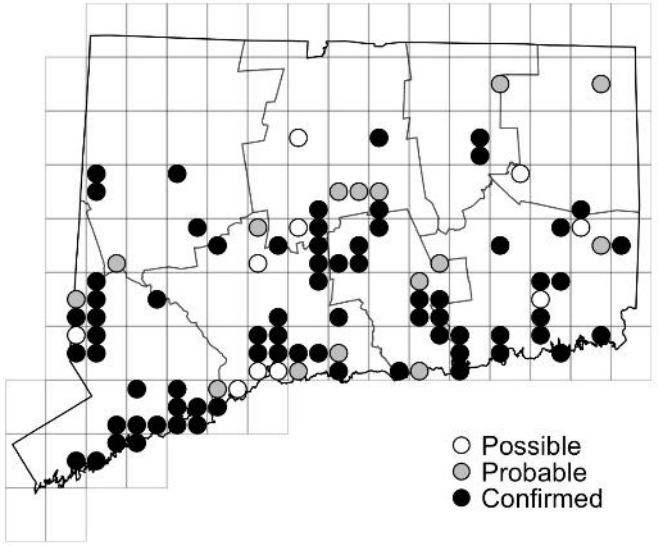
~24% decrease in breeding distribution

Mute Swan
Cygnus olor

Atlas 1982-1986



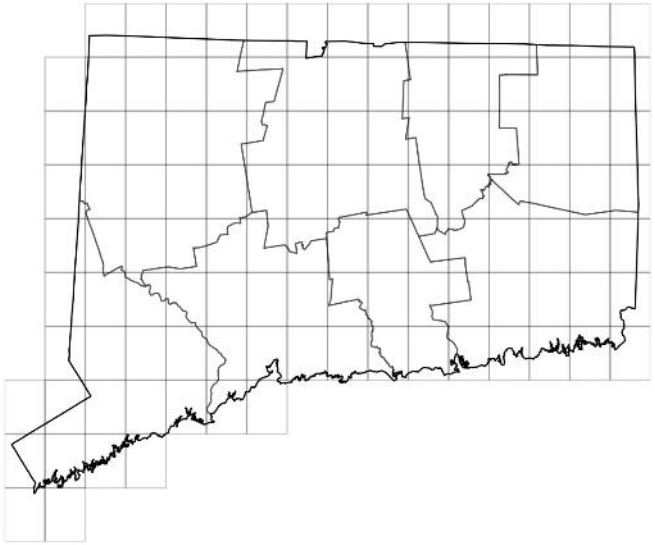
Atlas 2018-2021



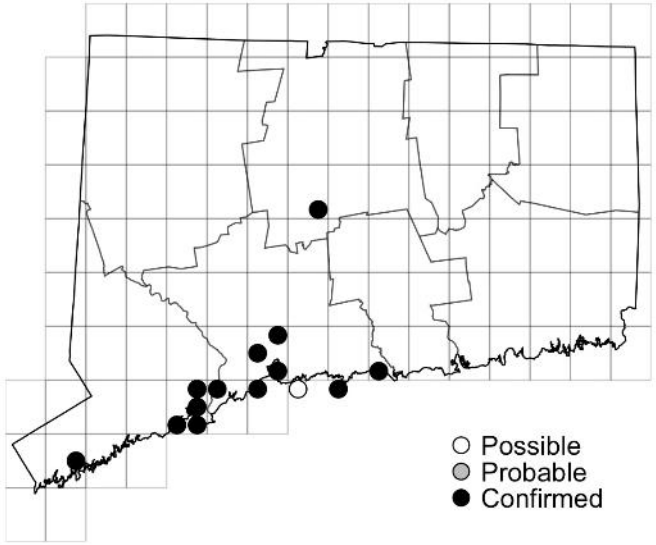
New breeding distribution

Monk Parakeet
Myiopsitta monachus

Atlas 1982-1986

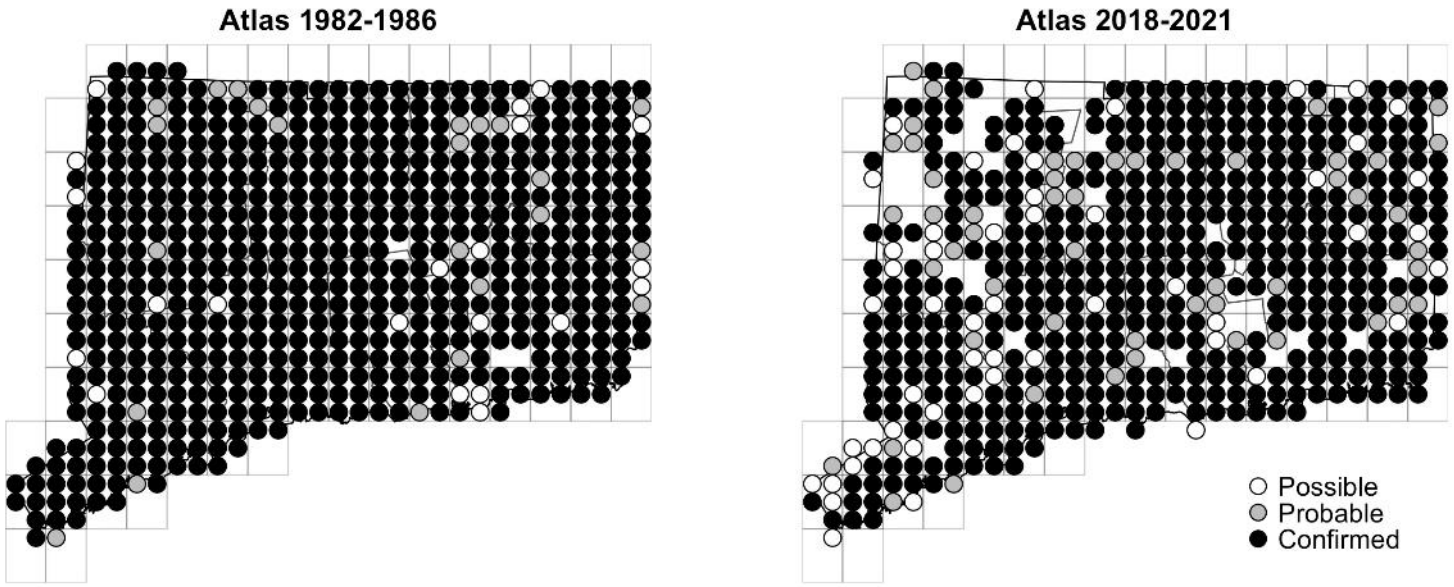


Atlas 2018-2021



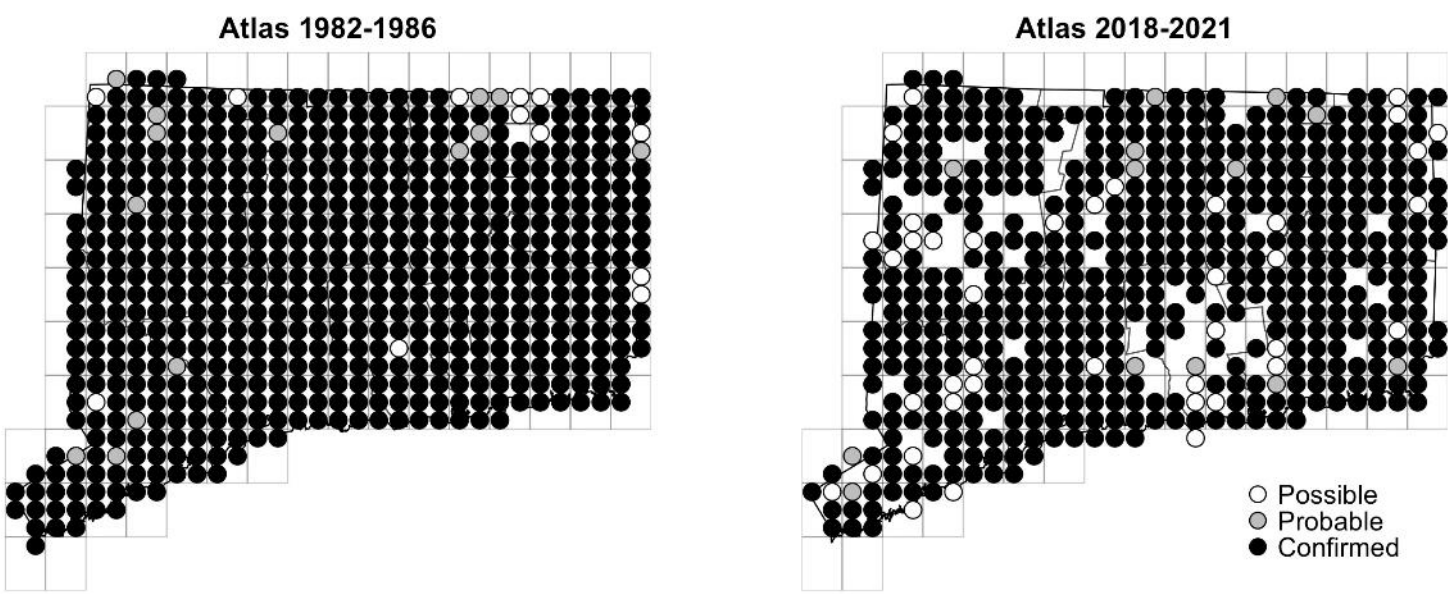
~15% decrease in breeding distribution

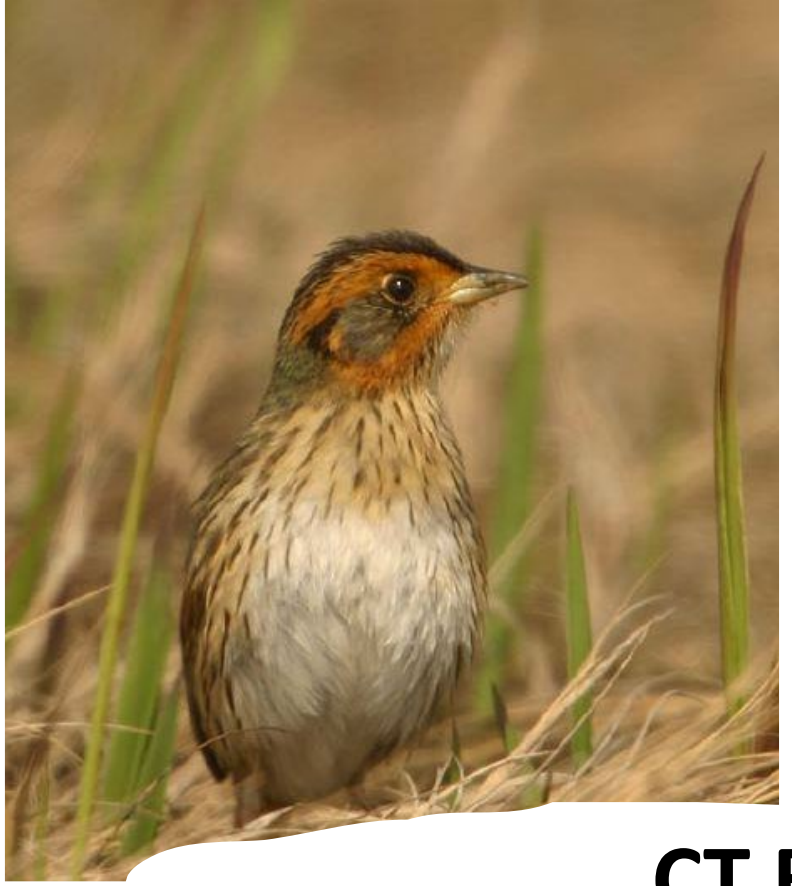
House Sparrow
Passer domesticus



~18% decrease in breeding distribution

European Starling
Sturnus vulgaris





CT Bird Atlas

Some Increases, Far Too Many Declines

Alarming trends….

Habitat is the

to wildlife

CT Atlas Objectives

Conduct 2nd CT Bird Atlas

Document changes in breeding bird distribution and assemblages since first Atlas

- Block maps and predictive maps

Quantify relative abundance of breeding birds in the State

Document wintering bird assemblages and relative importance of areas across the State

Interactive website for all data

Wait for it…..

CT Atlas Objectives

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Document wintering bird assemblages and relative importance of areas across the State

Interactive website for all data

??????

Galvanize the conservation community to develop a dedicated funding mechanism to actually implement the actions needed to reverse current trend

Our Birds are in Trouble!!

BIODIVERSITY LOSS

Decline of the North American avifauna

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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 and independent monitoring networks, we report population losses across much of the North American avifauna over 48 years, including once-common species and from most biomes. Integration of range-wide population 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 migrating birds over a recent 10-year period. This loss of bird abundance signals an urgent need to address threats to avert future avifaunal collapse and associated loss of ecosystem integrity, function, and services.

Slowing 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 background rate, with profound effects on ecosystem functioning and services (*8*). The overwhelm-

United States and Canada (76% of breeding species), drawing from multiple standardized bird-monitoring datasets, some of which provide close to 50 years of population data. We integrated range-wide estimates of population size and 48-year population trajectories, along with their associated uncertainty, to quantify net change in numbers of birds across the avifauna over recent decades (*18*). We also used a network of 143 weather radars (NEXRAD)

groups. Across breeding biomes, grassland birds showed the largest magnitude of total population loss since 1970—more than 700 million breeding individuals across 31 species—and the largest proportional loss (53%); 74% of grassland species are declining. (Fig. 1 and Table 1). All forest biomes experienced large avian loss, with a cumulative reduction of more than 1 billion birds. Wetland birds represent the only biome to show an overall net gain in numbers (13%), led by a 56% increase in waterfowl populations (Fig. 3 and Table 1). Unexpectedly, we also found a large net loss (63%) across 10 introduced species (Fig. 3, D and E, and Table 1).

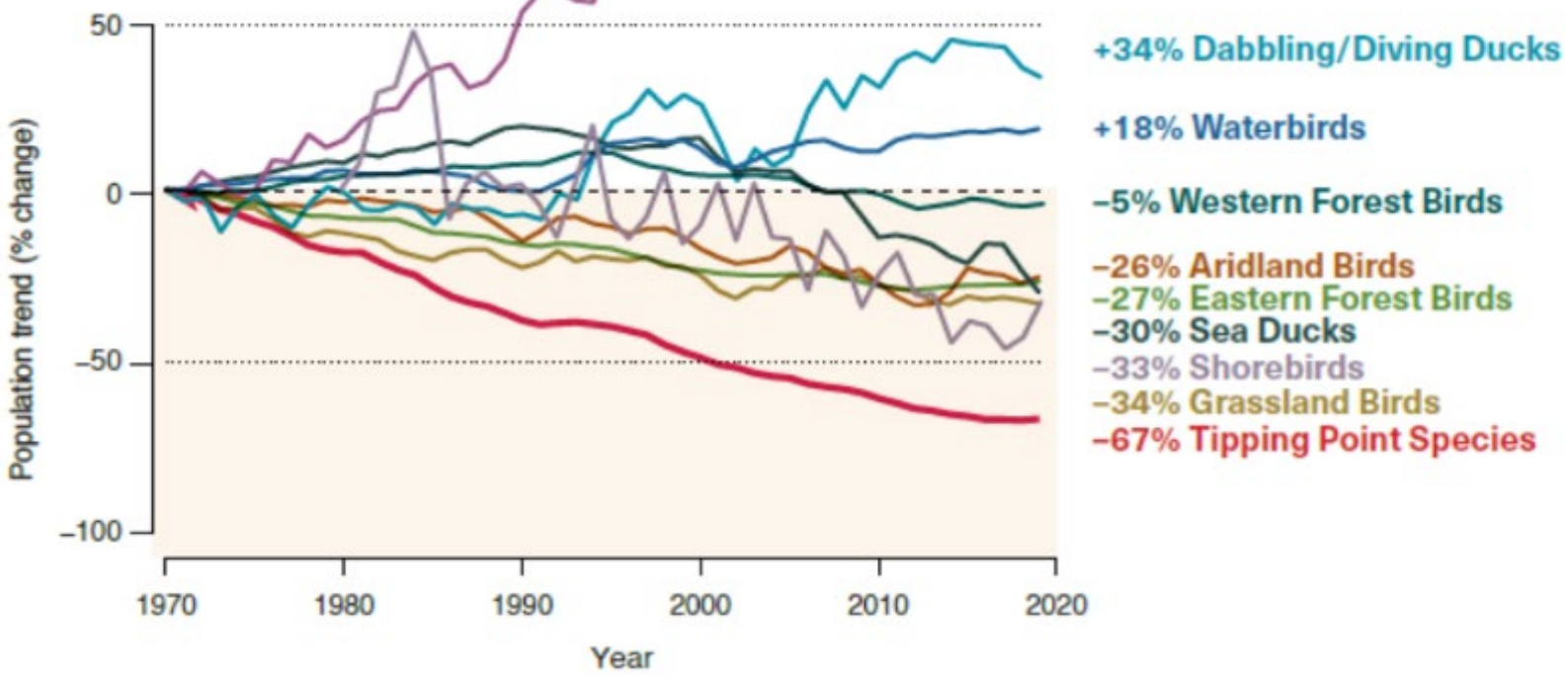
A total of 419 native migratory species experienced a net loss of 2.5 billion individuals, whereas 100 native resident species showed a small net increase (26 million). Species overwintering in temperate regions experienced the largest net reduction in abundance (1.4 billion), but proportional loss was greatest among species overwintering in coastal regions (42%), southwestern aridlands (42%), and South America (40%) (Table 1 and fig. S1). Shorebirds, most of which migrate long distances to winter along coasts throughout the hemisphere, are

Loss of over 3 Billion birds

Funding and Advocacy Make a Difference!!!

a chance. Let's do more to save our nation's birds and benefit people in every state.

Birds across the U.S. show downward trends in every habitat except in wetlands, where comebacks of waterfowl show the power of funding and policy investments.



Causes for Declines

- Habitat Loss on Breeding Grounds
  - Low Productivity
  - Low Adult survival
- Habitat Loss on Wintering Grounds
  - Low Adult survival
- Contaminants
- Climate Change
- Hunting?

Predation

118 Million birds killed by cats annually

Pesticides, Buildings, Towers, Etc

- Buildings-100 million to 1 billion
- Pesticides 67 million
- Towers-50 million

Habitat is the Key To Wildlife!!

- In the absence of habitat we cannot sustain populations
- Outright loss (e.g conversion)
- Degradation
- Indirect loss (e.g. fragmentation, disturbance)
- Breeding grounds, Stopover areas, Wintering areas

Habitat Protection, Enhancement, Management

- Protection of contiguous forest, grasslands, rare habitats, etc
- Restoration of degraded habitats (e.g. wetlands, grasslands)
- Maintenance of existing habitat (early successional habitat)
- Active Management (e.g. beach nesting species, forest management)

Financing Conservation Actions

- We have filled critical data gaps with the Atlas
- In the absence of sufficient, dedicated funding to implement conservation actions….
- Much of the data from the Atlas won’t be able to be utilized to affect positive change for species and habitats
- **NOW THE REAL WORK MUST BEGIN**

American Kestrel

- CT Listed Species-Special Concern
- Have been upgraded from Threatened to Special Concern due to citizen science efforts, not DEEP
- Based upon 20 years of work by volunteers, costs approximately $3,640 to recruit a chick
- Given juvenile survival rates and adult survival, likely **$50,000/yr** to de-list

Piping Plover Example

- Another Listed species (Federal and State)
- Disturbance, predation, and high tides result in nest failure
- Estimated cost to ‘grow’ 1 plover is $2,250
- Population objective is 4,000 adults on Atlantic Coast, currently 3,400.
- Estimated cost for recovery = **$100,000/yr**

And the List (48 species) Goes On……..

- **And, unfortunately, common species are becoming uncommon…**

The clock is ticking away on many of our cherished birds

It is time for the conservation community to come together and develop a dedicated, stable funding source to protect HABITAT in perpetuity.


Thank You
Questions?