

## Connecticut

# Survival by Degrees: 389 Species on the Brink

## Background

Birds form part of healthy ecosystems, bring joy to people, and benefit local economies throughout the United States. In 2011, birdwatching-related industries drove \$41 billion in expenditures and \$107 billion in total industry output nationally. There are more than 873,000 total birders in Connecticut alone [1]. Additionally, birds play critical roles in pollination, insect control, forest generation, seed dispersal, carrion scavenging, and many other ecosystem services we rely on.

However, the future of birds is at risk with alarming losses of biodiversity occurring worldwide. Global extinction rates are now 100 times higher than background rates [2]. Climate change exacerbates the global biodiversity crisis, with an anticipated rate of change 20 times faster in the next century than during the past two million years.

Audubon leads the way in conducting science to understand the vulnerability and threats to birds from climate change. Our science shows that stabilizing warming at a global average of 1.5°C (2.7°F), as recommended by the IPCC (Intergovernmental Panel on Climate Change) to reduce the global risk of climate change, would also reduce vulnerability and threats for many species of birds. To save birds we must address the underlying causes of climate change (*climate change mitigation*), and protect places that birds need now and will need in the future (*climate change adaptation*). Climate change mitigation means reducing or preventing the causes of climate change, such as greenhouse gas emissions. Climate change adaptation includes efforts to alter and adapt both our natural surroundings as well as our infrastructure to better withstand the threats of climate change.

Audubon's 2019 Report, *Survival by Degrees: 389 Bird Species on the Brink* [3], is a powerful look at how vulnerable birds are to climate change across North America based on a new, updated scientific analysis that leverages big data and incorporates the unique biology of each bird to determine its vulnerability. In this research, we related bird observations for 604 species with climate and habitat conditions at these locations and used modeling algorithms to capture the unique composition of each species's suitable range. We then mapped and compared the projected current and future ranges to estimate the projected range

loss and gain under multiple future climate change scenarios. These projections were then used to assess how vulnerable each species was to climate change [4,5].



Figure 1. Ovenbird. Photo: Megumi Aita/Audubon Photography Awards

### Future Climate and Habitat in Connecticut

Across the state of Connecticut, without substantial climate change mitigation (i.e., a 3°C/5.4°F global warming scenario), average temperatures during the warmest month are expected to increase approximately 5.3°C (9.6°F), and average temperatures during the coldest month are expected to increase approximately 4.7°C (8.4°F) from 2010 to the end of the century. Average annual precipitation is expected to increase by approximately 75 mm (2.9 in). Despite the overall increase in precipitation, available moisture is expected to decrease by 66% across the state due to increases in evapotranspiration [6].

The distribution of vegetation biomes, critical for plants and animals, are also projected to change under climate change scenarios [7]. The largest biome in the state is Deciduous Forest, covering 100% of the state.

All of these changes in climate and vegetation will alter plant and insect communities; influence availability of food, water, and shelter for birds; and will likely cause ecological disruption as species assemblages reshuffle. Over time, a complex suite of changes in climate and vegetation will inevitably affect Connecticut's bird communities.

## Climate Change Vulnerability

Climate change will negatively affect many birds in the state. Here, we assess vulnerability based on the amount of a species's range that may be gained or lost with climate change. We designate species that may lose much more range across North America than they have the potential to gain as *climate vulnerable*. In Connecticut, 71 out of 160 species are climate vulnerable in summer under the 3°C scenario, meaning they stand to lose more of their North American summer range than they would gain under a warming climate. Reducing emissions to 1.5°C reduces the number of vulnerable species to 37. Impacts are somewhat lessened in winter, with 13 out of 144 species vulnerable

under 3°C of warming and 3 species vulnerable if we reduce warming to 1.5°C.

Each bird was grouped by its primary habitat (see Table 2 for groupings), and these groups are not equally affected. In Connecticut, the habitat groups with the most species vulnerable to the impacts of ongoing and future climate change are eastern forest (28 species) and boreal forest (16 species) in summer (Figure 2). In winter, boreal forest (6 species) and marshland (2 species) groups have the most vulnerable species.

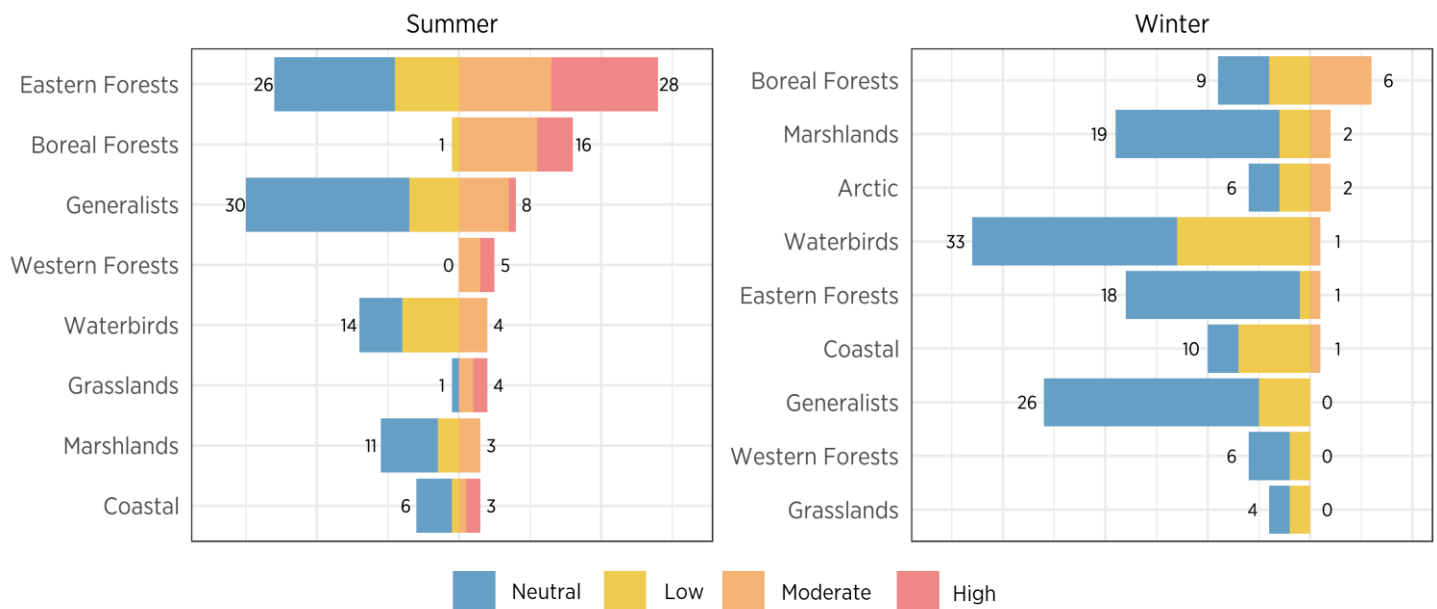


Figure 2. Number of species by their vulnerability to climate change in each habitat group under a global 3°C warming scenario. The species in each group are ones that currently live in the state, though vulnerability is assessed across the species's full North American range to better account for range-wide changes. Red and orange indicate number of vulnerable (high and moderate) species, and yellow and blue indicate non-vulnerable (low and neutral) species.

## Climate-Related Threats

In addition to changes in climate across North America, we assessed the potential impacts of other forecasted threats related to climate change, including sea level rise, land use change, and extreme weather events, such as extreme spring heat, spring drought, fire weather, heavy rain, and false springs within the lower 48 states [8]. These threats are relevant to both birds and the places they need, but were only available for the lower 48 states, and were analyzed separately from vulnerability. This analysis provides information on how each location and the birds that occur there may be exposed to these specific, climate-related threats (Figure 3) beyond their range-wide vulnerability described above.

Here we summarize threats occurring within the state. Five climate-related threats will affect portions of Connecticut

(Table 1). The threat affecting both the greatest area and number of species in the state is extreme spring heat.

In Connecticut, species that are most threatened by a combination of climate change and additional climate-related threats under 3°C of warming include Brown Thrasher, Cerulean Warbler, Eastern Towhee, Eastern Whip-poor-will, Field Sparrow, Pine Warbler, Red-headed Woodpecker, Scarlet Tanager, Worm-eating Warbler, Wood Thrush, Yellow-throated Warbler, Saltmarsh Sparrow, and Seaside Sparrow. Clapper Rail faces four coincident climate-change related threats despite having low range-shift based vulnerability. For information on threats for individual species in Connecticut, see Table 2.

## Climate-Related Threats (Cont.)

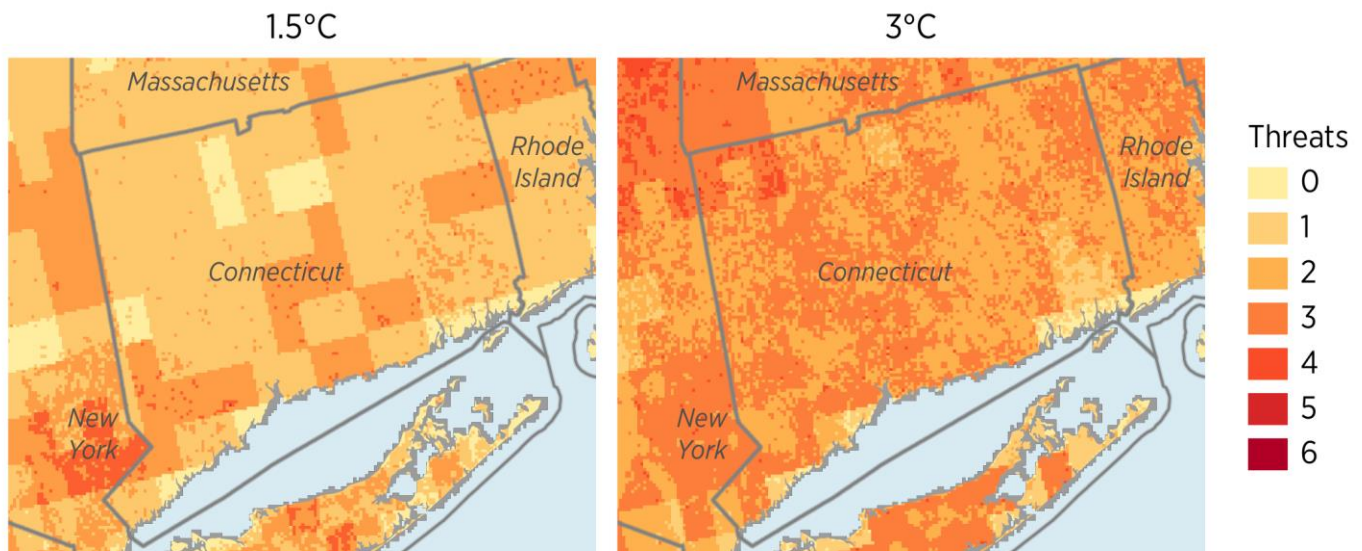







Figure 3. The number and distribution of overlapping climate-related threats under future global change scenarios of 1.5°C and 3°C. For detailed information on threats for each location in the state, refer to our online interactive tool at [climate.audubon.org](http://climate.audubon.org).

Table 1. Climate-related threats that Connecticut is expected to experience under the warming scenarios 1.5°C (2.7°F) and 3°C (5.4°F), and the projected area and number of species affected. We report the projected amount(s) of global sea level rise associated with each scenario [8]. Threats and scenarios were omitted if no species were affected in that scenario.

Threat	Scenario	Area Affected (acres)	Summer (Vulnerable) Species Affected	Winter (Vulnerable) Species Affected
 Sea Level Rise	1.5°C (0.5 m/1.6 ft)	16,877		2 (0)
	3°C (1 m/3.3 ft)	27,822	15 (3)	13 (1)
	3°C (2 m/6.6 ft)	37,444	19 (4)	18 (3)
 Urbanization	3°C	860,479	138 (39)	144 (8)
 Extreme Spring Heat	1.5°C	1,492,761	45 (5)	65 (2)
	3°C	3,152,566	143 (42)	146 (8)
 Fire Weather	3°C	122,317	1 (1)	
 Heavy Rain	1.5°C	2,210,601	122 (22)	106 (2)
	3°C	2,955,376	134 (40)	139 (6)

We also mapped risk, areas of high conservation value for birds that are exposed to climate change-related threats. For any one location, risk is the product of the number of overlapping climate change-related threats, the total number of bird species that occur under future climate, and

the number of species with range-wide vulnerability under future climate. Risk is greater across Connecticut in summer relative to winter, and mitigating warming from 3°C to 1.5°C would more than halve the average risk of climate change-related threats to birds across the state.

## Conclusions and Caveats

---

Birds are early responders to climate change and can be important indicators of large-scale ongoing and future ecological change. We found that 37% of Connecticut's 227 bird species are vulnerable to climate change across seasons. A rapidly changing climate could lead to population declines and local extinctions if species are not able to adapt. In addition, the reshuffling of bird communities at a continental scale will bring together species that previously lived in isolation, leading to novel, unpredictable interactions. Disruptions in food and nesting resources further compound vulnerabilities to climate change.

Although we project range gains offsetting loss for some species, especially in winter, it is unknown whether birds will establish populations in these new locations because of other factors not assessed here. On top of this, the added stressors of extreme weather events and other climate change-related threats will make establishment and persistence of populations difficult in the coming decades.

## Call to Action

---

### **We know what to do.**

The scientific consensus is clear. We must reduce greenhouse gas emissions at an urgent speed and on a wide scale from every sector of the economy to achieve a more favorable future for birds and people. There is no single perfect solution, but we can make a series of changes that lead to large-scale, systemic adjustments to achieve the required reductions.

### **Addressing the underlying causes of climate change.**

Audubon is pursuing policies that together can drive down emissions at the scale and speed we need. For instance, we can invest in 100% clean energy, energy efficiency, and clean transportation policies that will dramatically reduce carbon emissions from the U.S. and world economies. We can adapt, improve, and innovate. We can power our cars, homes, cities, factories, farms, communities, and economy with clean energy—without contributing to climate change. We are working to implement policies and conservation practices that offset what we cannot eliminate, such as planting forests and testing new technologies to capture (i.e., sequester) carbon through industrial processes and permanently store it underground. We can do all of this in ways that spur innovation, create good jobs, promote homegrown industries, and build our economy for a smarter future.

### **Protecting the places birds need.**

We can also pursue policies and conservation practices that help us avoid some of the worst effects of climate change

While these studies did not assess the effects of climate change on people, we know that the fate of humans and birds are deeply connected. Climate change is currently and will continue to cause harm to people too, who face threats like extreme weather, loss of coastal areas and changing economic patterns, to name a few. Climate change will cause disproportionate harm to vulnerable communities, including children, the elderly, the sick, and the poor, who may have fewer resources available to move or otherwise protect themselves from these threats. If we drastically reduce carbon emissions, we help people and birds alike.

This is the most comprehensive assessment of climate change vulnerability of birds in North America to date, but even this assessment may reasonably be considered conservative because the pace of change is exceeding the scenarios considered in this study. Our work concludes that climate change will have multiple, compounding effects on birds and will likely amplify biodiversity loss, unless actions are taken to lessen its effects.

by building more resilient infrastructure—meaning our cities, roads, and other structures—or even ranches, parks, floodplains, forests, and wetlands that can serve as good wildlife habitat and simultaneously protect our communities from extreme weather.

Audubon has identified the best opportunities to increase the resilience of coastal wetlands in key places that can serve as the first line of defense against the threat of sea level rise. We work to ensure key landscapes that are critical for birds have clean and reliable sources of water, now and in the future, and we advocate for conservation-minded management of working and urban landscapes that can help birds adapt to the changing climate.

### **We still have time.**

We can avert and limit dangerous warming and its worst effects if we act quickly. Science tells us that in order to limit warming to a rise of 1.5°C (2.7°F), we must reduce greenhouse gas emissions 45% below 2010 levels by 2030 and reach net-zero carbon emissions by 2050.

### **We must act now.**

We are on a dangerous path, but we have the power to chart a better one. Still, change will come only if we demand action from the public officials who represent us and the businesses we support.

### **We ask you to join us.**

Be part of the solution. We can do this, together.

## How You Can Help in Connecticut

---

### **We still have time.**

But we must act quickly. In Connecticut, 80 species (43%) are climate vulnerable in summer under the 3°C scenario. Reducing emissions to 1.5°C reduces the number of vulnerable species to 41.

### **We must voice support for clean energy.**

Here in Connecticut, change is on the horizon. We must support the development of responsibly-sited and operated renewable and clean energy (wind and solar) in our communities, as well as upgrades and expansions to our electrical transmission infrastructure. In particular, we must support legislation and policies that affect our coastal communities, which will be the first to feel the impacts of climate change.

### **We're off to a flying start.**

We have a plan to create and protect more resilient, bird-friendly habitat in the places where we know our birds—and people—need it most. But we need your help on a local level.

In our northeastern forests, we are connecting landowners and foresters to grow and manage diverse, healthy woodlands that provide bird-friendly habitats. Our forests must be more resilient to the stressors of climate change and invasive species, so they can provide essential ecosystem services like carbon sequestration, flood control, and watershed protection.

In our urban areas we are bringing conservation to life by working with community leaders and youth, encouraging native plantings and design sustainable buildings. Only through collaboration can we improve the urban landscape for people and birds.

On our coasts, we have identified thousands of acres of salt marsh, beach, and island habitat that are in jeopardy of ecological collapse as a result of climate-driven sea level rise. We aim to implement a science-based conservation strategy that involves habitat protection, restoration, stewardship, and cost-effective public policy.

We can do this, together.

## More Information

---

This project was conducted by the National Audubon Society. For more information, including details on the methods, please see the project website ([climate.audubon.org](http://climate.audubon.org)) and the scientific publications [5,8].

### **References**

1. US Fish & Wildlife Service. 2013. Birding in the United States: A Demographic and Economic Analysis. Addendum to the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.
2. Ceballos, G. et al. 2015. Accelerated modern human-induced species losses: Entering the sixth mass extinction. *Science Advances* 1:e1400253. doi:10.1126/sciadv.1400253.
3. Wilsey, C. et al. 2019. Survival By Degrees: 389 Bird Species on the Brink. National Audubon Society: New York.
4. Wilsey, C. et al. 2019. Climate policy action needed to reduce vulnerability of conservation-reliant grassland birds in North America. *Conservation Science and Practice* e21; DOI: 10.1111/csp2.21.

5. Bateman, B. et al. 2019. North American birds require mitigation and adaptation to reduce vulnerability to climate change. In review.
6. AdaptWest Project. 2015. Gridded current and projected climate data for North America at 1km resolution, interpolated using the ClimateNA v5.10 software (T. Wang et al., 2015). Available at [adaptwest.databasin.org](http://adaptwest.databasin.org).
7. Rehfeldt, G.E. et al. 2012. North American vegetation model for land-use planning in a changing climate: a solution to large classification problems.
8. Bateman, B. et al. 2019. Risk to North American birds from climate change-related threats. In review.
9. IPCC (Intergovernmental Panel on Climate Change). 2019. IPCC Special Report on the Ocean and Cryosphere in a Changing Climate.

### **Contact**

Brooke Bateman, PhD  
Senior Climate Scientist, National Audubon Society  
[climatescience@audubon.org](mailto:climatescience@audubon.org)

## Species Projections

Table 2. Climate suitability projections in summer and winter under the 3°C warming scenario for birds in Connecticut. Each bird is associated with the *Habitat Group* representing its primary habitat (see classification key below). *Range-wide Vulnerability* is the vulnerability of each species, across its full North American range under 3°C of global warming, based on long-term climate and vegetation change. High and moderately vulnerable species are considered vulnerable to climate change, whereas low and neutral species are considered not vulnerable. In *State Trends*, we show the top two trends in climate and habitat suitability for select birds in Connecticut, with colors reflecting the trend according to the legend below and percentages reflecting the percent of the state's area in which each trend will occur. The total percentage reflects the area of the state that the species currently occupies and is projected to occupy in the future. Potential colonization indicates that climate and habitat are projected to become suitable for the species, whereas potential extirpation indicates that climate and habitat are suitable today but projected to become unsuitable. *State Threats* shows the additional climate-related threats each species might face, indicated by icons as in Table 1. Threats shown here were assessed within each state for species under either 1.5°C or 3°C warming (i.e., species that will be completely extirpated from the state do not have threats shown). Omitted species are either not present in the state during that season or not modeled due to data deficiency. These lists may have been further reduced by local experts. For a full list of species modeled in Connecticut, see the project website ([climate.audubon.org](http://climate.audubon.org)).
















































































### Habitat classifications:

- F-B = Boreal Forests
- F-E = Eastern Forests
- F-W = Western Forests
- F-S = Subtropical Forests
- A = Arctic
- D = Aridlands
- G = Grasslands
- M = Marshlands
- C = Coastal
- W = Waterbirds
- Gen = Generalists

### Trend classifications:



Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Brant	W	Winter	Moderate	18% Potential extirpation, 4% Potential colonization	
Canada Goose	W	Summer	Moderate	9% Potential extirpation, 87% Worsening	
	W	Winter	Neutral	78% Worsening, 16% Stable	
Wood Duck	W	Summer	Low	34% Potential extirpation, 66% Worsening	
	W	Winter	Neutral	33% Stable, 52% Improving	
Northern Shoveler	M	Winter	Neutral	3% Stable, 22% Improving	
Gadwall	M	Summer	Moderate	3% Potential extirpation, <1% Potential colonization	
	M	Winter	Neutral	20% Improving, 27% Potential colonization	
American Wigeon	M	Winter	Neutral	9% Stable, 22% Improving	
Mallard	W	Summer	Low	81% Worsening, 10% Stable	

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
	W	Winter	Neutral	94% 5%	  
American Black Duck	W	Winter	Low	37% 31%	  
Northern Pintail	M	Winter	Neutral	21% 14%	  
Green-winged Teal	M	Winter	Neutral	4% 24%	  
Canvasback	M	Winter	Neutral	14% 17%	  
Redhead	M	Winter	Low	23% 10%	  
Ring-necked Duck	W	Winter	Neutral	23% 20%	  
Greater Scaup	W	Winter	Neutral	36% 9%	  
Lesser Scaup	W	Winter	Neutral	13% 59%	  
Common Eider	C	Winter	Low	9%	
Harlequin Duck	W	Winter	Low	<1%	
Surf Scoter	C	Winter	Neutral	2% 4%	  
White-winged Scoter	W	Winter	Neutral	15% <1%	  
Black Scoter	C	Winter	Neutral	2% 4%	  
Long-tailed Duck	W	Winter	Low	2% 17%	  
Bufflehead	W	Winter	Low	38% 6%	  
Common Goldeneye	W	Winter	Neutral	90%	  
Hooded Merganser	W	Summer	Low	33% 18%	  
	W	Winter	Neutral	55% 35%	  
Common Merganser	W	Summer	Moderate	32% 1%	  
	W	Winter	Low	3% 96%	  
Red-breasted Merganser	W	Winter	Low	15% 36%	  
Ruddy Duck	M	Winter	Neutral	5% 20%	  
Wild Turkey	Gen	Summer	Neutral	99%	  
	Gen	Winter	Neutral	10% 89%	  
Pied-billed Grebe	M	Winter	Neutral	7% 25%	  
Horned Grebe	M	Winter	Neutral	13% 9%	  
Red-necked Grebe	M	Winter	Neutral	2% 9%	  

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Mourning Dove	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Yellow-billed Cuckoo	F-E	Summer	Neutral		
Common Nighthawk	Gen	Summer	Neutral		
Chuck-will's-widow	F-E	Summer	Neutral		
Eastern Whip-poor-will	F-E	Summer	High		
Chimney Swift	F-E	Summer	Neutral		
Ruby-throated Hummingbird	F-E	Summer	Neutral		
Clapper Rail	C	Summer	Low		
	C	Winter	Low		
Virginia Rail	M	Summer	Moderate		
	M	Winter	Low		
American Coot	M	Winter	Neutral		
Sandhill Crane	M	Winter	Low		
American Oystercatcher	C	Summer	Neutral		
Black-bellied Plover	W	Winter	Neutral		
Wilson's Plover	C	Summer	Neutral		
Piping Plover	C	Summer	High		
	C	Winter	Moderate		
Killdeer	W	Summer	Neutral		
	W	Winter	Neutral		
Ruddy Turnstone	W	Winter	Neutral		
Sanderling	W	Winter	Neutral		
Dunlin	W	Winter	Low		
Purple Sandpiper	W	Winter	Low		
American Woodcock	F-E	Summer	Moderate		
	F-E	Winter	Neutral		

















































































Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Wilson's Snipe	M	Winter	Neutral		
Spotted Sandpiper	W	Summer	Moderate		
Greater Yellowlegs	W	Winter	Neutral		
Willet	W	Summer	Neutral		
	C	Winter	Neutral		
Bonaparte's Gull	W	Winter	Neutral		
Laughing Gull	C	Summer	Neutral		
Ring-billed Gull	W	Summer	Low		
	W	Winter	Neutral		
Herring Gull	W	Summer	Low		
	W	Winter	Neutral		
Great Black-backed Gull	C	Summer	Moderate		
	C	Winter	Low		
Least Tern	W	Summer	Low		
Gull-billed Tern	C	Summer	Neutral		
Common Tern	W	Summer	Low		
Forster's Tern	M	Summer	Neutral		
	M	Winter	Neutral		
Royal Tern	C	Summer	Neutral		
Sandwich Tern	C	Summer	Low		
Black Skimmer	C	Summer	Neutral		
Red-throated Loon	W	Winter	Low		
Common Loon	W	Winter	Low		
Northern Gannet	C	Winter	Neutral		
Great Cormorant	C	Winter	Low		
Double-crested Cormorant	W	Summer	Neutral		
	W	Winter	Neutral		
American White Pelican	M	Winter	Neutral		








































































Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Brown Pelican	C	Summer	Neutral		
American Bittern	M	Summer	Low		
	M	Winter	Neutral		
Least Bittern	M	Summer	Neutral		
Great Blue Heron	W	Summer	Neutral		
	W	Winter	Neutral		
Great Egret	W	Summer	Neutral		
	W	Winter	Neutral		
Snowy Egret	M	Summer	Neutral		
Little Blue Heron	M	Summer	Neutral		
Tricolored Heron	M	Summer	Neutral		
Green Heron	M	Summer	Neutral		
Black-crowned Night-Heron	M	Summer	Neutral		
	M	Winter	Neutral		
Yellow-crowned Night-Heron	M	Summer	Neutral		
White Ibis	M	Summer	Neutral		
Glossy Ibis	M	Summer	Neutral		
Black Vulture	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Turkey Vulture	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Osprey	W	Summer	Neutral		
Mississippi Kite	F-E	Summer	Neutral		
Northern Harrier	M	Summer	Low		
	M	Winter	Neutral		
Sharp-shinned Hawk	F-W	Winter	Neutral		
Cooper's Hawk	Gen	Summer	Neutral		

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Northern Goshawk	Gen	Winter	Low		
	F-B	Summer	High		
	F-B	Winter	Low		
Bald Eagle	Gen	Summer	Low		
	Gen	Winter	Neutral		
Red-shouldered Hawk	F-E	Summer	Neutral		
	F-E	Winter	Neutral		
Broad-winged Hawk	F-E	Summer	Low		
Red-tailed Hawk	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Rough-legged Hawk	A	Winter	Moderate		
Eastern Screech-Owl	F-E	Summer	Neutral		
	F-E	Winter	Neutral		
Great Horned Owl	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Snowy Owl	A	Winter	Low		
Barred Owl	F-E	Summer	Neutral		
	F-E	Winter	Neutral		
Short-eared Owl	G	Winter	Neutral		
Northern Saw-whet Owl	F-B	Summer	Moderate		
Belted Kingfisher	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Yellow-bellied Sapsucker	F-E	Summer	High		
	F-E	Winter	Neutral		
Red-headed Woodpecker	F-E	Summer	High		
	F-E	Winter	Neutral		
Red-bellied Woodpecker	F-E	Summer	Neutral		
	F-E	Winter	Neutral		

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Downy Woodpecker	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Hairy Woodpecker	Gen	Summer	Low		
	Gen	Winter	Low		
Pileated Woodpecker	F-E	Summer	Neutral		
	F-E	Winter	Neutral		
Northern Flicker	Gen	Summer	Moderate		
	Gen	Winter	Neutral		
American Kestrel	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Merlin	F-E	Winter	Neutral		
Peregrine Falcon	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Eastern Wood-Pewee	F-E	Summer	Low		
Acadian Flycatcher	F-E	Summer	Moderate		
Alder Flycatcher	F-B	Summer	Moderate		
Willow Flycatcher	F-W	Summer	Moderate		
Least Flycatcher	F-B	Summer	Moderate		
Eastern Phoebe	F-E	Summer	Low		
	F-E	Winter	Neutral		
Great Crested Flycatcher	F-E	Summer	Moderate		
Eastern Kingbird	G	Summer	Moderate		
White-eyed Vireo	F-E	Summer	Neutral		
Yellow-throated Vireo	F-E	Summer	Moderate		
Blue-headed Vireo	F-E	Summer	High		
Warbling Vireo	Gen	Summer	Neutral		
Red-eyed Vireo	F-E	Summer	Low		
Blue Jay	F-E	Summer	Neutral		






















































Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
American Crow	F-E	Winter	Neutral	99%	
	Gen	Summer	Low	99%	
	Gen	Winter	Neutral	99%	
Fish Crow	Gen	Summer	High	18% 25%	
	Gen	Winter	Low	25% 21%	
Common Raven	Gen	Summer	Low	94% 5%	
	Gen	Winter	Low	99%	
Horned Lark	G	Winter	Low	27% 4%	
Northern Rough-winged Swallow	Gen	Summer	Neutral	80% 11%	
Purple Martin	Gen	Summer	Neutral	45% 54%	
Tree Swallow	Gen	Summer	Moderate	94% 5%	
Bank Swallow	Gen	Summer	Neutral	48% 22%	
Barn Swallow	Gen	Summer	Neutral	99%	
Cliff Swallow	Gen	Summer	Neutral	36% 39%	
Carolina Chickadee	F-E	Summer	Neutral	94%	
	F-E	Winter	Low	95%	
Black-capped Chickadee	F-B	Summer	Low	91% 8%	
	F-B	Winter	Low	6% 93%	
Tufted Titmouse	F-E	Summer	Neutral	97% 1%	
	F-E	Winter	Neutral	96% 3%	
Red-breasted Nuthatch	F-B	Summer	Moderate	10%	
	F-B	Winter	Neutral	99%	
White-breasted Nuthatch	F-E	Summer	Low	79% 20%	
	F-E	Winter	Neutral	26% 73%	
Brown Creeper	F-W	Summer	Moderate	12%	
	F-W	Winter	Neutral	99%	
House Wren	Gen	Summer	Moderate	72% 15%	

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Winter Wren	F-E	Summer	High	6%	
	F-E	Winter	Low	16% 82%	  
Sedge Wren	G	Winter	Neutral	6%	   
Marsh Wren	M	Summer	Low	7% 4%	   
	M	Winter	Low	19%	  
Carolina Wren	F-E	Summer	Neutral	30% 66%	  
	F-E	Winter	Neutral	23% 74%	  
Blue-gray Gnatcatcher	Gen	Summer	Neutral	43% 37%	  
Golden-crowned Kinglet	F-B	Winter	Neutral	59% 24%	  
Ruby-crowned Kinglet	F-W	Winter	Neutral	21%	  
Eastern Bluebird	F-E	Summer	Neutral	98%	  
	F-E	Winter	Neutral	74% 22%	  
Veery	F-E	Summer	Moderate	76%	
Hermit Thrush	F-W	Summer	High	<1%	
	F-W	Winter	Low	8% 90%	  
Wood Thrush	F-E	Summer	High	33% 66%	  
American Robin	Gen	Summer	Moderate	71% 28%	  
	Gen	Winter	Neutral	70% 30%	  
Gray Catbird	F-E	Summer	Neutral	20% 79%	  
	F-E	Winter	Moderate	5% 2%	  
Brown Thrasher	F-E	Summer	High	15% 71%	  
	F-E	Winter	Neutral	74%	  
Northern Mockingbird	Gen	Summer	Neutral	42% 34%	  
	Gen	Winter	Neutral	26% 56%	  
American Pipit	A	Winter	Neutral	<1% 14%	  
Cedar Waxwing	Gen	Summer	Low	67% 30%	  
	Gen	Winter	Neutral	71% 18%	  
House Finch	Gen	Summer	Low	48% 36%	  

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Purple Finch	Gen	Winter	Low	<div style="display: flex; justify-content: space-between;"><div style="width: 52%; background-color: #e67e22;"></div><div style="width: 33%; background-color: #f1c40f;"></div></div>	  
	F-B	Summer	Moderate	<div style="width: 40%; background-color: #e67e22;"></div>	
	F-B	Winter	Low	<div style="display: flex; justify-content: space-between;"><div style="width: 83%; background-color: #f1c40f;"></div><div style="width: 14%; background-color: #2980b9;"></div></div>	  
Red Crossbill	F-B	Winter	Moderate	<div style="width: &lt;1%; background-color: #e67e22;"></div>	
Pine Siskin	F-W	Winter	Neutral	<div style="display: flex; justify-content: space-between;"><div style="width: 11%; background-color: #e67e22;"></div><div style="width: 88%; background-color: #f1c40f;"></div></div>	  
American Goldfinch	Gen	Summer	Moderate	<div style="display: flex; justify-content: space-between;"><div style="width: 75%; background-color: #e67e22;"></div><div style="width: 16%; background-color: #f1c40f;"></div></div>	  
	Gen	Winter	Neutral	<div style="width: 99%; background-color: #f1c40f;"></div>	  
Lapland Longspur	A	Winter	Neutral	<div style="display: flex; justify-content: space-between;"><div style="width: 30%; background-color: #e67e22;"></div><div style="width: 7%; background-color: #f1c40f;"></div></div>	  
Snow Bunting	A	Winter	Low	<div style="display: flex; justify-content: space-between;"><div style="width: 78%; background-color: #e67e22;"></div><div style="width: 12%; background-color: #f1c40f;"></div></div>	  
Chipping Sparrow	Gen	Summer	Moderate	<div style="display: flex; justify-content: space-between;"><div style="width: 84%; background-color: #e67e22;"></div><div style="width: 11%; background-color: #f1c40f;"></div></div>	  
	Gen	Winter	Neutral	<div style="width: 5%; background-color: #2980b9;"></div>	  
Field Sparrow	F-E	Summer	High	<div style="display: flex; justify-content: space-between;"><div style="width: 90%; background-color: #f1c40f;"></div><div style="width: 9%; background-color: #2980b9;"></div></div>	  
	F-E	Winter	Neutral	<div style="display: flex; justify-content: space-between;"><div style="width: 71%; background-color: #2980b9;"></div><div style="width: 28%; background-color: #2980b9;"></div></div>	  
American Tree Sparrow	A	Winter	Neutral	<div style="display: flex; justify-content: space-between;"><div style="width: 3%; background-color: #e67e22;"></div><div style="width: 92%; background-color: #e67e22;"></div></div>	  
Fox Sparrow	F-B	Winter	Moderate	<div style="display: flex; justify-content: space-between;"><div style="width: 9%; background-color: #2980b9;"></div><div style="width: 84%; background-color: #2980b9;"></div></div>	  
Dark-eyed Junco	F-W	Summer	High	<div style="width: 10%; background-color: #e67e22;"></div>	
	F-W	Winter	Neutral	<div style="width: 99%; background-color: #f1c40f;"></div>	  
White-crowned Sparrow	Gen	Winter	Neutral	<div style="display: flex; justify-content: space-between;"><div style="width: 1%; background-color: #2980b9;"></div><div style="width: 91%; background-color: #2980b9;"></div></div>	  
White-throated Sparrow	F-B	Summer	High	<div style="width: &lt;1%; background-color: #e67e22;"></div>	
	F-B	Winter	Neutral	<div style="display: flex; justify-content: space-between;"><div style="width: 64%; background-color: #f1c40f;"></div><div style="width: 36%; background-color: #2980b9;"></div></div>	  
LeConte's Sparrow	G	Winter	Neutral	<div style="width: 37%; background-color: #2980b9;"></div>	  
Seaside Sparrow	C	Summer	Neutral	<div style="width: 3%; background-color: #f1c40f;"></div>	  
	C	Winter	Moderate	<div style="width: 5%; background-color: #2980b9;"></div>	   
Saltmarsh Sparrow	M	Summer	Neutral	<div style="display: flex; justify-content: space-between;"><div style="width: 3%; background-color: #e67e22;"></div><div style="width: 5%; background-color: #f1c40f;"></div></div>	  
Savannah Sparrow	G	Summer	High	<div style="width: &lt;1%; background-color: #e67e22;"></div>	
	G	Winter	Low	<div style="display: flex; justify-content: space-between;"><div style="width: &lt;1%; background-color: #2980b9;"></div><div style="width: 16%; background-color: #2980b9;"></div></div>	  
Song Sparrow	Gen	Summer	Moderate	<div style="display: flex; justify-content: space-between;"><div style="width: 85%; background-color: #e67e22;"></div><div style="width: 14%; background-color: #f1c40f;"></div></div>	  
	Gen	Winter	Neutral	<div style="display: flex; justify-content: space-between;"><div style="width: 12%; background-color: #e67e22;"></div><div style="width: 75%; background-color: #f1c40f;"></div></div>	  

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Swamp Sparrow	M	Summer	Moderate	18%	
	M	Winter	Neutral	47% 34%	
Eastern Towhee	F-E	Summer	High	13% 75%	
	F-E	Winter	Neutral	51% 48%	
Yellow-breasted Chat	F-E	Summer	Neutral	23% 76%	
Bobolink	G	Summer	High	47%	
Eastern Meadowlark	G	Summer	Moderate	4% 78%	
	G	Winter	Neutral	2% 76%	
Orchard Oriole	F-E	Summer	Low	64% 33%	
Baltimore Oriole	F-E	Summer	Low	81% 16%	
Red-winged Blackbird	Gen	Summer	Neutral	99%	
	Gen	Winter	Neutral	49% 29%	
Brown-headed Cowbird	Gen	Summer	Neutral	87% 9%	
	Gen	Winter	Neutral	26% 59%	
Rusty Blackbird	F-B	Winter	Neutral	39% 58%	
Common Grackle	F-E	Summer	Low	9% 90%	
	F-E	Winter	Neutral	17% 76%	
Boat-tailed Grackle	C	Summer	High	<1% <1%	
	C	Winter	Moderate	1% 6%	
Ovenbird	F-E	Summer	Moderate	80%	
Worm-eating Warbler	F-E	Summer	High	21% 38%	
Louisiana Waterthrush	F-E	Summer	Neutral	46% 46%	
Northern Waterthrush	F-B	Summer	Moderate	17%	
Blue-winged Warbler	F-E	Summer	Moderate	58% 31%	
Black-and-white Warbler	F-E	Summer	Moderate	26% 26%	
Prothonotary Warbler	F-E	Summer	Neutral	85%	
Swainson's Warbler	F-E	Summer	Low	4%	
Kentucky Warbler	F-E	Summer	Low	93%	



Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Common Yellowthroat	Gen	Summer	Low	<div style="display: flex; width: 100%;"><div style="width: 50%; background-color: #f4a460;"></div><div style="width: 49%; background-color: #fff9c4;"></div></div>	  
Hooded Warbler	F-E	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 93%; background-color: #fff9c4;"></div><div style="width: 3%; background-color: #42a5f5;"></div></div>	  
American Redstart	F-B	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 7%; background-color: #f44336;"></div><div style="width: 92%; background-color: #f4a460;"></div></div>	  
Cerulean Warbler	F-E	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 52%; background-color: #f44336;"></div><div style="width: 7%; background-color: #42a5f5;"></div></div>	  
Northern Parula	F-E	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 30%; background-color: #42a5f5;"></div><div style="width: 58%; background-color: #42a5f5;"></div></div>	  
Magnolia Warbler	F-B	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 1%; background-color: #f44336;"></div></div>	
Blackburnian Warbler	F-B	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 15%; background-color: #f44336;"></div></div>	
Yellow Warbler	F-B	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 99%; background-color: #f44336;"></div></div>	
Chestnut-sided Warbler	F-E	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 33%; background-color: #f44336;"></div></div>	
Blackpoll Warbler	F-B	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 1%; background-color: #f44336;"></div></div>	
Black-throated Blue Warbler	F-E	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 16%; background-color: #f44336;"></div></div>	
Pine Warbler	F-E	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 51%; background-color: #f4a460;"></div><div style="width: 40%; background-color: #fff9c4;"></div></div>	  
	F-E	Winter	Neutral	<div style="display: flex; width: 100%;"><div style="width: 20%; background-color: #42a5f5;"></div></div>	  
Yellow-rumped Warbler	F-B	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 6%; background-color: #f44336;"></div></div>	
	F-B	Winter	Neutral	<div style="display: flex; width: 100%;"><div style="width: 18%; background-color: #42a5f5;"></div><div style="width: 82%; background-color: #42a5f5;"></div></div>	  
Yellow-throated Warbler	F-E	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 82%; background-color: #42a5f5;"></div></div>	  
Prairie Warbler	F-E	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 82%; background-color: #fff9c4;"></div><div style="width: 12%; background-color: #42a5f5;"></div></div>	  
Black-throated Green Warbler	F-E	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 31%; background-color: #f44336;"></div></div>	
Canada Warbler	F-B	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 1%; background-color: #f44336;"></div></div>	
Summer Tanager	F-E	Summer	Neutral	<div style="display: flex; width: 100%;"><div style="width: 99%; background-color: #42a5f5;"></div></div>	  
Scarlet Tanager	F-E	Summer	High	<div style="display: flex; width: 100%;"><div style="width: 83%; background-color: #f4a460;"></div><div style="width: 14%; background-color: #fff9c4;"></div></div>	  
Northern Cardinal	F-E	Summer	Neutral	<div style="display: flex; width: 100%;"><div style="width: 92%; background-color: #fff9c4;"></div><div style="width: 7%; background-color: #42a5f5;"></div></div>	  
	F-E	Winter	Neutral	<div style="display: flex; width: 100%;"><div style="width: 98%; background-color: #fff9c4;"></div><div style="width: 1%; background-color: #42a5f5;"></div></div>	  
Rose-breasted Grosbeak	F-E	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 72%; background-color: #f44336;"></div></div>	  
Blue Grosbeak	F-S	Summer	Neutral	<div style="display: flex; width: 100%;"><div style="width: 29%; background-color: #42a5f5;"></div></div>	  
Indigo Bunting	F-E	Summer	Moderate	<div style="display: flex; width: 100%;"><div style="width: 66%; background-color: #fff9c4;"></div><div style="width: 33%; background-color: #42a5f5;"></div></div>	  
Dickcissel	G	Summer	Neutral	<div style="display: flex; width: 100%;"><div style="width: 99%; background-color: #42a5f5;"></div></div>	