

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 1,175,000 total birders in Indiana 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. Willow Flycatcher. Photo: Mick Thompson/Eastside Audubon

Future Climate and Habitat in Indiana

Across the state of Indiana, 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 6.4°C (11°F), and average temperatures during the coldest month are expected to increase approximately 4.3°C (7.8°F) from 2010 to the end of the century. Average annual precipitation is expected to increase by approximately 40 mm (1.6 in). Despite the overall increase in precipitation, available moisture is expected to decrease by 110% 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]. By the end of the century under a 3°C (5.4°F) global warming scenario, approximately 31% of the state of Indiana will transition to a different biome. At present, the largest biome in the state is Deciduous Forest, covering 70% of the state. By the end of the century, Deciduous Forest will cover approximately 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 Indiana'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 Indiana, 49 out of 148 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 24. Impacts are somewhat lessened in winter, with 6 out of 123 species vulnerable under 3°C of

warming and 1 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 Indiana, the habitat groups with the most species vulnerable to the impacts of ongoing and future climate change are eastern forest (24 species) and generalist (8 species) in summer (Figure 2). In winter, boreal forest (4 species) and marshland (1 species) groups have the most vulnerable species.

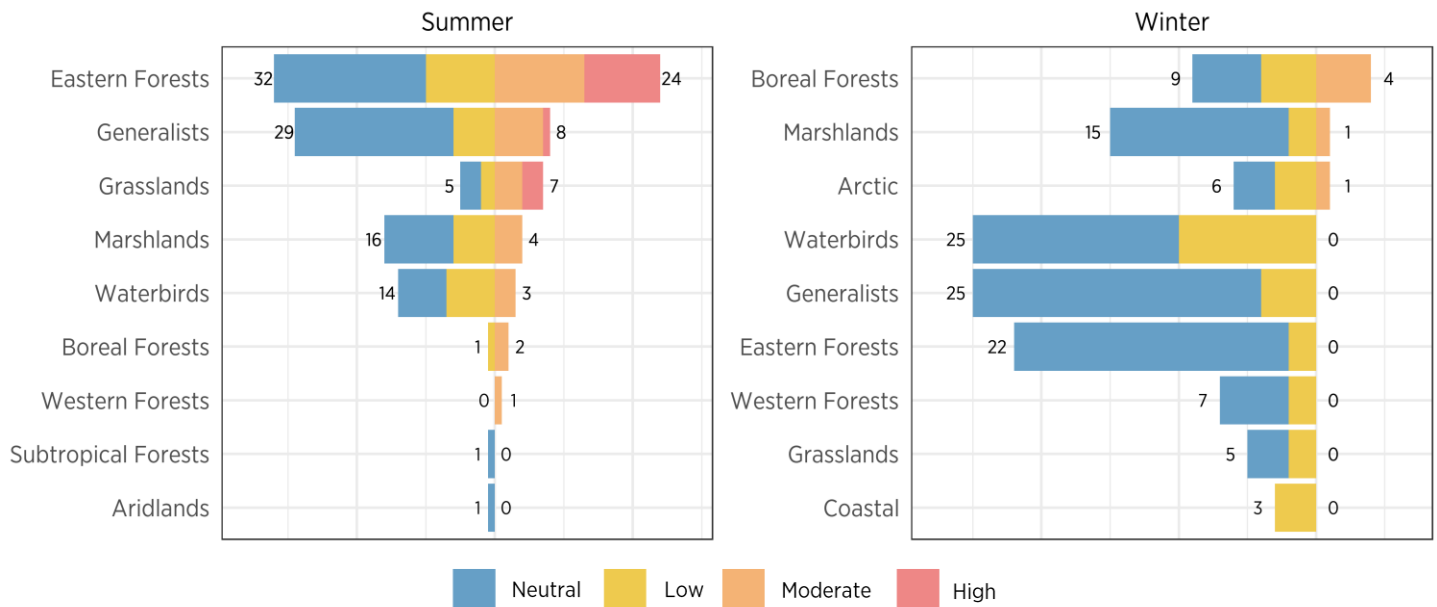


Figure 2. Number of species by their vulnerability to climate change in each habitat group under a global 3°C warming scenario. The species in each group are ones that currently live in the state, though vulnerability is assessed across the species's full North American range to better account for range-wide 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. Four climate-related threats will affect portions of Indiana (Table 1). The threat affecting both the greatest area and number of species in the state is extreme spring heat.

In Indiana, species that are most threatened by a combination of climate change and additional climate-related threats under 3°C of warming include Field Sparrow, Red-headed Woodpecker, Wood Thrush, Yellow-throated Warbler, Scarlet Tanager, and Northern Flicker. For information on threats for individual species in Indiana, see Table 2.

Climate-Related Threats (Cont.)

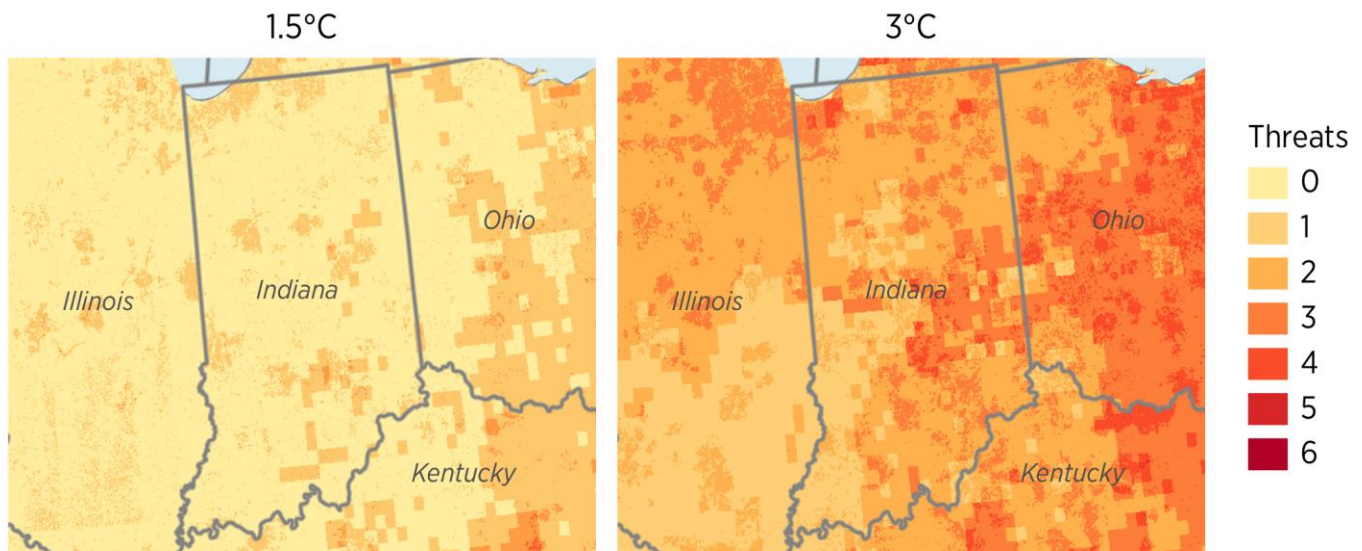






Figure 3. The number and distribution of overlapping climate-related threats under future global change scenarios of 1.5°C and 3°C. For detailed information on threats for each location in the state, refer to our online interactive tool at climate.audubon.org.

Table 1. Climate-related threats that Indiana 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
 Urbanization	1.5°C	1,374,796	7 (1)	1 (0)
	3°C	3,601,298	109 (20)	129 (3)
 Extreme Spring Heat	3°C	23,211,314	117 (23)	135 (4)
 Fire Weather	3°C	12,011,774	82 (15)	92 (3)
 Heavy Rain	3°C	7,484,069	10 (6)	7 (1)

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 Indiana 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 27% of Indiana's 208 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 Indiana

You can help protect birds and the places they need by telling your elected officials you support a future fueled by clean energy. For example during the 2019 state legislative session, the Indiana General Assembly supported the creation of 21st Century Energy Policy Development Task

Force, a 15-member panel charged with evaluating state policies concerning electric generation. This was an important step and an opportunity to tell decision makers to expand renewable energy development and energy efficiency programs at the local, municipal and state level.

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) and the scientific publications [5,8].

References

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Contact

Brooke Bateman, PhD
Senior Climate Scientist, National Audubon Society
climatescience@audubon.org

Species Projections

Table 2. Climate suitability projections in summer and winter under the 3°C warming scenario for birds in Indiana. 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 Indiana, 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 Indiana, see the project website (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
Snow Goose	W	Winter	Low	68% Worsening, 23% Stable	Development, Climate Change, Fire
Ross's Goose	W	Winter	Low	28% Worsening, 23% Stable	Development, Climate Change, Fire
Cackling Goose	M	Winter	Moderate	15% Potential extirpation, 11% Stable	Development, Climate Change, Fire
Canada Goose	W	Summer	Moderate	56% Potential extirpation, 44% Worsening	Development, Climate Change, Fire
	W	Winter	Neutral	100% Worsening	Development, Climate Change, Fire
Trumpeter Swan	W	Winter	Low	6% Potential extirpation, 20% Worsening	Development, Climate Change, Fire
Wood Duck	W	Summer	Low	87% Potential extirpation, 13% Worsening	Development, Climate Change, Fire
	W	Winter	Neutral	29% Stable, 69% Improving	Development, Climate Change, Fire
Blue-winged Teal	M	Summer	Low	7% Potential extirpation, 2% Stable	Development, Climate Change, Fire
	M	Winter	Neutral	3% Potential colonization	Development, Climate Change
Northern Shoveler	M	Winter	Neutral	15% Improving, 36% Potential colonization	Development, Climate Change, Fire
Gadwall	M	Winter	Neutral	35% Improving, 62% Potential colonization	Development, Climate Change, Fire
American Wigeon	M	Winter	Neutral	9% Improving, 27% Potential colonization	Development, Climate Change, Fire
Mallard	W	Summer	Low	94% Worsening, 4% Stable	Development, Climate Change, Fire
	W	Winter	Neutral	100% Stable	Development, Climate Change, Fire
American Black Duck	W	Winter	Low	74% Potential extirpation, 2% Worsening	Development, Climate Change, Fire
Northern Pintail	M	Winter	Neutral	30% Stable, 9% Potential colonization	Development, Climate Change
Green-winged Teal	M	Winter	Neutral	9% Stable, 23% Potential colonization	Development, Climate Change

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Canvasback	M	Winter	Neutral		
Redhead	M	Winter	Low		
Ring-necked Duck	W	Winter	Neutral		
Greater Scaup	W	Winter	Neutral		
Lesser Scaup	W	Winter	Neutral		
White-winged Scoter	W	Winter	Neutral		
Long-tailed Duck	W	Winter	Low		
Bufflehead	W	Winter	Low		
Common Goldeneye	W	Winter	Neutral		
Hooded Merganser	W	Summer	Low		
	W	Winter	Neutral		
Common Merganser	W	Winter	Low		
Red-breasted Merganser	W	Winter	Low		
Ruddy Duck	M	Summer	Low		
	M	Winter	Neutral		
Northern Bobwhite	G	Summer	Neutral		
	G	Winter	Neutral		
Ruffed Grouse	F-B	Winter	Moderate		
Greater Prairie-Chicken	G	Winter	Neutral		
Wild Turkey	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Pied-billed Grebe	M	Summer	Neutral		
	M	Winter	Neutral		
Horned Grebe	M	Winter	Neutral		
Mourning Dove	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
Yellow-billed Cuckoo	F-E	Summer	Neutral		
Black-billed Cuckoo	F-E	Summer	Low		

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
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		
King Rail	M	Summer	Low		
Virginia Rail	M	Summer	Moderate		
	M	Winter	Low		
Sora	M	Summer	Moderate		
Common Gallinule	M	Summer	Neutral		
American Coot	M	Summer	Neutral		
	M	Winter	Neutral		
Sandhill Crane	M	Summer	Moderate		
	M	Winter	Low		
Whooping Crane	W	Winter	Low		
Black-necked Stilt	M	Summer	Neutral		
Killdeer	W	Summer	Neutral		
	W	Winter	Neutral		
Upland Sandpiper	G	Summer	Neutral		
American Woodcock	F-E	Summer	Moderate		
	F-E	Winter	Neutral		
Wilson's Snipe	M	Winter	Neutral		
Spotted Sandpiper	W	Summer	Moderate		
Willet	W	Summer	Neutral		
Bonaparte's Gull	W	Winter	Neutral		
Ring-billed Gull	W	Summer	Low		
	W	Winter	Neutral		

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Herring Gull	W	Summer	Low	3% <1%	
	W	Winter	Neutral	22% 78%	  
Iceland Gull	C	Winter	Low	3% 1%	
Lesser Black-backed Gull	C	Winter	Low	5% 2%	  
Glaucous Gull	W	Winter	Low	3%	
Great Black-backed Gull	C	Winter	Low	4%	
Least Tern	W	Summer	Low	2% 6%	 
Caspian Tern	W	Summer	Low	3% <1%	  
Forster's Tern	M	Winter	Neutral	8%	 
Common Loon	W	Summer	Moderate	5%	
Double-crested Cormorant	W	Summer	Neutral	5% 13%	 
	W	Winter	Neutral	35%	 
American White Pelican	M	Winter	Neutral	14%	 
American Bittern	M	Summer	Low	1%	
Least Bittern	M	Summer	Neutral	6% 8%	 
Great Blue Heron	W	Summer	Neutral	100%	  
	W	Winter	Neutral	78% 22%	  
Great Egret	W	Summer	Neutral	17% 28%	 
Snowy Egret	M	Summer	Neutral	1% 4%	 
Little Blue Heron	M	Summer	Neutral	3% 73%	 
Tricolored Heron	M	Summer	Neutral	2%	
Cattle Egret	W	Summer	Neutral	6% 88%	  
Green Heron	M	Summer	Neutral	46% 26%	  
Black-crowned Night-Heron	M	Summer	Neutral	2% 8%	  
	M	Winter	Neutral	1%	  
Yellow-crowned Night-Heron	M	Summer	Neutral	2% 98%	  
White Ibis	M	Summer	Neutral	5%	 

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
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		
	Gen	Winter	Low		
Northern Goshawk	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		
Barn Owl	Gen	Summer	Neutral		
	Gen	Winter	Neutral		
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		

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
	F-E	Winter	Neutral	100%	
Long-eared Owl	F-W	Winter	Low	76% 5%	
Short-eared Owl	G	Winter	Neutral	74% 2%	
Northern Saw-whet Owl	F-B	Winter	Low	100%	
Belted Kingfisher	Gen	Summer	Neutral	9% 81%	
	Gen	Winter	Neutral	82% 17%	
Yellow-bellied Sapsucker	F-E	Winter	Neutral	6% 89%	
Red-headed Woodpecker	F-E	Summer	High	91% 4%	
	F-E	Winter	Neutral	66% 24%	
Red-bellied Woodpecker	F-E	Summer	Neutral	7% 81%	
	F-E	Winter	Neutral	99%	
Downy Woodpecker	Gen	Summer	Neutral	49% 51%	
	Gen	Winter	Neutral	6% 94%	
Hairy Woodpecker	Gen	Summer	Low	94%	
	Gen	Winter	Low	90%	
Pileated Woodpecker	F-E	Summer	Neutral	10% 67%	
	F-E	Winter	Neutral	63% 16%	
Northern Flicker	Gen	Summer	Moderate	79% 21%	
	Gen	Winter	Neutral	77% 23%	
American Kestrel	Gen	Summer	Neutral	56% 32%	
	Gen	Winter	Neutral	69% 16%	
Merlin	F-E	Winter	Neutral	3% 97%	
Peregrine Falcon	Gen	Summer	Neutral	40% <1%	
	Gen	Winter	Neutral	44% 45%	
Eastern Wood-Pewee	F-E	Summer	Low	94% 5%	
Acadian Flycatcher	F-E	Summer	Moderate	84% 12%	
Willow Flycatcher	F-W	Summer	Moderate	92%	
Eastern Phoebe	F-E	Summer	Low	68% 31%	

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
	F-E	Winter	Neutral		
Great Crested Flycatcher	F-E	Summer	Moderate		
Western Kingbird	G	Summer	Neutral		
Eastern Kingbird	G	Summer	Moderate		
Scissor-tailed Flycatcher	G	Summer	Neutral		
Loggerhead Shrike	G	Winter	Neutral		
Northern Shrike	F-B	Winter	Moderate		
White-eyed Vireo	F-E	Summer	Neutral		
Yellow-throated Vireo	F-E	Summer	Moderate		
Warbling Vireo	Gen	Summer	Neutral		
Red-eyed Vireo	F-E	Summer	Low		
Blue Jay	F-E	Summer	Neutral		
	F-E	Winter	Neutral		
American Crow	Gen	Summer	Low		
	Gen	Winter	Neutral		
Fish Crow	Gen	Summer	High		
	Gen	Winter	Low		
Horned Lark	G	Summer	Low		
	G	Winter	Low		
Northern Rough-winged Swallow	Gen	Summer	Neutral		
Purple Martin	Gen	Summer	Neutral		
Tree Swallow	Gen	Summer	Moderate		
Bank Swallow	Gen	Summer	Neutral		
Barn Swallow	Gen	Summer	Neutral		
Cliff Swallow	Gen	Summer	Neutral		
Carolina Chickadee	F-E	Summer	Neutral		
	F-E	Winter	Low		

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Black-capped Chickadee	F-B	Summer	Low		
	F-B	Winter	Low		
Tufted Titmouse	F-E	Summer	Neutral		
	F-E	Winter	Neutral		
Red-breasted Nuthatch	F-B	Winter	Neutral		
White-breasted Nuthatch	F-E	Summer	Low		
	F-E	Winter	Neutral		
Brown-headed Nuthatch	F-E	Winter	High		
Brown Creeper	F-W	Winter	Neutral		
House Wren	Gen	Summer	Moderate		
	Gen	Winter	Neutral		
Winter Wren	F-E	Winter	Low		
Sedge Wren	G	Summer	Moderate		
	G	Winter	Neutral		
Marsh Wren	M	Summer	Low		
	M	Winter	Low		
Carolina Wren	F-E	Summer	Neutral		
	F-E	Winter	Neutral		
Blue-gray Gnatcatcher	Gen	Summer	Neutral		
Golden-crowned Kinglet	F-B	Winter	Neutral		
Ruby-crowned Kinglet	F-W	Winter	Neutral		
Eastern Bluebird	F-E	Summer	Neutral		
	F-E	Winter	Neutral		
Veery	F-E	Summer	Moderate		
Hermit Thrush	F-W	Winter	Low		
Wood Thrush	F-E	Summer	High		
American Robin	Gen	Summer	Moderate		
	Gen	Winter	Neutral		

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Gray Catbird	F-E	Summer	Neutral	100%	
Brown Thrasher	F-E	Summer	High	100%	
	F-E	Winter	Neutral	8% 53%	
Northern Mockingbird	Gen	Summer	Neutral	34% 42%	
	Gen	Winter	Neutral	35% 55%	
American Pipit	A	Winter	Neutral	2% 93%	
Cedar Waxwing	Gen	Summer	Low	100%	
	Gen	Winter	Neutral	40% 57%	
House Finch	Gen	Summer	Low	70% 23%	
	Gen	Winter	Low	67% 25%	
Purple Finch	F-B	Winter	Low	49% 44%	
Common Redpoll	A	Winter	Low	32%	
White-winged Crossbill	F-B	Winter	Moderate	85%	
Pine Siskin	F-W	Winter	Neutral	86% 14%	
Lesser Goldfinch	F-W	Summer	Neutral	2%	
American Goldfinch	Gen	Summer	Moderate	100%	
	Gen	Winter	Neutral	100%	
Lapland Longspur	A	Winter	Neutral	3% 86%	
Smith's Longspur	A	Winter	Neutral	99%	
Snow Bunting	A	Winter	Low	96% 4%	
Grasshopper Sparrow	G	Summer	Low	37% 35%	
Chipping Sparrow	Gen	Summer	Moderate	92%	
	Gen	Winter	Neutral	23%	
Field Sparrow	F-E	Summer	High	94% 3%	
	F-E	Winter	Neutral	89% 9%	
Lark Sparrow	D	Summer	Neutral	<1% 3%	
American Tree Sparrow	A	Winter	Neutral	94% 5%	
Fox Sparrow	F-B	Winter	Moderate	32% 59%	

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Dark-eyed Junco	F-W	Winter	Neutral	100%	
White-crowned Sparrow	Gen	Winter	Neutral	62% 30%	
Harris's Sparrow	F-B	Winter	Low	13%	
White-throated Sparrow	F-B	Winter	Neutral	80% 20%	
Vesper Sparrow	G	Summer	Moderate	23%	
	G	Winter	Neutral	3%	
LeConte's Sparrow	G	Winter	Neutral	97%	
Savannah Sparrow	G	Summer	High	<1%	
	G	Winter	Low	2% 77%	
Henslow's Sparrow	G	Summer	High	73%	
	G	Winter	Neutral	26%	
Song Sparrow	Gen	Summer	Moderate	100%	
	Gen	Winter	Neutral	69% 31%	
Lincoln's Sparrow	F-B	Winter	Neutral	4%	
Swamp Sparrow	M	Summer	Moderate	1%	
	M	Winter	Neutral	41% 42%	
Eastern Towhee	F-E	Summer	High	100%	
	F-E	Winter	Neutral	29% 46%	
Yellow-breasted Chat	F-E	Summer	Neutral	44% 45%	
Bobolink	G	Summer	High	24%	
Eastern Meadowlark	G	Summer	Moderate	80% 13%	
	G	Winter	Neutral	14% 71%	
Orchard Oriole	F-E	Summer	Low	34% 57%	
Baltimore Oriole	F-E	Summer	Low	30% 49%	
Red-winged Blackbird	Gen	Summer	Neutral	100%	
	Gen	Winter	Neutral	44% 56%	
Brown-headed Cowbird	Gen	Summer	Neutral	100%	
	Gen	Winter	Neutral	89% 11%	

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Rusty Blackbird	F-B	Winter	Neutral	42% 46%	
Brewer's Blackbird	Gen	Winter	Neutral	69%	
Common Grackle	F-E	Summer	Low	70% 28%	
	F-E	Winter	Neutral	52% 36%	
Ovenbird	F-E	Summer	Moderate	1%	
Worm-eating Warbler	F-E	Summer	High	10% 1%	
Louisiana Waterthrush	F-E	Summer	Neutral	21% 48%	
Blue-winged Warbler	F-E	Summer	Moderate	19%	
Black-and-white Warbler	F-E	Summer	Moderate	<1% 72%	
Prothonotary Warbler	F-E	Summer	Neutral	76% 17%	
Kentucky Warbler	F-E	Summer	Low	17% 9%	
Common Yellowthroat	Gen	Summer	Low	100%	
Hooded Warbler	F-E	Summer	Moderate	20% 39%	
American Redstart	F-B	Summer	Moderate	98%	
Cerulean Warbler	F-E	Summer	High	23%	
Northern Parula	F-E	Summer	Moderate	23% 24%	
Yellow Warbler	F-B	Summer	Moderate	71%	
Pine Warbler	F-E	Summer	High	70%	
	F-E	Winter	Neutral	36%	
Yellow-rumped Warbler	F-B	Winter	Neutral	43% 57%	
Yellow-throated Warbler	F-E	Summer	High	40% 1%	
Prairie Warbler	F-E	Summer	Moderate	49% 13%	
Summer Tanager	F-E	Summer	Neutral	16% 54%	
Scarlet Tanager	F-E	Summer	High	99% 1%	
Northern Cardinal	F-E	Summer	Neutral	69% 31%	
	F-E	Winter	Neutral	100%	
Rose-breasted Grosbeak	F-E	Summer	Moderate	19%	
Blue Grosbeak	F-S	Summer	Neutral	16% 33%	

Species	Habitat Group	Season	Range-wide Vulnerability	State Trends	State Threats
Indigo Bunting	F-E	Summer	Moderate		
Dickcissel	G	Summer	Neutral		