Connecticut State of the Birds

125 Years of Bird Conservation Through Local Action

1898 - 2023
THE CONNECTICUT
Audubon
SOCIETY

Sharing the joys of nature for 125 years

2022

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Connecticut State of the Birds

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After over 100 years, egrets in Connecticut remain a conservation concern.
PHOTO: PAUL J. FUSCO

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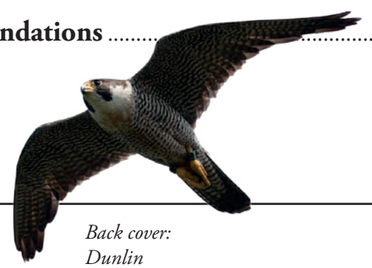


Front cover:
Snowy Egrets
PHOTO: PAUL J. FUSCO

Back cover:
Dunlin
PHOTO: JULIAN HOUGH

Above top: Black-crowned Night-Heron *PHOTO: PAUL J. FUSCO*
Above lower: Peregrine Falcon *PHOTO: JULIAN HOUGH*

INTRODUCTION

A Look Back: 125 Years and More of Assaults on Birds, and Solutions by Conservationists

In a sense, they came here to kill birds.

The region's first civic boosters were visitors from England and the Netherlands who sent reports back to Europe—come-ons, really—in the early 1600s. Vast forests, limitless fish. And birds darkening the skies, descending on meadows, crowding the bays, and huddling in great flocks along the beaches.

Birds so unwary that when you shot into a flock, they didn't fly away. In New England, the killing was relentless. "All our hunting, fishing and fowling is entirely gone," a group of Mohegans mourned in a petition to the General Assembly in Hartford in 1789.

The killing spread as the nation grew. Conservationists have been trying to catch up ever since—to the devastation left by market hunters, by plume hunters, by misguided sworn enemies of hawks, by pesticide producers, by road builders, by wetlands drainers, by land developers.

Birds were shot and sold in markets for food. "Audubon once reported a flight of 'millions' of golden plover," wrote Peter Matthiessen, in *The Wind Birds*, "of which some 48,000 were killed in a single day. The golden plover was thought to have been even more numerous than the Eskimo curlew, whose multitudes have been compared to the great flights of the passenger pigeon."

Birds were killed for feathers to bedeck women's hats. Great Egrets and Snowy Egrets in Florida suffered the worst. *Audubon Magazine* reported in 1955: " …in the nesting season of 1892, just one of the many 'feather merchants' in Jacksonville shipped 130,000 bird 'scalps' (skins with the feathers on) to New York for the millinery trade!"

Frank Chapman of the American Museum of Natural History walked along Manhattan's 14th Street in 1886 for a macabre birding expedition. "There, notebook in hand, I recorded … the names of birds which, usually entire, were seen on the hats of passing women." His list? Forty species, including Sanderling, Green Heron, and Greater Yellowlegs.

In 1892, a Florida merchant shipped 130,000 bird skins, many of them Snowy Egrets, to New York for the millinery trade.
PHOTO: PAUL J. FUSCO

Waterfowl, vanished in the 1930s when drought in the Great Plains followed six decades of poor farming practices. Prairie pothole breeding areas dried up—and the ducks and geese that had used them for 12 millennia became scarce. Topsoil blew away in the Dust Bowl.

Raptors were vermin. The first curator of Birdcraft Sanctuary in Fairfield wanted to kill accipiters; he thought they were killing songbirds at this new songbird sanctuary. The first protectors of Hawk Mountain in Pennsylvania were appalled by the number of spent shells littering the ground after years during which the north winds of autumn meant hawk-killing season.

When raptor numbers recovered, the killing resumed indirectly. Sprayed in wetlands and along coasts to control mosquitoes, DDT worked its way up the food chain to Ospreys, Bald

continued on page 10

Hats Off to the Conservationists Who Saved the Egrets and Started a Movement.

But 125 years later, wading birds are fading in Connecticut

by Milan Bull

Can you imagine Connecticut's marshes, shores, and wetlands without the graceful beauty of our long-legged wading birds, cautiously hunting the shallows for small fish and other aquatic life? I can't, but this was nearly the case at the turn of the last century when there were more egrets adorning ladies' hats than in the wild. Fortunately, strong, far-sighted women like Mabel Osgood Wright, Harriet Hemenway, and Minna B. Hall brought the issue to the public and helped turn the tide in favor of all our migratory birds. As a result of their efforts, nesting herons and egrets, after being nearly exterminated in the 19th century, rebounded along Long Island Sound and by the 1970s and 1980s had become numerous. Currently, however, they have only a very precarious hold on a few of our offshore islands.

One hundred and twenty-five years ago, the breeding plumage from egrets, by weight, was more valuable than gold, and plume hunters quickly exterminated heron and egret rookeries, killing the ornately plumaged adults on their nests and leaving the nestlings to starve. No wildlife population can withstand this kind of slaughter for long. Conservationists organized the first Audubon Societies to change the fashion industry and halt the certain extermination of, first, herons and egrets, and later many other migratory birds. Among the leaders of these conservation efforts were Harriet Hemenway and Minna B. Hall, Boston cousins who co-founded the Massachusetts Audubon Society in 1896, and Mabel Osgood Wright, who founded the Connecticut Audubon Society in 1898. By the turn of the 20th century they had joined conservationists such as Theodore Roosevelt, Gifford Pinchot, John Muir, George Bird Grinnell, and others to help pass some of the first wildlife and forestry protection measures adopted by this country. In 1918 the Migratory Bird Treaty Act was finally passed by the U.S., Canada, and Mexico and the slow recovery of our wading birds began.

Over the next 50 years wading bird numbers along the eastern seaboard gradually increased, starting with southern rookeries and generally moving up the Atlantic seaboard. In Connecticut, many, but not all, nested on brushy, offshore islands that were largely uninhabited.

The first herons in recent history began nesting on Sheffield Island in Norwalk in

PAUL J. FUSCO 3)

Black-crowned Night-Herons are still among the more common of the state's wading birds.

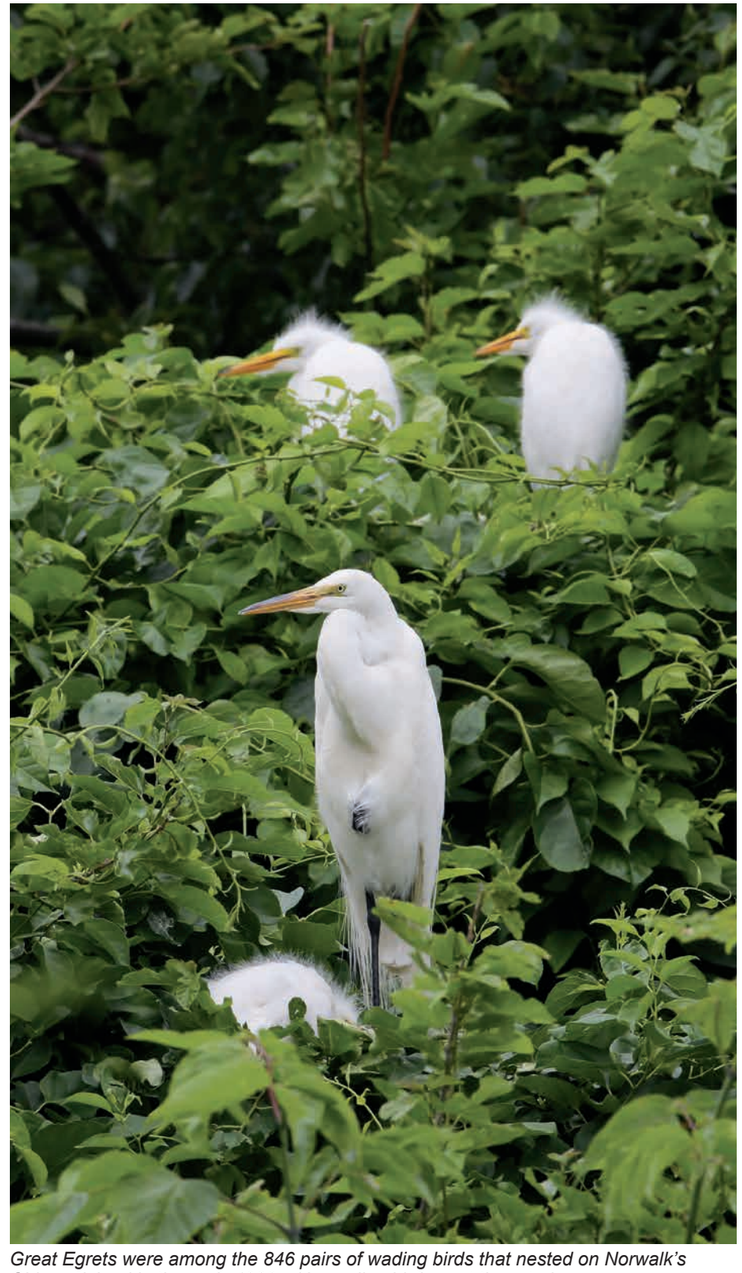
Charles Island, Milford in 2013. The Charles Island rookery was damaged by storms and has been undergoing habitat restoration in recent years.

1961—a pioneering colony of eight pairs of Snowy Egrets and 20 pairs of Great Egrets. By 1962, however, all but two Great Egrets had moved over to nearby Shea Island (then called Ram Island), apparently because of human disturbance. This colony contained 14 Great Egrets, 10 Snowy Egrets, two Yellow-crowned Night-Herons, and one Tricolored Heron. It was not until the late 1960s that a major heronry formed on Norwalk's Chimon Island. Previously, the island had been heavily used for recreation, then abandoned and posted with "no trespassing" signs. Chimon then became overgrown by dense entanglements of Asiatic bittersweet, Japanese honeysuckle, staghorn sumac, and common nettle, overtopped by maples, cherries, and ailanthus, allowing herons and egrets to colonize it. On the first census of the island in 1968, Carroll Dater, an Audubon researcher, found 10 pairs of Black-crowned Night-Herons, 25 pairs of Snowy Egrets, six pairs of Great Egrets, and one pair of Little Blue Herons.

846 Pairs

In 1971 the Saugatuck Valley Audubon Society employed David Burg as a summer warden to protect this growing colony. His data were the first to reveal an astonishing number of nesting herons. This heronry continued to grow, and a census conducted by ornithologists Fred Sibley and Noble Proctor for the Connecticut Colonial Waterbird Survey in 1977 found over 500 pairs of herons and egrets nesting here. By 1981, when the Connecticut Audubon Society studies began, the rookery had increased dramatically, with 846 pairs of wading birds of eight species, making Chimon Island the largest wading bird colony between New Jersey and Massachusetts and the only one in Connecticut. It marked the peak of wading bird abundance in Connecticut over the last 125 years.

Wading birds need isolation from people and predators, as well as a combination of habitats that include thick understory and taller trees and shrubs (herons and egrets have different nesting strategies). Interestingly, invasive plant communities such as



Great Egrets were among the 846 pairs of wading birds that nested on Norwalk's Chimon Island in the early 1980s. No wading birds nest there today.

The state-owned Charles Island in Milford is closed during nesting season in hopes of allowing wading birds to re-establish a rookery there.

PAUL J. FUSCO (6)

Tricolored Heron

Little Blue Heron

Asiatic bittersweet, Japanese honeysuckle, and ailanthus provide the major understory habitat components of our heronries now, and should be maintained and protected in those locations until a suitable native replacement can be found.

Following the peak populations listed in the 1981 survey, the major Connecticut heronries have fallen off. This decline is largely human-related. The exponential increase of raccoon populations in the 1970s was mostly due to that animal's habituation to humans and its ability to adapt to suburban environments. This eventually led to their occupation of nearby offshore islands, where they found a poultry market of wading-bird eggs and young, easily accessed by these tree-climbers. Similarly, and during nearly the same time period (and for the same reasons), white-tailed deer flourished and found the islands within easy swimming distance. They helped themselves to the understory vegetation, so critical to the protection and nesting cover of the birds.

Forty years ago nine species of wading birds nested on nine islands along the Connecticut coast. For the past two decades I've participated in the bi-annual colonial waterbird survey, joining state wildlife biologists Julie Victoria and Jenny Dickson on a state research vessel to document the number of nests and species, and where they're located. Four of the species found on those islands 40 years ago—Cattle Egret, Yellow-crowned Night-Heron, Tricolored Heron, and Green Heron—have not been recorded there in recent years (although Yellow-Crowned Night-Heron and Green Heron nest inland). The other five—Great Egret, Snowy Egret, Black-crowned Night-Heron, Little Blue Heron, and Glossy Ibis—can now be found on only five islands.

Glossy Ibis nest on only five islands in Connecticut.

Duck Island in Westbrook is one of the sound's rare, undeveloped islands. At 5.5 acres, this state-owned wildlife management area, with two long breakwaters extending north and west, is listed by the National Audubon Society as an Important Bird Area and is currently one of the largest heronries in the eastern half of the sound. About 55 pairs of wading birds of all five species nest in the dense vegetation and trees here.

Tuxis Island off Madison is an uninhabited 3.42-acre granite island owned by the Madison Beach Club. Covered in trees and dense shrubs, it hosts several species of wading birds, including Great Egret, Snowy Egret, and Black-crowned Night-Heron. Little Blue Herons have not nested here since 1997. Fortunately, Tuxis is off limits to the public during the nesting season.

Snowy Egrets were among the first wading birds to re-colonize Connecticut, in the early 1960s, following the devastation of the late 19th century.

Habitat Restoration

Charles Island in Milford is state-owned, part of Silver Sands State Park, and lies about a half mile from the Milford shoreline, connected at low tide by a long sandbar. It is designated as a Natural Area Preserve within Silver Sands for local breeding populations of wading birds, which have been reduced in numbers on the island after a series of storms, diseases, and white-tailed deer destroyed much of the breeding habitat. A few pairs of Great Egrets, Snowy Egrets, and Black-crowned Night-Herons still nest here, and the state has an active and rigorous habitat restoration plan currently being implemented on the island.

Cockenoe Island in Westport is a crescent-shaped, 27-acre island currently home to one of the largest heronries in Connecticut, with several pairs of Great Egrets, Snowy Egrets, Little Blue Herons, and Black-crowned Night-Herons occupying mostly the south and easternmost sections of the island. The herons and egrets share the island with multi-use recreation camping sites, which are largely on the western side of the crescent. The heavily vegetated eastern section, where most of the wading birds are nesting, is a dense growth of Asiatic bittersweet, Japanese honeysuckle, poison ivy and sumac, and cherry trees that help to keep the campers and dogs at bay.

Great Captain Island in Greenwich, a 17-acre town-owned island with a historic lighthouse, features a camping and picnic area on its western peninsula to which regular ferry service brings visitors in summer. The larger easternmost section, however, is home to the largest heronry in the western Long Island Sound and is protected by a land steward who lives at the lighthouse. Here over 90 pairs of herons and egrets nest during the breeding season, including Great and Snowy egrets and Black-crowned Night-Herons.

Those islands are all we have for nesting colonies — we are not making anymore islands. Sadly thus far, island heronries once abandoned have not been reoccupied by nesting wading birds, in spite of serious efforts to restore habitat and eliminate predators, at least during the last 30 or so years. Although attempts to lure herons back to previous nest sites have met with limited success, strong efforts to acquire islands when they become available, restore habitat, and control predators offer the best chance of bringing Long Island Sound's rookeries back to their former robust status and the wading birds back to their former numbers. Our shores and wetlands would be desolated without them.

* * * * *

Milan Bull is the Senior Director of Science and Conservation for the Connecticut Audubon Society.

Connecticut's Oystercatcher Revival Faces an Increasingly Murky Future

by Elizabeth Amendola

Each spring many species of shorebirds migrate north and land on the shores of Connecticut. Some stay to breed and raise their young, while others rest before continuing their journeys north. One of these is the American Oystercatcher. This large striking shorebird stands out in the seascape with its long red-orange bill and black, white, and brown plumage. Its story is one of success and hope; however, because of the increasing threat from climate change and habitat loss, its future is uncertain.

The American Oystercatcher was historically abundant along the Atlantic Coast until it was extirpated in the Northeast in the late 1800s as a result of intensive plumage hunting and egg collecting. After the passage of the Migratory Bird Treaty Act of 1918 the population began to rebound. Yet the first reported sightings of oystercatchers returning to Connecticut weren't until 1980. The U.S. Shorebird Conservation Plan lists the North American population of oystercatchers as a high priority species with high conservation concern, and the Connecticut Department of Energy and Environmental Protection lists the American Oystercatcher as a threatened breeder.

The plight of the American Oystercatcher is typical of many of the shorebirds that nest on Connecticut's beaches and in its tidal marshes, or that stop to feed and rest here during migration. Local breeding birds such as Willet and Piping Plover, and migrants such as Sanderling and Semipalmated Sandpiper, were pushed to the brink of extirpation, recovered somewhat, and now require continual vigilance to maintain and increase their populations. Researchers estimate that the population of North American shorebirds has declined 73 percent since the 1970s because of habitat loss and unregulated hunting in their Central and South American wintering grounds.

ALL PHOTOS: JULIAN R. HOUGH

80 percent of the breeding American Oystercatchers in Connecticut nest on islands in Long Island Sound.

The first range-wide population estimate of the Atlantic and Gulf Coast American Oystercatcher was conducted by the American Oystercatcher Working Group during the winter of 2002-03. The Working Group, made up of federal, state, and non-governmental agencies and scientists, used a combination of aerial and ground surveys to estimate the population at around 11,000 birds across the winter range from New Jersey to Texas. Since then, dedicated managers and biologists have been working together on management efforts, such as monitoring population trends and identifying threats to the population and the factors affecting success. To date, the Working Group estimates an overall population increase of 23 percent over the past 20 years, which testifies to the hard work and dedication of its members and partners.

Strong breeding success

In Connecticut the first comprehensive survey of the breeding population and resulting nesting success was conducted by Audubon Connecticut in 2011. The project grew in 2012 with the creation of the Audubon Alliance for Coastal Waterbirds, a partnership between Audubon Connecticut and the Connecticut Audubon Society. Over the past 10 years the Alliance, in collaboration with the Connecticut Department of Energy and Environmental Protection, The Nature Conservancy, and the U.S. Fish and Wildlife Service, has implemented conservation efforts statewide contributing to the success of the breeding population of oystercatchers and other vulnerable beach-nesting birds.

Each year the Alliance and partners work to protect nesting areas and reduce disturbance, while monitoring the breeding population of not only oystercatchers but also Piping Plovers, Least Terns, and Common Terns. Since 2012 the Alliance has recorded an increase in oystercatcher breeding pairs from 48 to around 80 in 2022 and an overall population of 200 individuals during the breeding season. (Historic numbers may have been as high as 300 pairs in the state, before coastal development ate away at oystercatcher habitat and when food was more plentiful.) The islands just off the Connecticut shore harbor 80 percent of the breeding population every year; the island birds on average have much higher nesting success than the pairs nesting on the coastal beaches. They see less human disturbance and predator pressure than those on the mainland. For these breeding sites the Alliance works with private landowners and municipalities to fence off nesting areas, reduce human disturbance, and spread awareness about the unique species calling these islands home for the summer.

Although the number of oystercatchers in Connecticut is small compared to the total Atlantic and Gulf Coast population, their unusually strong breeding success is helping to increase the total population. According to the working group, the number of chicks fledged per pair for the entire population is 0.47, just below the recovery goal of 0.5 for the rangewide population. Over the past 10 years, oystercatchers in Connecticut have produced an

Historically, Connecticut's beaches might have harbored as many as 300 breeding pairs of American Oystercatchers.

average of 0.7 fledglings per pair, consistently above the recovery goal. For a breeding population of 80 pairs, that productivity difference results in 56 young oystercatchers rather than 40. During the 2022 season the Connecticut breeding oystercatchers produced 61 fledglings, the highest ever recorded since the creation of the Alliance. This success is due in part to the tireless work of the Alliance and partners, who continually strive to improve management and better understand threats to the breeding population.

For example, the Alliance participated in an Atlantic Coast study, led by Virginia Tech, to assess the impact of different types of human disturbance on nesting success. It was determined that general beach walking and dogs on the beach had the greatest impact. As part of a pilot study, social-science-based strategies were tried at two sites in Connecticut to educate visitors and change the way they behave near critical nesting sites, reducing the impacts on beach-nesting birds. The Alliance has also been working with local municipalities and state agencies to improve

Leg bands provide information about oystercatcher migration.

enforcement of dog or motorized vehicle ordinances during the nesting season. Other examples include restricting drones near nesting areas and hosting beach cleanups. Birds perceive drones as predators and the adult oystercatchers will try to chase them off, leaving the nests and chicks susceptible to real predators. Similarly, trash on the beach will increase the number of predators in the nesting area, such as gulls, Fish Crows, and raccoons, which prey on eggs and chicks.

In 2019, Audubon Connecticut also began using remote cameras to document disturbances directly impacting nesting success, such as predation, human disturbance, and severe weather. The cameras recorded varying levels of predation from raccoons, Fish Crows, and red foxes, among other species, and disturbance from non-predatory species, such as Osprey, humans,

Walkers and dogs affect shorebird nesting success the most.

and domesticated dogs. One camera deployed on Cockenoe Island in Westport documented a severe coastal storm that resulted in a nest being washed over, moving the eggs to a new location. It was previously thought nests exposed to overwash would result in immediate failure. However, the camera captured the oystercatchers returning to incubate the nest in the new location. Both eggs hatched successfully.

For further insight into the breeding population, Audubon Connecticut, with support from partners, joined the efforts to color-band American Oystercatchers across the range. Since 1999, over 6,000 oystercatchers have been banded in the U.S. and Mexico. Banding birds helps researchers to better understand movements, habitat requirements, and survival. To date, 62 oystercatchers have been banded in Connecticut, and the subsequent re-sighting of those birds has allowed researchers to track behavior and movements during the breeding season, and identify wintering grounds.

The Milford Point rest area

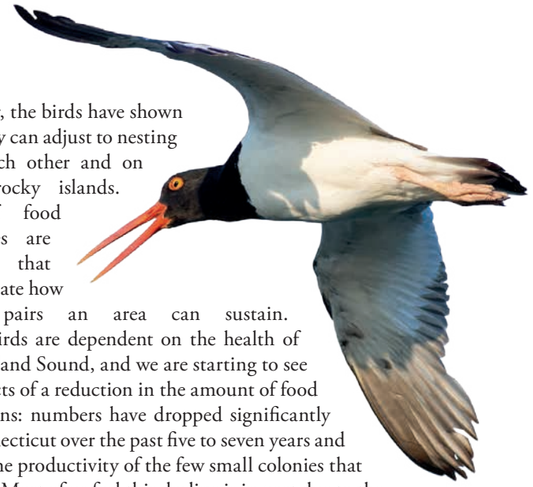
Re-sights of banded birds identified Milford Point as an important staging area not only for our Connecticut birds before they head south but also for other northern migrants to rest and refuel on the way to their wintering grounds. During fall migration the flock of oystercatchers can number from 50 to 100 birds feeding and resting as they prepare to head south. Re-sights of one of these individuals, identified by its yellow bands and unique N17 code, tell the story of a remarkable long-distance journey. Each spring Oystercatcher Yellow N17 returns to breed in West Haven, where it was originally banded in 2019. After the end of nesting season this bird joins the staging flock of oystercatchers at Milford Point preparing to head south. The next part of the journey is truly amazing, as it travels to the Gulf of Fonseca off the west coast of Central America for the winter. It was previously not known how far south the Atlantic Coast breeding population migrated, but thanks to a joint effort by multiple nonprofits from El Salvador, Honduras, and Nicaragua surveying wintering shorebirds, many of the Atlantic Coast banded oystercatchers have been re-sighted wintering in the Gulf of Fonseca.

A difficult future?

This amazing long-distance journey is not unique to oystercatchers, as many other shorebirds travel the length of the Americas every year. Red Knots, for example, travel nearly 20,000 miles from breeding to wintering grounds. Every stop along the way is critical for these birds. Effective conservation needs to be range-wide and collaborative with international partners. For example, efforts have been made to support stronger hunting regulations in the wintering grounds of Central and South America. Coastal industry also poses a threat; however, conservationists have been working with shrimp farmers in the Gulf of Fonseca to implement better management practices to preserve the foraging habitat for many wintering shorebirds, including American Oystercatchers.

Author Elizabeth Amendola measures an oystercatcher's leg.

As for future population growth of American Oystercatchers in Connecticut, I feel the real limiting factor is food availability. Sea level rise will reduce the amount of suitable nesting habitat; however, the birds have shown that they can adjust to nesting near each other and on small rocky islands. But if food resources are limited, that will dictate how many pairs an area can sustain. These birds are dependent on the health of Long Island Sound, and we are starting to see the effects of a reduction in the amount of food with terns: numbers have dropped significantly in Connecticut over the past five to seven years and so has the productivity of the few small colonies that remain. Most of us feel this decline is in part due to the lack of forage fish these birds depend on in the Sound. If the average temperature of the Sound continues to increase, we may see a decline in availability of the mollusks American Oystercatchers depend on, which could result in a decline in their numbers.



For now, though, the recovery of the American Oystercatcher population is a success story and a testament to the collaborative effort by many organizations, agencies, researchers, and volunteers across multiple states. But the work is not done. Habitat loss, coastal development, human disturbance, high predator pressure, and vulnerability to sea level rise have kept the population low and threaten the long-term survival of not only this species, but many other shorebirds as well. As a result, the Audubon Birds and Climate Change Report lists the American Oystercatcher as climate endangered. Habitat restoration, coastal resilience projects, and strong international partnerships may be the next chapter in the oystercatchers' story, ensuring that this amazing species is thriving on our shores for many more generations to come.

* * * *

Elizabeth Amendola is the Coastal Program Coordinator for Audubon Connecticut.

The hard work of the Audubon Alliance has resulted in a nesting productivity rate higher than the national average.

Introduction, continued from page 1

Eagles, and Peregrine Falcons, preventing them from laying eggs with sufficient calcium to withstand their own weight during incubation. Those three species and others soon seemed to be facing extinction.

Wetlands were drained and filled. New highways led to new suburbs built on what had been forests and meadows.

And birds became even scarcer. In 2019, a team of ornithologists demonstrated in the journal *Science* that there were about three billion fewer birds in North America than there were in 1970. Thirty percent of the North American avifauna had disappeared.

10.3 billion birds in 1970.

7.3 billion birds now.

"You don't publish a paper like that and then go back to your day job doing science," said Peter P. Marra, Ph.D., one of the *Science* report authors and the director of Earth Commons, Georgetown University's Institute for Environment and Sustainability. "You start scratching your head and thinking what do we do to help these species recover. We came to the conclusion that conservation and the way we're doing it, it's not enough. It's not working. And we need to reimagine what we're doing for bird conservation."

In 2023, the Connecticut Audubon Society will celebrate its 125th anniversary. It coincides with the newest and biggest challenge—climate change. In this *Connecticut State of the Birds* report, we look at the conservation history of five groups of birds, emphasizing their status now, with a look toward a hard-to-predict future. For our recommendations, see page 21 of this report.

Suffice it to say, climate change is a challenge we can't avoid. No statewide conservation organization or its members can do it all. But success might be measured in local progress that adds up to big achievements.

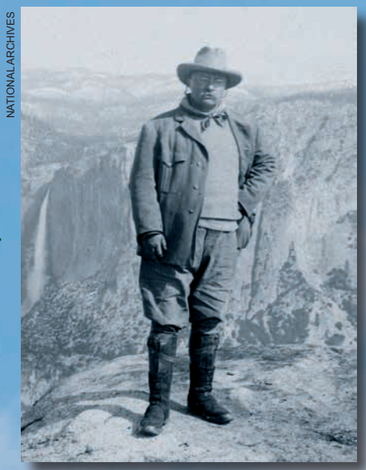
Bald Eagle and background photos: PAUL J. FUSCO

Responses to Bird Crises


CONNECTICUT AUDUBON SOCIETY

1898

The Connecticut Audubon Society, which celebrates its 125th anniversary in 2023, was founded in 1898 by Mabel Osgood Wright of Fairfield as part of a nationwide movement to end the feather trade.


NATIONAL ARCHIVES

1903

President Theodore Roosevelt created the first National Wildlife Refuge, in Florida. The fish and wildlife refuge system has since grown to encompass 568 refuges, including three that are all or partly in Connecticut.


CONNECTICUT AUDUBON SOCIETY

1914

The Connecticut Audubon Society created Birdcraft Sanctuary in 1914, following the creation of a bird sanctuary in Meriden, New Hampshire. They are the earliest known private bird sanctuaries. Birdcraft was named a National Historic Landmark in 1993.


PAUL J. FUSCO

PAUL J. FUSCO

1918

The Migratory Bird Treaty Act of 1918 provided the first broad-based protection from harm for songbirds and other non-game birds. It was amended in 1972 to include raptors.

1934

The Migratory Bird Hunting Stamp Act of 1934 required waterfowl hunters to buy "duck stamps," with the funds earmarked for wetlands conservation and waterfowl protection.


PAUL J. FUSCO

1940

Congress passed the Bald and Golden Eagle Protection Act.


PAUL J. FUSCO

1962

Rachel Carson published Silent Spring, *warning of the dangers of DDT and other chemicals in the environment. It is generally regarded as the inspiration for the modern environmental movement.*


PAUL J. FUSCO

1972

The United States banned the use of DDT in 1972. Over several decades and much restoration work, the Ospreys, Bald Eagles, Peregrine Falcons, Brown Pelicans and other species affected by DDT made a full recovery.


PAUL J. FUSCO

1973

The Endangered Species Act became law.


PAUL J. FUSCO

2019

A report in the journal Science *showed that since 1970, the number of birds in North America has fallen by about 30 percent. Many of the organizations represented by the authors of the report are collaborating on a plan that they hope will serve as a blueprint for restoring birdlife.*

The Decline of Native Birds? The Fault Lies Not in Our Starlings but in Ourselves

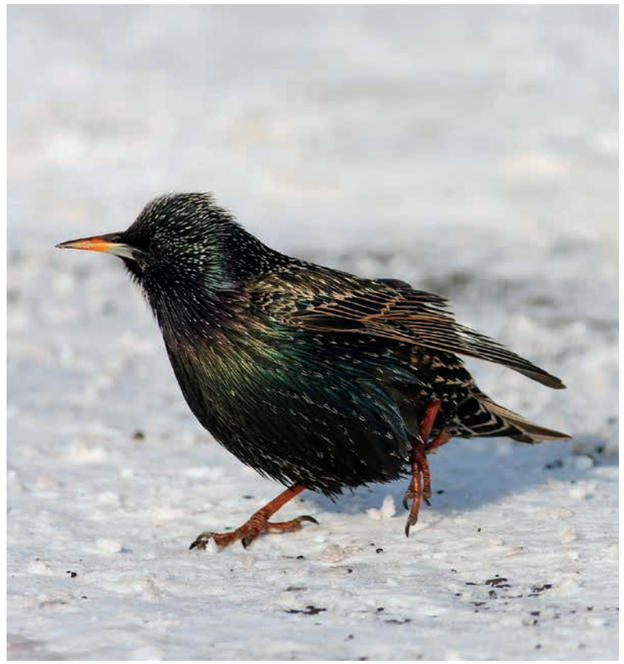
by Julia Zichello

Manhattan's Central Park is a key historical location in the history of European Starlings in America. The well-known Shakespeare connection however might be a tall tale.

I have lived my whole life in New York State. But the first time I saw an Eastern Bluebird—the State Bird of New York—I was in Connecticut. The leafless tree branches on Thanksgiving Day provided the perfect neutral backdrop for that dreamy blue, so vibrant that it was almost like ultramarine right out of the paint tube. Wow!

I have been studying European Starlings since 2016, mostly from New York City. They are one of the world's most widespread invasive avian species, and when Eastern Bluebirds became rare in North America 50 years ago, starlings bore some of the blame. They had arrived in New York City in 1890, and again in 1891. Around 100 birds were released in Central Park by the president of the American Acclimatization Society, Eugene Schieffelin. The purpose of this organization was to bring plants or animals that were thought to be useful or beautiful from Europe to the United States. The first starlings were likely brought to North America from England, though their full native range extends across Europe and Asia, east to Mongolia and south to North Africa. Starlings were also introduced to South Africa, Australia, and New Zealand in the 19th Century, and more recently to South America, with the species now occupying a global range of approximately 14.8 million square miles.

The well-worn bird lore is that Schieffelin brought starlings to the United States because he wanted every bird that was mentioned in Shakespeare to live in Central Park. Starlings were mentioned only once, in *Henry IV, Part 1*, and not in a positive way: that a starling should be taught to repeat the name of the King's enemy Mortimer over and over, to drive the King mad. But despite the



The starling's global range covers 14.8 million square miles.

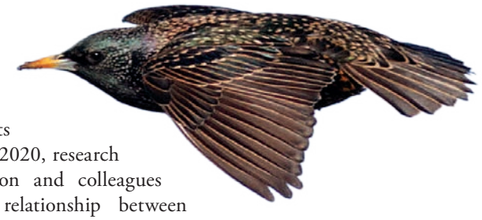
ALL PHOTOS: JULIAN R. HOUGH

Recent research indicates that Eastern Bluebirds are not negatively affected by European Starlings.

memorable and scoff-inducing connection between Shakespeare, Schieffelin, and starlings, there is no primary source for this idea, and it has been recently refuted by several scholars. So, as much as people love a sensational blame-gamey tale, this one is probably not to be.

Today, just from Schieffelin's certainly misguided but perhaps non-Shakespearean introductions, there are an estimated 93.3 million starlings in North America. They have spread from New York to California and from Alaska to Mexico. Starlings cause a lot of trouble. They collide with aircraft, decimate fruit trees and agricultural crops, steal food from livestock, spread infectious diseases through their guano, and disappoint birdwatchers. To know them is to hate them. And one of the oft-repeated ecologically minded reasons to dislike them is that they outcompete native bird species, such as the Eastern Bluebird—and *Sialia sialis* with its impossibly sweet face is the perfect victim. But let's look at the data.

Historically, several accounts have reported starlings aggressively evicting cavity-nesting birds such as Northern Flickers, Eastern Bluebirds and Red-bellied Woodpeckers. You



may even have one of these accounts yourself. But in 2020, research by Jessica Barton and colleagues examined the relationship between starlings and 19 cavity-nesting species (including Eastern Bluebirds) in urban and rural locations in and around Chicago. Despite predictions to the contrary, none of the species in this study were negatively correlated with starling populations. Not even bluebirds. In 2012, Amelia Koch and colleagues recorded data from 622 nests and found only a modest effect of starlings on nest abundance, clutch size, and nest success of Mountain Bluebirds *(Sialia currucoides)* in British Columbia.

And from a broader-scale population perspective, Walter Koenig conducted a study that used over 100 years of data from the Christmas Bird Count and the North American Breeding Bird Survey to determine whether the population size of several cavity-nesting species (including Eastern Bluebirds) declined when starlings first arrived. The only group of species which showed a statistically significant but slight decline due to starlings were sapsuckers.

Of course, not all nesting cavities are equal in size or substrate, and they can be found in different habitats—in trees, or in a mailbox, or under the metal siding of buildings. And this means that ideally when it comes to starlings and bluebirds, never the twain shall meet. In the 1960s and '70s, a great grass-roots conservation effort began to design nest boxes specifically sized to accommodate bluebirds, which is still ongoing. This helped bluebird populations, which are now ranked of low conservation concern with an estimated population size of 21 million.

Several months after seeing my first bluebird in Connecticut, I saw a group of starlings circling, landing, and seemingly right at home, at a farm in Sherman. And they were joined by another familiar invasive silhouette, pigeons.

Which brings me to a further aspect of starling troublemaking, one that would never be anecdotally or statistically described as modest: their presence and impact on farms throughout the country. One of the most dramatic differences between starling diet in the U.S. and their native range is the intensity of their foraging at dairies and feedlots in the U.S. and consuming substantial amounts of food from livestock. They eat grain-based feed consisting of various combinations of grain, silage, hay, and high energy fat nuggets. Since 1960, corn production in the U.S. has increased exponentially, which enabled a concurrent expansion of the cattle industry. By the 1960s, feedlot operators in several states were reporting starling disturbance. Starling flocks on U.S .farms and dairies can exceed 10,000 birds at one time, and in 2000 it was estimated that they cause $800 million dollars of annual lost revenue across the country. Starlings can obtain up to half of their winter diet from these facilities, and the U.S. Department of Agriculture actively works to reduce starling damage on farms and dairies.

So, perhaps the species with the hardest time adapting to the presence of starlings is not a bird at all.

If you are reading this, you are likely already aware that many migratory and grassland bird populations are in peril because of

JULIAN R. HOUGH

In some city areas, starlings are the only birds to observe.

human-induced climate change and habitat disturbance, but starling populations in North America and in their native range are also declining. In Europe, the population has declined 68 percent since 1980, in part because of a shift in farming practices. In North America, the population size has declined almost 50 percent since 1970. European Starlings remain the second largest bird population in the world at 1.3 billion, second only to House Sparrows at 1.6 billion. This is not to say that we should be actively concerned about the decline of the invasive starling populations in the same way that resources and conservation efforts focus on shorebirds and vulnerable migratory species, but that the weight of anthropogenic pressures such as climate change and habitat disturbance is everywhere. And, at this point, blaming starlings for the problems of native birds may just be distracting us from the primary villain: ourselves.

So, when it comes to starlings, I really hesitate to roundly hate. Not because their deep iridescent green and purple plumage shimmers modestly in sunlight, or because their beaks turn a joyful yellow in the breeding season, or even because they fly in astonishing undulating flocks called murmurations. But because this perspective does not reflect the nuance or complexity of our ongoing ecological entanglement with this species, which is worthy of discussion and continued research. And in urban settings, starlings are sometimes the only bird on the street (besides pigeons and House Sparrows). To observe. To learn from. Singing loudly along with the noise of the traffic. Swooping up and reminding us that there is a sky. And making you feel kind of good, as birds often do. We just have to be smart about it.

* * * *

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PAUL J. FUSCO

Vulnerable to Wetland Loss but Responsive to Conservation Work, Waterfowl are Doing Well in North America, For Now.

by Paul Schmidt

PAUL J. FUSCO

The number of breeding pairs of Mallards has fallen in Connecticut.

Waterfowl have captured the attention and support of people for generations. Many of us saw this charismatic suite of species at an early age at a local park, lake, or marsh, were mesmerized by the colors and behaviors, and wondered where these birds go and what they do when not in our "backyard." For countless numbers of us, those first experiences inspired a lifelong passion for birds and the environment. The annual arrival, seasonal residency, and reliable departure of geese and ducks continue to provide the beauty and wonder that maintain that passion.

Over the last 125 years waterfowl have been particularly vulnerable to habitat loss and other pressures. But they have also responded to sustained conservation work. Whether conservationists can now respond effectively in the face of many environmental challenges, including climate change, is an open question.

North America's ducks and geese have benefited from two conservation awakenings. The first was the realization in the late 1800s that unregulated shooting to meet the demands of market hunters was decimating a number of species. Then in the 1930s, the plummeting populations of the infamous Dust Bowl days showed what can happen when critical breeding and migratory habitats are severely degraded. Fortunately, conservationists led a multifaceted effort to restore and protect important habitats and to develop a sustainable harvest structure. Congress, multiple administrations, and the American people invested significant resources in science and conservation to ensure that waterfowl populations recovered and their habitats were secured. Dozens of national wildlife refuges were established for waterfowl throughout the flyways. Farm policy and practices changed to address the loss of habitat. Hunters were asked to fund key programs (e.g., Migratory Bird Hunting and Conservation Stamp) and to adopt hunting practices that could sustain the populations and leave behind the days of overexploitation. It wasn't long before new technologies, such as aerial surveys and banding programs, began to provide important information on which to make sound decisions.

All these important advances in habitat protection and in data collection and analysis helped increase waterfowl populations. They also allowed conservationists and managers to document the bottom falling out again in the 1980s. The cause was a prolonged drought that dried up waterfowl breeding grounds in the prairies. Recovery required more investment in habitat conservation and more hunting restrictions. Greater emphasis was placed on the importance of wetlands. Programs and laws such as the Clean Water Act, the North American Wetlands Conservation Act, the U.S. Farm Bill, and the North American Waterfowl Management Plan spurred a recovery that began in 1993 and continues to this day. Scientists designed a more scientific and objective method for developing hunting regulations called adaptive harvest management. This strategic process provided a sound framework of population monitoring, assessment, and evaluation, thus ensuring that the harvest of waterfowl would sustain the recovery and indeed help prevent another significant population decline. This work continues to provide the bedrock of recent success.

While the general status of waterfowl in North America is now very good, serious concerns remain with some species or regions. First, the good news: dabbling and diving ducks have generally been doing well over the past three decades, registering high populations and positive trends. Wood Ducks in Connecticut and throughout New England, for example, are thriving. Most populations of geese are at record levels and have shown positive trends for several decades. Snow Geese and White-fronted Geese, for example, are more abundant throughout the middle of the continent and have shown remarkable expansion into new habitats. The species that nest in Alaska's Arctic have recovered from their low populations in the '90s, but vigilance is critical if they are to remain healthy.

PAUL J. FUSCO (6)

Mallards were a rare migrant to Connecticut in the mid 1800s, and began to nest here only in the 20th century.

Conversely, many species of sea ducks (including eiders, scoters, and Long-tailed Ducks) are poorly monitored; they are likely well below population goals and are experiencing declines. As reported in the 2021 *Connecticut State of the Birds*, the giant rafts of Long-tailed Ducks and White-winged Scoters that winter off southern New England, including in Long Island Sound, have gotten noticeably smaller over the years. Scoter numbers from the mid-to-western Sound fluctuate, depending on the surf clam distribution. Climate change has increased ocean temperatures, likely causing reduced food availability and rapidly changing breeding habitats. Concerted efforts to stem this trend for sea ducks is critical.

Some dabbling ducks in the Atlantic Flyway continue to trend downward. American Black Ducks have been at a low population level for a long period, prompting several decades of hunting restrictions. Breeding black ducks are few and far between and have diminished as development continues to impact important habitats on the coast and inland. Fieldwork and analysis for the current Connecticut Bird Atlas show that the number of nesting pairs of American Black Ducks in the state has declined since the first Atlas, published in 1994. The annual Christmas Bird Count found more than 13,500 American Black Ducks in Connecticut in 1972-73, the peak for a 70-year span, but barely over 3,000 in two of the past four years.

Studies are being conducted to understand why Mallards in the Atlantic Flyway (particularly in the mid-Atlantic and southern portions) have also been declining. Breeding Mallards in New England are relatively stable, although data supplied by the Connecticut Department of Energy and Environmental Protection reveal that the three-year rolling average of nesting pairs in Connecticut fell by 34 percent from 2000 through 2020—from an average of 17,823 to 11,676. Mallards are interesting for another reason—until relatively recently they did not breed in Connecticut. In their 1990 book *Connecticut Birds*, Joseph Zeranski and Thomas Baptist report that it was a rare migrant to the state in the 1860s-1880s, and started to nest here only in the 20th century after pen-raised birds were released.

Elsewhere, Mottled Duck is one of three waterfowl (along with King Eider and Black Scoter) identified by the Road to Recovery project as a priority requiring urgent conservation because of large population losses. (Road to Recovery is the multi-agency consortium working to find solutions to the loss of three billion birds in North America over the past 50 years, first reported in 2019 in the journal *Science* and examined in the 2021 *Connecticut State of the Birds* report.) Mottled Duck have an inherently small population level and range (the southern parts of the Atlantic and Mississippi flyways, in particular Florida and the coast of the Gulf of Mexico), so vigilance is important to maintaining these birds.

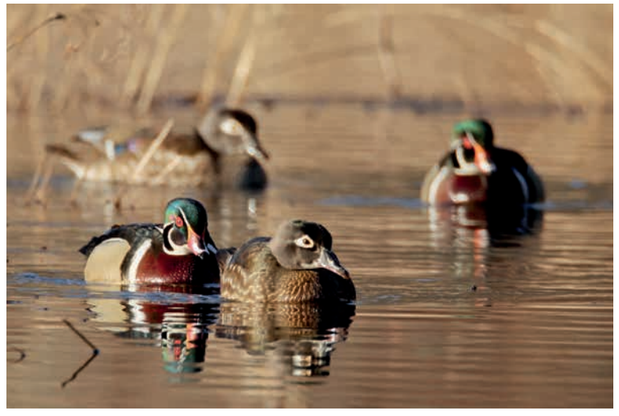
In the Pacific Flyway, waterfowl populations are being severely impacted by the regional droughts and the redistribution of water for human consumption, farming, fish, and endangered species. Recent years of extreme drought in the West and Prairie Pothole regions offer a glimpse into our future under a warming climate. The need to increase water supplies and maintain critical wetlands is key to maintaining healthy populations of important continental waterfowl resources.

The real take-home message from the story of waterfowl in North America is that we can make a difference in recovering bird species and populations. We must have the collective will to cooperate throughout the birds' annual cycle: to investigate the causes of declines and develop conservation treatments to reverse them, to develop government policies and programs to minimize detrimental human activities, and to build public-private partnerships to protect and restore key habitats. This story for waterfowl demonstrates that when we work in unison with a sense of urgency, we can restore populations.

* * * * *

Paul Schmidt has over 40 years of experience in wildlife conservation. He is currently the Director of Road to Recovery, Saving Our Shared Birds and formerly served as Chief Conservation Officer for Ducks Unlimited and the Assistant Director, Migratory Birds for the U.S. Fish and Wildlife Service.

Black Scoters are a conservation priority.



Among the good news, Wood Ducks are thriving in Connecticut.

Long-tailed Duck numbers are down in the winter waters of southern New England.

50 years ago, the Christmas Bird Count found 13,500 American Black Ducks in the state. In recent years there have been barely more than 3,000.

Raptors Are Back and in Good Shape. The Effort it Took Was Enormous

by Brian Hess

Raptors like this Peregrine Falcon, along with Ospreys and Bald Eagles, represent an enduring success story in Connecticut. They faced extinction in the 20th century but are now relatively secure.

Bald Eagles, Peregrine Falcons, and Ospreys have been the focus of successful conservation work over the past half-century. Before that, they were shot for sport, had their habitats encroached upon by humans, and along with many other species, experienced massive population declines caused by the insecticide DDT. Their recent history is evidence that with proper, timely action, imperiled species can recover. Following a concerted effort by individuals, private organizations, and regulatory agencies to establish policy solutions and legal protections based on solid science, the birds are now found statewide and throughout their historic ranges.

Recent history has taught us that these raptors are key indicators of waterway health, pollution, and deeper environmental issues. Ospreys, eagles, and Peregrines are easily identifiable in urban and suburban spaces, which makes them ideal ambassador species to engage the attention of the public, particularly beginner birders and volunteers. Volunteers have been essential to the Connecticut Audubon Society's Osprey Nation citizen science project, which monitors and maps Osprey nests throughout the state; and to the Midwinter Eagle Survey run by the Connecticut Department of Energy and Environmental Protection, which counts eagles in Connecticut in early January each year.

Peregrines, Ospreys, and eagles represent not only an integral part of Connecticut's natural heritage, they are also culturally and historically relevant. Ospreys and Peregrine Falcons are distributed worldwide. Peregrines are used for falconry, a practice dating back millennia. Ospreys were revered among some Indigenous cultures in North America. Bald Eagles are limited to North America, where they are embedded in the stories, symbols, and practices of Indigenous nations across the continent. Bald Eagles were codified as the national symbol of the fledgling United States in 1782.

Before DDT, these raptors and others were persecuted as a threat to game and property, and larger birds like Bald Eagles and vultures were killed simply because they were large, easy targets. In addition to direct persecution, Bald Eagles and Ospreys were competing with human development for habitat along waterways. Both species require trees capable of supporting very large nests directly along coasts, rivers, and lakes. In the case of Ospreys, they also need nest structures that afford visibility in all directions, away from other vegetation. These sites also became targets for coastal development, with land clearing for houses, commercial areas, and highway corridors. As a result, nesting opportunities for eagles and Ospreys decreased.

In 2022, Bald Eagles nested in 67 of Connecticut's 169 towns..

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Those threats were compounded and eclipsed by the introduction of DDT and the ecosystem-wide impacts that it brought about. DDT's properties as a broad-spectrum insecticide were first demonstrated in 1939. The chemical was approved for agricultural use in the United States in 1945 and was deployed worldwide to curb the devastating impacts of malaria. Paul Herman Müller, the chemist who discovered DDT's insecticidal properties, was awarded a Nobel Prize in 1948.

Despite concerns, government policy and agricultural practices drove widespread application of the chemical across the United States. DDT worked its way throughout the food web, accumulating in fish and other animals that raptors preyed on. It caused the birds to lay eggs with shells so thin they broke during incubation. As the impacts became more apparent, scientists and public health officials cautioned about the overapplication and overreliance on DDT and other insecticides. Their advocacy, the decline of natural systems, and human impacts inspired Rachel Carson to write *Silent Spring*. Published in 1962, it warned of the dire ecological consequences of pesticide use. As a result of *Silent Spring* and the ensuing public concern, Connecticut convened a Pesticide Advisory Board, which began recommending alternatives to DDT. Many towns restricted the use of DDT, and the Connecticut Agricultural Experiment Station collected data from "sprayed" and "unsprayed" areas of the state, finding that DDT had worked its way into the food webs of both. In 1972, the newly formed Environmental Protection Agency banned most uses of DDT nationwide.

As DDT levels decreased, a barrier limiting reproductive success was removed, but this action was not enough for recovery. The Endangered Species Act, passed in 1973, created a framework to support the protection and recovery of eagles, Ospreys, and Peregrines. The recovery work of federal and state agencies was supported by the constant vigilant efforts of private organizations and academic and volunteer groups dedicated to species recovery. Volunteer organizations like the Bald Eagle Study Group were of critical importance to state efforts to recover the population. Volunteer work monitoring eagles, falcons, and Ospreys continues to this day.

Since their first post-DDT nest in 1992, Bald Eagles have become an increasingly common year-round sight along the state's major river systems, inland lakes, and coastal zones. In winter, they congregate along open waterways looking for food. During spring and summer, Bald Eagles nest in all eight counties in Connecticut. Monitoring by the Department of Energy and Environmental Protection's Wildlife Division in 2022 found at least 79 active nesting territories in 67 towns, a dramatic increase

Connecticut Audubon's Osprey Nation program has mapped more than 800 Osprey nests in the state.

Litter like balloons or monofilament fishing line are an ongoing threat. Lead, rodenticides and other poisons continue to threaten raptors.

over the 30 years since the first post-DDT nest in the state. Bald Eagles were removed from the federal endangered species list in 2007 but are still listed as threatened in Connecticut.

Peregrine Falcons have similarly benefited from protection and conservation and have recovered in the state. They were not found in the Connecticut Breeding Bird Atlas surveys from the 1980s, but by 2022 there were 12 known active nesting territories, in 12 towns. While some pairs nest on natural or man-made rock faces, Peregrines have proved to be extremely adaptable and are well established members of the ecological community of urban wildlife. They nest on tall buildings, power plants, and tall bridges, keeping the resident pigeons at bay and taking advantage of a host of species that use these urban areas along migratory routes. Although their numbers have increased, they are still listed as threatened on the Connecticut endangered species list.

Ospreys represent a truly remarkable conservation success story. The proliferation of cell phone towers has provided expansive new opportunities for the species to flourish. Ospreys are common throughout coastal Connecticut, and they can be seen breeding along most waterways in the state. In addition to hundreds of man-made nest platforms, Ospreys have appropriated billboards, power poles, and cell towers across the state to expand their numbers. The Connecticut Audubon Society's Osprey Nation program has mapped over 800 nesting pairs across the state.

While these species are widespread, threats remain. Recent research led by Cornell University has suggested that lead contamination has slowed the recovery of Bald Eagles and depressed their reproductive output. Bald Eagles and raptors that scavenge or eat small mammals are also susceptible to secondary toxicity from second generation anticoagulant rodenticides, and more research is necessary to better understand the extent and impacts of these compounds. Bald Eagles and Ospreys are also affected by plastic pollution in waterways. Specifically, discarded monofilament line presents an entanglement hazard that results in disfigurement, infection, and death.

While monitoring continues, these three raptor species represent a concrete and enduring conservation success story, demonstrating that through science, policy, and conservation actions, threats can be addressed and species recovered. This hope of helping wildlife for future generations is the motivating principle behind Connecticut's Wildlife Action Plan and the Recovering America's Wildlife Act, which would dedicate funding and plan conservation actions to protect wildlife for future generations.

* * * *

Brian Hess is a wildlife biologist with the DEEP Wildlife Division. Originally from southeastern Pennsylvania, he has worked with a wide range of birds including ducks, condors, and prairie-chickens. He has worked for the agency's Wildlife Diversity Program since 2014.

Peregrine Falcons have become urban dwellers.

JULIAN R. HOUGH

RECOMMENDATIONS & ACTIONS

For All Wildlife

- The Recovering America's Wildlife Act passed the House of Representatives in June 2022. We now call on the U.S. Senate to pass it. RAWA, as it's known, has become one of this report's perennial recommendations, with good reason. This bill would direct some $1.3 billion of existing revenue annually to states to fully implement their Congressionally mandated Wildlife Action Plans. Connecticut would receive about $12.6 million each year from the fund—an almost 10-fold increase in what it spends on the plan now.
- Land acquisition remains the best way to protect habitat. Connecticut must fully fund and protect the Community Investment Act as a source of open space funding.
- Similarly, state officials should continue to increase funding for the Open Space and Watershed Land Acquisition Grant Program and the Recreation and Natural Heritage Trust Program, and look for new and innovative ways to fund land conservation and stewardship.

Wading Birds

- Promote and encourage vegetative nesting structure on all islands used by wading birds. This includes invasive species such as Asiatic bittersweet, Japanese honeysuckle, porcelain berry, and multiflora rose, until native species can thrive and provide the necessary structure and protection.
- Consider planting red cedar, black cherry, chokecherry, sassafras, hackberry, and staghorn sumac on those islands where the vegetation has been destroyed by storms and disease.

- Increase efforts to eliminate predation, especially by raccoons, and remove white-tailed deer whose overbrowsing destroys nesting habitat..
- Prioritize the acquisition of privately owned but uninhabited islands as they become available.

Waterfowl

- Habitat for ducks and geese in New England is so limited that whatever can be protected should be. Continent-wide, it is critical to protect breeding habitats in the prairies of Canada and the U.S. through farm policy and wetlands protections, including restoring the protections under the Clean Water Act. Wintering habitat along the Gulf Coast needs massive investment to protect waterfowl.
- Purchase Duck Stamps—officially, Migratory Bird Hunting and Conservation Stamps—both state and national. You don't have to be a duck hunter to do so. The funds from these sales go toward protecting important bird habitat throughout the country and in Connecticut.

Raptors

- Continue protecting active nests from disruptive human disturbance. We specify "disruptive" because so many of our raptors are essentially urban wildlife and are adapted to living closely with humans and their disturbance.

- Continue public education and recycling efforts to reduce the amount of monofilament and other litter/pollution that presents an entanglement hazard.
- Continue to monitor and research the prevalence and impacts of anthropogenic environmental toxins like lead, PFAS, and anticoagulant rodenticides.

American Oystercatchers and Other Shorebirds

- Habitat and food are the keys. Oystercatchers need an ample supply of shellfish, which themselves are crucial to maintaining water quality. Support legislation to improve the health of Long Island Sound to ensure shellfish populations are abundant.
- Shorebirds need healthy coastal habitat for nesting, and to rest and feed during migration. Continue efforts to protect and restore open space along the sound.
- Continue to make visitors aware of how their behavior on the state's beaches can affect the well-being of shorebirds.
- Expand the Audubon Alliance's coastal waterbird conservation work to better steward nesting and migrating shorebirds along the coast.

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