

WILDLINES

New Hampshire Fish and Game's quarterly newsletter of the Nongame and Endangered Wildlife Program



A Positive Summer for NIGHTHAWKS

The state-endangered common nighthawk is a nocturnal bird that loops and glides to snatch up flying insects at dawn and dusk. Nighthawks nest on the ground in natural conditions but on flat rooftops in urban environments. Its peent call resembles that of the American woodcock. A male displaying loudly and persistently with calls and regular dives at a Concord site, resulting in a whooshing noise (called a boom), was captured on video this season (visit www.youtube.com/watch?v=R1On-CRxLNc to view the nighttime video). Currently in New Hampshire, nighthawks are known to nest in Concord, Franklin, Keene, the Ossipee Pine Barrens, and rocky ridges in the western part of the state. The loss of habitat

and potential changes in the food supply have been identified as major threats. In partnership with NH Fish and Game, NH Audubon leads monitoring and research efforts for nighthawks.

Audubon's Project Nighthawk Coordinator, Rebecca Suomala, reports that common nighthawks had a good nesting season in 2020, perhaps because of the warm summer. In recent years, monitoring has shown a decline in the state's common nighthawks, but this year numbers held steady or even increased in some areas. There were ten verified nests in the state. Fledged chicks were confirmed at four of the sites, while failure was reported at two sites (cause unknown). There were four additional sites with possible nesting.

Keene confirmed a rooftop nest with one chick that stayed on site for 48 days, a record for Project Nighthawk. Brett Thelen of the Harris Center leads the effort in Keene; no other nighthawks were found there this year. In the Concord area, there were

five confirmed nests, the highest number in many years. Most nests were confirmed by the behavior of the adults, but one nest was found with two chicks. This year, the Concord males were active as late as 11:00 p.m., much later than the usual 9:30 p.m. quiet time, making for late watches by staff and volunteers.

The Ossipee Pine Barrens area was the usual hot bed of activity, and observers tallied a total of thirteen males and two to three females during one watch. The Nature Conservancy performed some habitat management which improved the area for nighthawks, resulting in a remarkable five males and at least one female at that site. Pine barrens habitat is the only natural area with a strong population of common nighthawks in the state. For more information, visit www.NHAudubon.org.



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© REBECCA SUOMALA

A common nighthawk nest with two chicks was observed in the Concord area.



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VIRUS OUTBREAK

Reported in Wild Rabbits

It was a quiet season for the conservation of New England cottontails, New Hampshire's native state-endangered rabbit species. The normally busy season of captive rearing, fostering, and releasing young rabbits had been paused, due to staff limitations at Rhode Island's Roger Williams Park Zoo and Queens Zoo when COVID-19 restrictions were enacted. This was the first time annual captive rearing was interrupted since its beginnings in 2010. Meanwhile, a different virus was lurking, threatening to further challenge the complex conservation efforts of many lagomorph species (hares

and rabbits).

Thousands of miles away in the state of New Mexico, a confirmed case of rabbit hemorrhagic disease marked the first wild rabbit infection in the United States. Different strains of the virus that causes rabbit hemorrhagic disease appeared sporadically across the country in previous years but had been documented exclusively in domestic rabbits. Symptoms of the disease include fever, signs of hemorrhages or bleeding, loss of appetite, seizures or uncoordinated movements, breathing difficulty, and lethargy. Often little to no sign of illness is

observed before the seemingly sudden death. An infected deceased rabbit may have blood on its nose, a sign of internal bleeding caused by the disease.

The virus is extremely infectious and persists on surfaces and in organic matter for weeks, even through cycles of freezing and thawing. This particular strain of the virus, known as RHDV2, has been documented in at least seven southwestern states. The RHDV2 strain was first reported in France in 2010 and has since spread around the world. To date, infected domestic rabbits in New York represent the cases in closest

proximity to New Hampshire, which were quickly identified and contained. In some outbreaks of RHDV2, the death rate of infected animals is reported to be near 90%.

The U.S. Department of Agriculture (USDA) reports that the virus can be spread by direct contact between animals and anything with which the animal comes into contact. Even biting insects or remnants of rabbit on a predator's fur can transfer the virus. People can also transfer the pathogen on skin or clothing, but the virus is not known to affect humans or other animals. It is believed that all lagomorphs are susceptible, and USDA research has shown that rabbit hemorrhagic disease also causes mortality in the closely related eastern cottontail



A New England cottontail rabbit at Great Bay National Wildlife Refuge.

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UPDATED WILDLIFE HABITAT MAPS AVAILABLE ONLINE

(New Hampshire's non-native rabbit species).

NH Fish and Game biologists are part of a regional task force developed to share information about the disease as it becomes available. A vaccine for rabbit hemorrhagic disease is available in Europe, but because of its classification as a foreign animal disease, the vaccine isn't currently licensed for use in the United States.

"We want to be prepared to vaccinate young New England cottontails that come out of the breeding program by next season," said Nongame Biologist Heidi Holman, emphasizing the need for quick action in the New England cottontail population, estimated to be around 13,000 animals. "If we can't do captive rearing safely, we won't have any young to augment the wild population, which for New Hampshire is critical to recovery. Translocation of New England cottontails from other locations wouldn't be an option either, since cross contamination is now a bigger concern." Even conservation activities such as habitat surveying and management could become problematic, with the potential to spread the RHDV2 virus without ever coming into direct contact with rabbits.

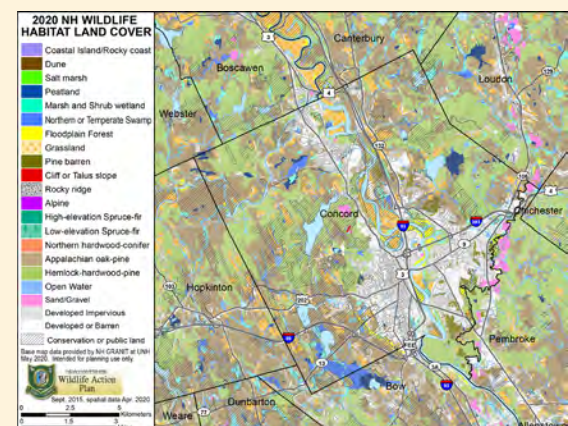
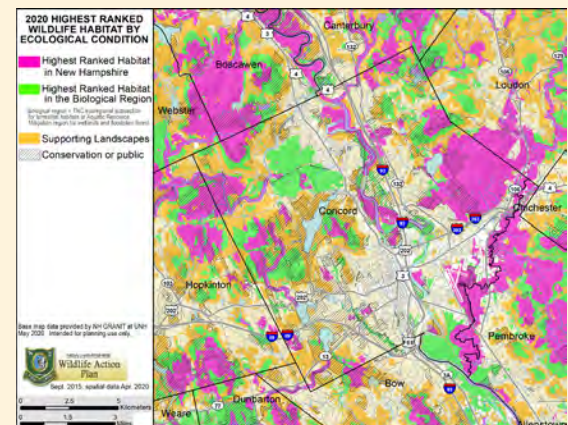
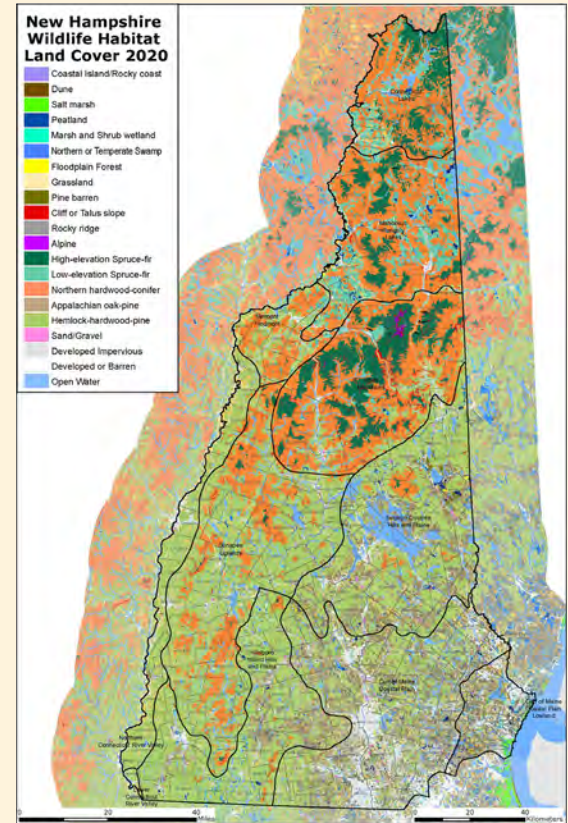
"Without a licensed vaccine, the APHIS–Center for Veterinary Biologics will continue to process permit requests for special emergency importation of the two European Union–licensed vaccines, which would be allocated to states enduring severe outbreaks of RHDV2," said New Hampshire State Veterinarian Stephen Crawford, DVM. "USDA remains eager to work with any company on vaccine licensure for RHDV2." Biologists working with the New England cottontail are concerned about the current requirement that vaccine importations are granted once RHDV2 is confirmed in the state.

"For endangered populations, by that point, it may be too late," explained Holman. "Requesting and then receiving the vaccine can be a long process, reportedly taking six to eight weeks just to get approved." The task force is currently working on a proposal that

For the third time since their release in 2006, New Hampshire's Wildlife Action Plan maps have been infused with new data. This update is the best yet—including advanced landcover mapping from the National Oceanic and Atmospheric Administration's Coastal Change Analysis, National Wetlands Inventory updates, and addition of The Nature Conservancy's Resilient and Connected Network data. These maps are a widely used tool provided through the Wildlife Action Plan, which serves as a comprehensive document for conserving Species of Greatest Conservation Need and their habitats in New Hampshire.

"Communities and conservation partners use the Wildlife Action Plan maps to help identify high-priority wildlife habitats, providing critical guidance for making decisions when resources are limited," said Nongame Program Biologist Sandi Houghton. The map update incorporates an additional five years of rare species reports, helping to highlight areas of highest conservation priority. "This is a concrete example of how research and public reports feed directly into conservation planning," said Houghton.

Many Northeast partners are engaged in the research and development of landcover maps that accurately reflect habitats on the ground—even those that are difficult to map such as grasslands, aquatic habitats, and wetlands. Some recent projects have focused on the development of data that reflect climate change predictions and highlight areas that can provide pathways for wildlife and plants to move over time. The Wildlife Action Plan maps are where all of this data development culminates into one powerful tool for landowners, researchers, and planners. To see the most recent maps that support the NH Wildlife Action Plan, visit wildnh.com/wildlife/wap-using-maps.html.



RABBITS continued on page 8

ATLANTIC HORSESHOE CRAB (*Limulus polyphemus*)



© NHFG / VICTOR YOUNG PHOTO

More closely related to arachnids than crabs, horseshoe crabs have ten eyes plus additional light receptors. A female can lay eggs in batches of over 100,000. Their copper-based blue blood contains a component that detects bacterial endotoxins and is useful in the pharmaceutical industry.

Habitat and Distribution: From Maine and along the Eastern seaboard down to the Gulf of Mexico.

Threats:

- Oil spills, ocean acidification, shoreline hardening (seawalls), invasive species, and excess nutrients from polluted runoff and waste water.
- Ocean temperatures over 95°F are lethal to horseshoe crab embryos and negatively affect the growth and development of larvae.

Conservation Actions:

- Improve coordination between agencies and the public to limit the damage a potential oil spill could have on oyster reefs and marine resources.
- If you see a stranded horseshoe crab (upside down) on a beach, gently flip it back over by the edge of its shell.

A Successful Summer in Spite of Challenges PIPING PLOVER

In what was possibly the most challenging season to date, biologists reported the successful fledging of sixteen piping plovers from New Hampshire. This year marked the twenty-fourth season of piping plover

camouflage for the birds and optimal opportunities for nest scrapes. The plovers took advantage of the quiet and undisturbed stretch of beach, nesting as far north as the Seashell Complex and the Ashworth Hotel.

A record twelve pairs nested in New Hampshire this year, eight of them in Hampton.

As beaches reopened in June, the presence of plovers in these nontraditional nesting areas prompted several meetings among state, town, and federal officials. Representatives from NH Fish and Game, the NH Department of Natural and Cultural Resources, the town of Hampton, and the US Fish and Wildlife Service met onsite in early June to discuss the necessary monitoring that would be required to ensure that plover nests or chicks would not be disturbed. "It really was a collaborative effort this year," said Nongame Program Biologist Brendan Clifford. "All the beach managers and officials did their part, from state park staff to lifeguards to members of the chamber of commerce and police and fire departments."

The collaboration extended beyond beach managers, as more than thirty trained volunteers donated



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In total, six chicks fledged from Hampton and ten chicks fledged from Seabrook...the third highest total recorded over the 24-year monitoring effort.

protection efforts by the Nongame Program, a species listed at both the state (threatened) and federal (endangered) levels. The shorebirds are monitored annually from April through August on Hampton and Seabrook Beaches.

In 2020, the combination of newly deposited sand from the winter harbor dredge and closed beaches due to COVID-19 created ideal nesting conditions for plovers as they returned from their wintering grounds. The dredged sand was fine and lightly colored, tossed with seaweed and shell fragments, which provided

their time to monitor the newly hatched chicks on Hampton Beach. This monitoring



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Challenges for PLOVERS

proved vital for one particular brood of chicks that hatched along Hampton's main strip. "Within a day of hatching, the adults moved the chicks one quarter mile south toward the refuge of the dune habitat, a potentially hazardous journey for the flightless young," said Clifford. These chicks were insistent on feeding at the wrack line and in the tidal flat in order to find the highest quality food, which meant they were regularly running between these areas to the safety zone roped off by officials for the bird's protection.


Volunteers alerted the public to the presence of the birds to minimize disturbance and allow them to feed uninterrupted. "Our call to volunteers really paid off for these active broods on an extremely busy beach," said Cassandra Bliss, the Nongame Program's seasonal plover monitor. "Without their support, we would have been hard pressed to fledge these chicks." In total, six chicks fledged from Hampton and ten chicks fledged from Seabrook. The sixteen fledged chicks match the third highest total recorded over the 24-year monitoring effort.

Though an overall success, the 2020 monitoring season presented some complex challenges. Several nests were abandoned before hatching, and egg predation was documented from a suspected aerial predator. Despite the intensive monitoring by Nongame Program staff and volunteers, there were at least two instances where chicks were captured by beachgoers who assumed the birds were abandoned.

Although both chicks were released after being surrendered to state officials, one was found dead the next day and the

other was not seen again. Although law enforcement investigated the incidents, the beachgoers who captured the birds remain unidentified. "This situation reinforces the importance of leaving wildlife wild," said Clifford. "These birds may have survived had they been left alone."

"The trend in the number of plover nests and fledged chicks has continued to be positive in New Hampshire over the past several years," reported Clifford. "The number of nesting pairs has increased to a record high for three years running, which has led to the highest number of fledged chicks since the project began." New Hampshire's plovers are part of the greater Atlantic Coast population extending from the Carolinas to Nova Scotia, where nearly 2,000 breeding pairs nest annually.

The Nongame Program would like to thank the many volunteers who donated their time to monitoring the birds in 2020 and the beach managers who provided critical support to the project. Moving forward, this dedicated collaboration will be critical to the continued breeding success of piping plovers in the Granite State. 



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NEST TRAY SUCCESS FOR PEREGRINES

on Merrimack River Bridge

The convergence of New Hampshire's Route 101 and Interstate 293 supports thousands of commuter cars and trucks every day. The Merrimack River is rocky as it tumbles under the 101/293 bridge, from there flowing south into Massachusetts before emptying into the Gulf of Maine. In this urban environment, a pair of state-threatened peregrine falcons soars over the cities of Manchester and Bedford, claiming the bridge as their nursery.

New Hampshire Audubon reports that over one quarter of the state's peregrine falcon population nests on manmade structures. Since peregrines have adapted to utilize towers, buildings, stacks, and high bridges for nesting, biologists across the Northeast have used strategies such as installing nest trays and nest boxes to increase the chances of successful reproduction in these unconventional urban habitats. A nest tray was first installed in 2016 on the Merrimack River bridge, coordinated by the NH Department of Transportation (DOT), NH Audubon, and NH Fish and Game. This flat tray was attached to a beam under the bridge to encourage nesting as far away as possible from planned bridge construction. The pair hatched two eggs on the platform in 2020. Falcons typically mate for life, returning



A pair of peregrine falcons claimed the I293 bridge over the Merrimack River as their nursery.



The peregrine chicks were surveilled by volunteer nest monitors.

© GRACE PRESTON

each year to the same nest site or even the same nest.

Mastering the skills of diving and soaring is critical to survival. Adult falcons can reach speeds approaching 200 miles per hour, earning them the title of the fastest bird on earth. The first falcon chick to fledge from the nest tray landed in the river below but was able to swim to shore. Scheduled bridge construction and rehabilitation occurred this year and last. Staff from R.S. Audley, DOT's bridge contractor, rescued the chick from the bank of the river, where it was then cared for by licensed Wildlife Rehabilitator Maria Colby at Wings of the Dawn in Henniker.

Audubon Senior Biologist Chris Martin added one band to each leg of the falcon as a way of identifying it in the future. A silver numbered band is provided by the US Fish and Wildlife Service with a code unique to this animal, while a colored band on the opposite leg bears a code that can be read and reported by photographers and wildlife viewers. Within a few days,

Colby and Martin were granted access by the Manchester Water Treatment Plant to release the chick in the vicinity of the nest, where the bird successfully flew off into the trees.

Dedicated volunteer nest monitors supervised by NH Audubon checked on the progress of the falcon pair throughout the season, reporting that the second falcon chick fledged from this nest as well, flying to an island downstream. Although this peregrine falcon pair has occupied this site since 2016, just three chicks had successfully fledged prior to this summer's achievement. Hatchling falcons are round, fuzzy, and white and lack the long legs and streamlined body of adults. Even at a young age, they appear to have the fierce gaze of an aerial predator. By August, peregrine chicks around the state begin hunting for themselves and seeking out new territories. These young are part of an interconnected regional population of peregrines, still considered to be recovering from historic extirpation. 🦅

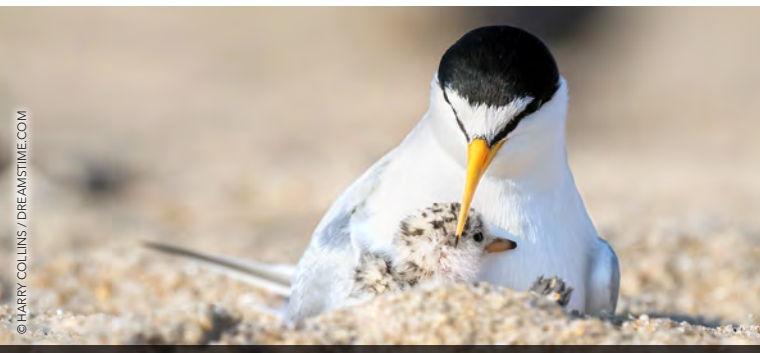
UPDATES FROM OUR FIELD SEASON

Projects implemented and funded by the Nongame and Endangered Wildlife Program



Northern harrier

- New Hampshire Audubon staff conducted over 100 surveys in habitats suitable for the state-threatened *northern harrier*, documenting eight sites in New Hampshire and one in Vermont where harriers may be breeding and nesting. The majority of sites were in Coos County, New Hampshire.
- New Hampshire Audubon biologists and volunteers monitored *bald eagle* nests over the spring and summer, estimating that at least 74 young eagles fledged statewide.
- Six nesting pairs of state-endangered *least terns* on Hampton Beach fledged ten chicks this season. This more than doubled their fledgling success from last summer. Least terns have been arriving to nest here in varying numbers since 2015, when they were documented as nesting for the first time since the 1950s.
- This season was a record year for *common terns* (state threatened), with 3,280 nesting pairs on the Isles of Shoals, beating out the previous record in 2017.
- At the peak of nesting season, biologists documented 96 nesting pairs of *roseate terns*, compared with 61 in 2019, which is a record for this decade. These birds are endangered at both the state and federal levels.
- One pair of *Arctic terns* nested on the Isles of Shoals, but were unsuccessful at hatching eggs for the second consecutive year.
- Twelve *upland sandpiper* chicks (state endangered) were documented this year in the state, known to nest only at the Pease Airfield in Portsmouth and Newington. They require continuous grassland of over 160 acres for nesting.
- A report of an *American oystercatcher* nest on the Isles of Shoals was a rare observation this summer. The northernmost reach of their breeding range is typically considered the barrier islands and beaches of Massachusetts. 🐦



Least tern



American oystercatcher



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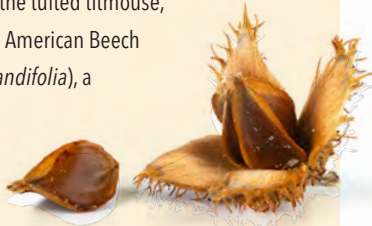


OCTOBER

- Ospreys are migrating towards Brazil, before New Hampshire's waterbodies ice-over, making fishing here increasingly difficult.

NOVEMBER

- Mammals, like porcupines and chipmunks, and birds, like the tufted titmouse, are feasting on American Beech nuts (*Fagus grandifolia*), a nutrient-dense winter food source.



DECEMBER

- Be on the lookout for winter's visitors from the north—such as the dark-eyed junco and snowy owl—journeying from Canada.




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RABBITS *continued from page 2*

would instead permit the vaccine request process to begin if RHDV2 is detected anywhere in the Northeast.

Professionals in New Hampshire remain vigilant and watchful over endangered New England cottontails and their continued recovery throughout the region. Proactive measures are ramping up to prevent any possible cross contamination. Scientists from the New England Cottontail Population Working Group, veterinarians, and zoo personnel are coordinating with the Northeast Wildlife Disease Cooperative to update the state disease surveillance plan and connect with laboratories that will provide initial testing of suspected cases. Even the more common eastern cottontail and snowshoe hare, which are a critical component of the Northeastern food chain, are at great risk. The public can play an important role in the prevention of disease spread by keeping domestic rabbits indoors, monitoring for illness, using safe sanitation practices when handling rabbits, and minimizing the transfer of rabbits from other states. 

While surveying for upland sandpipers at the Portsmouth International Airport at Pease, Nongame Program Biologist Brett Ferry discovered this ground nest of young meadowlarks. As a Species of Greatest Conservation Need, eastern meadowlarks have declined regionally along with other grassland-dependent birds. Meadowlarks prefer to nest in fields greater than 12 acres, equipped with high singing perches. Their nests are often built with a domed roof to hide the chicks from predators and the harsh sun. They may be seen on the ground foraging for insects and are in the same family as orioles, grackles, and blackbirds.



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