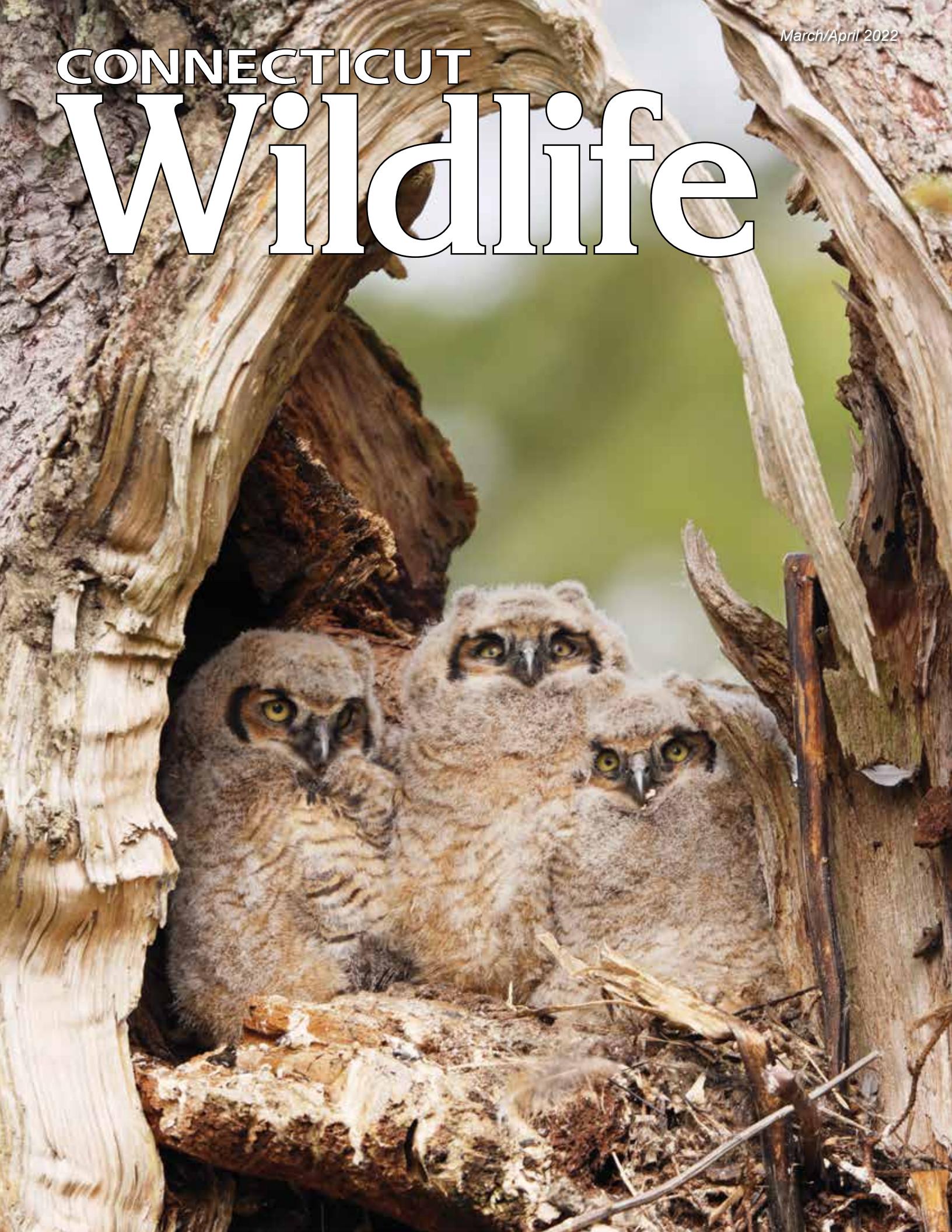


March/April 2022

CONNECTICUT Wildlife



From The Director

Whenever I ponder our natural world, I realize how much there is to learn. I am also grateful for the dedication of so many people who care deeply about wildlife and the places they live and always work to find a better understanding and appreciation that leads to better stewardship on our part. This issue reflects that dedication in many ways.



How many of us have taken the time to learn about the “hummingbirds of the fish world,” the tiny darters that can be found in many of our small streams, ponds, and lakes? Our fisheries biologists do, and they have taken a closer look to learn more about these tiny fish and how they fit into our ecosystem. Hopefully, their story will inspire you to look at what may be below the water’s surface.

There is also what many of us would consider the less pleasant side of the natural world, mosquitoes and zoonotic diseases. Learning more about these topics is integral to understanding how we can protect public health, improve ecosystem function, and increase wildlife health. Understanding the concept of One Health—how people, wildlife, and habitats are linked and need to be considered together to successfully address health issues more effectively—is something we all need to learn more about and learn how we can contribute to this effort. Simple things like eliminating standing water around your home or making sure pets are vaccinated for rabies can make a huge contribution.

Learning more about the magic of nature is something that can recharge all of us regardless of how we experience it. This issue features some great tips for appreciating your next walk in the woods a little bit more and provides some suggestions to increase your wildlife viewing opportunities. What magical moment will you find waiting around the corner, at the local park, in your back yard, or outside your window?

This issue also highlights the dedication of two great colleagues, Ed Parker and Rick Jacobson. Both served as Bureau Chief of Natural Resources, made significant contributions to conservation, and embodied the importance of learning about the natural world to be good stewards. Ed took time to learn about the issues facing some of our rarest species and became a strong advocate for advancing their conservation. Through his leadership, we launched a statewide Grassland Habitat Initiative, which ultimately led to the permanent protection of hundreds of acres of grasslands that are critically important to many state-listed species. Rick spent time learning about how conservation could be enhanced by landscape-scale partnerships. Recognizing that wildlife does not understand state borders, he engaged with partners to advance regional efforts to protect young forest habitats for species like the New England cottontail and coastal marshes for species like saltmarsh sparrow and black rail. I encourage you to read more about these dedicated professionals and reflect on what we can learn from nature to make each of us better stewards of wildlife and diverse habitats.

Jenny Dickson, Wildlife Division Director

Connecticut Wildlife

Published bimonthly by

Connecticut Department of
Energy and Environmental Protection
Bureau of Natural Resources
Wildlife Division
<https://portal.ct.gov/DEEP>

Commissioner
Katie S. Dykes
Chief, Bureau of Natural Resources
Rick Jacobson
Director, Wildlife Division
Jenny Dickson

Magazine Staff
Managing Editor Kathy Herz
Production Editor Paul Fusco
Contributing Editors: Mike Beauchene (Fisheries)
Christopher Martin (Forestry)

Wildlife Division

79 Elm Street, Hartford, CT 06106-5127 (860-424-3011)
Office of the Director, Recreation Management, Technical Assistance, Natural History Survey

Sessions Woods Wildlife Management Area
P.O. Box 1550, Burlington, CT 06013 (860-424-3011)
Wildlife Diversity, Birds, Furbearers, Outreach and Education, Habitat Management, Conservation Education/Firearms Safety, Connecticut Wildlife magazine

Franklin Wildlife Management Area
391 Route 32, N. Franklin, CT 06254 (860-424-3011)
Migratory Birds, Deer/Moose, Wild Turkey, Small Game, Wetlands Habitat and Mosquito Management, Conservation Education/Firearms Safety

Eastern District Area Headquarters
209 Hebron Road, Marlborough, CT 06447 (860-295-9523)
State Land and Private Land Habitat Management

Connecticut Wildlife magazine (ISSN 1087-7525) is published bimonthly by the Connecticut Department of Energy & Environmental Protection Wildlife Division. Send all subscription orders and address changes to Connecticut Wildlife, Sessions Woods WMA, P.O. Box 1550, Burlington, CT 06013. Subscription rates are \$8 for one year, \$15 for two years, and \$20 for three years. No refunds. Periodical postage paid at Bristol, CT. Postmaster: Please send all address changes to Connecticut Wildlife, P.O. Box 1550, Burlington, CT 06013.

<https://portal.ct.gov/DEEPWildlife>
www.facebook.com/CTFishandWildlife
E-mail: deep.ctwildlife@ct.gov Phone: 860-424-3011



Connecticut Wildlife Magazine is the official publication of the Connecticut Bureau of Natural Resources, and is dedicated to creating awareness and appreciation of the state's fish and wildlife and the habitats upon which they depend. Much of the work of the Wildlife and Fisheries Divisions of the Bureau is supported by the Federal Aid in Wildlife and Sport Fish Restoration Programs, which are exclusively funded by your purchase of fishing tackle, firearms, ammunition, archery equipment, and motor boat fuels. Partnering to fund conservation and connect people with nature.



The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act. If you are seeking a communication aid or service, have limited proficiency in English, wish to file an ADA or Title VI discrimination complaint, or require some other accommodation, including equipment to facilitate virtual participation, please contact the DEEP Office of Diversity and Equity at 860-418-5910 or by email at deep.accommodations@ct.gov. Any person needing an accommodation for hearing impairment may call the State of Connecticut relay number - 711. In order to facilitate efforts to provide an accommodation, please request all accommodations as soon as possible following notice of any agency hearing, meeting, program or event.

Copyright 2022 by the Connecticut Wildlife Division. The Wildlife Division grants permission to reprint text, **not artwork or photos**, provided the Wildlife Division is credited. Artwork and photographs printed in this publication are copyrighted by the CT DEEP Wildlife Division. Any unauthorized use of artwork and photos is prohibited. Please contact the managing editor to obtain permission for reprinting articles (deep.ctwildlife@ct.gov or 860-424-3011).

Printed on recycled paper



Waterfowl congregations can lead to outbreaks of zoonotic disease, including avian influenza. See page 18 for more information.

PHOTO BY P.J. FUSCO

IN THIS ISSUE

4 Reflecting on the 2021 Mosquito Season

Connecticut's Mosquito Management Program is responsible for monitoring the mosquito population and the surveillance of West Nile virus and eastern equine encephalitis.

7 In Memoriam - Edward Parker, Former BNR Chief

Remembering Edward Parker, a former Chief of the Bureau of Natural Resources

8 Darting In and Out of Sight

Darters are small, colorful, and quick fish

10 Rick Jacobson Retires

Bureau chief takes on new position

12 Patience and Power

The great blue heron in Connecticut

14 Watchable Wildlife: Walk in the Woods

Take a moment to appreciate

18 Zoonoses Are a Threat to Humans and Animals Alike

How disease surveillance in CT is keeping up with new and emerging diseases

21 Spring, Sun, and Shells Out!

Which turtles are the first to emerge in spring?

DEPARTMENTS

22 From the Field

23 Conservation Calendar

Cover:

Wildlife watchers who hike in the forest can be treated to such discoveries as nesting great horned owls using a tree cavity. Read more on page 14. Photo courtesy Paul Fusco

Reflecting on the 2021 Mosquito Season

Written by Roger Wolfe, DEEP Wildlife Division

If you ever want to win a trivia contest, ask what the world's "deadliest animal" is. It is not a shark or a bear or a tiger – it is the mosquito. According to the World Health Organization, more than 1 million people worldwide die as a result of a mosquito bite each year, mainly due to malaria and other diseases transmitted by mosquitoes. We are indeed blessed in the United States to have one of the most comprehensive and available public health systems in the world, which includes mosquito and vector control. However, despite the good programs that are in place, it is imperative that each of us do our part to reduce sources of mosquito breeding around our homes and neighborhoods, and minimize our exposure to mosquito bites.

In Connecticut, the monitoring and management of our 54 different species of mosquitoes is a collaborative effort between the Department of Energy and Environmental Protection (DEEP), Department of Public Health (DPH), and Connecticut Agricultural Experiment Station (CAES), in conjunction with the Department of Agriculture's State Veterinarians Office (DoAG) and UConn Veterinary Medical Diagnostic Laboratory (CVMDL). Together, these agencies conduct mosquito, human, and veterinary surveillance to monitor trends, detect increased transmission risk, and implement a phased response to minimize the threat of mosquito-

borne disease outbreaks.

The CAES collects and tests mosquitoes for a variety of pathogens; however, the two diseases of greatest public health importance in the Northeast are eastern equine encephalitis (EEE) and West Nile virus (WNV). Both of these agents are bird viruses and are endemic in a variety of local and migratory birds. Historically in Connecticut, EEE activity tends to be cyclical and we experience increased occurrences about every six years. In the recent past, we had increased EEE activity in 2003, 2009, and again in 2013, when the first human case was confirmed in Connecticut. The most recent surge in activity was in 2019, which culminated in 122 EEE-positive mosquito pool isolations, six confirmed horse cases, one pheasant flock, and four human cases, tragically including three deaths; certainly something to take seriously.

Because EEE has a higher human mortality rate, when there is a season like 2019, it tends to garner more attention than WNV, a more prevalent, but less virulent, mosquito-borne disease. WNV was first identified in New York and Connecticut in 1999 (which was also the first isolation of this virus in the Western Hemisphere) and has become endemic in our wild bird population. Since that time, there have been 172 confirmed human cases of WNV, including four deaths. This includes six (non-fatal) human cases in 2021.

What Is Eastern Equine Encephalitis (EEE)?

Eastern equine encephalitis (EEE) is a virus in the genus *Alphavirus* and is ever-present ("enzootic") in species of perching birds (songbirds), mainly found in hardwood freshwater swamps in Connecticut. The virus is transmitted between birds primarily by the mosquito species *Culiseta melanura*, a species that almost exclusively bites birds. It is thought the virus is introduced into the Northeast each year by migratory birds, and EEE typically appears in early July, which coincides with the hatching of highly-susceptible bird populations. Initially, a relatively smaller proportion of birds and mosquitoes carry the virus. Throughout the mosquito season, continuous transmission between mosquito vectors and bird reservoir hosts increases the proportion of infected birds and mosquitoes, leading to a greater amount of virus circulating in the environment. This is called the "virus amplification cycle".

In the Northeast, EEE transmission occurs in and around forested swamps of mature white cedars and red maples, the primary habitat of *Cs. melanura*. The amount of rainfall during summer and fall affects the survival of *Cs. melanura* larvae during winter and, in part, determines the population of adult mosquitoes the following year. Because of the unique habitat where this species is found, the risk of EEE in humans varies geographically in Connecticut. Historically, areas where EEE has been found are in the southeastern portion of the state.

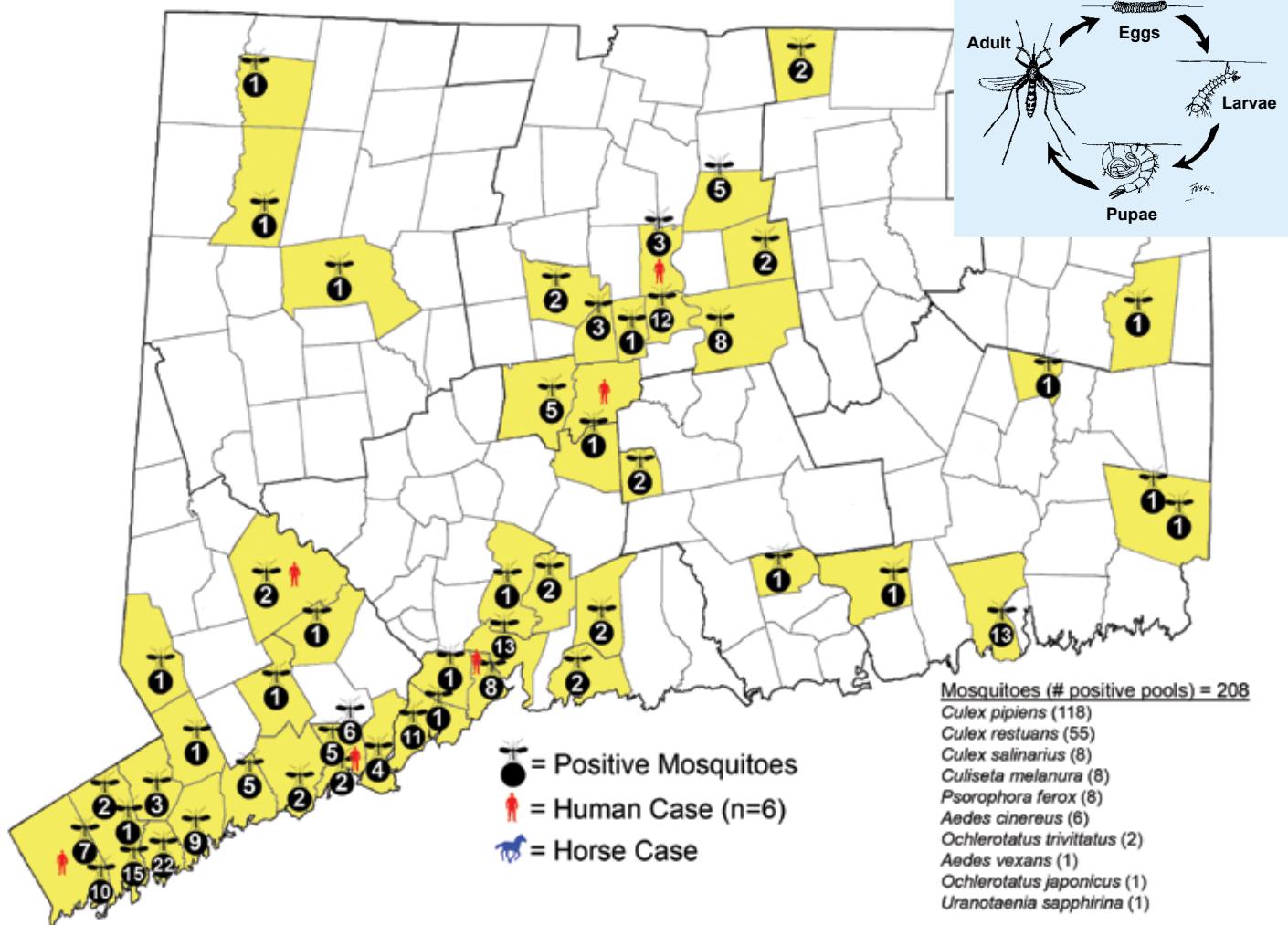
In most years, EEE exists mainly in a mosquito-bird cycle. In years with high virus amplification, the virus may eventually spill over into secondary, or "bridge", mosquito vectors that feed on both birds and mammals, including humans. In the Northeast, these bridge vectors are found in or near freshwater hardwood swamps. Saltmarsh mosquitoes (as the name implies) are found mainly along coastal marshes and, although they can be abundant and aggressive daytime biters, they are not generally found near these forested swamp environments where bird reservoirs of EEE are concentrated. Therefore, the risk of EEE transmission to humans by saltmarsh species is low.



CT AGRICULTURAL EXPERIMENT STATION FILE

The Asian bush mosquito (*Ochlerotatus japonicus* (Theobald) is an exotic mosquito introduced into the US within the last 20 years.

2021 West Nile Virus Activity



There is no way to predict how bad an upcoming mosquito season might be, but we know it is coming. With both of these diseases, climatic conditions can make all the difference. In the case of EEE, the primary enzootic mosquito vector is *Culiseta melanura* (the black-tailed mosquito), which is found primarily in red maple swamps and favors wetter summers, such as we had in 2019. With WNV, the primary mosquito species involved are of the genus *Culex*, which favor stagnant water sites in which to lay their eggs (often found in a variety of artificial containers and backyard habitats). Somewhat surprisingly, *Culex* mosquitoes and WNV activity tend to escalate during dryer summers.

Since the unprecedented activities of 2019, several action items have been put in place to better respond to mosquito-borne disease outbreaks: the State's EEE Response Plan has been updated; the CAES has enhanced its surveillance program by adding 17 additional trap sites (total of 108); the DEEP has secured an aerial application contract in the event we have to aerially spray in the future; and members of the State's Mosquito Management Working Group continue to meet as needed with members of the Environment Commit-

tee and other state legislators to develop a more enhanced surveillance, communication, and response strategy.

As tragic as the 2019 season was, it did, however, get people's attention as to how serious mosquito-borne disease outbreaks can be. Although we can never eliminate diseases like EEE or WNV, we must do all that we can to minimize the risk of a public health outbreak. This includes a robust surveillance program, effective risk communication, and supporting mosquito control programs at the state and local level. Your best defense as an individual is to heed public health notices concerning mosquitoes when they are announced, be diligent about eliminating sources of mosquitoes around your home, and to take personal protective measures to avoid mosquito bites.

How Can You Minimize Risk?

During the summer months, when mosquitoes are active, routine personal precautions should include:

- Minimizing time spent outdoors between dusk and dawn when mosquitoes are most active;
- Consider using mosquito repellents containing an

EPA-registered active ingredient (<https://www.epa.gov/insect-repellents>). If you prefer not to apply repellents to your skin, apply to clothing.

- *Wearing shoes, socks, a hat, long pants, and a long-sleeved shirt when outdoors at times when mosquitoes are most active. Clothing should be light-colored, loose fitting, and made of tightly woven materials that keep mosquitoes away from the skin.*
- *Ensuring door and window screens are tight-fitting and in good repair;*
- *Using mosquito netting when sleeping outdoors or in an unscreened structure;*
- *Protecting infants from mosquito bites when outdoors;*
- *Remove sources of standing water around the home. Any water that can sit and stagnate for seven or more days can produce mosquitoes. If you cannot fill or remove sources of standing water, consider applying a biological agent (Bti) to the water to control larvae. These products are available at most garden centers and hardware stores.*

During periods of elevated risk, residents should also be cautioned to avoid swampy, shady, or wooded areas where mosquitoes are prevalent during daytime hours. This is especially important during dawn and dusk, which are peak biting times for many of our mosquito species. Mosquitoes become less active when temperatures fall below 50 degrees F. Most remaining adult mosquitoes are killed following the first frost; however, some species overwinter in caves, basements, barns, and similar protected sites.

Want More Information?

Connecticut Mosquito Management Program (<https://www.portal.ct.gov/mosquito>)

Centers for Disease Control and Prevention (CDC; <https://www.cdc.gov/ncezid/dvbd/about/prevent-bites.html>)

American Mosquito Control Association (<https://www.mosquito.org>)



Discarded tires and other artificial containers that hold stagnant water can be significant sources of mosquitoes and should be eliminated.

EEE Disease and Diagnosis in Humans and Animals

Eastern equine encephalitis (EEE) is a serious disease in humans, with 30-50% mortality and lifelong neurological disability among many survivors. The first symptoms of EEE are fever (often 103° to 106°F), stiff neck, headache, and lack of energy. These symptoms begin three to 10 days after a bite from an infected mosquito. Additional symptoms may include difficulty speaking and weakness. Inflammation and swelling of the brain, called “encephalitis”, is the most dangerous and frequent serious complication. The disease may rapidly worsen and some patients may go into a coma within a week.

There is no vaccine or treatment for EEE. People who survive this disease will often be permanently disabled due to neurologic damage. Few people recover completely.

Human cases of EEE are most likely to occur in late August and September. EEE causes severe disease in horses and has been associated with illness in exotic game and non-native birds (e.g., pheasants, emus), birds of prey, goats, and white-tailed deer; evidence of infection and possibly illness in dogs and cats has been reported. There is a vaccine for horses against EEE and it should be given annually.



Edward Parker - *Former BNR Chief*

The DEEP Bureau of Natural Resources mourns the loss of Edward Parker who passed away on February 26, 2022. Ed retired in 2009 from the then-Connecticut Department of Environmental Protection (DEP) after 33 years of service. Before retirement, he was the Chief of the Bureau of Natural Resources (BNR), although he also served in other capacities within the DEP before becoming Bureau Chief. While leading the Bureau, Ed also served as President of the Association of Fish and Wildlife Agencies (AFWA). AFWA represents North America's fish and wildlife agencies to advance sound, science-based management and conservation of fish and wildlife and their habitats in the public interest.

Ed was responsible for some of our biggest wildlife conservation advances. His passion for bald eagles and concern about disturbance during the critical nesting period led to laws that make it illegal to harass nesting eagles – key to making the early return of eagles to Connecticut as a nesting species successful. Ed was also responsible for the acquisition of Suffield Wildlife Management Area to protect grassland birds. Not only did his efforts help Connecticut, he convinced his counterparts at MassWildlife to acquire the abutting property in Southwick, thereby creating a block of over 400 acres of protected grassland habitat that is now used by state-listed species, such as the upland sandpiper and grasshopper sparrow.

While many will remember his tales of deer hunting and those “really big” fish, we should remember the conservation legacy for all species Ed put in place for future generations to enjoy. The impacts he had were not just here in Connecticut, but for conservation nationwide.

Following are some memories of Ed from one of the BNR colleagues he worked most closely with, Tony Petrillo:

“I will always remember Ed Parker as one who never backed away from controversial topics and always spoke his mind defending natural resource issues. Not only was Ed a leader at the state level he also participated in a num-



DEEP FILE PHOTO

While Ed Parker came to BNR from the Environmental Quality side of DEEP where he put his engineering skills to use and made many lasting friendships, there is no doubt that his passion for the conservation work of DEEP and his willingness to dig in and help—whether it was with denning bears, birds large and small, fish, or trees—left a lasting impact on our natural resources.

ber of initiatives on regional and national levels, providing leadership to advance projects designed to conserve natural resources while also seeking to increase opportunities for anglers and hunters. One of his many talents I observed in his role as BNR Bureau Chief was that he was a very skilled writer. He always had his red pen working overtime when making edits to a document. Poor Sara (his secretary at the time), always trying to interpret Ed’s hieroglyphics.

Ed had a good sense of humor and was the butt of some of my jokes, taking a lot of ribbing from me about his computer skills. He also allowed me to perform some practical jokes in the office, some of which were on him.

One of the valuable lessons I learned from Ed that I still rely on today is “don’t just go to someone with a problem”. If you have a problem, at least offer some suggestion as to how to resolve it. By the way, if Ed didn’t like your solution, you can bet on him letting you know!

Ed was an avid sportsman, passionate conservationist, and dedicated natural resource professional who will be sorely missed.”

Darting In and Out of Sight

Written by Mike Beauchene, DEEP Fisheries Division; photos by Robert Jacobs, Retired, DEEP Fisheries Division

Descriptive names for a type of fish like rainbow, peach, vermillion, harlequin, sunburst, golden, or speckled most likely conjure up images of fish found at an aquarium or your local pet store.

However, if you add the name “darter” after each of those descriptors, you have just a few of the over 200 species of a small group of fish endemic to North America. The Missouri Department of Conservation describes darters as the “hummingbirds of the fish world—colorful, small, and quick”.

Darters are within the same family, Percidae, as Yellow Perch and Walleye, both of which are much more familiar with anglers. Darter species are typically two to three inches but range in size from around an inch or so up to a massive five to six inches. So, it is not surprising that many people do not routinely encounter these fish. In many species, the male will develop extremely vibrant colors, rivalling topical fish or even plumage coloration of tropical birds.

Across unglaciated portions of North America, specifically, the Mississippi, Ohio, and Tennessee River systems, many species are found within a single watershed and, as a result, many darter species tend to be listed as special concern, threatened, or endangered.

Connecticut is home to just two species, the very common Tessellated Darter (*Etheostoma olmstedi*) and the less common Swamp Darter (*Etheostoma fusiforme*). Both, according to darter color standards, are drab and brown, lacking any of the vibrant colors of their family members in the Southeast and Midwest United States.

Tessellated Darter

The Tessellated Darter is distributed widely across Connecticut. The fish is a bottom-dweller that prefers slower-moving areas of streams and rivers with sand to cobble



Darters are not going to win you the biggest fish award. However, they play an important role in the ecology of our rivers and streams. Connecticut has two species of darter, the Tessellated Darter (top) and the Swamp Darter (bottom). The dime is included to give an idea of the size of these small fish.

substrate. Tessellated Darters are also known to occur in shallow shoal areas of some lakes. The Tessellated Darter is very similar to and was once considered to be the same species as the Johnny Darter (*Etheostoma nigrum*), which has a more Midwestern distribution. Tessellated Darters are entertaining to watch as they prop themselves up on their pectoral fins and appear to be scanning their surroundings. As the name suggests, they often “dart” using quick pulses. Sometimes, they bury themselves in the sand with only eyes and tail tips exposed.

The Tessellated Darter is described as being a small, slender fish with a small mouth (reaching only to front of eye). Compared to the Swamp Darter, it has a longer more normal looking snout. The lateral line is complete and relatively straight. It has nine to 11 dark blotches that often look like X’s or W’s and are typically dark brown above, fading on the sides, and has a cream-colored belly.

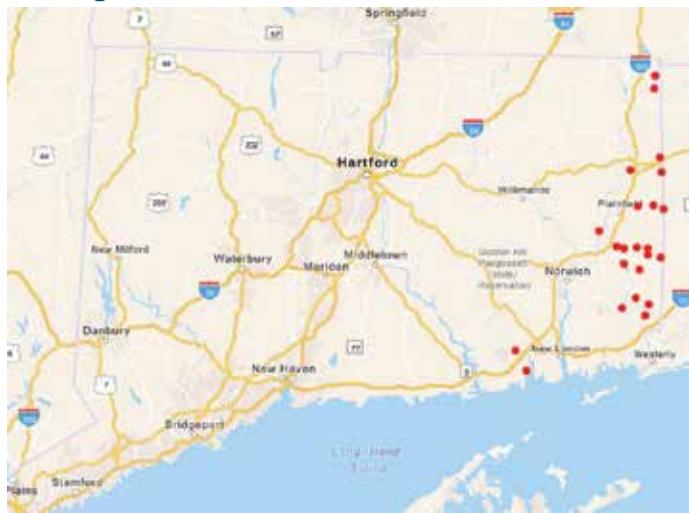
Swamp Darter

Swamp Darters are distributed along coastal plain wa-

Small but Mighty Important

Tessellated Darters play a key role in the persistence of the state and federally endangered Dwarf Wedgemussel (*Alasmidonta heterodon*). The larvae of the mussel are called glochidia. These larvae end up attaching themselves to the gills of the darter where they safely grow until it is time to drop off and settle on the stream bottom. Without the obligate host, the mussel larvae would perish, ultimately leading to loss of the mussel population in that waterbody.

Swamp Darter



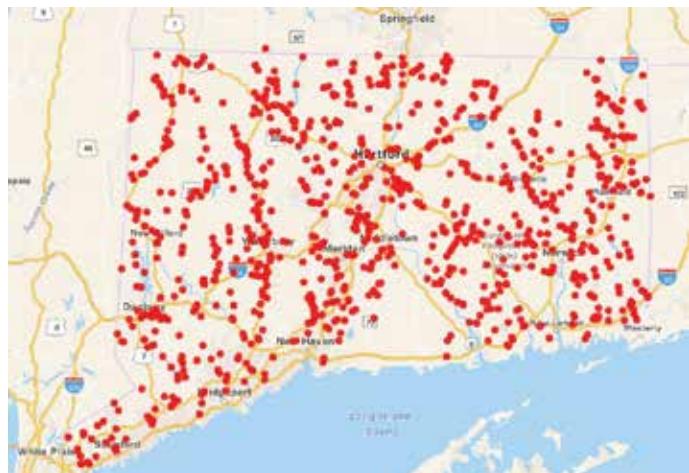
The Swamp Darter has specific habitat requirements, which are met along the Atlantic Coastal plain. This limits their potential distribution in Connecticut to far eastern sections.

ters from southern Maine to Florida, west to the Mississippi River. In Connecticut, Swamp Darters are limited to lowland areas in the eastern part of the state, mostly east of the Quinebaug River, where they are typically uncommon to rare in abundance.

The Swamp Darter is a very small, camouflaged, and secretive bottom-dwelling fish that prefers ponds, swamps, and backwater areas of slow-moving streams. It is usually found in areas of vegetation or detritus over mud bottoms. Primarily for this reason, the distribution of this species in Connecticut is not fully-defined, nor is it clear whether their range has changed over time.

The Swamp Darter is described as a small, slender fish with a small mouth (reaching only to front of eye). A key feature is the “stubbier” snout as compared to the tessellated (looks like it ran into a wall). The lateral line incomplete (ends before end of caudal peduncle) and arches upward above the pectoral fin. Dark blotches on the sides typically

Tessellated Darter



The Tessellated Darter is ubiquitous in Connecticut with only a few watersheds where the species has not been observed to date. Male Tessellated Darters often turn very dark when in full breeding color (bottom)

do not form W's or X's.

Compared to other members within the family, Connecticut's two darters lack color and apparent excitement. However, they are no less important to the function of our aquatic systems. The next time you are wading through a gravel bottom stream, look super close as you may just see a small fish dart over your toes.



Connecticut's Aquatic Resources Education (CARE) Program offers a wide variety of introductory level fishing classes held all over the state. Learn the basics from passionate volunteer fishing instructors. Register for a free fishing class today! Learn more at <https://portal.ct.gov/DEEP/Fishing/CARE-CARE-Fishing-Classes>.

Rick Jacobson Retires

Bureau Chief Takes on New Position

After almost 35 years with DEEP, starting out as a Resource Technician with the Fisheries Division and ending as the Chief of the Bureau of Natural Resources, Rick Jacobson has retired from DEEP and started a new career with the U.S. Fish and Wildlife Service. Before embarking on his next adventure, Rick answered a few questions about his career at DEEP.

Why did you become interested in a career in Natural Resources/Fisheries/Wildlife?

Growing up in rural Wisconsin, there were three things that defined my childhood and early adult years. (1) The connection to the land that comes with farming. (2) Getting off the school bus and heading straight to the woods across the street (or later, putting on cross country skis and skiing to work at a farm implement manufacturing center). (3) All our family vacations revolved around camping, fishing, paddling, hiking, and biking at state and national campgrounds. It was a great way for a kid to grow up.

What year did you begin working for DEEP and what were the different positions that you held?

I started with the DEEP in 1987 after having worked for the U.S. Fish and Wildlife Service, Wisconsin Department of Natural Resources, Dairyland Power Company Environmental Division, Syracuse Research Corp., and Ocean Surveys, Inc. My first 22 years at DEEP were with the Fisheries Division, starting as a Resource Technician



Rick Jacobson has a passion for the outdoors, hunting, and fishing and enjoys sharing those activities with his dog.

P.J. FUSCO



Much of Rick's time at DEEP was spent communicating with constituents about hunting, fishing and natural resource conservation and management.

on the stream survey, then to Fisheries Biologist 2 (Water Resources Liaison), then to supervising the newly-formed Habitat Conservation and Enhancement Program, and finally Assistant Director for habitat, diadromous fisheries and hatcheries. From there, I spent nine years as Director of the Wildlife Division and the last four as Chief of the Bureau of Natural Resources.

What were some of your major accomplishments?

I am proud of several accomplishments: (1) institutionalizing an instream flow regime to conserve fisheries resources of the Farmington River, a central element leading to Congressional designation of the Upper Farmington as the nation's first Partnership Wild and Scenic River; (2) restoration of instream flow regimes to the Shepaug and Fenton Rivers; the Shepaug through legal action and the Fenton through science-based water supply planning; (3) changing the paradigm for hydropower operation for three power stations on the Housatonic River, moving them from

a store and release operation to run-of-river and incorporating fish passage at two others; (4) leading the five state/three federal agency collaborative conservation initiative that culminated in the Secretary of the U.S. Department of the Interior to determine that the New England cottontail did not warrant listing under the federal Endangered Species Act because of the successes and shared commitment of the initiative's partners; and (5) leading the Atlantic Coast Joint Venture management board to adopt coastal wetlands and the conservation of saltmarsh sparrows as the conservation focus of the 13 state/2 federal agency, and multiple non-governmental organization partnerships. This new focus has evolved to adopting a comprehensive conservation strategy modeled after the success of the New England Cottontail Initiative with the intent to lead yet another species from the brink of extinction to sustainable populations.

What was your favorite project or species to work with?

My passion is for reversing downward population trends, restoring sustainable populations, and keeping common species common. That transcends any individual species or project. But if pressed to pick one – it would be American woodcock. There is something about that small, migrant game bird with the long bill and big eyes that attracts me.

What part of your job will you miss the most?

Working with a team of people with shared values – family, faith, and a love of all things outside.

What part of your job will you not miss?

Bureaucracy and an institutionalized resistance to simplifying processes.

What do you see as the three major issues currently facing the Bureau of Natural Resources?

The three major issues are (1) providing staff with the financial and material support they need to succeed; (2) the need to be more relevant to the citizenry of the state who are becoming less connected to the outdoors; and (3) becoming successful in engaging more of Connecticut's 3.6 million residents in natural resources issues, managing the implications of those new conservationists on only 3.5 million acres.

What major differences/changes have you seen since you first joined the DEEP Bureau of Natural Resources?

Decision-making has become increasingly centralized, leaving Directors and Bureau Chiefs with less authority – and I see that as a detriment to conservation progress.



Rick displays a Governor's Proclamation for National Hunting and Fishing Day during a Bureau of Natural Resource's Discover Outdoor Connecticut event.

P.J. FUSCO

Has anything remained the same?

The Bureau has always been blessed with recruiting highly-talented and passionate professionals. Based on that, I am really excited for the Bureau's future.

What is the most memorable event that happened during your time with the Bureau of Natural Resources?

The day I shared the podium with U.S. Department of the Interior Secretary Sally Jewell, New Hampshire Senator Jeanne Shaheen, and U.S. Fish and Wildlife Service Director Dan Ashe to announce that New England cottontail populations were on a path to sustainability such that listing under the federal Endangered Species Act was not warranted.

What advice do you have for your colleagues?

Each new moment in time is the intersection of two eternities. All that came before and all that will come after. You cannot do anything about what happened yesterday. But at this moment, at this meeting of two eternities, each of you have the chance to make all that comes after better. Grab that chance. Make tomorrow better. We are all counting on you.

What are your plans after retirement?

I am transitioning to my next career adventure. I accepted a job offer from the U.S. Fish and Wildlife Service, North Atlantic Region where I will become their newest Assistant Regional Director. In that role, I will be responsible for all of the Service's fisheries and aquatic conservation programs and hatcheries from Maine to Kentucky.

Are there any other thoughts you would like to include?

Connecticut is a wonderful place to raise a family and DEEP is a great place to enjoy a successful career. I would not have changed any of it.



Patience and Power

The Great Blue Heron in Connecticut

Article and photography by Paul Fusco, DEEP Wildlife Division



Great blue herons nest in rookeries, usually within secluded wooded wetlands, such as beaver marshes. Nesting birds are highly sensitive to disturbance.

Large in stature and prehistoric in behavior, the great blue heron is an opportunistic hunter that takes a wide variety of prey for food. While fish are the primary quarry, great blues will also eat small mammals, including mice, shrews, and rats. Also on the menu are frogs, lizards, snakes, small birds, salamanders, and invertebrates, such as crayfish and dragonflies. Great blue herons do most of their hunting by either the “stand-and-wait technique” or by stalking before they strike with lightning-quick speed and powerful force.

Long legs, a long neck, and a long, pointed bill give these birds an elegant

appearance. In breeding season, great blue herons sport their best plumage. Long plumes are grown on the crown and the bare skin at the base of the bill becomes flushed with hormones, becoming bright blue. As stately and majestic as they are, the herons often give a different impression when they take to the air. With a low-pitched croak, slow flapping wings, and gangly legs, their take-off gives them a prehistoric look. The labored takeoff will gradually settle into a smooth and powerful flight, with long broad wings propelling them high into the air. With a length of approximately 45 inches and a wingspan of over six feet,

the great blue heron represents the largest of our heron species and one of the largest birds found in Connecticut.

Migration

Great blue herons are migratory. Most of their population will move through Connecticut from March through April in spring and in September and October in fall on their way to and from their breeding and wintering grounds. Migrating individuals may be found at coastal as well as inland wetland locations. Migrational movements often occur at night. On a fall night with a northwest wind, patient observers may be rewarded with the sighting of one or more great blue herons flying high up in front of a full moon. While most great blues will move south of Connecticut for the winter, a few hardy individuals will be found at places with open water, such as coastal marshes or near dams with flowing water.

Great blue herons are uncommon breeders in Connecticut. They normally nest in rookeries that can number from a few pairs to well over 100. Their highly visible, large stick nests are loosely constructed with long twigs and branches that are carried to the nest by both adults. The nests are often built high up in standing dead tress within a secluded beaver marsh or wooded wetland. Nests may be 100 feet up, and some trees may hold multiple nests.

Nests typically hold three to six pale blue eggs, and incubation lasts approximately 28 days. Chicks are able to fly at about eight weeks of age, but usually remain at the nest for another week or



Several Native American Tribes look at the heron as a sign of patience, good luck, and self-reliance.

two to be fed by the adults.

Great blue herons nest at inland wetland locations in Connecticut. They do not nest close to the shoreline, which may be related to how heavily developed the Connecticut coast is, combined with herons being highly sensitive to human presence and disturbance.

In Connecticut, great blue heron rookeries are often found in association with beaver marshes. These wetlands are dynamic and changing habitats that are ephemeral, and may continue for years, but will not last forever. Beavers create wetland habitat by damming streams and tributaries. The dammed streams flood nearby forest, often killing tall forest trees, which may eventually become ideal heron nest trees that are surrounded by standing water. Standing water within the marsh not only gives beavers swimming access to food and lodges, but also helps protect the treetop heron nests from mammalian predators. The heron rookery will be productive as long as the marsh endures and the nest trees remain standing. The beavers' food supply around the marsh will eventually run low, forcing the beavers to move on to another location. After a period of

years, the trees will rot and fall. Then, the herons will be forced to find a new location to host a rookery.

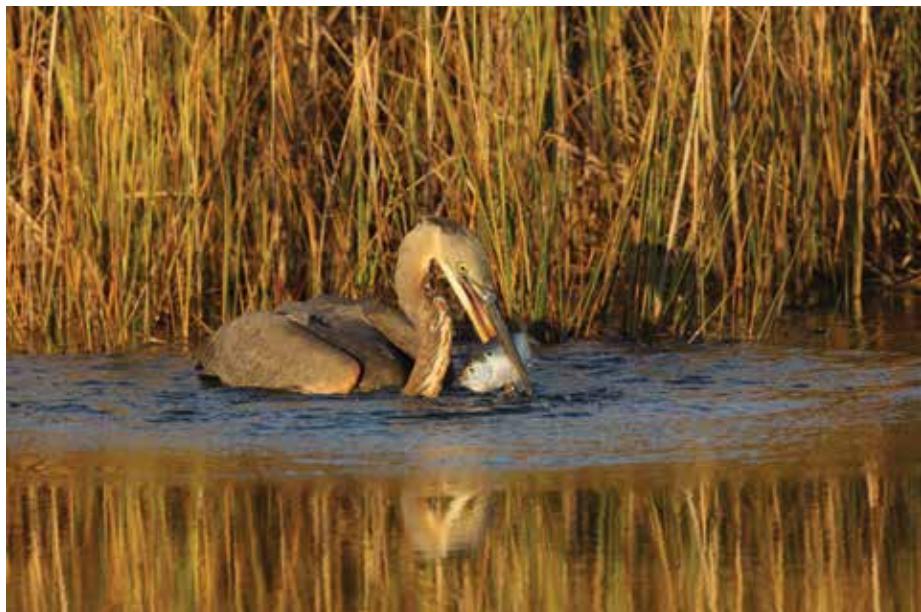
Conservation

Great blue herons are wary and nest colonies are highly susceptible to human encroachment and disturbance. Too much disturbance will keep adults

off their nests and may lead to rookery abandonment. Herons require quality habitats in which to feed, as well as habitat that provides low-disturbance opportunities to nest and raise young.

As with all wetland dependent birds, conservation and preservation of wetland habitat at both state and local levels is critical to maintaining healthy populations. Most of Connecticut's freshwater wetland habitats are under the responsibility of local officials,

where decisions about development and wetland protections are made. The DEEP works cooperatively with local commissions, and continues to monitor and manage Connecticut's freshwater wetlands, which will ensure a successful future for the great blue herons of our state.



While breeding is typically away from the coast, great blue herons will forage in coastal waters for fish, including menhaden, when available.

Watchable Wildlife

A Walk in the Woods

Take a Moment to Appreciate



Article and photography by Paul Fusco, DEEP Wildlife Division

Winter has turned to spring and the Connecticut forest scene has come alive with activity at every turn. By the middle of the spring season, the wildlife watcher will be overwhelmed by the dynamics at play. Attention is drawn from flowering plants bursting with color and pollen, to territorial battles over breeding rights and newly-emerged food resources. This is a great time for wildlife watching in the most dominant habitat type in Connecticut, our forests.

Connecticut has many forests to explore, including state and municipal properties, as well as private property. State properties are accessible to all and include state forests, wildlife management areas, and state parks. Municipal and private properties may have limited access, depending on the individual location and local rules and restrictions. Always check the access rules in advance before making a trip to these properties.

The forests in Connecticut are made up of a mix of plant types, including broad-leaf deciduous and needle-leaf coniferous trees, along with a diversity of understory shrubs and herbaceous plants. Most forests have a mix, while some are dominated by one tree type or another. The variety of trees, shrubs, and herbaceous plants results in ecosystem diversity within our forests. Adding to the diversity is the age of the plants within the forest. Some properties have mature trees and others have younger growth. Most of Connecticut's forests have been cut in the past. The mix of ages adds to plant and wildlife diversity. Each forest has its own set of habitat components and parameters that have influenced the type of



Forests are the dominant habitat type in Connecticut. The diversity of these forests is truly remarkable, and creates the foundation for a great range of plant and animal species to be found here.

forest that it has become over time. Soils, nutrients, drainage, sunlight, temperature, and precipitation all influence the forest and what grows there. This makes Connecticut a treasure when it comes to forest ecosystems, as we have such a great diversity from the northern hills to the dry coastal parts of the state. Having an understanding of this diversity will help the wildlife watcher know what might be encountered where.

While on your hike in the woods, be aware of what may be going on around you. Remember, that not all is immediately visible. It may take patience and interpretation to discover some of the hidden secrets of the forest.

Vernal Pools

For the wildlife watcher, to experience a vernal pool in peak activity is a "must-see" within the forest. Wood frogs, spotted salamanders, and other amphibians use the forest vernal pools to court and reproduce. Egg masses will be laid and young tadpoles and larval salamanders will hatch and

grow. Once the young reach maturity, they will leave the pool to live in the forest. Adults will return to the vernal pool the following year for their opportunity to breed.

Nesting Cavities and Boxes

Once the winter ice and snow melt from woodland ponds, the open water quickly becomes active with waterfowl that will breed within the forest. Hooded mergansers and wood ducks search for potential nesting sites close to these small wooded ponds. Look for active flying behavior as males chase after females, and females explore potential nest cavities. Both species nest in natural tree cavities and will readily use artificial nest boxes.

Aerial courtship displays and territorial aggression goes on above the treetops too, as red-tailed, red-shouldered, and broad-winged hawks show off in the sky. Once territories have become established, nesting and chick raising ensues. Watch and listen for hawks carrying food to feed chicks in their forest canopy nests. As they grow, young become increasingly vocal when adults bring in food. Great horned owls begin nesting as early as January. Because they do not build their own nests, the owls will take over an old hawk nest for themselves before the hawks return. They can be found by searching for large stick nests in trees along edge habitat within or close to forested areas. Look for protruding tails and ear tufts that will betray the presence of a nesting great horned owl.

Butterflies

For those who are walking early in the spring, keep an eye out for such early forest butterflies as the uniquely colored mourning cloak (*Nymphalis antiopa*) and the eastern comma (*Polygonia comma*), both of which overwinter as adults. They can be found sheltering in bark crevices or flying on warm sunny days, even in late winter. When resting with folded wings, both butterflies show brownish markings that blend into the forest setting, giving them the appearance of dead leaves.

Predatory Mammals

Predatory mammals, including coyotes, foxes, and bobcats, are denning and raising young in the forest during the spring months. Ground dens of the canids can be found by recognizing excavations with dirt piles outside the entrance holes. Secretive bobcats often den in thickets or caverns in rock outcrops, or under wood piles or the roots of fallen trees. Clues like food scraps or a cluster of tracks may be found around the den area. Bones or clumps of fur or feathers may be present, indicating what these animals have been



Many migratory forest songbirds opportunistically catch flying insects during spring. Be sure to look for them in forest edges or openings where they are often seen foraging, like this American redstart.

feeding on. Most of the time, mammals will be elusive but visibly active around sunrise and sunset. Each animal will typically use a variety of habitats, including forests, fields, and backyards, but often travel on trails that will show signs of being used.

Migrant Songbirds

By mid-May, the forest really comes alive when trees open their buds and release pollen. Large numbers of migrant songbirds time their Connecticut forest arrival with bud openings and leaf-out, primarily to feed on the insects attracted to pollen and fresh shoots. The birds travel from points south to take advantage of North American insect hatches in order to have the best opportunities for nesting and raising their young. Many of these birds are neotropical, having spent the winter months in Latin America. These include thrushes, warblers, vireos, orioles, and tanagers, among many others. The best time to observe their migration



Red-shouldered hawks will often bring fresh greens to their nest.



A red fox kit takes a nap on the mound of its forest den.

is from late April through mid-May. Once trees leaf out, the birds will be much more difficult to see. Look for their active flight in the forest canopy and listen for songs as males claim breeding territories and attract mates. Once late May arrives, most of these birds will have either traveled farther north or begun nesting in Connecticut.

Forest Reptiles

Reptiles emerging from their winter hibernation will be sunning themselves, gaining energy from the sun. Look for snakes, including the eastern gartersnake, black ratsnake, and others as they leave their dens to soak in warmth on sun-bathed rock outcrops and sunny patches along trailsides. Eastern box turtles that have burrowed for winter into shal-

low leaf litter and forest substrate will become active once the temperature warms the forest floor.

Watchable Wildlife Trail Walking Gear

There are many options when choosing hiking shoes and boots for use in Connecticut forests. Trails may have rocks and tree roots, wet or icy patches, and loose or muddy soil. Strong treads can be helpful for traction, but may come at the cost of additional weight. Slippage on wet or icy surfaces are a concern. Hard soles will be strong and rugged, but softer soles will help give a better grip on wet or icy surfaces. Some folks may want to carry a walking stick for added stability. A spare ski pole or a monopod

can also be used for stability.

Layered clothing is a must, especially if the trail walk is planned to be lengthy. Always bring water. A fully charged cellphone would be helpful for GPS locations, communication, and photo documentation. A more advanced camera with a telephoto lens or macro capability may be useful as well. As always, binoculars are an important tool for the wildlife watcher. Some have a narrower perspective and higher magnification than others, so try out and compare different types to find the right pair for you.

You may want to keep a journal of what is seen and the changes that are experienced at different properties over the course of the spring season and from year to year. Bring the notepad or journal with you to document as you go. Try mapping the property, indicating habitat features, plant types, wildlife food source locations, etc. Record the date, weather, and exact place of your observations. Include all wildlife encounters, not just the uncommon things. Include the use of a bird box or tree hole, tracks in the snow or mud, and use of food and cover. Make note of den trees and cavities. Long-term notes will show how the forest changes over time.

When gearing up for your adventure, keep in mind that wildlife viewing opportunities will be much reduced if you bring along a dog. Most wildlife perceive dogs as predators, so your best choice will be to leave dogs at home.

Young Animals

During your hike you may encounter young animals. Remember that young animals may look like they need to be “rescued”, but in reality they are almost always just fine where they are. Adults are nearby and will tend to them when you depart. It is in the best interest of the young for you to leave them alone and keep your distance.

Vernal Pools Are Critical Forest Habitats

Vernal pools are temporary woodland ponds that typically fill with water in the autumn or winter due to rainfall, groundwater, and snowmelt. Pools remain ponded through spring into summer before drying out completely by the middle or end of summer. This drying prevents fish from becoming established, which is critical to the reproductive success of many of the amphibian and invertebrate species that rely on breeding habitats free of fish predators. During spring, vernal pools explode with life as wood frogs, spring peepers, and salamanders converge to mate and lay their eggs in the safety of these pools. As the spring season proceeds, the eggs hatch, and young frogs and salamanders metamorphize into adults which leave the pools before the water dries up.



Spring peeper

Look at Uncommon Places

Check and recheck any tree cavities you come across. Many types of wildlife will use cavities as protection for nests or from bad weather. Cavities are also good places for quiet rest. Animals that will use cavities include ducks, woodpeckers, owls, raccoons, fishers, and many more. Look for clues of activity around the entrance hole.

Maybe your trail walk will take you past a rock outcrop, wet swampy low spot, upland overlook, streamside, dense pine stand, small forest opening, or vernal pool. All of these forest habitat features will have different plants and wildlife to experience. For example, during your walk past a small forest opening, you may see a redstart catching insects or a fawn being nursed by a doe, or you may encounter a box turtle crossing your path.

And, don't forget to look up. Some of the best viewing opportunities may be what's above.

Don't Just Look, but Listen

While on your hike, be aware of the sounds that characterize the forest. Listen for the sound of a pileated woodpecker as it hammers on a hollow tree, creating a sound that resonates through the deep woods. The calls of this large woodpecker are loud and carry for a long distance. The beautiful ethereal songs of the forest thrushes have an impressive tonal quality. Even the inquisitive call of the chickadee will attract a person's attention. Learn to identify the sounds of the band-winged grasshopper, gray tree-frog, and katydid to help expand your experience.

Give Yourself Time to Stop and Appreciate

By being quiet and patient as you walk, you will often be rewarded by the secret life and spirit that is embodied within the forest. When it comes to maximizing the conservation of Connecticut's forest habitat, the wildlife watcher can provide insight based on his or her experience and documentation. And, by sharing your knowledge with others, your appreciation will go far.



Chicks call wildly as an adult pileated woodpecker arrives at its nest to feed the young. Woodpeckers can be loud denizens of the forest. For the wildlife watcher, it may be beneficial to learn their calls.



The Eastern box turtle can occasionally be found using forest trails. Remember that this animal is a state-listed species and possession or collection from the wild is prohibited.



Zoonoses Are a Threat to Humans and Animals Alike

How disease surveillance in CT is keeping up with new and emerging diseases

Article and photographs by Kyle Testerman, DEEP Wildlife Division

The coronavirus pandemic that reached Connecticut in March 2020 has had a tremendous impact on the lives of so many. The spread of the SARS-CoV-2 virus and the disease it causes (COVID-19) highlights how critical it is for effective disease surveillance in Connecticut and throughout the world. Monitoring for new public health threats often does not start in humans, but in animal populations, both domestic and wild.

Zoonotic diseases are infectious diseases transmitted between humans and other animals. These diseases can be caused by bacteria, parasites, fungi, and viruses. These pathogens can lead to many different illnesses in humans and other species, ranging from mild to severe disease. Additionally, one infected species may appear healthy and asymptomatic, while another species may suffer severely.

While it may seem like a rare event for diseases to transmit from one species to humans, it is actually very common. The Centers for Disease Control and Prevention (CDC) estimates that around 60% of known infectious diseases in humans can be spread from other animals. These diseases are transmitted through five main pathways:

- Direct contact with body fluids, as well as touching, being bitten, or scratched by an infected animal.
- Indirect contact, such as being in areas where animals live and roam (such as chicken coops), or objects or surfaces that have been contami-



Wildlife, especially those that live close to human settlements, can act as reservoirs for zoonoses, which are diseases that can be passed between humans and other animals.

nated with germs.

- Vector-borne diseases caused by an infected mosquito or tick.
- Foodborne, by consuming something unsafe, such as unpasteurized (raw) milk, undercooked meat or eggs, or raw fruits and vegetables that are contaminated by an infected animal.
- Waterborne, by drinking or coming into contact with water that has been contaminated by an infected animal.

COVID-19

Even before COVID-19 became a deadly international pandemic in 2020,

scientists have been studying it from the first detection in late 2019. Similar zoonotic diseases caused by coronaviruses have been studied for many years, and their ability to spread rapidly and jump to a new host species has been demonstrated during outbreaks of SARS (beginning in 2002) and MERS (beginning in 2012). This existing knowledge about coronaviruses is one reason why vaccines specific for SARS-CoV-2 were developed so quickly; scientists did not have to start from scratch.

As SARS-CoV-2 spread across the globe through human-human transmission, it began to spill over into other mammal species that humans had close contact with. By August 2020, the virus was detected in mink at fur farms in Europe and the United States. Wild mink sampled near a mink farm in Utah were also found to be infected. When viruses spill over into a new host, the chances of new mutations increase, including host-specific mutations. New mink-specific mutations have been found in some variants of COVID-19 in humans, which suggests that the virus had been passed back to humans after evolving further in mink. Some of these mutations changed the virus' spike protein, which could affect how our immune systems detect the intruding virus. Fortunately, these specific mutations did not make the variant more deadly but underscores the potential threat new mutations and new host transmissions could have.

To keep up with emerging disease threats, surveillance is conducted across the globe, including in Connecticut. Epidemiologists, wildlife biologists, and many other experts monitor the spread of new and existing diseases in humans and other animals.

Monitoring efforts have detected COVID-19 in other wild animals, including white-tailed deer. These ubiquitous herbivores live in close proximity to humans all across the country. Deer in New York, Pennsylvania, New Jersey, Illinois, Michigan, Iowa, and Ontario, Canada, have tested positive so far, and in some samples as many as 20% of deer



Wildlife Division biologists are collecting nasal swab samples from sedated bobcats to test for COVID-19 infection. Blood samples are also being collected to help immunologists develop bobcat antibody tests for the disease.

had been infected. Deer sampled in these efforts did not die from COVID-19 but were already deceased from vehicle collisions or were harvested by hunters.

Connecticut began testing deer in early 2022 and has not had a confirmed case yet. Genomic sequencing of samples suggests that the SARS-CoV-2 virus has spilled over to deer several times in several places. Samples in Canada were most closely related to earlier human variants, suggesting transmission in late 2020. In Pennsylvania, many samples had similarities to the Delta variant in humans, indicating transmission to deer sometime in mid-2021.

Disease surveillance in other species is especially important for the good of public health because eradicating zoonotic diseases becomes increasingly difficult when other species act as reservoirs. If we could eliminate all human-human transmission of a disease, but it persists in another transmissible species nearby, the disease could still spill back over into humans.

Much like mink and other mustelid species, felines were noted early in the pandemic to be susceptible to SARS-CoV-2. DEEP Biologists are working

with researchers at UConn to test for COVID-19 in Connecticut's bobcat population. While the Wildlife Division is completing efforts to trap and collar these wide-ranging carnivores, they are also collecting nasal swabs and blood samples from sedated bobcats to find out if the virus is circulating in a new population. Currently, tests available for bobcats can only identify if the individual has an active infection, using a PCR test, and cannot detect if it has had COVID-19 in the past. Samples from Connecticut's bobcats are being used to develop new antibody tests that can be used to identify past infection.

Avian Influenza

While reducing transmission of COVID-19 remains a priority, surveillance of other zoonotic diseases has continued. Detections of Highly Pathogenic Avian Influenza (HPAI) occur annually across the country in both wild and domestic birds. Strains of HPAI occur regularly in wild waterfowl and may not cause noticeable illness in these species. However, HPAI can easily spread to other birds where they may be congregating, leading to transmission to domestic wa-



Highly Pathogenic Avian Influenza is a serious threat to domestic poultry. To safeguard you, your family, and your backyard flock, be sure to follow biosecurity protocols from the USDA. Scan the QR code below to visit the USDA's Animal Health website (<https://www.aphis.usda.gov/aphis/ourfocus/animalhealth>).

terfowl and poultry, which come into close contact with humans. While human infections are rare, about 60% of HPAI cases are fatal. The seriousness of this disease threat requires backyard poultry hobbyists as well as large-scale producers to monitor their flocks and follow established biosecurity protocols from the CDC and USDA.

By the first two months of 2022, HPAI had been confirmed in wild mallards and American black ducks 30 times across Connecticut. While detections in wild birds are not unusual, infected birds pose the risk of carrying the disease to new places and exposing other birds, including domestic birds that may be gathering in the same area.

Wild bird surveillance acts as an early warning system for the poultry industry to act in a timely manner to new threats.

In early March 2022, the USDA con-

firmed that HPAI was also detected in a domestic backyard flock of 155 birds in New London County. Health officials are working to quarantine the affected area and the property will be depopulated to stop the spread of the disease. No human cases have been confirmed in the United States as of this writing. Examples like this stress the importance, even for owners of small backyard chicken flocks, to stay vigilant and be versed in biosecurity protocols.

What You Can Do

The study of zoonotic diseases links the diverse fields of medicine, public health, wildlife, agriculture, and economics, and thanks to the American Rescue Plan Act, \$300 million of additional funding has been allocated to biosecurity and zoonotic disease surveillance. While experts from across the globe are working to study and manage the spread of these diseases, it is essential that everyone be knowledgeable about preventing the spread of zoonotic illnesses.

Following are a few easy things

you can do to help:

- Leave wildlife alone and avoid touching wild animals. Staying a safe distance from wildlife will prevent bites and scratches.
- Follow updated guidelines from health, wildlife, and agriculture officials. Emerging issues like HPAI have led officials to recommend keeping domestic poultry away from wild birds and removing any attractants that might encourage wild birds to congregate close by.
- Report sick and dead animals to the appropriate officials. Wild animals, especially large numbers of sick or dead birds should be reported to DEEP's Wild Bird Mortality Database at <http://www.cfwildbirdmortalityreporting.ct.gov/>. Sick or dead poultry and livestock should be reported to the CT Department of Agriculture.
- Prevent tick- and mosquito-borne illnesses by wearing insect repellent, wearing proper clothing, and performing a tick check after spending time outdoors.
- Practice proper hygiene: avoid touching your face and wash your hands regularly, even if you think you have not touched contaminated surfaces.

The connection between our health, the ecosystem, and other animals necessitates we all take a One Health approach. This concept accounts for the expanding and growing human population and the increased pressure it places on the environment, as well as the health of animals that play an important role in our lives. By acknowledging this interconnectedness and working to improve the health of the environment and animal populations, we can help to reduce opportunities for new and emerging diseases to affect all of us.

Scan For More Information



Spring, Sun, and Shells Out!

Article and photograph by Paul Benjunas, DEEP Wildlife Division

For many wildlife enthusiasts, the thought of spring brings to mind the familiar sounds of vernal pool amphibians. While it is fascinating to hear and see the pools come to life from the spring rains, another group of animals that will soon follow suit in waking from their winter dormancy without vocalizing their arrival is turtles.

Over the course of winter, Connecticut's turtles are either hunkered down in a shallow depression covered in leaf litter or submerged in icy lakes, ponds, or rivers, relying on dissolved oxygen extracted from the water around them.

One of the first turtles to emerge in spring is the spotted turtle. This charismatic reptile, a state species of special concern, is relatively small (up to 4.5 inches in length) and is characterized by a smooth, bluish-black carapace (top shell) with yellow-orange spots. Sometimes referred to as the "polka-dot turtle", the spotted turtle's habitat requirements change seasonally. During early spring, when feeding is the priority, this turtle frequents vernal pools and other shallow water bodies, including unpolluted bogs, marshes, and fens. Despite inhabiting these smaller bodies of water, the spotted turtle can be very difficult to see up close. More often than not, spotted turtles will bask on partially submerged branches and logs located towards the middle of a pool and will quickly dive into the water at first sight of a perceived threat, their dark carapace almost instantly blending in to the murky water. Your best bet at catching a glimpse of a spotted turtle in early spring is to observe a vernal pool at a distance with binoculars and focus on potential basking sites. Basking in the sun is important for healthy shell development. After breeding, female



The spotted turtle's habitat requirements change seasonally. During spring, this small turtle typically inhabits vernal pools.

spotted turtles leave their breeding pools and often travel to upland habitats, such as meadows and fields to lay their eggs.

Another turtle that emerges in early spring is the wood turtle. Best known for the signature deeply sculptured or chiseled wood-like pattern found on the carapace (top shell), this turtle inhabits rivers and large streams. In spring, wood turtles prefer to bask close to the water's edge, quite often blending into their surroundings. As warmer weather sets in, the turtles become more active, eventually leaving the water to begin foraging for food and searching for nesting areas. Like spotted turtles, the habitat requirements of wood turtles change seasonally. They rely on river and stream habitats early in the year and then transition to an almost exclusively terrestrial existence by summer in nearby open riparian habitats with good cover. Conservation of riparian habitats is critical in maintaining wood

turtle populations. Stream banks that are manicured (cleared of natural shrubby and herbaceous vegetation) will not be used by wood turtles or most other wildlife species.

Some of the more familiar turtle species, including the eastern painted, eastern box, and common snapping turtles, also become active in early spring, but are more commonly seen crossing roadways in May and June when females are searching for a place to lay eggs. Despite the resiliency of these long-lived reptiles, Connecticut's turtles face many conservation challenges, including illegal collection and trade. You can help turtles by leaving them in the wild and reporting any illegal collection activity to the Connecticut Environmental Conservation Police through DEEP's 24-hour Dispatch Center at 860-424-3333. Even the removal of one individual from a population greatly reduces the ability of the population to maintain itself.



CT's Newest Inductees to the New England Turkey Hunting Hall of Fame

Michael Gregonis and John June were recently inducted into the New England Turkey Hunting Hall of Fame (NETHHF). The New England Chapters of The National Wild Turkey Federation (NWTF) are stewards of the NETHHF. The purpose of the NETHHF is to recognize individuals throughout New England who have made exceptional contributions to the conservation and preservation of wild turkeys, hunting, and hunting heritage. Both Michael and John are well-deserving of this award because of their decades-long association with wild turkey conservation, management, and hunting in Connecticut.

Michael has been on the vanguard of wild turkey conservation and management in Connecticut for the past 27 years. Since 1995, he has been the Wild Turkey Program Biologist, tasked with providing science-based management of Connecticut's wild turkey population and their habitat. To achieve this goal, he has collected annual harvest data on Connecticut's three turkey hunting seasons, and conducted statewide brood surveys to assess annual productivity, as well as annual surveys to evaluate hunter opinions. To enhance wild turkey habitat throughout the state, Michael has been a strong advocate of the creation of forest openings for brood habitat and establishment of young forests for nesting habitat. His research activities include assessing annual acorn mast abundance, evaluating "nuisance turkey" issues throughout the United States and Canada, and investigating turkey crop damage complaints in vineyards. This body of work has culminated in numerous popular articles and several professional publications. Michael's contributions to wild turkey management extend beyond Connecticut's borders. He serves as state representative to the Association of Fish and Wildlife Agencies' Northeast Upland Game Bird Technical Committee and the NWTF Wild Turkey Technical Committee. As a seasoned wild turkey hunter, Michael has imparted his knowledge at numerous turkey-hunting seminars and has often mentored novice hunters afield. Michael's dedication, expertise, and willingness to talk turkey, both literally and figuratively, have benefited wild turkey conservation efforts in Connecticut and beyond.

John June has been actively involved with wild turkey hunting and conservation in Connecticut for over 20 years. As a volunteer with the NWTF, he has been the glue that has held



John June (left) and Michael Gregonis (right) were recently inducted into the New England Turkey Hunting Hall of Fame for their exceptional contributions to the conservation and preservation of wild turkeys, hunting, and hunting heritage.

PHOTO BY G. GREGONIS

the State Chapter Board together. Throughout the past 15 years, John has been the local Housatonic Chapter President, and a member of the Connecticut State Board of Directors, serving in many different roles from President to Treasurer. John has spent numerous volunteer hours fundraising for NWTF by hosting banquets and educating the public at countless hunting and fishing expositions. As an avid wild turkey hunter and turkey call maker, he is more than willing to share his expertise with rookie turkey hunters. Taking kids out hunting is an endeavor that is very important to John; he would much prefer to selflessly assist others in their success than be the one to harvest the turkey himself. Many youth and aspiring hunters have enjoyed success under John's tutelage. The apple does not fall far from the tree in John's family as his daughters are well on their way to becoming accomplished hunters. Whether teaching others about turkey hunting or managing habitat on his property, Connecticut wild turkeys have benefited from John's conservation work ethic.

John and Michael's dedicated support for the conservation of Connecticut's wild turkey population continues to promote the wise use and enjoyment of this renewable natural resource by all of Connecticut's citizens.

BearWise Helps People Live Responsibly with Bears

The DEEP Wildlife Division is now a member of BearWise, a program, resource, and website (<https://bearwise.org>) to help people live responsibly with black bears. The website features bear safety tips in the outdoors and at home, how and when to use bear spray, information for hunters, many articles, and bear fact sheets. Having all the resources in one location will help interpretive and nature centers, teachers, Scout leaders, businesses, travelers, and others find all the information they need to learn about bears themselves or teach others.

The Wildlife Division also recently updated the black bear webpage (<https://portal.ct.gov/DEEP-Bears>) on the DEEP website. There is an informative storymap about estimating black bear and other animal populations and three videos on tips for living with black bears.





Subscription Order

Please make checks payable to:

Connecticut Wildlife, P.O. Box 1550, Burlington, CT 06013

Check one:

1 Year (\$8.00)

Name: _____

Address: _____

City: _____ State: _____

Zip: _____ Tel.: _____

Email: _____

Will only be used for subscription purposes

Check one:

Renewal

New Subscription

Gift Subscription

Gift card to read:

Donation to the Wildlife Fund:

\$ _____

Help fund projects that benefit songbirds, threatened and endangered species, reptiles, amphibians, bats, and other wildlife species.

Order on-line with a credit card through the DEEP Store at <https://portal.ct.gov/DEEP-CT-Wildlife-Magazine>

Conservation Calendar

Mid-April - August ... Share the Shore! Respect fenced and posted shorebird and waterbird nesting areas when visiting the Connecticut coastline. Also, keep dogs and cats off shoreline beaches to avoid disturbing nesting birds.

May 14 World Migratory Bird Day. Learn more at <https://www.migratorybirdday.org/>.

2022 Hunting and Fishing Season Dates

April 27 - May 28 Spring Turkey Hunting Season

May 7 **Free Fishing Day** - No fishing license is required; however, all other rules and regulations still apply.

June 19 and Aug. 6 A free one-day fishing license is valid on both days. The free one-day fishing license is available through the online license system three weeks prior to each date. Licensing website: <https://portal.ct.gov/CTOutdoorLicenses>

Consult the 2022 Connecticut Hunting and Trapping Guide and Connecticut Fishing Guide for specific season dates and details. Hunting guides are available at town halls and outdoor equipment stores, and also on the DEEP website at <https://portal.ct.gov/DEEPHunting>. The Fishing Guide is only available online at <https://portal.ct.gov/DEEPFishing>. Go to <https://portal.ct.gov/CTOutdoorLicenses> to purchase Connecticut hunting, trapping, and fishing licenses, as well as required permits and stamps. The system accepts payment by VISA or MasterCard.

Winner of the 2022 Connecticut Junior Duck Stamp Competition

The DEEP Wildlife Division and the Connecticut Waterfowl Association (CWA) are pleased to announce the winner of the 2022 Connecticut Junior Duck Stamp Art Competition!

Congratulations to Sophie Archer, age 18, of Old Lyme, CT, whose painting of an Atlantic brant on a beach coastline was selected as the “Best in Show”. Sophie’s artwork will be featured on the 2023 Connecticut Migratory Bird Conservation (Duck) Stamp. This is the second year in a row that Sophie received such honors for her artwork. Her painting of a drake wood duck in flight was awarded “Best in Show” for the 2021 contest and is featured on the current 2022 Connecticut Duck Stamp.

A total of 120 entries were submitted from public school, private school, as well as home-schooled students in grades K-12, from all across the Connecticut! The participants in every age group put forth a great amount of time and effort to produce some amazing artwork (and conservation messages). Visit the Connecticut Duck Stamp webpage to view more of the winning artwork and also learn about the Duck Stamp Program: <https://portal.ct.gov/DEEP/Wildlife/CT-Duck-Stamp>.



The winner of the 2022 Connecticut Junior Duck Stamp Art Competition was Sophie Archer, age 18, of Old Lyme, CT, whose painting of an Atlantic brant on a beach coastline was selected as the “Best in Show”.

CONNECTICUT Wildlife

Connecticut Department of Energy and Environmental Protection
Bureau of Natural Resources / Wildlife Division
Sessions Woods Wildlife Management Area
P.O. Box 1550
Burlington, CT 06013-1550

PERIODICALS
POSTAGE PAID AT
BURLINGTON, CT,
AND ADDITIONAL
OFFICES



P.J. FUSCO

Raising five hungry little herons is no easy task for this mom. Tall and statuesque, the great blue heron is the largest of the heron family to be found in Connecticut. Great blue herons typically feed on small fish and amphibians.