September/October 2019

CONNECTICUT Wildlife

From the Director

This issue of "Connecticut Wildlife" bring to mind images of fall in New England, sportsmen and women are heading afield, migration has been moving across the state in waves of color and sound, and temperatures have been dipping. These changes and shifts also underscore the connectedness of our ecosystems.

In this issue, you will learn about amazing migratory shorebirds and also about growing concerns for the declines that have been noted in many birds in the U.S. and Canada. Tied to habitat changes and loss, there are important underlying conservation challenges we need to address to make sure the spectacle of migration continues well into the future.

You can also learn more about how snapping turtles serve as bioindicators of their habitats. Their health is directly connected to the health of the aquatic habitats they live in and they can help us tell if the changes we make to improve water quality are working. Healthy habitats for turtles can mean healthy fish, invertebrates, birds, and people.

The migration of birds is also reflective of the global travel and global economy that in turn have presented new conservation and, in some cases, public health challenges. Introduction of pathogens such as West Nile Virus and introduced mosquito species, which can increase the spread of illnesses including Eastern Equine Encephalitis, are a sobering reminder of our global connections. Changing fall temperatures provide a welcome assist to mosquito control efforts.

Changes can also be a source of inspiration. The changes students in the Wildlife Guards program have made, both personally and within their community, highlight what great things can be accomplished when we dare to do things that are new or beyond our comfort zones and how that can help us find novel ways to meet conservation challenges.

For inspiration, you can't beat the amazing images captured in this year's Discover Outdoor Connecticut photo contest. Each one highlights the amazing richness of our state's natural resources in every season. Let those captured moments inspire you to get outdoors and enjoy the colors, sounds, and smells of a crisp fall day. I cannot think of a better way to appreciate the connections of the natural world. Maybe you will even be fortunate enough to snap an amazing photo for next year's contest!

Jenny Dickson, DEEP Wildlife Division Director

Connecticut Wildlife

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Commissioner
Katie S. Dykes

Deputy Commissioner
Susan Whalen

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)
Circulation Trish Cernik

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

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A Hudsonian godwit shows off its identifying field marks. Its raised wings show the dark underwing lining, while the bold black and white tail pattern is also visible.

Photo by Paul Fusco

Audubon Wildlife Guards:

Student Stewards of the Shoreline

Written by Shelby Casas, Waterbird Technician, Audubon Connecticut

On July 2, 2019, 16 high school students from Bridgeport and West Haven started their summer jobs with Audubon Connecticut. At Pleasure Beach in Bridgeport, Anthony L., Ricardo or "Tyler", Ori, Kyle M., Ichell, Shela, and Elani joined Crew Leaders Natalie and Sara, both college students at Connecticut universities. At Sandy Point Bird Sanctuary in West Haven, Noah, Rianne, Anthony P., Daniela, Samiyah, Matthew, Kyle B., and James were overseen by Alfred and Victor, both alumni of the Wildlife Guards program themselves. For some, this was their first job; for others, their first experience in the world of conservation and wildlife.

A. GREEN / AUDUBON CONNECTICUT (2)

Wildlife Guards work with the City of West Haven to install two interpretive signs at Sandy Point Beach and Bird Sanctuary. Assisting is Ed Moran (center), an ECSU senior who was interning at West Haven Department of Public Works this past summer.

Summers in the Sand

Despite working at sites that are essentially in their backyard, the Wildlife Guards are typically students who have grown up without much outdoor experience. Just seeing Pleasure Beach can be an eye-opener.

"I never thought something like this was in Bridgeport of all places," said Elani. Ori recounted seeing his first-ever piping plover this year, "*I would never even have known they were there.*"

Audubon Connecticut, with the help of the Roger Tory Peterson Institute of Natural History, the City of Bridgeport, and the City of West Haven, runs the Wildlife Guards program for high school students to assist in the stewardship of their local beaches. Bridgeport and West Haven-based students are interviewed by Audubon Connecticut staff, Corrie Folsom-O'Keefe and Genevieve Nuttall, then hired by their respective cities to monitor beach-nesting birds, engage the public, and participate in habitat restoration. The crews are stationed at two very popular beach sites, Pleasure Beach in Bridgeport and Sandy Point Bird Sanctuary in West Haven.

Tiny Chicks, Big Responsibilities

Pleasure Beach is a site with a lot of history. Stretching back to 1892, the park was primarily a large tourist attraction with roller coasters, a baseball field, and carousels. After a fire destroyed the only bridge connecting the island to the mainland in 1996, it was abandoned by people and reclaimed by nature. Shorebirds, like the piping plover and least tern, historically nested at Pleasure Beach, so when the island reopened in 2014, these birds and American oystercatchers were still making the island their

A West Haven Guard assists with the placement of the two interpretive signs at Sandy Point. These signs discuss the importance of the Long Island Sound and its watersheds.

C. FOLSOM-O'KEEFE / AUDUBON CONNECTICUT

Bridgeport Wildlife Guards (blue T-shirts) show the Mayor's Conservation Corps (green T-shirts) around for a "day in the life" of a Wildlife Guard. The Guards teach the Conservation Corps how to use binoculars and identify shorebirds.

home. To help people better coexist with nature, the island needed more than just lifeguards. The Wildlife Guards program was established to watch over the protected species of animals and native flora.

On Pleasure Beach, the students monitor nesting plovers and oystercatchers in an effort to ensure they can safely nest and raise chicks. They tend to the native plant gardens around the pavilion, and perhaps most important – they engage beachgoers on-site through staffing outreach tables and education. To expand their understanding of the natural world, the students take part in field trips to other important conservation sites around Connecticut, including Hammonasset Beach State Park and Beardsley Zoo, and participate in a variety of lessons on topics like saltmarsh ecosystems and the life cycle of horseshoe crabs.

"*I will definitely carry the knowledge I have gained from this program with me. You don't just build something – you have to take into account the environment,*" said Tyler, a rising senior who plans to seek a career in building and design.

Responsibilities at Sandy Point are very similar to Pleasure Beach. Sandy Point is popular with local anglers and birders, and it is a critical nesting site for many shorebirds, including piping plovers, American oystercatchers, and least terns.

The Guards monitor nesting shorebirds at Sandy Point, educate the public, and help Sanctuary volunteers with vegetation management. On any given day, they can be seen talking to visitors at the en-

Dedicated work by Wildlife Guards has benefitted nesting shorebirds, including piping plovers.

PHOTO: PAUL FUSCO

A. GREEN / AUDUBON CONNECTICUT

Bridgeport and West Haven Wildlife Guards attend weekly field trips together. At this field trip, the Guards teach campers at Audubon Connecticut's Bent of the River Center about beach-nesting birds.

trance to the park, or removing invasive mugwort, phragmites, and autumn olive and adding native plants to the grounds.

All activities and projects at Sandy Point are managed and planned out by veteran crew leader Alfred, who has been with the Wildlife Guards for seven years. At 21, Alfred has watched his fellow Guards grow in the program, even though he knows it is not easy for the students to get excited during their summer vacation. *"Eventually some of the guards warmed up to learning how to memorize bird calls and names,"* said Alfred.

Certain students, like Noah and Daniela, hope to be crew leaders in the future. Unlike her other job, Daniela says, "*It is something different. They [the Crew Leaders] know you by your name, you bond with them.*"

Seeing Progress and Making Memories

Not all experiences are pre-planned, and sometimes the most memorable ones are personal. Rianne recounts her trip to Hammonasset Beach State Park, looking over a small pond with purple martins: "*I thought it was cute and beautiful watching the little birds flutter – and really sad that they are dwindling down, and there isn't anything we can do if we don't help.*" Samiyah describes her first experience eating sea lettuce, saying "*[Corrie] took some out of the Sound – handed it out to us – that was really crazy to me. I think about that a lot because if I ever run out of food, I know I could go to the beach and make a salad.*"

Recognizing a bird species on one's own for the first time is a life-changing experience. Anthony P. reflects on the first moment he successfully identified a piping plover, saying "*It felt rewarding – to see the progress and knowing that is a piping plover felt really good.*" This confidence and knowledge help the Guards as they engage with beachgoers and ask them to share the shore with birds by respecting fenced-off areas, keeping the beach clean, and keeping dogs off the beach or on leashes in areas where they are allowed during the nesting season.

Rewarding Summer

To wrap up their summer season, the Guards made paper plate awards for one another with categories like team spirit (Keeping It Fun Award) and most knowledgeable (the Factoid Award). Natalie and Sara are past Guards and it was their first year as leaders. They describe the summer as *"challenging"* to learn how to be good leaders and be respected. Their students describe the summer as *"fun"* and "*a great opportunity*", often citing how close their group is and how, according to Kyle M., everyone is "*always helping each other and being there.*" Kyle will always remember their water balloon fight and the time they had "*a little party, and the [Crew Leaders] surprised us with a little bit of food*".

As the 2019 Wildlife Guards head back to their classrooms, they carry a new legacy. During their tenure, the first American oystercatcher chick fledged at Pleasure Beach since it reopened in 2014. Because of moments like this, it is often the previous Guards who recruit future program participants, looking for friends that share their love and passion for the environment and enticing them through their fond memories of walking the beach identifying their first plover. If precedent holds, the future of the Wildlife Guards program looks very promising.

The Wildlife Guards program would not be possible without the support of partners and funders. We are thankful for program support from the City of Bridgeport Department of Youth Services and the Mayor's Summer Youth Initiative, City of West Haven Department of Public Works, Roger Tory Peterson Institute of Natural History, United Way of Coastal Fairfield County, West Haven Watershed Restoration Committee, DEEP Wildlife Division, Schumann Foundation, the Jeniam Foundation, Horizon Foundation, and Menunkatuck Audubon Society.

Safety is a Must for Tree Stand Use

Article and photo by Paul Benjunas, DEEP Wildlife Division

Using a tree stand is an integral part of a deer hunter's field equipment, as it provides a wider field of vision, allowing the hunter to spot game much sooner than at ground level. Being positioned in a tree stand also makes it harder for game to detect a hunter's scent and provides the hunter with a greater level of concealment, positioning the hunter above the animal's normal field of vision.

However, these advantages do not come without risk. Tree stands can be dangerous if they are used incorrectly or carelessly, with most accidents occurring while hunters climb up to or descend from their stand. The best way to use a tree stand safely is to become familiar with its function and practice with it prior to the first day of the hunting season. To protect yourself, use good judgment and follow these recommendations, always putting safety first.

- Always read the manufacturer's instructions and follow them strictly. Inspect portable stands for loose nuts and bolts each time they are used.
- Make sure the equipment is in good shape and suspension straps and attachments are not frayed or worn.
- Attach a Fall-Arrest System (FAS) to the tree while at ground level, and keep it attached throughout your hunt. This piece of equipment may not be included with your stand, but will significantly reduce your chance of severe injury or death should you fall from the stand.
- Only use a tree stand during daylight hours.
- Be extremely wary during wet weather and wear boots with non-skid soles.
- Carry a signaling device, such as a whistle, radio, or cell phone, to let others know if you have a problem.
- Always use three points of contact when climbing into or out of a tree stand.
- Never carry equipment while climbing. Use a haul line to raise or lower your gear. Make sure your firearm is unloaded and broadheads are covered prior to raising your hunting implement with a haul line.
- Always tell someone where you are hunting and when you will return.

Tree stand safety is one of the many safety topics covered in Connecticut's Conservation Education/Firearms Safety (CE/FS) courses. Sign up for courses on the DEEP website at *www.ct.gov/deep/hunting* or by calling the Wildlife Division at 860-424-3011. See you outdoors!

No Bull – *Maybe a Cat*

Written by Mike Beauchene, DEEP Fisheries Division; photos DEEP Fisheries

Another fond fishing memory from my early childhood is fishing at my Grandfather's pond for bullheads. On this particular day, we had just finished collecting a dozen or so nightcrawlers out of my Grandfather's worm holding box. The worm box was a magical wooden rectangle roughly 18 inches wide, 12 inches deep, and 24 inches long filled three quarters of the way with rich earth. A three-pronged garden tool was inside, used to slowly dig and discover the night crawlers (previously deposited from night-time capture in the yard) hidden within – magic for a 10-year-old.

The worms, now in a very cool, green metal cylinder with a hinged lid that attached to your belt, joined several fishing rods and a five gallon plastic sheetrock taping bucket in the bed of Grandpa's pick-up truck. We were on our way!

Our quarry was to catch dinner, which that night would hopefully be a handful of brown bullheads, or as I would come to learn them as during my fisheries work in college, *Ameiurus nebulosus*. The family homestead pond never let us down, and in an hour or so, we had plenty for dinner and, boy, could Grandma cook a mean fried bullhead fillet.

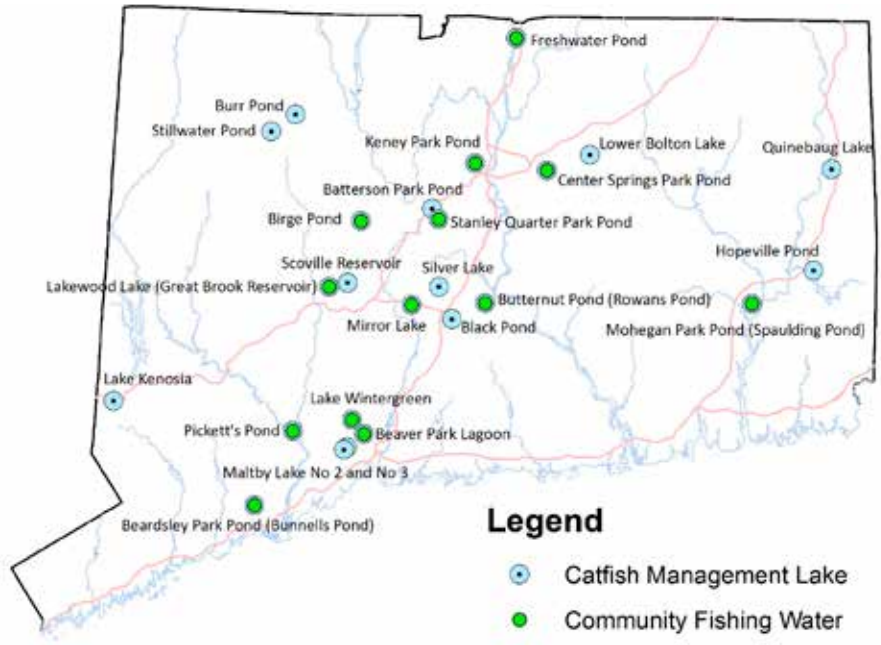
Catfish tends to be a generic term tossed about casually to refer to any fish that has a chin full of whiskers. Scientifically, these type of fish are grouped into a family called Ictaluridae. The catfish and bullhead belong to a group of fish that is differentiated from all others, as they have an adipose fin (small fleshy lobe on the back between the tail and the dorsal fin), chin whiskers (barbels), a single stout rigid spine in the dorsal and each pectoral fin, and lack scales.

Connecticut has four common species – the native brown bullhead (*Ameiurus nebulosus)* and three introduced species, yellow bullhead (*Ameiurus natalis*), white catfish (*Ameiurus catus*), and channel catfish *(Ictalurus punctatus*).

Bullhead or Catfish?

Identifying which species you have caught can be tricky and confusing, as all of Connecticut's catfish have a similar look and feel. The easiest way to differentiate bullheads (brown and yellow) from the white and channel catfish is the shape of the tail. Bullheads have a rounded tail that is a bit convex. Catfish have a forked or V-shaped tail.

Locations stocked with channel catfish purchased by the DEEP Fisheries Division (as of 2017).



What Type of Bullhead; Brown or Yellow?

Once you know you have a bullhead, next you need to figure out if it is a brown or yellow. The chin barbels are the hint. All of the barbels on the brown bullhead are dark-colored. Those of the yellow bullhead are light in color. Yellow bullheads sometimes have a yellow tint to the belly and underside of the head.

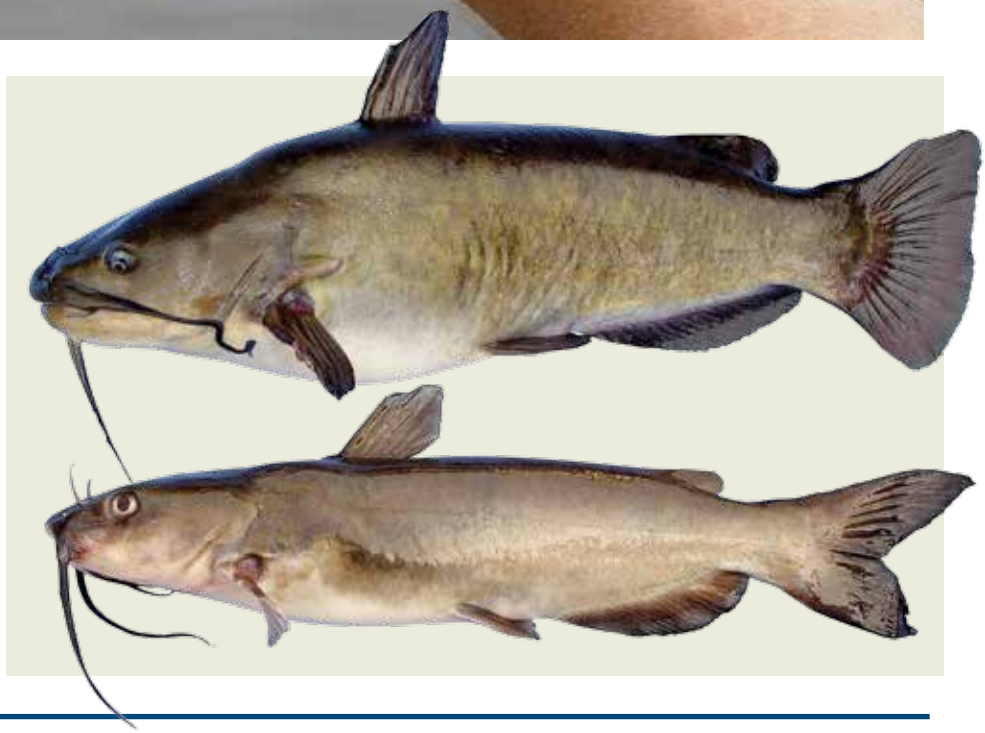
What Type of Catfish; White or Channel?

Unlike bullheads, which are fairly easy and straight forward to identify, differentiating between white catfish and channel catfish can give even the most seasoned fisheries biologist a challenge.

White catfish have a wider and broader

The white catfish (above) is an inhabitant of the estuaries in our larger rivers like the Thames, Connecticut, and Housatonic.

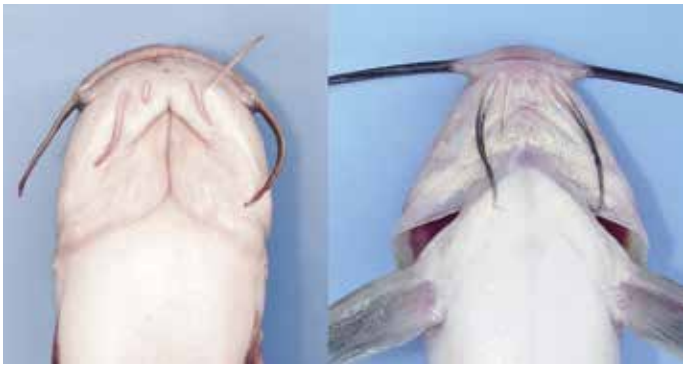
(Right photo) The bullhead (top) has a square or rounded tail, while the catfish (bottom) has a forked or V-shaped tail.



head than channel catfish. The iris of the eyes may be colored blue. The anal fin is shorter than that of the channel catfish, with between 18 and 24 rays. The tail is forked, but may only be slightly so, with the tips of the tail slightly rounded. The barbels at the corner of the mouth are about twice the length of the barbels near the nostrils.

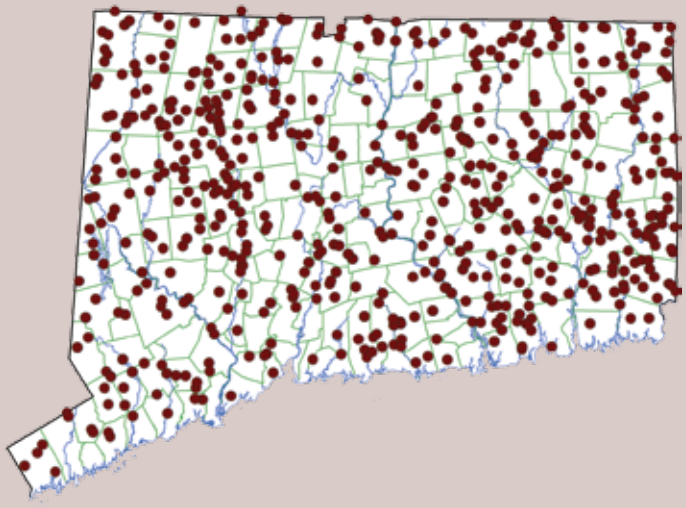
Channel catfish have a narrower head and mouth. The tail is strongly forked, with the tips of the tail com-

The yellow bullhead (left) has light barbels and often a yellow tint on the underside of the head, while the brown bullhead (right) has dark barbels and no pigment (white).

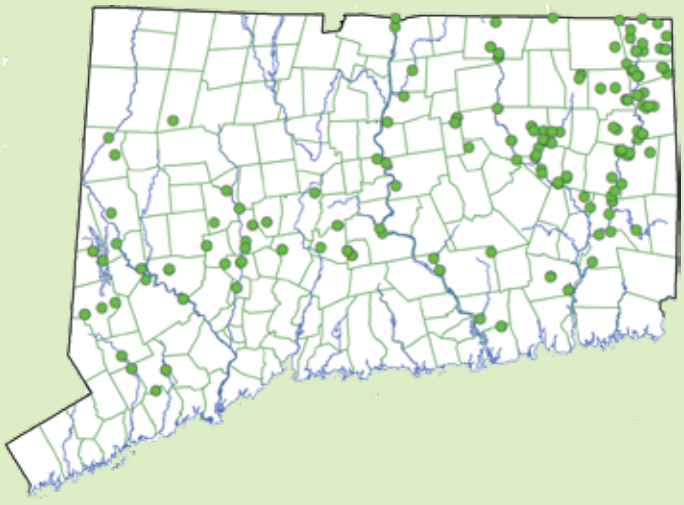


The white catfish (left) has light barbels and a broader mouth than the channel catfish (right) with dark barbels and a narrower mouth.

Distribution of brown bullhead, as found in fish population samples collected by the Fisheries Division since 1988.



Distribution of yellow bullhead, as found in fish population samples collected by the Fisheries Division since 1988.



ing to a distinct point. The anal fin is longer than that of the white catfish, with between 25 to 29 soft rays, and the tail is deeply forked. The barbels at the corner of the mouth are about three times the length of the barbels near the nostrils. Juvenile channels may be silvery with dark spots.

More About Connecticut's Bullhead and Catfish

The native brown bullhead is also known as a "horn pout" or "mud pout". This fish is widespread across the entire state and can be found in almost every standing body of water. Bullhead are easy to catch by simply leaving a piece of bait, like a worm, set on the bottom. The fish are very tasty, provided the fillets are skinned. Brown bullhead rarely exceed 12 to 14 inches and are most commonly in the eight to 10 inch range.

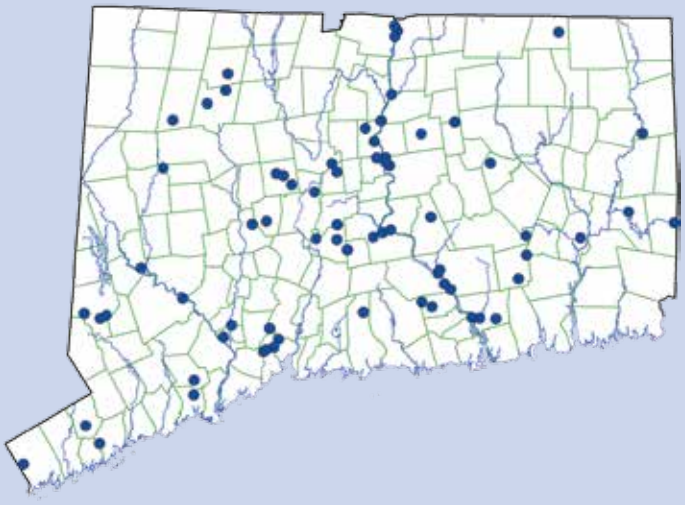
The introduced yellow bullhead can have a very similar appearance to the brown, but the barbels give it away every time. This fish has a limited distribution in Connecticut, primarily in the Quinebaug River drainage. The first records of the yellow bullhead were during the 1980s, and it is thought the fish moved into Connecticut from upstream populations in Massachusetts. Other occurrences around the state are being attributed to transport by humans (thinking they had a brown bullhead). Yellow bullhead rarely exceed 12 to 14 inches and are most commonly caught in the eight to 10 inch range.

The introduced white catfish was reported being trapped in the Connecticut River and then relocated to many waters by biologists working for the State Board of Fisheries and Game during the mid-1900s. The intent of the relocation was to enhance recreational fishing by providing a larger fish than the native brown bullhead. White catfish are tolerant of moderate salinities and, as such, are a prominent member of the fish community in our larger river estuaries found on the Thames, Connecticut, Quinnipiac, and Housatonic Rivers. White catfish can grow to be about 20 to 26 inches, with many commonly caught in the 15 to 22 inch range.

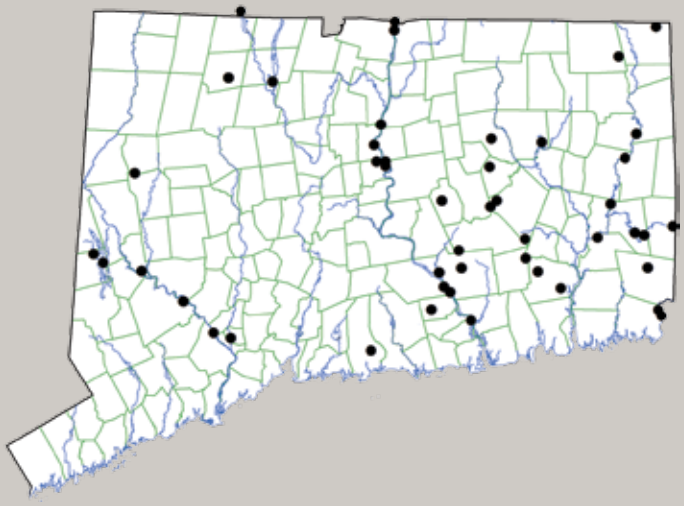
The earliest confirmed record of channel catfish stocking

Edwin Stackhouse with a 14-pound channel catfish from Batterson Park Pond, in Farmington.
PHOTO COURTESY EDWIN STACKHOUSE

Distribution of channel catfish, as found in fish population samples collected by the Fisheries Division since 1988.



Distribution of white catfish, as found in fish population samples collected by the Fisheries Division since 1988.

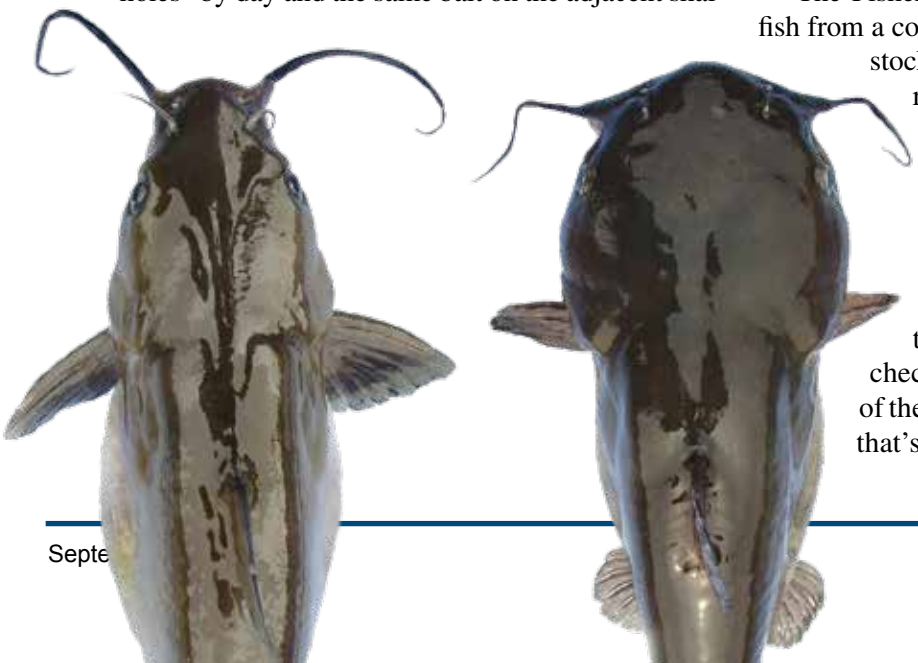


in Connecticut was in 1954, when the Connecticut Board of Fisheries and Game stocked them into Lee Pond in Fairfield. During the 15 to 20 years prior to that stocking, there were numerous stockings of white catfish and "unknown" catfish into Connecticut lakes and ponds.

The Connecticut State Board of Fisheries and Game routinely collected and relocated warmwater species annually, including nearly 10,000 catfish (exact species not always specified), from the Connecticut River-Hamburg Cove as detailed in interdepartmental memos dated 1965 and 1968. Newsletters published by the State Board indicate these fish, and a variety of other species, were transported and stocked into designated "Children's Only Fishing Waters" to provide quality fishing for children.

Channel catfish are the largest, with growth potential to exceed 25 pounds. A naturalized and robust self-sustaining population is found in the Connecticut River. Channel catfish in the eight to 10 pound range (24 to 30 inches) can be caught with very little time or effort. Some of the best fishing is using chunks of fish or eel on the bottom of deeper "holes" by day and the same bait on the adjacent shallow river flats by night.

The Fisheries Division began purchasing channel catfish from a commercial hatchery in Arkansas and has been stocking various waters since 2007 to diversify recreational fishing opportunities and provide a quality summer fishery for a species popular to eat. Channel catfish are the only species of the three where private landowners apply for stocking permits from the Fisheries Division. So give your local water a try by casting a worm and waiting for the line to go tight. To get the identification correct, check the shape of the tail and the color of the barbels to see if you have a cat, and that's no bull!



Long Distance Powerhouse

The Hudsonian Godwit

Article and photography by Paul Fusco, DEEP Wildlife Division

Sandpipers, along with plovers, avocets, stilts, and oystercatchers, are part of the larger group of birds referred to as shorebirds. The sandpiper family is large and diverse, with 86 species represented worldwide, of which 28 species are considered regular visitors to Connecticut. Among those sandpipers are two that belong to the genus *Limosa*, the godwits. Godwits are among the largest sandpipers. They are elegant, long-legged wading birds with long, slightly upturned pinkish or orange bills tipped in black. They also have long, pointed wings and short tails. Godwits are easily recognized at a distance, as they have a habit of walking in a hunched posture, with the head drawn in close to the body, unlike other shorebirds. Connecticut is regularly visited by two types of godwit, the marbled godwit and Hudsonian godwit. While both are rare visitors to our state, the Hudsonian godwit is the one that is a long-distance migrant.

Bold black-and-white tail markings and black underwings identify the Hudsonian godwit. Hudsonians also have a whitish wing stripe, which can be seen in flight. Males have rich chestnut brown breast plumage during the breeding season, while females are similar but duller. Females are larger than males and have longer bills. In winter, both males and females have plain gray plumage.

Hudsonian godwits are wetland-dependent, favoring marshes, shorelines, mudflats, flooded fields, and wet tundra habitats. They breed in small numbers in widely scattered locations that offer wet tundra/muskeg habitat from Alaska to Hudson Bay in Canada.

Like almost all sandpipers, godwits use their long bills to probe into the substrate for their principal food, invertebrates. The bill has a flexible tip that allows the bird to grasp prey that may reside deep in the mud. Long bills and long legs allow godwits to reach food other smaller sandpipers cannot reach. Food items include worms, mollusks, crustaceans, and insects, and also plant tubers at certain times of the year.

Of all the shorebirds, godwits are the masters of long-distance migration. For the Hudsonian, the distance between their breeding and wintering grounds may be as much as 9,000 miles.

In spring, the Hudsonian godwit travels from South America, up the Gulf Coast to Texas, then north through the Great Plains and on to arctic and subarctic nesting areas in Canada and Alaska. In fall, this species gathers in its largest flocks in southwestern parts of Hudson Bay and James Bay in central Canada.

In a spectacular migratory feat, most of these birds will fly directly from subarctic Canada to South America, flying

The Hudsonian godwit is rarely encountered in Connecticut.

non-stop over open ocean until they touch down north of the Amazon River on the Atlantic coast of Brazil, a journey that may cover thousands of miles of continuous flying.

Some birds will stage at locations in the Canadian maritime provinces and the northeastern United States, including Cape Cod, before undertaking the over water trip to South America. A few of these birds may show up in Connecticut during their fall migration after a period of strong easterly winds that would bring them closer to shore.

Most of the overwintering population will concentrate at a few locations along the southernmost coast of South America, primarily in Tierra del Fuego. Such large concentrations put the population at risk from potential catastrophic events.

During migration, Hudsonian godwits may be found in large grass fields, where they feed on invertebrates, including grubs and worms.

Conservation

Hudsonian godwits are considered an uncommon species, with a total estimated population of between 50,000 and 70,000. They have a relatively low population and a small breeding distribution. Fall migration and winter staging areas used by Hudsonian godwits have high concentrations of birds. Their migration is long and potentially dangerous. Vulnerability during migration can include such dangers as habitat degradation, chemical and petroleum pollution, illegal shooting, severe weather, and impacts from climate change that may have consequences not only on their migration, but also on the arctic and subarctic breeding ground habitat.

For shorebirds that nest on the tundra in arctic and subarctic regions of North America, climate change is a threat to their very survival. Tundra permafrost provides them with habitat components of low nesting cover, thick grass and willow cover for young chicks, and shallow water pannes for feeding. The thawing of permafrost, which is already occurring, has the potential to transform tundra habitat into less optimal wooded habitat that would leave no place for these birds to nest and raise young.

Climate change may also influence the timing of migration, which the birds rely on for finding food resources at peak times to build up their energy reserves. Prolonged dry periods brought about by rising average temperatures have the potential to dry up ephemeral wetland stopover sites along migration paths.

Given these circumstances, along with the continuing threat of habitat loss, the species is considered to have a high level of conservation concern throughout its range. Earlier this year, Canada added the Hudsonian godwit to its threatened species list, joining seven other shorebird species already listed.

In Connecticut, we can do our part as stewards by protecting shorebird staging areas along the coast. This habitat protection is essential for the conservation of all shorebirds, including uncommon species, such as godwits. Some of our better known shorebird stopover sites include Milford Point (Milford), Sandy Point (West Haven), and Griswold Point (Old Lyme), where some of the largest concentrations of shorebirds are found during spring and fall migrations.

Wide open tundra is the breeding habitat for Hudsonian godwit.

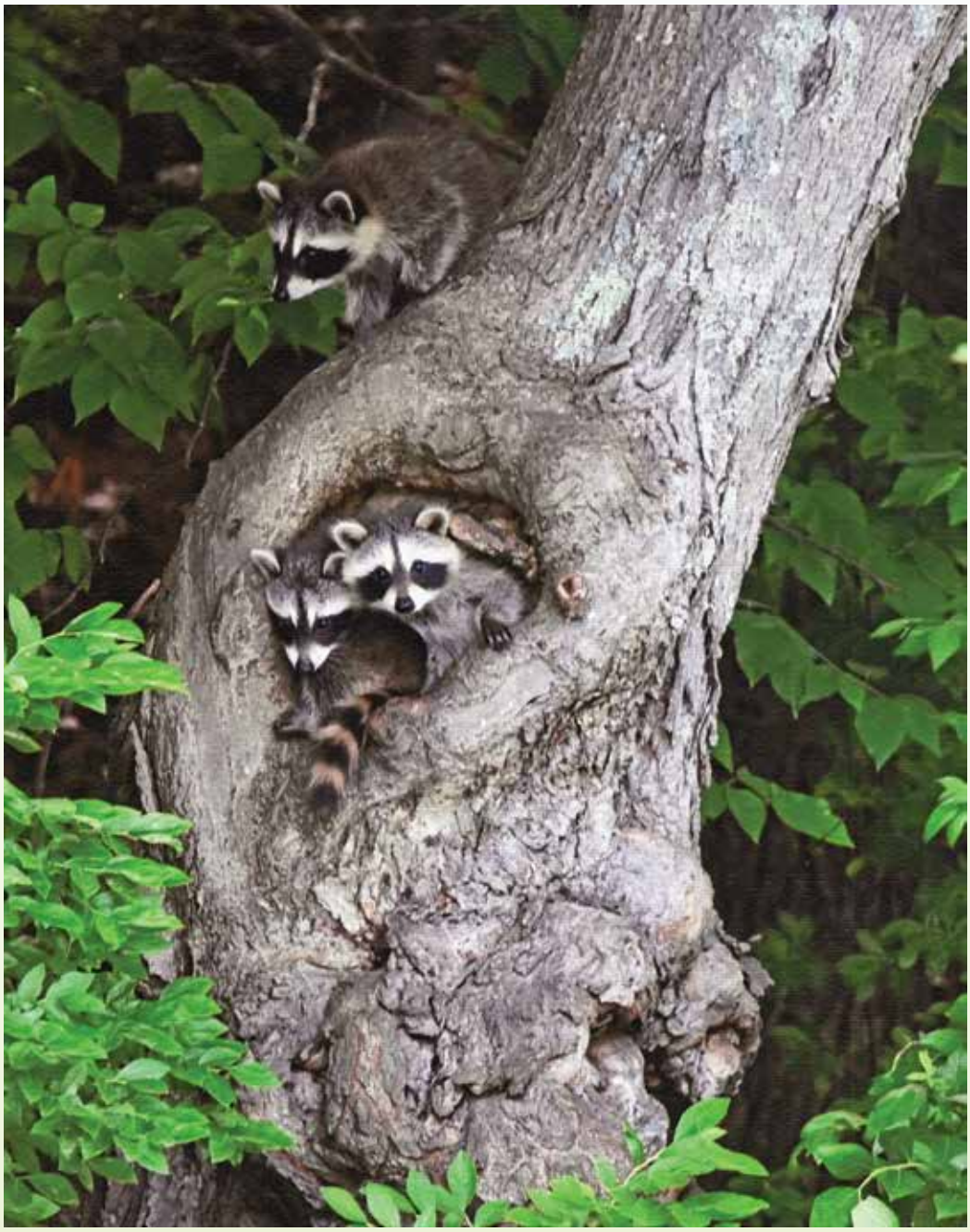
Discover Outdoor Connecticut Photo Contest a Big Hit

The DEEP Bureau of Natural Resources recently held its second *Discover Outdoor Connecticut* Photo Contest. Photographers were invited to submit photos taken in Connecticut in four categories: Wildlife, Scenic (including flora), People Enjoying the Outdoors, and Youth (ages 15 and younger). Over 320 photographs were entered in the contest, and many of the high quality images made the judging extremely difficult for most categories.

All of the photographs, including the winning entries, were on display during DEEP's *Discover Outdoor Connecticut* Day, which was held on September 15, 2019, at the Meigs Point Nature Center at Hammonasset Beach State Park in Madison. A steady stream of event participants viewed the photos and were asked to vote on one photo to receive a "People's Choice" Award. The photo contest was well received by attendees and contest entrants alike.

First place for the Wildlife category went to Maxx McKinlay of Granby for the endearing image of three young raccoons on a den tree. First place for the Scenic category went to Kristen Fallon of Bloomfield for her beautiful image, *Amber Light*. First place in the People Enjoying the Outdoors category went to Daniel Reinwald of Branford for the reflective image, *Painting the Point*. The Youth category was won by Avery Rogulski of Lisbon for a wonderful close up image of a dragonfly. The People's Choice Award winner was Kim Holden Wolfe from Plainville, for her serene image of Kent Falls.

Winners received various prizes and ribbons, which were donated by the nonprofit volunteer group, Friends of Sessions Woods.



The first place winner in the Wildlife Category was the stunning image of a raccoon family in a den tree photographed by Maxx McKinlay of Granby.

Winning photos can also be seen at: www.ct.gov/deep/DiscoverOutdoorCT

Left: "Amber Light" by Kristen Fallon of Bloomfield won first place in the Scenic Category.

Above: Kelly Hunt of Deep River won third place in the People Enjoying the Outdoors Category with"Splashing Fun."

Below left: Marcy Lamiras of Putnam won third place in the Scenic Category with the snowy landscape along the Quinebaug River.

Below: Kristen Fallon claimed second place in the People Enjoying the Outdoors Category with the image titled "You Go First."

Peter DeGennaro of Plainville won second place in the Wildlife Category with the above photo of a state endangered Northern Metalmark butterfly.

Over 320 photographs were entered in this year's Discover Outdoor Connecticut Photo Contest.

Signar Cohen-Tyler's photograph entitled "Blades of Orange" took the second place prize in the Youth Category.

The stunning "Summer Glow" by Deb Swaney-Jones of Ivoryton won second place in the Scenic Category.

Third place in the Youth Category went to Emma Kawalchuk of Farmington for her colorful "Flower."

Submissions came in from 86 towns in Connecticut, along with some from as far away as Florida.

Top: The first place photo in the People in the Outdoors Category went to Daniel Reinwald for "Painting at the Point."

Above: First place in the Youth Category was won by Avery Rogulski of Lisbon for the close-up dragonfly image.

Above right: The third place photo in the Wildlife Category was taken by Sheryl Haraghey from Enfield.

The DEEP Wildlife Division would like to thank all of the photographers who submitted their work for the second annual Discover Outdoor Connecticut Photo Contest!

Using Snapping Turtles to Gauge Water Quality - *Study Results*

Written by Tyler Mahard, DEEP Wildlife Division, photos by Paul J. Fusco

The July/August 2019 issue of *Connecticut Wildlife* detailed a research project that used data collected from snapping turtles to learn about water quality in Connecticut's inland waters. Because snapping turtles are long-lived omnivores, they have the potential to accumulate a wide variety of toxins over their lifetimes. Snapping turtles are also widespread and tolerant of disturbance and pollution. As a result, they are good bioindicators capable of providing information about relatively clean and dirty waters from across the state (bioindicators are living organisms that give an idea of the health of an ecosystem).

During the summers of 2017 and 2018, 56 snapping turtles were captured in the Housatonic, Quinnipiac, Connecticut, and Thames River watersheds. Within each watershed, seven turtles were captured from the primary river, and seven were captured from upland wetlands. Blood samples, toenail clippings, and measurements were taken from each turtle in the field, and the turtles were promptly released at their location of capture.

Blood and toenail samples were tested at UCONN for heavy metals (including lead, arsenic, and mercury), PCBs, and pesticides. Heavy metals occur naturally, but are often released in higher concentrations by industrial processes. PCBs (polychlorinated biphenyls) are a suite of manufactured chemicals that were used widely in machinery fluid, flame retardants, and caulking until their production was banned in 1979. These chemicals are carcinogenic and do not readily breakdown in the environment. Pesticides continue to be used in agricultural and residential settings, and can run off into waterways. Many that have been banned are neurotoxins and continue to persist in the environment.

Heavy metals, PCBs, and pesticides were found in turtles from all four watersheds. All samples had detectable amounts of heavy metals, and nearly all had detectable levels of PCBs and pesticides. Concentrations of heavy metals and PCBs in turtles differed among the four drainage basins, while levels of pesticides were similar across all of Connecticut. Turtles living in rivers tended to have higher concentrations of arsenic, lead, and mercury than turtles living in upland lakes and ponds. Turtles in the Housatonic watershed tended to contain higher levels of PCBs. Although these pollutants likely have some detrimental effect on snapping turtles, the species has a history of being able to persist in polluted waters.

Because snapping turtle meat is oc-

Road Mortality

Among the 56 turtles captured for this study, 47 were adult turtles. Only 10 of these adults were females. During nesting season, female snapping turtles make overland journeys to find suitable terrestrial habitat for egg laying. This is quite dangerous as these journeys often involve crossing busy roads. As a result, large numbers of female snapping turtles are killed each spring. While other factors are likely involved, the fact that fewer than 25% of adult turtles captured in this study were female is likely a reflection of the disproportionately increased risk of road mortality faced by female turtles. Such skewed sex ratios in populations of semi-aquatic turtles have been observed in numerous studies across the country. When driving near wetlands during spring and summer, it is important to be alert and prepared to avoid hitting turtles that may be in roadways.

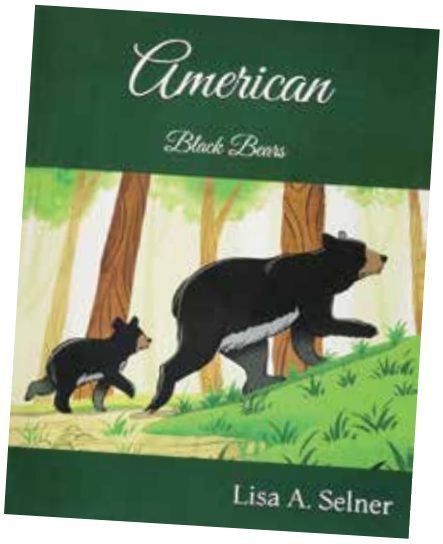
casionally consumed by people, contaminants in snapping turtles are also a concern for human health. The concentration of mercury in all turtle nail samples ranged from 0.16 to 31.37 micrograms per gram. The U.S. Environmental Protection Agency recommends limiting consumption of fish with concentrations of mercury that exceed 0.15 micrograms per gram. It is important to note that the concentration of mercury in a turtle's nail may differ from that of turtle meat. Although Connecticut banned commercial trade of snapping turtles in 2018, current regulations allows for harvest of up to 10 turtles per individual per season (July 15 – September 30), provided that turtles have a shell length of 13 inches or more. High mercury concentrations observed among some turtles in this study indicate that frequent consumption of snapping turtle meat could be unsafe.

Connecticut's rivers and lakes are clean compared to years past. However, pollution still enters waterways from occasional spills, and mercury floats in on air pollution from outside of the state's borders. Because snapping turtles live and accumulate contaminants for decades, they provide a long-term indication of water quality. Through continued vigilance and stewardship of our waters, it is hoped future samples will reveal further improvement of Connecticut's waterways. This study was completed in collaboration with UCONN Wildlife and Fisheries Conservation Center and provides important data regarding the health of Connecticut's inland waters.

Funding for this project was provided by the Connecticut Endangered Species/Wildlife Income Tax Check-off and the federal State Wildlife Grants programs.

FROM THE FIELD

"American Black Bear" Children's Book



Author and wildlife biologist Lisa A. Selner recently published a children's book entitled *American Black Bears*, which is filled with fun facts about North America's smallest and most widely distributed bear. Lisa previously worked for the CT DEEP Wildlife Division's Furbearer Program, where she assisted with the program's research and public outreach efforts and also worked with bears firsthand. The information included in the book provides an excellent snapshot of the black bear's natural history, including behavior, habitat, and diet. Conservation concerns and safety precautions are included, as well as information on how to avoid bear conflicts near your home, while camping, or out hiking. Every other page includes a colorful illustration that helps tell the story of the American black bear. This book is recommended for children ages 8 and above. Lisa has also published other wildlife-focused children's books, including one on *The American Kestrel*.

Creating Shrubland Habitat at Minor Preserve in Stonington

Wildlife Division staff, along with a group of dedicated volunteers, recently planted approximately 270 native shrubs at the Stonington Land Trust Miner Preserve in Stonington to create young forest/shrubland habitat. The planting occurred in a meadow that had previously been invaded by Phragmites. The phragmites was treated and replaced with a variety of shrubs, including speckled alder, arrowwood viburnum, red osier dogwood, silky dogwood, and common elderberry. The goal is to promote the growth of a shrub thicket that would benefit wildlife, including the New England cottontail, which had been previously documented adjacent to the property, and more recently, on the preserve. Young forest and shrubland habitats are critical for the New England cottontail, as well as over 50 species of greatest conservation need as identified by Connecticut's Wildlife Action Plan. In the past, natural disturbances, such as fire, flooding, beaver activity, and storms, created and maintained these habitats. Today, some of these disturbances are replicated by the Habitat Program to maintain a variety of habitats for wildlife.

Paul Benjunas, DEEP Wildlife Division

Roraback WMA Expands

Roraback Wildlife Management Area (WMA) in Harwinton recently expanded by approximately 73 acres with the purchase of the Kasznay property. Funding for this purchase was made possible through the Federal Aid in Wildlife Restoration Program, which collects fees from the purchase of hunting equipment. The majority of the WMA was originally donated in 1983 by local resident, Lewis P. Roraback. The Kasznay property consists of a mix of agricultural fields, deciduous forest, mixed coniferous forest, and two brooks, Leadmine Brook and Kelly Pond Brook. Leadmine Brook, a cold water stream, runs along the property's eastern boundary and is protected in part, by existing parcels of Roraback WMA. This stream is stocked with trout, and sampling results from a 2015 survey showed blacknose dace, creek chub, common shiner, longnose dace, and white sucker were all present. These fish communities are fairly typical of cold water streams in minimally developed watersheds. Stream resources such as this are highly vulnerable to degradation and, consequently, are in decline in Connecticut, and thus identified as a key habitat type for protection in Connecticut's Wildlife Action Plan.

The new property is located within one of two Woodcock Focus Areas identified by the DEEP Wildlife Division and is near a demonstration site where a timber harvest was conducted in conjunction with capturing, banding, and attaching radio transmitters to American woodcock. After the timber harvest, this demonstration area has proven to be immensely beneficial for American woodcock – a 400% increase in singing males was

P. J. FUSCO

detected on the site and high seasonal survival rates indicative of excellent quality habitat were documented. Additionally, the site provided year round habitat for about half of the birds that were monitored in 2016 and 2017.

The addition of this parcel to an existing wildlife management area will reduce encroachment from development, provide additional roadside access to Roraback WMA, and will increase the amount of land available for hunting, trapping, fishing, and wildlife viewing.

Laurie Fortin, DEEP Wildlife Division

U.S. and Canada Have Lost More than One in Four Birds in the Past 50 Years

A study published recently in the journal *Science* reveals that since 1970, bird populations in the United States and Canada have declined by 29%, or almost 3 billion birds, signaling a widespread ecological crisis. The results show tremendous losses across diverse groups of birds and habitats. Multiple, independent lines of evidence show a massive reduction in the abundance of birds. Continuing declines of threatened species were expected to be found. But for the first time, results also showed pervasive losses among common birds across all habitats, including backyard birds.

The study notes that birds are indicators of environmental health, signaling that natural systems across the U.S. and Canada are now being so severely impacted by human activities that they no longer support the same robust wildlife populations. The findings show that of nearly 3 billion birds lost, 90% belong to 12 bird families, including sparrows, warblers, finches, and swallows – common, widespread species that play influential roles in food webs and ecosystem functioning, from seed dispersal to pest control. Among the steep declines noted:

- Grassland birds are especially hard hit, with a 53% reduction in population – more than 720 million birds – since 1970.
- Shorebirds, most of which frequent sensitive coastal habitats, were already at dangerously low numbers and have lost more than one-third of their population.
- The volume of spring migration, measured by radar in the night skies, has dropped by 14% in just the past decade.

Evidence for the declines emerged from detection of migratory birds in the air from 143 NEXRAD weather radar stations across the continent in a period spanning over 10 years, as well as from nearly 50 years of data collected through multiple monitoring efforts on the ground, including citizen science efforts. These data are consistent with what is being seen elsewhere with other taxa showing massive declines, including insects and amphibians.

Although the study did not analyze the causes of declines, it noted that the steep drop in North American birds parallels losses of birds elsewhere in the world, suggesting multiple interacting causes that reduce breeding success and increase mortality. The largest factor driving these declines is likely the widespread loss and degradation of habitat, especially due to agriculture and urbanization. Other studies have documented mortality from predation by free-roaming domestic cats (conservative estimates are over 1 billion annually); collisions with glass, buildings, and other structures; and use of pesticides associated with widespread declines in insects, an essential food source for birds. Climate change is expected to compound these challenges by altering habitats and threatening plant communities that birds need to survive. More research is needed to pinpoint primary causes for declines in individual species.

All is not lost – there are many ways to help save birds. Some require policy decisions, such as strengthening the Migratory Bird Treaty Act. Harmful pesticides can be banned and effective bird conservation programs need to be funded. People can make a difference with everyday actions that together can save the lives of millions of birds – actions like making windows safer for birds, keeping cats indoors, and protecting habitat.

P. J. FUSCO

Study results showed pervasive losses among common birds across all habitats, including backyard birds. Many actions can be taken to help bird conservation, including strengthening the Migratory Bird Treaty Act and addressing pesticide use.

The study also documents a few promising rebounds resulting from galvanized human efforts. Waterfowl (ducks, geese, and swans) have made a remarkable recovery over the past 50 years, made possible by investments in conservation by hunters and billions of dollars of government funding for wetland protection and restoration through such programs as Federal Aid in Wildlife Restoration and the federal Migratory Bird Conservation Stamp. Raptors, like the bald eagle, have also made spectacular comebacks since the 1970s, after the harmful pesticide DDT was banned and recovery efforts through endangered species legislation in the U.S. and Canada provided critical protection.

This crisis reaches far beyond our individual borders. Many of the birds that breed in the U.S. and Canadian backyards migrate through or spend the winter in places farther south — from Mexico and the Caribbean to Central and South America. What birds need now is an historic, hemispheric effort that unites people and organizations with one common goal: bringing our birds back." You can learn more and also find out how to help at *3billionbirds.org*.

National Audubon recently released a recent report called "Survival by Degrees: 389 Bird Species on the Brink" which describes that two-thirds of North American birds are at increasing risk of extinction from global temperature rise. Look for more details in a future issue of "Connecticut Wildlife" magazine or visit *https://www.audubon.org/climate/survivalbydegrees*.

EEE, Not for Me!

Written by Timothy McKinney, Contractor for the Wildlife Management Institute

The outbreak of eastern equine encephalitis (EEE) in Connecticut toward the end of summer 2019 was a concern for many, so much so that the fear of contracting the disease overrode the desire to participate in many outdoor activities. So what exactly is EEE? It is a disease that is transmitted by infected mosquitos, which feed on both birds and mammals. For most who contract the disease, symptoms include high fever, headache, tiredness, neck stiffness, nausea, and vomiting. In more extreme cases, inflammation of the brain can lead to death. When outside during mosquito season, people are advised to protect themselves by using insect repellent, wearing protective clothing, and removing any standing water or other potential mosquito breeding areas on and around one's property.

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EEE can only be contracted through the bite of an infected mosquito. It poses no threat when consuming animals that may be infected.

Large mammals, such as white-tailed deer, have been reported showing symptoms associated with EEE about three weeks following infection. Symptoms may include hypersalivation, confusion, loss of coordination, head tilt, circling, blindness, loss of fear, difficulty breathing, emaciation, paralysis, and seizures. In Rhode Island, at least three deer displaying these symptoms were euthanized in 2019 due to concerns about chronic wasting disease, but were found to be positive for EEE. One deer in Connecticut was reported with similar symptoms in 2019; however, test results were negative for EEE.

For hunters and anglers, the desire to harvest one's own food may convince them to take proper precautions to protect against mosquitoes while out the field to lessen the chances of contracting EEE. However, some concern has been expressed about whether or not EEE-infected deer are safe to consume. The fact is, they are. EEE can only be contracted through the bite of an infected mosquito. It poses no threat when consuming infected animals. Nonetheless, hunters are encouraged not to shoot or consume any animal that appears to be sick. Whenever processing game, hunters should always wear gloves and protective eye wear. Cooking game meat to an internal temperature of 165 degrees F will kill viruses and bacteria.

If proper precautions are taken when heading out on the water or into the woods, you lessen your chances of contracting this rare disease, and you should be able to continue enjoying these fall outdoor activities. During mosquito season, residents are encouraged to visit the State Mosquito Management Program website at *https://portal.ct.gov/mosquito* to find weekly surveillance updates of mosquito and virus activity and precautionary and control methods.

Where do mosquitoes go during winter?

Mosquitoes are cold-blooded creatures and do not generally feed in temperatures below 50 degrees F. In Connecticut, some adult mosquitoes become inactive with the onset of cold weather and enter into hibernation before the first frost. Other mosquitoes die in the fall but have winter-hardy eggs, which hibernate as embryos.

Many mosquito species (genus *Aedes*, *Ochlerotatus*, and *Psorophora*) in Connecticut deposit eggs in fall, which will not hatch until the following spring. For these mosquitoes, larval development usually begins in early March and egg deposition can extend into October, with adults most abundant from May through September. A few species (genus *Culiseta* and *Coquillettidia*) will overwinter in the larval stage, while adults of other species (genus *Culex* and *Anopheles*) will enter into buildings or sheltered areas and remain dormant until warmer weather arrives. (This is why adult mosquitoes are occasionally seen during a midwinter warm spell.) In Connecticut, some species of mosquitoes can produce up to four broods per year. Most have an average adult life span of about two weeks, excluding those which overwinter as adults.

More questions and answers about mosquitoes can be found at *https://portal.ct.gov/Mosquito/FAQs/Mosquitoes---FAQs*.

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Conservation Calendar

2019 Hunting Season Dates

Sept. 15-Dec. 31 ..... Deer bowhunting season on private land.

Sept. 16-Dec. 31 ..... Deer bowhunting season on state land and fall turkey bowhunting season on state and private land.

Nov. 20-Dec. 10 ..... Statewide firearms deer hunting season on private land. Consult the 2019 Connecticut Hunting and Trapping Guide for specific dates for the shotgun season on state lands and the landowner season.

Dec. 11-24 ..... Muzzleloader deer hunting season on state land.

Dec. 11-31 ..... Muzzleloader deer hunting season on private land.

*Consult the 2019 Connecticut Hunting and Trapping Guide and 2019-2020 Migratory Bird Hunting Guide for specific season dates and details. Guides are available at DEEP facilities, town halls, and outdoor equipment stores, and also on the DEEP website (**www.ct.gov/deep/hunting; www.ct.gov/deep/fishing**). Go to **www.ct.gov/deep/sportsmenlicensing** to purchase Connecticut hunting, trapping, and fishing licenses, as well as required permits and stamps. The system accepts payment by VISA or MasterCard.*

P. J. FUSCO

You Can Help . . .

Help the Wildlife Division keep track of:

Bobcat • Black Bear • Fisher • Moose • Ruffed Grouse • Wild Turkey Broods

Include the date, time, and exact location where the animals were observed.

Report bear and moose online at *www.ct.gov/deep/wildlife*

Report bobcat and fisher by emailing *deep.ctwildlife@ct.gov*

Report ruffed grouse by emailing *deep.Franklin@ct.gov*

Find out how to participate in the Annual Wild Turkey Brood Survey from June 1 through September 30 at *www.ct.gov/deep/wildlifecitizenscience*

Sign up to receive *Wildlife Highlights*, a free, electronic newsletter for anyone interested in Connecticut's wildlife and the outdoors! *www.ct.gov/deep/WildlifeHighlights*

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The mating (or rutting) season for white-tailed deer starts in late October and extends through early January. During that time, you may be able to witness two males sparring with their antlers as they compete over female deer. The antler size for a male deer is determined by age, genetics, and nutritional value of the deer's diet.