

May/June 2022

CONNECTICUT

# Wildlife



# From The Director

*This issue provides a great opportunity to reflect on some amazing long-term conservation efforts, some of which rank among my personal favorites. Our partnership with Beardsley Zoo has had conservation impacts far beyond what either of us would have been able to accomplish alone. In addition to*



*the great projects you'll read about here, there were also many fun Bioblitz events—frantic 24-hour events where you try to identify as many species as possible in a given area—in the greater Bridgeport area. The Zoo vets have also helped us when we have had odd requests. One example was surgery for a badly damaged wing on a silver-haired bat, a state species of special concern. I am excited to see what future collaborations are possible.*

*Another personal favorite is our annual spring breeding waterfowl surveys. As one of the long-time observers, I look forward to visiting “my” survey locations every spring to see the changes from year to year, anticipating which spots will have waterfowl, getting some early insight into what spring migrants have moved back in, and wondering what other wild adventure might unfold. I have seen osprey fishing, fox kits romping near a den, and even a bobcat catching breakfast! And yes, lots of geese and ducks.*

*Did you realize Connecticut has the dubious distinction of having among the most dams on our rivers and streams of any state in the nation? While they led to advances at the time they were installed, they also blocked fish migration, altered ecosystems, and fragmented aquatic habitat. Restoring connectivity and providing for fish passage is another long-term conservation effort yielding tremendous benefits. I think you will be fascinated to learn more in this issue.*

*Two key conservation partnerships worthy of mention are closer to home and behind the scenes. Many of you have long enjoyed the amazing photographs and bird tales contributed by Paul Fusco, a key member of our Outreach Program. As of the end of May, Paul will be retired from DEEP and will be greatly missed. I have had the great fortune to have worked with Paul and been a part of major transformations in our educational materials. From black and white technical illustrations to the full-color images that grace these pages, Paul has helped bring the world of wildlife, their habitats, and the work we do to conserve them into vivid focus for all of us.*

*Joining Paul in retirement is Laura Rogers-Castro, coordinator of our wonderful Master Wildlife Conservationist volunteer program and lead educator for the Wildlife Division. Laura has worked with school groups statewide; organized our participation in fairs, festivals, and community events; and more recently helped us launch virtual educational programs to keep people connected with nature and learning in their backyards or local parks during the pandemic. Before joining the Wildlife Division, Laura and I both spent time at the DEEP's Kellogg Environmental Center in Derby helping to bring the wonder of nature to people of all ages.*

*I would like to thank our many conservation partners, dedicated staff, and our readers for helping to share a passion for nature. With this kind of partnership, I cannot wait to see what great ideas await.*

- Jenny Dickson, Wildlife Division Director

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Connecticut is home to two types of venomous snakes, the timber rattlesnake and the northern copperhead (above). To learn more about venomous snake identification, see page 14.

PHOTO BY P. J. FUSCO

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*Chestnut-sided warbler in young forest habitat.*

*Photo courtesy Paul Fusco*

# CT DEEP and Connecticut's Beardsley Zoo: *A Wildly Successful Collaboration*

Article by Jim Knox, Connecticut's Beardsley Zoo

Even in early May, the clear waters of Sandy Brook can send a chill through the Neoprene waders, wicking the cold up through your feet as you brace against the swift current. With a glance upstream and downstream, we pick our “pour spots,” identifying the best release sites along the river’s shallows for the tiny Atlantic salmon fry in our buckets. With a dip upstream, we swirl rushing river water into the five-gallon buckets, acclimating the little fish to the scent and temperature of their new home stream. Then, once we have selected the right sized cobble—bigger than a quarter, but no bigger than a football—we dip dozens of fish into the protected downstream flow, where they instinctively, and immediately, dive down into the sheltering cobble. There, they will hide from their voracious cousins, rainbow and brown trout, to feed and grow. Over the next two years, the young salmon will reach approximately seven inches in length before making their epic journey downstream to Long Island Sound, the Atlantic, and the west coast of Greenland beyond!

It has been more than 20 years since Connecticut's Beardsley Zoo began its volunteer efforts to assist the Connecticut Department of Energy and Environmental Protection's (DEEP) Fisheries Division in their initiative to reintroduce Atlantic salmon to their historic range and waters in our home state. While that effort has faced numerous obstacles over the years, both natural and human in nature, the one constant has been the steadfast guidance and support of the DEEP. Led by fisheries biologists, Steve Gephard, Bruce Williams, and Tim Wildman, the Zoo team has learned species biology, natural history, and best practices in fisheries conservation from the best. Though contributing only a fraction of the collective effort, the results have become a source of pride for the Zoo volunteers who have reintroduced an astounding 1,000,000+ salmon over the past two decades.

The DEEP Bureau of Natural Resources celebrated its 150th anniversary in 2016, while DEEP marked its 50<sup>th</sup> anniversary last year through continuity with its predecessor agency, the Connecticut Department of Environmental Protection (DEP). Now, this year, Connecticut's Beardsley Zoo is celebrating its centennial. With all of these notable anniversaries, there has never been a better time to reflect on the enduring partnership between the



C. SHORE / BEARDSLEY ZOO (2)

**Above:** BeeZe, the Beardsley Zoo's resident bobcat, was instrumental in helping biologists test the bobcat collars used in an on-going Bobcat Study in the state.

**Right:** Bobcat monitoring collar used for the Wildlife Division's study.



DEEP and the Zoo. With the wildlife professionals of the DEEP safeguarding our wild places and the creatures that inhabit them, and the wildlife professionals of Connecticut's Beardsley Zoo providing care for endangered wildlife, including protected Connecticut species, the two teams are well matched.

With this specialization, it should come as no surprise that the list of collaborative projects extends to other waters across our state. With the students of the Zoo's Conservation Discovery Corps, using underwater viewing “Aqua Scopes”

to identify protected mussel species in the shallow stream beds of Vernon's 282-acre Belding Wildlife Management Area, this next generation of conservation stewards receives wildlife identification training from the experts. In turn, their data inform conservation actions for these essential filter-feeding and water-purifying species.

Closer to home, Zoo staff and volunteers have monitored underwater footage from the dam cameras on Bridgeport's Pequonnock River, under the guidance of DEEP Fisheries biologists, for the presence of migrating river herring, including alewives and the occasional blueback herring. In the process of monitoring footage and observing wildlife activity along this riverine migration corridor, they have documented the comeback of osprey, mink, river otters, and bald eagles to Connecticut's largest city.

The Pequonnock River is also the site of the Zoo's Trout in the Classroom program (TIC). The TIC mission is to train and empower the next generation of conservation stewards through their work raising and releasing trout. In the case of the Zoo's work with Bridgeport middle schools, Park City Prep and Bridge Academy, this work focuses on our only native trout/char species, the brook trout. Under the expert

guidance of retired DEEP Fisheries Biologist, Neal Hagstrom, these students have successfully reintroduced brook trout into their native waters of the lower Pequonnock River after an absence of more than a century!

Transitioning from Connecticut's waters to Connecticut's skies, Beardsley's conservation students have also benefited from waterfowl study training from Wildlife Division



D. FLEMMINGS / BEARDSLEY ZOO (2)

Atlantic salmon fry.



An intrepid Atlantic salmon stocking team – CT DEEP and Connecticut's Beardsley Zoo – in the field. Pictured from left to right are Des Flemmings and Al Hildred (of the Beardsley Zoo Team) and, from the DEEP Team, are Fisheries Biologist Bruce Williams, Carolyn Rinaldi, and seasonal technicians Victoria and Jackie.



Beardsley Zoo staff accompanied DEEP Wildlife Division Biologists during winter den checks of female black bears and observed while a cub was given a health checkup.



Zoo staff learned how radio telemetry equipment is used to track a black bear with a radio collar, and to also find its den.

Biologist Min Huang as they have gained invaluable experience tagging Canada geese and other avian species. Upon graduation from the program, students have in turn applied these very same skills in working with endangered bird species in the Hawaiian Islands through AmeriCorps. Closer to home, Zoo volunteers have aided DEEP efforts to monitor osprey nests, as these magnificent raptors continue to make a comeback throughout our state. Zoo staff and volunteers have also contributed to many other DEEP conservation initiatives over the years. From barn owls to big brown bats to box turtles, the Zoo team gets out into the field at every opportunity to assist with observations of, and data collection for, protected species.

Additionally, the zoo's 15-year collaboration with DEEP through the Connecticut Amphibian Monitoring Project (CAMP) helped define vital range and biodiversity data for our state's critical amphibian populations in need of conservation.

On the terrestrial end of things, the Zoo's staff has aided the Wildlife Division's efforts to field test tracking collars for bobcats. By affixing a tracking collar to the Zoo's resident bobcat, DEEP biologists were able to ensure a snug fit and accurately gauge resting, climbing, eating, drinking, and sleeping data points for wild bobcats by comparing and confirming corresponding data gleaned from observations of the Zoo's bobcat. Through collaboration, the two teams were able to conduct an accurate field beta test—without leaving Zoo grounds.

This work aligns with the study of other furbearer species as Zoo staff and volunteers have contributed data to the state's multi-year furbearer and weasel range studies. Zoo staff members have also gained invaluable observation data and techniques from the Wildlife Division on their work with black bears. Coupling this with existing Master Wildlife Conservationist certification expertise taught through the Wildlife Division's Outreach team over the years, Zoo staff and volunteers have delivered programming on our state's expanding black bear population to thousands of residents throughout our state, including essential "Bear Aware" programming.

To further inform their educational program delivery, Zoo staff recently joined DEEP biologists in the field on one of 25 annual bear den surveys. The Zoo team accompanied the biologists in action, observing radio tracking, checks on sows

with cubs, maintenance of radio collars, health checks, and collection of field data, such as fur length, ear size, sex, and weights of cubs. Such field experience is invaluable in providing Zoo Educators with firsthand scientific knowledge of Connecticut wildlife and further bolsters their ability to incorporate emerging data and trends into their programming for state residents.

Such joint efforts are not new. They go back decades. From the Zoo's Wild Connecticut Days events when current DEEP Wildlife Division Director, Jenny Dickson, delivered wildlife talks to attendees, to the present, the DEEP/Zoo Team has engaged countless thousands of state residents of all ages. For more than 20 years, students in the Zoo Patrol summer program have enjoyed learning about our Connecticut waters and the fish species that inhabit them under the instruction of the Connecticut Aquatic Resources Education (CARE) program. Led by retired CARE Director and veteran educator, Tom Bourret, and now Justin Wiggins and Jim Murtagh, the CARE Team instructs students about the ecological importance of our native wetlands and the benefits the conservation of these wetlands and their species confer to the ecosystem, as well as to both wild and human residents of our state. The curriculum is topped off by an instructional fishing session on the neighboring Pequonnock River. The CARE Team members are as patient as they are expert; untangling fishing line, ensuring safe back casts, and helping to land "the big one." Over the years, many of these youngsters have caught their very first fish during these sessions. Such occasions have marked nothing less than the birth of a conservation ethic for the young person and frequently imbue a lifelong love of the natural world.

Over the years many of these same young conservationists have advanced from Zoo Patrol to join the Zoo Career Explorers and the Conservation Discovery Corps. These Zoo teen groups have worked side by side with DEEP staff to identify and remove invasive plant species statewide. Far from glamorous, this toilsome work is essential for conservation of native habitat and the species that require such intact native habitat. With DEEP professionals serving as both expert educators and outstanding role models, their example of hands-on field stewardship leads and inspires these young conservationists on a level far more impactful than classroom instruction alone. These very experiences have launched the careers of numerous Zoo students and interns with the DEEP Wildlife and Fisheries Divisions over the years.

As we approach the upcoming summer season, the Zoo team looks to "Teach on the Beach" – joining the DEEP Team at Sherwood Island State Park. Here, Zoo team members deliver beachside species awareness programming to summer park attendees. In true reciprocal fashion, the Sherwood Island team joins the Zoo team on-grounds to deliver programming "in their wheelhouse" on marine creatures and ecosystems. In recent years, many of these educators have been cross-trained at both institutions and are now working to teach and engage



C. SHORE / BEARDSLEY ZOO (2)

**Bear dens are visited in winter to assess if the female has given birth to cubs or is spending the winter with yearlings born the year before.**



**A black bear cub displaying impressive claws, even at a young age.**

## Conservation Science at Connecticut's Beardsley Zoo

Connecticut's Beardsley Zoo is proud to work with conservation partners like the Connecticut Department of Energy and Environmental Protection, the United States Fish and Wildlife Service and other conservation agencies around the world to protect species in the wild as well. The survival of more than 25 endangered species at Connecticut's Beardsley Zoo is directly linked to a scientific model which was designed to protect the rarest of the rare. Species Survival Plans, or SSPs, are comprehensive endangered species breeding programs which harness emerging science to conserve and grow critically low populations. By connecting conservation scientists in the field (in situ) with their colleagues managing populations under direct human care, such as accredited zoos, aquariums, and living museums (ex situ), SSP species and subspecies are protected under an umbrella of collective expertise and resources. Whenever possible, wild reintroduction programs, such as that of the Red Wolf, are incorporated into the recovery framework of SSP plans.

With such critically low populations—like the Red Wolf's 12 founder animals—all individuals in an SSP may be related to one another. With this foremost in mind, SSP plans are managed to maintain a minimum of 90% genetic diversity over a minimum of 100 years, or 10 generations, to ensure viability and sustainability for generations to come. Each animal is assigned an inbreeding coefficient—a numeric value representing its degree of genetic loss through inbreeding. In the case of Red Wolves, the inbreeding coefficient value ensures each wolf is genetically represented and its degree of relatedness to all other members of its population can be calculated. This in turn ensures that the healthiest, most distantly related animals of reproductive age are paired for breeding. In this way, the genetics of an entire population can be expressed. When animals do not, or cannot breed for a variety of reasons, or when environmental or logistical conditions may prohibit the transfer of animals, veterinary reproductive specialists may perform artificial insemination, embryo transfer, or in vitro fertilization to bolster the breeding success of these and other imperiled creatures.

Cooperative breeding and field conservation efforts, such as the Red Wolf SSP and others, are guided by Scientific Advisory Groups or SAGs and Taxon Advisory Groups or TAGs—conservation biology loves its acronyms. Collectively, these species subject matter experts serve as advisors, developing breeding and transfer plans that identify population goals and make recommendations to manage healthy, sustainable, and genetically diverse populations. Their colleagues, who provide population management recommendations for the SSPs, conduct Population Viability Analyses or PVAs. PVAs identify vital conservation needs, assess genetic sustainability, evaluate long-term demographic trends, and calculate extinction risk. Lastly, Animal Care Specialists in the Association of Zoos and Aquariums (AZA) SSP program conduct Red Wolf husbandry, or care, in a completely hands-off manner. This highly successful protocol is essential in preventing wolves from associating humans with food or care upon their reintroduction to the wild, thus minimizing human-wolf encounters and mitigating wolf mortality.

Other SSP species at Connecticut's Beardsley Zoo include White-naped Cranes, Red Pandas, Amur Leopards, Amur Tigers, Maned Wolves, Mexican Wolves, and Andean Condors. The Beardsley Zoo is proud to work with conservation partners like the

U.S. Fish and Wildlife Service and conservation partners around the world to protect these species in the wild as well. Among the Zoo's notable achievements on this front over the past decade was the successful release of a pair of endangered Andean Condors into the wilds of the Colombian Andes!



Two young Amur leopards at the Beardsley Zoo were born in January 2019. These nocturnal big cats are on the brink of extinction.



(Top photo) With the help of the Zoo's Trout in the Classroom program and Bridgeport middle school students, native brook trout have been successfully reintroduced into the lower Pequonnock River after an absence of more than a century!

(Above) Thanks to the sponsorship of the Zoo's conservation partner, Aquarion, Eastern hellbenders reside in Professor Beardsley's Research Station. This salamander is the largest aquatic amphibian in the United States.

(Left) Connecticut's Beardsley Zoo is home to a pack of non-breeding Mexican wolves. These endangered wolves are the smallest subspecies of gray wolves.





Zoo Educator Jen Farrell measures a box turtle's carapace for a DEEP turtle conservation field study.

residents statewide.

While the DEEP/Zoo partnership flourishes on the conservation and education fronts, it extends to law enforcement and public safety as well, with the Zoo supporting the Connecticut DEEP Environmental Conservation (EnCon) Police Division in their Animal Amnesty Days to get illegal, endangered, and dangerous animals out of private hands. Over the years, EnCon police officers have provided public education support for the Zoo's wildlife conservation events by delivering community programming in conjunction with the EnCon TIP Trailer. There is no substitute for face-to-face education and such engagement is essential in extending the reach of conservation education messaging to Connecticut communities on individual and family levels. Such events highlight the success of both organizations in promoting animal and human welfare alike and in educating a diverse public about the highly specific needs of wildlife.

As we look back on more than a century and a half of combined service to the citizens, wild creatures, and wild

*When partners such as CT DEEP and Connecticut's Beardsley Zoo collaborate to leverage their skills and resources, wildlife and citizens alike derive the benefits.*

places of Connecticut, we reflect on the shared nature of our missions, our mutual passion for conservation and our commitment to our communities, both human and wild.

In the Connecticut Department of Energy and Environmental Protection and Connecticut's Beardsley Zoo, we have partners who share effort, expertise, and goals. This collaboration of all things wild is even more diverse than it might appear, as the list of joint initiatives—and achievements—just keeps growing. After more than a century of combined conservation and education, we are going stronger than ever. As we look ahead to our next century, we anticipate new challenges, yet we also anticipate the synergies derived from our teamwork, and to further expanding our wildly successful partnership!



Zoo staff observed while DEEP Wildlife Division staff collected data on a female black bear that was located at her winter den using radio telemetry.

# Annual Spring Waterfowl Breeding Survey

Article by Min Huang, DEEP Wildlife Division

**W**ildlife Division staff completed the annual Atlantic Flyway Breeding Waterfowl Survey in April. Since its inception in 1989, the states from Virginia north to New Hampshire have participated in this important survey. The survey is ground-based and targets randomly placed square kilometer plots. Elsewhere in the Atlantic Flyway, in Maine and eastern Canada, breeding waterfowl surveys are conducted from the air using fixed wing aircraft along fixed transects and helicopters in five-kilometer plots. Connecticut is part of the ground-based survey, where 56 plots are surveyed each year across the state. These plots are stratified by habitat type.

The spring breeding waterfowl survey provides part of the data that drive the models used in the Atlantic Flyway Multi-stock Adaptive Harvest Management, the Eastern Mallard Harvest Strategy, and the International Black Duck Harvest Strategy. Outputs from these models determine the season lengths and bag limits of duck hunting seasons in the Atlantic Flyway. In addition to providing an estimate of the breeding population, the survey provides managers with an index to both habitat condition and waterfowl production. The spring breeding survey data are also used to estimate

resident Canada goose population levels. Throughout the Atlantic Flyway, no surveys were conducted in 2020 due to the Covid-19 pandemic.

One of the biggest keys to this survey in Connecticut is that the same observers have been collecting the data for a substantial period of time. This consistency results in a big reduction in observer bias, which is a huge factor in the accuracy and precision of surveys. Some of the observers have been conducting the same plot surveys for the past 25 years.

Mallards are the most abundant waterfowl species in the state. However, a gradual decline in the breeding population estimate has been observed in the past decade. A new study looking at nesting success and fledging success of mallards in Connecticut should shed some light on whether production is the problem. This study will also help tell biologists whether increasing fragmentation and urbanization is impacting mallard nest selection and ultimate success.

Connecticut's resident Canada goose population is estimated annually through this survey. Our state's liberal resident Canada goose hunting seasons continue to have an impact on goose populations, particularly in those areas where hunters have access to the birds. Increasing activism by homeowners and municipalities to thwart nesting geese has also played a role in reducing resident goose numbers. A slow, but steady decline in the resident goose population has been observed over the past decade. Urban areas, however, continue to harbor significant numbers of resident geese. Research in Connecticut indicates that these urban goose populations serve as sources for problems outside of the cities, making it critical that urban municipalities think about aggressive control of resident geese.

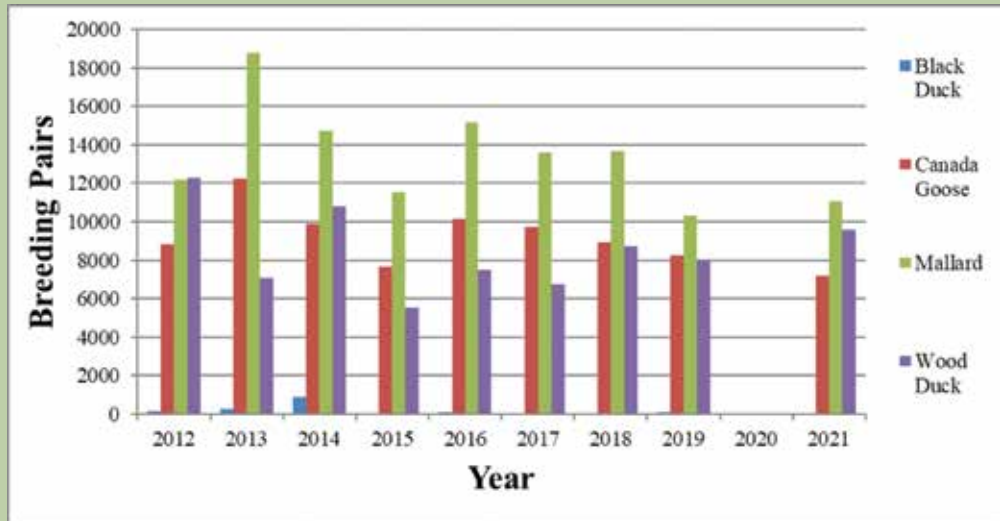
The state's wood duck population is increasing. This is due, in part, to the wood duck nest box program, which maintains and checks boxes on state lands. The program has refurbished over 400 boxes in the past six years, and around 70%



P. J. FUSCO

**Mallards are the most abundant waterfowl species in Connecticut. However, a gradual decline in the breeding population estimate has been observed in the past decade. Wildlife Division biologists are currently conducting a nesting study of mallards in our state.**

## Breeding Pairs of Common Waterfowl Species, 2012 - 2021



*Connecticut's increasing wood duck population is due, in part, to a highly successful wood duck nest box program, which maintains and checks boxes on state land. The program has refurbished over 400 boxes in the past six years.*

of all boxes are used annually. Wood ducks are also increasing due to the numerous wooded wetlands and adjacent forests that contain many suitable nesting cavities.

Breeding black ducks are rarely counted in this survey as they are not uniformly distributed across the landscape as some of the other breeding waterfowl are. The recently completed Connecticut Bird Atlas confirmed nesting black ducks in 26 different blocks, which equates to at least 26 different locations. Similarly, rare breeding species, such as gadwall and American green-winged teal, which are sporadically counted during the annual breeding survey, were also confirmed during the course of the Atlas Project.



P. J. FUSCO

Canada goose nest with newly-hatched goslings.



Mallards will nest in many different places. From left to right – a brushpile in the middle of a state forest, over one-quarter mile from the nearest waterbody; in the open; and in a pile of junk in the side of a yard.

PHOTOS LEFT TO RIGHT: M. HUANG, P. FUSCO, M. HUANG

# An All-time Favorite

## The American Robin

Article and photography by Paul Fusco, DEEP Wildlife Division

Connecticut's largest thrush is also its official state bird, the American robin. It is found in all parts of the state, especially in areas that have a human influence on the landscape. Robins were originally a bird of the forest, but are now well adapted to human landscape changes that fit well into the bird's ecology. Green lawns and planted fruiting trees and shrubs offer the bird a perfect niche close to human habitation.

Robins still retain their close association with the forest where they use such habitat for roosts and foraging. Most of our robins migrate to more southern locations for the winter. Some from farther north may arrive to spend the winter. Nomadic flocks can usually be found here during winter. Robins are regularly documented on annual

Audubon Christmas Bird Count surveys, which take place in December and early January. These flocks will be on the move, often in moist wooded habitat, searching for food in the form of persistent winter fruits, including winterberry, crabapple, sumac, and rose. Soft mast, like these berries, provide a food source for robins during the cold winter weather. Earthworms and other invertebrates comprise the bulk of the robin's diet when the weather is warmer.

Mid-March is the time that robins start appearing in numbers on lawns across the state, making robins one of our telltale signs of spring. What is actually happening is that mid-March is the time the ground starts to thaw and food in the form of earthworms and grubs becomes readily available to the

birds. So, with robins making use of a thawing ground, it is a true sign that winter has come to an end.

### Behavior

Nests are built mainly by the female, with males bringing building material to the nest for her to use. Robin nests are often built on horizontal branches or sometimes on ledges or structures that have wooden beams. Nesting materials include twigs, fine grasses, feathers, rootlets, and mud. The female typically lays a clutch of four pale blue, unmarked eggs. The incubation time is 11 to 14 days and chicks fledge when they are approximately 14 days old. Two broods may be raised per season.

From a perch high up in a tree, the robin will throw its head back to sing its comforting and familiar song, liquid in quality and regular in frequency. Rendered as "Cheerily, cheer-up, cheerio," their variable short phrases form longer choruses, and take shape into its characteristic song.

### Conservation

Robins are one of the most widespread and common songbirds in North America. In the period between 1966 and 2019, their overall population has increased slightly according to the North American Breeding Bird Survey coordinated by the National Audubon Society and the U.S. Geological Survey. What this means is that the robin is a bird of moderately low conservation concern



During winter storms with snow, cold, and blowing wind, overwintering robins will often make use of persistent soft mast from winterberry and crabapple plants.

## *Of Earthworms and Forests*

Most earthworms found in our area are exotic and invasive species that have the potential to alter native forest ecosystems. They do this by changing leaf decomposition and forest soil structure, resulting in a less suitable germination substrate for regeneration of most forest understory plants.

Regeneration of canopy trees is also slowed, making browsing by deer more likely to happen when the trees are in a more prolonged seedling/sapling stage. Reduced understory vegetation results in ground nesting birds becoming more vulnerable to predation. And, invasive plants, including barberry and multiflora rose, have a greater opportunity to become established and spread within the forest understory in areas affected by changing soil structure.



with a fairly stable population. Despite this, there are some concerns.

During a good part of the year, robins will forage and feed young within backyards that have a component of lawn. This makes robins potentially vulnerable to impacts from human use of lawn chemicals, including pesticides and herbicides, which can be lethal to songbirds, especially their young. Remember that songbirds provide billions of dollars worth of natural insect control, plant pollination, and seed dispersal every year. Keeping robins healthy and abundant helps us, too.

Being ground feeders, robins are vulnerable to being killed by free-roaming housecats. Housecats are a non-native predator in our outdoor ecosystem. They threaten birds and other wildlife, disrupt ecosystems, and spread diseases. Predation by domestic cats is the number-one direct, human-caused threat to birds in the United States and Canada. Cats kill approximately 2.4 billion birds every year in the U.S. alone.



Newly fledged robins are often seen being fed by parents on the ground. At this stage, the young robins are not yet strong flyers and are at their most vulnerable to predators, including free-roaming, outdoor housecats.

Young, as well as adults, may also be susceptible to persistent lawn chemicals, herbicides, and pesticides that may impact their food source.

# Watchable Wildlife

## Snakes Alive!

### *Venomous or Non-venomous*



Article by Paul Benjunas, DEEP Wildlife Division

For many Connecticut residents, spring and early summer are spent enjoying the outdoors. Whether hiking, bird watching, or gardening (hopefully with native plants), this time of year provides countless opportunities for being outside and enjoying the sun's warm rays. That being said, there is a group of critters that not only enjoys but is dependent on the warmth of those ultraviolet rays. We are talking about Connecticut's snakes!

Throughout history, snakes have been feared and persecuted by humans. Contrary to what some people think, snakes are not full of malice and are certainly not bent on sending

us running and screaming (although one may have heard plenty of tales that say otherwise). As is the case with nearly all wildlife, snakes would simply prefer to be left alone and pose no threat to us when left undisturbed. Despite this fact, humans have repeatedly and frequently interfered with the lives and habitats of these ecologically important reptiles. Human persecution is one of the greatest threats to our native snake species, especially the two venomous species and their lookalikes. Unfortunately, it is some humans who have acted out of malice, deliberately and wrongfully killing snakes out of fear and misunderstanding.

### ***Timber Rattlesnake***

Connecticut is home to 14 species of snakes, two of which are venomous: the timber rattlesnake and northern copperhead. The timber rattlesnake is a beautifully patterned, thick-bodied pit viper that is a state endangered species.



P. BENJUNAS

The timber rattlesnake is one of only two venomous species found in Connecticut. Over the years, populations have declined, mainly because of human activity and persecution, which includes illegal pet trade, intentional killing, habitat degradation and fragmentation, and human development.

As a pit viper, rattlesnakes rely on their large heat-sensing pits located between their eyes and nostrils (known as pit organs). The snakes will typically wait along large rocks or fallen logs with the intention of ambushing mice and other small rodents that scurry by. Only two main populations of rattlesnakes remain in the state. In the past, several Connecticut towns had bounties that encouraged people to collect and kill timber rattlesnakes, and many snake dens were repeatedly decimated. The effects of these practices, paired with the ever-present expansion of human development, are still being felt today. As a state-listed species, timber rattlesnakes are now legally protected from collection and indiscriminate killing.

The odds of coming across one of these striking serpents are fairly low, but should you come across a timber rattlesnake in the wild, give it plenty of space, choose an alternate route, and continue on your way. Timber rattlesnakes will often use

the keratinous rattle at the end of their tail to warn someone when they are too close. In some of the more developed areas of the state where rattlesnakes are present, Wildlife Division staff provide specialized outreach to local residents. There also is a group of dedicated and highly-trained volunteers that specializes in dealing with rattlesnakes should the need arise.

### *Northern Copperhead*

The other venomous species of snake that calls Connecticut home is the northern copperhead. This beautiful, two-toned, copper-colored snake has a distinctive hourglass pattern that runs along its back. It relies on its cryptic coloration to remain hidden among leaf litter and rocky outcrops where it waits to ambush its prey (primarily mice and small rodents). Both the copperhead and timber rattlesnake have a triangular, or spade-shaped, head which is wider than the neck, a distinctive characteristic of most venomous snakes. Copperheads are primarily associated with trap rock ridges, which are more common west of the Connecticut River. Copperheads are mostly absent from the northeastern and northwestern portions of the state and less common east of the Connecticut River. Despite having the potential to inflict harm, this snake is mainly docile and non-aggressive and will only take a defensive posture when threatened. Connecticut's copperhead population is more stable than the timber rattlesnake's, but is still declining due to habitat loss, disturbance, and human persecution.

### *Look-a-Likes*

Just like the two venomous snakes, several non-venomous species are also wrongfully killed, as they are often mistaken for being venomous. For example, the non-venomous eastern milksnake is commonly



P. BENJUNAS (2)

The juvenile eastern ratsnake is often very difficult for Connecticut residents to identify as it looks quite different from how it will appear as an adult. The ratsnake is the longest species of snake in Connecticut and feeds primarily on mice and other small mammals.

found around houses, outbuildings, and barns where it feeds primarily on mice. Its pattern consists of bands and blotches of varying shades of brown, red, yellow, and tan, similar to the coloration of the copperhead. Unlike the copperhead, however, the milksnake's head is narrow and only slightly wider at the base of the neck. Additionally, the head of a copperhead is noticeably copper-colored and never marked,



The eastern milksnake is often mistaken for the venomous copperhead and wrongfully killed out of fear. The milksnake's coloration closely resembles that of a copperhead, but this snake is harmless to people and feeds mostly on small rodents and amphibians.

while the milksnake's head has the light "V-" or "Y-shaped" mark.

In addition to their coloration, another major reason why milksnakes are mistaken for being venomous is because when disturbed, this snake will rapidly vibrate the tip of its tail despite not having a rattle. The sound of the vibration is made even more apparent when the tail repeatedly strikes leaf litter. Other non-venomous snake species, including the common gartersnake, have evolved with this behavior of simulating a rattlesnake rattle with the hope of fooling and deterring predators. Unfortunately, this behavior often works too well and leads to many harmless snakes being killed by people.

Another reason milksnakes are commonly mistaken as being venomous is because of the red color of their eyes. The brightness of the eye color varies among individuals. This feature is somewhat unusual for a non-venomous snake, often causing people to question whether the milksnake is potentially harmful or not.

### *Identifying Snakes*

Being able to properly identify snakes in the wild can be



The northern watersnake is one of the most common species of snakes in Connecticut, but is often mistaken for the venomous water moccasin (also known as the cottonmouth), which does not occur in our state.

a challenge even for the trained naturalist! Often times, folks only catch a quick glimpse of a snake as it slithers across their path or are too fearful to get close enough to identify any distinguishing characteristics. To make matters even more complicated, some young and juvenile snakes have patterns that will change drastically before they reach adulthood. This is particularly apparent with the eastern ratsnake. This non-venomous snake is Connecticut's largest snake species,

capable of reaching six feet in length! Juvenile ratsnakes are light gray with brown/black blotches, but once they reach adulthood, ratsnakes are primarily black in color with a white chin and a belly with a black checkerboard pattern. Wildlife Division staff regularly receive inquiries through email and social media (particularly this time of year) with photos and videos from residents who are looking for a correct identification of a snake in question.

Arguably one of the more challenging snakes to identify is the non-venomous northern watersnake. Despite being one of the most common snake species, the northern watersnake may appear different in color, depending on what it is doing. As an inhabitant of nearly all freshwater wetlands and waterways,



By the time the eastern ratsnake reaches adulthood, its dorsal (back) pattern has transitioned to mostly black with faint white flecks. Its chin often appears white, and the snake has a black and white checkerboard pattern along its stomach.





When a northern watersnake has been out basking, it becomes very difficult to notice the snake's brownish red crossbands, causing it appear almost entirely black. This can make the watersnake more difficult to identify to the casual observer.

the watersnake's coloration and markings are most apparent when it is in the water. When the snake is in the water, it is not difficult to see its tan to gray body with brown or reddish crossbands, alternating with dark blotches on the sides. However, when this snake is basking out of the water, the coloration is almost impossible to notice, and the snake will appear dark brown or black in color. Watersnakes will also travel short distances from a water source and are easily misidentified as a ratsnake or black racer, especially given the watersnake's larger size (up to three and a half feet).

One of Connecticut's most enduring snake myths revolves around the northern watersnake. Residents recreating in outdoor spaces frequently misidentify the watersnake for the venomous water moccasin (also known as a cottonmouth). Simply put, water moccasins do not occur in Connecticut. Southern Virginia is the northern extent of the water moccasin's range. Sometimes watersnakes are also confused with the northern copperhead, but copperheads are rarely found in water.

### ***What Is the Takeaway?***

Take the time to learn how to properly identify Connecticut's

snakes! There is no need to be fearful while enjoying the outdoors this season. Will you be startled if you unexpectedly come across a snake? Perhaps! But if you simply observe and enjoy it from a distance and allow it go on its way, there will be no conflict. Snakes make up an important part of the food web, providing free rodent control and serving as prey for larger animals, including birds of prey. If you have a photo or video of a snake you would like to have identified, send it to [paul.benjunas@ct.gov](mailto:paul.benjunas@ct.gov). In the meantime, please visit <https://portal.ct.gov/DEEP/Wildlife/Learn-About-Wildlife/Snakes-of-Connecticut> for more information on Connecticut's snakes. S-s-s-see you outdoors!

Would you like to learn even more about reptile and amphibian conservation in Connecticut? The

recent DEEP publication, *Conservation of Amphibians and Reptiles in Connecticut*, provides a broader understanding of key conservation challenges and explores ways we can begin to address – and hopefully resolve – the decline in many groups of reptiles and amphibians.

The 305-page, detailed text includes 131 color photos, species account maps, and conservation solutions for the complex challenges Connecticut's amphibians and reptiles face. This book is currently available at CT DEEP Bookstore (<https://www.ctdeepstore.com/>).



The copperhead is one of two species of venomous snakes that occurs in Connecticut. Despite having a more stable population than the timber rattlesnake, the copperhead population has still been declining due to habitat loss, disturbance, and human persecution.

# They Swam and They Swam

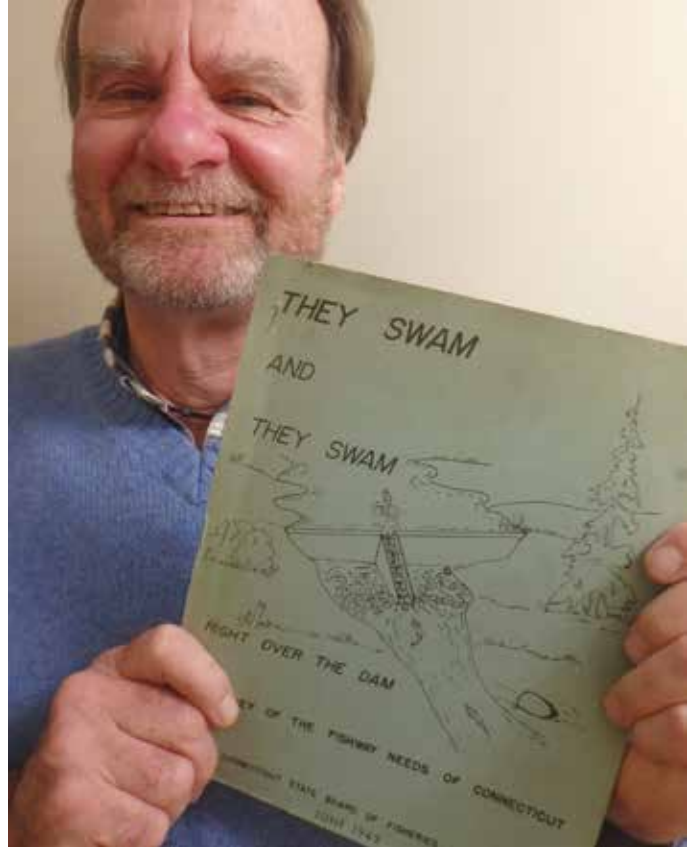
## A 60-year Update on Barrier Dams in CT

Article by Stephen Gephard, DEEP Fisheries Division, Retired; Photos courtesy DEEP Fisheries Division

Connecticut is one of the most densely dammed states in the nation, with over 4,000 dams clogging our streams. These dams, built mostly between the 1780s and 1920s, supported incredibly diverse local needs and manufacturing that led to our state's prosperity, but they also fragmented critically important aquatic habitat, blocked fish migrations and caused the demise of important runs, and degraded the habitat of our watersheds. A handful of old timber fishways were built in New England following the Civil War, but few worked and all of them have since disappeared. By 1960, there were no fishways in Connecticut. But, with the apparent success of salmon ladders in the West, there was increasing interest in fishways for Connecticut dams.

In 1961, the unique fishlift at the Holyoke Dam on the Connecticut River passed 22,000 American Shad (in 2017 it passed more than 537,000) and the Connecticut General Assembly requested that the State Board of Fisheries and Game (a precursor to the DEEP's Fisheries Division) prepare a report on the "fishway needs of Connecticut". The 33-page report entitled "They Swam and They Swam—Right Over the Dam" was issued in June 1962. On the 60th anniversary of this visionary document, it seems timely to review our progress in providing fish passage around dams.

By today's standards of fancy fonts, embedded full color graphs and maps, and digital desktop publishing, the typed report seems archaic and a bit amateurish. However, when considered in the context of the 1960s, it was forward-looking and inspirational. The staff who produced this report trained many of the staff who have been working during the past



The author with the ground-breaking 1962 report that set priorities for fish passage at dams in Connecticut.

decades to open up the rivers of Connecticut and are now retired or approaching retirement.

Two major changes in fisheries management have occurred since this report was issued. First, the report placed no priority on passing river herring (Alewife and Blueback Herring) upstream. It was reasoned that since there was no commercial fishery for the species in Connecticut, there was no need to "manage" them. This position failed to recognize the important ecosystem functions served by these forage species, as well as the concept of biodiversity. Priority was placed on species that had economic value for sport fisheries, notably American Shad and sea-run Brown Trout. The report did not reflect the present day understanding that healthy populations of river herring support important sport fisheries in Long Island Sound and inland waters. The emphasis in



The Tiley-Pratt Dam on the Falls River in Essex is an example of a dam not listed as a priority in 1962, but a fishway was built in 2017 at this private home to restore the run of alewives.

1960 was passing only fish that were actively sought after by anglers. Currently, we realize that other species (such as river herring) are critical forage species, not only for other fish but for ospreys, eagles, otters, and a myriad of other wild-life species. Secondly, no focus was placed on dam removal. We now realize that fish run restoration can be achieved by removing the dam, and that action not only allows fish to move upstream but it provides other ecological benefits for the stream. The effort also removes aging dams that can be public safety threats and require perpetual maintenance costs.

The report listed over 40 dams by name and referenced many others in targeted streams. These dams were categorized in three priority groups, I, II, and III. At the time, there were no fishways in Connecticut, although the Lees Pond Fishway (Saugatuck River/Westport) was under construction. (Historical footnote: the wooden “step and pool” fishway that was built at Lees Pond probably never worked and was in total disrepair by the 1980s. It has since been replaced by the DEEP with a steep pass fishway.) Therefore, let’s see what progress has been made in getting fish over dams in the last 60 years. The accompanying table lists 42 dams specifically listed in the 1962 report, as well as eight others not named but referenced in the text. The table also includes two dams

that the 1962 report missed and one that was built after 1962. Of these dams, seven (13%) washed out (“breached”) on their own in the ensuing years; 16 (30%) were removed; 27 (50%) have fishways; and only four (7%) have had no actions taken. Of those four, one had a fishway fully designed but the property changed hands and the new owner did not want the fishway; another was discovered to have a barrier falls below it and plans for fish passage were scrapped; one has failed to receive funding for removal; and the last one has had no action to date as a result of an unresponsive dam owner.

The report also mentioned low priority streams, including the Rippowam River (one dam removal), Indian River (one breached and one fishway is currently being planned), Menunketesuck River (one fishway), and Oyster River (three fishways). Furthermore, there are other dams that now have fish passage that were not even mentioned in the 1962 report, including Anguilla Brook (one removal, one fishway), Aspetuck River (one removal, two fishways), Mill Brook (three fishways, Old Lyme), East Aspetuck River (one removal), Mattabeset River (two fishways), Falls River (one breach and three fishways), and others. There are also a number of small fishways in or below Department of Transportation (DOT) culverts that were blocking fish passage, including



**The Ed Bill Dam on the East Branch Eightmile River in Lyme was referred to as a Priority 1 dam in the 1962 report (#23 in the table) and was removed in 2015.**



Pages Millpond Dam in North Branford is the second dam on the Farm River (#27 in the table) and its steepass fishway was completed in 2020, 58 years after the State Board of Fisheries and Game report recommended it. Like many fishways, this is on private property but can be seen from the Mill Road Bridge.



Connecticut's newest fishway is this Denil Fishway at the Upper Collinsville Dam on the Farmington River, which was completed early in 2022. It is dam #5 in the table.

one on a tributary of Lyman Brook (Route 2) and one on Ruby Brook (Interstate 84), both spearheaded by Brian Murphy who recently retired from the Fisheries Division. There are also specialized eel passages at dozens of dams where eels are unable to use the fishway. All of this work, including over 65 fishways, makes Connecticut one of the top states on the East Coast at getting fish around dams.

To be clear, credit for all of this work goes beyond the DEEP. Many of the fishways and dam removals were accomplished by projects sponsored by towns, land trusts, watershed groups, and other conservation groups, most notably The Nature Conservancy and Save the Sound, which continue to do this work (e.g. Merwin Meadows Dam in Weston). However, DEEP staff have been involved with each project through planning and technical assistance. These projects have been funded by a variety of sources that the 1962 report would have never anticipated, including the National Fish and Wildlife Foundation's Long Island Sound Future Fund. Furthermore, the DEEP has used its statutory authority to require fish passage at licensed hydroelectric dams and at other barrier dams requiring repair permits. There are many more projects in the planning stages.

This retrospective on the 1962 report paints an encouraging picture. We have addressed the problem of fish passage at 92% of the dams called out in the report and gone well beyond those dams into watersheds not targeted 60 years ago. This work has improved sport fishing in Connecticut, enhanced habitat, increased biodiversity, and strengthened watershed ecosystems. Like all environmental problems, huge gains have been made but more work still needs to be done. Check back with us in another 60 years!

*A list of the dams prioritized for fish passage in the 1962 report with the status of these dams today.*

	Dam Name <sup>1</sup>	River/Town	2022 Status <sup>2</sup>		Dam Name <sup>1</sup>	River/Town	2022 Status <sup>2</sup>
	<i>Priority I</i>				<i>Priority II</i>		
1	Rainbow	Farmington/Windsor	Fishway	25	Dayton	Muddy/Wallingford	No passage <sup>3</sup>
2	Spoonville	Farmington/E. Granby	Removed	26	New Haven Water Comp	Farm/East Haven	Fishway
3	Winchell-Smith	Farmington/Farmington	Breached	27	Pages Mill	Farm/N. Branford	Fishway
4	Lower Collinsville	Farmington/Avon	Removal-D	28	Creamery	Farm/N. Branford	Breached
5	Upper Collinsville	Farmington/Canton	Fishway	29	Brush Shop	Farm/N. Branford	Breached
6	Greenville	Shetucket/Norwich	Fishway	30	Old Papermill	Hammonasset/Madison	Removed
7	Taftville	Shetucket/Norwich	Fishway	31	Bunnells Pond	Pequonnock/Bridgeport	Fishway
8	Occum	Shetucket/Norwich	Fishway	32	<b>Landon Dam</b>	West/Guilford	Fishway
9	Scotland	Shetucket/Norwich	Fishway	33	Birch Mill Pond (Witch Hazel)	West/Guilford	No passage
10	Tunnel	Quinebaug/Preston	Fishway	34	Int'l Silver Comp (Wallace)	Quinnipiac/Wallingford	Fishway
11	Aspinook	Quinebaug/Griswold	Fishway-P	35	Community	Quinnipiac/Wallingford	breached
12	Wauregan	Quinebaug/Plainfield	Breached	36	Hanover Pond	Quinnipiac/Meriden	Fishway
13	Wood	Saugatuck/Westport	Fishway	37	Carpenters	Quinnipiac/Cheshire	Removed
14	Lees Pond	Saugatuck/Westport	Fishway	38	<b>Clark Bros</b>	Quinnipiac/Southington	Removed
15	Dorr-Oliver	Saugatuck/Westport	Fishway	39	<i>Priority III</i>		
16	Unknown 4 (Coleytown)	Saugatuck/Westport	Fishway	40	Mianus Pond	Mianus/Greenwich	Fishway
17	Unknown 5 (River Road)	Saugatuck/Weston	Fishway	41	Hazardville (Springborn)	Scantic/Enfield	Removed
18	Unknown 6 (Bradley Ave)	Saugatuck/Weston	No passage	42	Capello	East/Guilford	Fishway
19	Leesville	Salmon/East Haddam	Fishway	43	<b>Lower Guilford</b>	East/Guilford	Fishway
20	Paper Mill Pond (Norton Mill)	Jeremy/Colchester	Removed	44	Wards Mill	Branford/Branford	No passage
21	Unnamed (Latimers)	Latimer Br./East Lyme	Fishway	45	Three dams	Norwalk/various	See note <sup>4</sup>
22	Woods (Moulson Pond)	Eightmile River/Lyme	Fishway	46	Unnamed	Roaring Br./Glastonbury	See note <sup>3</sup>
23	Unnamed 3 (Ed Bill Pond)	E. Branch Eightmile/Lyme	Removed	47	Unnamed	Naugatuck/various	See note <sup>5</sup>
24	Unnamed 4 & 5 (Tom Wagner and unknown)	E. Branch Eightmile/Lyme	Both breached				

NOTES: <sup>1</sup> The names are those used in the 1962 report. In some cases, the dams were unnamed or went by a different name than we currently use. The names commonly used at the present are listed underneath in parentheses. If a dam name is bold-faced, it means that the dam was not listed in the 1962 report but included here for the sake of completeness.

<sup>2</sup> "D" means the project is currently in design; "P" means that the project is being planned.

<sup>3</sup> No project is proposed for this or upstream dams because a downstream natural barrier waterfall was identified that was not recognized in 1962. Currently, the Fisheries Division does not propose to build fishways around natural waterfalls that historically blocked fish runs.

<sup>4</sup> Dam 1 was Flock Process, which was removed; Dam 2 was Cannondale, which was deliberately breached ("removed"); Dam 3 is Merwin Meadow, for which a removal is currently being designed.

<sup>5</sup> Dam 1 is Kinneytown, which has a fishway; Dam 2 is Tingue, which has a fishway; the next 5 dams were removed: Union City, Pratt Mills, Freight St., Anaconda, Chase Brass.

*The numbers are for reference only and do not imply any present day prioritization of remaining dams.*



## *Bird Conservation Award Goes to Wildlife Division's Paul Fusco*

The Connecticut Ornithological Association (COA) recently presented the Mabel Osgood Wright Award to Wildlife Division Creative Media Specialist and Photographer Paul Fusco. The award recognizes individuals who have made a significant contribution to the knowledge, study, and conservation of birds and was named after Connecticut Audubon founder Mabel Osgood Wright.

Paul has had a position with the CT DEEP Wildlife Division for over 33 years. He has written articles on birds and bird conservation, providing stunning images and informative essays, for *Connecticut Wildlife* magazine during the last 20 plus years. Recently, some of the articles have focused on wildlife viewing with the goal of introducing others to Connecticut's watchable wildlife. Paul leads annual migratory bird walks at the Wildlife Division's Sessions Woods Wildlife Management Area, sharing his vast knowledge of birds to eager participants. He also has been assisting with the publication and design, along with photographs, of the Connecticut Audubon Society's State of the Birds Annual Report since 2006.

Over the years, Paul has conducted numerous bird surveys, including annual Audubon Christmas Bird Counts and waterfowl surveys. He has participated in ruffed grouse, grassland birds, neotropical migrant, bald eagle, and wetland callback surveys. Paul also monitors the Connecticut coast for shorebirds and has assisted with protective measures, such as fencing and signage, for state-listed piping plovers and least terns.

COA chose the perfect individual to provide the Mabel Osgood Wright Award as Paul has dedicated much of his adult life to the study, documentation, and conservation of birds.

- Written by Laura Rogers-Castro, DEEP Wildlife Division



L. ROGERS-CASTRO

Some of Paul's recent articles in *Connecticut Wildlife* have focused on wildlife viewing in Connecticut with the goal of introducing and educating others on the great diversity of wildlife and habitats within the state.

## *New Marine Fishing Regulations for 2022*

There were only a few changes to Connecticut's Saltwater Fishing Regulations for 2022. All of the information can be found online at <https://portal.ct.gov/DEEP/Fishing/Saltwater-Fishing-Guide/Species-Regulations>. New regulations are listed below.

### **Summer Flounder (Fluke)**

- Minimum length: 18.5 inches (NEW!)
- Daily creel limit: 4 fish per angler
- Open Season: May 1 - October 9 (NEW!) Enhanced Opportunity Shore Fishing Sites the minimum length is 17 inches

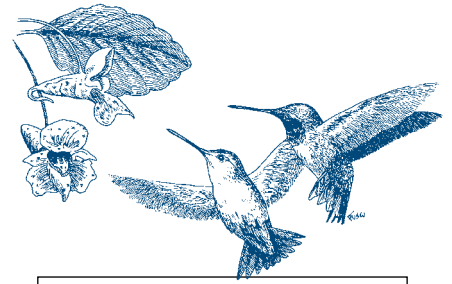
### **Scup (Porgy)**

- Minimum length: 10 inches (NEW!)
- Daily creel limit: 30 fish per angler
- Open Season: Open Year Round
- Party/Charter Vessel Bonus Season: For paying passengers only: 50 fish per angler from September 1 - October 31
- Enhanced Opportunity Shore Fishing Sites the minimum length is 9 inches (NEW!)

### **Black Sea Bass**

- Minimum length: 16 inches (excluding tail fin filament - tendril) (NEW!)
- Daily creel limit: 5 fish per angler
- Open Season: May 19 - December 1, except May 19 - December 31 for Party/Charter Vessels (NEW!)
- **Party/Charter Vessel Bonus Season:** For paying passengers only: 7 fish per angler from September 1 - December 31. Daily logbook reporting required by Party/Charter Vessel operator for trips taking Black Sea Bass

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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.

June 20-26..... Pollinator Week! Learn more at <https://www.pollinator.org/pollinator-week>.

### 2022 Hunting and Fishing Season Dates

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>.

Sept. 1-30 ..... Early Canada goose season in the north zone (portion of the state north of Interstate 95).

Sept. 15-30 ..... Early Canada goose season in the south zone (portion of the state south of Interstate 95).

Sept. 15 ..... Opening day of the Fall Archery Deer and Turkey Season.

Consult the 2022 Connecticut Hunting and Trapping Guide, 2022-2023 Migratory Bird Hunting Guide, and Connecticut Fishing Guide for specific season dates and details. Hunting guides are available at town halls and outdoor equipment stores (Fishing Guides were not printed this year). All guides can be found on the DEEP website at <https://portal.ct.gov/DEEP-CT-Outdoor-Guides>. 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.

### 2022 Fishing Guide Only Available Online

The passage of Public Act 21-12 (removed the closed season for trout) required an overhaul of the freshwater sportfishing regulations. The formal regulation change process began immediately following the passage of the Public Act (May 2021) and is nearing completion. Public comment has been received on the DEEP Fisheries Division's proposed changes to the sportfishing regulations. Review of comments is underway and the final step in the process is approval by the Legislative Regulations Review Committee (expected in summer 2022). Due to this ongoing process, the DEEP Fisheries Division made the decision to not print the 2022 Connecticut Fishing Guide. However, all of the information provided in the guide can be found on the DEEP website.

Freshwater Fishing Guide: <https://portal.ct.gov/DEEP/Fishing/Freshwater-Fishing-Guide>

Saltwater Fishing Guide: <https://portal.ct.gov/DEEP/Fishing/Saltwater-Fishing-Guide>

The official freshwater sportfish regulations may be found on the Secretary of State's webpage at [https://eregulations.ct.gov/eRegsPortal/Browse/RCSA/Title\\_26Subtitle\\_26-112](https://eregulations.ct.gov/eRegsPortal/Browse/RCSA/Title_26Subtitle_26-112)

The Connecticut Fishing Guide will be printed and distributed in 2023, as well as be available on the DEEP website.

Sign up to receive the Wildlife Division's monthly electronic newsletter, *Wildlife Highlights*, by email at <https://portal.ct.gov/DEEP-Wildlife-Highlights>.



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P. J. FUSCO

One of the more stunning shorebirds that migrates through Connecticut in spring is the ruddy turnstone. Turnstones depend on small mollusks and other invertebrates during their northbound journey. They also rely on the availability of horseshoe crab eggs at many of their stopover sites.