March/April 2020

CONNECTICUT Wildlife

From The Director

As we started planning this issue in late December and early January, I had envisioned the general theme I would use for this column. Having been at the center of the bluebird restoration effort in Connecticut and remembering the days when bluebirds were only found in three towns statewide, it seemed to be the ideal conservation success story to highlight. There were also great connections to Earth Day and climate change. Now, we are in a very different place. We are facing a new challenge in the form of COVID-19 and it has dramatically altered our lives. Our first thoughts are for the safety and well-being of our friends and families and those folks on the front lines helping to keep all of us safe and healthy during a global pandemic.

Perhaps there are still some lessons we can borrow from the creation of Earth Day, our efforts on climate change, and the recovery of bluebirds. Then as now, three themes emerge — recovery, resilience, and adaptation. As a nation, we have a long history of adapting to new situations, being resilient in the face of amazing challenges, and bouncing back from whatever is sent our way.

During these challenging times, it is important to remember that nature can help us just as we have helped improve our air and water quality, habitats, and wildlife. We derive significant health benefits from nature, both physically and mentally. During times like these when we are surrounded by uncertainty, change, loss, and fear, those health benefits are critically important. Time spent in nature helps lower our blood pressure, reduces stress and anxiety, and helps combat depression. Consider taking a health break and get outdoors. Recreate locally, practice social distancing, and recreate responsibly. Remember, you don't have to travel to distant places to get the benefits of being outdoors. Time spent in your back yard or on a balcony can be filled with the sights and sounds of nature.

While you read this issue of Connecticut Wildlife *and reflect on the many conservation success stories it contains, remember that our greatest successes come when we work together for a common goal, be it specific like species recovery or broad like protecting the public health. We are in this together, we are stronger together, and we are resilient and resourceful when we work together for a common goal.*

Stay safe, stay home, stay healthy, and let nature help each of you during these difficult times.

Jenny Dickson -- Wildlife Division Director

Connecticut Wildlife

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Commissioner
Katie S. Dykes

Chief, Bureau of Natural Resources
Rick Jacobson

Director, Wildlife Division
Jenny Dickson

Magazine Staff

Managing Editor Kathy Herz
Production Editor Paul Fusco
Contributing Editors: Mike Beauchene (Fisheries)
Christopher Martin (Forestry)
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)
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E-mail: deep.ctwildlife@ct.gov Phone: 860-424-3011

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CONNECTICUT Wildlife

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A newly-fledged chipping sparrow awaits a food delivery from its parents. The CT Bird Atlas seeks to document breeding activities of birds throughout the state. PHOTO BY P. J. FUSCO

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With the help of volunteers, the CT Bird Atlas will document the distribution, abundance, and breeding activities of birds, such as the tree swallow, at sites throughout the entire state and map all species found during both the nesting and non-nesting seasons. However, collection of breeding data has been delayed for the spring of 2020. See page 16 to learn more.

Photo courtesy Paul Fusco

Conservation Success Story: The Eastern Bluebird

Written by Brian Hess, DEEP Wildlife Division; photography by Paul J. Fusco, DEEP Wildlife Division

A male Eastern bluebird surveys its surroundings from the top of a nest box.

Like much of the wildlife in Connecticut, the fate of eastern bluebirds has ebbed and flowed with the European colonization of eastern North America, the incursion of invasive species, and attention of conservation actions.

Three bluebird species are found in North America, but only one occurs east of the Mississippi River. Eastern bluebirds (*Sialia sialis*) are charismatic year-round residents of Connecticut. Their vibrant blue backs and red breasts and habit of perching in open spaces captivate wildlife watchers. In native cultures, bluebirds are closely associated with happiness, spring, the sun, and the wind. Across the bluebird's range, its bubbling song ushers in the changing of the seasons from winter to spring.

Bluebirds are small omnivorous thrushes, switching their diets from invertebrates to wild fruits and berries throughout the year. To find this food, they prefer open areas with low ground cover and scattered trees. From these perches, bluebirds watch for insects and spiders on the ground. Many gardeners attempt to attract bluebirds because of their appetites for invertebrates.

After the European colonization of North America, bluebirds were one of the species that benefitted from the large-scale change in land use. Their numbers increased as forested land was converted to fields, pastures, and orchards. The birds were further encouraged, as colonists realized that bluebirds were beneficial in controlling insects and would readily nest in artificial cavities.

But the invasion of European humans across the continent facilitated other colonizers. Throughout the middle of the 19th century, immigrants of European descent imported and released thousands of house sparrows. Most of these releases centered around urban areas, including 40 pairs released in New Haven in 1867. The birds were introduced as a fond reminder of the world the immigrants had left behind, and because of the erroneous belief that house sparrows were more effective insectivores than birds native to North America. Motivated by the same devotion to European wildlife, the American Acclimatization Society was founded in 1871. Among the group's projects was its most notorious and long-lived initiative, the introduction of the European starling. Around 100 birds were released in New York City in 1890 and 1891.

Both house sparrows and European starlings have spread across North America and number in the hundreds of millions of individuals. Both birds nest in cavities and are fiercely competitive for nesting space. Competition with these exotic birds, along with severe winters and low survivorship, caused

bluebird populations to decline, starting in the 19th century. This decline was furthered by the reversion of fields, meadows, and pastures back to forest, as the regional economy shifted from agriculture towards centralized industry.

In the absence of enough nesting space, conservation groups undertook huge efforts to provide nesting opportunities for bluebirds and help them compete and succeed. The groups not only erected nest boxes, but monitored and maintained them throughout the nesting season, removing invasive sparrow and starling nests. The bluebirds have responded, and the population has rebounded over the past 50 years. The recovery has been a team effort, with many organizations and groups playing important roles. While DEEP has given away wood for the construction of thousands of nest boxes for bluebirds over that past few decades, that effort would be in vain without groups to build, erect, and maintain the boxes.

Old nesting material can harbor parasites, so regular cleaning of nest boxes can help nestlings stay healthy.

How You Can Help Bluebirds

You can care for bluebirds by putting up a nest box. The ideal box has an entry hole of 1.5 inches, can be opened on the front or side for cleaning and monitoring, and is rough inside to allow young birds to climb out when ready to fly. Make sure the box faces an open area with low vegetation, and avoid putting it in wooded or shrubby areas and places where house sparrows are common. Never put the box on a tree, but rather use a post or pole and install a predator guard to protect the nest from raccoons, housecats, and snakes. Maintain your boxes. Clean out nesting material before the nesting season, then check the boxes frequently throughout the spring. Remove house sparrow nests promptly (house sparrows are not protected by the Migratory Bird Treaty Act). When each clutch of bluebird chicks has left the nest, remove the nesting material to encourage re-nesting. Information about bluebird nest boxes is on the DEEP website at *https://portal.ct.gov/DEEP/Wildlife/Fact-Sheets/Eastern-Bluebird.*

A bluebird's blue color is produced from the structure of the feather reflecting blue light, not from pigment.

Because our environment is so complicated, there are few straightforward success stories in recovering species at risk. In a sea of bad news, eastern bluebirds offer hope of what might be possible when the interests of many align to help wildlife. With enough resources, we hope this might be an increasingly common narrative for our wildlife species in Connecticut.

Earth Day: 50 Years of Celebrating Our Planet

Written by Anna Toledo, DEEP Wildlife Division; photography by Paul J. Fusco, DEEP Wildlife Division

On April 22, 2020, the 50th anniversary of Earth Day was celebrated around the world and at home in Connecticut. In 1970, the first Earth Day saw 20 million Americans gather together in protest to the environmental crises of the day. Air and water pollution were at the forefront, as smog choked the cities and oil spills leaked into oceans and rivers across the country. This event is often cited as the birth of the modern environmental movement, and it has blossomed into a global celebration of environmental accomplishments, as well as a reminder to maintain the fight for environmental health.

According to the official Earth Day website (*www.earthday.org*), Earth Day 2020 is all about climate action. This should come as no surprise to environmentalists and citizens of Connecticut. Our state has long been a leader in the area of climate change. Connecticut's Climate Action Timeline showcases the state's place at the forefront of efforts across the nation in developing courses of action to tackle greenhouse gas emissions, advance renewable energy initiatives, and promote sustainability at every level, from the individual citizen through the international organizations that call Connecticut home. In 2019, Governor Ned Lamont signed an executive order establishing the Governor's Climate Change Council (GC3) to monitor the State's progress in addressing climate change and update mitigation, adaptation, and resilience strategies to guide Connecticut for many years to come. To learn more, visit *https://portal.ct.gov/deep/Climate-Change/GC3/Governors-Council-on-Climate-Change*.

With the commemoration of 50 years of Earth Day, every member of our global society is invited to reflect on their lifestyle choices and their role in combating climate change. Each ocean begins with a single drop of water. As those original 20 million Americans demonstrated in 1970, each voice and each action matters. The accomplishments of today will shape the world tomorrow.

Environmental Tips to Follow for Earth Day and Every Day!

DEEP offers several environmental tips for Connecticut residents to take steps for observing Earth Day every day. More tips can be found on the DEEP website at *https://portal.ct.gov/DEEP/About/Earth-Day/Environmental-Tips*.

- Get outdoors with your family. Learn to fish, take a walk or a day trip to a Connecticut state forest or park, try letterboxing and camping, and more.
- Bats love insects, like mosquitoes! Attract bats to your yard for their excellent insect control abilities by installing a bat house.
- Attract bluebirds and other wildlife to your yard. Build or install a nest box or plant native plants that provide food and shelter for wildlife.
- Kick the water bottle habit. Buy a reusable container and fill it with tap water.
- Clean up your dog's waste. It can contain harmful pathogens that can contaminate our drinking water.
- Don't Trash Grass! Save time and money by leaving clippings on the lawn as a fertilizer.
- Conserve water in your yard. Collect rain water in a barrel and use the water on your garden and lawn. Plant a rain garden to collect run-off from driveways and sidewalks.
- Do you know how much energy is lost through leaky doors, windows, and other areas of your home? Through the Home Energy Solutions Program, you can receive an energy audit where a professional seals air leaks, installs compact florescent bulbs, provides water conservation devices, and more.

The starflower can be found in Connecticut's forested habitats. This plant relies on a healthy pollinator population (native bees) in order to reproduce.

Connecticut's last coal-fired power station, Bridgeport Harbor Station, is scheduled to be closed by 2021. It has been replaced by a new cleaner-burning natural gas facility. Coal-fired power stations have closed down in Connecticut due to dramatic declines in the use of coal to generate electricity in the region, as well as the increased use of alternative sources that produce less air pollution while generating electricity.

Once laden with many forms of toxic pollution, the Housatonic River of today is an example of how policy changes and conservation partnerships have revitalized the ecosystem. The Housatonic is once again teeming with fish and multiple pairs of bald eagles nesting along its watercourse.

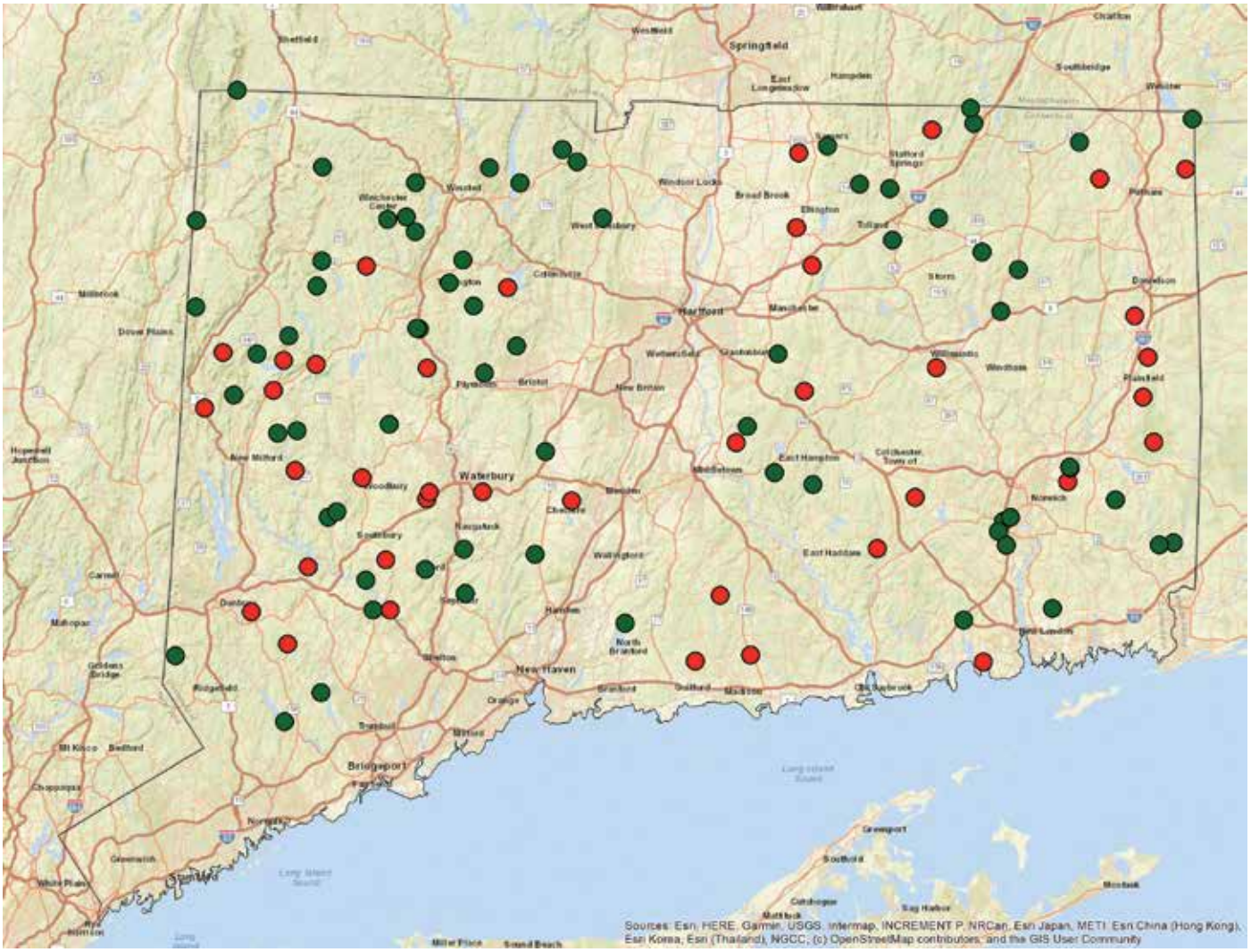
The More Things Change, the More they Change

Written by Mike Beauchene and Brian Eltz, DEEP Fisheries Division; photos: DEEP Fisheries Division

It is 6:50 AM on June 10, 1991, and I roll into our DEEP Fisheries Field office to join my fellow seasonals. Our team leader has already been there for an hour and loaded all of the gear into the state-issued green Chevy Suburban. Our job, check the list one more time. Block nets? Check. Electroshockers? Check both of them. Hip chain? Check. Dip nets? Check. Conductivity meter? Check. The next question, "where are we going today?"

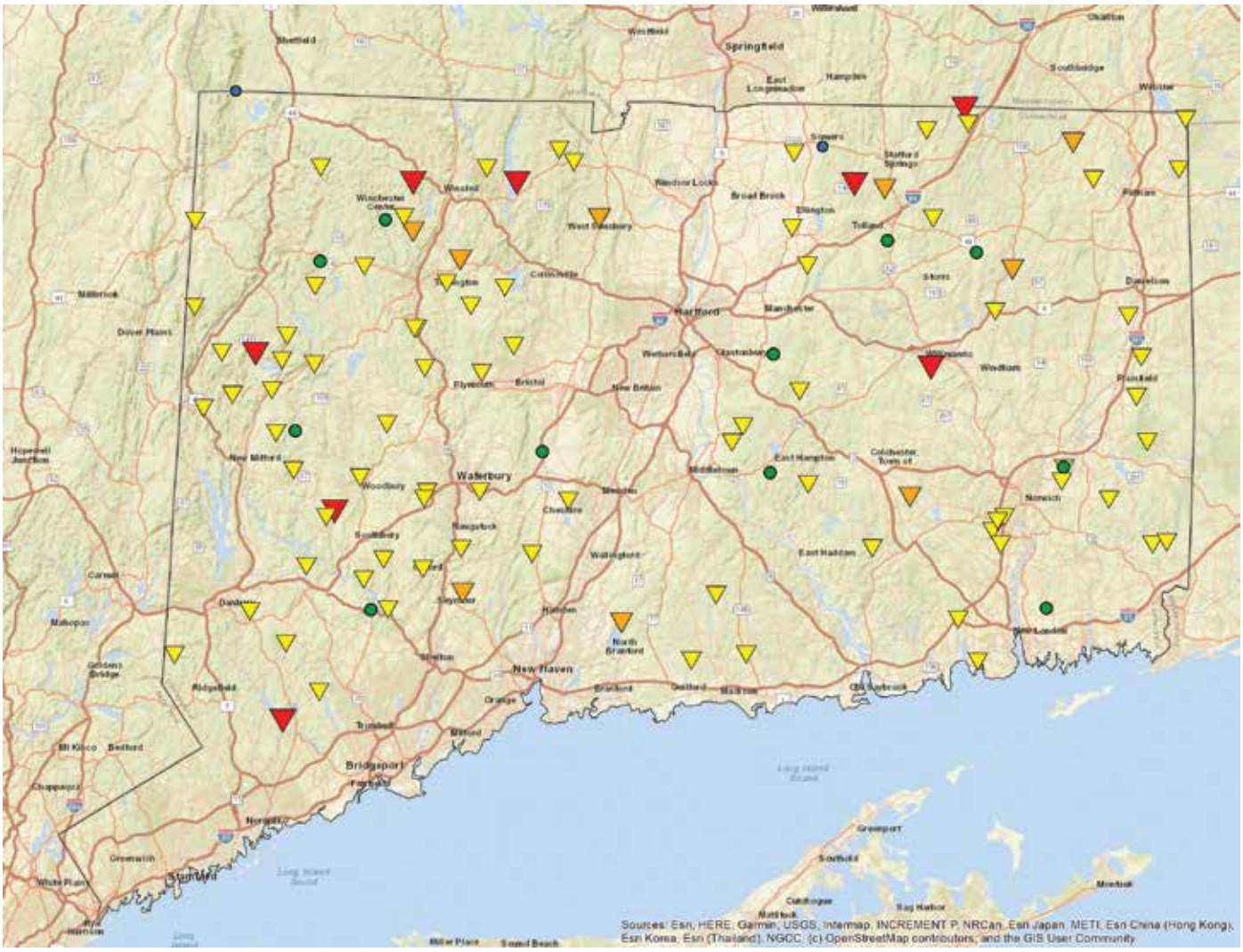
One of my first roles in the Fisheries Division was as a seasonal research assistant on the Statewide Stream Survey Project. What a dream job! Each and every day, from May through August, two teams of five

Wild brook trout presence/absence in 2018-2019.



All dots (107 total) indicate where wild brook trout were found during samples conducted from 1988 to 1994. Green dots (68 total) indicate areas resampled in 2018-2019 where brook trout were detected again. Red dots (39 total) indicate where brook trout were not detected in samples during 2018-2019.

Wild Brook Trout change in density since the time of first sample (1988-1994) to present day (2018-2019).



The blue dot shows the greatest increase in density (+525 trout/km to 1,136 trout/km). Green dots show no change or a slight increase in density (+0 fish/km - 525/km). All upside down triangles show where brook trout density decreased, with red being the most severe. Streams where densities decreased are where brook trout went undetected in the most recent samples at some locations (39).

headed out to collect a plethora of data to describe the physical, chemical, and, most importantly, fish community data at a series of streams. Each team had a predetermined and scouted list of locations to sample, so that by the end of the summer, over 150 locations were visited, with a whopping 900 by the end of the seven-year project in 1994.

My favorite part of being on this team was spending the majority of days submersed, but not literally, within the immense network of brooks, streams, and rivers across Connecticut's landscape. I was most interested in the status and condition of finding and documenting populations of wild brook trout. I love this fish! Our only native member of the family Salmonidae, except for the Atlantic salmon, the brook trout (*Salvelinus fontinalis*) is actually not a trout, but a charr. So wow your friends and family at your next party with fish trivia – as you now know the only species of "charr" native to Connecticut.

What we found during our field work was amazing to me. A significant number of teeny-tiny flowing water courses, most seemingly barely a trickle, had brook trout present. As watershed and stream size increased, so did the number of larger fish present in our sample. At the close of the project, we concluded that populations of wild brook trout were "common" and "widespread" across the state.

Fast forward 30 years – could it really be that long ago? Connecticut looks a bit different in 2020 than it did in the early 1990s. Some things that stick out include the widespread use of smart phones, less "big hair", multiple national NCAA basketball championships for my alma mater and our flag ship university (UCONN), Amazon, and the amount of the landscape covered by impervious surface. Looking at the flora and fauna, bears and bobcats are thriving, but Eastern hemlock and ash trees are not. A new concept has been introduced, climate change and global

The DEEP Fisheries Division is keeping their fingers on the pulse of Connecticut's fish communities, with special focus on native species.

warming. So, now, how are our wild brook trout doing?

Enter the next generation, young, enthusiastic, and eager to take Connecticut's fisheries to the next level. Time to tap into that energy and revisit some of the old stomping (fish-sampling) grounds to answer the question, "how are the wild brook trout populations fairing?"

Over a two-year period, Brian Eltz led a team of seasonal research assistants (just like in the good ole' days) out to 107 of the 585 sites found to have wild brook trout back during the stream survey project. The 107 sites were randomly selected and would form a statistically representative sample.

Brian takes the story from here . . . While I am not that young, I am definitely still eager and enthusiastic, and would have the same ole' green Chevy Suburban (not really…we have a gray Chevy Silverado now!) loaded and waiting for the next generation of future biologists to come in each morning to make sure I had not forgotten (that would never happen on my watch) to load some important piece of equipment before going out sampling. Along with the truck and crew, the equipment has been updated too, but that same old checklist still exists! Now, we have smartphone technology, so we ditched the old maps and rely on navigation apps to get us around the state. That is, unless we went to the northwestern hills of Connecticut, lost contact with the ever-needed cell tower, and had to drag the old maps out again. So much for newer technology!

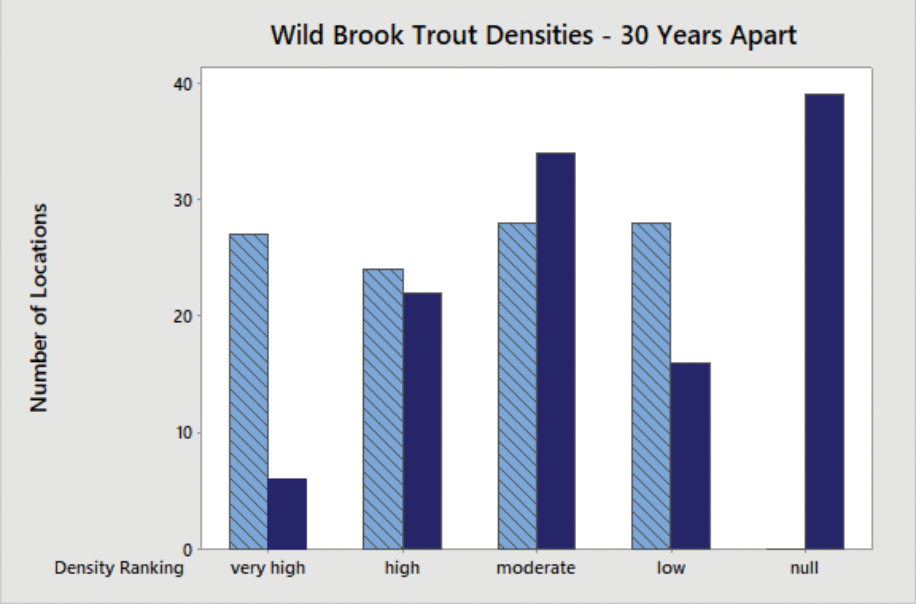
As a young kid growing up in northeastern Pennsylvania, I found myself observing and catching our only native ~~trout~~, I mean charr (the things you learn when you have to write an article like this!). So, given the opportunity to

Fortunately, Connecticut has some large blocks of preserved land. This land was favorable to our native brook trout 30 years ago and remains so today, thankfully.

go back in time and resample many of the sites Mike did in his younger years was very exciting to me! But, before doing so, I had to ask myself what has changed, if anything?

So, data in hand from the samples conducted over 30 years ago, we would drive up to a historic sample location, and I would tell the crew how many "brookies" the former crew got in the old sample. We would bet (no money exchanged hands…really!) if the brookies were still present and we would replicate history – I mean the sample – as best we could. Many times, I would win the bet because I might have had some recent insight on a stream or river, but other times I just straight up lost. And, so it appears, the State's only charr might have, too.

You see, as the title of this article suggests, "The more things change, the more they change." Of the 107 sites that were resampled in 2018 and 2019, only 68 of the previously sampled sites retained brook trout. We are not willing to say that because we did not see any in the sample reach, brook trout have been extirpated from these streams, but it does mean they could be present in such low densities (number of fish present per kilometer) that it rendered them undetectable. Not only did we find that overall, fewer streams had brook trout present, we also found that when present, overall densities had decreased as well. For the majority of sites where brook trout were still found to be present, most (40) had reduced densities than what was found close to 30 years ago. A bright point – for some streams (20), densities remained similar and a few managed to increase (8). Overall, however, the trend was about losses.



A pattern has not yet been detected as to why populations have been lost from waterbodies but near-term efforts include looking at Connecticut's changing landscape. Efforts will determine if there have been changes in forest cover (more is better), changes in impervious cover (less is best and more is poor), and possible changes in water temperature, as it may be related to increasing air temperatures (i.e. climate change), but not those wonderful UCONN basketball championships (my alma mater too).

There are plans to resample many of the sites where brook trout were lost because when recent samples were taken, they may reflect that it has just been a bad couple of years. If we do find that brook trout have been extirpated from some systems and the habitat is still appropriate, we may consider jump-starting a population by transferring wild brook trout from another stream. We have had success with this in the past (when drought has completely dried a section of stream). Additionally, we might consider habitat improvements (dam removal, culvert replacement, increasing woody debris), as well. Time will tell in what direction we should proceed, but we do not have the luxury of waiting anther 30 years to find out.



Over the past 30 years, Connecticut's landscape and climate have changed – a change away from conditions favorable for our native brook trout.

Bird Brains are Monumental

In Migration and Survival

Article and photography by Paul Fusco, DEEP Wildlife Division

It has been said that birds are seemingly unintelligent because they have a small-sized brain in comparison to the much larger proportional brain of mammals. In fact, although bird brains are comparatively small, they are highly-developed and have significantly more neurons packed into a unit of mass than mammals do. This is especially true regarding the forebrain, which in all animals is associated with intelligent behavior. While the term "bird-brain" may have an applicable use at times, its derogatory meaning is certainly not the rule when it comes to birds.

Some Birds Are Problem Solvers

Birds in some families, including corvids (crows and jays) and parrots, can solve problems, and some, including certain vultures and finches, will use tools to forage. The Egyptian vulture from North Africa will toss rocks against an ostrich egg to break it open. In the Galapagos Islands, the woodpecker finch can use a cactus spine to dig into holes to gain access to wood-boring insects. Green herons in the U.S. will use bait in the form of food scraps or pieces of grass to lure small fish into their reach. Even herring gulls along the Connecticut shoreline use tools, in a manner of speaking, when they fly up with a clam and drop it on the pavement to crack the shell open. If the gull did not know to fly up and drop the clam, it would not be able to access the meaty morsel inside.

So, How About Memory?

When it comes to memory, some birds are superstars. We have all heard about the feats of homing pigeons. How do they find their way? Pigeons have a built-in compass (directional) and mapping (navigational) capability that combine to give them the ability to find their way home. They also have an astounding capacity to memorize visual clues.

How can it be that a hummingbird will show up in spring looking for a nectar feeder that has not been put out yet? The sugar water was there last summer, and the hummer seems to have the location programed into its memory, as it buzzes around the spot where the feeder is supposed to be. Its behavior is an indication that the hummingbird may be the same individual that spent the previous summer in this same yard and remembers where to find the yard and the feeder. Or, it could be that the hummer is a transient that made a refueling stop in this yard during its migration. Either way, this is a remarkable feat for a small bird with a tiny brain that has traveled perhaps 2,000 miles during its spring migration.

Birds have a well-developed hippocampus region of the brain, which is closely associated with memory, particularly long-term memory. It is also thought to play an important role in spatial processing and navigation, making the hippocampus critical for a migrating bird.

Stopover Sites

Long-distance migrants must know the right places to stop for food and rest. Year after year, migrating birds use the same reliable and historic stopover sites, which provide these birds with needed food and rest. At least on some level, memory in adult birds plays a role. For instance, a first-year migrant navigates by an internal compass using the sun, stars, and the earth's magnetic field. As the bird becomes older and has more experience with migration, it develops an enlarged hippocampus that aids in spacial recognition, allowing the bird to learn visual cues in the route it needs to take. This indicates the adult has an improved capacity to retain spacial and navigational information.

Scientists have shown that migrant birds have better memories than non-migrants, which holds true even within the same species. Those individuals that migrate tend to have a more highly-developed and enlarged hippocampus.

The Remarkable Chickadee

Industrious chickadees work tirelessly, snatching seeds from the forest or a feeder and storing (caching) them for later consumption. During severe winters, some of their food sources may become depleted. So, by caching food, the chickadees are assured a food supply that will last through winter. Caching food like this requires the bird to remember all of the hiding places it used, which may total as many as 80,000 or more over the course of one fall and winter.

Studies have shown that the amazing chickadee is able to increase its memory capacity by adding new brain cells to the hippocampus, thus enlarging the spatial recognition portion of the brain by as much as 30% during the winter season. This allows the birds to relocate stored seeds, increasing their chances of survival during winter. In spring, the hippocampus shrinks back down to normal size because food caching memory is no longer needed.

So, the next time you are referred to as a bird-brain, just remember there is plenty of evidence suggesting you should take that as a compliment!

Above: Hummingbirds often seem to know where the nectar feeders should be in the spring.

Right: Chickadees need to remember where they cached up to 40,000 seeds each winter.

Observations of banded long-distance migrants, including shorebirds like this semipalmated plover, demonstrate the birds use the same stopover sites year to year. Sometimes, individual birds are found in successive years at the same stopover site after traveling thousands of miles.

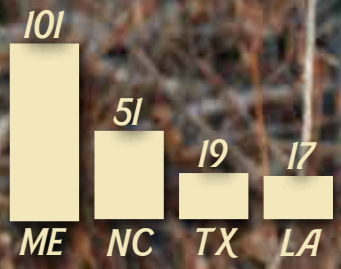
Wild Turkeys by the Numbers

13 Turkey management zones in Connecticut

1813 *The year wild turkeys were deemed extirpated from Connecticut*

22 wild turkeys were reintroduced in Northwestern Connecticut in 1975

188 *Between 1987 and 1997, Connecticut provided this many wild turkeys to other states for their reintroduction projects*



1,324 *Spring turkey season harvest total in 2019*

1981 was the first year hunters were able to harvest wild turkeys in Connecticut


55 mph top flight speed
28 days of incubation until hatching
6 to 7 inches
The length of a gobbler track
3 The number of wild turkey hunting seasons maintained in Connecticut:
1. Spring
2. Fall archery
3. Fall firearms
5,445 hunters participated in the 2019 spring wild turkey season
16th annual Youth Wild Turkey Junior Hunter Days took place in 2020
WILDLIFE & SPORT FISH RESTORATION

Update on the CT Bird Atlas

Written by Min Huang, DEEP Wildlife Division; photos by Paul Fusco, DEEP Widlife Division

It is hard to believe we have two full years under our collective belts of the CT Bird Atlas. The Atlas Project Team could not be happier with the enthusiasm demonstrated by the community while taking on the challenge of this Project. We have collectively compiled some truly remarkable information that will enable better protection of critical habitat and our beloved avian species. Throughout the first two years of this Project, we have overcome many obstacles. A curve ball here and there has been met with resolve, providing the desired result. This spring, however, has thrown a combined curve ball, spitball, and fastball at us all at once. The onset of the COVID-19 pandemic is something that none of us in several generations of time have experienced. Prior to the exponential increase of COVID-19 cases and the subsequent "Stay Safe, Stay Home" advice and orders, the Atlas Project Team was developing guidance and priorities for the 2020 breeding season, which was supposed to be distributed prior to the start of April. However, nothing is more important than the health and well-being of CT Bird Atlas volunteers, their families, and others in society. Given the highly contagious nature of this virus, the lack of adequate and widespread testing, and a paucity of data about the true prevalence of the virus in the human population, the Atlas Project Team felt it was not prudent to take risks.

Consequently, the Team decided to forego a full survey effort in 2020 and add another breeding season of data collection during 2021. This enables everyone to focus on truly important things right now – staying safe rather than traversing the landscape looking for birds. It also means that, if you felt that this spring was your last chance to find a displaying woodcock or a nesting red-tail in your block, then you can put those concerns aside. In doing so, we also postponed the hiring of seven technicians this spring and summer. These technicians were going to finish up the final third of the State's point counts and conduct targeted surveys for secretive, difficult to detect species.

Given that we have decided to go another breeding season and have asked the community to please refrain from traveling far and wide to bird until the epidemiologists and other health care professionals tell us it is safe, we are not saying that volunteers should forget about the Atlas entirely. Simply, everyone should stay home and local, as the disease experts are telling us.

Partnering for Bird Conservation in Connecticut

Northern flicker

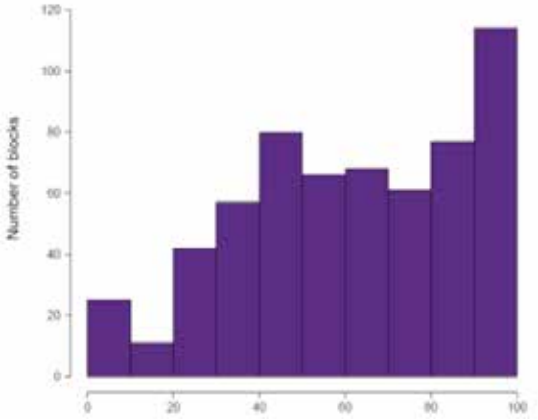
University of Connecticut
CT Department of Energy & Environmental Protection
Community Foundation of Middlesex County
Audubon Connecticut - National
Connecticut Audubon Society
Connecticut Ornithological Association
Great Hollow Nature Preserve
Hartford Audubon
Litchfield Hills Audubon
Menunkatuck Audubon
New Haven Bird Club
Potopaug Bird Club
Quinnipiac Valley Audubon
Western Connecticut Bird Club

Advice for CT Bird Atlas Volunteers

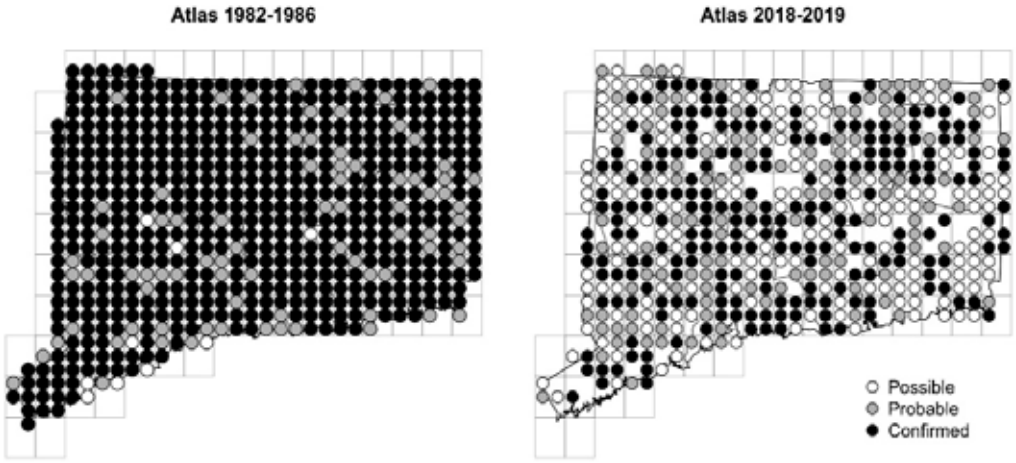
Volunteers are encouraged to continue looking for evidence of breeding birds in their immediate surrounds – especially behaviors that confirm breeding (confirmed breeding records are what the Atlas lacks most). If robins and cardinals are not confirmed in your block – this is the time to look for their nests in your yard. If house sparrows and starlings are not confirmed, then sit in your car for an extra five minutes while at the grocery store and see if you can see birds going back and forth to a nest.

This unique situation provides a great opportunity to spend a lot of time birding (very) close to home. As the weather continues to improve, we are all going to have spring fever, particularly while complying with requests to shelter at home. **Before stepping outside to get fresh air, familiarize yourself with the species that are still unconfirmed in your block and pay particular attention to those species to see if you can observe them carrying nest material or something similar.** You never know, you might see a red-tailed or a red-shouldered hawk carrying sticks, which would confirm them as local breeders. And, should things become drastically better in the next few months, there will be time to get out and do some birding at precisely the right time for what the breeding Atlas needs most!

Figure 1. Graph showing the number of blocks and their level of "completeness" based on the three criteria being used to designate "completeness" of a block.



Black-capped Chickadee - *Parus atricapillus*



Need to "Complete" Breeding Data

The ultimate goal for the breeding portion of the Atlas is to have 100% completion status for the breeding season across all of the blocks in the state. This could still happen! Currently, we are fairly far from that goal. Figure 1 shows the number of blocks that are at various stages of "completion". Three criteria are being used to define a block as being "completed": 1) species list that is at least 80% of the list from the first Atlas, 2) at least 50% of that list consists of confirmed breeding, and 3) at least 20 hours of survey effort.

The first two criteria are important. A number of blocks have very slight spe-

cies lists, while others have good species lists but few confirmations. The process to achieve these two criteria are a bit different. Given the current operating conditions, the focus should be on confirmations of breeding behavior. Certainly, increasing species lists for blocks is also critical, but given the current situation, it might be more helpful to focus on breeding confirmations at this time.

Increasing Block Confirmations

A quick look at the number of blocks that have at least 16 confirmed species shows there is a need to focus on confirming breeding in the blocks.

Another example of the need to obtain breeding confirmations is shown by a very common species, the black-capped chickadee. The first breeding Atlas conducted in 1982-1986 indicated that this species was confirmed in pretty much every block in the state. Although we expect to find, and are finding, changes in the breeding distribution of species, a significant change, if any, in a species such as the black-capped chickadee would not be expected.

Increasing the number of confirmed breeding species does not mean merely spending more time in survey blocks, but rather focusing time efficiently during late June, July, and August. It is easiest to observe breeding behavior during these time periods. **Should we be able to assume some semblance of normalcy by June**, there might be the opportunity to significantly reduce the number of blocks with few confirmations this year. The breeding confirmation of species is obviously a lot more difficult than merely observing a species in a block. Confirming breeding behavior takes a bit more time but, if done at times that best increase the probability of observing specific behaviors, it can be relatively easy and certainly rewarding!

Number of Blocks with 16 or More Confirmed Breeding Species.

	Count	*Percent*
Less than 16 confirmed	*366*	*61*
At least 16 confirmed	*235*	*39*

Figure 2 demonstrates that breeding phenology for most species indicates that the months of July and August may be better times to observe the more conspicuous and easier to detect breeding behavior FL (fledglings) and NY (nest with young). With an increased effort in July and August (if possible in 2020), volunteers will be able to confirm the highest number of breeding species and bring more blocks to completion.

Certainly, a number of species do not conform to this schematic (raptors, waterfowl, wading birds), but most of Connecticut's breeding species do. Figure 3 demonstrates that during the first two years of breeding season data collection that very little effort was spent during the critical July and August time periods relative to the early portion of the breeding season.

Another way of looking at the distribution of confirmed breeding is shown in Figure 4. This figure, along with a quick look at the CT Bird Atlas website (*www.ctbirdatlas.org*), shows where there is a lack of information on confirmed breeding. Species lists and breeding status (possible, probable, confirmed) are shown as a pull down menu for each block on the website. For many of those probable species, it is just a matter of being out at the right time of year to detect the most easily observed behaviors and moving those species to the confirmed column.

This is a challenging time for all, but hopefully we can all do what is asked of us by health care professionals and disease experts and, in doing so, come through this experience healthy and safe. When the time eventually comes when we get the go-ahead to go out more, let's go birding and confirm some breeding! You can learn more about the CT Bird Atlas at *www.ctbirdatlas.org*.

Figure 2. Breeding phenology for most species indicating the month in which most breeding confirmation behaviors are occurring.

Yellow-crowned night-herons building a nest.

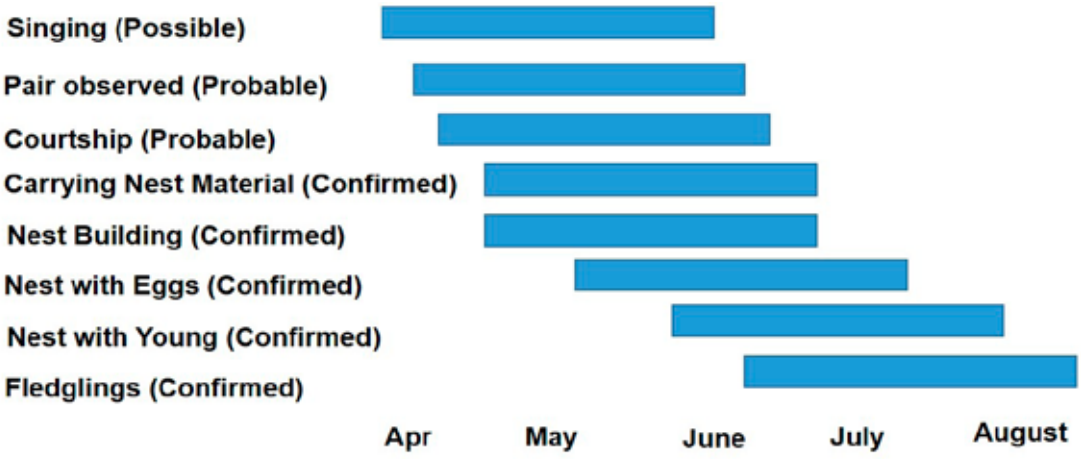


Figure 3. Survey effort by month over the course of the first two years of the CT Birds Atlas.

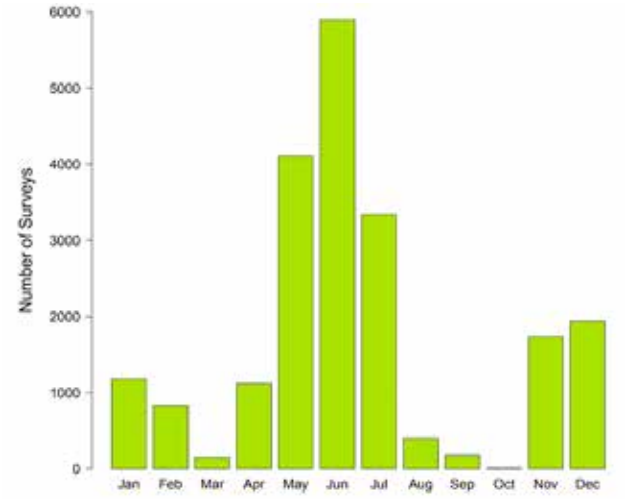
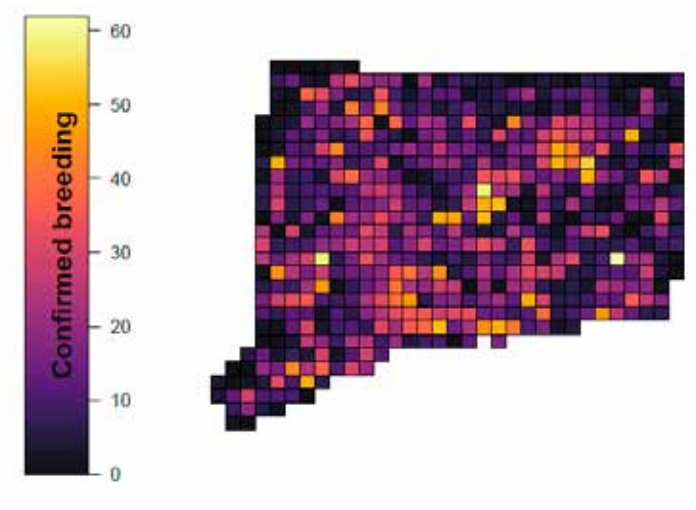


Figure 4. Number of confirmed breeding species. Lighter blocks have higher numbers of confirmed breeding species.



Nests originally constructed and used by hawks are often used by owls, such as the great-horned owl.

PHOTO COURTESY KYLE TESTERMAN

Bringing Wildlife into View

From the woods, your doorstep, and across the globe with remote cameras

Written by Kyle Testerman, Wildlife Management Institute

Taking pictures of wildlife in their natural environments has been a lifelong pursuit of many outdoor enthusiasts. While it is rewarding enough to see wildlife with our own eyes, snapping a photograph preserves that memory in a tangible way that is easy to share with others. The downside, of course, is that you actually have to be outside (or at least looking outside), camera at the ready, when wildlife happens to be nearby. And, what about elusive species that do their best to avoid being the subject of a close-up photo? One solution may be to hide, camouflaged in a viewing blind, 24-hours a day, but realistically, most of us just cannot do that.

An easier way to photograph wildlife, especially in your backyard, is to use a remote camera that can monitor an area and take photographs automatically when triggered by motion. Automatically-triggered cameras go by many different names: trail cam, game camera, hunting camera, deer cam, etc., and are essentially the same thing. For the most part, these cameras are passive, detecting motion and infrared changes, then triggering the camera to capture a video or photograph. With the popularization of home security cameras, many doorbells and flood lights now act in the very same way, even triggering an alert to your mobile phone. Backyard triggered cameras are a great way to feel a sense of connection and appreciation to the land and the animals we share it with.

A camera set along a river bank captured this great blue heron with a large trout it caught.
PHOTO COURTESY KYLE TESTERMAN

Traditionally, triggered cameras have been used by wildlife biologists, hunters, and trappers as a way of monitoring an area for game species and other wildlife. On the research side, cameras have been used to study an array of wildlife species. In the era before widespread use of triggered cameras, researchers studying rare and elusive species relied on surveying for tracks, droppings, hair, and other signs of their targeted species. With cameras, researchers can place the camera where

they suspect their target will pass, and simply wait days, months, or even years to collect the camera.

Cameras have also opened doors to studying wildlife in unique ways. Researchers can expand their efforts from simply monitoring for the presence of a particular species to estimating species abundance with marked individuals, involving complicated computer-based calculations from camera detections. Monitoring for a certain species is a common goal for hunters looking to scout appropriate areas for harvesting game. Knowing where to set up a hunting blind or tree stand can make a big difference in the success of an outing.

Remote video cameras have opened up many new opportunities to record wildlife behavior. As part of the Wildlife Division's ongoing Bobcat Project, triggered cameras are opportunistically placed at deer carcasses where GPS-collared bobcats have been found feeding on deceased deer. When a researcher discovers the deer carcass, he or she may set up a triggered camera to record images and/or videos of what species are feeding on the carcass and if there are any interactions between one another. Triggered cameras have also been placed outside of bobcat dens, revealing the way mothers move kittens to new den sites.

Videos recorded from doorbell cameras have shown us how wildlife use our yards and driveways on a regular basis, even capturing rarely seen behavior. In one doorbell camera video shared with the Wildlife Division, a bobcat can be seen slowly stalking an unsuspecting woodchuck on the homeowner's lawn. The two animals tussle briefly before the bobcat subdues its prey. Though not originally the intended purpose of doorbell-type security cameras, these videos provide insight and rewarding views of wildlife at our doorsteps.

Beyond our backyards, remote cameras have helped to uncover the lives of wildlife all across the planet. Over the last two decades, live streaming of webcams, particularly at bird nests and watering holes, have revealed the everyday behaviors of wildlife without the disturbance caused by people with cameras getting too close. At Hammonasset Beach State Park in Madison, the Connecticut DEEP, together with the Menunkatuck Audubon Society, the Friends of Hammonasset, and others, operates and maintains a live online stream of an osprey nesting platform year-round. The Hammonasset Osprey Cam, shared a special view of an osprey pair raising four chicks in 2018. When the ospreys are not using the nest in fall and winter, many other bird species can be seen at the platform, including snowy owls, great blue herons, and various species of gulls. Several other live streams of nesting birds in Connecticut can be viewed from the Audubon Connecticut website at *ct.audubon.org/Audubonlive*. Outside of our state, live streams of bald eagle nests, great-horned owl nests, African watering holes, and Alaskan salmon streams can be enjoyed from the comfort of your living room.

A female bobcat is seen moving one of her kittens out of a brush pile den to a new location.
PHOTO DEEP WILDLIFE DIVISION

A pair of adult osprey and their four offspring crowd the nest at Hammonasset Beach State Park in Madison in 2018. The image was captured by a live camera installed above the nest.
PHOTO COURTESY MENUNKATUCK AUDUBON

Whether it is through the lens of your handheld camera, from a motion-triggered doorbell camera, or a 24-hour streaming webcam, wildlife photography has taken on many new shapes in the 21st century. Regardless of the type of camera used, wildlife photography can increase everyone's appreciation for nature and the outdoors. Across Connecticut, our wildlife is navigating through our parks, forests, and neighborhoods, adapting, on-screen, to many of the changes we throw at them.

2019 Wild Turkey Season Highlights

Spring Harvest Total	1,324
Fall Firearms Harvest	32
Fall Archery	79

Permit Issuance
(Based on the Spring Turkey Survey Information)

Spring (Active Hunters)	5,445
Fall Firearms (Active Hunters)	3,066
Fall Archery (Active Hunters)	3,066

Success Rates

Spring	24.3%
Fall Firearms	1.0%
Fall Archery	2.6%

Top Spring Harvest Towns

Lebanon	36
Thompson	35
Woodstock	31

Top Spring Harvest Zones

Zone 5 (Northeast)	242
Zone 2 (Northcentral)	137

Top Fall Firearms Harvest Towns

Thompson	4
Willington	4

Top Fall Archery Harvest Towns

Eastford	3
Woodstock	3

https://portal.ct.gov/-/media/DEEP/wildlife/pdf_files/game/turksum2019.pdf

PHOTO: PAUL FUSCO

Outdoor Activities for Families to Do at Home

Visit the DEEP website to find ideas for outdoor learning activities to do at home:

https://portal.ct.gov/DEEP/Natural-Resources/25-Wildlife-Activities-You-Can-Do-at-Home and https://portal.ct.gov/DEEP/Forestry/Urban-Forestry/Arbor-Day-2020---On-Line-and-At-Home.

Join the Coverts Program

Coverts is a long-standing education program of UCONN Extension, Connecticut Forest & Park Association, and CT DEEP (Forestry and Wildlife Divisions) that teaches Connecticut woodland owners, land trust representatives, educators, and engaged citizens. During this engaging three-day seminar held at the beautiful Yale Forestry Camp at Great Mountain Forest in Canaan, CT, you will learn about Connecticut forests and how they can be better managed to support wildlife. You will also find out about natural resource professionals and organizations available to assist you, and how you can become an advocate for sound forest management in our state. More information and how to register is at *https://www.ctwoodlands.org/environmental-education/connecticut-coverts-cooperators*.

CT Junior Duck Stamp Winner for the 2020 Contest

Congratulations are extended to Julia Phillips, age 13, of Avon, CT, whose colored pencil drawing of a Canada goose was selected as the overall winner of the 2020 Connecticut Junior Duck Stamp Art Contest. Julia is a student at the Farmington Valley Arts Center and has been drawing since she could hold a pencil. She also loves sculpture and painting. Other than art, Julia likes reading, baking, animals (has a guinea pig and a dog), participates in Girl Scouts, and loves Maine and the beach.

Julia's artwork will be featured on the 2021 Connecticut Migratory Bird Conservation (Duck) Stamp. The change to using the Junior Duck Stamp winning art insures that a Connecticut artist represents our state Duck Stamp. Further, the school curriculum associated with the Junior Duck Stamp Contest is geared towards waterfowl and wetland conservation. This helps foster an appreciation for the species being painted by the students and, hopefully, provides students with a better connection to the natural world.

The Junior Duck Stamp Contest is divided into four age groups spanning from kindergarten through high school. Winners in each age group are then judged against each other to determine the overall state winner. Audrey Kolodziej, age 7, of Wallingford won her age group with a colored pencil drawing of wood ducks. Macayla Samorajczyk, age 9, of Oxford, won her age group with a colored pencil portrayal of a ruddy duck. Julia Phillips (the overall winner), age 13, from Avon won her group with a colored pencil drawing of a Canada goose. Marielle Kan, age 15, from the Barn for Artistic Youth in Niantic won the oldest age group with a pair of wood ducks.

Students and teachers interested in participating in the 2021 Junior Duck Stamp Art Contest can learn more on the DEEP website at *https://portal.ct.gov/DEEP/Wildlife/CT-Duck-Stamp*.

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Order on-line with a credit card through the DEEP Store at: www.ct.gov/deep/WildlifeMagazine

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 of shoreline beaches to avoid disturbing nesting birds

May 9 ..... World Migratory Bird Day. Learn more at *https://www.migratorybirdday.org/*.

Early 2020 Hunting Season Dates

April 29-May 30 ..... Spring Turkey Hunting Season

*Consult the 2020 Connecticut Hunting and Trapping Guides and 2020 Connecticut Fishing 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 (***https://portal.ct.gov/DEEP/Hunting/CT-Hunting-and-Trapping; https://portal.ct.gov/DEEP/Fishing/CT-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.*

New DEEP Website Launched

Find us on Facebook
www.facebook.com/CTFishandWildlife

The Department of Energy and Environmental Protection launched its new and improved website in early March. You can find the new website at *https://portal.ct.gov/DEEP*. If you have bookmarked sections of the previous website in your internet browser or use many of the shortened, friendly URLs, they will continue to redirect to the new website for the near future. However, please take some time to explore the new website and become familiar with it. We would like to receive feedback from users to let us know if they like the website or are having problems using it or finding information. Please send any comments to *deep.ctwildlife@ct.gov*.

Recovering America's Wildlife Act

ALLIANCE FOR AMERICA'S FISH & WILDLIFE

While the COVID-19 pandemic has shifted the immedate focus on new legislation in the U.S. Congress, progress is still ongoing in the national effort to secure stable, long-term funding for wildlife. Recovering America's Wildlife Act (RAWA) has continued to gain supporters. The importance of this effort, as well as the physical and mental health benefits we get from nature, are timely as we face unprecedented challenges. To learn more about the Alliance for America's Fish and Wildlife and this important effort, visit *http://ournatureusa.com* and the Alliance Facebook page at *https://www.facebook.com/OurNatureUSA*.

#RecoverWildlife

CONNECTICUT
Wildlife

PERIODICALS
POSTAGE PAID AT
BURLINGTON, CT,
AND ADDITIONAL
OFFICES

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

P. J. FUSCO

Male (tom) turkeys are dark in coloration with iridescent feathers. They have a fleshy, unfeathered head that is brightly-colored in red, white, and blue, especially during the breeding season. Toms also have spurs on their legs and a beard protruding from their breast. The breeding season starts in late March and early April when toms begin gobbling and displaying for hens.