

## From The Director

This issue of
Connecticut
Wildlife brings
back many fond
memories for me.
Growing up in the
home of an avid
fisherman, I learned
to cast with a
practice weight not
long after I learned
how to walk. For



as long as I can remember, fishing and the outdoors were intertwined. I learned how to identify different species, how to get your line unsnagged from submerged logs, and how to untangle some amazingly tangled line. I learned a lot more than that from those early morning hours in the boat with my dad. I learned to enjoy nature. I learned to be inquisitive. (Yes, I was the kid who always wanted to watch the fish being cleaned so I could learn what they had eaten.) I also learned to appreciate and understand wildlife behavior — caddisflies, dragonflies, turtles, snakes, kingfishers, herons, beaver, otters — any animal I could spot became part of my world. And, on those quiet mornings, I got to share theirs.

The Trophy Fish Awards Program is a part of those memories, too. I can still remember getting the call from my dad that he was driving to my dorm at UCONN so I could take photos of his trophy largemouth bass with "the good camera." I knew it was also about showing me his really big fish. He submitted the required data and was proud to receive his trophy fish pin. I know firsthand the goals of the Trophy Fish Program have been exceeded. The program also increased his support for what DEEP does and provided a way for him to engage in a more intellectual way with the science and management goals of the fisheries program. There is no doubt it helps support the fishing heritage — I still have both the pin and the fish more than 35 years later.

That sharing of knowledge and invitation to be part of the science behind what we do is reflected throughout this issue. The reason behind surveying turkey hunters is more than just to get opinions. It provides a way to capture long-term population trend information and even helps quantify the economic benefits of turkey hunting. This information in turn helps guide management actions that have helped wild turkeys to once again grace Connecticut woodlands.

Engagement with science — much like my youthful studies of fish dietary preferences — is a way to help all residents understand and appreciate the wildlife around them. The bobcat project is a perfect example of how much citizen scientists have to offer and how even just an interested landowner can be part of an important conservation research project.

I encourage all of you to channel your childlike curiosity, observe the amazing animals and plants Connecticut has to offer, and explore the outdoors. It is filled with amazing sights and sounds and memories you will treasure for a lifetime.

Jenny Dickson, DEEP Wildlife Division Director

# Connecticut Wildlife

Published bimonthly by

Connecticut Department of Energy and Environmental Protection Bureau of Natural Resources Wildlife Division www.ct.gov/deep

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

www.ct.gov/deep/wildlife www.facebook.com/CTFishandWildlife E-mail: deep.ctwildlife@ct.gov Phone: 860-424-3011



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



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Printed on recycled paper

May/June 2019



PHOTO BY P. FUSCO, DEEP WILDLIFE

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Wildlife Division biologists working on the Bobcat Project have been checking the dens of female bobcats with GPS collars to record the number of kittens born and collect important data from the kittens, such as sex and body weight.

Photo by Paul Fusco

# The Big Ones that Did Not Get Away

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

angler with an equally diverse set of motivations. However, a common theme across many is the hope and anticipation that the next cast brings the chance to land a fish of a lifetime. The chance that on the very next cast, the line will be taught, the drag will be singing, and the fight is on. It is the chance to see a fish of unprecedented proportions, one many dream of, but few ever see.

Catching the big one can be like the lottery, pure luck; however, it is more often the result of putting in countless hours learning about a species' behavior and preferences. It also takes learning the water, where and when conditions will optimize finding the fish so many desire, but not often catch.

Acknowledgment of the skill, time, and effort put forth by anglers to land such monster fish began in 1965 when the Connecticut Board of Fisheries and Game established the "Trophy Fish Award" Program. The program's purposes were to:

- 1. Recognize and reward angling skill;
- 2. Secure information on how various bodies of water are producing;
- 3. Provide a year-to-year documentation of fishing quality;

4. Maintainanup-to-date listing of Connecticut record fish.

A key benefit of the program was to provide fisheries biologists with insight as to the growth potential for species in particular waters. Traditional fisheries sampling gear was good at formulating the overall population structure within many waterbodies, but it is the outliers, the trophy size fish or record fish, that elude the biologists' hands.

Fast forward to 2019. The Trophy Fish Award

program is alive and well. Each year, the DEEP Fisheries Division receives approximately 200 applications reflecting the tremendous diversity of fish species, inland and marine, Connecticut has to offer. To qualify for an award, a fish has to exceed the minimum qualifying length or weight for the species. A bronze pin is awarded for the first fish of merit, a silver pin after the fifth fish of merit, and a gold pin for the tenth fish of merit or the capture of a new state record (the largest fish for that species by weight).

Just as in 1965, the Fisheries Division is proud to congratulate and acknowledge each angler for the time and effort put forth to land such a significant catch. At the same time, these catches give the Fisheries

### RECORD GAME FISH OF CONNECTICUT

COMMON NAME	SCIENTIFIC NAME	WEIGHT	WHERE TAKEN	ANGLER	EAR
Brook Trout	Salvelinus fontinalis	4 lbs. 6 oz.	Housatonic River	Fred Mazzafemo, Waterbury	1950
Brown Trout	Salmo trutta	12 lbs. 10½ oz.	Lake Saltonstall	Raymond Field, New Haven	1949
Rainbow Trout	Salmo gairdnerii	8 lbs. 8 oz.	Lake Saltonstall	Arthur Washington, New Haven	1955
Lake Trout	Salvelinus namayeush	29 lbs. 13 oz.	Wononscopomuc Lake	Dr. Thompson, New York	1918
Smallmouth Bass	Micropterus dolomicu	6 lbs. 4 oz.	Crystal Lake, Ellington	Paul Wormstedt, Rockville	1950
Largemouth Bass	Micropterus salmoides	10 lbs. 1 oz.	Black Pond, Meriden	William Livingstone, Southington	1960
Walleyed Pike	Stizostedion v. vitreum	14 lbs. 8 oz.	Candlewood Lake	George Britto, Bethel	1941
Chain Pickerel	Esox niger	7 lbs. 8 oz.	Wononscopomuc Lake	Henry Silta, Lakeville	1960
Northern Pike	Esox lucius	15 lbs.	Connecticut River	Steve Sikorski, New Britain	1960
Shad	Alosa sapidissima	7 lbs.	Connecticut River	Anthony Volpe, Hartford	1960
White Catfish	Letalurus catus	8 lbs. 8 oz.	Candlewood Lake	Thomas Molloy, Danbury	1958
Calico Bass	Pomoxis nigromaculatus	3 lbs. 13 oz.	Lake Saltonstall	Raymond Stopka, New Haven	195



(Top) The first "official" state record list as published in the "CT Wildlife Conservation Bulletin". (Bottom) David Mangelinkx with a northern pike meeting the Trophy Fish requirements.

With the preference of many of today's anglers to release their catch, regardless of size, many states have added a Catch and Release State Record, the largest fish by length. The Catch and Release Record compliments the traditional weight-based record, but provides an option for those who choose to immediately release their catch. The Fisheries Division is currently compiling a list of catch and release data to provide a mechanism to acknowledge the significant number of anglers who choose to release their remarkable catch.

So, no matter what motivates you to fish, when you find the fish of a lifetime at the end of your line, we hope you will share that moment with all of your fellow anglers (for bragging rights), but equally important, to help fisheries biologists gain information that is also as rare and elusive – the big one that did not get away.

Additional information about the Trophy Fish Award *Program, including the* minimum sizes, rules, and entry affidavit, is available in the annual Connecticut Fishing Guide or on the DEEP website at www.ct.gov/deep/trophyfish.



### Sporting License Sales Continued Up

The upward trend in the purchase of hunting and trapping and sport fishing licenses continues in Connecticut. In 1968 a total of 178,026 such licenses were issued, an increase of 17,303 over 1967.

Over a five year span the totals

read: 1964—140,102; 1965—142, 259; 1966—149,059; 1967—160, 723; 1968—178,026.

The bulk of each year's increase resulted from sales to residents. In 1964 non-residents purchased 5,172 licenses; in 1968, 5,966.









Dozens of fish species have Trophy criteria. Visit www.ct.gov/deep/trophyfish for details on how you can be recognized for an outstanding catch.

# Past, Present, and Future Status of CT's Wild Turkey Population

Written by Michael Gregonis, DEEP Wildlife Division

onnecticut's wild turkey population has had a rollercoaster existence. This native species has gone from moderately abundant to extinct to abundant to moderately abundant. Many factors have impacted the rise and fall of our state's wild turkey population, including weather, disease, predators, and the loss/modification of habitat. These elements have had various levels of importance throughout the history of Connecticut's wild turkey population.

Although pre-colonial information about wild turkeys is scarce, evidence suggests that they existed throughout Connecticut. Skeletal wild turkey remains have been found in at least eight different archeological sites across the state. Literature from the first European settlers reported that mature oak-hickory forests were commonly interdispersed with stands of conifers, along with forest openings created by

both aboriginal tribes practicing swidden (slash and burn) agriculture and weather events, such as tornadoes and hurricanes. Although no accounts of wild turkeys exist specifically for Connecticut in the literature of the 1600s, several documents from surrounding states (i.e., Massachusetts, Maine, Rhode Island) indicated that wild turkeys were moderately abundant across the countryside.

As Connecticut's history moved into the eighteenth century, European settlements dotted the landscape. In 1780, Marquis de Chastellux wrote, "I have never travelled three miles without meeting with a new settlement either beginning to take form or already in cultivation." His narrative further described that with colonization came free-roaming livestock and massive amounts of forest clearing. Historians have estimated that, prior to settlement, Connecticut forests en-

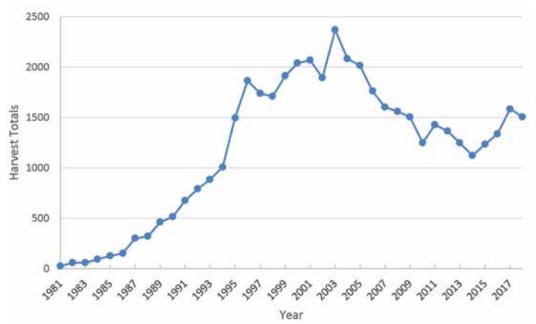
compassed approximately 95% of the landscape, and by the mid-nineteenth century only about 35% of our forests remained. The loss and destruction of habitat eventually led to the demise of Connecticut's wild turkey population. In the *American Journal of Science and Arts*, Linsley documented the extirpation of Connecticut's wild turkey population. He wrote, "The last Wild Turkey that I have known in Connecticut, was taken by a relative of mine ... on Totoket Mountain, in Northford" (North Branford). He indicated that this event occurred around 1813.

During the mid-nineteenth century, farmers left Connecticut in search of better agricultural opportunities in the Midwest. This allowed forests to regenerate once again, providing habitat suitable for wild turkey restoration. Like many states, Connecticut's initial restoration attempts were with pen-raised turkeys. Between 1956 and 1970, 740

"game farm" turkeys were released at various locations across the state. Although these birds were of the same genetics as truly wild turkeys, they did not possess the survival instincts that are passed from hen to poult. Because the pen-raised birds lacked parental training, survival rates were very low. Therefore, none of these releases resulted in a viable self-sustaining population.

Successful wild turkey restoration was accomplished by live-trapping wild turkeys with a cannon and/or rocket net. These

## Connecticut's spring wild turkey season harvest, 1981 - 2018.





Connecticut's wild turkey population has had a rollercoaster existence. This native species has gone from moderately abundant to extinct to abundant to moderately abundant.

wild-hatched turkeys had the benefit of parental survival training. During the winter of 1974-1975, Connecticut's Department of Environmental Protection received 17 female and five male wild turkeys from the New York Department of Environmental Conservation. These New York birds were released on Great Mountain Forest in Canaan and formed the core of Connecticut's population. By 1978, the population had grown to a level that allowed for an in-state trap and transfer program to be established. From 1975 to 1992, a total of 356 turkeys were captured and released at 16 unique sites. These events set the stage for a remarkable wildlife management success story that has yet to be duplicated.

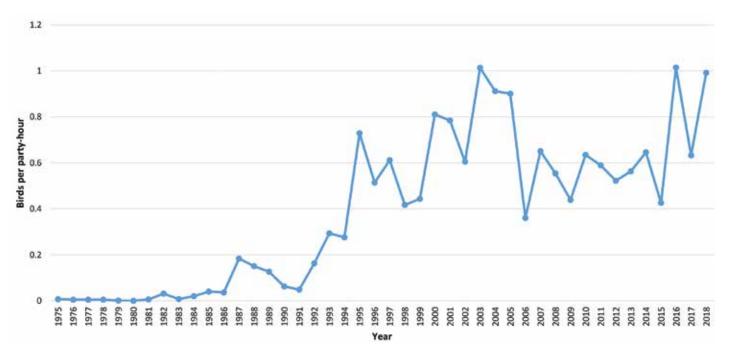
Based on spring wild turkey harvest records and Audubon Christmas Bird Counts, Connecticut's turkey population grew exponentially from the initial releases until approximately 1996 (see graphs). Subsequently, the population

began to level off, but continued to have an increasing trend, albeit at a slower rate, until 2003. Since 2003, both data sets suggest that the population has been trending downward. However, in the past 10 or so years, it appears that turkey numbers are relatively stable with annual fluctuation as a result of changes in yearly productivity and survival.

The overall future outlook for Connecticut's wild turkey population is one of uncertainty. The perceived decline in our state's wild turkey population has left us with many unanswered questions about the cause or causes. Some have stated that wild turkeys have declined simply because the birds exceeded the resources available to them, then dropped to a level more compatible with the habitat and food Connecticut has to offer. Although this argument may have some merit, others believe that the dynamics of Connecticut's wild turkey population are much more complex. To fully understand turkey population dynamics, one must consider how annual weather events affect productivity, the impacts of disease and predation, microhabitat availability (e.g. brood, nesting, roosting, foraging, etc.), and the role human impacts (habitat change and habitat modification) play. Although each of these factors by themselves may only have minimal impact, collectively, the impact can be significant.

In Connecticut, spring weather is the principal factor that dictates annual fluctuation in wild turkey populations. Rain and cool temperatures affect survival of nesting hens and poults. May is when the majority of wild turkey hens are sitting on nests incubating their eggs. This process continues for 28 days after the last egg is laid. During incubation, if hens encounter multiple days of wet and cool conditions and are unable to dry their feathers, they will emit a stronger odor, enabling predators to locate the nesting hens. In addition, during the first two weeks of June, the

## Audubon Christmas Bird Count for wild turkeys, 1975 - 2018.



majority of poults hatch out. At this point in a wild turkey's life, the feathers are fine and downy, offering little protection from inclement weather. Therefore, if a poult's down gets wet and temperatures are cool, the young turkey may succumb to exposure.

Two diseases currently being monitored by DEEP Wildlife Division biologists are avian pox and lymphoproliferative disease virus (LPDV). Birds infected with these viruses exhibit lesions or wart-like protuberances around non-feathered areas, typically the head, neck, and feet. Avian pox is more established in the southern states; however, in recent years, the disease has become more prevalent in the Northeast. LPDV is a new arrival to North America and was first reported in the United States in 2009. It has been present in domestic turkeys in Europe and the Middle East for decades. Although both diseases have been found in Connecticut, only a limited number of infected birds have been documented on an annual basis. Currently, there is not enough information to determine the impact of these viruses on our wild turkey population.

Although more research is required,

there is evidence in the literature and Wildlife Division databases suggesting that predators could be negatively affecting wild turkey populations. Data from Connecticut Audubon Christmas Bird Counts show that several raptor species exhibited an upward population trend since the establishment of turkeys in 1975. In addition, several mammalian predators have also increased in population. For example, research conducted by the Wildlife Division's Furbearer Program demonstrates that since the 1990s, coyotes, bobcats, and bears have experienced an upward population trend. These increases in predator populations likely raise the risk of predation for prey species, such as the wild turkey.

Habitat loss and modification have also impacted wild turkey population trends. According to the University of Connecticut's Center for Land Use Education and Research, significant land use change has occurred in our state regarding agricultural fields and forests. For example, from 1985 to 2015, the amount of agricultural fields in production has declined by 15.4% (1985 – 269,193.8 acres; 2015 – 227,655.9 acres) and forests have declined by

5.8% (1985 – 1,659,994.3 acres; 2015 – 1,563,742.6 acres).

Farms and forests contain important microhabitats for the survival of wild turkeys. Farms provide fields for insect foraging and unharvested grains for supplemental food during winter. Forests are of paramount importance to wild turkeys. Mature forests provide roost trees and hard mast trees which produce important food sources, such as acorns and hickory nuts. Young forests are essential for providing nesting and escape cover, while the shrubs (viburnum spp., hawthorn, dogwood spp.) commonly associated with this habitat type provide soft mast, which are important summer and early fall food items. The loss of farms and forests and changing habitats could affect the wild turkeys' ability to acquire the resources necessary for survival within a manageable home range.

Although wild turkeys have been researched extensively, there still is much that biologists do not fully understand, creating uncertainty in how to effectively and responsibly manage the state's largest game bird.



# Why Are Spring Wild Turkey Hunter Surveys Important?

Written by Michael Gregonis, DEEP Wildlife Division

he short answer to the question about the importance of hunter surveys is they provide a mechanism for gathering a variety of information to better manage wildlife populations - that includes the spring wild turkey hunter as it relates to Connecticut's wild turkey resource. Hunter responses to the survey provide valuable insight into population growth trends, economic expenditures, and recreational benefits. The survey also provides wild turkey hunters with a forum to weigh in on proposed regulation changes and overall satisfaction with the Wild Turkey Program.

Prior to 2010, all hunters who participated in the spring season received a survey card attached to their permit. Hunters were required to complete and submit the survey card within 10 days of the close of the spring season. Data from the returned surveys were entered

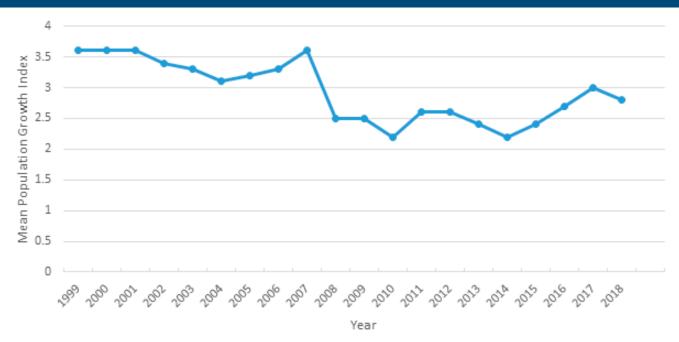
and analyzed to evaluate hunter experiences. Since then, in an effort to streamline the survey process, all individuals who purchase a Resident Game Bird Conservation Stamp and provide an email address receive a survey. Hunter responses go directly into a database for analysis.

In 2018, a total of 4,211 spring turkey hunters were sent surveys via email, with 30% responding. The hunter response rate has been between 30% to 35% over the past several years. Of those who did hunt, most of their hunting activity occurred in Turkey Management Zones 2 and 5. On average, hunters spent approximately 5.1 days pursuing turkeys on private land and 4.5 days on state land. These hunters also reported that, on average, they spent \$221.06 on hunting-related items, equating to about \$1,614,000 being added to Connecticut's economy by spring turkey

hunters. Sales of the Resident Game Bird Conservation Stamp, as of June 1, 2018, also generated an additional \$204,400.

The survey also is used to assess hunter opinion, preferences, and activities. To obtain a long-term trend index, hunters are annually asked "In the Zone you hunted most, how would you describe the status of the wild turkey population compared to last year?" This question has been on the spring turkey hunter survey since 1999. Overall, if a value of 3.0 indicates a stable population or no change from one year to the next, then greater than 3.0 indicates an increasing population and less than 3.0 indicates a decreasing population. Based on the population growth index from 1999 through 2007, the turkey population continued to grow. The population growth trajectory changed in 2008 and remained below 3.0 until

## Perception of hunters regarding wild turkey population growth from 1999 – 2018.





Hunters are valuable source of information for the wise management of wildlife resources, such as the wild turkey.

2017. This indicates that Connecticut's wild turkey population was increasing through the mid-2000s and decreasing through 2018.

The majority of 2018 spring turkey hunters who purchased a Resident Game Bird Conservation Stamp intended to pursue wild turkeys (95%) and 55% indicated they would only hunt wild turkeys. In addition, 40% aimed to pursue wild turkeys and other game birds, two percent pursued pheasants and other game birds, three percent were only interested in pheasants, and one individual purchased the stamp to only hunt ruffed grouse. Ninety-four percent of hunters identified themselves as spring turkey hunters, 34% as fall archery turkey hunters, and 37% as fall firearms turkey hunters. Seventy-six percent of the respondents who obtained a Resident Game Bird Conservation Stamp participated in the 2018 spring turkey hunting season. Of these spring hunters, 50% hunted turkeys on private land only, 25% on both private and state lands, and 25% on state land only.

Wild turkey hunters were queried regarding their opinions about proposed regulations and hunter satisfaction. The majority of these individuals (65%) felt

that the current spring turkey season bag limit of three bearded birds on private land and two bearded birds on state land is the correct amount, 20% indicated that the bag limit was too high, five percent felt it was too low, and 10% had no opinion. Combining private land and state land bag limits into a single limit of five bearded birds had mixed opinions (see table).

In 2018, spring turkey hunters encountered over three times more interference on state land (22%) versus private land (7%). When 2018 spring hunter interference was compared to 2017, state land hunters indicated that 27% encountered more interference, 14% less, and 59% the same amount, whereas 12% of private land hunters reported more interference, 12% less, and 76% the same amount. The survey also clearly shows that spring turkey hunters believe not being disturbed during the hunt is important. The majority of hunters indicated that not being disturbed is extremely important (53%), followed by very important (28%), somewhat important (14%), not important (3%), and no opinion (2%). Overall, based on the hunt satisfaction rankings, most 2018 spring hunters were satisfied with

## Deer and Turkey Management Zone Map



the quality of their Connecticut spring turkey hunting experience (see table).

Because annual surveys provide invaluable information related to the management of Connecticut's wildlife resources, it is in the best interest of hunters and anglers to complete any surveys they receive. The information provided may assist in justifying additional opportunities to use our fish and wildlife resources.

Support for combining private and state land spring turkey bag limits into a single limit of five bearded birds.

<b>Strongly Opposed</b>	26%
Mildly Opposed	14%
Strongly Support	24%
Mildly Support	22%
No Opinion	14%

Hunter satisfaction with the quality of their spring turkey hunting experience.

Excellent	22%
Very Good	6%
Good	39%
Fair	22%
Poor	10%
No Opinion	1%

# **Broad-winged Hawk**

## Bird of the Great Eastern Forest

Article and photography by Paul Fusco, DEEP Wildlife Division

spring or summertime walk through the deep woods in Connecticut will often reveal the high-pitched, whistling call of the broad-winged hawk. As a member of the buteo subfamily of hawks, which also includes red-tailed and red-shouldered hawks, the broadwinged is often seen circling high in the sky above forests and wetlands. It has the typical shape of a buteo – chunky with broad wings and a wide fan-shaped tail – attributes which are ideal for soaring flight. Broad-winged hawks are our smallest buteo, typically the size of a crow. Some small males may be between the size of a blue jay and crow. The body plumage is uniformly dark brown on top and has medium to heavy rufous barring on the underside that tapers to white at the bottom. The tail is banded black and white, with one broad white band being conspicuous.

In flight, the underwing is very pale with contrasting

black-tipped wing edges. When soaring, the wings are held flat and the wingtips are more pointed than in other buteos. Some other hawks may be seen hovering, but broad-winged hawks do not hover.

#### Habitat

In Connecticut, broad-winged hawks are traditionally birds of deep deciduous and mixed forests. They tend to avoid coastal areas and highly-developed parts of the state, although some birds have been known to nest in smaller woodlots in suburban settings. A wetland component is almost always a part of their nesting territory. Much of the food caught by these hawks is found in or near wetlands. Snakes, frogs, toads, and crayfish are favorites. The hawks will also take rodents, small birds, and large insects, including dragonflies. Hunting is frequently done from a perch under the forest canopy,

along forest edges, or overlooking wetlands.

#### **Nesting**

In spring, broadwinged hawks arrive in Connecticut in late March to early April. By mid-April, most pairs have begun nesting.

Nests are usually built in the crotch of a deciduous tree, not far from a wetland. The nest is made up of sticks and twigs, often with sprigs of fresh greenery placed in the nest. Two or four white eggs with brown and purple blotches are laid between late April and early June. The incubation period lasts from 28 to 31 days. Young fledge after about 30 days.



Broad-winged hawks build stick nests that are typically placed in the crotch of a deciduous tree within the deep forest, and often close to water.



#### **Migration**

Broad-winged hawks are well-known for their spectacular migration to and from Central and South America as they travel great distances along coastlines and mountain ridges. Some traveling flocks in the fall can number in the thousands of birds. The peak of their fall migration in Connecticut is in mid-September, when local hawk watch sites often have hundreds, if not thousands, passing by on some days. Lighthouse Point Park in New Haven and Quaker Ridge in Greenwich, as well as other hawk watch sites, are monitored throughout the fall and have logged many years of hawk migration data. A more exotic location for hawk fanciers to visit is Panama, where tens of thousands of broad-wingeds can be seen in a single day as they funnel past the ecotourism viewing sites.

#### **Conservation**

In the Northeast region, forest habitat has increased during the last century. This would be good news for broad-winged hawks; however, development, logging, and other habitat degradation or modification, are continuing threats to the hawk popula-

tion. Any possible benefit from reforestation may have been negated due to increases in forest cutting and habitat loss. Forest fragmentation and development are the major factors affecting the conservation of this bird in its breeding range. There are further concerns on wintering grounds, where

shooting continue.

Overall, the broad-winged hawk population is considered to be stable or slightly increasing, despite its listing in Connecticut as a species of special concern.

forest cutting, pesticide application, and

# **Bobcat Project Update**

## The project is in its second year

Written by Valerie Dugan, DEEP Wildlife Division; photos courtesy DEEP Wildlife Division Furbearer Program

he DEEP Wildlife Division is in year two of its Bobcat Project, and so far more than 100 bobcats have been livecaptured, eartagged, and fitted with shortterm Global Positioning System (GPS) collars. All GPS collars placed on bobcats in 2018 have automatically detached from the animals as planned, and the collars put on bobcats in 2019 are scheduled to drop off this fall.

Collar data



Trail cameras are used to monitor some kill sites to gain observational data. This tagged and collared adult male bobcat cached a white-tailed deer in Litchfield.

have revealed that bobcats are using urbanized areas far more than expected. GPS data have shown that some bobcats regularly cross major highways and/or main roads in their home range travels. The average home range size was found to be an impressive 21.63 km² (approxi-

mately 13 square miles) for females, and 62.24 km<sup>2</sup> (approximately 39 square miles) for males.

The Wildlife Division has also been investigating potential kill sites, which are indicated by clusters of GPS points in the same location over the span of a few days and where a bobcat has most likely made a kill or is feeding on a carcass. Common prey items found at kill sites include opos-

sums, deer, rabbits, domestic and wild birds, and raccoons.

Data collected so far have shown that Connecticut's bobcats are remarkably expansive in their travels and resourceful in their use of habitat.

Looking ahead, DEEP Wildlife Division biologists are planning for the next field season to begin in fall 2020. Limited trapping and collaring of bobcats will be focused in the Farmington Valley area. Volunteer trappers in that area can anticipate hearing from the Wildlife Division in the future for assistance with trapping efforts in 2020. In the meantime, sighting reports of bobcats statewide, particularly for tagged and/or collared bobcats,

as well as roadkills, are still essential to the study and will be collected via Facebook (www.Facebook.com/CTFishand-Wildlife), the iNaturalist app, and email (deep.ctwildlife@ct.gov). In 2020, it will be particularly critical to continue receiving sightings from the Farmington Valley area, especially from property owners who are willing to allow trapping for the study and are seeing bobcats regularly. Property owners in the Farmington Valley who are willing to allow bobcat trapping on their property for this study should contact DEEP Wildlife Division Biologist, Jason Hawley (jason.hawley@ct.gov or 860-424-3011).

The DEEP will continue to collect

#### **Bobcat Behavior**

Bobcats are most active just after dusk and before dawn, although it is not unusual to see them out during the day. Secretive and solitary, they tend to hunt and travel in areas of thick cover, relying on their keen eyesight and hearing for locating prey. Bobcats are patient hunters, meaning they spend much of their time either sitting or crouching, watching, and listening. Once prey is located, a bobcat will stalk within range and ambush its quarry.

Bobcats rarely cause conflicts with human activities and attacks on people are extremely unusual. Infrequently, they kill livestock, especially fowl, and attack domestic cats. Learn more about the bobcat on the DEEP website at <a href="https://www.ct.gov/deep/bobcatfacts">www.ct.gov/deep/bobcatfacts</a>.

road-killed bobcats to examine stomach contents to aid in the determination of diet. Biologists want to know if Connecticut bobcats have a preferred prey item and which food sources they depend on the most. Anyone who finds a deceased bobcat should call the Wildlife Division at 860-424-3011 to report the finding, as well as any applicable details on its location. The Wildlife Division strongly advises that road-killed bobcats not be handled by the public. If possible, cover the bobcat with a bag without handling it. However, if the cat must be moved, please do so using disposable gloves and proper safety measures.

The Wildlife Division wishes to thank all of the Connecticut residents who have aided this study by submitting sighting and road-kill reports or

assisting with trapping endeavors. Your efforts have been invaluable to the success of this project.

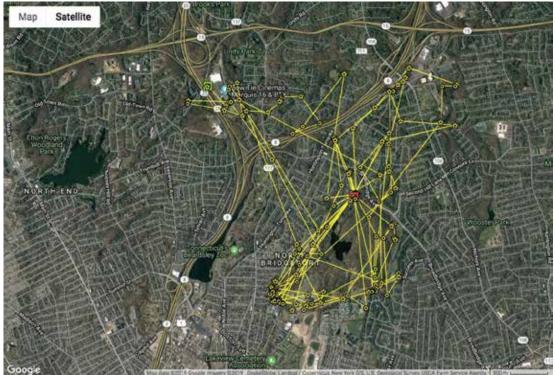


This deer carcass was found at a bobcat kill site. Sometimes bobcats scavenge off of road-killed or other predator-killed carcasses, while other times the cats have made the kill themselves.

#### Lower right:

This map spans approximately one month of movements made by a collared female bobcat in Stratford and Bridgeport. Location points are transmitted every four hours to the database.







# Spring Brings a New Danger Spotted Lanternfly on the Move

Written by Cathy Doodnauth, DEEP Division of Forestry; photos courtesy U.S. Department of Agriculture

ver the last few years, Connecticut has been hit hard by gypsy moth infestations, emerald ash borer invasions, and southern pine beetle outbreaks, all leading to high tree mortality. Now, Connecticut may have another invasive insect to worry about – the spotted lanternfly – a plant-hopping pest that has been hitchhiking its way through the Northeastern United States.

Spotted lanternfly originated in parts of Asia and is believed to have hitchhiked on a shipment to Pennsylvania in 2012. In 2014, the Pennsylvania Department of Agriculture confirmed the presence of infestations in Berks County, and the insect has been on the move since. Today, infestations have spread to a total of 14 Pennsylvania counties and several states. Despite quarantines put in place, the pest

has made its way further – adults, dead and alive, were found in various counties in New York; in a home in Massachusetts; on a trap in Maryland; and a single, dead adult was found in Farmington, Connecticut in October 2018.

Most of the spotted lanternfly's movement to other states has happened within the last two years, highlighting how easily the insect can start infestations in areas that are unprepared for the level of damage it brings. This includes Connecticut, where statewide tree damage is already at a high due to gypsy moths, emerald ash borers, and recent storms.

DEEP recently conducted a hazardous tree survey on state properties and found almost 18,000 hazardous trees that are dead or dying. This number focuses on trees within high-use recreational state

lands, such as state parks, forests, and trails, likely leaving thousands more that are weak and dangerous around the rest of the state. The possibility of spotted lanternfly infestations can increase this number to the point of permanent changes to Connecticut's forests and a constant danger to people. As a heavily forested and densely populated state, the effects of spotted lanternflies can be devastating.

#### **Impacts**

The spotted lanternfly is dangerous for many reasons – the biggest of which is its rapid population growth. Egg masses are laid in fall and hatch in spring. Nymphs begin to feed on nearby plants and grow into the plant-hopping adults that will pester homeowners and impact our forests. With no native predators and a variety of

food sources, the insect population can grow exponentially, mirroring its growth in Pennsylvania. Clusters of this pest can lead to heavy damage to trees and decrease the amount of plants we rely on economically and ecologically.

While the pests usually prefer their native host – tree-of-heaven (*Ailanthus altissima*), another invasive species from Asia – they have adapted to plants commonly found in the United States. So far, the species has been observed on many of Connecticut's native species, such as pine, beech, black birch, black cherry, maple, and pignut hickory trees, as well as various fruit trees and grain crops. The spotted lanternfly's ability to feed on such a large variety of plants is alarming, and rightfully so – these plants contribute to our state's economy and our ecosystem.

As a result, the insect poses a significant threat to Connecticut's \$3.5 billion agriculture industry, which includes the \$74.5 million fruit industry and \$62.7 million commercial logging industry, all accounting for over 21,000 jobs.

Ecological impacts of the spotted lanternfly are still being studied, as the insect's arrival in America is relatively recent. The most obvious impact is the loss of tree diversity due to the high rates of mortality caused by spotted lanternfly damage. Loss of plant biodiversity can negatively impact the overall health of for-



Report possible spotted lanternfly observations and send photos to ReportSLF@ct.gov.

ests, other insects, and animals, and the ecosystem in general. Additionally, the spotted lanternfly negatively impacts native insects that are beneficial to ourecosystem. Infestations can damage plants that provide food for native species, which can cause declines in those populations. This decline can in turn impact any species that relies on those insects for food, causing a disruption of the food chain.

Another concern is the loss of mast, such as acorns and hickory nuts, for wildlife.

Social impacts also are important to consider. The spotted lanternfly causes trouble for homeowners whose backyards are infested. Many are unable to walk outside due to the hundreds of insects feeding on their plants. Homeowners in Pennsylvania have described the "rain of honeydew" that coats their yards, homes, cars, and themselves if they step foot outdoors. If spotted lanternflies infest state parks and forests, visitor numbers will decline, and outdoor activities will lose popularity due to the presence of these pests.

#### Damage

Spotted lanternflies cause damage through feeding and honeydew excretion. The sheer volume of spotted lanternflies found on a tree can be what leads to its death. The insect uses a piercing-sucking mouthpart to feed on the sap of trees and plants, leading to weeping wounds that give off fermented odor and attract more insects. Trees can still survive, but with hundreds of insects continuing to feed, it may succumb to the wounds.

Further damage is caused by the excretion of honeydew, a sugary and sticky fluid that promotes the growth of black sooty mold. The mold can completely cover the surface of plants, hindering photosynthesis and stunting growth, eventually leading to plant mortality.



Clusters of spotted lanternflies can lead to heavy damage to trees and decrease the amount of plants we rely on economically and ecologically.

Damage increases as the population increases. Egg masses can be laid on any and every smooth surface, whether it is the bark of a tree, the side of a vehicle, or outdoor furniture. Scientists in Pennsylvania believe that one female can lay up to two egg masses every fall. With 30 to 50 nymphs hatching per egg mass, trees can soon be overwhelmed and face mortality.

#### Keep this Pest Out of Connecticut

All hope is not lost. No further sightings of spotted lanternfly or its egg masses have been reported in Connecticut since the single adult was found this past October. While it may seem like the pest is closing in, there are ways to make sure it stays out of our state and forests. Pennsylvania and New Jersey have already set up quarantines in an effort to stop the spread of spotted lanternfly. Inspect everything when driving through any quarantine zones or transporting materials to stop the hitchhiking bug from spreading further. Do not bring firewood home from another state - you never know what insect pest is lurking in the wood. If there is tree-of-heaven on your property, remove it. Educate yourself and others on the threat of invasive insects to our beautiful forests.

Report any possible sightings of spotted lanternflies (take photos) to *ReportSLF@ct.gov*.

# Mystic Aquarium's Animal Rescue Program

Written by Stevi Bramich, Public Relations Coordinator, Mystic Aquarium; photos courtesy Mystic Aquarium

ince 1975, Mystic Aquarium's Animal Rescue Program (ARP) has been rescuing, rehabilitating, and releasing sick, injured, and stranded marine animals along 1,000 miles of the Northeastern coastline throughout Connecticut, Rhode Island, and Fishers Island, New York. As a founding member of the Greater Atlantic Region Stranding Network, the ARP cares for these marine animals while learning more about why they came to shore. Working closely with the National Oce-



Mystic Aquarium's Animal Rescue Program Manager Janell Schuh (left) and Veterinarian Dr. Barb Mangold (right) perform a routine admission exam on a harbor seal pup.

anic and Atmospheric Administration (NOAA) Fisheries, which is the ARP's permitting office, and other government agencies, the Animal Rescue Team responds to an average of 175 hotline calls each year while also providing support to other stranding facilities in New England.

#### Rescue, Rehabilitate, Release

A majority of patients admitted to the ARP are seals, including those commonly found in New England, like harbor, gray, harp, and occasionally hooded. While the Program's process is streamlined, that does not mean it is easy or even routine. Each animal's care is unique to its needs.

The ARP's 24-hour hotline receives reports of live and dead marine mam-

mals and sea turtles throughout the coverage area. When a report comes through, the caller is prompted to leave a message on the hotline's voicemail, which then forwards to an on-duty member of the team who will call back for more information on the sighting.

With this follow-up call, the ARP is looking for details that will help determine necessary action for the animal, including its location and appearance. Many reports are of animals that have simply hauled out to rest or sun themselves – a behavior the general public may not realize is normal for seals. Other cases require a trained eye for additional feedback; making it necessary to deploy a trained "First Responder" volunteer to further assess the condition of the animal.

Some of the animals admitted to the Aquarium's Animal Rescue Clinic for care are rescued by a member of the team, but a majority of the animals are transfers from other stranding facilities. In each case, upon arrival at the clinic, the animal undergoes a routine admission exam which helps veterinarians determine a treatment plan. Blood samples are collected, along with other essential data, including measurements and photos to document the animal's body condition.

On average, most seals remain in the care of the ARP for about two to four months. In the week leading up to a seal's potential release back to its ocean habitat, the animal goes through a series of "tests" – both biological and physical – to ensure it is in good health.

Once deemed releasable by Aquarium veterinarians, the ARP contacts NOAA for approval to release the seal. Efforts are also coordinated with local agencies like the Connecticut Department of Energy and Environmental Protection (DEEP) and Rhode Island Department of Environment Management (DEM) before Mystic Aquarium releases seals, which generally takes place off the Rhode Island coastline based on the topography of the beaches.

### Managing Dead Marine Animals

Reports of dead marine animals are just as vital to the overall understanding of our local populations and environment as are live sightings. In addition to identifying the species and its sex,

## If You See a Dead or Alive Marine Mammal or Sea Turtle:

• Leave a message on Mystic Aquarium's 24-hour hotline (860-572-5955 x107) and expect a return call.

 Give the animal plenty of space, keeping people and pets at least 150 feet away (it's the law!).

 For the animal's safety and your own, do not touch, feed, or attempt to help in any way.

 If the animal appears to be dead, keep your distance
 some zoonotic diseases are harmful to humans and can be transferred to pets.



ANIMAL RESCUE







A harbor seal pup during a routine admission exam.

basic documentation and data are collected, including photos in the field, body measurements, and GPS coordinates. If the animal is "fresh dead" and a manageable size, the ARP team makes every attempt to collect the body for a necropsy at the Aquarium; for larger animals, a necropsy could take place at the stranding sight, as transportation may not be an option. However, due to geography, weather, and other unforeseen obstacles, a necropsy is not always possible.

When a field or Aquarium necropsy is possible, veterinarians do a thorough work up where they search for bullet fragments, plastics, and other signs of potential human interaction. Each organ is examined and two sets of tissue samples are

## Pygmy Whales

Not much is known about the behavior of pygmy whales. However, confirmed sightings have documented that pygmy whales tend to be solitary or live in small groups. They are slow-moving and often raft motionless at the surface, making them vulnerable to shark attacks and boat strikes.

Measurements: 3 – 11 feet long; can weigh up to 900 pounds

Description: Robust body that tapers from dorsal fin to flukes, bluish-steel gray with white or pinkish shading on belly, bracket-shaped marking ("false gill") present between eye and flipper

Range: Tropical and temperate latitudes

Prey: Cephalopods, crustaceans, and fish

Life Span: Unknown

Conservation Status: Unknown

All marine mammals (dead or alive) are protected by the Marine Mammal Protection Act of 1972. This prohibits the hunting, harassing, capturing, or killing of any marine mammal.

collected; one frozen and archived at the Aquarium, the other fixed in formalin for a pathology exam.

In the event that a dead animal is suspected to have a biological disease or is part of an Unusual Mortality Event (UME), the Aquarium may collaborate with its colleagues at the University of Connecticut for necropsy—this ensures that the Aquarium's live animals are never exposed to potentially harmful biologics.

Once all data and test results are compiled, they are saved within a digital database. For data collected as part of a suspected UME, all test results are kept confidential by NOAA, as the findings are part of an ongoing investigation into the potential cause.

While not every report ends with a healthy seal returning to sea, each sighting – dead or alive – contributes to a growing database. Collecting and archiving samples or data from each sighting, admitted patient, and partnering organization is contributing to knowledge on the health of these animals, reasons why they come ashore, their ecosystem, and the environment overall.



This pygmy sperm whale was found deceased on a Stratford, Connecticut, beach in December 2018.

# **May Moose Sightings**

Written by Andrew LaBonte, DEEP Wildlife Division

ince 1992, the DEEP has been collecting public sighting reports of moose. Over time, those sighting reports continued to increase, along with reports of moose/vehicle accidents. The moose population is believed to have peaked in Connecticut between 2009 and 2013 (average sightings were 127), with the highest number of reported moose/vehicle accidents occurring in 2014. In recent years, moose populations appear to be declining across the northeastern United States and Canada due to a variety of reasons, such as changing temperatures, disease, and increasing tick loads. Over the past five years in Connecticut, sighting reports have averaged around 68 per year, which could be an indication of some of the previous mentioned effects or simply less excitement

generated from residents in the areas where moose have been present for a longer period of time (i.e., northwestern Connecticut). Sighting reports are made through DEEP's online moose sighting reporting system (http://www.depdata.ct.gov/wildlife/sighting/mooserpt.htm), by email (Andrew.labonte@ct.gov), or by phone (860-424-3011 or 860-424-3333).

The number of moose sightings tends to rise in spring due to an increase in moose activity between April and May as young moose often disperse this time of year because the adult cows are nearing the time when they give birth to new offspring. The young moose often travel distances of greater than 100 miles to seek out an area of their own. Male moose also move large distances in the fall when they are seeking out a mate. (See more about moose movements in an article published in the July/August 2013 issue of *Connecticut Wildlife*).

### Recent Moose Activity

During early spring of 2019, moose tracks were reported by a resident on North Windham Road in Windham, an area of the state where few reports have been made in the past. Additional moose tracks and scat were reported in the Mansfield Field Trial Area in Mansfield. Later reports indicated the moose had traveled further east on Route 6, where it nearly avoided a major collision with a couple of motorists.

It appears that one of the motorists involved in this potential mishap with the moose in northeastern Connecticut was the son of former and now retired Wildlife Division Director Dale May. Dale sent an email to the Division's Deer Program



after returning from vacation, only to find one of his vehicles had been damaged. His email read as follows: "Not sure if you heard about this, but my son was driving our car and had to swerve to miss a moose on Route 6 in Chaplin (just east of Mansfield). The car following also swerved, which caused the moose to run into the side of our car, taking off the side mirror and causing some other damage. Great work on the moose management program. I will send a copy of the repair bill to the DEEP." Having worked for Dale May for many years, I couldn't help but send him a Certificate of Appreciation for allowing me to study moose in Connecticut and be part of the management efforts and also to his son for avoiding a major collision with the moose.

The height and dark color of a moose makes it difficult to see at night. So, if a moose is struck by a vehicle, it often ends up coming through the front windshield or landing on the roof, causing major damage to the vehicle and possible injuries to the motorist and the moose. Because moose often travel distances of three to five miles a day, it is difficult to say where this particular moose ended up, but as of this writing, two other reports just northeast of the incident were received. Although Dale was only joking about sending DEEP his car repair bill, a moose/vehicle accident is no joking matter (the damage to Dale's car was estimated at about \$4,000). Use caution while driving, keep your senses sharp, and always be on the alert for wildlife (big and small) crossing roads. If you are fortunate to observe a moose, always report it to DEEP and take photographs from a safe distance.

# FROM THE FIELD



## Discover Outdoor Connecticut Day: September 15

Come to Hammonasset Beach State Park (Meigs Point area) on Sunday, September 15, from 10:00 AM to 4:00 PM, and join the DEEP Bureaus of Natural Resources and Outdoor Recreation at a FREE, special event to **Discover Outdoor Connecticut**! This fun-filled event explores Connecticut's fish and wildlife resources and legacy of outdoor traditions, with live animals, demonstrations, fish casting, fly tying, archery, axe throwing, kid's activities, outdoor skills, a photo contest, and more. Bring a picnic lunch (concessionaire also on site) and stay for a few hours or the whole day! Entrance to the park is free for cars with Connecticut license plates, and there is plenty of onsite parking. Planning is still underway; look for updated information on the DEEP website at <a href="https://www.ct.gov/deep/DiscoverOutdoorCT">www.ct.gov/deep/DiscoverOutdoorCT</a>.

## Discover Outdoor Connecticut Photo Contest

Enter your amazing outdoor or wildlife photo in our second annual contest. All entries will be on display during Discover Outdoor Connecticut Day on September 15 at Hammonasset Beach State Park. **The deadline for submitting entries is August 16, 2019.** Instructions, rules, and other details are at www.ct.gov/deep/DiscoverOutdoorCT.

# Jenny Dickson Selected as Wildlife Division Director

Jenny Dickson took over the helm as the new Director for the DEEP Wildlife Division in early June 2019. As the first female director of the Wildlife Division, Jenny began her tenure with DEEP as one



of the first full-time, interpretive naturalists in the Parks Division in 1986 and has worked for the Wildlife Division since 1990. Jenny is a Certified Wildlife Biologist with extensive knowledge and experience in wildlife management, conservation, and outreach at the local, state, regional, and

national levels. She holds a B.S. in Natural Resource Conservation with a wildlife specialty from the University of Connecticut and a M.S. in Wildlife Management from West Virginia University.

Jenny is best known for her work with birds, reptiles, amphibians, small mammals including bats, and both state and federally listed species. She has served on many regional and national conservation committees and working groups, been engaged in development of wildlife policy and law at state and federal levels, and has worked with a wide variety of conservation partners.

In 2015, Jenny worked for the Association of Fish and Wildlife Agencies as part of a state detail to assist the Blue Ribbon Panel on Sustaining America's Diverse Fish and Wildlife Resources with the development of recommendations to secure long-term stable funding for wildlife conservation. She continues to work on that effort though the Alliance for America's Fish and Wildlife and the Recovering America's Wildlife Act legislation.

# Changes to the Migratory Bird Hunting Season for 2019-2020

At the time of this printing, the 2019-2020 Migratory Bird Hunting Guide, with season dates and regulations, should be published on the DEEP website at <a href="https://www.ct.gov/deep/hunting">www.ct.gov/deep/hunting</a>. The printed version of the guide will be available at town halls and DEEP offices by mid-summer. Migratory bird hunters should be aware of several changes to season dates, bag limits, and the Canada goose hunting zones.

The general duck season in the Atlantic Flyway is now being set based on the collective status of four species (wood duck, ring-necked duck, American green-winged teal, and common goldeneye). This is a vast departure from the way the general duck season has been set since 2000, which was based solely on the status of mallards breeding in the northeastern part of the Continent. This new approach has been in the works since 2012 and will result in a season setting process that much better accounts for all duck populations and the status of waterfowl habitat in the Atlantic Flyway. More information can be found at <a href="https://www.ct.gov/deep/hunting">www.ct.gov/deep/hunting</a>.

The mallard bag limit has been reduced in half, from 4 to 2, with one hen in the daily bag. Mallard populations breeding in the northeastern United States have been declining for the past 20 years, and these birds constitute over 70% of the mallard harvest in New England and 58% of the harvest in the Mid-Atlantic. This reduction in bag limit is across the entire Atlantic Flyway.

The season length for the AP (Atlantic Population) goose season has been reduced to 30 days with a two-bird daily bag limit. The breeding pair count for the AP has been declining and that, coupled, with a total breeding failure in 2018, necessitates a restrictive season throughout the Atlantic Flyway for AP geese.

The Atlantic brant season will be reduced to a 30-day season with a two-bird daily bag limit. The midwinter survey for Atlantic brant, the metric upon which the season is set, was at 120,109, which prescribes a restricted brant season in the Atlantic Flyway.

The pintail daily bag limit will change to one. This change, despite a relatively high breeding population estimate, is based on the Continental pintail harvest strategy.

Black duck hybrids are now classified as black ducks. This should reduce the chances of a mistake and any confusion in the field.

A necessary change was made to the AFRP Canada goose zone, which also precipitated a change to the NAP zone. New descriptions and a map are in the 2019-2020 Migratory Bird Hunting Guide and on the DEEP website (www.ct.gov/deep/hunting).

# CONNECTICUT

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#### Programs at the Sessions Woods Conservation Education Center

Programs are a cooperative venture between the Wildlife Division and the Friends of Sessions Woods. A complete list of programs can be found at www.ct.gov/deep/SessionsWoods. Please register by sending an email to laura.rogers-castro@ct.gov or calling 860-424-3011 (Mon.-Fri., 8:30 AM-4:30 PM). Programs are free unless noted. An adult must accompany children under 12 years old. No pets allowed! Sessions Woods is located at 341 Milford St. (Route 69) in Burlington.

#### 2019 Hunting and Fishing Season Dates

August 11 ......Free Fishing License Day #2. Statewide free fishing licenses for this special day are available at www.ct.gov/deep/sportsmenlicensing.

Consult the 2019 Connecticut Hunting and Trapping Guide, 2019-2020 Migratory Bird Hunting Guide, and 2019 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 (www.ct.gov/deep/hunting; www.ct.gov/deep/fishing). Go to www.ct.gov/deep/sportsmenlicensing to purchase Connecticut hunting, trapping, and fishing licenses, as well as required permits and stamps. The system accepts payment by VISA or MasterCard.

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





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During May and June, Wildlife Division biologists visit as many bald eagle nests as possible to document the number of chicks, collect data, and place identifying leg bands on the chicks. Division biologist Brian Hess has the challenging job of climbing extremely tall trees to reach the nest and carefully lowering the chicks in a canvas bag to the other biologists waiting below. Once the chicks are "processed", Brian raises the bag up the tree to place the chicks back in the nest. All the while, the adult eagles are circling overhead, waiting for everyone to leave so they can return to their young.