

July/August 2013

# Connecticut Wildlife

CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION  
BUREAU OF NATURAL RESOURCES  
DIVISIONS OF WILDLIFE, INLAND & MARINE FISHERIES, AND FORESTRY



# Eye on the Wild

As summer winds down, the breeding songs of birds have been replaced by the hum of various insects. I cannot even begin to identify what insects are making the noise, except maybe crickets. Insects are definitely not my strong point, and I am lucky to be able to just group the insects I see as dragonflies, butterflies, moths, beetles, etc. It's not to say that I don't have an interest in insects – there are just too many insects to learn to identify! But, this year, I developed a great interest and appreciation for insects – mainly because of the amazing emergence of the 17-year periodical cicada. Everyone seemed to be talking about cicadas in May and June. We even published an article about cicadas in Connecticut Wildlife magazine and several cicada posts on our Facebook page ([www.Facebook.com/CTFishandWildlife](http://www.Facebook.com/CTFishandWildlife)) went viral.

I admit that I didn't pay much attention to cicadas when they appeared in 1996. But, with the help of social media and technology 17 years later, more people were definitely excited about cicadas and wanted to see and hear them in 2013, including me. My interest was first sparked when we published the cicada article in the magazine, and even more when I was asked by one of my coworkers at the Wildlife Division to be a cicada monitor. I readily volunteered, especially because the cicadas would be appearing in my town (Meriden) and in places not too far from my home.

I attended a special training session given by Dr. Chris Maier of the Connecticut Agricultural Experiment Station, along with several volunteer cicada monitors. Dr. Maier has been researching cicadas for decades and it was his goal this year to document the presence of cicadas at locations where they were found in 1996, at historical locations, and in places where he thought they might be but had never been documented. In late May/early June, armed with a GPS unit, topographical map with known locations marked with red dots, jars of isopropyl alcohol, and flagging, I headed out to my predetermined locations in Meriden and Berlin to find cicadas. My first stop was a neighborhood in Meriden across the street from Hubbard Park. I had received a report from a resident that the neighborhood was inundated with cicadas. This was my first experience with the periodical cicada! The ground appeared to be "moving" as cicadas came out of their exit holes by the dozens. Cicadas and their spent exoskeletons were clinging to the trunks of trees, mail box posts, utility poles, and even the sides of houses. Those that had just emerged from their "shells" were still white and drying their wings. Others had already climbed to the tops of trees. It was a truly amazing sight!

I came back to the neighborhood a few days later to the deafening sound of their "singing." It is a sound I will never forget! I was then ready to head out to areas where cicadas might be but had never been verified. I explored forested areas near my home that, for one reason or another, I had never ventured into. I hiked for miles on rarely used trails that connected right to my own neighborhood. To my delight, I found cicadas. All I had to do was follow the sound. The experience of being in a rare "wild" place in Meriden/Berlin, with no one else around but thousands of cicadas singing overhead, was something I will always remember and appreciate. I can't wait to return to the same area in 2030 to experience it all over again -- as long as development does not destroy this special area.

Kathy Herz, Editor

## Cover:

White-tailed deer fawns are being monitored in northwest Connecticut as part of a deer research project (see article on page 3).

Photo courtesy of Paul J. Fusco

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# Fawn Mortality Research Project Enters a Second Year

Written by Bill Embacher, Resource Assistant, Wildlife Management Institute

The second year of an ongoing, multi-year deer research project assessing fawn production, adult and juvenile survival rates, causes of mortality, and habitat use in northwest Connecticut continued during winter and spring of 2013. The Wildlife Division's Deer Program, along with Wildlife Management Institute staff, continued to monitor does and fawns captured and marked in 2012. An additional 25 does were captured in January through March 2013 in Cornwall (13) and Canaan/North Canaan (12). Immobilized does were fitted with ear tags, a radio transmitting collar, and a temperature sensitive vaginal implant transmitter (VIT). VITs assist in the capture of fawns later during spring. The average doe was four years old, and the oldest was estimated to be at least nine years old. At three of the capture sites, staff routinely observed groups of over 10 deer, and over 30 deer on multiple occasions at another site.

Radio telemetry data have shown that eight of the collared does have traveled between three and 13 miles from where they were captured. This suggests they may have a larger home range than the deer previously collared in Sharon and Salisbury in 2012. The deer captured in 2012 stayed close to their capture sites throughout the year. Home range estimates for all captured deer will be calculated in the future so a more detailed analysis can be made.

Does captured in 2013 were monitored 24 hours a day from mid-May through late June. Sixteen fawns were captured from 10 of the does, along with three fawns that were captured opportunistically. Average birth rate was 1.6 fawns per doe. Forty percent (4) of does gave birth to single fawns, while 60% (6) had twins. As of mid-July, six fawns were still alive, equating to a 32% survival rate. Preliminary findings from fawns collared in 2013 indicate that eight percent died of natural causes, eight percent were illegally killed, 15% died of unknown causes, and 69% (9) died from predation.

Over the next two years, researchers will continue capture efforts in northwest Connecticut as additional years of data will provide better insight into fawn survival in that area of the state. Additionally, the Wildlife Division will be collecting incisor teeth from harvested deer to better evaluate the age structure of the

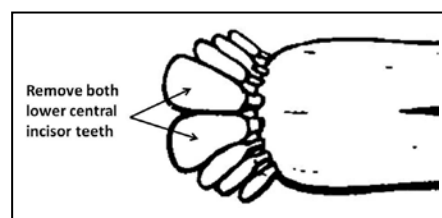


Newborn fawn fitted with an expandable radio collar in northwest Connecticut in June 2013.



This adult doe was fitted with radio collar, ear tags, and a temperature sensitive vaginal implant transmitter (VIT) during winter 2013. (l to r) Helping with the project are Justin Church, research assistant, Danny Marino, volunteer, and Darrell York, volunteer.

deer population in the study area, and in northeastern Connecticut for comparison. Hunters interested in participating in this



effort should remove the entire two front lower incisors and mail them in an envelope (include the sex of the deer, date, and town of kill) to: CT DEEP Deer Program, 391 Route 32, North Franklin, CT 06254. If you are interested in participating or have any questions, please contact [William.Embacher@ct.gov](mailto:William.Embacher@ct.gov) or [Andrew.Labonte@ct.gov](mailto:Andrew.Labonte@ct.gov) (860.642.7239).

# The Amphibian Chytrid Fungus in Connecticut – A Widespread Parasite with No Disease Symptoms

Written by Katy L. Richards-Hrdlicka, Yale University, and Jonathan L. Richardson, University of Connecticut

What is so unique about the green frog pictured here? It is infected with a notorious fungus, but is feeling fine. Unlike so many other amphibians harboring this fungus, it is not dying. *Batrachochytrium dendrobatidis*, or what is sometimes better known as the amphibian chytrid fungus, has infected this frog. This fungus receives a lot of attention for many reasons: 1) it is actively involved in driving many of its host species to extinction or into severe declines; 2) it has a global distribution and likely infects thousands of species; 3) while it kills most of its hosts quickly, there also are hosts that do not seem to suffer any symptoms of infection; and 4) it is a relatively new pathogen identified as an emergent disease. The frog pictured here is one of the lucky ones – it is not suffering from its infection and is unlikely to develop any of the harsh symptoms experienced in other species. Animals with a lethal infection shed their skin often and in random patches, often hold themselves aloft to promote airflow beneath them, are lethargic, and stop eating.

Pathogens should not drive their hosts to extinction, but this chytrid fungus is breaking many norms when it comes to understanding and modeling disease. What commonly happens with disease is that as it spreads to susceptible individuals, fewer uninfected individuals remain over time for the disease to infect. Healthy, uninfected individuals become too rare to sustain the outbreak and the disease dies out. Humans witness this type of transmission during cold and flu season, and it is the type of dynamic experienced by many amphibian diseases as well. But, this chytrid fungus does not stop there. Because most amphibians have short, explosive breeding seasons, this brings an otherwise diffuse population of individuals together and in very cramped places. So, if there were not enough uninfected hosts to support the fungus' transmission early in the outbreak, the congregation of animals during the breeding season provides many such hosts. This one-two punch delivered by the fungus to amphibians keeps it persisting in populations and passing among susceptible individuals. It has been documented that within just a two-week period, the amphibian chytrid fungus can infect and kill nearly 60% of a rainforest's amphibian population. This fungus infects quickly, transmits efficiently, and kills rapidly.

The diversity of species that is susceptible to this chytrid fungus is truly astonishing. Imagine that your last seasonal cold not only infected your coworkers and family, but also your dog, the farmer's cow, the Beluga whale you saw at the Mystic Aquarium, the bat that sleeps in your breezeway, and the raccoon wreaking havoc on your trash. In essence, imagine a disease that manifests the same way in every single mammal. That is just how broad of a host-base this fungus has. It infects the entire class of Amphibia – frogs, toads, salaman-

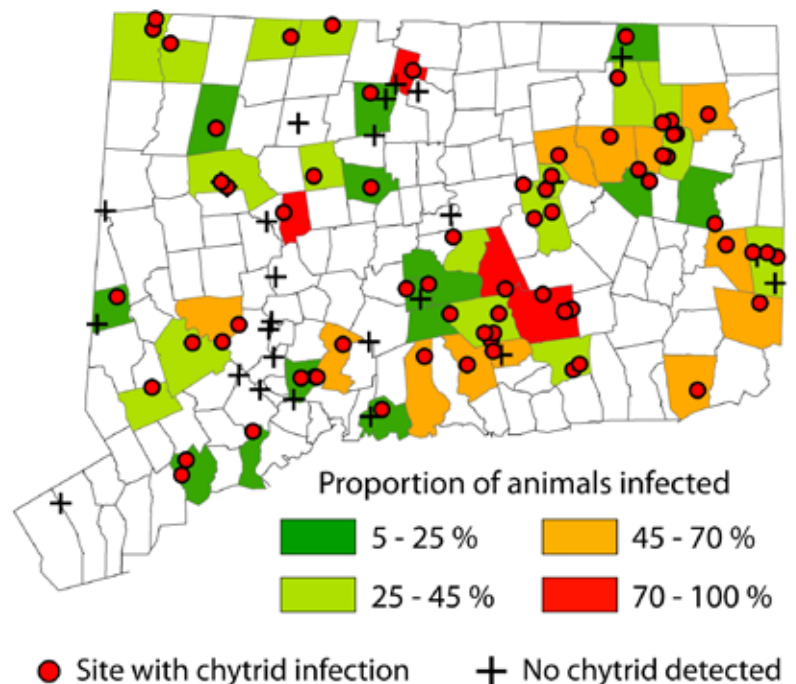


A male green frog that is infected with the chytrid fungus is enjoying the warmth on the edge of a pond in Stratford.

ders, and caecilians. Any time a scientist looks for this fungus, it is nearly always found. It is seemingly everywhere and on every species. However, not every infected amphibian becomes sick, or even shows any symptoms.

Until recently, we knew very little about what the amphib-

## Sampling locations and chytrid prevalence in CT



ian chytrid fungus was doing in New England. We partnered with the Connecticut DEEP to perform the first comprehensive survey for the fungus in the state. During this survey we were able to test for the fungus in more than 900 animals, including tadpoles, juveniles, and adults of 18 different species (frogs, toads, and salamanders). We also partnered with other agencies in neighboring states, tallying more than 1,900 skin swabs from 2010-2013.

Amphibians are sampled by rubbing their bodies with a toothpick (researchers wore a new pair of sterile gloves every time they handled an animal). The chytrid fungus infects the skin, so by swabbing the skin, any genetic material present is collected, including DNA from the host and DNA from anything living on the skin. The swabs are brought back to the lab where a highly sensitive test for the fungal DNA is performed. The test can assess if the animal has the fungus and how much pathogen is there. On average, 28% of all amphibians in Connecticut were found to carry the chytrid fungus. Ranids, the most common group of frogs (includes green frogs, bullfrogs, leopard frogs, and pickerel frogs), carry the fungus more often than other species (31% vs. 13% for all other species).

In Connecticut, 116 wetlands from more than 60 towns were sampled; 75 sites (65%) had the fungus. Of the nearly 1,900 animals swabbed, none displayed any clinical signs of disease. They all seemed healthy. This could partly be explained by the measured amount of pathogen DNA collected from each animal. The pathogen loads in Connecticut are orders of magnitude lower than the loads found on animals experiencing a die-off in other areas of the world. Why are Connecticut species seemingly able to live with this fungus whereas other species in other areas are decimated? How can the same pathogen have such drastically different outcomes?

Important interactions must occur between the host, environment, and pathogen for clinical symptoms to appear. There is evidence that native Connecticut species have special chemical properties and microbial communities on their skin that either keep the fungus from infecting their skin or keep colonization to a minimum. It also is suspected that Connecticut's climate prevents this fungus from growing too rapidly. Unlike the tropics, Connecticut experiences months of cold temperatures, which inhibit fungal growth. It also is possible the particular strain(s) of the fungus circulating throughout New England may be less deadly than strains seen elsewhere. Most likely, the host biology, environmental conditions, and pathogen dynamics interact to create the subdued effects of the fungus that have been observed in Connecticut.

In the grand scheme, amphibians are robust. They survived the dinosaur extinction and many other environmental changes during their evolutionary history. But, now they are experiencing a rapid and global decline resulting from a confluence of factors. Among many reasons for their decline, habitat loss and land use change probably have the most significant impact. Also important, and more conspicuous in many ways, are disease-driven declines. A perplexing question relates to why amphibians are suddenly having a problem with a fungus that may have been around as long as they have. This chytrid fungus is situated at the base of the fungal tree of life – it is old and the only lineage of this group that is pathogenic to vertebrates. It is not understood why disease driven die-offs are happening now,



K. RICHARDS-HRDLICKA, YALE UNIVERSITY

**Samples are collected from frogs by gently swabbing the legs and belly. Researchers wear gloves to prevent cross-contamination between animals.**

but one hypothesis that is currently being tested is whether the pet and food trades introduced various strains of this fungus that normally would not come in contact with wild populations. This could have resulted in a super strain. So far, there is no clear evidence for or against this hypothesis.

More research is needed in places like Connecticut where the amphibian chytrid fungus exists but is not causing intense die-offs so that researchers can understand how certain species and geographic regions are resistant to or tolerant of this fungal infection. The situation may not be dire in Connecticut, but its juxtaposition to what is witnessed elsewhere in the world is perplexing. The question of why our state's amphibians are not experiencing chytrid outbreak problems remains unanswered. While exposed to this lethal pathogen and living only with minor infections, Connecticut's native species are seemingly healthy and stable. Whatever is happening with this fungus in Connecticut and more broadly across New England is a fascinating example of the intersection between host/parasite ecology and evolution. We hope to apply what we learn in Connecticut to places that are experiencing disease-driven die-offs and even to other disease systems, including human host parasites.

### *Connecticut Amphibians*

<b>Blue-spotted/Jefferson Salamander Complex</b>	American Toad
Spotted Salamander	Fowler's Toad
Marbled Salamander	Northern Spring Peeper
Northern Dusky Salamander	Gray Treefrog
Northern Two-lined Salamander	Bullfrog
<b>Northern Spring Salamander</b>	Green Frog
Four-toed Salamander	Pickerel Frog
Redback Salamander	<b>Northern Leopard Frog</b>
<b>Slimy Salamander*</b>	Wood Frog
Red-spotted Newt	<b>Eastern Spadefoot*</b>

*\* species NOT sampled  
Endangered, threatened, and special concern species in bold*

# Monitoring Connecticut's Colonial Waterbirds

Written by Julie Victoria, Retired Wildlife Division Biologist; photography by Paul Fusco

This past June, the DEEP Wildlife Division completed the eleventh statewide Colonial Waterbird Survey. This survey is conducted every three years at nesting colonies located primarily on barrier beaches, coastal marshes, and offshore islands from Greenwich to Stonington. Final tabulations for the 2013 survey are not yet completed, but the pairs of all nesting species were counted, including great egrets, snowy egrets, black-crowned night-herons, glossy ibis, little blue herons, American oystercatchers, common terns, double-crested cormorants, great black-backed gulls, herring gulls, and approximately eight other species.

Wildlife Division personnel and partners in the U.S. Fish and Wildlife Service, along with many volunteers, worked together to complete this survey in the two-week window during the nesting season, even though the weather this past season posed several challenges! The Division truly appreciates the efforts of all the participating volunteers for their contributions of time, expertise, boating experience, equipment, and gas. Some of the long-term volunteers have been doing



Andrew MacLachlan, from the U.S. Fish and Wildlife Service in Rhode Island, and Julie Victoria, retired Wildlife Division biologist, plan their course for conducting the Colonial Waterbird Survey in Long Island Sound, near Waterford.



Offshore rocky islands are used by herring gulls (above), great black-backed gulls, and double-crested cormorants (above, right) as nesting locations.



## *Mile-a-minute Found*

One unwelcomed species was discovered on Cockenoe Island off of Westport during the Colonial Waterbird Survey – the invasive mile-a-minute vine. This non-native plant was not damaging the nesting habitat but had spread over a large area in the middle of the nesting colony. This weed grows rapidly (up to 6 inches per day), enabling it to form dense mats that smother native plants.



the survey since the 1980s!

The main purpose of collecting these data during this year's and previous surveys is to enable the Division to compare long-term nesting population trends. However, this year's survey also provided the opportunity for biologists to see the habitat damages caused by tropical storm Irene in 2011 and superstorm Sandy in 2012. These habitat assessments, along with the population data, let biologists know where to focus their conservation efforts to help these birds and also conserve their habitat.



**Wildlife Division biologist Jenny Dickson and Division Director Rick Jacobson conduct a Colonial Waterbird Survey on Charles Island (pictured on bottom), off the coast of Milford. They also took the opportunity to assess storm damage to the rookery.**



**These two black-crowned night-heron chicks (left) are almost ready to fledge from their nest on one of the Norwalk Island rookeries. Great egrets (below) also nest on the islands with taller trees.**

**Miley Bull, a long-time survey volunteer (since the 1980s) from the Connecticut Audubon Society, assisted with the Norwalk Island portion of the survey, along with Master Wildlife Conservationist Larry Flynn, who piloted his boat to the island rookeries.**



**Superstorm Sandy caused damage to the Charles Island heron and egret rookery in October 2012 (left).**

# Moose on the Move

Written by Andy LaBonte, DEEP Wildlife Division

This past spring, the DEEP Wildlife Division saw a flurry of moose activity that hasn't been seen in Connecticut since 2007. From January 1 to mid-June 2013, the Division recorded 67 reports of moose via email ([andrew.labonte@ct.gov](mailto:andrew.labonte@ct.gov)), phone (860-642-7239 or 860-424-3333), and our online moose reporting system ([www.depdata.ct.gov/wildlife/sighting/mooserppt.htm](http://www.depdata.ct.gov/wildlife/sighting/mooserppt.htm)). In comparison, the Division received about the same number of reports in 2007 for the entire year (the online reporting system was not operational then). Also that year, four moose were struck by a motor vehicle during spring and two were euthanized due to public safety concerns. Similarly, in spring 2013, four moose were struck by motor vehicles in Harwinton, Simsbury, Bolton, and Goshen.

So why is there such an increase in moose activity during spring? Each spring, as female moose prepare to give birth, they drive off the previous year's offspring, although the offspring may remain in close proximity to their mother into the second year of life. These yearling and two-year-old moose spend much of the spring wandering in search of their own home range area to inhabit. Dispersal distances exceeding 100 miles have been recorded in some parts of the country. The total distance dispersing moose travel in Connecticut is unclear, but distances of three to five miles per day are not uncommon, based on limited data collected by the Wildlife Division. These dispersals occur in random directions and moose often pass through areas that could be considered relatively suitable habitat for Connecticut. Why moose travel where they do cannot be explained, but it may be a function of landscape characteristics. Moose dispersing south through Connecticut often end up becoming victims of a moose/vehicle accident due to the abundance of roads and motor vehicle traffic. During spring when moose dispersal occurs, motorists should exercise extreme caution, especially at dusk and dawn when moose are most active. Following are some examples of movement patterns of dispersing moose recorded through public sightings in Connecticut.

## Moose Movement Patterns

**Westbrook:** In May 1998, a young female moose was first observed in the

town of Eastford, in northeastern Connecticut. Over an eight-day period, the moose traveled at least 40 miles, passing through the towns of Scotland, Lebanon, Franklin, Bozrah, and Montville. On June 5, the cow moose was hit and killed

by a motorist traveling on Interstate 95 in Westbrook. The moose had traveled at least 56 miles in 11 days. The vehicle was totaled and the passengers sustained non-life-threatening injuries. A physical examination of the moose indicated that she was a two-year old female that sustained internal injuries and three broken legs.

**Old Lyme:** On June 5, 2004, the Massachusetts Division of Fisheries and Wildlife tranquilized a young female moose 30 miles outside of Boston in the town of Clinton. The moose was in a heavily populated area and was relocated near the Massachusetts/New Hampshire border in the town of Winchendon. A radio-collar and ear tags were attached to the moose so that its movements could be monitored. In late June, about three weeks after its release in Winchendon, the moose was seen just north of the Connecticut border in the town of Monson, MA. Over a 17-day period (June 25–July 11), the moose was observed traveling southward in Connecti-



While riding his bike on May 17, 2013, in Hartland, Brad Smithers (the photographer) was approached and followed by this newly-born moose calf . . . hopefully not a sign of things to come!

cut through the towns of Stafford, Coventry, Columbia, Lebanon, Montville, and Old Lyme. From June 5 to July 11, the moose traveled over 100 miles from the Massachusetts/New Hampshire border to Old Lyme along the southern Connecticut coastline.

The moose appeared to temporarily settle down in a three-square mile area between Route 1 and I-95. Moose have large home ranges (about 10 square miles) and this moose, in particular, demonstrated a tendency to wander great distances. These facts, coupled with its close



This two-year-old female moose spotted in Manchester in May 2013 was struck and killed by a vehicle on Route 385 in Bolton.



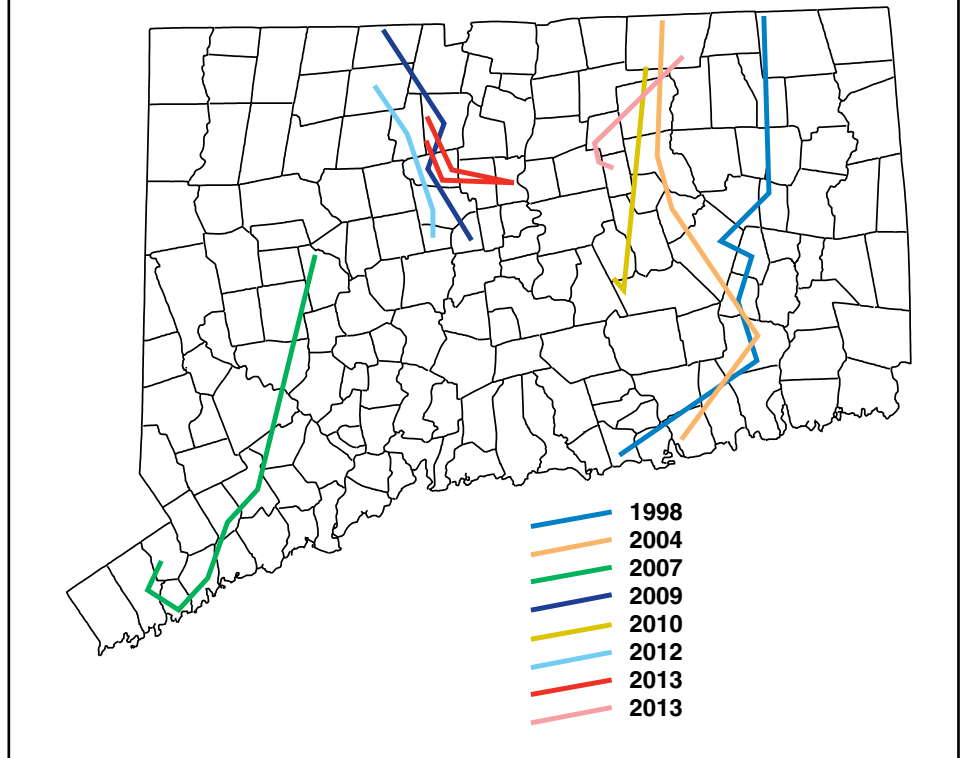
*There was a flurry of moose activity this past spring that hasn't been seen in Connecticut since 2007. From January 1 to mid-June 2013, the Wildlife Division recorded 67 reports of moose via email, phone, and the online reporting system. In comparison, about the same number of reports were received in 2007 for the entire year!*

proximity to a major highway, resulted in the decision to relocate the moose to a more suitable location. The Department successfully immobilized the moose and relocated it to northwest Connecticut.

**New Canaan:** In June 2007, the Wildlife Division received reports of a moose moving in a southerly direction. Sightings occurred from Watertown, Southbury, and Easton over a two-day period (10 miles per day). The Department activated its response team to attempt to tranquilize and relocate the wandering moose before it posed a public safety hazard. On June 5, the Department followed up on reports of moose sightings in Norwalk, Darien, Stamford, and New Canaan, looking for an opportunity to tranquilize the wandering moose. Search efforts were terminated when EnCon Police received a report that the moose had been hit by a vehicle on the Merritt Parkway in New Canaan. The driver of the vehicle received serious injuries and the injured moose was euthanized. Tragically, the driver died from crash-related complications the following week.

**New Britain:** In May 2009, website reports indicated there was an active moose in central Connecticut. Sightings occurred in Avon, Simsbury, Farmington, and New Britain over a two-week period. The Department activated its response team to attempt to tranquilize and relocate the wandering moose before it posed a public safety hazard. On May 21, the Department followed up on reports of moose sightings in New Britain, looking for an opportunity to tranquilize the wandering moose. Search efforts were terminated, but resumed the following day when additional reports were received. Staff successfully immobilized the moose

### *Spring Moose Dispersals in Connecticut, 1998-2013*



and relocated it to northeastern Connecticut. The moose was found dead several days later, likely due to heat stress caused by the heat wave the state was experiencing during the time of capture.

**Marlborough:** In May 2010, residents reported a young female moose in Ellington. Over the next three weeks, sightings occurred in Tolland, Bolton, Hebron, and Colchester. The moose was observed the following week wandering through a neighborhood in Marlborough. The Department investigated the reports and located tracks; however, the moose appeared to have taken residence in and around Salmon River State Forest and was not relocated.

**Plainville:** In May 2012, residents reported a moose in Avon. A month later, several reports were received from Farmington and Plainville. The male moose entered a highly urbanized area where it could easily be immobilized. The moose was fitted with a GPS/VHF collar and ear tags and relocated near the Barkhamsted/Hartland line. In late September, the moose was observed traveling through New Hartford, Canton, Burlington, Harwinton, Thomaston, Litchfield, Morris, Bethlehem, Roxbury, Bridgewater, and New Milford. It then proceeded to travel back north through Goshen and Cornwall

(see the January/February 2013 issue of *Connecticut Wildlife*). In May through June 2013, the same moose was observed on multiple occasions in Granby.

**Simsbury:** In May 2013, residents reported a moose in Canton and Simsbury. Over the next couple of weeks, several reports were received from Farmington and West Hartford. The moose then entered a highly urbanized area in Hartford between St. Francis Hospital and Route 84. Police officers were able to redirect the moose back north. After traveling back through Avon and into Simsbury, it was struck by a motor vehicle at the end of May, causing substantial damage to the vehicle. The moose continued into the woods and its fate is unknown.

**Bolton:** In May 2013, residents reported a moose in Stafford. Over the next few days, several reports were received from Tolland and Vernon. DEEP EnCon Police Officers, who were responding to concerns about the moose along Interstate 84, found that it had gone under the highway through an underpass. From there, the moose continued to travel into Manchester. Additional efforts were made to locate the animal, until it entered a large forested block of land. The following morning, the moose was struck and killed on Route 384 in Bolton.

# Connecticut's Forest Action Plan: A Plan for the Future

Written by Helene Hochholzer, DEEP Division of Forestry

The Food, Conservation, and Energy Act of 2008, more commonly known as the 2008 Farm Bill, required each state to complete a Statewide Forest Resource Assessment and Strategy in order to continue receiving federal forestry financial assistance for certain programs.

In response, the DEEP Division of Forestry, with support from Connecticut's forest conservation partners in academia, extension, and non-profit organizations, along with regional, municipal, and private landowners, developed the Connecticut Statewide Forest Resource Assessment and Strategy (Connecticut Forest Action Plan) in 2010.

Connecticut's Forest Action Plan (FAP) includes a "snapshot" of what the state's private and public forest conditions were like in 2010. The FAP serves as a baseline from which future gains and losses involving Connecticut's forestlands will be measured. It also identifies

the most pressing forest-related issues and priorities; with visions, action steps and long-term strategies to address these issues.

Nine key forestland issues are identified in the FAP:

- Maintaining forest ecosystem health and biodiversity;
- Promoting stewardship of the state's public forests;
- Protecting the future of private forestlands;
- Providing for forest-based recreational opportunities;
- Supporting a sustainable forest-based economy;
- Fostering public awareness and support of forests;
- Advocating and implementing effective forest planning and policy;
- Developing and sustaining a comprehensive, collaborative, long-

term research initiative; and

- Determining the role of urban forestry.

## Measuring Progress

Three years have passed since the creation of the FAP. Is it too early to determine any gains or losses on those measurements? Possibly. However, it is not too early to see successes of various action steps that have been developed and implemented during the last few years. Following are a few examples:

**Vision:** In the future, policies will fully support and encourage private forest owners that have environmentally, socially, and economically balanced stewardship goals.

**Action Step:** Create effective, appropriately funded public/private support systems addressing education, research, consultation/advice, compensation/incentives, and communications.



Connecticut's Forest Action Plan, which was developed in 2010, identifies the most pressing forest-related issues and priorities; with visions, action steps, and long-term strategies to address these issues.

A Memorandum of Understanding between DEEP, University of Connecticut Cooperative Extension System, and Natural Resources Conservation Service (NRCS) was developed to address this issue. Today, there is an improved interagency delivery of forestry-related conservation assistance to private landowners. Also, Connecticut jumped from 49<sup>th</sup> to 4<sup>th</sup> in the nation with increased dedicated funds for forest practices from the NRCS Environmental Quality Incentives Program (EQIP).

**Vision:** Connecticut will increase the amount of forest protected from development, following priority criteria based on core forest areas, forest legacy potential, and vulnerability.

**Action Step:** The Connecticut State Legislature will pass a law to insure conversion of the approximately 14,000 acres of forestland under the “10 Mill” law to property tax rates under PA 490, or write a new law that encourages continuation as open space and working forests.

In July 2011, Governor Malloy signed into law Public Act No. 11-198: An Act Concerning the Transition from the Ten Mill Program. The goal of this Act was to lessen the impact of 50-year revaluations on 14,000 acres enrolled in the Ten Mill Program, eliminating astronomical increases in property taxes. The impact was lessened by removing the true and actual land value of land and timber as established by local assessors, and instead using PA 490 forestland rates of \$130/acre, keeping taxes affordable for landowners.

**Vision:** Management of Connecticut’s forests will use the best available scientific information and best available data as the basis for sound conservation and management decisions.

**Action Step:** Increase state funding for extension and service forestry programs and advocate for increased federal support. Working forests are the least expensive way to maintain open space and produce public benefits from forestlands (e.g., clean water, scenery, wildlife habitat, carbon sequestration, etc.).



Connecticut’s Forest Action Plan identified nine key forestland issues, one of which is to provide forest-based recreational opportunities. State forests and parks, like Bigelow Hollow State Park (pictured), provide a variety of activities, such as hiking, picnicking, birdwatching, fishing, hunting, and other outdoor activities.

In 2011, DEEP was able to leverage Regional Greenhouse Gas Initiative (RGGI) funds to hire three durational employees in the Division of Forestry. These funds, from carbon dioxide trading allowance proceeds, can be used to fund important benefit programs, including “green” jobs. These employees, during their two-year tenure, collectively inventoried nearly 8,000 acres of forestlands, wrote five forest management plans, harvested 118 acres of timber, designed urban tree survey mechanisms, and trained 30 volunteers in data collection techniques.

**Vision:** In the future, public agencies will manage Connecticut’s public forestlands to enhance public benefits.

**Action Step:** The State Legislature will create a funding mechanism to ensure that revenues generated from state-owned forests be used for sustainable management of those lands.

In 2011, Public Act 11-192: An Act Concerning State Forestry Programs was enacted. Also called the Timber Harvesting Revolving Fund, this act allows for revenues from state forests and wildlife management areas to be reinvested in those state-owned properties for management plan development and costs directly associated with plan implementation.

**Vision:** In the future, Connecticut’s forests will support a viable forest prod-

ucts industry that provides marketable products from renewable and diverse forest resources.

**Action Step:** TimPro and other associations will advertise and promote the markets for Connecticut Grown wood and fiber. This will include expanding the branding of Connecticut Grown crops and products to include our state’s forest resources.

In January 2011, the Connecticut Grown Program expanded to include and showcase locally and sustainably grown forest products. This includes such products as lumber, firewood, flooring, witch hazel, fine furniture, and maple syrup.

### *Where Do We Go from Here?*

Connecticut is scheduled to update the Forest Action Plan in 2015. Although not a full rewrite, the update will include the most recent research and statistical forest data for Connecticut. DEEP will also solicit input from forest stakeholders to assure that forest-related issues are known and understood. Work on the Forest Action Plan update will begin within the next year. The full Forest Action Plan can be viewed at [www.ct.gov/deep/forestry](http://www.ct.gov/deep/forestry). Questions can be addressed to Helene Hochholzer, Forest Planner, DEEP Division of Forestry, 79 Elm St., Hartford, CT 06106; [helene.hochholzer@ct.gov](mailto:helene.hochholzer@ct.gov); 860-424-3634.

# Invisible Bird of the Forest - *The Eastern Whip-poor-will*

Article and photography by Paul Fusco, DEEP Wildlife Division

As dusk settles across Connecticut's landscape on a warm summer evening, stillness in the air guides the transition of the forest into nighttime. As the sky darkens, many wildlife species become more active. Raccoons and opossums exit their daytime resting cavities, white-tailed deer move to their favorite foraging areas, and owls take over the daytime domain of hawks. A chorus of tree frogs comes alive. With dusk also comes the persistent call of the eastern whip-poor-will, a bird that is heard more often than seen. Its call was once more commonly heard in Connecticut's forests than it is today.

## Description

The whip-poor-will is a member of the nightjar family, which consists of nocturnal and crepuscular (active at twilight) insectivorous birds with large eyes, large tails, small legs and feet, and small bills with very large mouths. The scientific name, *Antrostomus vociferus*, descriptively translates to "cave-mouth with strong voice." The mottled plumage is well camouflaged in a "dead-leaf" pattern, making the birds virtually invisible in the woods.



A male eastern whip-poor-will sits on the forest floor. Note its white collar marking.

With their large eyes, whip-poor-wills hunt by sight on moonlit nights and during the crepuscular hours around dawn and dusk. They hunt on the wing, or sally from a perch, catching all sorts of flying insects. They also will search rotten logs

and leaf litter for ants, worms, and other insects. Main foods include large moths, beetles, wasps, grasshoppers, fireflies, ants, mosquitoes, and stoneflies.

In flight, whip-poor-wills show rounded wings and males have white

patches on their tails. Males also have a white throat collar. When flushed from their daytime roost, the flight pattern is irregular and moth-like.

What does the whip-poor-will sound like? The bird is named after its whistled three-note call of "whip-poor-WILL, whip-poor-WILL" which is repeated over and over in fast succession, often over 200 times without stopping. A faint "chuck" often precedes the louder "whip-poor-WILL" call. The birds tend to call most actively on moonlit nights, usually between dusk and about two hours later, then again about two or three hours before sunrise until the sun comes up.

## Nesting

Whip-poor-wills nest on the ground in leaf litter within the forest. The nest is usually a short distance from a forest



An adult female whip-poor-will nestles with one of its half-grown chicks. A second chick is being brooded under the adult's wing. Notice how well the birds blend into the leaf litter.



The eastern whip-poor-will is listed as a Connecticut species of special concern. It is considered to be a common bird that is in steep decline in our region.

opening and often placed next to a small shrub or seedling. The birds do not build a nest, but rather lay two creamy white eggs with dark splotches in a slight hollow created in the leaf litter on the forest floor. The nesting cycle is synchronized with the lunar cycle. As the moon cycles to full, the eggs hatch, providing the adults with ample hunting opportunity to feed their growing chicks. The incubation period is 18-21 days and chicks fledge after about three weeks. Whip-poor-wills may have two broods in one season.

The whip-poor-will is reliant on camouflage. After the yellowy-tan chicks hatch and are being brooded on the

ground, the adult, if startled and flushed, will scatter the chicks with her wings and feet as she explodes into the air. The young will stay motionless in their landing position until the threat passes, blending perfectly into the surrounding leaf litter. Pre-fledged young are also mobile, frequently sitting in leaf litter away from the nest, making detection by predators difficult.

### Conservation

During the breeding season, whip-poor-wills are found in the eastern United States from Minnesota to Arkansas and Maine to northern Georgia, and in southern Canada from southern Ontario east to New Brunswick. They migrate through the southern United States and winter from the Gulf states to Central America.

The whip-poor-will's preferred breeding habitat is dry hardwood or mixed forests near fields or disturbed areas, such as blow-downs or log cuts. The birds show an avoidance of large unbroken expanses of forest with dense canopy. In winter, they are found in broadleaf tropical or subtropical forests.

The eastern whip-poor-will is listed as a Connecticut species of special concern. It is on the Partners in Flight Watch List,



A whip-poor-will nest sits in the leaf litter on the forest floor.

and is considered a common bird that is in steep decline in our region. The exact reasons for their decline are unclear. However, threats include habitat loss, heavy use of pesticides, and predation/disturbance by free-roaming cats and dogs. There are indications that whip-poor-wills may be suffering from a loss of open understory habitat in forests. Some studies have shown that there are unoccupied breeding territories in the Northeast region. Results from DEEP Wildlife Division surveys conducted from 2010 to 2012 indicate that the number of survey routes occupied by whip-poor-wills is decreasing, although the total number of birds is slightly higher. It appears that whip-poor-will distribution may be becoming more concentrated, and that many of these birds may not be breeding. Further study is needed.

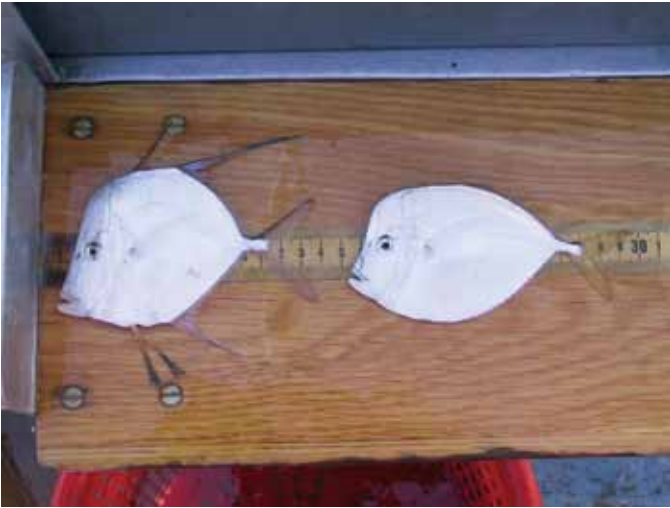
### Goatsuckers?

Nightjars are sometimes referred to as goatsuckers, a name that originates from European folklore where farmers mistakenly believed that nightjars entered their barns at night to suck the milk from their goats.

Nightjars would often be seen during the day perched on the ground amongst herds of cattle, goats, and sheep. Thus, farmers had the erroneous belief that the birds were after goat milk, not realizing that instead they were after the insects that would gather around the herds.

# Long Island Sound: Then and Now

Written by Penny Howell, Christopher Kul, and Deb Pacileo, DEEP Marine Fisheries Division,  
Photos by CT DEEP Long Island Sound Trawl Survey Staff



New species becoming more common in Long Island Sound include the look down (top left) and moonfish (top right), smooth dogfish shark (middle left) and spiny dogfish shark (middle right), and black seabass (bottom).

With increasing interest in habitat restoration and climate change, surveys of local waters made decades ago have taken on a new and valuable role as windows into our ecological past. For the history of fishes in Long Island Sound, we are very fortunate to have the publications of Sarah Richards. Though trained at Vassar College and Stanford University during the 1940s – a period when very few women were professional scientists, much less carried out their own field work – Sarah participated in surveys of the central Sound from 1955 through 1957. Her meticulous documentation of the catch data was published in 1963 as *The Demersal Fish Population of Long Island Sound* in The Bingham Oceanographic Laboratory Bulletin, a publication of Yale University and the Peabody Museum. Prior to Sarah's studies, the Bingham Bulletin had only published a limited survey of Morris Cove, New Haven, cataloguing the smaller fish found in the intertidal zone over an annual cycle in 1942-43.

Sarah also published survey work done in eastern Long Island Sound in 1958-1960 with Yale's William Percy. In following years, Sarah established the Little Harbor Laboratory in Guilford, where data from her continued research became a large contribution to the second and last edition of the State Geological and Natural History Survey publication entitled *Saltwater Fishes of Connecticut*, printed in 1978. The list of species captured in these historic studies records the diversity of fish present in the Sound and adjoining river mouths decades ago. This list is a baseline for comparison with species captured in DEEP Marine Fisheries Division surveys ongoing since 1979. Recent survey data also are available from the Millstone Environmental Laboratory from studies which began in 1976 and are required by the operating permit for Millstone Power Station. Species gained or lost from these survey lists are indications of changes in the Sound's habitats or community dynamics from factors such as physical water quality, prey availability, predation, and fishing pressure.

The total number of marine and anadromous finfish species captured by trawl or seine nets in one or more of these surveys stands at 164! Of that total, 113 are listed in the historic accounts, as well as in current Marine Fisheries Division or Millstone surveys. Only nine species that were captured in the historic surveys have not been seen in either Marine Fisheries Division or Millstone studies (see table). Surveys from both the Marine Fisheries Division and Millstone conducted over the past 35 years have catalogued 154 marine and anadromous finfish species, a list that includes 41 species not recorded in the surveys conducted from the 1940s to the 1970s (see table). Half of these newly catalogued species are tropical and sub-tropical species that spawn off of southern states or in the Caribbean and stray into Long Island Sound in small numbers, possibly following warm water cores breaking off from the Gulf Stream current. However, one sub-tropical species, the moonfish, now ranks in the top 40 most abundant species captured in the Marine Fisheries Division Long Island Sound Trawl Survey. Another 13 of the newly-listed fish are common mid-Atlantic species abundant from Virginia to New Jersey, including Atlantic bonito and Atlantic croaker, which are popular with recreational anglers. The final six newly-listed species have distributions primarily stretching north into the Gulf of Maine. Two of these species – haddock and American plaice – support lucrative commercial fisheries.

This comparison across decades shows that the diversity of

Long Island Sound's finfish community is high and may be increasing, or maybe we have gotten better at seeking out and cataloguing the great diversity of the Sound's habitats. Another trend revealed by this comparison is that mid-Atlantic species are becoming more common in the Sound, and even tropical species are not the oddities that they once were.



Warm-water species captured in surveys in recent years (from top to bottom) include spot, northern stargazer, glasseye snapper, and blue runner.

### Species listed in recent surveys of Connecticut marine waters but absent in historic surveys.

Depth groups shown are: P=pelagic (upper water column only), D=demersal (entire water column), E=epibenthic (bottom waters only)

Common Name	Genus_species	Temperature Group	Depth Group
Atlantic Cuttlass Fish	<i>Trichiurus lepturus</i>	Tropical	P
Blue Runner	<i>Caranx crysos</i>	Tropical	P
Blue Spotted Coronet Fish	<i>Fistularia tabacaria</i>	Tropical	D
Dwarf Goatfish	<i>Upeneus parvus</i>	Tropical	D
Flying Gurnard	<i>Dactylopterus volitans</i>	Tropical	E
Glasseye Snapper	<i>Priacanthus cruentatus</i>	Tropical	P
Grey Snapper	<i>Lutjanus griseus</i>	Tropical	D
Mackerel Scad	<i>Decapterus macarellus</i>	Tropical	P
Permit	<i>Trachinotus falcatus</i>	Tropical	D
Red Cornetfish	<i>Fistularia petimba</i>	Tropical	P
Short Bigeye	<i>Pristigenys alta</i>	Tropical	P
Web Burrfish	<i>Chilomycterus antillarum</i>	Tropical	D
Yellow Jack	<i>Caranx bartholomaei</i>	Tropical	P
Bigeye	<i>Priacanthus arenatus</i>	Sub-tropical	P
Bigeye Scad	<i>Selar crumenophthalmus</i>	Sub-tropical	P
Bonefish	<i>Albula vulpes</i>	Sub-tropical	P
Moonfish	<i>Selene setapinnis</i>	Sub-tropical	P
Pinfish	<i>Lagodon rhomboides</i>	Sub-tropical	D
Rough Scad	<i>Trachurus lathami</i>	Sub-tropical	P
Scrawled Filefish	<i>Aluterus scriptus</i>	Sub-tropical	P
Schoolmaster	<i>Lutjanus apodus</i>	Sub-tropical	D
Spanish Mackerel	<i>Scomberomorus maculatus</i>	Sub-tropical	P
Atlantic Bonito	<i>Sarda sarda</i>	Warm	P
Atlantic Chub Mackerel	<i>Scomber colias</i>	Warm	P
Code Goby	<i>Gobiosoma robustum</i>	Warm	E
Atlantic Croaker	<i>Micropogonias undulatus</i>	Warm	D
Feather Blenny	<i>Hypsoblennius hertz</i>	Warm	D
Gag	<i>Mycteroperca microlepis</i>	Warm	D
Gizzard Shad	<i>Dorosoma cepedianum</i>	Warm	P
Halfbeak	<i>Hemiramphus unifasciatus</i>	Warm	P
Houttuyn Chub Mackerel	<i>Scomber japonicus</i>	Warm	P
Northern Star Gazer	<i>Astroscopus guttatus</i>	Warm	E
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	Warm	E
Spotfin Butterfly Fish	<i>Chaetodon ocellatus</i>	Warm	P
Striped Cusk-eel	<i>Ophidion marginatum</i>	Warm	E
American Plaice	<i>Hippoglossoides platessoide</i>	Cold	E
Atlantic Hagfish	<i>Myxine glutinosa</i>	Cold	D
Banded Gunnel	<i>Pholis fasciata</i>	Cold	E
Fawn Cusk-eel	<i>Lepophidium profundorum</i>	Cold	E
Haddock	<i>Melanogrammus aeglefinus</i>	Cold	D
Spiny Dogfish	<i>Squalus acanthius</i>	Cold	P

### Species listed in historic surveys of Connecticut marine waters but absent in recent surveys.

Included are four sharks with coast-wide distribution but recent declining abundance, and five species that are rare subtropicals or rare cousins of more common fish: the large-scale menhaden is cousin to the Atlantic menhaden and the shorthorn sculpin is cousin to the longhorn sculpin seen in many of the old and new surveys. Depth groups shown are: P=pelagic, D=demersal, E=epibenthic

Common Name	Genus_species	Temperature Group	Depth Group
Blue Shark	<i>Prionace glauca</i>	Cold	P
Mako Shark	<i>Isurus oxyrinchus</i>	Warm	P
Smooth Hammerhead Shark	<i>Sphryna zygaena</i>	Warm	P
Thresher Shark	<i>Alopias vulpinus</i>	Warm	P
Cownose Ray	<i>Rhinoptera bonasus</i>	Sub-tropical	P
Four-eyed Butterfly Fish	<i>Chaetodon capistratus</i>	Sub-tropical	D
Smooth Puffer	<i>Lagocephalus laevigatus</i>	Sub-tropical	P
Large-scaled Menhaden	<i>Brevortia brevicaudata</i>	Warm	P
Shorthorn Sculpin	<i>Myoxocephalus scorpius</i>	Cold	E

# Connecticut State Parks – A Vision

Written by Alan Levere, State Parks Division

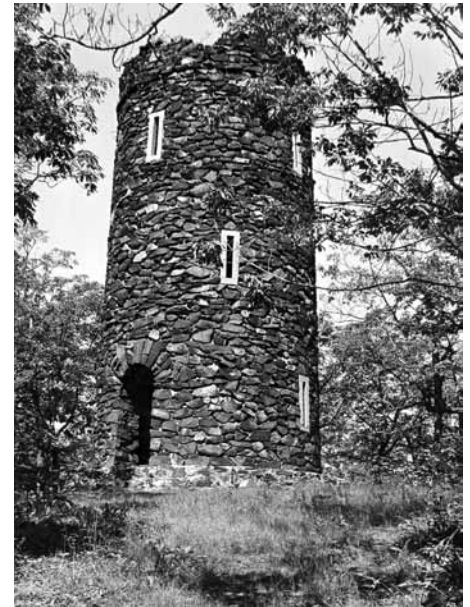
Albert Turner, the first State Park employee, spent his initial six months on the job investigating the Connecticut landscape for potential state park locations. By the fall of 1914, he was able to present an overview of his work to the Park Commission. From the start, Turner was seemingly guided by one overriding quest: the nearly universal desire to be near the water. Thus, water-based locations were his priority, and the highest among those was the Long Island Sound saltwater frontage. Turner's coastal investigation yielded three available premium sites – all easily recognizable to us today. From east to west, in the order he identified them, those sites were: Bluff Point in Groton, Hammonasset Beach in Madison, and Sherwood Island in Westport. These sites provided a rich variety of vegetated upland, tidal marsh, rocky shore, and miles of sandy beach. They were spaced fairly evenly along the coast and far enough from cities so as not to be influenced by their sewage outfall, but still accessible by the mass transit system of the day – trolley cars.

For the people in the northern tier of the state, Turner realized their waterfront of choice was along the lake shore. Accordingly, after his coastal investigation, Turner turned to the inland water resources. He drew up a list of 108 lakes of 40 acres or more which he narrowed by eliminating water supply reservoirs and summer mill ponds prone to summer drawdowns. Of the remaining 57 lakes, Turner provided the Commission a list of 18 priorities: Alexander Pond, Killingly; Mount Tom Pond, Litchfield; Bantam Lake, Morris; Pocotopaug Lake, East Hampton; Lake Compounce, Southington; Quassapaug Pond, Middlebury; Gardner Lake, Salem; Lake Quonnipaug, Guilford; Great Hill Pond, Portland; Lake Hayward, East Haddam; Hammonasset Lake, Madison; Spectacle Ponds, Kent; Highland Lake, Winchester; Twin Lakes, Salisbury; Long Pond, North Stonington; Wangumbaug (Coventry) Lake, Coventry; Mashapaug Pond, Union; and Lake Waramaug, Washington.

Continuing his concentration on water locations, Turner next appraised the lower rivers in the state. The Connecticut River had always been a priority, especially the area below Middle-

town where an attempt for preservation had failed in 1911. Turner felt river islands, especially Selden Neck, were prime targets for preservation, along with the coves of the Salmon and the Eightmile Rivers. Along the lower Thames River, Mamacoke Island was to be considered. At the time, the Housatonic River was not yet under developmental pressure because travel routes were just then being constructed. It is notable that in 1914, Turner found the wasted condition of the Naugatuck River to be "... a disgrace to our civilization."

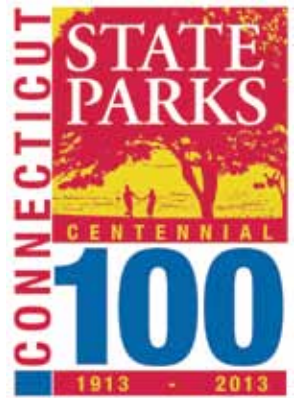
Away from water, where land values were slower to rise, upland locations were under less urgent need for conservation. Nonetheless, as with the lakes, a thorough hilltop study featured "... a list of the more prominent and desirable, with their location and height above sea level ..." The top five were: Bear Mountain, Salisbury (2,355 ft.); Haystack, Norfolk (1,680 ft.); Hosted Mountain, Cornwall (1,680 ft.); Ivy Mountain, Goshen (1,640 ft.); and Bald Hill, Union (1,286 ft.). The lure of the hilltops was the view and those with towers and access took precedence. In a day when so



much of the landscape was in agriculture, locations that today are engulfed in trees once stood as naked high points, each a destination well worth achieving (as with Mount Tom tower in Morris, above).

By early fall 1914, Turner's reconnaissance was completed. His recommendations encompassed three key shore areas, 18 lake locations, 14 hilltops, and myriad sites along the rivers. It would take years of time and millions of dollars to even begin to achieve such a goal, but the table was set. When taken as a whole, the vision was more than simply a collection of park locations; rather, it was an intuitively planned system of parks. Turner also knew that his ideas and philosophy were nothing without legislative backing and resulting financial support. Given the miniscule funding of the Commission's first two years and the coming of a Great War, it would be a challenge to obtain the first property. But wheels were in motion and landing the first "state park" was only weeks away.

Please visit the Connecticut State Park Centennial Web page at [www.ct.gov/deep/StateParks100](http://www.ct.gov/deep/StateParks100).



Lake Waramaug was one of Turner's earliest recommendations for acquisition. In 1920, land on the northwestern arm was added to the state park system and a pavilion, now gone, was constructed as an amenity for the earliest visitors.



# Eastern Hog-nosed Snake

*Heterodon platirhinos*

## Background

The eastern hog-nosed snake is one of the most unique snakes found in Connecticut because of its behavior, habits, and appearance. It also is one of the rarer snakes in our state due to population declines caused by human disturbance and habitat loss. This snake is currently listed as a state species of special concern.

There are different species of hog-nosed snakes; however, Connecticut is home to only the eastern species. This snake is found in locations throughout the state, but is more localized inland at moderate elevations. Despite being well spread out, populations are not always abundant in numbers.

Hog-nosed snakes are susceptible to human disturbances and habitat degradation. In addition, fluctuations in prey population densities can affect this snake's numbers. Human persecution of this harmless snake also is a serious threat.

## Description

This short, stout snake usually measures about 21 to 32 inches in length and has distinctly keeled dorsal scales (raised ridge along the center). Its coloration can be highly variable – some individuals have alternating light and dark patches with vivid yellows, browns, reds, and oranges, while others may be more uniformly black or dark gray. The belly is mottled grays but the tail underside will be noticeably lighter or even white. Juveniles resemble adults, but are less vivid in coloration and their patterning is often predominantly gray with deep brown blotches. The hog-nosed snake's most distinctive field mark is an upturned, hog-like snout, which is used for digging up this snake's main food item, toads. The hog-nosed snake is the only snake in the United States with this characteristic.

## Habitat and Diet

Hognose snakes prefer loose, sandy, gravelly soils that are well drained. The snakes also travel underground using enlarged passages created by small mammals. These passages are found in fields, open grassy areas adjacent to woods, and open forests. More adapted to inhabiting edge habitats, hog-nosed snakes are seldom found in dense wooded areas.

In addition to toads, hog-nosed snakes will also eat frogs, small mammals, salamanders, eggs, some birds, and insects.

## Life History

Shortly after emerging from underground winter dens, hog-nosed snakes search for a mate. In early summer, the female lays from 4 to over 50 eggs in a shallow cavity in loose or sandy soil. The young snakes hatch from the eggs in about 60 days, and must fend for themselves upon hatching. No parental care is involved.

## Interesting Facts

When feeling threatened, the hog-nosed snake will try to bluff its way out of a situation by coiling, flattening its head and neck to form a cobra-like hood, inflating its body, hissing fiercely,



P. J. FUSCO

and striking violently. The strike, usually made with the mouth closed, almost always falls short of the target. These behaviors have earned the hog-nosed other names, such as puff adder, blow snake, and hissing viper. If these tactics do not scare away a predator, the snake will writhe about, excrete a foul-smelling musk, and then turn over with its mouth open, tongue hanging out, and lie still, feigning death. If the snake is turned over on its belly, it will roll over on its back again. Once danger passes, the snake will lift up its head, look around, turn back over on its belly, and proceed on its way. These unique behaviors often have people convinced that the hog-nosed snake is venomous, which sometimes results in the snake's death due to misidentification and misunderstanding.

The hog-nosed snake is completely terrestrial, although it will enter water when moving between areas. It is active during daylight, and often observed basking in sunny areas. Cover may be sought under shrubs, logs, or in shallow burrows in sandy soil.

## What You Can Do

Take the time to learn about, understand, and respect this vitally important reptile, and share your knowledge with others.

If you encounter a hog-nosed snake, observe it from a distance and allow it to go on its way. All snakes will retreat from humans if given a chance.

Do NOT attempt to kill any hog-nosed snakes under any circumstances as this is an illegal action. Hog-nosed snakes are protected by Connecticut's Endangered Species Act and persons who kill or collect this special concern snake could be faced with fines or legal action. If you see or know of any suspicious or neglectful activity directed towards these snakes, you can report violators to DEEP at the 24-hour, toll-free TIP hotline (800-842-HELP) or DEEP Dispatch at 860-424-3333.

Be a strong proponent of conserving hog-nosed snake habitats, as well as habitats used by prey species, like toads and frogs. Learn more about snakes on the DEEP website ([www.ct.gov/deep/wildlife](http://www.ct.gov/deep/wildlife)).

# Timber Rattlesnake

*Crotalus horridus*

## Background

The timber rattlesnake is one of only two venomous snakes found in Connecticut; the other is the northern copperhead. This beautifully patterned snake is extremely rare in the state and is listed as an endangered species. It was probably widespread in Connecticut during colonial times, as evidenced by the many land features named “rattlesnake” (i.e., Rattlesnake Mountain). In the past, some Connecticut towns had bounties that encouraged people to collect and kill rattlesnakes, and many dens were repeatedly decimated. Once documented in over 20 towns, this snake is now limited to isolated populations in about 10 towns in the central and western portions of the state. Timber rattlesnake populations have declined, mainly because of human activity and persecution, which includes illegal pet trade, intentional killing, habitat degradation and fragmentation, and human development. Protection of this snake’s specialized habitats, both winter den and summer foraging/breeding grounds, is a priority.

## Description

Rattlesnakes can usually be identified by the distinctive, segmented rattle at the tip of the tail. Other distinguishing characteristics include vertical eye pupils; large heat-sensing pits between the eyes and nostrils (known as pit organs); a flattened, unmarked, triangular head about twice the size of the neck; and keeled scales (raised ridge in the center of each scale).

This heavy-bodied snake that can grow to lengths between 36 and 54 inches (average 40 inches). Both sexes are similar, although males have longer tails (not rattles). Timber rattlesnakes that occur in Connecticut usually have black or brown crossbands on a yellow, brown, or gray background. The crossbands, which may be V-shaped, break up toward the head to form a row of dark spots down the back and on each side. Sometimes the snakes are darker, with a heavy speckling of black or very dark brown that hides much of the lighter pigment.

## Habitat and Diet

In Connecticut, timber rattlesnakes inhabit deciduous forests (often second growth) in rugged terrain with steep ledges, rock

slides, and a nearby water supply. Dens are usually located in rocky ledges.

These snakes feed primarily on mice, other small mammals (voles, shrews, chipmunks, squirrels), and occasionally birds.

## Life History

Connecticut’s rattlesnakes are active mid-April through October. During the colder seasons, they retreat to communal dens that may include other snake species. After emerging from dens in spring, rattlesnakes will venture in search of food, basking sites, and shelter. Males are active at this time, searching for females that have released pheromones (chemical attractants). Mating occurs in spring or fall; the females give birth to an average of 9 young in August to late September (range 5-22 young). This snake is ovoviviparous. Eggs are retained and hatched internally, resulting in live birth. Young emerge singly from the female, encased in a transparent membrane, which is shed in a few minutes. The 8- to 10-inch long young are born with a single, tiny rattle segment (button), venom, and fangs. They receive no maternal care, but are ready to fend for themselves. Males are sexually mature at about 5 years of age, while females mature at 7-10 years of age. Females breed every third or fourth year. The average lifespan of rattlesnakes is 16-22 years; therefore, a female may only reproduce as few as 3-5 times in her lifetime. Rattlesnake populations take a long time to stabilize after losing a significant number of breeding individuals due to their low reproductive rate.

## Interesting Facts

Rattlesnakes (also known as pit vipers) are ambush predators that patiently wait for prey to come within reach. They use a keen sense of smell and sensory pit organs to find prey. Pit vipers also have large, hollow fangs at the front of their mouth that are connected to the bones of the upper jaw and palate. These fangs are folded against the roof of the mouth when the mouth is closed and are automatically brought forward when the mouth is opened. These fangs inject venom into prey. The primary purpose of venom is for eating and digestion. Therefore, a defensive strike has less and sometimes no venom compared to a prey strike.

From birth, rattlesnakes have a small rattle at the end of their tail. This rattle is keratinous (like our fingernails) and a small segment is added each time the snake sheds its skin. When these “segments” are vibrated together, a rattle-like sound is created.

## What You Can Do

*If you encounter a timber rattlesnake, observe it from a distance, calmly and slowly back away from it, and allow the snake to go on its way. Quick movements often scare snakes and may provoke a defensive strike. Try not to agitate the snake by getting too close or handling it. Rattlesnakes will usually let you know if you are getting too close. Unprovoked, undisturbed rattlesnakes will not intentionally attack people; they prefer to stay camouflaged and undetected. All snakes will retreat from humans if given a chance.*

*Do NOT attempt to kill rattlesnakes under any circumstances as this is illegal. Timber rattlesnakes are protected by Connecticut’s Endangered Species Act and persons who kill or collect this snake could be faced with fines or legal action. If you see or know of any suspicious or neglectful activity directed towards rattlesnakes, report violators to DEEP at the 24-hour, toll-free TIP hotline (800-842-HELP) or DEEP Dispatch at 860-424-3333.*

*Take the time to learn about, understand, and respect this vitally important reptile, and share your knowledge with others. Also learn to identify snakes and how to differentiate between similar-looking species. Identification help can be found on the DEEP website ([www.ct.gov/deep/wildlife](http://www.ct.gov/deep/wildlife)) or by calling the DEEP Wildlife Division at 860-675-8130.*



P. J. FUSCO



## Taylorstown Salt Marsh Habitat Restoration Project

While the familiar, tall, grassy plant looks innocent enough, infestation in the Saugatuck River watershed by *Phragmites australis*, a federally recognized invasive plant species, has resulted, over time, in the loss of a biologically-rich tidal marsh. Dense growth of the tall reeds blocks sunlight from reaching marsh soil, preventing the germination of seeds of important native plants. Overtaken by this invasive plant, the area is deprived of a healthy mix of cattails, grasses, sedges, and other plants. As a result, it is an unsuitable habitat for many native marsh birds and other animals.

In late 2012, DEEP's Wetlands Habitat and Mosquito Management (WHAMM) Program initiated a project to restore native plant species and enhance wildlife habitat and diversity in the 3.2-acre Taylorstown Salt Marsh Preserve on the Saugatuck River, in Westport, which is owned by the Aspetuck Land Trust. The project was initiated in December 2012, and will be conducted over a four-year period. The work will expand to include an additional 9.2 acres of waterfront wetland along Westport's Saugatuck River estuary, including Gorham Island and the northerly marsh area extending along Lee's Canal.

The restoration process involves a combination of mowing, the use of DEEP and federally approved and registered herbicides (shown to be nontoxic to humans and wildlife), and then, mulching of the dead plants during winter and early spring with special machinery. This process opens the marsh surface to sunlight so that seeds of native plants that are stored in the soil can start to grow and the marsh community can thrive. This DEEP-supervised process has

worked successfully in Westport at the Bermuda Road Marsh and the Allen Pond Saltmarsh off of Grove Point Road. The process has also been successfully used to end *Phragmites* infestations at several other locations.

The invasive plant removal effort has been reviewed and approved by local environmental organizations, including Aspetuck Land Trust, Connecticut DEEP, Connecticut Audubon Society, The Nature Conservancy, and the Westport Conservation Commission. Grants totaling \$11,000 to cover the cost of the effort have been committed by Aspetuck Land Trust, Jeniam Foundation, and DEEP.

Environmental scientists will use satellite imaging and other technologies to monitor the return of native plant and animal species. Based on similar DEEP-led efforts elsewhere in Connecticut, it is expected that after a three-year period, the restored Saugatuck River estuary habitat will see an increase in egrets, snipe, rails, woodcock, owls, muskrats, river otter, and many other wildlife species.

Paul Capotosto, DEEP Wildlife Division



## Presenting the 2014 Connecticut Duck Stamp!

An original painting of three common mergansers, created by wildlife artist John Brennan, was the winner of the most recent Connecticut Migratory Bird Conservation (Duck) Stamp Art Contest. This striking image will be featured on the 2014 Connecticut Duck Stamp. Mr. Brennan's painting was selected by a panel of judges as the best out of 19 other entries submitted by artists from across the country, from Oregon to Georgia, including five from Connecticut artists. John Brennan works from his studio in Lutz, Florida. He has a B.A. in music from the University of South Florida School of Music. His gift for music is matched by his talents in the visual arts. His award winning work has been juried into state art shows and has traveled in national touring exhibits with the Federal Duck Stamp Contest. His work has also graced the cover of *Florida Wildlife Magazine*. John's recent win in the Oklahoma Waterfowl Stamp Contest makes him the youngest person to do so in State Duck Stamp history.

All waterfowl hunters age 16 and older are required to purchase and carry the current Connecticut and federal Duck Stamps – but conservationists, stamp collectors, and others also purchase stamps in support of wetland habitat conservation. Connecticut Duck Stamps can be purchased for \$13 each wherever hunting and fishing licenses are sold: participating town clerks, participating retail agents, DEEP License and Revenue (79 Elm Street in Hartford), and through the online Sportsmen's Licensing System ([www.ct.gov/deep/sportsmenlicensing](http://www.ct.gov/deep/sportsmenlicensing)). Upon request, stamps can be sent through the mail. The 2014 Duck Stamp will be valid from January 1 through December 31, 2014.



## Connecticut Hunting & Fishing Day

DEEP and the Friends of Sessions Woods will be hosting the fourth Connecticut Hunting & Fishing Appreciation Day on September 28 at the Sessions Woods Wildlife Management Area in Burlington. With the assistance of the Paul Petersen Memorial Fund, the event will feature two live reptile programs with Brian Kleinman from Riverside Reptiles. The day features additional activities for all ages, including target shooting; hunting dog demonstrations; archery; children's crafts and activities; hunting and fishing tips; fishing demonstrations; and more! And, it's all FREE! Visit [www.ct.gov/deep/HuntFishDay](http://www.ct.gov/deep/HuntFishDay) for more details. Free shuttle bus parking (with more and larger buses) will be available at Lewis Mills High School off of Route 4, in Burlington. Event hours are 10:00 AM-4:00 PM.

# Common Carp: A Huge and Challenging Catch

Written by Bill Gerrish, DEEP Inland Fisheries Division, and Iain Sorrell, Saxon Tackle

The word “minnow” conjures up an image of a slender slivery fish, a few inches in length, both recently captured and proudly displayed in a child’s bucket or as bait at the end of an angler’s hook. Rarely, if ever, would one think of fishing for a minnow, never mind one that could exceed 40 pounds or is the largest freshwater fish in Connecticut. The common carp (*Cyprinus carpio*) is that minnow. No other fish living exclusively in freshwater in Connecticut grows as big. The current state record common carp – a massive 43-pound 12-ounce fish from the Connecticut River (a trophy common carp in Connecticut must be either 20 pounds or 34 inches) – was caught and released by Mike Hudak in 2012.

Native to Asia and Europe, the common carp is tolerant of a wide range of habitat conditions and is one of the few fish that can thrive in low water quality. In Connecticut, many anglers consider the common carp to be a “coarse” or “trash” fish, while in their native range, common carp, and several other species of carp, are a highly sought after species for both food and sport. In fact, common carp have been selectively bred over thousands of years, creating several strains with unique shape, scale pattern, and coloration. In Connecticut, the humble common carp is rapidly gaining acceptance as a true and worthy sport fish by a growing number of enlightened anglers. And why not?

## Fishing for Carp

Unless you catch common carp by chance, they can be elusive as they have superior senses and lightning fast reflexes



Carp fishing is rapidly becoming popular in Connecticut. Traditionally considered to be a “trash fish,” many common carp have grown to be well over 20 pounds. A worthy catch indeed. From left to right, Iain Sorrell holds a common carp landed in Middletown with State Representative Matthew Lesser (100th Assembly District), DEEP Commissioner Daniel C. Esty, Middletown Mayor Daniel Drew, and State Senator Paul R. Doyle, 9th State Senate District (back).

that can result in a lot of missed strikes, especially when the bait is mounted directly on the hook. When starting out, all you need is either heavy spinning or light surf rod, a spinning reel loaded with 200 yards of 20-pound test fishing line, and some corn. Place a Y-shaped stick into the bank to keep the rod tip up and you are ready for action. One note: carp fishing requires sharp attention to your rod unless you have a bait runner style reel or have loosened your drag. If not paying attention, you may see your rod disappear from the bank into the water, being towed by

a monster carp! Trust us, we have seen it happen plenty of times, so be prepared!

## The Hair-Rig

Unlike most predatory species that Connecticut’s anglers are accustomed to, the common carp feeds by gently tasting potential food items as it swims along the bottom. Often, common carp will notice the hook, spit out the bait, and move on long before you ever realize they had a taste. The “Hair-Rig” is a novel technique used by many carp anglers to increase the odds of hooking the fish. It works

## How to Land and Care for Your Fish

Catch-and-release common carp fishing will ensure many “trophy” catches for years to come. A landing mat (left), a few quick photos to document the catch (center, Iain Sorrell), and then a gentle release back to the water (right, Bill Gerrish).



by suspending the bait an inch or two beyond the hook on a short length of line (the “hair”). When the carp picks up the bait (on the hair), it doesn’t immediately notice the hook until it is well inside its mouth. As soon as the fish feels the hook, its reaction is to spit the bait, but the bait simply pivots around the hook shank, helping to keep the hook in the mouth. The result is a self-hooked fish, which may decide to take off.

**Carp Bait:** A favorite bait to use is sweet corn, which works well on the hook but tends to be fragile on a “hair.” A cheap and effective alternative is feed corn (maize), which takes a little more preparation. The dry kernels should be covered in slightly salted water and soaked for about 24 hours before being boiled for 30 to 40 minutes. You can add your favorite flavor or any sugary fruit drink mix (Kool-aid, etc.) to make the bait taste even more enticing.

A second popular type of bait is the dough ball. While it seems everyone has their own secret dough ball recipe for carp, some options are more effective when used with the hair rig. This includes a specialized dough ball that, when cooked in boiling water for a few minutes, becomes tough enough to stay on the “hair.” These marble-sized baits, known as “boilies,” contain flavors and attractants that carp find irresistible. Boilies are becoming more widely available in North America and, in the right hands, can help the dedicated angler target some of the bigger carp found in our state.

### Where and When to Fish for Carp

According to current regulations, there is no closed season for carp (except if the waterbody has a closed season). Common carp are found throughout Connecticut in many lakes, ponds, and slower-moving sections of larger rivers. Spring carp fishing in the bigger rivers can be hit or miss – high flows in the main channel can make fishing a challenge. Spring carp hot-spots can be sheltered coves or backwaters until river levels recede from

springtime highs. At the onset of summer, common carp will move out of deeper water and begin feeding more steadily in the shallows, where on sunny days, you may catch a glimpse of a common carp basking in those warming rays.

When you hook a carp, especially a big one, do not be in too much of a hurry to reel it in. A medium-sized (15 pounds) common carp can easily make initial runs of 20 to 40 yards – sometimes more – so make sure your drag is not set too tight. When you finally get it close to the net, be prepared for some powerful surges as sometimes they never seem to give up! Remember, this powerful fish can be upwards of 20-40 pounds.

It is important to note that common carp, like any big fish, should not be allowed to flop around on the ground or be lifted and weighed by the gills because both cause fatal damage. It is recommended that unless you are going to keep the fish, unhook and release it while it is still in the water. However, if you would like to take it out of the water (for a photo to document the great catch), lay it carefully on a piece of two- to four-inch soft foam inside a heavy-duty trash bag (called a landing mat). Before releasing your catch, gently lift the big fish, keeping it horizontal. Snap a couple of photographs to capture the memory, giving you plenty of bragging rights, and release it gently back into the water.

During summer, when many other species may be difficult to catch, try your hand to tempt ’ol bugle mouth. It’s been said that “beauty is in the eye of the beholder” and we love to see those great golden flanks resting in the bottom of our

## The Fish of Many Different Shapes and Colors

*Common carp* are usually golden to dark bronze, with large scales covering the body, except for the head. Their jaws do not have teeth, but powerful teeth (pharyngeal teeth) are inside on the gill arches. There are two barbels on either side of the upper jaw, with the lower barbel longer and more obvious. The dorsal and anal fins have a single stout spine.



I. SORRELL, SAXON TACKLE

*Mirror carp* (pictured) are usually the same color but have irregular and patchy scale patterns. They can be fully scaled with many of the scales being different sizes; have a single line of scales along the lateral line; or have a few random scales. *Leather carp* do not have any scales on their body. This fish is the most rare variant of common carp and is rarely captured.



R. JACOBS, DEEP INLAND FISHERIES (2)

*Koi* can be an infinite variety of colors and scale patterns. Most are white with orange and black. Koi are a popular fish for people who have garden ponds as part of their landscape.

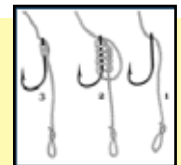


net. The DEEP Inland Fisheries Division encourages catch and release carp fishing as much as possible. If you are planning to keep some carp for a tasty meal, please take fish that are less than 10 pounds. By releasing the larger fish and keeping the smaller fish, you too may hook into one of our giant minnows and have the fight of your life.

**Note:** Eating carp caught in some lakes and rivers (i.e., Connecticut and Housatonic) could pose a health problem. Larger fish pose the biggest risk. Specific information is available on the Connecticut Department of Public Health’s website ([www.ct.gov/dph](http://www.ct.gov/dph)).

### Tying a Hair-Rig

The hair-rig is easy to tie. While many improved or more complex versions exist, the original is still highly effective. Use about 12 inches of 30-pound braided line. Thread the line through the eye of the hook and tie a small loop into the end (#1) to create the “hair.” Next, tie a knotless knot to a size six or four heavy wire hook (#2 and #3). Connect the other end to a swivel so that the total length of line from swivel to hook is about eight inches. Finish the rig by placing a one- to two-ounce in-line lead onto your mainline, plus a plastic bead to protect the swivel knot connection. To use the hair-rig, thread the bait onto the hair with a baiting needle and place a simple stop into the loop to keep it in place.



A piece of corn threaded on a “hair” (left) and a dough ball or “boilie” (right) are ideal bait for common carp.



## 2013 Spring and 2012 Fall Wild Turkey Harvest

Connecticut hunters are able to participate in three different wild turkey hunting seasons (spring, fall firearms, fall archery) in their pursuit of harvesting a turkey. Each of these seasons offers unique challenges and rewards. If turkey hunters were to purchase all available permit types, they could harvest as many as 10 wild turkeys in a single year and pursue turkeys for nearly 150 days. The spring season continues to be the most popular. Many sportsmen enjoy hearing the gobble of a mature tom and witnessing the rebirth of the spring woodlands. The fall turkey seasons have limited participation as hunters have many choices in the fall regarding which game species they prefer to hunt. Often fall turkey hunting takes a back seat to deer and small game hunting. However, there are hunters who participate in each season and are thankful for Connecticut's liberal bag limits and season lengths.



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P. J. FUSCO

**Spring Turkey Season:** The 2013 spring season was open statewide from April 24 to May 25. A total of 9,017 permits were issued and 1,248 birds were harvested. At least one turkey was harvested by 838 hunters for a 9.3% statewide success rate. A total of 204 hunters harvested two birds, 73 hunters harvested three birds, 12 hunters took four birds, and six hunters reported five birds. The harvest consisted of 853 adult males, 390 juvenile males, and five bearded hens. Harvest decreased by 8.5% from 2012; however, permit issuance increased by nearly 5%. In general, the highest harvest occurs on opening day and Saturdays. The 2013 spring season was no exception – 15% (182 birds) of the total harvest occurred on opening day and 23% (291 birds) were taken on the five Saturdays. At least one turkey was harvested from 137 of Connecticut's 169 towns (81%). Woodstock (33), Lebanon (30), and East Haddam (26) reported the highest harvest. State land hunters reported the highest harvest

from Pachaug State Forest (21), Cockaponset State Forest (15), and Tunxis State Forest (15).

In an effort to provide a quality turkey hunting experience for youth (ages 12 through 15), junior turkey hunter training days took place on April 13 and April 20, 2013 (both Saturdays). Youths harvested a total of 48 turkeys. Junior hunter days have been well received, with participants and mentors making many positive comments on spring turkey hunter surveys. These special training days are a great way to introduce youth hunters to spring turkey hunting.

**Fall Turkey Seasons:** The fall firearms season continues to be more popular than the archery season. In 2012, 2,383 firearms permits were issued and 47 turkeys were harvested for a statewide success rate of 2%. Private land hunters harvested 42 birds; state land hunters reported five birds. Both harvest and permit issuance declined from 2011 to 2012; overall harvest declined by 32% and permit issuance by 8%. The reported harvest

included 32% adult females, 9% juvenile females, 23% juvenile males, and 36% adult males.

Many bowhunters purchase a fall archery turkey permit hoping to have a chance encounter with a wild turkey while deer hunting. The archery turkey and deer seasons run concurrently. During the 2012 archery season, 1,260 permits were issued and 39 birds were harvested. At least one bird was harvested by 36 hunters for a 2.9% statewide success rate. The fall archery harvest consisted of 25% adult females, 31% adult males, 13% juvenile females, and 31% juvenile males. Harvest decreased by 38% from 2011 and permit issuance dropped by 26%.

Connecticut offers some of the best wild turkey hunting in New England, so for those who have not tried turkey hunting, take up the challenge of chasing the spring gobble or the fall "kee kee."

*Michael Gregonis, DEEP Wildlife Division*



***Celebrate Snakes!*** Learn all about Connecticut's snakes on the DEEP website at [www.ct.gov/deep/YearoftheSnake](http://www.ct.gov/deep/YearoftheSnake).

Find out about upcoming snake events and view the winning artwork from our Year of the Snake Art Contest for kids.

# Conservation Calendar

May-August..... Respect fenced and posted shorebird and waterbird nesting areas when visiting the Connecticut coastline. Keep dogs and cats off beaches to avoid disturbing nesting birds. Herons and egrets are nesting on offshore islands in Long Island Sound. Refrain from visiting these areas during the nesting season.

Sept. 28 ..... National Hunting and Fishing Day and Connecticut Hunting & Fishing Appreciation Day

## Programs at the Sessions Woods Conservation Education Center

Programs are a cooperative venture between the Wildlife Division and the Friends of Sessions Woods. Please pre-register by calling 860-675-8130 (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.

Aug. 21 ..... **Nature Walk & Drawing Workshop**, starting at 10:00 AM. The Friends of Sessions Woods is co-sponsoring a special workshop for adults and children, focusing on nature drawing, with artist Judy Bird and Wildlife Division Natural Resource Educator Laura Rogers-Castro. Laura will lead an interpretive walk, weather permitting, and Judy will provide a lesson on observing and drawing in the outdoors. This workshop is funded, in part, through the generosity of the Newman's Own Foundation. Participants should dress for both indoor and outdoor activities.

Sept. 28 ..... **CT Hunting & Fishing Appreciation Day**, from 10:00 AM-4:00 PM. The Friends of Sessions Woods will be hosting the 4<sup>th</sup> Connecticut Hunting & Fishing Appreciation Day at Sessions Woods. This year, with the assistance of the Paul Petersen Memorial Fund, the event will feature two live reptile programs with Brian Kleinman from Riverside Reptiles. The day features additional activities for all ages, including target shooting; hunting dog demonstrations; archery; children's crafts and activities; hunting and fishing tips; fishing demonstrations; and more! And, it's all FREE! Visit [www.ct.gov/deep/HuntFishDay](http://www.ct.gov/deep/HuntFishDay) for more details. Free shuttle bus parking (with more and larger buses) will be available at Lewis Mills High School, in Burlington. Pre-registration is not required for this special day.

Oct. 16 ..... **The Northern Copperhead**, starting at 6:30 PM. Herpetologist Dennis Quinn will present an informative program on the interesting and elusive northern copperhead. Participants will learn about the natural history of this snake, including its habitat requirements. This program continues the CT DEEP's celebration of the "Year of the Snake."

## Hunting Season Dates

Sept. 2-30 ..... Early Squirrel Season

Sept. 16-Nov. 19 ..... First portion of the deer and turkey bowhunting season on state land

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

Oct. 5 & Nov. 2 ..... Youth Waterfowl Hunter Training Days

Oct. 12 ..... Youth Pheasant Hunter Training Day (private land only)

Oct. 19 ..... Opening day for the small game hunting season

Nov. 9 & Nov. 16 ..... Youth Deer Hunter Training Days

Consult the 2013 Connecticut Hunting & Trapping Guide and the 2013-2014 Migratory Bird Hunting Guide for specific season dates and details. Printed guides can be found at DEEP facilities, town halls, bait and tackle shops, and outdoor equipment stores. Guides also are available on the DEEP Web site ([www.ct.gov/deep/hunting](http://www.ct.gov/deep/hunting)). Go to [www.ct.gov/deep/sportsmenlicensing](http://www.ct.gov/deep/sportsmenlicensing) to purchase Connecticut hunting, trapping, and fishing licenses, as well as required deer, turkey, and migratory bird permits and stamps. The system accepts payment by VISA or MasterCard.



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The migratory spot-winged glider (*Pantala hymenaea*) is a strong flier that is found in open areas with freshwater ponds or brackish waters.