July/August 2011

Connecticut Wildlife

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

From the Director's Desk

The power of suggestion. Suggestion is a powerful force. For example, one of our staff recently 'saw' a cougar in eastern Connecticut. He, an experienced biologist who has observed and handled hundreds of animals in research and as a sportsman, was amazed by how certain he was and for how incompatible it was with all he believed about cougars. Unable to reconcile these feelings, he put the car in reverse to confirm what he saw. To his chagrin, it turned out to be a large bobcat.

Recent reports of cougars in our midst offer a salient lesson in the distinction between what we know and what we believe. For instance, the Department has received several hundred cougar sightings over the last 25 years. We have investigated scores of sightings where there was a good prospect of finding corroborating evidence, primarily when snow cover allowed us to check for tracks. Not one of these sightings was confirmed as a cougar. Rather, the physical evidence confirmed the presence of another species. As for the rest of the reported sightings, we simply don't know what was seen.

Then came early June 2011. On June 5, a mountain lion was reported being seen on the Bucknell School campus in Greenwich. That report was accompanied by a blurry photo, an indistinct paw print, and a scat sample. A qualitative assessment of the original and recreated images led to the conclusion that the photo was likely that of a cougar. Six days later, a 140-pound adult male cougar was killed on the Wilbur Cross Parkway, in Milford. Also, a preliminary report from a private laboratory indicates the scat sample is from a cougar.

As of this writing, additional tests are being performed to determine whether the scat sample collected on June 5 was from the animal killed on the Parkway, and whether the animal was a captive or wild animal. And, as of this writing, all we really know is that one of the several hundred reported cougar sightings has been confirmed with physical evidence (well, two if you count the driver of the vehicle that struck the animal on the Parkway).

But there is something else we know – that the public believes that cougars, whether wild or captive, may be in our midst, and they are concerned for their safety, and the safety of their family, friends, neighbors, pets, and livestock. We also know that the Department has a responsibility to investigate public safety threats posed by wild animals. In fact, it would be irresponsible for us, with the mission we have, not to respond.

Rick Jacobson

Cover:

A male peregrine falcon watches as DEP biologists attach leg bands to its four chicks at the Travelers Tower in Hartford.

Photo by Paul J. Fusco

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The Federal Aid in Wildlife Restoration Program was initiated by sportsmen and conservationists to provide states with funding for wildlife management and research programs, habitat acquisition, wildlife management area development, and hunter education programs. Connecticut Wildlife *contains articles reporting on Wildlife Division projects funded entirely or in part with federal aid monies.*

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Horseshoe Crabs: Bell Weather Species for Our Beaches

Written by Penny Howell, DEP Marine Fisheries Division

P. J. FUSCO

Horseshoe crabs are being tagged with white circular tags during the spawning season as part of a research project to assess the status of Long Island Sound's horseshoe crab population.

Of all the animals living in Long Island Sound, the oldest biological lineage belongs to the horseshoe crab. Its body shape and physiology have been essentially unchanged for over 245 million years and its ancestors date back to the Paleozoic Era – older than most of the dinosaurs and far older than the human lineage. Young horseshoe crabs are called trilobites because they resemble that Paleozoic fossil species group of 500 million years ago.

The animal isn't really a crab; its taxonomic family is a single offshoot of arthropods (the phylum including crabs). Its closest living relatives are actually spiders and scorpions. Globally, there are four species of horseshoe crabs – and they all look very much alike. The horseshoe crab's unchanged anatomy speaks to the fact that it is exquisitely well adapted to its environment. This tight link between horseshoe crabs and their shallow-water habitat make them a bell weather species for the health of the beaches and near shore waters enjoyed by so many species, including our own.

Natural History of Horseshoes

The species of horseshoe crab found in Long Island Sound ranges from Maine to the Yucatan Peninsula. Horseshoes are very tolerant of wide ranges in water temperature, salinity, and bottom sediment conditions. They scavenge on a variety of small invertebrates and algae, and have been known to take advantage of seeded clam and oyster beds, becoming a bane to aquaculture farms.

Most of the time, horseshoe crabs move about Long Island Sound unnoticed. However, in late spring and early summer, mature crabs move into intertidal waters to find a mate and spawn. The smaller males come in first, searching for females by using several chemical receptors and photoreceptors ('eye spots') positioned over their armor-like shells. This mating behavior occurs primarily at night, and is timed to coincide with the new and full phases of the moon when spring tides are the highest. Once pairs are formed by a male grasping onto the back of a female, the pair moves onto the beach. The female then uses her shell to bulldoze into the sand to make a nest where she lays 90,000 eggs or more. The male follows behind and fertilizes the eggs before they are buried into the sand. The warm, moist sand makes a perfect incubator for the eggs, an evolutionary milestone in egg development repeated by sea turtles. Often, several other male crabs will join in, thereby ensuring all of the eggs are fertilized and that genetic mixing of the population is maximized. A beach full of burrowing horseshoe crabs makes for quite a spectacular site!

Food for Shorebirds

All of this activity also attracts the attention of migrating shorebirds. Several bird species – including red knots, sanderlings, and ruddy turnstones – have 'co-adapted' their behavior to match up with horseshoe crab spawning events. These small birds fly north from wintering grounds in Central and South America on their way to nesting grounds as far north as the Arctic, using up almost all of their body's energy reserves by the time they get to the East Coast of the United States. High energy, easy-to-find horseshoe crab eggs are just the 'fast food' they need to finish their journey on time and in good health.

Contribution to Medicine

Horseshoe crabs also provide a valuable service to modern human medicine. Over their long history, horseshoes have evolved one of the most sensitive immune systems to cope with a high diversity

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Horseshoe Crabs

continued from previous page

of bacteria. The blood clotting agent Limulus Amebocyte Lysate (LAL), found in horseshoe crab blood, can detect, immobilize, and engulf bacteria even in extremely small quantities. LAL has been used by medical facilities since the 1970s as the preferred method to screen for bacteria. Almost every injected drug, vaccine, and surgically implanted medical device is screened with LAL before use.

Necessary Research

Horseshoe crab blood and eggs also work well in attracting eels and whelks (conchs) when released in water. This feature makes horseshoes highly prized as bait for these fisheries. All three characteristics of this remarkable animal – nutritious abundant eggs, blood LAL, and blood/eggs as bait – are cause for concern. Losses due to harvest for bait and medical bleeding have raised concern as to whether local horseshoe crab populations can reproduce enough eggs to sustain themselves, as well as the shorebird species that depend on them.

The DEP Marine Fisheries Division has been involved in a multi-state management program for the last 10 years with the goal of regulating Connecticut's horseshoe crab harvest and assessing the status of Long Island Sound's population. In conjunction with Sacred Heart University (Project *Limulus*), in Fairfield, and 12 environmental organizations, DEP biologists monitor the Sound's horseshoe crabs through an annual volunteer spawning census, a long-term tag/recapture project managed by Sacred Heart faculty and students, and the DEP Sound-wide Trawl Survey.

To date, the volunteer spawning survey has identified 155 sites along Connecticut's shore where horseshoes spawn. Horseshoe crabs have been tagged at many of those sites. Recapture of the tagged animals has shown that they move throughout the Sound and spawn at several sites over their long lifetime. Numbers of spawning adults estimated from sequential recaptures at the more abundant sites range from about 2,000 to 25,000 per site each season.

When they aren't laying eggs on the beach, horseshoes tend to stay in shallow water less than 60 feet deep. Based on Sound-wide Trawl Survey catches, they are more abundant west of New Haven, with a slight increase in overall abundance since 1992. Abundance in the eastern section of the Sound has not fared as well.

The greatest threats faced by horseshoe crabs in Connecticut are the loss of nesting beaches and disturbance of nests on the remaining beaches by people, dogs, and other animals. There are many anecdotes of much higher horseshoe abundance before Connecticut's coastline was altered from empty beaches and open marshes to filled revetments, lawns, and sunbathers.

K. HERZ

Menunkatuck Audubon Society Project Limulus coordinator Judy Knowles describes horseshoe crab ecology to volunteers.

Project Limulus

Project *Limulus* was initiated in 2003, with start-up funds from the DEP's Long Island Sound License Plate Program and the support of many different federal, state, and non-profit agencies. It is, in its most basic form, a horseshoe crab research project that relies heavily on data gathered from physically tagging and recapturing animals.

The project is an ecological study of the Long Island Sound horseshoe crab population; a community-based research program that provides opportunities for people to become active contributors to on-going scientific research; a data-gathering network to potentially direct conservation programs for the horseshoe crab; and an educational tool to increase public awareness of horseshoe crabs and their connection to the Long Island Sound ecosystem.

Horseshoe crabs are being marked throughout New York, Connecticut, Rhode Island, and Massachusetts with federal disc tags (white circular tags). If you find a horseshoe crab with a white disc, please call 1-888-LIMULUS (1-888-546-8587) to report the tag number, location (specific beach), date you found the horseshoe, and if it was alive or dead. Please return live horseshoes to the water. You also can report tags online at www.fws.gov/northeast/marylandfisheries/crab.cfm.

Horseshoe crabs have also been tagged with yellow cinch tags throughout New York and Connecticut. If you find this tag, please call 203-365-7577 to report the tag number, location (specific beach), date you found the horseshoe, and if it was alive or dead.

Citizen scientists are welcome to participate in Project *Limulus* and can attend informational and/or training sessions each spring. These sessions, which are held up and down the Connecticut coast, give a brief history of Project Limulus and an overview of the research, as well as provide training to volunteers on to how to conduct spawning surveys and tag horseshoe crabs according to U.S. Fish and Wildlife Service spawning survey and tagging protocols. For more information, visit the Project *Limulus* Web site (www.sacredheart.edu/pages/13692_project_limulus.cfm).

P. J. FUSCO (3)

Red knots are heavily dependent on the eggs of the Atlantic horseshoe crab to help them gain enough energy reserves to complete an arduous spring migration to their arctic nesting grounds.

Horseshoe Crabs - The Shorebird Connection

Long Island Sound has its share of horseshoe crabs, but Delaware Bay is home to the largest horseshoe population along the Atlantic Coast. When this huge concentration of horseshoe crabs spawns, starting in spring, many of the eggs are exposed to the beach surface by waves and the digging action of mating crabs. The exposed eggs are the primary food source for migrating shorebirds making the journey from South America to the Arctic along the Atlantic Flyway. Delaware Bay is the second largest stopover location in the Western Hemisphere for northward migrating shorebirds. More than a million shorebirds fly nonstop from places thousands of miles away, such as Peru, Suriname, and Argentina's Tierra del Fuego. More than half of the total flyway population of red knots, ruddy turnstones, and semipalmated sandpipers depend on Delaware Bay's horseshoe crab eggs as a food supply high in protein and fat. Red knots arrive at Delaware Bay underweight after their long journey from southern Brazil. But, after gorging primarily on fresh horseshoe crab eggs over a two to three week period, the birds have gained enough weight to finish their journey to the Arctic and begin nesting.

Studies have shown that, in recent years, horseshoe crab populations are declining due, in part, to harvesting of their blood for medical testing and their use as fishing bait for eel and conch. This has resulted in a decline in the shorebirds that rely on horseshoe eggs for food, in particular the red knot. If the birds cannot find any excess eggs while at the stopover area, they won't be able to double their body weight during migration. Thus, they will either be unable to fly all the way to the Arctic or, if they do make it, will not have enough energy to reproduce. These shorebirds are on a tight schedule, having to reach the Arctic by mid-June to nest and then leave for their southward migration six weeks later. When they arrive at the Arctic, it is still cold enough that little food is available. So, the birds must continue to rely on the fat built up during their stay in Delaware Bay.

In response to the decline in horseshoe crab populations, several states have limited the number of crabs that can be harvested each year. New Jersey has implemented a moratorium on harvesting the crabs. In 2009, since measures have been implemented, the number of red knots visiting Delaware Bay was estimated at 24,000, up from 18,000 the year before, but still far lower than the population of 100,000 to 150,000 of two decades ago.

Research projects, like Project *Limulus* sponsored by Sacred Heart University, in Fairfield, Connecticut, are vital to understanding the dynamics of the horseshoe crab population and to monitor its numbers.

Two other shorebird species that are heavily reliant on horseshoe crabs are the sanderling ...

... and the ruddy turnstone.

Mountain Lion Killed on Parkway in Milford

Testing underway to determine its origin

The first verified sighting of a mountain lion loose in Connecticut in over 100 years was confirmed in early June of this year. What is yet to be determined is where the animal came from. A mountain lion was seen in Greenwich on June 5. In the early morning hours of June 11, a mountain lion was struck and killed by a vehicle on the Wilbur Cross Parkway in Milford. Mountain lions have been reported to travel in excess of 10 miles per day. The location where the animal was killed was 30 miles from the original sighting six days earlier. No other sightings since have been confirmed with physical evidence. In the absence of evidence to the contrary, the working hypothesis is that the sighting in Greenwich and Milford roadkill are one and the same. The 140-pound male mountain lion was transferred to a DEP facility for further examination and analysis to test that hypothesis.

P. J. FUSCO (2)

Supervisory Veterinary Pathologist Tabitha Viner, DVM DACVP, from the USFWS National Fish and Wildlife Forensics Lab in Oregon, performs a necropsy on a mountain lion killed on the Wilbur Cross Parkway in Milford. Data and samples collected from the necropsy will be analyzed to help researchers determine the origin of the mountain lion.

It is believed that the mountain lion was not naturally occurring and may have been captive. The Northeast does not have a native population of mountain lions. After many decades of questioning its existence, the U.S. Fish and Wildlife Service (USFWS) declared a specific subspecies of mountain lion, the eastern cougar, extinct in March 2011. Before the June 5 sighting in Greenwich and the roadkill in Milford, the last confirmation of a mountain lion in Connecticut was sometime in the late 1800s.

The DEP is working with the U.S. Forest Service, USFWS, the University of Arizona, and the New York State Museum to conduct genetic and other testing on the mountain lion. Researchers are trying to determine if the mountain lion had a lineage from South America or North America. Most, but not all, of the mountain lions involved in the pet trade originate from South America. If the lion's ancestry is determined to be from North America, further testing will be conducted to determine which region of the continent the animal originated from.

Measurements were recorded and a cast was made of the 140-pound male mountain lion's large paw.

In addition to the genetic testing, a detailed necropsy (animal autopsy) was performed at a DEP facility by Supervisory Veterinary Pathologist Tabitha Viner, DVM DACVP, from the USFWS National Fish and Wildlife Forensics Lab. This lab, which is based in Oregon, is responsible for a wide array of wildlife-related testing. X-rays and physical examination confirmed injuries consistent with a vehicle strike as the cause of death. The x-rays also revealed that the mountain lion did not have an implanted microchip, similar to ones implanted in dogs and cats to help in locating a lost pet.

The stomach and intestinal tract were examined to determine the mountain

lion's recent diet. Another planned test will examine isotope profiles in tissues, which can provide a historical record of the lion's diet, possibly shedding light on whether the lion had been eating a wild or captive diet.

Preliminary examination also revealed that the mountain lion was young (under six years of age), lean, and not neutered or declawed. These characteristics are not necessarily indicative of a captive animal. However, the fact that the lion was found so far from existing wild populations of mountain lions is a strong indication that it had been kept in captivity. It is illegal for a private individual to keep a mountain lion in captivity in Connecticut. The DEP Environmental Conservation Police are currently conducting an investigation to determine the ownership of the animal and if it was held illegally in Connecticut or originated from captivity in another state.

A scat sample found on Audubon property in Greenwich on June 12, 2011, was submitted to the U.S. Department of Agriculture Forest Service Rocky Mountain Research Center in Montana to undergo DNA testing to determine if it was from a mountain lion. The sample tested was collected following the reported sighting of a mountain lion in the area. Test results indicated that the scat was from the canine family (coyotes, dogs, foxes, etc.).

As of this writing, the DEP was still waiting for results from the various tests. Those involved with the investigation and testing are putting forth a large amount of effort to find answers and to thoroughly examine all of the information being collected. Results from the necropsy and the testing will be released by the DEP as soon as they are available.

Connecticut Wildlife Magazine: Celebrates 30 Years

Written by Kathy Herz, Editor

Thirty years ago, in July 1981, the Wildlife Unit (precursor to the current Wildlife Division) published the first issue of an informal newsletter that was to one day become *Connecticut Wildlife* magazine. The humble beginnings of the newsletter date back to the formation of a Public Awareness Program (now called the Outreach Program) in 1980 that was intended to "foster an appreciation for the value of wildlife, a basic understanding of wildlife management, and support for the Wildlife Unit and its programs." The program staff was tasked with launching the newsletter to "improve on communicating items of interest regarding wildlife and related matters."

In the early years of the newsletter, the number of pages varied and there were no photos or illustrations. Its initial title was SCOPE, but the name was changed to *Connecticut Wildlife* in 1993 to better reflect the content of the magazine. Black and white graphics accompanied articles for a number of years before the informal newsletter transformed into the *Connecticut Wildlife* magazine you see today – 24 pages with full-color photographs and articles that cover topics associated with wildlife, fisheries, forestry, and the outdoors.

Many of the articles have focused on Wildlife Division projects funded by the Federal Aid in Wildlife Restoration Program, such as waterfowl surveys, hunter education, deer research, and habitat management at state wildlife management areas. One of the main purposes for publishing the magazine is to inform readers about the contributions of sportsmen to wildlife conservation.

Looking back at articles in previous issues of *Connecticut Wildlife* (and SCOPE), it is amazing to see how much has changed over the past 30 years. The first issue in July 1981 reported that "*two immature bald eagles were observed in Old Lyme on May 1. Bald eagle sightings in Connecticut this time of the year are an encouraging sign.*" Eleven years later, the July/August 1992 issue of SCOPE reported the first successful nesting of a pair of bald eagles in Connecticut since the 1950s. That year, a pair in Barkhamsted fledged two chicks. Now, in 2011, 21 active bald eagle pairs were recorded in the state and 29 chicks fledged.

In 1988, a few articles were printed in the magazine telling readers to be aware of black bears, as the Division was beginning to receive reports of bear sightings and had found evidence that bears were establishing residency after a long absence from Connecticut. Today, articles in the magazine report about an on-going bear research project to help monitor the growing population and the increasing number of sightings and bear problems. (In 2010, the DEP received over 3,000 bear sighting reports from 115 of Connecticut's 169 towns.)

The January/February 2011 issue of *Connecticut Wildlife* launched a new era for the magazine, when staff from the other Divisions in the Bureau of Natural Resources, as well as from the Bureau of Outdoor Recreation, began to contribute articles. The "new" magazine has received rave reviews from our readers. As we keep improving the magazine and also look to the future, we hope to continue providing the information our readers expect, hopefully for at least another 30 years or more!

FREE Educational Programs this Summer at Kellogg Environmental Center and Osbornedale State Park in Derby

The Kellogg Environmental Center, a facility of the DEP Division of State Parks & Public Outreach, is dedicated to providing environmental education to youth and adults. The Center is offering several free educational programs throughout July and August, covering such topics as geology, geocaching, ferns, insects, butterflies, fishing, pond exploration, and more. Program details and dates are available on the DEP Web site at www.ct.gov/dep/kellogg. Pre-registration is suggested, but not required. All ages are welcome (unless otherwise suggested), but children must be accompanied by an adult. Please call 203-734-2513 to register or for more information. All programs are FREE, but donations are always welcome. The Center is located at 500 Hawthorne Avenue, in Derby.

Annual Wood Duck Box Checks Completed

Written by Kelly Kubik, DEP Wildlife Division

In pre-colonial times, the wood duck was likely the most abundant waterfowl species in eastern North America. Due to habitat destruction and overhunting, wood duck populations were on the brink of extinction by the early twentieth century. Fortunately, times have changed, and the wood duck is currently the third most abundant breeding waterfowl species in Connecticut, behind the mallard and Canada goose. While the dramatic rebound of wood ducks can be largely attributed to the passage of the Migratory Bird Treaty Act, their recovery also was assisted by the advent of wood duck nest boxes. Because wood ducks are cavity-nesters that do not excavate their own holes, their abundance is limited by the number of naturally occurring cavities in suitable habitat.

DEP WILDLIFE HABITAT MANAGEMENT PROGRAM

Wildlife Division seasonal resource assistant Bob Bartholomew checks a wood duck nest box this past winter. He collected data on nesting activity, cleaned and inspected the box, and added new nesting material.

Early Days of Nest Boxes

The first large-scale use of wood duck boxes was by the United States Biological Survey in 1937. Initially, over 450 boxes were erected at the Chautauqua National Wildlife Refuge in Illinois. Over the next two years, Arthur Hawkins and Frank Bellrose put out 700 boxes throughout the state of Illinois. More than half of these boxes were used by wood ducks, thus revealing their management potential. These artificial nesting structures benefit more than just wood ducks. Other wildlife species, such as American kestrels, eastern screech owls, hooded mergansers, and northern flickers, use the boxes as well.

Monitoring CT Boxes

The Wildlife Division manages over 400 wood duck boxes on various state properties. Each winter, DEP staff, in conjunction with numerous volunteers, checks, maintains, and installs wood duck boxes throughout Connecticut. A data form is completed at each site after all the boxes are thoroughly inspected and cleaned, and new nesting material is added. The data from these checks are analyzed, providing the Division with information on use of the boxes and allowing management decisions to be made about the wood duck box program.

This past winter, 402 boxes were checked at 113 sites. Overall, duck use of the boxes was 62%. Wood ducks were most dominant in boxes in eastern Connecticut, while hooded mergansers were more prevalent in boxes in the western portion of the state. Twenty-three percent of the boxes checked were successful, producing 413 ducklings. Unfortunately, 42% of the boxes examined experienced some degree of nest predation.

Eighty-four percent of the boxes checked this past season were in good condition, 12% were in need of minor repairs, and the remaining four percent were classified as unusable. Thirty-one boxes were missing and 15 of these were replaced. In addition, 20 boxes were installed at various sites.

The Division often receives inquiries about assisting with projects that benefit wildlife. One such project is to volunteer to build, check, or maintain wood duck boxes in your area. For more information on wood ducks or how to volunteer with box checks, contact Kelly Kubik at kelly.kubik@ct.gov or 860-642-7239.

P. J. FUSCO

Mallards Continue to Dominate Breeding Waterfowl Survey

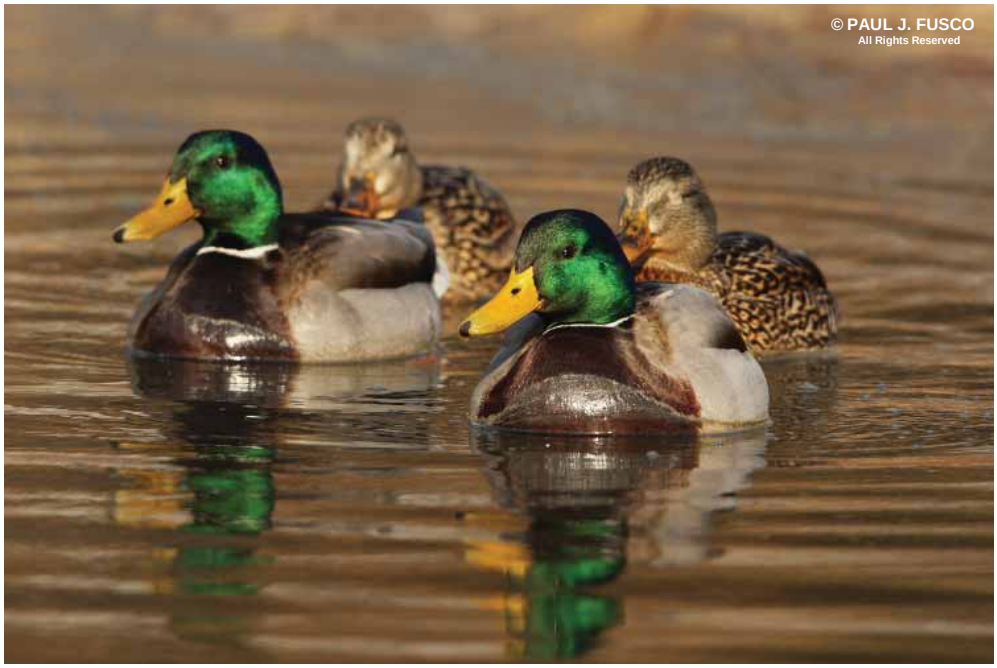
Written by Kelly Kubik, DEP Wildlife Division

Staff from the Wildlife Division completed the annual breeding waterfowl survey in April. This survey was initiated by the Atlantic Flyway Technical Section in 1989 and became fully operational in 1991. While all observed waterfowl are recorded, it is primarily designed to estimate the population sizes of black ducks, Canada geese, mallards, and wood ducks. Each state in the Atlantic Flyway, from Virginia north to New Hampshire, participates. The data derived from this survey are used in the Eastern Mallard Adaptive Harvest Management models. The results of these models are used to set duck hunting regulations in the Atlantic Flyway. Prior to this survey and other breeding waterfowl surveys initiated in 1990 for eastern Canada and Maine, waterfowl in the flyway were managed based on data collected for mid-continent waterfowl populations.

The survey is timed to coincide with peak waterfowl breeding activity in the state. All of the plots were surveyed between April 21-30, 2011. Surveys were conducted on the ground by checking all water bodies and any suitable terrestrial habitat where waterfowl could be found within the plot boundary. Per survey protocol, 20% of the plots were checked at either dawn or dusk.

A drake index was calculated for each duck species to determine if survey timing was appropriate. A high drake index indicates good timing. It shows that local duck nesting has begun and most migrants have moved north. Conversely, a low index shows the survey was conducted too early and paired migrants may still be present. An index between 0.50 and 0.75 is indicative of a well-timed survey.

This survey not only provides an index of waterfowl breeding populations, but also provides waterfowl managers with an idea of current habitat conditions. While most of Connecticut's wetlands were recharged by record snowmelt and considerable rainfall prior to the initiation of the survey, low water levels were noted in some of the surveyed plots. This was primarily due to the breaching of beaver dams or drainage associated with construction activities. Even though these types of habitat changes are inevitable over the years, they are major factors that affect breeding waterfowl populations.



P. J. FUSCO

Survey Results

Mallards continue to dominate the survey in Connecticut. The mallard estimate for 2011 was 17,148 pairs. This is a five percent decrease from 2010 and a three percent decrease from the five-year average. The mallard drake index was 0.65. Prior to this survey, the mallard population in the Atlantic Flyway was monitored by the annual Midwinter Waterfowl Survey. The breeding waterfowl survey more accurately depicts mallard population trends in the flyway because it was found that the midwinter survey underestimated the number of mallards wintering in the Northeast.

The Canada goose estimate for this year was 9,792 pairs. This represents a 21% decrease from the previous year and a five percent decrease from the five-year average. Numerous pairs of Canada geese were seen actively nesting and one pair was observed with a brood during the survey. The DEP has established a management goal of 7,500 breeding pairs of Canada geese in the state. This survey is used to monitor the resident goose population on a yearly basis and assess the efficacy of more liberal hunting regulations aimed at reaching the state's management goal.

The wood duck estimate for 2011 was 9,431 pairs. This is an 18% increase from 2010 and an 11% increase from the five-year average. The wood duck drake index was 0.62. Prior to the establishment of the breeding waterfowl survey, the distribution and abundance of wood ducks in the Atlantic Flyway was not well known. The survey provides a method of tracking changes in wood duck populations in the northern portion of the Atlantic Flyway.

Black ducks were observed in an inland plot for only the fourth time since 2001. The breeding black duck estimate for this year was 396 pairs. This represents a 34% decrease from 2010 and a 10% decrease from the five-year average. The black duck drake index was 0.17. This survey indicates that while black ducks are a small component of Connecticut's overall breeding waterfowl population, they are heavily reliant on the existing saltmarsh habitat in the state.

Connecticut Breeding Waterfowl Pair Estimates for Major Species

Species	2011	2010	Five-year Avg.
Black Duck	396	604	439
Canada Goose	9,792	12,415	10,344
Mallard	17,148	18,038	17,703
Wood Duck	9,431	7,989	8,489

After 32 Years, Wildlife Biologist Julie Victoria Retires

Wildlife Division biologist Julie Victoria started her association with the DEP in November 1978 when she helped out at deer check stations. At the time, she was working for the YACC (Young Adult Conservation Corps), which was a federally funded program administered by the DEP. In January 1979, she was "loaned out" from YACC to work for the Wildlife Division's Deer Program and was hired as a seasonal in May 1979. Eventually, Julie was hired permanently, continuing with the Deer Program until 1985 when she became one of the state's first "nongame" biologists after the State Legislature established the Nonharvested Wildlife Program (now Wildlife Diversity Program). Julie remained with the Wildlife Diversity Program until her retirement on July 1, 2011.

Dealing with unhappy raptors, like this adult peregrine falcon, was just part of the job for Wildlife Division biologist Julie Victoria. This was Julie's last time banding the peregrine chicks raised at the Travelers Tower in Hartford. PHOTO BY P. J. FUSCO

As a biologist with the Wildlife Diversity Program, Julie was responsible for coordinating and conducting projects related to invertebrates, raptors (such as bald eagles, peregrine falcons, and ospreys), shorebird species (piping plovers, least terns, and colonial waterbirds), reptiles, and amphibians. One of her first endeavors was the initiation of the Bluebird Working Group, which brought together bird experts to design and refine an artificial nest box for bluebirds that could help

Julie Victoria: In Her Own Words

What was your best accomplishment while working for the Wildlife Division?

I hope my best accomplishment was forging good working relationships with private wildlife organizations, federal agencies, other state agencies and divisions, municipalities, volunteers, and the public.

What was your favorite species to work with?

Bog turtles and ospreys. I love looking for bog turtles, even though it requires slogging through a cold fen in May, in mud that sucks your legs in up to your thighs, to find them. It is so infrequent when I do find one that it's like hitting the jackpot – very exciting.

Ospreys are my favorite bird species. When I was growing up in Stonington in the 1960s, I can remember the electric company taking an osprey nest off of an active power pole and moving it to a new pole that was put up just for the birds. It was dramatic, and every kid in the neighborhood monitored the whole event. Later, when I worked for DEP, I realized that event happened at a time when there were very few osprey nests in the state. Stonington was one of the towns that had a core population so I didn't even realize how rare ospreys were. Witnessing the osprey being removed from Connecticut's species of special concern list and reaching such high numbers that I can't even monitor them every year has made me very happy.

What part of your job will you miss the most?

I will miss the people the most – my coworkers, the volunteers that are integral to monitoring so many species, the partners that I worked with from private organizations and the U.S. Fish and Wildlife Service, and the landowners whose properties I've come to love as much as they do.

What part of your job won't you miss?

The paperwork!

What do you see as the three major issues currently facing the Wildlife Division?

There are many, but the top three that come to mind are:

1) Loss of habitat – as the human population expands or the climate changes, wildlife habitat shrinks. Shrinking habitat leads to fewer animals or more human/animal interactions. Most human/animal interactions (like vehicle kills) end up badly for the animal.

2) Communication – *Connecticut*

reverse dramatic declines in this species' population. Bluebirds, which were once rare in Connecticut, now nest statewide, delighting residents with vibrant color and melodic song. Similar success was achieved with the restoration of Connecticut's osprey population. Julie worked tirelessly with volunteer groups to refine the design of an artificial osprey nest platform and promote its use statewide. With the help of these platforms, nesting ospreys have rebounded from an all-time low of nine active pairs in 1974 to well over 200 pairs in 2010.

Julie's efforts also extended to federally-listed species, like the threatened piping plover whose population has increased from 15 pairs along the Connecticut shoreline in the mid-1980s to currently approaching the federal recovery plan goal of 50 nesting pairs. For many years, Julie routinely gave up summer weekends or long holidays to monitor plover and least tern beach nesting areas during periods of high public use, educating the public and protecting nesting birds.

P. J. FUSCO

The state endangered bog turtle was one of Division biologist Julie Victoria's favorite species to work with. Julie spent many field seasons searching wet bogs for this very rare turtle.

Julie served on a team of biologists that founded the Northeast Partners in Amphibian and Reptile Conservation, one of the leading conservation groups for these species. She also volunteered to help prepare a recovery plan for the timber rattlesnake as part of a proactive approach in the Northeast to avoid placing the snake on the federal Endangered Species List.

Julie is always willing to help the general public learn, understand, and appreciate wildlife. She has conducted countless interviews for print and electronic media outlets, been featured in videos promoting many programs within the DEP, and never hesitated to talk to the public about a bird seen at the beach or a snake captured in a bucket or a mussel shell found while walking along a brook.

It is difficult to concisely detail the many ways in which Julie has contributed to projects and programs that benefit the Department, but also more importantly the wildlife species she was tasked with protecting as a public trust resource. If another program needed help, Julie was always among the first to volunteer, be it working with sportsmen at deer check or pelt tagging stations, or removing garbage from a park or beach front. No job was too big or too small. For the entire 32 years Julie worked for the DEP Wildlife Division, she could be counted on to use a no-nonsense, take-charge approach to completing tasks or doing what was best for the resource.

Wildlife magazine is probably the best communication tool the Division has ever had, but it is not enough. The readership is small. How do we educate more people about who we are, what we do, and why?

3) Lack of empathy, understanding, or outdoor etiquette by the public. There are children who don't go outside anymore and, when they do go outside, they don't always treat wildlife well. No one has taught them how to behave outdoors or minimize their impact to wildlife. So, we end up creating a No Child Left Inside program or printing a pamphlet called "Sharing the Waterways: A Code of Ethics for Wildlife Watching along the Connecticut Coast" and we still are not reaching enough people – the same people who could potentially be making environmental policy decisions in the future.

What major changes have you seen since you first joined the Wildlife Division?

I'm going to sound like a dinosaur – we didn't have PCs when I started and the computer that ran the deer lottery filled a large air-conditioned room. That old computer was a large main frame and the deer data were on magnetic storage disks as big as a spare tire donut. In the late 1970s to early 1980s, Connecticut didn't have many deer (less than 20,000), no nesting eagles or peregrines, and few ospreys.

Has anything remained the same?

The paperwork! Whoever said that the computer would create a paperless society was not in state government.

What is the most memorable event that happened during your time with the Wildlife Division?

In the 1980s, it was the opening of the Division offices at Franklin Wildlife Management Area (WMA) and Sessions Woods WMA. In the 1990s, it was the return of the bald eagle and peregrine falcon to nest in Connecticut and the banding of the first chicks. In the 2000s, it was the hiring of the several wildlife technicians and the development of Connecticut's Comprehensive Wildlife Conservation Strategy and all of the good work that has been accomplished with the extra help.

What advice do you have for your colleagues at the Wildlife Division?

Try to stay positive – the stress associated with funding and budgets will come and go as the economy changes. The current recession reminds me more than ever of conditions in 1979 when I started at the DEP.

Elusive Bird of the Marsh - The Virginia Rail

Article and photography by Paul Fusco

Rails are secretive birds that are more often heard than seen. Frequently running and hiding in thick marsh grass or cattails, they quickly slip through the dense cover with ease. They are cryptically marked in drab colors, making them even more difficult to see as they blend into their surroundings. Seldom does one venture out into the open, and then usually showing itself only for an instant before darting back into the grass. Because of their secretive behavior, the most common, and frequently the best, way to identify rails is by listening for their unique calls.

Rails are small to medium-sized ground dwelling marsh birds. They have compact bodies, short necks, and strong legs. Some rails have long bills for probing in mud, while others have short stubby bills. Their strong legs and feet are well adapted for life on the ground. When seen in flight, their legs and feet dangle behind. The term "thin as a rail" can be interpreted by the fact that rails have laterally compressed bodies that allow them to slip through the thick vegetation found in marshes.

Several species of rails are found in Connecticut, including the Virginia rail, which is the most common and widespread rail in our state. About the size of a robin, the Virginia rail has a medium-long, decurved bill. Like other rails, Virginia's have short, rounded wings and a short tail. Their plumage is mostly rusty colored. They have contrasting gray cheek patches and black barring on the flanks.

Their call is an unusual metallic two-syllable "kid-ick, kid-ick," or a descending series of quack-like calls, "wak-wak-wak-wak." Calls are frequently repeated many times.

Habitat

During winter and migration, Virginia rails may be found in coastal saltmarshes, but favor inland and brackish wetlands during the breeding season. Wetlands with a mix of cattails, sedges, and grasses are usually the most likely habitats in which to find Virginia rails. Their breeding distribution is uneven across the state – the birds are most concentrated in the wetlands of Litchfield County. In winter, some individuals may remain in Connecticut, but most spend the colder months south of Virginia.

Although Virginia rails are weak fliers, they surprisingly migrate long distances that may cover hundreds of miles. Migrating at night, they use rapid wingbeats in low flight over water or the ground to get to their destination.

Behavior

Nests are normally built close to water in thick emergent vegetation in a marsh. The foundation can be built on mud, over water, or on downed vegetation. It is skillfully concealed with nearby vegetation that is pulled over the nest and loosely woven into a canopy, protecting seven to 12 eggs.

Young hatch in about 20 days, leaving the nest almost immediately. One parent will lead the downy black chicks to safe areas, while the other adult continues to brood until all of the eggs are hatched, which may take several days.

Using its long, curved bill, the Virginia rail catches food by probing and grabbing. The list of food it eats includes worms, grubs, slugs, snails, beetles, caterpillars, small fish, frogs, small snakes, crayfish, and other invertebrates.

The Virginia rail will escape danger by running at remarkable speed through thick marsh vegetation. Using its thin profile and strong legs, the rail can escape even the most determined predator. A rail moves so quickly and silently that it seemingly disappears with no sign of it ever being there. Not only are Virginia rails very fast when running, but they also are capable swimmers, and can climb up reed stalks with their strong legs and feet.

Conservation

As with many species of wildlife in Connecticut and in the region, the major conservation issue is loss of habitat.

During the spring and summer months, Virginia rails can be found at inland wetland locations that offer a mix of emergent vegetation, including cattails, sedges, and grasses.

Without a place to live, reproduce, and find food, individuals in a population will die out and eventually the population undergoes decline and possibly extirpation. This is especially true of species, like the Virginia rail, that are critically dependent on specific types of habitat, such as wetlands.

The DEP estimates that Connecticut has lost between 33-50% of its original wetlands. Urban and coastal areas have been hit the hardest. For instance, the estimated loss of tidal wetlands in Fairfield County is 61%. The loss of coastal wetlands has slowed dramatically since the passage of the Tidal Wetlands Act in 1969. This act regulates the draining, filling, and excavation of tidal wetlands through a permit process. While it may be too late to reclaim some lost habitat, the Wildlife Division, along with cooperating partners, is using resources, through the DEP's Wetland Restoration Program, to restore and enhance degraded coastal wetlands.

Inland wetlands continue to be impacted by development pressure that not only destroys wetlands, but also degrades water quality. Wetlands also are negatively affected by encroachment, which leads to further loss of quality wetland habitat. The rate of inland wetland loss has been estimated to be three to five percent per year in recent years.

Populations of wetland birds, including the Virginia rail, are monitored by DEP staff through breeding season surveys at selected wetlands across the state. Recent work shows that Virginia rails are absent from small inland marshes. In general, a minimum of 25-30 acres of emergent wetlands is needed to support Virginia rails.

Because these birds migrate at night, they are susceptible to collisions with communication towers, guy wires, buildings, and other structures. It is well documented that these structures take a heavy toll on migrating, night-flying birds. In poor weather, structures with lights are especially hazardous because the lights attract migrants. Guy wires also are extremely hazardous. In the Untied States alone, communication towers may kill up to 40 million birds a year.

More work is needed to gain a better understanding of the distribution and breeding success of Virginia rails. Because of their secretive nature, rails are difficult to survey, and accurate population trends are somewhat uncertain. Although the Virginia rail population seems to be relatively stable in Connecticut at this time, the conservation of wetland habitat is important for maintaining a healthy population and to prevent declines.

Benefits of Wetlands

- **FLOOD CONTROL**

Wetlands absorb water from storms and runoff, preventing damaging floods in developed areas.

- **WATER QUALITY**

Wetlands act as giant filters, purifying water by removing excess nutrients and pollutants.

- **EROSION CONTROL**

Wetlands form buffers between water bodies and higher ground, preventing soil erosion.

- **FISH AND WILDLIFE HABITAT**

Wetlands serve as nurseries for fish, shellfish, and wildlife populations, including many endangered species.

- **RECREATION**

Wetlands are places where many people hunt, fish, hike, canoe, boat, birdwatch, and participate in the arts of photography and painting.

Looking Back at the History of Forestry in Connecticut

Connecticut is one the nation's most heavily forested states, even though it also is one of the most densely populated. During the more than 380 years of settlement in our state, Connecticut has gone through periods of deforestation and then regrowth of the forests. Today, nearly 60% of the landscape is forested. There currently are 32 forests totaling about 170,000 acres in the Connecticut State Forest system. These forests are owned by the State of Connecticut and managed through the DEP's Division of Forestry. The majority of this forestland was acquired during the early part of the 20th century — a time period in Connecticut that saw the creation of a state forestry agency, the first state forests, and the first real efforts to protect and conserve natural resources.

The early history of Connecticut's state forests was recorded in the "Wooden Nutmeg," a periodical that highlighted forest and park news during the 1930s and 1940s. The periodical contains reminiscences of the pioneers in forest and wildlife management who were members of the Park and Forest Commission and the State Board of Fisheries and Game. These agencies were the precursors to the Department of Environmental Protection, which was established in 1971. Some of the stories published in the "Wooden Nutmeg" are still relatable to current times. The authors were resource managers who built the foundation for the stewardship ethic we have today. Following is an article published in 1943 about the history of the Connecticut State Forest system.

Wooden Nutmeg, Hartford, Conn. December, 1943

History of Acquisition of Connecticut State Forests

By Chester W. Martin, Field Agent, Commission on Forests and Wild Life

The State Forest acquisition program began in 1903 (in the reign of the first Roosevelt) in the era of buggies, moustache cups and bustles, when Walter Mulford, Experiment Station Forester and ex-officio State Forester, acting under the authority granted by Chapter 175 of the Public Acts of 1901 purchased 627 acres of land in the Town of Portland at a cost of $964.16. The purchase of this tract established the first State Forest in New England but it is doubtful if many persons at that time envisaged the growth of movement to 100,000 acres within the ensuing forty years. Indeed, except for the rapid growth of Connecticut cities and the development of the automobile with the accompanying network of hard roads, it is questionable if the system of State Forests would have reached one-half of its present total, since by 1925 there had been acquired only 11,531 acres.

John Cordella 'Del' Reeves was the first warden/forester hired by the State to patrol Meshomasic State Forest.
DEP FORESTRY ARCHIVES

In the early Twenties the importance of the State Forests as open areas for public recreation including fishing and hunting began to receive recognition and in 1923, State Forester Hawes requested the Park and Forest Commission for authority to permit public hunting and fishing on the State Forests. In 1925 Senator Frederic C. Walcott, then Chairman of the State Board of Fisheries and Game, proposed a policy of forest acquisition which would provide not only for the growing of timber but for hunting and fishing as well. This program was favorably received by the Park and Forest Commission and resulted in the establishment of a joint commission called the Commission of Forests and Wild Life. The major purpose of this new commission was to acquire land for State Forests and for public hunting and fishing. At this time it was decided that an adequate State Forest system should consist of 200,000 acres of land to be acquired within the boundaries of definite purchase areas. Professor H. H. Chapman prepared standards for purchase which are basically unchanged to date. To implement the work of the new Commission, the Legislature appropriated $150,000 for the purchase of State Forests at a price not to exceed $10 per acre and at the same time, in recognition of the loss of local taxes, a law was passed to enable the State to pay to the towns, a grant in lieu of taxes on the State Forest lands. Elliott P. Bronson of Winchester was employed as the Field Agent and under his skillful and able direction, the program moved forward rapidly and within the next four years the total acreage of the State Forests exceeded 50,000 acres. Then came the depressing Thirties and funds for acquisition ceased, not to be renewed again until 1939 when $50,000 was made available for the purchase of State Forest land.

In 1943 the Commission on Forests and Wild Life received the largest appropriation in the history of the acquisition program when $400,000 was voted by a special act of the Assembly. To a large degree this appropriation was the result of pressure from Connecticut sportsmen who recognized that the future of public hunting and fishing depended on State–owned land. At present there is slightly more than 100,000 acres of land under the administration of the State Forester. Throughout the forty year acquisition history the movement has been guided by the continuous and intelligent effort of the Commissioners who have served their State without consideration, either financial or political. To these men and to the public spirited friends of the State Forests, who have contributed by gift of land and money, the people who love Connecticut's out-of-doors are forever indebted.

CT's Environmental Conservation Police Officers:

More than just 'Game Wardens'

Written by Colonel Kyle Overturf, EnCon Police Division

Connecticut's Environmental Conservation (EnCon) Police Officers are appointed by the DEP Commissioner to enforce the state's fish and game, boating, recreational vehicle, and park and forest laws and regulations, as well as a majority of the state's motor vehicle and criminal laws and regulations. These officers also are appointed by the Commissioner of the Department of Public Safety with full police powers on all DEP-owned and managed lands and facilities. These dual appointments require that all EnCon Police Officers attend the Connecticut Police Officer Standards and Training Council Academy. These appointments mandate that each officer receive specialized training in such areas as natural resource protection, wildlife and plant identification, vessel and recreational vehicle operation, boating safety, commercial fisheries, shell fishing, wildlife management, tranquilizing large animals, boating accident investigation, and hunting-related shooting investigations, in addition to the statutory training that all police officers are required to have.

Connecticut EnCon Police Officers not only have the responsibility of enforcing Connecticut's fish and game laws and regulations, but are also Deputy Special Agents of the U.S. Fish and Wildlife Service and National Marine Fisheries Service and, as such, may also enforce U.S. Federal Codes concerning the taking of fish and wildlife. Their duties in fish and game enforcement include a wide range of activities from checking sporting and commercial licenses, tags and permits to undercover assignments investigating suspected violations of fish and game laws.

The purpose of enforcing fish and game laws is to ensure that the state's wildlife populations are not harvested in excess or illegally exploited for commercial gain. Excessive harvesting or exploitation of a species can lead to an overall decline of the resource. Through the enforcement of fish and game laws and regulations, EnCon Police Officers help to maintain sustainable populations of wildlife species for future generations to enjoy.

EnCon Police Officers have a long tradition of enforcing the state's fish and game laws, starting in 1895. In that year, the Commissioner of Fish and Game was created by statute. The Commissioner had the power to appoint "special protectors" who could serve anywhere in the state. They were the predecessors of state-appointed game wardens, now known as State Environmental Conservation Police Officers. At present, 52 EnCon Police Officers patrol Connecticut.

DEP ENCON POLICE DIVISION (2)

EnCon Police Officer Bernier at a training session on how to handle exotic species.

EnCon Police Officer Concepcion with a tranquilized black bear.

Four Peregrine Chicks Banded at Travelers Tower in Hartford

Those who are familiar with the Peregrine Watch at Travelers Tower web cam (www.falconcam.travelers.com) had the opportunity to watch the resident peregrine falcon pair tend to their nest this past spring. The female falcon and her male attendant are the same ones that have occupied the nest tray since 2007, successfully producing chicks every year (except in 2008 when there was no nesting attempt at the location). Leg bands on the two adults indicate that the female is from Massachusetts and the male (Goldeneye) comes from St. Paul, Minnesota.

This year, the peregrine pair was seen preparing the tray for nesting around March 16 and the female began incubating the first egg on March 21. Four eggs were laid by March 29. After almost a month of incubating, the first chick hatched on April 28, followed by the others on or around May 1. Web cam watchers then had the opportunity to watch the pair care for their young, feeding them and keeping them warm during the fluctuating spring weather.

On May 20, a team from the DEP, which included Wildlife Division biologists Julie Victoria and Jenny Dickson, placed leg bands on the four healthy chicks, two males and two females. The letters and numbers on the colored U.S. Fish and Wildlife Service bands can be identified through a spotting scope, which helps biologists track the movements of these young peregrines after they leave the area.

P. J. FUSCO

A leg band is placed on one of four peregrine falcon chicks hatched on the Travelers Tower in Hartford. Two males and two females fledged from the nest.

The peregrine nest, known as an aerie, is on the 21st floor of the Travelers Tower in downtown Hartford. The nesting tray, which was first installed in 1984 and then replaced in 2001, is on a ledge of the tower that overlooks Constitution Plaza and the Connecticut River. In 1997, the first peregrines to nest on the tower since the late 1940s were "Amelia" and an unidentified male attendant. Amelia was captive bred (in Minnesota) and brought to Rochester, New York, in 1994 where she was raised to fledging and released through hacking.

In 2000, the Peregrine Watch at Travelers Tower web cam was launched, the first of its kind at that time in Connecticut. Now in its eleventh year, the web cam has enabled teachers, students, and wildlife watchers to see and learn about the life cycle and habits of this state threatened species. When the web cam was first established, only two pairs of peregrine falcons were nesting in Connecticut – the Travelers Tower pair and a pair in Bridgeport. Currently, in 2011, 13 pairs of peregrine falcons attempted to nest throughout the state.

The Peregrine Watch at Travelers Tower web cam (www.falconcam.travelers.com) is made possible through a partnership among The Children's Museum, the DEP, and Travelers.

Update on Nesting Bald Eagles and Peregrine Falcons

The Wildlife Division and several dedicated volunteers monitored the nesting activities of bald eagles and peregrine falcons throughout the spring and summer. Twenty-three pairs of the state threatened bald eagle were present in Connecticut; two were territorial and 21 were active. Of the 21 active nests, three pairs failed to produce chicks and 18 pairs fledged a total of 29 chicks. Due to inaccessibility or safety concerns about the nest tree, only five chicks in four nests were handled by Wildlife Division biologists and fitted with leg bands.

Thirteen active pairs of the state threatened peregrine falcon were present in the state this year, although two pairs failed to nest successfully. Biologists were able to access nine nests to document 25 chicks.

Connecticut Bald Eagle Nests

New Haven County – 3 active pairs; 5 chicks fledged

Hartford County – 1 territorial pair; 6 active pairs; 1 pair failed; 8 chicks fledged

Middlesex County – 3 active pairs; 1 pair failed; 3 chicks fledged

New London County – 4 active pairs; 7 chicks fledged

Litchfield County – 4 active pairs; 1 pair failed; 5 chicks fledged

Tolland County – 1 housekeeping attempt

Fairfield County – 1 active pair; 1 chick fledged

Trout Parks Offer Family Friendly Fishing Opportunities

Written by Neal Hagstrom, DEP Inland Fisheries Division

Would you like to know about a perfect place to take your children or grandchildren fishing for the first time? Or, maybe you just want to go to a place where you have a really good chance of catching a trout? One of the DEP's 11 Trout Parks may be the place to go. Trout Parks are a pond or river section with a family friendly environment. They all are located in state or town parks, which usually have picnic tables and bathrooms facilities — items all high on the list of requirements for a family outing. The landscaped nature of most parks ensures safe, easy shoreline access for children, seniors, and persons of limited mobility.

But, having a good family friendly environment isn't enough. You have to catch fish! At the Trout Parks, we've tipped the odds in your favor. To accomplish this, the DEP stocks large numbers of trout into the ponds or river within the Trout Park before Opening Day and once every seven to 10 days until Memorial Day. A mixture of brown, brook, rainbow, and even tiger trout make up the stockings. As a bonus for a few lucky anglers, about a dozen larger trout (2-10 lbs.) are mixed into these stockings.

The fish stockings and regulations for the Trout Parks are designed to ensure that novice anglers can catch fish. We want every new angler to love fishing, and there is no better way to get them hooked on fishing than a great first day. On a typical Connecticut trout stream, only 50% of the fishermen catch a trout on any given day and most of those fish are caught by the more skilled anglers. Typically, 75% of people, regardless of skill level, will catch at least one fish each day of fishing at a Trout Park. Odds are, if you take a kid fishing at a Trout Park, one of you will hook a fish – you just have be prepared to hand off your rod to the rookie.

Anglers are more successful at Trout Parks because there is a reduced creel limit of two-fish per day. Fish also are stocked frequently and with a large proportion of rainbows and brook trout, which are twice as easy to catch as brown trout. By stocking every seven to 10 days, catch rates are kept up so that typically there are no days when the waters are fished out. This ensures good fishing all spring, not just on Opening Day. The two-fish per day creel limit spreads the catch around among more anglers and discourages any one angler from taking too many, leaving more for the next angler.

N. HAGSTROM, DEP INLAND FISHERIES

The DEP's 11 Trout Parks are family friendly and offer kids and novice anglers a good chance at catching a fish.

An Opening Day tradition has developed at selected Trout Parks across the state. At eight of the 11 Trout Parks, the DEP stocking trucks arrive in mid-morning of Opening Day to stock fish. Any children that are present are encouraged to help put fish in the ponds. This has been a big hit with both the parents and kids. There is nothing better than kids, buckets of water, and fish. So, on Opening Day next year, get to a Trout Park early to catch a few fish, then hang around to help us restock the pond.

Connecticut Trout Parks Stocked for Opening Day

All sites are stocked prior to Opening Day and often during the spring fishing season.

- **Black Rock State Park, Watertown**
- **Chatfield Hollow State Park, Killingworth**
- **Southford Falls State Park, Oxford**
- **Stratton Brook State Park, Simsbury**
- **Wharton Brook State Park, Wallingford**
- **Wolfe Park, Monroe**
- **Valley Falls Pond, Vernon**

Other Trout Parks:

- **Day Pond, Colchester**
- **Kent Falls State Park, Kent**
- **Natchaug River, Eastford**
- **Spaulding Pond, Norwich**

Pictorial Guide to Freshwater Fishes of Connecticut

This new 242-page guide to the fishes of Connecticut is the first to present multiple, high resolution, full-color photos of most New England and all Connecticut freshwater fish species. This easy-to-read book contains detailed information for each fish species on identification, distribution, size, abundance, habits, and how to observe and catch them. It will appeal not only to anglers, nature lovers, and teachers, but also to scientists and the general public. The book is available for $19.95 (plus tax and shipping/handling) from the DEP Store (www.ct.gov/dep/store, or 860-424-3555).

2011 Year of the Turtle: *Keep Wild Turtles Wild*

Turtles are a common sight during the spring and early summer nesting season. They cross roads in search of nest sites, come into yards to dig their nests and lay eggs, and bask in the warm sun. If you come across a turtle, especially one in your yard or crossing a road, you may be tempted to take it as a pet. However, you should NOT. The Wildlife Division cautions that turtles should be left in the wild, both for your own good and the good of the turtle.

P. J. FUSCO

Removing individual turtles from the wild, including hatchlings (like this painted turtle hatchling), can have a huge impact on the local population. Turtle populations require high levels of survivorship -- every individual is important to the population's stability.

Removing individual turtles from the wild, including hatchlings, can have a huge impact on the local population. Turtle populations require high levels of survivorship -- every individual is important to the population's stability. A turtle must live for many years and reproduce numerous times in order to replace itself in the population. Losing adult turtles, particularly adult females, is a serious problem that can lead to the eventual local extinction of a population.

Keep in mind that caring for a pet turtle is not as easy as you may think. They require specific temperatures, diets, and lighting for digestion and shell health. Cages must be kept clean as turtles can carry salmonella. And, turtles live a long time – 50 to 100 years for a box turtle.

Once the novelty of having a turtle as a pet wears off, the owner is faced with a decision of what to do with it. Captive turtles, whether they were collected from the wild or bought at a pet store, should never be released to the wild. Released turtles rarely survive, frequently introduce undetectable respiratory diseases to wild populations, and in the case of non-native species, may harm native turtle populations. The best way to enjoy turtles is to watch them in their native habitat. Help keep wild turtles wild and leave them where you find them.

For more information about turtles and turtle conservation in Connecticut, visit the DEP's "Year of the Turtle" Web page at www.ct.gov/dep/yearoftturtle,. You also can visit the Partners in Amphibian and Reptile Conservation's (PARC) Web site at www.yearofthetturtle.org.

Turtle Q&A

Q: What should I do if I find an injured turtle?

A: The most common causes of turtle injuries (most often resulting in death) are strikes by vehicles and lawn mowers. Turtles with minor injuries, such as damage to the outer rim of the shell, should be left where they were found. Turtles are resilient and should recover from most minor injuries. Major injuries, such as a large open wound or cracked shell, need care from a wildlife rehabilitator or veterinarian. The Wildlife Division maintains a list of volunteer wildlife rehabilitators who care for reptiles and amphibians. The list can be obtained from the DEP Web site at www.ct.gov/dep/wildlife (click on "Nuisance/Distressed Wildlife"), or by calling the Division's Hartford office at 860-424-3011.

"Top 25 Turtles in Trouble" Interactive Flip Cards Now Available

In February 2011, the Turtle Conservation Coalition released the report "Turtles in Trouble: The World's 25+ Most Endangered Tortoises and Freshwater Turtles." A set of online informational flip cards was recently released that focus on the Top 25 species in the report. You will find a photo of each species on the front of these interactive cards, and an overview of the species' status, global distribution, and information on the threats to each species on the reverse side. These cards may be accessed on the Partners in Amphibian and Reptile Conservation (PARC) Web site at parcplace.org/YOT_flip_cards/index.html.

The first place winning entries in the Turtle Art Contest for Kids will be featured in the September/October issue of Connecticut Wildlife.

Painted Turtle

Chrysemys picta picta.

P. J. FUSCO

Description

Painted turtles are commonly found around quiet bodies of water. These brightly colored turtles gain their name from colorful markings along the head, neck, and shell. They often can be observed basking on logs and rocks around a body of water and will quickly scoot into water if threatened or disturbed.

The medium-sized painted turtle can be distinguished by its dark shell, which has olive lines running across the carapace (upper shell), dividing the large scutes (scales). The margin of both the carapace and plastron (bottom shell) have black and red markings. The head, neck, and limbs have yellow stripes. The plastron is typically yellow, but may be stained a rust/red color. Males can be distinguished from females by their long front claws, long tail, and smaller size. The carapace of adults usually measures from 4.5 to six inches in length.

Range

The painted turtle is the most widely distributed North American turtle, and the only one with a range across the entire continent. This species ranges from coast to coast through the northern United States and southern Canada, south to the Gulf of Mexico from Louisiana to southwestern Alabama.

The painted turtle is Connecticut's most numerous turtle species. There are four subspecies of painted turtles in the United States. Two subspecies, the eastern painted turtle (*Chrysemys picta picta*) and the midland painted turtle (*Chrysemys picta marginata*), are closely related. As subspecies, they can and do interbreed to produce offspring known as "intergrades." While Connecticut is home to only one – the eastern painted turtle – intergrades do occur throughout the state, probably as remnants from the retreating glaciers, but are more prevalent west of the Connecticut River.

Life History

The breeding period for painted turtles is from March to mid-June, with peak breeding time in April. Males perform an elaborate mating ritual. They face the females and wave their long front claws. After breeding, the females will leave the water to dig a nest to deposit their eggs. Eggs are laid sometime between May and July. The nest is usually within a few yards of water, but may be up to a half mile away. Females may travel significant distances, crossing roads, to find optimal nesting sites. The nest is a flask-shaped cavity in the ground. After the eggs (2 to 11, but typically 5 to 6) are deposited, they are covered with layers of soil and left to develop on their own. Females may lay two clutches per year. The incubation period is 72 to 80 days.

The sex of the young is determined by the temperature of the nest; cooler temperatures favor males, warmer temperatures favor females. The hatching period is late August to early September. Young turtles from late clutches may overwinter in the nest, emerging in spring. After emerging from the nest, the young instinctively seek out the security of water.

Nests are often preyed upon by raccoons and skunks. Sometimes 90% or more of turtle nests are lost to predators. The young also are taken by raccoons, skunks, foxes, herons, other birds, snakes, and large predaceous fish. The adults are rarely taken by predators.

Painted turtles are thought to live between 20 to 40 years and reach sexual maturity at approximately 10 years of age.

Habitat and Diet

Primarily aquatic, painted turtles inhabit quiet shallow pools, rivers, lake shores, wet meadows, bogs, and slow-moving streams. They prefer pools with suitable basking sites and a soft, muddy bottom that is rich in aquatic vegetation. The turtles are commonly observed basking on rocks and logs, even on top of one another. Opportunistic, painted turtles can be found in brackish tidal waters and salt marshes. The turtles spend the winter hibernating in mud or decayed vegetation on pond bottoms, emerging earlier than other turtles, typically in March. This omnivorous turtle feeds only under water on aquatic plants, aquatic insects, crayfish, snails, small fish, tadpoles, mussels, and carrion.

Conservation Concerns

Being hit by vehicles while crossing roads is a significant source of mortality to this species. The turtles crossing roads are often gravid (pregnant) females searching for nesting sites.

There is concern that native painted turtles are facing competition for food and basking sites from non-native red-eared sliders (*Trachemys scripta elegans*) that have been released into the wild by pet owners who no longer want to care for these exotic pets.

Spotted Turtle

Clemmys guttata

P. J. FUSCO

Description

The spotted turtle is characterized by a smooth, bluish-black carapace (top shell) with yellow-orange spots. The carapace is made up of a combination of scales (scutes) and bones, and it includes the ribs and much of the backbone. This turtle is sometimes referred to as the "polka-dot turtle," as the number of spots can range from a single dot to multiple dots per scute. The plastron (bottom shell) is yellowish-tan with dark markings. The sides of the head and chin are often marked with reddish-orange to yellow blotches, and the forearms may also be bright orange.

Spotted turtles are small, only growing to about 4.5 inches in length and weighing between one half to three-quarter pounds. Males are distinguished by a tan chin, brown eyes, concave plastron, and a longer, thicker tail. Females have a more domed shell, yellow chin, and orange eyes. Hatchling spotted turtles are one to 1.5 inches long when born.

Range

The spotted turtle has a somewhat disjunct range in North America. It occupies the eastern portion of the Great Lakes region from Ontario south to Illinois and west to Michigan. It also is found along the eastern seaboard from southern Maine south to Florida.

Habitat and Diet

Spotted turtles are found throughout the Connecticut lowlands, close to slow-moving bodies of water. They use shallow water bodies, including unpolluted bogs, pond edges, ditches, marshes, fens, vernal pools, red maple swamps, and slow-moving streams. Water bodies with a soft, murky bottom and abundant aquatic vegetation are preferred. Spotted turtles will seek out other wetlands if their habitat becomes unsuitable. Upland habitats also are used for nesting, aestivating, and travel corridors between wetlands.

The spotted turtle is omnivorous, feeding on aquatic plants, small fish, snails, worms, slugs, spiders, tadpoles, and small crustaceans. Interestingly, this species will only feed under water.

Life History

Spotted turtles emerge from hibernation in early spring, usually in March, and begin looking for mates. After breeding, the females leave the breeding pools in search of nesting areas. They may travel a good distance and, in many instances, are killed when crossing roads. Preferred nesting sites are generally located in open, upland habitats, such as a meadow, field, or the edge of a road. The female digs a nest cavity with her hind legs and feet, and then lays about three to four eggs. She covers the eggs with soil, smoothing it over by dragging her body over the ground. The eggs hatch in mid-September through October, but some hatchlings may overwinter in the nest and surface the following spring. Sex of the hatchlings is determined by the temperature and humidity of the nest.

Due to this turtle's small size, predation is high, especially for hatchlings. Mammals, such as raccoons and muskrats, often prey on spotted turtles, as do some birds and predaceous fish. Spotted turtles are thought to live 25 to 50 years and reach sexual maturity at eight to 10 years of age.

Spotted turtles are active only during daylight, and spend the night under water on the pond bottom. They are often seen basking on logs or rocks during spring and summer, but may retreat to an aquatic or terrestrial spot (under the leaf litter) when there is intense heat. This summer "hibernation" is called aestivation.

Conservation Concerns

The spotted turtle is not a state-listed species but is recognized by experts as declining in Connecticut. The isolation and decline of populations are attributed to collection for the pet trade industry; the alteration, loss, and fragmentation of habitat; habitat succession; road mortality; and predation. Relatively low reproductive rates, coupled with the above-mentioned threats, make spotted turtles extremely susceptible to population declines. They are sensitive to pollution and toxic substances, and will disappear rapidly from habitats with declining water quality.

Mortality associated with crossing roads is especially problematic given that the turtles that cross roads are often pregnant females in search of a nesting site.

Every individual turtle collected from the wild to become a pet has a profound effect because each turtle removed is no longer able to be a reproducing member of that population.

Second Place in Nationals for CT Junior Duck Stamp Artist

Every year, the Connecticut Waterfowlers Association (CWA) sponsors the Junior Duck Stamp competition for young Connecticut artists. Members of CWA judged over 125 entries received this year in four groups from kindergarten through grade 12 and chose, as Best of Show, an oil on canvas painting of a drake lesser scaup by 17-year-old Matthew Messina, of Avon. As a student of well-known wildlife artist Kathy Goff, Matthew has been studying drawing, painting, and sculpting animals and birds at the Farmington Valley Arts Center in Avon. His painting took first place in Group IV, which includes students in grades 10-12. Matthew's painting was sent to the U.S. Fish and Wildlife Service to compete in the 2011 Junior Duck Stamp Art Contest, and it was awarded with second place in the national competition.

Matthew has created winning entries for the Connecticut Junior Duck Stamp Program for the past two years. He chose to paint the lesser scaup for his Duck Stamp entry this year because of its expression and pattern. A beautifully mounted scaup was used as a model for Matthew's painting. He plans to study ecology, wildlife conservation, and the arts in college.

The Connecticut Waterfowlers Association presented Matthew with a framed 2006 Junior Duck Stamp print at the CWA Annual Spring Dinner to recognize his accomplishment. Congratulations to Matthew on his achievement, and to all of the Connecticut junior artists who participated in the Connecticut Junior Duck Stamp Competition.

Thank you to Kathy Goff for contributing to this article.

What Is the Junior Duck Stamp Program?

The Junior Duck Stamp Program exposes hundreds of thousands of youth each year to wetlands, National Wildlife Refuges, and art concepts. The Junior Duck Stamp Conservation and Design Program is a dynamic art and science program designed to teach wetlands habitat and waterfowl conservation to students in kindergarten through high school and help reconnect youth with the outdoors. The program guides students, using scientific and wildlife observation principles, to communicate visually what they have learned through an entry into the Junior Duck Stamp art contest.

The first place design from the national contest is used to create a Junior Duck Stamp for the following year. Junior Duck Stamps are sold by the U.S. Postal Service for $5 each. Proceeds support conservation education and provide awards and scholarships for the students, teachers, and schools that participate in the program.

More information about the Junior Duck Stamp Program is on the U.S. Fish and Wildlife Service Web site at www.fws.gov.

The Wildlife Observer

Do you have an interesting wildlife observation to report?

Please send your story with photos to:

Wildlife Observations, DEP Wildlife, P.O. Box 1550, Burlington, CT 06013, or e-mail: dep.ctwildlife@ct.gov

Paul Natoli, from New Milford, sent in a photograph of five bluebird chicks that hatched in a backyard bluebird nest box in early May. Paul wrote: *"As a project during this long winter, I built this nestbox with my children (5 and 3 years old). During late winter, we put the nest box in our yard and it did not take long for bluebirds to start building the nest. To keep my kids involved with the progress, we would check on the nest every other day. I feel it is important to remind parents to keep their kids involved with nature instead of sitting in front of a TV or playing video games. I see many kids today that don't have a clue about nature and wildlife and/or do not appreciate it. Thanks for the good work that you do."*

FROM THE FIELD

20th Annual CT Envirothon Competition at Rocky Neck State Park

The morning started out cloudy and rainy, but the sun broke through during the afternoon as the 20th Annual Connecticut Envirothon competition took place on May 19, 2011, at Rocky Neck State Park in East Lyme. Forty-three teams representing 28 high schools and one home school registered for the event. Teams, which were comprised of five students each, took exams in five environmental subjects, including wildlife, forestry, soils, aquatics, and a current issue (coastal marshes and estuaries). The team with the highest cumulative test scores in the five subject areas wins first place standing.

The Envirothon Team from Housatonic Valley Agriscience earned first place in the 2011 Envirothon competition.

Teams arrived early in the morning at the Rocky Neck State Park pavilion and the competition started promptly at 8:00 AM. Teams walked to five different testing stations scattered throughout the park where they took written and practical tests at four of the stations and gave an oral presentation at the "current issue" station.

The team from Housatonic Valley Agriscience finished in first place this year. Housatonic Valley Regional High School placed second, while Litchfield High School placed third.

Peter Picone, DEP Wildlife Division (Chair of the wildlife station for 19 of the 20 years of the Connecticut Envirothon.)

Connecticut Hunting & Fishing Appreciation Day

September 24, 2011, is Connecticut Hunting & Fishing Appreciation Day at Sessions Woods Wildlife Management Area in Burlington. This free event, which is sponsored by the Friends of Sessions Woods and the Wildlife Division, celebrates the contributions of hunters and anglers to the conservation of Connecticut's natural resources. Fun activities for all ages are planned, along with educational programs and workshops about hunting and fishing. Anyone interested in fish and wildlife, not just hunting and fishing, is encouraged to attend this fun and informative event. Best of all, it is free to attend!

So, mark your calendar. Come practice your shooting and casting skills. Talk to DEP biologists about wildlife and fisheries. Learn some tips about getting that big buck or hooking that monster bass. Be sure to bring the kids and grandkids. Older children will be able to test their skills on the rifle and archery ranges and perhaps win some prizes. Younger children will be able to enjoy playing games, learning about wildlife, and making crafts. Food will be available for sale. But, if you want, bring your own lunch to enjoy. Activities will begin at 10:00 AM and continue throughout the day until 4:00 PM.

A list of specific activities and presentations, as well as a schedule for the day, will be posted on the DEP Web site at www.ct.gov/dep/HuntFishDay as the date approaches. You may also contact the Sessions Woods office at 860-675-8130 (Mon.-Fri., 8:30 AM-4:30 PM) for more information. The Sessions Woods Wildlife Management Area is located at 341 Milford Street (Route 69), in Burlington.

Subscribe to DEP's Free E-newsletters

The DEP launched two free electronic newsletters in April 2011 for the business community and municipal officials. Subscribers to *Your Business and the Environment* and *Your Local Environment* will receive updates on new policies, programs, regulations and laws, grants and funding opportunities, and "success stories," among other topics.

The DEP also publishes several other E-newsletters, such as *Sound Outlook* (Long Island Sound topics and issues), *P2 View* (pollution prevention), and *The Torrent* (floodplain management).

If you are interested in receiving any of these newsletters electronically, go to www.ct.gov/dep/newslettersubscription to sign up. You will **only** be sent the newsletters you sign up for and you can unsubscribe at any time.

Wildlife Division Staff Notes

Besides the retirement of biologist Julie Victoria in July (see page 10), the Wildlife Division also has said good-bye to three other staff members.

Wildlife technician Carrie Pomfrey, who worked on the Beaver and Deer Damage Programs, moved back to her home state of Virginia to work as wildlife biologist at Fort A.P. Hill in Virginia. Fort A.P. Hill which is located east of Fredericksburg, about half way between Washington D.C. and Richmond, has 76,000 acres of land primarily used for military training. Carrie is involved with wildlife habitat management of the property and is working on several wildlife research projects.

Wildlife technician Christina Kocer, who worked with small mammals and bats, is now the White-nose Syndrome National Assistant Coordinator with the U.S. Fish and Wildlife Service in Hadley, Massachusetts. She is assisting the National Coordinator in facilitating the activities of a multi-agency white-nose syndrome (WNS) investigation. WNS is a disease that is responsible for the unprecedented die-off of over one million bats throughout the eastern region of North America since its discovery in 2007. The disease is rapidly spreading west.

Clerk Lauren Pasniewski, who worked for the Conservation Education/Firearms Safety (CE/FS) Program at the Division's Sessions Woods office, took a new position with Massachusetts Audubon. Lauren had worked closely with the volunteer CE/FS instructors, ensuring that class supplies were available and students received their hunting safety certificates.

Their colleagues at the Wildlife Division wish them well in their new career endeavors.

Calendar of Events

May-August..... Respect fenced and posted shorebird nesting areas when visiting Connecticut beaches. Also, keep dogs and cats off shoreline 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.

..... Dispose of fishing line in covered trash containers or specifically marked recycling receptacles. Improperly discarded fishing line is a hazard for wildlife. A list of recycling receptacle locations is available at www.ct.gov/dep/whatdoidowith.

Aug. 13-14 ..... **44th Annual Sharon Audubon Festival**, at the Sharon Audubon Center, located on Route 4 in Sharon. The festival features two days of various nature programs and hikes throughout the Audubon property, live animal presentations, musical performances, vendors, food, and more. Gates are open from 9:30 AM-5:30 PM, and admission will be charged. For more information, contact the Audubon Center at 860-364-0520 or www.sharon.audubon.org.

September..... Report use of bluebird nest boxes by sending in a Bluebird Nest Box Survey card to the Wildlife Division. Cards are available by calling 860-675-8130.

Sept. 24 ..... 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. 6 ..... **Dragonfly Walk**, starting at 1:00 PM. Join Master Wildlife Conservationists Carol and Henry Perrault for an exciting look into the world of dragonflies. Henry and Carol will introduce participants to dragonfly natural history and identification in this two-mile round trip visit to the beaver marsh at Sessions Woods.

Sept. 24 ..... **Connecticut Hunting & Appreciation Fishing Day**. See page 22 for more information.

Great Park Pursuit Outdoor Recreation Challenge Family Days

The DEP is hosting a series of Great Park Pursuit Outdoor Recreation Challenge Family Days, which are themed around various outdoor recreational activities. Go to www.nochildleftinside.org to learn more about the Challenge.

Aug. 13 ..... **Family Swimming Day** from 9:00 AM – 3:00 PM. Check the Web site (www.nochildleftinside.org) to find out the location.

Sept. 10-11 ..... **Family Camping Day.** Check the Web site (www.nochildleftinside.org) to find out the location.

Oct. 8 ..... **Family Biking Day** from 9:00 AM – 3:00 PM. Check the Web site (www.nochildleftinside.org) to find out the location.

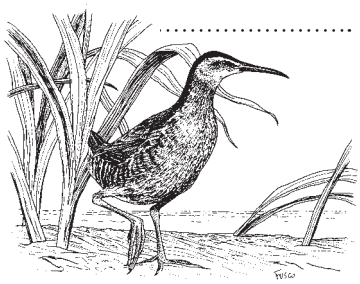
Hunting and Fishing Season Dates

Sept. 1-30 ..... Early squirrel season.

Sept. 15-Nov. 15 ..... First portion of the deer and turkey bowhunting season on state land (season extends until Dec. 31 on State Land Bowhunting Only Areas).

Sept. 15-Dec.31..... Deer and turkey bowhunting season on private land (private land bowhunters in deer management zones 11 & 12 may hunt deer until January 31, 2012).

..... Consult the 2011 Connecticut Hunting and Trapping Guide and 2011 Angler's Guide for specific season dates and details. Printed guides are available at more than 350 locations statewide -- including town halls, bait and tackle shops, DEP facilities, and commercial marinas and campgrounds. The guides also are available on the DEP Web site (www.ct.gov/dep/hunting or www.ct.gov/dep/fishing). Go to www.ct.gov/dep/sportsmenlicensing to purchase Connecticut hunting, trapping, and fishing licenses. The system accepts payment by VISA or MasterCard.



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P. J. FUSCO

This red-throated loon was found in Guilford with fishing tackle entangled around its body. Unfortunately, it could not be caught to remove the fishing line, and its fate remains unknown. Don't let this happen to our wildlife. Proper disposal of fishing line, hooks, and lures will prevent this from happening again.