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Connecticut Wildlife

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BUREAU OF NATURAL RESOURCES ● WILDLIFE DIVISION

2002
The Year in Review

see page 3

From the Director

A portion of this issue of Connecticut Wildlife is devoted to a review of activities conducted in 2002. Certainly, the highlight of the year was the opportunity to initiate many new projects under a grant from the federal Wildlife Conservation and Restoration Program (WCRP). Given the fact that all of the WCRP projects were initiated without any new permanent staff, it was a challenge to get these projects underway while maintaining our traditional programs. However, thanks to outstanding contributions from seasonal workers, contract personnel, and volunteers, coupled with oversight and direct participation by our permanent staff, a great deal of important and exciting work was accomplished in 2002.

*While many of the WCRP projects will continue into 2003, the Wildlife Division will be evaluating additional opportunities as they arise. Two new federal programs, the Landowner Incentive Program (**LIP**) and State Wildlife Grants (**SWG**) provide federal funds on a cost-share basis to the states. **LIP**, if developed in concert with the Natural Resource Conservation Service's (NRCS) Farm Bill programs and the U.S. Fish and Wildlife Service's (USFWS) Partners In Wildlife program, would provide DEP-administered planning and technical assistance to implement wildlife management on private lands. Because private citizens own the vast majority of Connecticut's landscape, an incentive-based private lands program is critical to preserving the State's biodiversity.*

*Like WCRP, the **SWG** program would direct funding to species and habitats with the greatest conservation need. One of the first projects to be implemented under SWG will be the development of a statewide wildlife conservation plan. The plan must be approved by USFWS as a condition of receiving funding through WCRP and SWG. The development of the wildlife conservation plan will take approximately one year and will include an evaluation of all existing natural resources data and the identification of conservation goals, objectives, strategies and priorities.*

The new federal funding opportunities (WCRP, LIP, SWG) are the result of nearly two decades of campaigning on behalf of the conservation community seeking to establish a permanent and predictable funding base for comprehensive wildlife conservation. Because these programs have been developed as federal/state partnerships, the states are required to provide a financial match as a condition of receiving federal funds. The ability of the states to take advantage of these programs will largely depend upon each state's ability and willingness to provide the required matching funds.

It is an unfortunate coincidence that this long awaited federal support has materialized at a time when many states are dealing with budget deficits. However, the state match requirements are very reasonable and the long-term health of our wildlife is at stake. Hopefully, Connecticut will be able to make full use of these vitally important programs. --Dale W. May

Cover:

Wildlife Division research assistants Mark Freeman (in the bear trap) and Henri Woods II have been busy trapping black bears and marking them with ear tags as part of a black bear research project (see next page for more information).

Photo by Paul J. Fusco

Connecticut Wildlife

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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. Each issue of Connecticut Wildlife *contains articles reporting on Wildlife Division projects funded entirely or in part with federal aid monies.*

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Year in Review 2002

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION - BUREAU OF NATURAL RESOURCES - WILDLIFE DIVISION

2002 was a busy year for the DEP Wildlife Division, thanks in part to a one-time federal grant through the Wildlife Conservation and Restoration Program (WCRP). This grant enabled the Division to undertake 21 new, two-year projects that cover research, habitat enhancement, wildlife outreach and recreation.

WCRP Projects Take Center Stage

Black Bears: The Black Bear Project was initiated to provide a more accurate estimate of how many bears reside in the state. From April to December, Division staff set out baited traps to capture black bears. Trapping will resume again in April 2003. In 2002, 25 bears were live-trapped and tagged with coded ear tags, and seven females were fitted with radio-collars. Radio telemetry equipment is being used to track the movements of the collared bears and to determine if any of the females give birth over the winter.

Cottontail Rabbits: The second year of the New England and eastern cottontail distribution study was completed. Over 500 specimens from 97 towns were collected and identified. The New England cottontail, a species of special concern, was documented from 20 towns. A radio-telemetry study also was initiated to evaluate home range size, habitat use and mortality rates of both cottontail species.

Invertebrates: A project to conduct comprehensive natural resource inventories at Goshen and Babcock Pond Wildlife Management Areas involved surveys of butterflies during May to October.

Work continued on cooperative projects to develop a website for the identification of native dragonflies and damselflies, as well as a pocket guide to identify Connecticut's freshwater mussels. Both projects will be an asset to future field surveys of these invertebrates.

Horseshoe crab breeding areas were surveyed in April and May to document the importance of these areas to migrating shorebirds. Resulting information will enable biologists to better evaluate the potential impacts of changes in horseshoe crab harvest rates.

Birds: Two major bird surveys were conducted under the WCRP Program. The Migratory Bird Stopover Habitat Survey was conducted by Division staff and volunteers during the spring and fall bird migrations. Results from the survey should help the Division identify priority migration stopover sites and guide conservation efforts at state and local levels. Grassland birds were the focus of the second major survey. Division staff and volunteers visited a series of points for five minutes each in grassland/farmland areas during June and July and recorded all birds seen or heard. This survey is important for monitoring populations of grassland dependent birds, many of which are declining.

P. J. FUSCO

A live-trapped black bear is immobilized so that data can be collected by Wildlife Division research assistant Mark Freeman (left), wildlife biologist Paul Rego (center) and volunteer Heather Freeman.

Potential red-headed woodpecker habitat was surveyed to provide more information about the current status of this state endangered species.

Nesting herons and egrets were monitored closely at the Charles Island Natural Area Preserve in Long Island Sound near Milford. Despite educational signs, protective fencing and the seasonal closure of the nesting area, the birds were threatened by severe human disturbance this past season. Unfortunately, the DEP was forced to close off all public access to both Charles and Duck Islands (Westbrook) into September to protect these threatened and special concern species.

Recreation: Efforts to develop a Connecticut Coastal Birding Trail got off to a great start. Public meetings were held, a website (www.ctbirdingtrails.org) was developed and nominations for potential stops along the trail are being accepted. The birding trail will guide visitors to wildlife refuges, wildlife management areas, parks, historic sites, rivers, lakes and bike trails, where they can see some of the nearly 400 species of birds that visit or nest in Connecticut.

Education and Outreach: The Master Wildlife Conservationist Program was initiated to develop a corps of highly-trained Wildlife Division volunteers. The program series was offered twice to a total of 43 individuals. In the first three months, Master Wildlife Conservationists performed over 200 hours of volunteer service, assisting with Division outreach and research efforts. Many of these volunteers also served on town commissions and implemented local wildlife habitat enhancement projects.

The Division assisted nine urban schools in creating schoolyard butterfly and hummingbird gardens. Four wildlife demonstration gardens also were created in urban parks.

Five new exhibits on habitat and endangered species are currently in progress at the Division's Sessions Woods Conservation Education Center in Burlington.

The Division maintains a website (www.dep.state.ct.us/burnatr/wildlife) to provide the public with up-to-date information. New items added to the website included over 20 new wildlife stories, a database containing the names and specialties of licensed wildlife rehabilitators, a listing of volunteer opportunities, updated hunting regulations, downloadable permit applications and a black bear sighting report page.

The following four pages of the Year in Review 2002 *highlight the numerous other responsibilities and accomplishments of the Wildlife Division.*

Research/Monitoring

A project was initiated in Greenwich to develop management strategies for urban deer populations. It involved capturing, marking and radio-tracking 50 adult female deer, conducting surveys of hunters and residents and evaluating factors that contribute to deer-vehicle accidents. Partners in this project are the University of Connecticut and the Town of Greenwich.

Spotlight surveys were conducted in Groton and Greenwich to evaluate sex ratios and fawn recruitment rates in the deer population in those towns.

Biological data was collected at check stations during the deer shotgun seasons.

A four-year study to assess the growing resident Canada goose population was initiated.

Sixteen major inland impoundments (ponds or marshes) on state lands were surveyed to assess waterfowl use, vegetative composition and water quality. The study will continue for two years. Results will assist in the management of these impoundments.

A three-year monitoring program of the recently restored wetlands at the Roger Tory Peterson Wildlife Area in Old Lyme was initiated.

Bog turtle surveys were conducted at six locations. Equipment was provided to a study documenting the preferred habitat and den sites of northern copperhead snakes.

Locations of viable populations of Puritan tiger beetles were surveyed as part of a long-term study. For a third year, Puritan tiger beetle larvae were removed from one of Connecticut's largest populations and relocated to augment a declining population in Massachusetts. Breeding sites of the banded bog skimmer dragonfly were monitored and potential new sites were surveyed.

Nesting pairs of state and federally threatened piping plovers and state threatened least terns were monitored at coastal nesting areas.

Equipment was contributed by the Division to the long-term roseate tern project being conducted on Falkner Island, in Long Island Sound, and to a foraging fish survey being conducted along the Connecticut coastline where roseate terns feed.

Several bird surveys were conducted this year, including the breeding waterfowl and midwinter waterfowl surveys, summer swan survey, wetland bird call-back survey, woodcock/mourning dove surveys and grouse drumming counts. Dabbling ducks were live-trapped during summer and fitted with identifying leg bands. The annual Midwinter Bald Eagle survey was conducted in January.

Wildlife Division staff participated in BioBlitz 2002 at Mohegan Park in Norwich. The BioBlitz is an annual event coordinated by the Connecticut State Museum of Natural History. The event is based around an intensive 24-hour survey of an urban park where participates attempt to identify as many species as possible. Members of the Division's Wildlife Diversity Program surveyed for bats using fine-threaded nets called mist nets.

Population trends of black bear, bobcat and fisher were monitored through reports of sightings and roadkills. One-year sighting totals were the greatest for each species (622 bear, 153 bobcat and 101 fisher sighting reports). Record numbers of fisher (43) and bobcat (33) vehicle-kills were reported. Three bears were killed on state roadways.

Trappers were surveyed to estimate harvests of furbearer species, as well as to determine trapping activity levels, incidence of wildlife diseases and the use of trapping to address nuisance problems.

Pelts of furbearer species were tagged to determine harvest levels and related information. A record high number of beavers (1,224) were harvested during the 2001-2002 trapping season. Trapping activity on state lands was monitored by analyzing annual harvest reports. Permits (100) were issued for 56 of the 83 state land trapping units. Approximately 20 percent of the statewide harvest of furbearers originated on state land.

Carcasses of furbearers were collected from trappers and hunters or salvaged from vehicle kills. Carcasses of river otters (90) and coyotes (27) were examined for age and reproductive analysis. Coyote stomachs also were examined as part of a food habits investigation. Necropsies were performed on vehicle-killed bobcats (15) and fishers (30) to assess age, reproductive status and diet.

January

Every January, volunteers brave the cold to search for bald eagles wintering in Connecticut. All eagles seen at areas traditionally used by the birds and in areas of suitable habitat are counted in the annual survey. In 2002, 90 volunteers reported 54 bald eagles. This number is lower than the number of eagles counted in 2001 (77). Connecticut and states to the north had a mild winter last year and many eagles did not migrate very far south.

P. J. FUSCO

February

P. J. FUSCO

The Master Wildlife Conservationist Program was initiated, offering training to adults in wildlife management, conservation, ecology and interpretation. Volunteers agree to give back volunteer service by presenting programs at libraries and schools, assisting with Division research projects and implementing conservation programs in their home towns. In the first three months, Master Wildlife Conservationists performed over 200 hours of volunteer service.

March

Early successional stage habitats are rapidly declining in Connecticut. Management programs are essential in providing old field, grassland, shrubland and young forest habitats. Through the combined efforts of the DEP, the U.S. Fish and Wildlife Service and the USDA's Wildlife Habitat Incentives Program, 517 acres of early successional stage habitat were enhanced on wildlife management areas in 2002. Management techniques included prescribed burning, herbicide application, use of a brontosaurus (heavy-duty mower/mulching machine) and traditional brush mowing.

J. WARNER

Management

Tidal wetlands restoration was completed on 300 acres of the Roger Tory Peterson Wildlife Area at Great Island, in Old Lyme. This cooperative project included the herbiciding and mowing of 200 acres of *Phragmites*, the creation of 30 shallow ponds and pannes and the plugging of old mosquito grid ditches. The restoration project was made possible due to a grant from the North American Wetland Conservation Act.

Marsh management projects were initiated or completed in Stratford, East Haven and New Haven. Three hundred acres of coastal marshes across the state were treated with herbicide to control the invasive plant, *Phragmites*. The Hop River riparian restoration project was completed.

Mosquito control specialists inspected coastal state-owned properties for mosquitoes and treated breeding areas with larvacides throughout the summer. The Wetland Habitat and Mosquito Management Program assisted towns in establishing mosquito surveillance and control programs. Staff members met with public health officials to review local wetland sites and answer questions about mosquitoes.

A project to maintain and enhance wetlands on state properties involved the installation of water level control devices at 25 sites, affecting over 497 acres.

Two pairs of peregrine falcons (state endangered) nested in the state. One nest produced and fledged two chicks (which were banded by the Wildlife Division) and one nest failed. Two other peregrine pairs were in the state but did not actively nest.

Eight pairs of bald eagles (state endangered, federally threatened) attempted to nest in the state. Four nests produced and fledged seven chicks (which were banded by the Wildlife Division) and two nests failed. Two additional pairs built nests but did not lay eggs.

Bluebird nest boxes (85) located on state property were inspected and maintained. The wood duck nest box program was reorganized; 250 nest boxes were inspected and maintained.

The fifth year of a deer reduction program was implemented at the Bluff Point Coastal Reserve in Groton. The deer reduction program has decreased the overabundant deer population from 228 to 20 deer per square mile.

A controlled deer hunt was initiated on portions of Mansfield Hollow State Park, in Mansfield, to reduce impacts of deer on a unique plant community, which indirectly affected several rare and endangered invertebrates.

Annual controlled hunts were implemented on about 19,000 acres of privately-owned lands throughout the state in an effort to assist large landowners in controlling the deer population.

Recreation Management

Public access for small game hunting was secured through renewals or new agreements with eight landowners, totaling 630 acres.

During the fall hunting season, 18,935 adult ring-necked pheasants were released on 68 state-owned, permit-required and state-leased hunting areas. Cooperating sportsmen's clubs released pheasants at various public hunting areas.

A survey to assess the attitudes, opinions and preferences of public land pheasant hunters was completed as part of an ongoing evaluation of the pheasant stocking program. Approximately 60 percent of randomly selected hunters responded to the survey. Further evaluation of survey results should improve the pheasant stocking program.

A revised map series featuring all major hunting access areas was completed. The series will continue to be updated with newly acquired properties as they become available.

Signs and gates were installed and boundaries were marked at various wildlife management areas open to hunting, trapping and wildlife viewing.

The shooting range at the Franklin Wildlife facility, which is used by the Conservation Education/Firearms Safety Program, underwent several improvements: a 50-yard elevated shooting deck, a 100-yard shooting platform and an elevated archery shooting deck were constructed. In addition, new specialized trap machines for the range were purchased as part of this project.

A public bird viewing blind was constructed by volunteers at the Goshen Wildlife Management Area.

April

P. J. FUSCO (3)

The Wildlife Division initiated a WCRP-funded project to document the use of Connecticut's major river corridors as stopover habitat for spring and fall migratory birds. Migratory bird stopover surveys were conducted first in the spring and again in the fall of 2002. A total of 250 points were surveyed and all birds seen or heard during a 10-minute survey were recorded. The surveys will continue in 2003.

Other bird surveys that occurred in spring and early summer were grassland bird surveys, wetland bird call-back surveys and breeding waterfowl surveys.

May

A cooperative project to restore 300 acres of tidal wetlands at the Roger Tory Peterson Wildlife Area in Old Lyme was completed in 2002. A three-year monitoring program was then started at the wildlife area to assess bird use, vegetation recovery and water quality of the recently restored wetlands.

June

In the first year of a four-year study to assess the growing resident Canada goose population, DEP staff and volunteers captured 1,236 geese at 28 different sites throughout the state. Of those captured geese, 500 were fitted with yellow neck collars, with approximately 60 neck collars placed on geese in each of Connecticut's eight counties. The highly visible neck collars will allow biologists to assess movement patterns, survival rates and the population size of resident Canada geese.

Technical Assistance

DEP Wildlife Division staff spend a considerable amount of time responding to the continuous flood of requests for help in resolving wildlife problems and concerns. Many of these problems involve common wildlife that are well adapted to living near people, such as coyotes, foxes, geese, swans, deer, raccoons, squirrels, skunks, beavers and bats. Changes in wildlife populations over the years reflect the source of complaints and the number of calls the Division receives. For example, complaints about bears, coyotes and geese have increased dramatically in recent years as the populations of these animals have grown.

Division personnel provide information and guidance about recommended solutions and legal control methods for nuisance wildlife situations. For problems involving such animals as beavers, deer, bear and geese, on-site inspections and assistance in resolving severe agricultural, ecological or public health and safety damages are often required. For example, field inspections were conducted at 90 sites where damage was caused by beavers.

Bears were the subject of an increased number of complaints and calls with concerns. Complaints included 128 instances of bears at or damaging birdfeeders, 31 reports of bears in garbage, eight livestock attacks, three instances of bee hive damage and four cases of damage to buildings. Traps were set for problem bears on four occasions but none were captured. A bear that was the source of nuisance problems for several years was euthanized after it entered a home in Goshen.

The Division administers Nuisance Wildlife Control Operators (NWCOs), who provide commercial wildlife control services to persons seeking help in resolving common wildlife problems. The Connecticut Nuisance Wildlife Control Operator's Association works closely with the Division to train NWCOs in wildlife damage identification and control methods. In 2002 there were 233 licensed NWCOs and 57 persons completed NWCO training.

The Division also trains and authorizes wildlife rehabilitators. There are currently 239 wildlife rehabilitators in Connecticut, of which 36 are authorized to work with rabies vector species and five can rehabilitate deer. These rehabilitators handled 4,826 birds, 3,365 mammals, 167 reptiles/amphibians and 443 rabies vector species. A website containing a directory of wildlife rehabilitators was created so that information can be retrieved about rehabilitators online.

Advice and technical guidance on deer population management was provided to communities or homeowner associations in the towns of Darien, Wilton, Greenwich and Ridgefield.

Technical assistance in habitat enhancement and nature trail development was provided to seven schools for the creation of outdoor classrooms. Assistance was given to four urban communities on habitat enhancement for wildlife.

Technical assistance on managing habitat for wildlife was provided to several sportsmen's clubs and towns, affecting 4,353 acres of habitat.

Division staff reviewed and commented on 20 forest cutting plans and 10-year forest management plans submitted by the DEP Division of Forestry.

Approximately 190 federal, state, town and private project proposals were reviewed for their potential impacts to wildlife, including threatened and endangered species.

Division staff reviewed and rated 135 potential state land acquisition proposals for wildlife value and 23 proposed changes in use for various state-owned properties. In addition, 59 Municipal Open Space Grant applications were evaluated for their value and impact on wildlife.

Proposed survey and sampling techniques for a variety of avian species that were to be used by researchers, consultants and others were reviewed.

Staff also responded to dozens of emails, phone calls and letters from across the country on technical and general mosquito-related questions.

July

P. J. FUSCO (3)

With the help of fencing and other protection efforts under the Piping Plover/ Least Tern Recovery Project, 31 pairs of piping plovers (state and federally threatened) fledged 58 young and 224 pairs of least terns (state threatened) fledged 38 young. Nesting beaches were monitored by 22 volunteers who tried to minimize disturbance to the nesting shorebirds and informed beach visitors about recovery efforts.

August

As part of a new WCRP-funded project to estimate Connecticut's black bear population, 25 bears were live-trapped and tagged, and seven females were fitted with radio-collars to determine their movements and reproductive success.

September

September is a busy time for the Division's Conservation Education/Firearms Safety (CE/FS) Program. As people begin to prepare for the fall hunting season, telephone calls concerning hunting safety classes flood the Franklin and Sessions Woods offices. Courses in firearms, bow hunting and trapping are offered all year long by certified volunteer instructors at various locations throughout the state. Class information is available on the DEP website and by calling the Franklin and Sessions Woods offices.

Education and Outreach

One of the Wildlife Division's major functions is to provide information on the state's wildlife and its management. Wildlife information is constantly provided to the public over the telephone and through publications, press releases, meetings, informational displays and presentations.

The Division set up informational exhibits at several public events, including the Durham and Woodstock Fairs, the annual Hunting and Fishing Expo, Sharon Audubon events and Connecticut Audubon's annual Eagle Festival in Essex. Not only did Division staff and Master Wildlife Conservationist volunteers interact with thousands of people, but staff members also gave wildlife presentations at the Durham Fair and the Eagle Festival.

Twenty-six backyards were registered by the Urban Wildlife Program as "Connecticut Backyard Habitats" in the interest of wildlife conservation.

A booklet entitled *Managing Urban Deer in Connecticut* was published to provide guidance to residents and communities concerned about overabundant deer populations. A comprehensive report on Connecticut's Wild Turkey Program also was completed.

A report was completed that summarized three surveys of residents living with urban deer. The surveys, which were conducted over a seven-year period, evaluated residents' perceptions and expectations about deer, deer management, birth control and hunting as a management tool.

The Division's Furbearer Program was active in a project of the Northeast Fur Resources Technical Committee to develop teacher resource packets on furbearer management and trapping.

In conjunction with National Mosquito Awareness Week in June, a workshop was conducted for Connecticut Certified Pesticide Applicators to gain recertification credits.

The 318 volunteer Conservation Education/Firearms Safety (CE/FS) instructors donated 16,213 hours of service to the CE/FS Program. A total of 5,577 students graduated from courses in firearms, bowhunting and trapping. In an effort to meet the 2002 bow certification requirements, a record number of bow hunting classes (111) were offered, graduating a record 2,914 students. A home study version of the CE/FS firearms course was developed and implemented to provide an alternative for students who are unable to attend the traditional classroom course.

Division staff gave numerous presentations at professional meetings and conferences, hunting seminars, conservation organization and town meetings, inland wetland commissioners' training, teacher workshops, school classrooms, college classes, scout meetings and other events. Topics included habitat management, deer and wild turkey management, bears, coyotes, bats, backyard wildlife habitat enhancement, mosquito management, endangered species, reptiles and amphibians and the challenge of wildlife management in an urban state. Biologists also gave numerous media interviews on such topics as bears, coyotes, shorebirds, herons and egrets, bats, reptiles and amphibians and bald eagles.

Sessions Woods Conservation Education Center

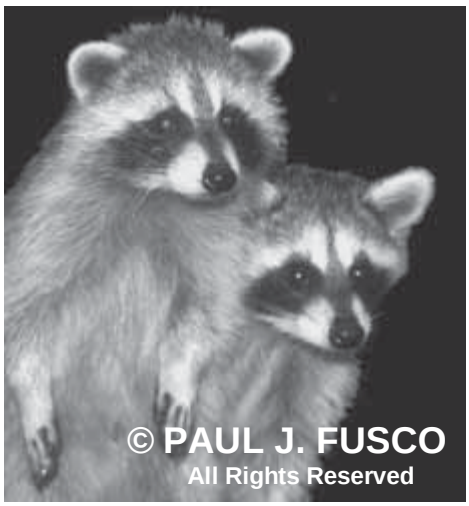
Sessions Woods was the site of 13 scheduled public education programs, 11 school field trips, 10 youth group campouts, field trips and presentations for numerous private groups, a Boy Scout camporee, and meetings and training sessions for DEP staff. The facility also was the site for Master Wildlife Conservationist training. More than 19,000 visitors used the interpretive trails at Sessions Woods.

Habitat management at Sessions Woods included maintenance and enhancement of trail demonstrations, four Eagle Scout projects (fire tower renovations and signs, compass course, 2 trail bridges and 2 trailhead bulletin boards), 17 volunteer projects, a controlled burn, enhancements to the water garden demonstration and an expansion of the butterfly garden.

The Friends of Sessions Woods purchased binoculars, microscopes, compasses, spotting scopes and taxidermy specimens with a grant from the Burlington Fund and the James R. Parker Trust to enhance educational programs at Sessions Woods. The group continues to make significant contributions to the programs, projects and activities at the facility.

October

P. J. FUSCO (3)



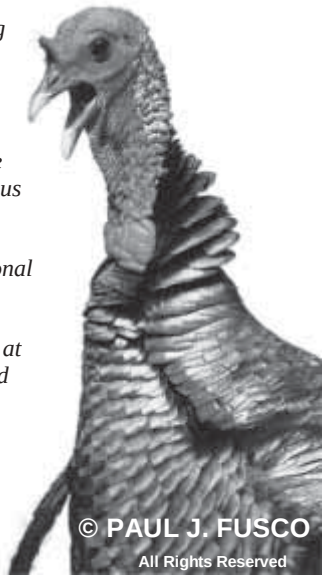
Wildlife Division staff spend a considerable amount of time responding to the continuous flood of requests for help in resolving wildlife problems and concerns. Information and/or guidance about recommended solutions and legal control methods for nuisance wildlife situations are offered to people seeking help.

November

Every November, during the deer shotgun hunting season, Division staff collect biological data from harvested deer to monitor changes in the health of Connecticut's deer population. Data collected include age, sex, weight, antler beam diameter (of yearling bucks) and location of harvest.

December

Several exhibits are planned and being worked on at the Sessions Woods Conservation Education Center, in Burlington. A wild turkey exhibit, funded by the National Wild Turkey Federation was recently completed. Five new exhibits, which are being funded by the WCRP Program, are currently in progress. These exhibits will focus on habitat and endangered species. Additional portable and changeable exhibits for use at fairs, events and other locations also are currently being developed.



New Wildlife Regulations Established

Several new wildlife regulations became effective in late December, after the 2003 Connecticut Hunting and Trapping Guides were printed. These changes will not be included in the 2003 guide. However, updates will be added to the DEP website.

- Specific hunting days were established when only individuals possessing a Connecticut junior hunting license will be allowed to hunt for wild turkey, deer and pheasant. Licensed junior hunters may hunt on these specific days when accompanied by a licensed adult hunter 18 years of age or older. The adult mentor may not carry a firearm. These training days will provide junior hunters with a special opportunity to learn safe and effective hunting practices from experienced hunters. Junior Hunting Training Days for 2003 are scheduled for May 3 (spring turkey), October 11 (pheasant) and November 15 (deer).

P. J. FUSCO

- The spring wild turkey season was extended by four days. The season will begin on the first Wednesday in May and end 25 consecutive days later. In 2003, the spring turkey season will run from May 7-31.
- The spring turkey season bag limit on private land was increased from two to three bearded wild turkeys and on state land from one to two bearded wild turkeys.
- The mandatory fall firearms turkey check stations were replaced with a mandatory mail-in report card.
- Hunters with a validated turkey permit for the current season that have filled their harvest tags are able to assist other turkey hunters with calling during that same season.
- The types of non-toxic shot allowed for waterfowl hunting in Connecticut now include tungsten-matrix and tungsten-nickel-iron (Hevishot).
- The requirement that hunters keep carcasses of harvested deer open to view while they are being transported to a deer check station was eliminated.
- The private land deer archery season was extended to the last day of January in zones designated by the DEP Commissioner. In 2003, the designated zones are 11 and 12.

Tree Seedlings Available from DEP's State Nursery

The Connecticut State Nursery, operated by the DEP Division of Forestry since 1905, is now accepting orders from throughout southern New England for tree and shrub seedlings to be planted in the spring of 2003. Landowners may purchase the Connecticut-grown seedlings for use as Christmas trees, to plant a new forest, to improve wildlife habitat or for many other conservation purposes.

This program is very popular because of the high-quality of seedlings available. Those interested in purchasing seedlings should place their order as soon as possible as the State Nursery will quickly sell out of some of the packets.

The State Nursery has two programs available this year. In the "Homesteader Seedling Program," homeowners can select from five different packages, each designed to meet a different need: the Woodland Packet (25 Norway spruce, 25 white pine); the Windbreak Packet (50 northern white cedar or 50 eastern hemlock or 50 eastern cedar); the Christmas Tree Packet (50 blue spruce); the Hardwood Packet (5 red oak, 5 black walnut, 4 black cherry, 6 sugar maple); and the Wildlife Packet (2 red mulberry, 5 silky dogwood, 5 flowering dogwood, 5 highbush cranberry, 5 elderberry, 2 shadbush, 5 chokeberry, 2 eastern red cedar). "Homesteader" packets are available for $26.00 per packet (includes shipping) to any Connecticut, Massachusetts or Rhode Island landowner.

The "Forest Planting Stock Program" is available to southern New England landowners with larger planting areas who intend to: establish a new forest; develop a commercial Christmas tree plantation; plant additional trees in an existing forest which has sparse tree cover; use trees as part of an effort to stabilize lands with erosion problems; or use the trees for any variety of other larger-scale conservation needs.

Forest Planting Stock orders must be in multiples of 250 per species. The price is $33.00 per bundle of 250 two-year-old seedlings. Three- and four-year-old seedlings of some species also are available. Forest Planting Stock orders require the approval of a State Service Forester, who may come to inspect the planting area.

Seedling orders will be shipped as soon as frost is out of the ground at the nursery in Voluntown, usually in late March or early April. Forest Planting Stock orders will be delivered to one of seven convenient pick-up points scattered across the state. The landowner will be notified by postcard as to when the order will be ready for pick-up.

The seedlings are quite small when received (from 6-12 inches tall). They grow slowly for the first year or two, after which more rapid growth and development can be expected.

To obtain an order form, write or call the DEP State Forester's Office, 79 Elm St., Hartford, CT 06106; (860) 424-3630. Information and order forms also are available on the DEP's website: www.dep.state.ct.us.

America's National Wildlife Refuge System

Celebrating a Century of Conservation

P. J. FUSCO

Commemorating a Pivotal Moment in History

March 14, 2003, marks a milestone in the history of wildlife conservation in America—the centennial anniversary of the National Wildlife Refuge System. The National Wildlife Refuge System is America's only network of federal lands dedicated specifically to wildlife conservation, representing a steadfast commitment to protecting our wild heritage.

The National Wildlife Refuge System story began in 1903 when President Theodore Roosevelt learned that brown pelicans and white egrets living on tiny Pelican Island on Florida's east coast were being slaughtered for their feathers. Taking action to protect the birds and their habitat, Roosevelt issued an executive order establishing Pelican Island as the first national wildlife refuge.

Roosevelt went on to create 51 more refuges during his presidency, and today the National Wildlife Refuge System includes more than 535 refuges and thousands of waterfowl production areas, spanning nearly 94 million acres across the United States and its territories.

National wildlife refuges form a series of stepping stones for ducks, geese, caribou, and thousands of other birds, mammals, fish, reptiles, amphibians, insects and plant species. Many national wildlife refuges were established along the four migratory bird flyways to provide crucial stopovers for birds to rest, feed, breed and recharge during their long migrations.

More than 400 national wildlife refuges are open to the public, offering a variety of outdoor activities–fishing, hunting, environmental education, wildlife observation and photography–and making them special places to discover the wonders of nature. Many refuges offer additional opportunities for nature hikes, bird tours, wildlife drives and other activities.

A Network of Wildlife Habitats

This vast network of prime habitats gives hundreds of critically endangered species a chance to recover, provides stopover areas for millions of migrating birds and protects premier fisheries. The National Wildlife Refuge System safeguards plants and animals of every variety, from cactus to caribou, butterflies to bison and salmon to songbirds.

As the land management arm of the U.S. Fish and Wildlife Service (USFWS), the National Wildlife Refuge System helps fulfill a critical part of the agency's overarching mission: to conserve the nature of America by protecting fish, wildlife, plants and their habitats for the continuing benefit of the American people.

Scenic Getaways

The National Wildlife Refuge System appeals to strong cultural traditions of American society, such as enjoying the wonders of the outdoors and ensuring wild, open space for future generations. More than 35 million Americans visit national wildlife refuges each year to enjoy unique outdoor experiences. Most people come during peak periods of bird migration, when refuges are thriving with wildlife. Hundreds of thousands of schoolchildren visit refuges each year to learn more about the natural world. Sportsmen come to fish or hunt, while others savor the solitude of these special places.

And over the last several years, more people and a variety of organizations have united to protect and strengthen the National Wildlife Refuge System. This support is most visible through new legislation and other Congressional action, and growth in community advocacy, volunteerism and partnerships. However, a large segment of the American people have yet to discover their National Wildlife Refuge System.

Poised for a New Century

The USFWS is undertaking a number of special, nationwide efforts to strengthen the National Wildlife Refuge System, and will use the centennial anniversary as an opportunity to build broad public understanding and appreciation of the value of these conservation lands to society.

To learn more about the National Wildlife Refuge System, visit www.refuges.fws.gov.

What Is the U.S. Fish and Wildlife Service?

The U.S. Fish and Wildlife Service is the principal federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The Service manages the 94-million-acre National Wildlife Refuge System, which encompasses more than 535 national wildlife refuges, thousands of small wetlands and other special management areas. It also operates 66 national fish hatcheries, 64 fishery resource offices and 78 ecological services field stations. The agency enforces federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands and helps foreign governments with their conservation efforts. It also oversees the Federal Aid program that distributes hundreds of millions of dollars in excise taxes on fishing and hunting equipment to state fish and wildlife agencies.

Divers from the North - Winter Loons in CT

Written by Paul Fusco, Wildlife Outreach Unit

The experience of hearing the eerie calls of a loon, echoing across a forest lake on a moonlit night is unforgettable. Sometimes carrying for great distances, their calls are the soul of the northern wilderness. In spring and summer these remote lakes are the territory of the common loon, a species that has a low tolerance for motorized boats and disturbance. Their presence during the breeding season is an indicator of the wilderness quality of those lakes.

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At this time, Connecticut does not support any breeding pairs of loons. There are a handful of unconfirmed reports of nesting loons in Connecticut, as well as summering individuals that are present on a regular basis at potentially good breeding locations in the northern part of the state. However, very little evidence exists that common loons have nested in Connecticut at any time in the last 100 years. They do breed just to our north in Massachusetts, and Connecticut has several large reservoirs that have minimal disturbance and are considered to be good breeding habitats for common loons. The common loon is listed as a species of special concern in Connecticut because of the possibility that loons bred here historically. It is reasonable that some day, maybe sooner than later, common loons may be documented as nesting here. Typically, common loons breed in several northern states and farther north in the subarctic areas of Alaska and Canada.

Two species of loons, the common loon and the red-throated loon, migrate through or spend all or part of the winter in Connecticut waters. They are considered to be uncommon to fairly common during spring and fall migration and uncommon in winter. Another species, the Pacific loon, is an extremely rare visitor to our area. Red-throated and Pacific loons are more northern breeders than the common loon, nesting in subarctic and arctic regions of Alaska and Canada.

During migration, common loons are frequently documented at inland lakes and rivers, while the red-throated loon rarely occurs at inland locations. Among the best places to find both loons in Connecticut are the coastal bays and estuaries of Long Island Sound. Both species occur more frequently in the eastern half of Long Island Sound than in the western half. On peak fall migration days, red-throated loons can be very numerous at some shoreline locations.

Note the large, heavy bill of the common loon (top). Although common loons feed mostly on fish, they will also take crustaceans, such as crabs.

Loons are large, powerful swimming birds. Designed for swimming and propelling themselves underwater, their strong legs are set well to the back of their bodies, making walking on land difficult and awkward. They take flight by running along the surface of the water. In fact, most loons cannot take off from land. Once airborne, their flight is strong and direct. They have rapid wingbeats and a hunched posture, as they hold their neck and head lower than their body.

Feeding Habits

Loons use their strong, dagger-like bills to catch their main food, fish. Crustaceans, such as crabs and shrimp,

P. J. FUSCO

Red-throated loons typically swim with their head and bill held at an upward angle.

also are consumed. In freshwater areas, loons will eat frogs, salamanders and crayfish.

Loons may be seen paddling along the water's surface with their face in the water as they look for schools of fish below. Once they see potential prey, they dive underwater to begin their pursuit. Because they hunt by sight, loons require clear water in order to feed. They may remain underwater for as long as a minute while foraging, and can stay under for longer periods if escaping from an enemy. Common loons are known to dive to depths of up to 250 feet.

Winter Identification

While the breeding plumage of loons can be spectacular, their winter plumage can be equally drab, making identification in winter sometimes difficult. Body structure and behavioral characteristics become more important when correctly identifying species.

Common Loon

At up to 32 inches in length, the common loon is the largest. It has a large, heavy bill and thick neck. In winter, the plumage is dark gray above and white below. The crown and nape are darker than the back. There is a soft edge between the white and darker plumage on the head and neck. The white in the face extends around the eye. This species usually holds its head level with the water.

Red-throated Loon

The red-throated loon is smaller (25 inches in length) and slimmer than the common loon. It has a thin, upturned bill, and normally swims with head and bill held at an upward angle. In winter, the plumage on the head and neck are well defined, with white extending above the eye. Its light gray back with white spotting gives it a paler appearance than the common loon.

Pacific Loon

As its name indicates, the Pacific loon typically winters on the West Coast of North America. It occurs on a regular basis in the mid-Atlantic and northeast region, but in very low numbers. In winter its plumage is dark gray above and white below, similar to the common loon. It is smaller (26 inches in length) and has a smaller, thinner bill than the common loon. Its dark cap extends down to the lower eye. Both adults and juveniles may have a thin, dark "chin strap" which can be helpful in identification.

Where to See Loons in Connecticut

Loons are most often seen singly, although sometimes in small groups, at good feeding locations. They will frequently be seen offshore at great distances and under less than ideal viewing conditions. To get a good look, binoculars are a must and a spotting scope with a sturdy tripod would be even better. Wind, heavy wave action, mist and glare can make correct identification difficult. Loons can be separated from other swimming birds, like ducks and gulls, because they typically ride lower in the water while swimming.

Some of the more reliable places to search for loons include Harkness Memorial State Park in Waterford, Griswold Point in Old Lyme, Hammonasset Beach State Park in Madison, New Haven Harbor, Milford Point and Sherwood Island State Park in Westport.

Conservation

In our region loons are subject to many pressures, including acid rain, mercury pollution (see below), lead ingestion and high levels of disturbance on nesting lakes. Lead ingestion occurs when loons pick up grit from lake bottoms to aid in digestion; many seem to pick up lead sinkers instead of stones, which end up slowly poisoning the birds.

Mercury Pollution and Loons

Coal-fired power plants are the largest source of mercury pollution. Trace amounts of mercury found naturally in coal are released into the atmosphere when coal is burned to produce electricity. Once in the air, the mercury returns to earth with rain and snow, or as dry particles that then end up in rivers, lakes and coastal waters. Over time mercury may settle to bottom sediments in bodies of water. However, in acidic lakes it becomes more water soluble and can be released back into the water from the sediment. The northeastern states and Maritime provinces of Canada have the worst mercury pollution in North America.

Because mercury accumulates in the aquatic food chain, top predators that eat a lot of fish, such as loons, are the first victims to show signs of mercury poisoning. Scientific studies conducted in the northeastern United States and the Canadian Maritimes have shown that loons breeding in these areas are experiencing reproductive problems consistent with mercury poisoning.

Loons with high levels of mercury may suffer reproductive failure, where no young are able to survive. Being a neurotoxin, mercury affects the nervous system and can debilitate young loon chicks, leaving them with a lack of motor coordination, leading to death.

Loon populations from our region are considered to be seriously at risk from mercury pollution. In some areas, the recruitment of young birds is not high enough to sustain the population.

Take Refuge and Relax at Stewart B. McKinney National Wildlife Refuge

Written by Jennifer Brown, Outdoor Recreation Planner, Stewart B. McKinney NWR

Did you know that there is a National Wildlife Refuge (NWR) in Connecticut? The Stewart B. McKinney NWR manages eight pieces of land, or units, along the coast of Connecticut. The Refuge includes five islands, barrier beaches, tidal saltmarshes, shrublands and upland habitats. Due to its location in the Atlantic Flyway, the refuge provides important resting, feeding and nesting habitat for many species of wading birds, waterfowl, songbirds, shorebirds and terns, including the endangered roseate tern and threatened piping plover.

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A historic lighthouse on Falkner Island, which was commissioned in 1802 by Thomas Jefferson, is open to public visitation for only two days each year.

Units of Stewart B. McKinney NWR

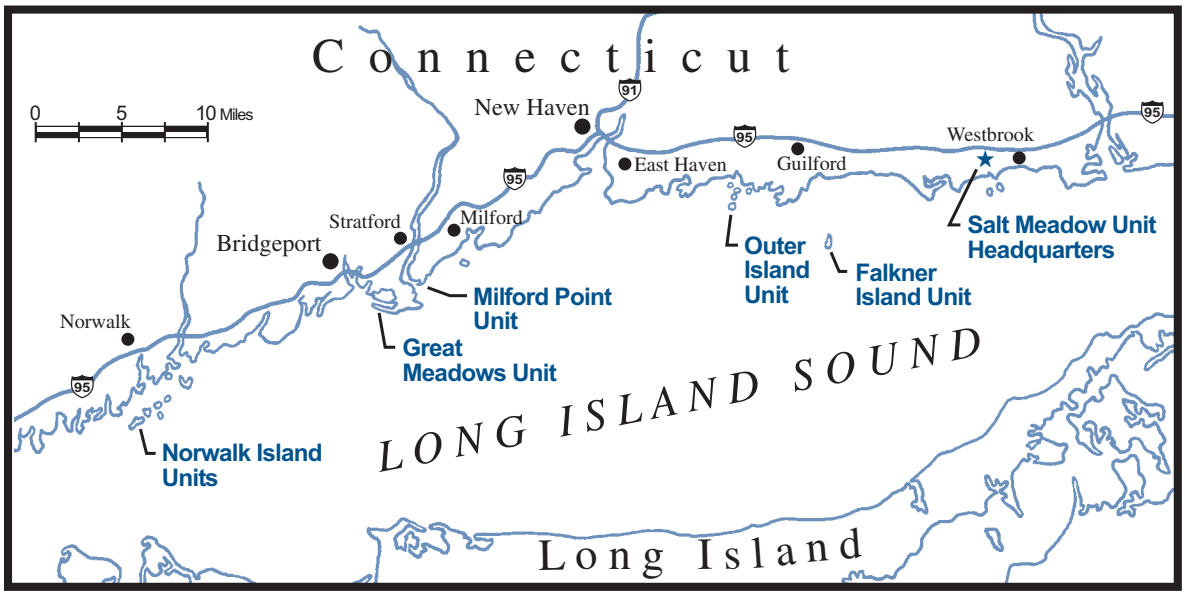
Salt Meadow Unit, Westbrook: The headquarters for Stewart B. McKinney NWR are located at Salt Meadow Unit. This unit is open to the public seven days a week for hiking, bird watching and photography on over two-and-a-half miles of trails. This trail system allows visitors to view forest, grassland and marsh habitats. While visiting Salt Meadow Unit, bluebirds, deer, foxes, egrets, ibis and red-tailed hawks are just some of the wildlife you may see.

Outer Island Unit, Branford: Outer Island is the outermost island in the Thimble Island chain off the coast of Branford. This island is composed of pink granite and is a home for the state-endangered prickly pear cactus. For many years, the island was closed to public visitation. With the help of the newly-formed Friends of Outer Island, the island was open on weekends in 2002 from July 4th to Labor Day. The Friends of Outer Island is currently looking for volunteers to train as island docents for the 2003 season. If you are interested in

The largest nesting colony of common terns in Connecticut can be found on Falkner Island Unit of the Stewart B. McKinney National Wildlife Refuge.

learning more about the program, please write to: Friends of Outer Island, P.O. Box 305, Branford, CT 06405.

Outer Island Unit is also the site of the Refuge's Environmental Education Programming. In partnership with Connecticut State University System, over 700 students visit the unit to study island ecology each year.



Milford Point Unit, Milford: Located just a stone's throw away from the Connecticut Audubon Coastal Center in Milford, the Milford Point Unit is home to the state and federally threatened piping plover. Because of the potential harm caused to piping plovers and state threatened least terns, visitors may only view this sandy peninsula from an observation deck at its boundary. Fishing access for the tip of Milford Point Unit is allowed on a designated route. Stop in at the Connecticut Audubon Coastal Center to play an educational and interactive computer game based on Milford Point Unit.

Each year, Connecticut Audubon, Connecticut DEP and the U.S. Fish and Wildlife Service (USFWS) train volunteers as part of the Piping Plover Patrol. These volunteers have helped make the beaches safe for plovers by educating visitors and conducting plover surveys. If you are interested in joining the Piping Plover Patrol, email Sara Williams at Sara_Williams@fws.gov, or call (860) 399-2513.

Great Meadows Unit, Stratford: The largest, unditched high salt marsh in Connecticut is protected as the Great Meadows Unit. A new trail, set to open late summer 2003, will give visitors, teachers and students the opportunity to enjoy this unique marsh community. Some of the wildlife that can be found in this unit include clapper rails, a variety of waterfowl and the northern harrier. Great Meadows is important as the feeding grounds for many long-legged wading birds.

Sheffield Island Unit, Norwalk: Each year, over 10,000 visitors travel to Sheffield Island in Norwalk to view its historic lighthouse. Now, those visitors can also enjoy the island's natural beauty by walking the Refuge's new Island Ethics Trail. This trail helps to teach visitors the importance of leaving islands as natural havens for wildlife and minimizing disturbance. From the trail's observation platform, visitors may spot a belted kingfisher or a great egret. The trail is open from Memorial Day to Labor Day. For a ferry schedule, call (888) LI-Sound.

Chimon Island Unit, Norwalk: Chimon Island was once the site of the largest colony of wading birds in Connecticut. Since that time, an increase of small mammal predators (such as raccoons and rats) and invasive non-native plants have caused the birds to leave the island. Deer have also caused a great deal of damage to the island's vegetation. Now, the island is used by migrating birds and its interior is closed to public visitation.

Goose Island Unit, Westport: This three-acre island is home to nesting herring gulls, black-backed gulls and double-crested cormorants. The island is closed to the public.

Falkner Island Unit, Guilford: Opened to visitation only once a year, Falkner Island Unit contains the fifth largest nesting colony of federally endangered roseate terns in the Northeast. It is also home to the largest nesting colony of common terns in Connecticut. Throughout the summer, members of the U.S. Geological Survey, Connecticut Audubon Society and USFWS study and protect the terns. In recent years, predation by black-crowned night herons, a decline in the terns' food source and other external pressures have reduced the productivity of this colony. Members of the Stewart B. McKinney NWR are currently working on several solutions to these issues.

A historic lighthouse, commissioned in 1802 by Thomas Jefferson, sits on Falkner Island. The USFWS, Faulkner's Island Light Brigade, U.S. Coast Guard and U.S. Geological Survey work together each year to open the island and the lighthouse to visitation for two days. The weekend open house usually occurs in September. Information on the open house in 2003 will be released later in the year.

Upcoming Articles

As part of the year-long celebration of the 100th anniversary of the National Wildlife Refuge System, each of the next five issues of *Connecticut Wildlife* will contain an up-close and personal look at one of the units of Stewart B. McKinney NWR. These articles will focus on upcoming refuge programs and volunteer projects.

Note from Editor: The Silvio O. Conte National Wildlife Refuge, which stretches along portions of the Connecticut River, is Connecticut's other National Wildlife Refuge.

How CT's Tax Check-off Program Helps Wildlife

The Endangered Species/Wildlife Income Tax Check-off Fund, which was initiated in 1994, allows Connecticut taxpayers to voluntarily donate a portion of their state income tax refund. The money is then used to support wildlife and natural area preserve projects by providing dollars when matching funds are needed or when other funding sources are unavailable. Tax deductible donations to the Fund have financed several important projects over the years to increase the DEP's knowledge of such species as the timber rattlesnake, tree-roosting bats, the shortnose sturgeon and the white-fringed orchid. Just recently, the DEP awarded tax check-off funding for some new and continuing projects.

P. J. FUSCO (2)

A New England cottontail is released after having a radio transmitter attached. Biologists will track the rabbit's movements and gain important data on its home range and habitat use.

New Projects

Flying Squirrels: Two species of flying squirrels are native to Connecticut. The southern flying squirrel is fairly common and can be found in most mature woodlands. The northern flying squirrel is considered rare and is usually found in colder areas at higher elevations. The status of the northern flying squirrel cannot be determined because only a few specimens have been collected in the state. Recently, the northern flying squirrel has been recognized as either endangered, threatened or special concern by states in the southern Appalachian mountains, including Pennsylvania. This research project will assess the status and habitat of these two squirrels in northern Connecticut.

Resulting information will be helpful to resource managers and conservation professionals. Flying squirrels may play an important role in forest regeneration as seed predators or by carrying beneficial fungus spores in their feces.

Flying squirrels are secretive and special techniques are required to detect them. In this project, animals will be live-trapped at several locations and the habitat will be examined to explore what factors limit flying squirrel populations in Connecticut.

Monitoring Avian Productivity and Survivorship in Northwestern Connecticut: Birders and scientists across the country have been noticing that migratory songbirds are showing population declines across the country. For that reason, the National Audubon Society in Sharon began a project in 1997 to monitor the population trends for migratory songbirds through seven bird banding stations in Litchfield County and in eastern Dutchess County, in New York.

Through mist netting and banding, these stations are designed to monitor trends in the productivity and survivorship of breeding songbirds, particularly neotropical migrants, on a long-term basis. 2003 will be the seventh year of operation. Every bird caught in the mist nets (from early June to mid-August to ensure that only breeding individuals are caught) is identified, sexed, aged, evaluated and banded. Additional data is collected through point counts, vegetation surveys and general observations recorded on a daily log.

In addition to being used by local land managers and scientists, the data are collected and submitted to the Institute for Bird Populations (IBP) in Point Reyes, California, and is pooled with data from similar stations throughout the country in order to help determine nationwide trends in bird populations and to guide conservation efforts. Information gained from this study will benefit the DEP's efforts to help migratory birds. The research will provide demographic information for both resident and neotropical bird species breeding in northwestern Connecticut.

Amphibian Diversity and Distribution Changes: The global decline of amphibian populations is of major importance and has gained the attention of biologists, environmentalists and politicians around the world. Within Connecticut, several amphibian populations appear to be declining, but valuable baseline data are lacking to document this trend. By studying amphibian larvae collected from

A project that monitors population trends for migratory songbirds, like the wood thrush, is receiving funding from the CT Endangered Species/Wildlife Income Tax Check-off Fund.

Connecticut wetlands in the past 100 years, researchers hope to gain a better understanding of changes in amphibian populations over time. Among the species being studied is the eastern spade-foot toad, now listed as endangered in Connecticut.

Researchers plan to identify amphibian larval specimens currently stored in collections at the Yale Peabody Museum of Natural History in New Haven. These specimens were collected from Connecticut at various times spanning most of the 20th century and most have never been identified or cataloged and thus have not been available for research. Once the specimens are identified and critical data have been taken, they will be available to researchers. The existence of larval specimens from certain localities may justify future surveys of those areas, especially in cases of species now considered endangered, threatened or even extirpated from the state.

Matianuck Sand Dunes Natural Area Preserve: Located in Bloomfield and Windsor, the Matianuck Sand Dunes Natural Area Preserve is an outstanding example of inland sand dunes, lying upon the bed of glacial Lake Hitchcock. The preserve contains a mixture of dryland plant species, which provide rare habitat for uncommon and endangered insects. This study will document the plant species found at this unique area, as well as identify research needs and focus areas of future survey work.

Continuing Projects

New England Cottontail: A project initiated in 2001 that will assess the distribution of the New England cottontail statewide and the home range size and habitat use of New England cottontails in coastal habitats received additional funding. The New England cottontail is the only native rabbit in Connecticut and historically was distributed statewide. Limited research suggests that populations have declined in Connecticut and the northeastern United States. This project also receives funding from the Wildlife Conservation and Restoration Program.

American Kestrel: This project to determine the home range and habitat use of breeding American kestrels received funding in 2001. Additional funding was awarded to continue data collection. Connecticut's kestrel population has been rapidly declining. Researchers hope to gain more information about what the birds need to survive. This should help in the development of management and recovery efforts.

How You Can Help

The Endangered Species/Wildlife Income Tax Check-off Fund can always use your help. When filing your Connecticut Income Tax Return for 2002, remember wildlife by donating a portion of your tax refund. Those not expecting a state income tax refund but who wish to contribute can send contributions to the Endangered Species/Wildlife Fund, DEP Bureau of Administration-Financial Management, 79 Elm Street, Hartford, CT 06106. Contributions are deductible on next year's federal tax return.

Learning More About the Copperhead Snake

Written by Stephen Berube, Copperhead Project Research Contractor

The northern copperhead snake is alive and well in Connecticut, with populations stretching from Stonington to Greenwich and Branford to Granby. The heaviest concentrations of copperheads are located along the Connecticut River valley. Little is known about the general history of copperheads, but through the collaborated efforts of herpetologist Charles Smith, a Ph.D. candidate at the University of Connecticut, and the DEP, the copperhead is currently the focus of scientific study.

The study was designed to determine mating behavior, migration, habitat use and ecological associations of the copperhead. To help with data collection, 17 snakes from a hibernaculum along the Connecticut River valley have been surgically implanted with small radio transmitters. These animals were then tracked with radio telemetry equipment every other day from the time they emerged from hibernation in early April until they returned to the hibernaculum in mid-September. Data collected from each animal included Global Positioning System (GPS) readings and observations, such as preferred habitat, feeding behavior and the animal's activity upon location. Blood samples were collected bimonthly to determine genetic paternity. Copperheads are very docile in nature. Even when approached, the snakes either fled or remained motionless. However, some males were slightly aggressive when handled during the breeding season.

Data collected so far have given researchers a better understanding of the behavioral differences between animals within an intraspecific population. These animals were found to be living in the same area as other snake species, such as milk snakes, rat snakes and black racers. Each copperhead, upon leaving the hibernaculum in April, traveled anywhere between a few hundred feet up to a couple of miles away to their preferred habitat and hunting grounds. Some snakes spent much of their time in swamps while others preferred the dense hardwood forest or cliff sides where they were completely unobtainable to researchers. While a few animals remained in small areas, others moved up to a quarter of a mile in as little as two days. During the apparent breeding season, certain males would travel extensively in search of a mate, spending up to a week at a time before finding female snakes to mate with. By the middle to the end of August, gravid (pregnant) females returned to the hibernaculum to give birth, remaining there for the rest of the season. Males and non-gravid females returned to the hibernaculum in early to mid-September and every snake returned to within feet of where they hibernated the previous winter, some to the exact location from which they emerged last April.

The Connecticut Endangered Species/Wildlife Income Tax Check-off Fund is providing funding for the copperhead project (see previous article). Stay tuned to learn more about copperheads as this project resumes when the snakes emerge from their winter dens in the upcoming spring.

DEP Continues to Monitor CWD Situation

P.J. FUSCO

Chronic wasting disease is a naturally occurring disease of the brain and nervous system in deer and elk. As of December, 2002, there have been no reported cases of CWD in the northeastern United States.

As reported in the September/October 2002 issue of *Connecticut Wildlife*, the DEP Wildlife Division has been monitoring the status of chronic wasting disease (CWD) in cooperation with fish and wildlife agencies throughout North America. CWD is a naturally occurring disease of the brain and nervous system in deer and elk. It attacks the brain of these animals, producing small lesions that eventually result in death. As of December, 2002, there have been no reported cases of CWD in the northeastern United States. The nearest known occurrence of CWD is in northern Illinois.

Because CWD is invariably fatal and it has the potential to dramatically impact deer and elk populations, state fish and wildlife agencies have been endorsing measures to minimize the chances of it spreading to other areas of North America. Animals may be infected with CWD for long periods of time before showing symptoms, and currently there is no means of testing whether a live animal is infected with CWD. Therefore, a complete ban on the importation of members of the deer family is considered the most prudent measure in controlling the spread of the disease. Earlier this year, the Connecticut Department of Agriculture issued regulations banning the importation of captive deer, elk, reindeer and other members of the deer (Cervidae) family of mammals. Other states have taken similar precautionary measures.

Some states have also started monitoring programs where they are collecting random samples of deer and testing for the presence of CWD. This is being done mostly in states that are in close proximity to known occurrences of CWD. Random testing was initiated in several northeastern states, including New York and Rhode Island. To date, no have animals have tested positive for CWD in the northeastern states. Currently in Connecticut, the DEP will only test deer that exhibit symptoms of the disease. If CWD is discovered in close proximity to Connecticut, a more intense monitoring effort would be employed. In 2003, the DEP plans to initiate random testing of animals.

Infected animals may display abnormal behavior, such as staggering or standing with very poor posture. Eventually, infected animals become emaciated and appear to be in very poor health. This symptom is how the disease got its name, "chronic wasting disease." Anyone observing a deer exhibiting symptoms of CWD should notify the Wildlife Division (860-424-3011) or the DEP's 24-hour TIP hotline (1-800-842-HELP). If the animal is dispatched, the head should be kept intact so that a brain sample can be collected for testing.

The probability of CWD appearing in Connecticut is very low at this time. If, however, CWD is discovered in Connecticut, the DEP will implement additional management strategies aimed at preventing its spread.

Although no known link exists between CWD and humans, health officials advise hunters not to consume meat from animals known to be infected with CWD and also recommend boning out meat. As usual, hunters should continue to employ normal precautions when field dressing deer, such as wearing rubber gloves. This precaution is especially important for hunters who travel to hunt deer in states where CWD has been detected. To date, CWD in free-ranging populations has only been detected in the following states and Canadian provinces: Colorado, Wyoming, New Mexico, Nebraska, South Dakota, Wisconsin, Illinois and Saskatchewan. Concerns about CWD should not keep hunters from participating in Connecticut's deer hunting season.

A website kept up-to-date with the latest information about CWD in North America can be found at www.cwd-info.org.

Hop River Habitat Restoration Project Completed

This past fall, the DEP completed a stream habitat restoration project in the lower Hop River, located in Coventry and Columbia. The goal of the project was to restore a more diverse fish community, including trout, by stabilizing eroding streambanks and stemming the introduction of sediment into the river. In addition to trout, stream fishes expected to benefit from these enhancements include fallfish, common shiner, white sucker and smallmouth bass. The project site encompasses approximately 1,400 linear feet of the Hop River from Flanders Road Bridge to its confluence with the Willimantic River.

The project involved a cooperative partnership between the DEP Inland Fisheries and the Inland Water Resources Divisions. The construction phase of the project was accomplished by the DEP Wildlife Division's Wetlands Habitat and Mosquito Management Program, which used specialized low ground pressure equipment to minimize any deleterious effects to wetland and stream habitats during construction.

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A bulldozer moves a root ball into position in the river bank. Root balls were installed to further deflect stream flow away from streambanks and to provide refuges for fish.

A special, low ground pressure excavator digs a deep pool area in the Hop River to create habitat for fish.

The excavator also was used to build a weir dam with rocks. A weir dam maintains pool habitat and concentrates stream flows toward the center of the channel, away from eroding streambanks.

In the early 1970s, the construction of the Route 6 bypass resulted in stream channelization (straightening) and relocation. These alterations, in concert with increased watershed development, destabilized streambanks, accelerated erosion and sedimentation, and degraded instream fish habitats within the lower Hop River.

The Hop River project was a comprehensive river channel restoration, using natural stream channel design and bioengineering techniques. The restoration represents the largest 'bioengineered' project ever completed in Connecticut. Bioengineering involves the use of living plants in combination with other materials to rapidly revegetate and stabilize streambanks and to restore stream ecosystems. Eroded streambanks were stabilized with coconut fiber rolls, small rock, erosion control fabric and plantings of willow and dogwood.

Restoration work also involved the installation of three rock weirs, which were designed to maintain pool habitat and concentrate stream flows toward the center of the channel, away from eroding streambanks. Additional structures made with trees and tree roots were installed to further deflect stream flow away from streambanks and to provide refuges for fish and hibernating areas for wood turtles, which are species of special concern. Boulders and tree tops were placed in the lower section of the Hop River to enhance instream habitats.

The Inland Fisheries Division annually stocks the Hop River with over 3,900 adult brook, brown and rainbow trout. Open season for fishing in the Hop River is from the third Saturday in April until the last day in February. Public access to the property is available via the north side of Route 66, Columbia, approximately 0.1 miles east of Flanders Road. Walk-in only access is available from the railroad bed. The public is advised not to walk on streambank areas that are being restored with vegetation.

Just for Kids

What large bird is brown on its back, white on its belly and has a white cheek patch?

Canada Goose

P. J. FUSCO (2)

Some like it hot! (Or at least warm!)

*Connecticut has **resident** Canada geese that stay here all year long. They nest and spend the winter in Connecticut. Other geese are **migratory** and nest in Alaska and northern Canada and spend the winter in the southern states. Some of these geese migrate through Connecticut in fall and spring. If Connecticut's winter is mild, some of the migrant geese will stay here all winter long.*

Honk, honk, honk!

When Canada geese migrate, their loud honking can be heard from miles away. The geese fly together in large, V-shapes in the sky. As the birds fly, little air currents are made around the wings and body. Flying in a "V" helps the birds gain lift from each other and they use less energy on their flight.

It's not "*Canadian*"

When you are talking about more than one goose say, "*Canada* geese" not "*Canadian* geese." Many people make this mistake. Let your English teacher know!

What does a Canada goose eat?

Unscramble the words below to find out.

1. *teawr nslpta*
2. *desse*
3. *rlvoce*
4. *ragisn*
5. *sgsar*

Watch where you're walking!

Sometimes Canada geese are a nuisance in parks, golf courses, ballfields and lawns. Too many geese leave too many droppings! High grass and low fences may keep geese out. Frightening geese with loud noises, scarecrows, flying balloons or dogs sometimes works, too. Hunting, where it is allowed, can help solve some goose problems.

Answers to Quiz

1. water plants, 2. seeds, 3. clover, 4. grains, 5. grass

Take the Wildlife Challenge!

Guess which animal is described in the challenge and enter into a drawing to win a free wildlife poster. Print your answer on a postcard, along with your name, address and phone number and send it to: CT Wildlife Division, P.O. Box 1550, Burlington, CT 06013, **Attn: Wildlife Challenge**. Answers may also be sent via email to katherine.herz@po.state.ct.us. Postcards for this issue's contest must be postmarked by **February 28, 2003**. Email answers must also be received by that date.

Congratulations

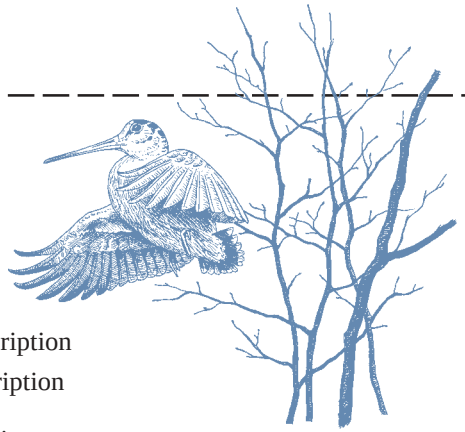
go to Michael Orefice Sr. who was chosen as the winner of the September/October challenge. Michael gave the correct answer of "white-tailed deer." Thanks to all readers who sent in answers. Please keep trying!

January/February Wildlife Challenge

If you've been reading your issues of Connecticut Wildlife *over the past year, you should know the answer to this wildlife challenge. Small numbers of this animal may have existed in Connecticut in colonial times before it eventually disappeared from the state. However, it recently returned to Connecticut in 1998 to reside. This animal, which can stand up to six feet tall and weigh up to 1,400 pounds, is the largest land mammal in the state. What is this issue's wildlife challenge?*

Wildlife Calendar Reminders

Dec. 28-Mar. 19	Shepaug Bald Eagle Viewing Area open for the 2002-2003 eagle viewing season. The observation area will be open three days a week--by advance reservation only--on Wednesdays, Saturdays and Sundays. Call 1-800-368-8954, Tuesday through Friday, from 9:00 AM-3:00 PM, to make reservations.
Jan. 1-31	Extended archery deer season on private land in zones 11 and 12. A 2003 deer permit and private land consent forms dated for 2003 are needed.
January	Donate to the Endangered Species/Wildlife Income Tax Check-off Fund on your 2002 CT Income Tax form (see page 14 for more information).
.....	Spring turkey hunting and state land deer lottery applications available at town clerks' and Wildlife Division offices, or apply online on the DEP's website: www.dep.state.ct.us.
Jan. 15-Feb. 15	Special late Canada goose hunting season in the south zone only. For more details, consult the 2002-2003 Migratory Bird Hunting Guide, available at town clerks' and DEP Wildlife Division offices. The guide can also be found on the DEP's website at: www.dep.state.ct.us.
Feb. 10	State land lottery deadline for spring turkey hunting season.
Feb. 14-16	Visit the Wildlife Division's exhibit at the 5th Annual Hunting and Fishing Expo, at the Connecticut Expo Center in Hartford. For more information on the Hunting and Fishing Expo, visit the website for North East Promotions, www.fishingandhuntingexpo.com.
Feb. 15-16	4th Annual Connecticut River Eagle Festival in Essex. For more information, visit the Connecticut Audubon's website at www.ctaudubon.org.
Feb. 28	Send in permit-required (small game) season survey cards.
Early March	Clean out bluebird nest boxes and install new ones.
March 1	**Bird House Workshop**, starting at 9:30 AM, at the Sessions Woods Wildlife Management Area, in Burlington. Bring your hammer and screwdriver to construct a bluebird/chickadee/nuthatch house. Assisted construction will follow a slide presentation on bird houses, size, placement and habitat. A donation of $4.00 to the Friends of Sessions Woods will cover the cost of the birdhouse. Call 860-675-8130 to preregister and for more information.
March 15	State land lottery deadline for deer hunting season.



P. J. FUSCO

Take time to enjoy the beauty of Connecticut's winter landscape.

Bureau of Natural Resources / Wildlife Division
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127