Like most kids growing up in the country, I had my share of snake encounters. In general, the pleasure associated with each experience was inversely proportional to the size of the snake. I still remember a large, lively water snake that effectively excluded me from the rocky shore of my favorite trout pool for the better part of a fishing season when I was eight years old. These childhood recollections were vividly rekindled last fall as I joined researchers Geoffrey Hammerson and Robin Lemieux to track timber rattlesnakes that had been implanted with radio transmitters. Especially at the moment when Geoff warned us to search very carefully because the signal indicated a mature female was nearly underfoot.

The truth is that few Connecticut citizens have ever seen a timber rattlesnake in the wild. If not for the radio telemetry equipment, we wouldn’t have seen one that day either. These rare and remarkably beautiful animals possess a cryptic coloration that protects them from detection by their prey and predators alike. Most of their time is spent motionless as they bask in the sun or wait in ambush for an unsuspecting chipmunk or white-footed mouse. Timber rattlesnakes are a state endangered species whose range has been greatly reduced since colonial times. Fortunately, their last stronghold in Connecticut occurs primarily on state-owned forest land where the potential for long term protection and conservation is good. However, as with most rare species, we need to learn much more about them before we can develop a management strategy that will ensure their survival.

The project that Dr. Hammerson has headed up for the past three years was funded through the DEP’s Division of Forestry and the United States Fish and Wildlife Service’s (USFWS) Conte Refuge. By capturing and marking rattlesnakes and following their movements, the researchers were able to study the behavior and habitat preferences of individual snakes. Their efforts resulted in 2,692 locations on 146 individual rattlesnakes; a substantial sample that provided a good representation of the local population. As a result of the study, Dr. Hammerson offered many recommendations for the protection and management of the snake population on the study area, including, beneficial forestry practices, actions to reduce human-caused snake mortality, and identifying adjoining private lands that are important to the rattlesnakes.

Many other wildlife species in peril in Connecticut would benefit from similar types of research. In the case of the timber rattlesnakes, the generosity of the Forestry Division and the USFWS allowed us to enlist some extremely dedicated investigators who advanced our knowledge and improved the outlook for an endangered species. I am hopeful that improved funding for other nongame wildlife will materialize in the future so we can expand efforts to assist those species most in need of our attention.

Dale W. May

Cover:
Large moths, like this waved sphinx moth, are important sources of food for many birds, including the state-listed common nighthawk and whip-poor-will. See article starting on page 4.

Photo courtesy of Paul J. Fusco
CT’s Hunter Education Instructors Honored

Written by Peter Bogue, Assistant Director

Connecticut’s Conservation Education/Firearms Safety (CE/FS) Program honored its volunteer instructors on March 18 at the 19th Annual Awards and Recognition Dinner held at the Aqua Turf Club in Plantsville. At the dinner, the CE/FS Program also recognized two instructors from each of the firearms, bowhunting and trapping programs who have made exceptional contributions during the past year. An award of merit was given to an additional two instructors for their outstanding efforts in teaching classes in all three categories of firearms, bowhunting and trapping.

Instructors chosen for these top honors were evaluated on time devoted to CE/FS programs, including classes, workshops and promotional activities. Involvement in community service on related activities, which help to enhance the instructors’ relationship with the general public, were considered as credits in the award nominations. The instructor awards are presented on a total cumulative point system. Points are earned by leading and assisting classes, attending training sessions, giving workshops, total hours contributed to programs and other CE/FS-related activities.

CE/FS Program coordinators each chose an instructor in their respective district to recognize for their innovative contributions to hunter education.

Special recognition for their contributions and support to Connecticut’s CE/FS Program was also given to the Glastonbury Elks Lodge 2202 and the Suffield Sportsmen Association, Inc.

Top honors for 2000 were given to the following instructors:

- **Firearms:**
  - Mark Fowler, Francis Wasylink

- **Bowhunting:**
  - Robert Dudek, Neil Delmonico

- **Trapping:**
  - George Finch, Jr., Jules Perreault

- **Award of Merit:**
  - Lawrence King, Warren Speh

- **Special Recognition:**
  - Raymond Hanley, Peter Mathewson

During calendar year 2000, 314 certified instructors donated 14,778 hours, without compensation, to conduct 177 courses for 4,380 students enrolled in basic firearms, bowhunting and trapping programs. The Wildlife Division is proud of the hundreds of instructors who donate their time and expertise to educating Connecticut’s sportsmen to be safe and responsible hunters. Connecticut’s program continues to be recognized as one of the best in the nation, thanks to the efforts of our volunteers.
What’s So Good About Bugs?
Written by Laura E. Rogers-Castro, Public Awareness Program

Most of us live in Connecticut because we like the change in the seasons. We enjoy spring with its flowers and bird songs, summer for its warm weather and opportunity for picnicking, fall for its spectacular display of color and winter for outdoor sports, such as skating or ice fishing. Well, imagine a world with no fish, birds or other wildlife; very few flowering plants; and no tasty, picnic treats, including blueberry and apple pie. Life would sure be different. This would be a life without insects.

It’s startling to realize that insects play such a vital role in the lives of so many organisms. For instance, insects and other invertebrates (animals without backbones) account for the majority of protein consumed in the diet of land animals. Many birds, including the whip-poor-will, night-hawk, eastern meadowlark, American kestrel, purple martin, eastern bluebird, various flycatchers and many warblers, rely heavily on insects in their diet, especially during the stressful periods of nesting and brood-rearing. Young wild turkeys eat insects, particularly grasshoppers, for the first few months of their lives. Many reptiles and amphibians also eat insects. Some animals are solely insect-eaters, including Connecticut’s eight species of bats. Shrews and moles are in a group of mammals known as the Insectivora. These insect feeders provide the base of the food chain for many animals, including owls, hawks, weasels, mink, foxes, fisher, coyote and various snakes.

The role that insects play in pollination is extremely important. From an entirely utilitarian standpoint, without pollinators there would be no apples, pears, cherries, strawberries, blueberries, blackberries, native garden tomatoes, pumpkins, squash, cranberries, chocolate and even hamburgers (insects pollinate alfalfa, a leading food plant of cattle). In fact, according to Gary Nabhan and Stephen Buchmann, authors of The Forgotten Pollinators, “approximately one of every three bites you take, you can thank a bee or other pollinator. About one-third of the United States’ annual agricultural production is dependent on insect-pollinated plants.”

Insects also pollinate many other plants that are ecologically vital in the landscape. Insect-pollinated trees and shrubs often have showy flowers to advertise their presence. Included in the list of insect-pollinated trees are tulip poplar, sassafras, American basswood, buckeye, black cherry, American chestnut, flowering dogwood, sugar maple, mountain-ash and hawthorn. Shrubs include witch hazel, spicebush, shadbush, staghorn sumac and Connecticut’s state flower, the mountain laurel. Connecticut’s native vines, wild grape, poison ivy and Virginia creeper, are all insect-pollinated. And, of course, insects pollinate many wildflowers.

Insects that are parasites of other insects are called parasitoids. Parasitoids are sometimes used for the control of insect pests and some can even be purchased for use in home gardens. Parasitic wasps can be used to control tomato hornworms, a caterpillar that can defoliate tomato plants and decrease production. Usually, parasitoids lay their eggs inside another insect and then have “readymade” food for the parasitoid’s developing young. The use of parasitoids is beneficial because it often results in a decreased use of chemical pesticides, which can be harmful to the environment.

Some predatory and foliage-eating insects are also beneficial to humans and...
Turkey Hill Marsh - A Cooperative Project

Written by Paul Rothbart, Supervising Wildlife Biologist

Turkey Hill Marsh, a valuable, 35-acre inland marsh in Cockaponset State Forest within the town of Had-dam, was recently restored. The water control structure on this marsh, which was originally constructed in the 1960s, had deteriorated to the point that water could no longer be main-tained at desired levels. The Turkey Hill Marsh restoration project involved the replacement of the concrete water control structure and associated pipes. In addition, wood duck nest boxes were installed, vegetation was cleared from the dike and informational signs were erected.

Now that the restoration project is completed, water is being impounded in the marsh at desired levels and excellent wetland habitat is currently being provided for a diversity of species, including waterfowl (black ducks, wood ducks, mallards, hooded mergansers, Canada geese), fur-bearers (otter, mink, muskrat, beaver) and other wildlife like swallows, great-blue herons, bats, cedar waxwings, kingfisher and numerous amphibians and reptiles.

This restoration project was the result of a cooperative effort between the Wildlife Division, the Valley Shore Waterfowlers, Inc., and the Natural Resources Conservation Service-Wildlife Habitat Incentives Program (WHIP). Habitat enhance-ment and restoration efforts are costly. Only through the cooperative support of conservation organizations and agency programs can many of these valuable projects be completed. The Wildlife Division wishes to thank its cooperators for their continued support of Division programs and for their commitment to the natural resources of Connecticut.
Bridgeport Bridge Home of New Nest Boxes for Peregrines  

Written by Julie Victoria, Nonharvested Wildlife Program Biologist, and Dan Biron, DEP Inland Wetlands Environmental Analyst

In early October 2000, DEP Wildlife Division biologist, Julie Victoria, and DEP Inland Wetlands Environmental Analyst, Dan Biron, met with Paul Corrente and Chris Malik, Transportation Planners from Connecticut’s Department of Transportation (DOT) Environmental Planning Division about placing peregrine falcon nest boxes on bridges. The DOT was particularly interested in the P. T. Barnum Bridge in Bridgeport where a peregrine falcon pair has nested for the past three years.

In mid-March 1999, this peregrine pair was frequently seen on the Peoples Bank building in Bridgeport, but nesting was not observed and the pair was not seen in the area after March. Wildlife Division biologists were alerted to the successful nesting attempt of the peregrine pair at the end of June when a peregrine falcon chick was found walking on the ground in a factory parking lot and taken to a veterinarian. The chick, which was healthy and able to fly, was eventually taken to wildlife rehabilitator Marilyn Kappel. A query was sent to local birders asking if anyone knew the location of the peregrine nest. Dennis Varza of Fairfield eventually discovered the nest under Interstate 95 as it spans Bridgeport Harbor. Marilyn released the young bird at the site and it flew to its parents and sibling.

Within a few days, both young chicks had flown from the area. In 2000, this peregrine pair was again active and at least one chick was produced. However, when biologists went to observe the nest and band the chicks in June, a chick was found dead on the bridge abutment below the catwalk where the nest was located. The ill-fated chick may have been blown out of the nest by strong winds.

The DOT spends thousands of dollars per year per bridge to clean off bird feces. However, due to the presence of the peregrines on the P. T. Barnum span, the cleaning of bird feces from the bridge has not been necessary. The peregrine falcons, which prey on other birds, have kept local bird populations down to a minimum.

Construction of the new span of the P. T. Barnum Bridge and rehabilitation of the old span has led to concern about the peregrine pair during the breeding season. The old span at this site will be taken down in pieces and rebuilt to widen the highway. The peregrines nested at this site during the construction of the new span and fledged two chicks. To prevent the birds from nesting in their old location or any new location on the old span, new peregrine nest boxes were proposed to be put up in February by DOT contractors, along with the removal of all the catwalks on the old span. The old span will be removed after the chicks fledge this year.

Two new boxes were installed in late February 2001 under the P. T. Barnum Bridge. A third box was installed in mid-March, close to the original nesting site. No sooner had the workers from L. G. Defelice Construction finished installing the box on the pier than one of the falcons landed on the perch and appeared to take up residence! It made for a lot of excited construction workers who may have been skeptical about the State installing “falcon condos” for birds that would never use them. Stay tuned to future issues of Connecticut Wildlife to find out if the pair took up residence in one of the new boxes.

For more peregrine falcon news, check the wildlife section of the DEP’s website (http://dep.state.ct.us/burnatr) for the link to the Peregrine Watch at Travelers Tower. The webcam shows the nest of a peregrine falcon pair nesting on the Travelers Tower in Hartford. Those who do not have access to the Internet can request a fact sheet on this interesting bird from the DEP Wildlife Division’s Nonharvested Wildlife Program, 391 Route 32, North Franklin, CT 06254 (860-642-7239).
Raccoon Rabies Risk Remains

Raccoon rabies first appeared in Ridgefield, Connecticut, in March 1991. As expected, the disease steadily advanced throughout the state in the following years until its presence was documented in all 169 towns.

When describing the current status of the disease in a given geographical area, public health officials commonly use the terms “epizootic” and “en- zootic” to illustrate disease intensity and distribution. Used correctly, the term “epizootic” refers to an increase and spread of wildlife disease over and above the baseline levels that would normally be expected to occur on a regular basis among wildlife populations. “Enzootic” (endemic for human disease) refers to the low level of disease reached following an epizootic period of increasing intensity and distribution. The experience in Connecticut and other statesaffected by the raccoon rabies epizootic has shown that raccoon cycles naturally within the raccoon population and returns to enzootic levels within one to two years following its introduction into previously unaffected areas. Connecticut and most New England states are now considered enzootic for the raccoon variant of the rabies virus.

Because Connecticut is experiencing enzootic levels of rabies, far fewer cases of the disease are reported than when the state was experiencing an epizootic. However, the disease will continue to persist and may even resurge slightly in certain areas. Any resurgence is not expected to be nearly as severe as experienced during the initial phase of raccoon rabies.

Since the first case of raccoon rabies was reported in 1991, a total of 4,566 cases among wild and domestic animals have been confirmed through laboratory testing. Raccoons continue to be the primary species affected, although spillover into other wildlife, particularly skunks, has been well documented. Unvaccinated cats, especially stray, feral or unowned cats, represent the majority of spillover cases among domestic animals and have accounted for the greatest number of direct exposures to humans.

Always Take Precautions

Connecticut residents should remain aware of the continuing presence of rabies among the wildlife in our state. The overall risk of exposure may be lower than when the disease first appeared, but that does not lessen the need to follow proper precautions, such as:

- Vaccinate dogs and cats. Keep them indoors at night and under close supervision at all times.
- Do not pet, feed or handle any wild or stray animal.
- Avoid direct contact with any animal, including those found dead of unknown causes. Wear gloves or use a shovel if the animal needs to be handled.
- Animal-proof your home to avoid attracting rabies carriers.
- Report sick-acting animals to police or animal control authorities.
- Call your local health authorities if you, a family member or pet is exposed to a suspected rabid animal.

While it remains true that humans can potentially be infected with the fatal disease, it is always important to emphasize that no human deaths have been attributed to the strain of rabies carried by raccoons in the eastern United States since the problem began in Florida in the 1950s.

For more information about rabies or if you have questions concerning the animals that can potentially carry rabies, contact the Wildlife Division’s Hartford office (860-424-3011) or your local health department.

Symptoms of Disease in Wild Animals

Abnormal behavior or any change in behavior in animals may indicate the presence of rabies or other nervous system diseases. The following symptoms may indicate the presence of rabies in mammals:

- Unprovoked, aggressive behavior
- Lack of fear/unusual friendliness
- Aimless wandering/disorientation
- Shaking, tremors, convulsions
- Partial or complete paralysis
- Lack of coordination/difficulty moving
- Daytime activity for nocturnal animals, if accompanied by one or more of the above symptoms.

Not all sick animals are infected with rabies. The following are some common wildlife diseases that have symptoms similar to rabies:

- Distemper - Most common fatal viral disease in wildlife. Not transmissible to humans.
- Toxoplasmosis - Caused by a small organism. Not fatal in adult animals. Transmissible to humans.
- Larvae Migrans - Parasite that affects the brain. Transmissible to humans.
- Lead/Mercury Poisoning - Toxic to wildlife. Ingestion from various sources.
- Antifreeze Poisoning - Usually fatal in all wildlife upon ingestion.
Taking a Count of CT’s Hibernating Bats

Written by Geoffrey Krukar, Nonharvested Wildlife Program Technician

Every other winter, members of the Wildlife Division’s Nonharvested Wildlife Program head underground to conduct a survey of bat hibernacula located in Connecticut. The purpose of the survey is to determine the number and species of bats that are using the various hibernacula. A hibernaculum is a place, such as a cave, mine or aqueduct, where bats can hibernate in stable temperatures and humidity levels. All but three of Connecticut’s eight bat species will seek out a hibernaculum, either here in Connecticut or in Massachusetts, New York and Vermont. This year, the Wildlife Division led surveys of seven sites throughout western Connecticut.

The results of the 2001 survey were mixed (see table). More bats were counted this year than in 1999, with slight increases at five of the seven sites. Two of the sites showed insignificant decreases.

This year’s survey was the first conducted at the Roxbury Iron Mine, Connecticut’s largest bat hibernaculum, since new bat-friendly gates were installed in 1999. The gates allow bats free access to their hibernaculum while protecting them from human disturbance. They also protect the public from the more than 30-foot drop into the mine. Although bat numbers were not any greater in the Roxbury Mine than in 1999, they were not significantly less either. The difference was small (65 bats) compared to the total number of bats (about 2,500) and the population could be considered stable. In addition, the difference in survey results could be attributed to other factors, such as observer variance or the bats being better hidden from view this year. It is a positive sign that the construction of the gates did not deter bats from using this hibernaculum and it is hoped that more bats will

Did You Know?

Connecticut has three species of bats that are considered migratory. The red, hoary and silver-haired bats all migrate to southern locales for the winter. They find suitable hibernacula locations further south or, in the case of the hoary bat, travel to the Gulf of Mexico where they remain active during the winter months and feed on insects that are still available.
Little brown bats frequently hibernate in tightly packed clusters

use the site in the future now that bat access has been improved. One of the greatest threats to hibernating bats is human disturbance. If bats are disturbed during hibernation they use up valuable fat stores and risk not surviving the entire winter.

The species of bats that were seen during this year’s surveys include the northern long-eared (Myotis septentrionalis), little brown (Myotis lucifugus), big brown (Eptesicus fuscus) and Eastern pipistrelle (Pipistrellus subflavus).

Choosing a Place to Hibernate

The proper selection of a hibernaculum is extremely important for bats. If they choose poorly, the bats could face dropping winter temperatures and risk freezing to death. To counteract this, some bats, like the Eastern pipistrelle, will select sites during the autumn that are warmer than is optimal to give themselves a buffer against colder temperatures. Others, like the little brown bat, actually prefer warmer hibernaculum temperatures, around 40 to 45 degrees Fahrenheit. However, some bats, like the big brown bat, can actually survive in temperatures as low as 29 to 39 degrees Fahrenheit. Big brown bats are usually the last bats in Connecticut to enter hibernacula because they can tolerate the cooler autumn temperatures.

For all our hibernating bats, temperature stability is the key factor to a good sleeping spot. If a bat is forced to move inside a hibernaculum to adjust to temperature changes, it uses up stored energy reserves and jeopardizes its survival until spring.

Bat Hibernacula Survey Results for 1999 and 2001

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<tr>
<th>Location</th>
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<tr>
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<td>Salisbury</td>
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</table>

(Top) Researchers work as a team to ensure that the entire hibernaculum is surveyed and all of the bats are counted. This also speeds up the process, reducing disturbance to the hibernating bats.

(Bottom) Resource Assistant J. T. Stokowski downloads information into a hand-held computer from a data logger that is permanently installed in the mine. Data loggers, like the one pictured here, continuously record the mine temperature and humidity levels at one-hour intervals.

P. J. FUSCO  (3)
Guess Who’s Coming to Dinner

Written by Paul Fusco, Public Awareness Program

We’ve all seen those huge dark birds flying along the ridges and valleys throughout Connecticut. Seldom flapping their long, broad wings, they glide gracefully on the wind, making use of rising warm air thermals to soar to great heights. These highly visible, expert soaring birds are vultures.

Two Species Found in CT

There are two vulture species that occur in Connecticut. The slightly larger and much more common species is the turkey vulture (Cathartes aura). Over the last 50 years, turkey vultures have gradually expanded their range from the south into Connecticut and beyond, now breeding as far north as southern Canada. They are now widespread and fairly common breeders in our state.

The second species is the black vulture (Coragyps atratus). Historically a southern species, black vultures are in the process of expanding their range northward and are currently becoming more numerous in Connecticut every year, although they are still considered to be rare to uncommon. Most occur in western Connecticut, where they can sometimes be seen mixed in with turkey vultures, either flying in groups or roosting in trees.

Both species are short distance migrants that move south for the winter, although some hardy individuals, mostly turkey vultures, may remain during milder years.

Vulgar Vulture

As scavengers, both species feed mostly on carrion, although they will also consume garbage, small newborn animals, newly-hatched birds and sometimes fruits and vegetables.

Vultures are well known for their amazing ability to consume infected, rotting meat without any ill effects. By consuming dead carcasses, either as roadkill or at dumps, vultures provide a “clean-up” service that helps to lower the spread of bacteria and disease.

Raptor or Not?

Because of their large size, vultures are sometimes mistaken for eagles. Although sometimes lumped in with hawks and eagles as raptors, they differ from true raptors in a number of ways. One main difference is the structure of their feet. Vultures, like raptors, have strong legs; however the feet and claws on vultures are not well adapted to grabbing and killing prey like the feet and talons on a raptor. The main food item of vultures is carrion, while raptors usually catch and kill their own prey.

Another characteristic of vultures is that they have featherless heads. Because they feed on dead carcasses, their heads are bare so that any decaying material does not become caught in their feathers when they reach into a carcass with their bill. Any rotting matter that would otherwise be stuck to their head feathers could spread bacteria and disease.

In 1998, with the publication of their 7th edition of the Check-List of North American Birds, scientists from the American Ornithologists Union concluded that vultures are more closely related to storks than they are to hawks and eagles. This official source on the taxonomy of birds now lists vultures next to the storks.

How Do Vultures Locate Food?

By riding thermals and the wind, vultures can cover large distances with a minimal use of energy as they search for food from high above the ground. At times, carrion can be difficult to locate, so conserving energy is a must. Turkey vultures use a keen sense of smell, along with sight, to locate their food, while black vultures rely primarily on sight.

When one bird locates and flies down to food, other vultures that are within sight of the first will move in. Sometimes a large number of vultures will end up feeding on the same source of food. By using others to help locate food, individual vultures can maxi-
mize their opportunities to feed. Coupled with their ability to conserve energy, vultures make the most out of the food that is available.

**Turkey Vulture**

These majestic soaring birds have long broad wings and brownish-black feathers. They get their common name from the red skin of the head on adult birds, giving them the appearance of a wild turkey. Immature birds are darker than adults and have a black head.

Rock ledges, caves and hollowed out tree stumps are favored nesting locations for this species. It does not build a nest, but rather lays its eggs on bare stone, ground or inside tree hollows. Two eggs are normally laid and young hatch after about 38 days. Feeding on food regurgitated by the adults, the young vultures continue to grow. At the age of approximately 10 to 12 weeks, they are ready to fledge from their nest.

**Black Vulture**

Slightly heavier on average and having a shorter tail and wings, the black vulture is not as graceful in flight as the turkey vulture. It must work harder by flapping its wings more often to stay aloft.

This species usually nests in tree hollows or on the ground under dense thickets. It has similar incubation and fledging times as the turkey vulture.

In Connecticut, the black vulture is found mainly in the Housatonic and Naugatuck River valleys and along nearby ridges. Nesting of this species in our state is suspected, but not yet confirmed. Observers have documented courtship behavior and reported seeing juvenile birds during summer. In 1996 an apparent fledgling was found and brought to a New Haven area rehabilitator, but its origin was unknown. Perhaps 2001 will bring a confirmation of black vulture nesting in Connecticut.
Bluebird Bulletin

Due to winter’s relentless grip on Connecticut this year, bluebirds began nesting later in 2001 than in past years. The deep snow and cold temperatures made it difficult for bluebirds to find nesting material and food. Normally, Connecticut’s bluebirds can begin nesting as early as March 1st and many will have their first nest by no later than March 15th. Yet, the first reported nest this year was from the Quinnipiac Valley Audubon Center on March 24th, a good two weeks later than normal.

Having a late start does not necessarily mean that the bluebirds will be less successful at raising young than in previous years. It does, however, mean that it will be very unlikely that bluebirds will raise a third clutch this year because the breeding season has been shortened.

Wood Distribution Program Still Active

Every year since 1986, the Wildlife Division has supplied bundles of rough-cut lumber to groups for the construction of bluebird nest boxes. Along with the lumber, packets of information containing box plans, bluebird fact sheets and survey cards are sent to interested groups. When the program first began, participation was so high that often times more groups requested wood than we could accommodate. However, in recent years participation has been low. Last year, approximately 15 bundles went unclaimed. This year, a limited number of bundles still remain unspoken for. The Wildlife Division relies heavily on volunteers to construct and monitor bluebird boxes. If any groups are interested in reserving bluebird box lumber, please call the Wildlife Division’s Nonharvested Wildlife Program, at 860-675-8130, Monday through Friday between the hours of 8:30 a.m. and 4:00 p.m.

Did You Know?

Bluebirds are birds of semi-open habitat, preferring orchards, parklands, meadows and other areas with scattered trees and short ground cover. They perch in the open, scanning the ground for their prey of insects and spiders. In fall and winter, their diets change to wild fruits and berries. During fall migration, dogwood and viburnum berries are very important foods. Typical winter foods are the fruits of Virginia creeper, eastern red cedar, sumac, bayberry, honeysuckle, winterberry and many other berry-producing shrubs and vines.

The Bluebird Bulletin is a special supplement to Connecticut Wildlife which reports on the activities of the Bluebird Restoration Project. Prepared by Nonharvested Wildlife Program Technician Geoffrey Krukar, the Bulletin also provides helpful suggestions and innovative ideas on helping eastern bluebirds continue their comeback. If you would like to join the hundreds of participants in Connecticut’s Bluebird Nest Box Network, contact the Wildlife Division at (860) 675-8130.
2000 Bluebird Nesting Season Summary

Connecticut’s Bluebird Restoration and Wood Distribution Project was initiated by the Wildlife Division in 1980 in an effort to increase the state’s eastern bluebird population. Through this project, the Division has provided educational materials, plans and assistance to community service organizations, school groups and others for the construction and installation of bluebird nest boxes. Since the bluebird project started, almost 1,600 groups have helped build nearly 40,000 boxes!

In many ways, the 2000 bluebird nesting season was less successful than in previous years. The Wildlife Division relies heavily on individuals to monitor nest boxes throughout the state and report usage by either bluebirds or other species. Unfortunately, fewer survey cards were returned this year than in 1999 and as a result reports were received for less nest boxes. Overall nest box occupancy also was down from last year and a greater percentage of people reported having predator problems. In addition, fewer towns were represented in reports than were last year.

On the bright side, tree swallows and bluebirds continued to be the two most prevalent box users, with bluebirds fledging 686 young. Box usage by house sparrows decreased from last year, due in part to the continued efforts of volunteers to evict them. It is important for box owners to evict house sparrows to allow our native birds to occupy them.

Nest Boxes Aren’t Just for Bluebirds

Black-capped chickadees, tufted titmice and tree swallows are all native cavity nesters that will use bluebird nest boxes. You should welcome their use of your box because you are providing a needed nesting location. If nesting bluebirds are being harassed or driven off by tree swallows, put up a second box 20 to 30 feet from the first. A tree swallow pair will select one box for nesting and defend the other box against use by other swallow species, allowing the bluebirds to claim it.

However, house sparrows (non-native), European starlings (non-native) and house wrens are all unwelcome users of bluebird boxes and they should be discouraged. To find out what you can do to help, read the Eastern Bluebird informational sheet published by the Wildlife Division. See the “For More Information” section of the Bulletin to find out how to obtain the fact sheet.

For More Information . . .

Information about the life history of the eastern bluebird, nest box plans and installation tips is available in an eight-page fact sheet, “Eastern Bluebird.” This publication and postage-paid nest box survey cards are free-of-charge to Connecticut residents and may be obtained by writing to: Non-harvested Wildlife Program, P.O. Box 1550, Burlington, CT 06013 or by accessing the wildlife section of the DEP’s website at http://dep.state.ct.us/burnatr/wildlife. In addition, anyone interested in reporting on bluebird box usage can obtain postage-paid survey cards by calling 860-675-8130 or by writing to the address listed above. The reports received from volunteers are the main way in which the Wildlife Division can monitor the bluebird’s status in Connecticut.

Information on bluebirds can also be found on the North American Bluebird Society’s web site: http://www.nabluebirdsociety.org. Those who do not have Internet access may write to the North American Bluebird Society, P.O. Box 74, Darlington, WI 53530

Percentage of Bird Species Reported Using Nest Boxes, 2000

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<th>Species</th>
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Gearing Up for Mosquito Season

By Roger Wolfe, Mosquito Management Coordinator

It’s that time of year when people are thinking about outdoor activities, such as gardening, fishing and hiking. Signs of spring are everywhere: daffodils sprouting, birds singing, mosquitoes buzzing. Oh yes. That all too familiar sound makes us start itching every time we hear it. The telephone calls are starting to trickle in. “What’s the mosquito season going to be like this year?” “With all the snow we got, is it going to be a bad year?” “I’ve got mosquitoes in my house. Are they hatching already?” It’s not possible to make predictions about the upcoming mosquito season because there simply is no way to predict what Mother Nature has in store. It’s true that we had a lot of snow this past winter which melted and created excess standing water, providing good habitat for spring mosquitoes. But after that, who knows?

Currently, there are 48 different species of mosquitoes in Connecticut, all with their own unique feeding patterns and life strategies. All mosquitoes go through a life cycle called “complete metamorphosis.” That is, they have an egg, larva (“wiggler”), pupa (“tumbler”) and adult stage. This is similar to the life cycle of butterflies that also have an egg, larva (caterpillar), pupa (chrysalis) and adult butterfly stage, except that mosquito larvae and pupae live in the water and the tumblers (unlike a butterfly chrysalis) are very active. The rate of development from egg hatching to adult emergence is related to water temperature and can take one to two months in early spring, or as little as seven to 10 days in summer. Some mosquitoes can have up to six to eight generations per year while others will have only one or maybe two. To survive the winter, some mosquitoes will lay their last batch of eggs in the summer or fall, which will survive cold winters and droughts, only to hatch in the spring when conditions are right. This is the strategy used by spring woodland pool mosquitoes and salt marsh mosquitoes. Other mosquitoes will seek out rock crevices, basements and barns and essentially hibernate for the winter. That is why, as things begin to warm up in the spring, we begin to see adult mosquitoes indoors. Those are the adults that have overwintered and are waking up. They will be looking for sources of water and sugar. The females do not seek a blood meal until May or June when conditions are right for them to lay their first batch of eggs.

2000 Mosquito Management Program Activities

Last year was quite active as we went into our second year of West Nile virus (WNV) activity. A great deal has been learned from Connecticut’s (and other states’) experience with WNV. Connecticut was very fortunate in that there was already a highly successful surveillance program in place to monitor for the presence of Eastern Equine Encephalitis (EEE), another mosquito-borne disease.

In Connecticut, the state’s Mosquito Management Program is a collaboration of several agencies, including the Department of Environmental Protection (DEP), The Connecticut Agricultural Experiment Station (CAES) and the Department of Public Health (DPH), with assistance from the Department of Agriculture (DoAG) and the Department of Pathobiology and Veterinary Sciences at the University of Connecticut (UConn). The goals of the Program are to monitor for mosquito-borne diseases, educate the public and take appropriate actions to prevent outbreaks of human illness. The Program has a very intricate communication network within the member agencies, as well as with local health districts, physicians and veterinarians, to provide thorough monitoring and timely response to any public health threat of mosquito-borne diseases. The following is a summary of West Nile virus activity for 2000 in Connecticut and the region.

Mosquito Surveillance: The CAES trapped and tested over 137,000 mosquitoes for WNV and other viruses from June through October. They identified 14 isolations of WNV in four different mosquito species with the first isolation occurring July 15 and the highest number of isolations occurring in mid-September. The CAES also had one isolation of EEE in a pool of mosquitoes and eight isolations from crows and one from a wild turkey. (Hunters should note that they cannot contract EEE or WNV from eating an infected game bird or

Used tires and other artificial containers provide ideal mosquito breeding sites and should be disposed of properly.

DEP Mosquito Control Specialist Steve Rosa inspects a ditch for mosquito larvae. Larval surveillance is essential before any larviciding can be done.
mammal. Proper cooking should kill any potential disease organisms.)

Regionally, WNV-positive mosquitoes were found in Connecticut, New York, New Jersey Pennsylvania and Massachusetts.

**Bird Surveillance:** The DPH, with the help of the UConn Pathobiology Laboratory and the DEP Wildlife Division, coordinated bird surveillance and testing for WNV, working closely with local municipalities. Over 1,800 dead birds (mostly crows) were submitted for testing. Over 1,100 birds were positive for WNV. The first isolation was made on July 5, but the majority of WNV-positive birds were submitted from mid-August through mid-October. Regionally, WNV-positive birds (over 60 different species) were found throughout Connecticut, New York, New Jersey, Rhode Island, as well as in parts of New Hampshire, Vermont, Pennsylvania, Washington D.C., Virginia and North Carolina.

**Horses and Other Mammals:** Horse and domestic animal surveillance was performed by the DoAG, in conjunction with the UConn Pathobiology Lab and local veterinarians. In Connecticut, seven horses were identified with WNV; three had to be euthanized. The distribution of horse cases was random and occurred in rural, residential and urban areas. The majority of horse cases occurred in mid-September with the dates coinciding with virus activity in mosquitoes. Other horse cases were confirmed in Rhode Island, Massachusetts, New Jersey, New York, Pennsylvania and Delaware. Mammals (other than horses and humans) from which WNV was isolated throughout this region included bats, rabbits, a skunk, a chimpunk, cats and a skunk.

**Humans:** Connecticut had one human case of WNV that did not fit the clinical definition. This person (over 50 years old) from Norwalk is an active gardener and outdoors person. She complained of a mild headache for several days then fully recovered. Her doctor suggested she get tested for WNV. She had positive antibodies for the virus which was confirmed by the National Centers for Disease Control and Prevention (CDC). This is not unusual as most people who get WNV never have any symptoms or may experience only mild symptoms, such as a headache, mild fever or stiff neck, before fully recovering. In October, the DPH, in conjunction with the CDC, performed a seroprevalence survey in lower Fairfield County. Over 700 volunteer blood samples were tested for antibodies for WNV. All tests were negative. Throughout the region, 19 people (including 3 deaths in NY and NJ) were identified with WNV in 2000. In 1999, 61 clinical cases (including 7 deaths) were identified in New York.

**Technical Assistance, Education and Mosquito Control:** The DEP provided technical assistance to towns to train local health and public works departments to identify sources of mosquito breeding and ways to reduce sources of breeding. In addition, $500,000 was appropriated by the State Legislature and provided to 45 towns in the form of grants to conduct larval mosquito control. The application of larvicides (pesticides to kill mosquito larvae) is very effective at reducing mosquito numbers.

In response to the WNV surveillance results, the DEP also sprayed adulticides, using truck-mounted Ultra Low Volume sprayers, on three occasions (in July and September) to reduce the number of adult mosquitoes that might be carrying WNV. The DEP also spent a great deal of time educating the public about mosquitoes, WNV, ways to reduce mosquitoes around homes and personal protective measures. Several public service announcements aired on local television and radio stations and informational brochures were distributed to all town health departments, town clerks and libraries, and to the public upon request. The DEP’s website (http://dep.state.ct.us) posts these informational brochures, as well as Connecticut’s WNV and EEE Response Plans and testing results.

**What’s New for 2001?**

Since the end of the mosquito season last fall, members of the Mosquito Management Program have been revising the WNV Response Plan and working on a course of action for the upcoming year. Over the winter, mosquito and public health experts from around the country met on several occasions to discuss what was learned from the past two years. With that knowledge, the Mosquito Management Program has prepared a budget that includes state and federal funding.

### Personal Protective Measures

There are many things that homeowners can do to minimize mosquito activity in their yards and neighborhood. Learn to recognize sources of potential mosquito breeding. Almost anything that can hold water for a minimum of seven to 10 days can breed mosquitoes. Common sources around the house include clogged rain gutters, buckets, used tires, tarps over pools and wood piles, unmaintained swimming pools, children’s wading pools and bird baths. Dispose of these sources or flush them out once a week. In addition, make sure window and door screens are tight with no rips, take personal protective measures against mosquito bites by avoiding peak mosquito activity (dawn and dusk), wear long sleeves and pants when mosquito activity is high (light-colored, loose fitting clothing works best and is cooler, too), consider wearing repellants (read the label) or, if all else fails, go indoors. These common sense approaches can help you enjoy the summer and not be bothered by these pesky creatures. Again, the DEP website contains plenty of information on protecting yourself from mosquitoes. The DEP is also providing a toll-free information line, 1-866-WNV-LINE.
Each year, between 2,500 and 3,000 deer are reportedly killed on Connecticut’s roads. Based on a preliminary survey, at least half of all deer hit and killed by cars are not reported and some deer may wander off the road before dying. A more realistic estimate is that between 5,000 and 8,000 deer are killed by cars annually. This is equivalent to about 14 to 22 deer per day being killed on Connecticut roads and highways. Most deer-vehicle accidents occur during the breeding season (November and December) when deer are most active. A second peak in deer roadkills occurs during June when young deer are moving into new ranges.

Density of Roadkills Examined

The Wildlife Division has examined the total number of roadkilled deer per square mile of deer habitat (fields, forests, marshes). Towns were considered to have a low to moderate incidence of roadkilled deer if the total number of roadkilled deer was less than two per square mile of deer habitat. Towns with a high incidence had two to three roadkilled deer per square mile of habitat, while towns with a severe incidence had more than three roadkilled deer per square mile of habitat.

Using these rankings, 14 (8%) of Connecticut’s 169 towns ranked as having high or severe incidences of roadkilled deer in 1999. Seven of these 14 towns (50%) were located in Deer Management Zone (DMZ) 11 (see map). More than a third of all towns in DMZ 11 were ranked as having a high or severe incidence of roadkills. Only New Canaan and Ridgefield ranked severe, each reporting over 60 roadkilled deer in 1999. Both towns are located in DMZ 11.

High Deer Population in Southwestern CT

Data on the distribution of roadkilled deer by town indicate that southwestern Connecticut has too many deer. This data is supported by the statewide winter aerial deer counts. The most recent survey conducted in the winter of 1999-2000 indicated that statewide deer densities were about 21 deer per square mile. However, in southwestern Connecticut, deer densities were double the statewide average (about 40 deer per square mile).

Because of concerns about increasing deer populations in New Canaan, a town-appointed committee was charged with investigating the deer situation and providing recommendations. After listening to a long list of experts speak on the topic, the town deer committee strongly encouraged the use of bowhunting to reduce the deer population in New Canaan. The New Canaan deer committee has been very active and progressive in promoting deer management in their town. Unmanaged deer herds that have adequate food and experience limited mortality have the potential to double in size every two to three years.

Summer is the best time to take a Conservation Education/Firearms Safety course. Contact the Division’s Sessions Woods (860-675-8130) or Franklin offices (860-642-7239) for course dates and locations.
Your Questions Answered

I found a giant, green moth. What is it?

When entomologists hear the words “green” and “giant” together in the description of an insect, they know it can be only one thing, the luna moth. This insect is spectacular. It is about four inches long from wingtip to wingtip. And, it is green, lime green to be exact. It has small eyespots on its wings, which makes it appear larger and may discourage predators from attacking. Its antennae are feathery, more so in the male than the female. Females, too, appear bulkier because they are often filled with eggs. The eggs are deposited on the type of plant that the caterpillars or larvae will eat later. For luna moths, this means alder, beech, cherry, hickory, willow and walnut.

A luna moth caterpillar is striking, with six rows of small, reddish-orange spots along a green body. It measures up to three inches when full grown. The cocoon can be found in leaf litter and is made of silk enclosed by leaves. After 25 days or nine months (if it overwinters), the pupa transforms into an adult and the large insects are on the wing for probably two weeks in May or August before the cycle starts anew.

Luna moths are members of the giant silkworm moth family Saturnidae. Several members occur in Connecticut, including cecropia, polyphemus and promethea moths. Most fly during early summer and are always subjects of interest when discovered by an observant outdoor enthusiast. Giant silkworm moths were uncommonly seen during the 1970s and 1980s and it was proposed that they might have been affected by heavy pesticide use during the 1950s and 1960s. They appear to be seen a little more frequently now and this might reflect the fact that some of the more harmful insecticides have since been banned from use in the United States.

2001 Junior Duck Stamp Artist Chosen in CT Competition

The Wildlife Division extends its appreciation to the Connecticut Waterfowl Association (CWA) for its continued sponsorship of the Junior Duck Stamp Program. This federal program is a dynamic, active arts curriculum designed to teach wetlands and waterfowl conservation to students in kindergarten through high school. The program incorporates scientific and wildlife management principles into a visual arts curriculum. Entries are received from all 50 states, with the first place national winning design being used to create a Federal Junior Duck Stamp each year. Proceeds from the sale of Junior Duck Stamps support conservation education by providing awards and scholarships for the students, teachers and schools that participate in the program.

The judging of this year’s entries was held on March 28th at Connecticut Audubon’s Coastal Center, located at Milford Point. The winning print, along with other representative pieces, are now on display at the Coastal Center. Our thanks and congratulations go out to the 43 young artists that submitted entries this year.

A special congratulations is extended to this year’s winning artist, Wes Kipphut, from Kensington. Wes is a 13-year-old who submitted his entry in age group III (grades 7-9). His winning entry was a beautiful color pencil drawing of a male hooded merganser, entitled “Going for a Swim on Lake Jackson.” Wes will be recognized at a special ceremony and receive the “Best of Show” award, which is the CWA Life Member Print by Keith Mueller entitled “Harbor Bound”, along with a framed 2000 edition of Connecticut’s Duck Stamp print. The three other category winners will also be recognized at this ceremony and receive framed Connecticut Duck Stamp prints.

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“Best of Show” was awarded to Wes Kipphut of Kensington for his color pencil drawing of a hooded merganser.
Take the Wildlife Challenge

Guess which animal is described in the challenge and enter into a drawing to win a free wildlife poster. Clearly 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. The answer and winner will be printed in the next issue of Connecticut Wildlife. Official Rules: Only one postcard will be accepted per household, per challenge. Postcards for this issue’s contest must be postmarked by May 31, 2001. Only one winner will be chosen for each challenge. Each winner will be chosen at random from all correct entries received by the postmarked deadline.

The answer to the Wildlife Challenge in the March/April 2001 issue is the porcupine. The name of the winner of the March/April challenge will be published in the July/August issue, along with the answer to this issue’s challenge.

Wildlife Calendar Reminders

May

Rabies Awareness Month -- Learn more on page 7.

Keep dogs off of Connecticut beaches to avoid disturbing nesting shorebirds.

Herons and egrets are nesting on offshore islands in Long Island Sound. Refrain from visiting these areas to avoid disturbing nesting birds.

Spring Turkey Hunting Season (For more information, see the 2001 Connecticut Hunting and Trapping Guide, available at town clerks’ and DEP offices or on the DEP website http://dep.state.ct.us.)

International Migratory Bird Day event, at the Sessions Woods Conservation Education Center, in Burlington. Call (860) 675-8130 to preregister.

Early Morning Bird Walk at 6:30 a.m.

Bird Banding Demonstration throughout the morning.

Birdwatching for Kids, starting at 9:00 a.m.; an introduction to birds for kids and their parents.

Bird House Workshop, from 10:00 a.m. to 12:00 noon. Bring a hammer and screwdriver to construct a bluebird house. Includes a slide presentation on bird housing, size, placement and habitat by Wildlife Division biologist Jenny Dickson. A donation of $4.00 to the Friends of Sessions Woods will cover the cost of materials for the bluebird house.

Connecticut Trails Day 2001. A wide variety of weekend-long events for all ages is planned across the state. Call the Connecticut Forest and Park Association (860-346-2372) to obtain a copy of the Trails Day 2001 brochure, which provides a complete listing of events.

The Second Coming: Moose, Black Bear, Coyote, Bobcat, Fisher, at the Connecticut Forest and Park Headquarters, 16 Meriden Road (Route 66), Middlefield, 7:30 p.m. Paul Rego, Furbearer Program Biologist for the Wildlife Division, will show slides and discuss how these wild animal populations have grown in recent years and the animal/human conflicts that arise. Call the Connecticut Forest and Park Association for more information (860-346-2372).

Dr. Tom Atwood will inform you about wildlife in the backyard. Meet at the Sessions Woods Conservation Education Center, in Burlington, starting at 9:30 a.m.; an introduction to birds for kids and their parents.

At 6:30 a.m.

While viewing fireworks displays at Connecticut’s coastal areas, respect fenced and posted shorebird nesting areas and offshore rookeries.

Teacher workshop: Biodiversity and Wildlife Habitats for Teachers of Grades 5-8, at the Sessions Woods Conservation Education Center, in Burlington, from 9:30 a.m. to 11:30 a.m. Participants will explore the diversity of wildlife habitats in Connecticut, learn how to teach about biodiversity and discover activities to use in the schoolyard. For more information and to obtain a preregistration form, call Laura Rogers-Castro at (860) 675-8130.

Teacher workshop: “Wildlife in Your Connecticut Backyard” & “Woodland Wildlife” Outreach Kits, at Franklin Wildlife Management Area, in North Franklin, from 10:30 a.m. to 2:30 p.m. Participants will be introduced to the Wildlife Division’s educational kits available for loan. They will also learn about common Connecticut wildlife through the kits’ slide shows and printed materials. There will be an opportunity to conduct activities for use in the classroom by using wildlife-related props. For more information and to obtain a preregistration form, call Laura Rogers-Castro at (860) 675-8130.
The Rap on Rabies

Rabies is caused by a virus. Viruses are very, very small. The common cold is caused by a virus. But unlike a cold, rabies is very dangerous.

Who can get rabies?
Any mammal, including people, can get rabies. There are different kinds of rabies that make different animals sick. Right now, in Connecticut, raccoons, foxes, skunks and bats are more likely to get rabies. House cats living in the wild are also likely to get rabies.

How do you get rabies?
Usually, when you are scratched or bitten by an animal that has rabies.

How can you tell if an animal has rabies?
Animals with rabies often walk funny and sometimes drool. Just because an animal is seen in the daytime, doesn’t mean it has rabies.

What you can do to avoid rabies.....
- Get your pets vaccinated
- Keep a safe distance from all animals, even if they seem tame
- Don’t feed wild animals
- Don’t touch dead animals
- Don’t play with or pet strange cats and dogs

Mammal Mania
What makes a mammal a mammal?
Unscramble the words below to find out.

amwr odolb
lmki nsdlag
ihra (most mammals)

Answers:

warm blood, milk glands, hair
Woodworking for Wildlife
Homes for Birds & Mammals

The Wildlife Division’s Nonharvested Wildlife Program is offering a revised second edition of this popular book for $10.00. Now published with color photographs and an easy-to-use spiral binding, it is the perfect resource for anyone wishing to build homes for wildlife.

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