January/February 2015

Connecticut Wildlife

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

Eye on the Wild

Going Back in Time

As the Coordinator for the DEEP Wildlife Division's Landowner Incentive Program (LIP), it has been deeply gratifying to not only be able to help implement large-scale habitat enhancement projects on private land, but to also work with landowners, such as Paul Chase of Montville, Connecticut, who are deeply committed to their land and the wildlife that calls it home. Paul wrote the article entitled "Going Back in Time" on page 10 of this issue. It is his personal account of undertaking a LIP project to restore, create, and manage 16.5 acres of young forest on his 110-acre property. LIP was initially made possible by a competitive grant awarded by the U.S. Fish and Wildlife Service to the Wildlife Division, enabling the Division to set up its own competitive grant program to restore, create, and enhance wildlife habitat for species at risk on private land. Paul's project is the 40th LIP-funded project to be completed and only a handful of projects remain to be done. LIP funding was eliminated some years ago, and the Division will work to complete the last five projects this year before LIP comes to an end.

The goal of the project carried out on the Chase property was to create, restore, and manage young forest habitat, which is declining across Connecticut. Young forest habitat is dominated by young trees and shrubs and is often intermixed with small patches of grasses and wildflowers. While never a dominant cover type, young forest habitat has always been a critical part of Connecticut's landscape. This habitat is created through natural processes, like storms, flooding, fire, and beaver activity, as well as through man's activities, such as timber harvesting, mowing, and abandonment of previously cleared farmland. Without these disturbances, time marches on and areas grow into mature forest. In order to "go back in time," a natural or man-made action is necessary to set back succession. (Succession is the gradual, natural growth of open fields into forest.) Young forest habitats are declining due to development, natural succession, man's interruption of natural processes, and public adversity to timber harvesting. The Chase property had been a working farm for hundreds of years, but with the absence of active pasturing and farming, it was growing back into mature forest.

Many species of wildlife have evolved to take advantage of young forest habitats as they were created across the landscape, and the New England cottontail is one such example. Once abundant, this native rabbit is being considered for listing under the federal Endangered Species Act. The New England cottontail's range has been reduced by more than 80%, largely due to dwindling habitat and possible competition from the introduced eastern cottontail. Other young forest dependent species, like the woodcock, ruffed grouse, and whip-poor-will, also continue to decline. By restoring the reverting field habitat on the Chase property and clearing low value trees from what was once pasture, we are "going back in time" and resetting the successional clock so that wildlife can once again find thick, dense areas of shrubs, young trees, grasses, and weeds that provide important food and cover.

Private landowners who are interested in conducting projects similar to that carried out on the Chase property may be eligible for the Working Lands for Wildlife Program, depending on location, the potential of the land to provide critical young forest habitat, and the size of the parcel and project. For more information, please contact Judy Wilson of the Wildlife Division's Habitat Management Program at judy.wilson@ct.gov or 860-295-9523.

Judy Wilson, DEEP Wildlife Division Biologist

Cover:

Winter is one of the best times to catch a glimpse of bald eagles, particularly along our major rivers. Wintering eagles begin to arrive in Connecticut in December, with concentrations peaking in January and February.

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

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Mapping the Wildlife Action Plan in Marine Waters

By Penny Howell and Deb Pacileo, DEEP Marine Fisheries Division

DEEP Marine Fisheries Division biologists are involved in the update of Connecticut's 2015 Wildlife Action Plan, adding digital maps that show the distribution of key marine species using Geographic Information System (GIS) tools not available when the Wildlife Action Plan was first developed in 2005.

These distribution maps will make it much easier for professionals and the public to see where species important to the Long Island Sound ecosystem are most frequently found. Data from the Long Island Sound Trawl Survey were used to generate maps showing locations with the greatest density of tautog, cunner, and windowpane flounder, among others, from 1984-2013. Separate maps showing spring and fall catch distributions of alewife, blueback herring, and winter flounder were generated to show the large seasonal distribution changes of these species. Distributional maps for horseshoe crab and lobster were designed to highlight their spawning grounds because successful reproduction is critical to these localized and depleted invertebrate populations.

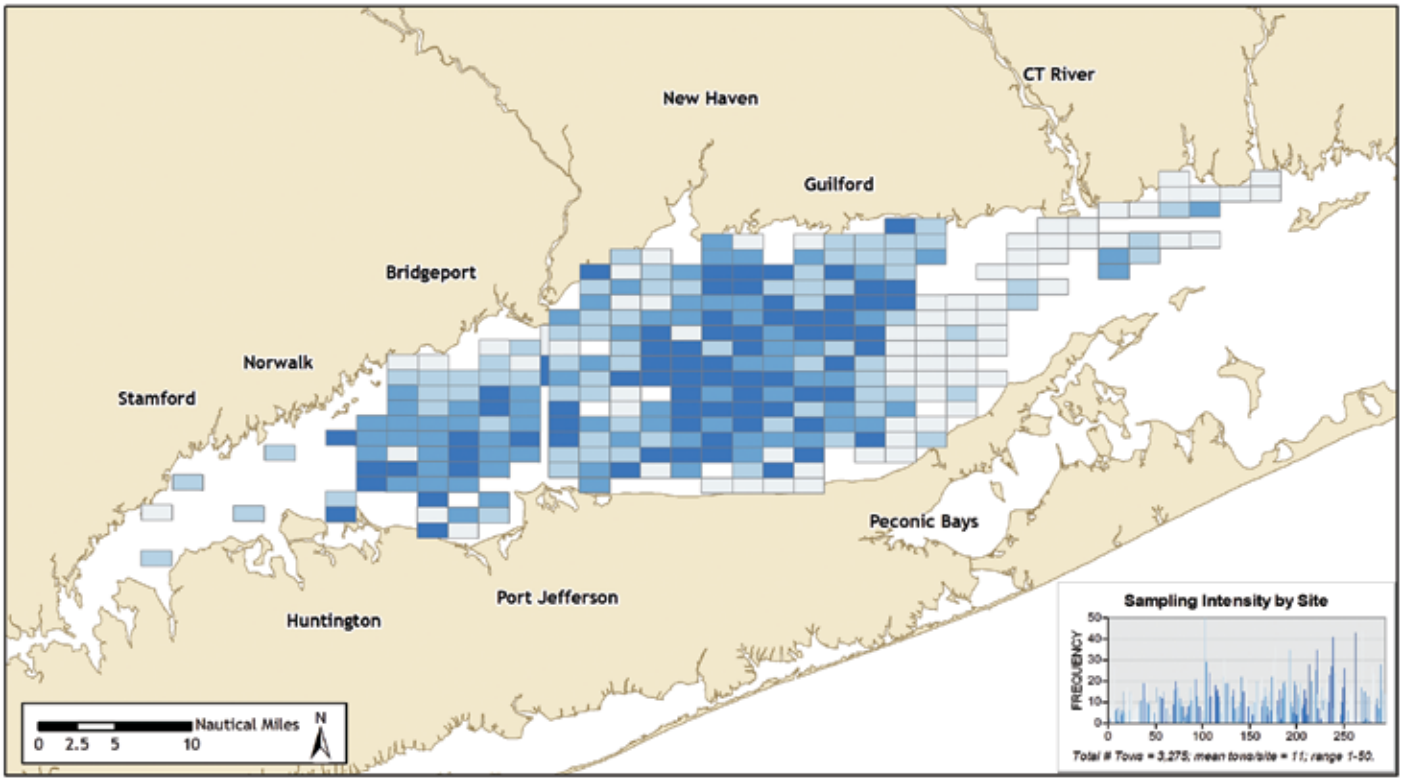
In addition to providing easy-to-read maps, distribution data sets also have been used to investigate connections between the changing habitat needs of species at different life stages. For example, a State Wildlife Grant for the Marine Fisheries Division enabled a graduate student to use GIS software to analyze the spatial connection between high-use horseshoe crab spawning beaches and high-use mid-Sound concentrations of horseshoe crabs captured in the Trawl Survey. One product from the research was a landscape scale model to help habitat managers predict areas of the shoreline with the highest potential for use by spawning horseshoe crabs based on the physical characteristics of the shoreline.

A future step in developing Connecticut's Wildlife Action Plan will be to combine distribution information for fish, shorebirds, and other coastal species to identify locations that offer the best opportunities for protection of critical species with overlapping habitats.

One approach under consideration involves aligning the spatial distribution of key species and habitats, then mathematically "optimizing" the areas of greatest overlap using the GIS analytical software. The resulting multi-species distributions can be configured with several goals in mind: 1) identify the largest habitat area(s) used by critically depleted or endangered species; 2) identify areas which provide migration corridors for multiple species and their prey; or 3) identify areas with the highest number of species present.

The addition of these maps to the Wildlife Action Plan will be a useful visual tool to identify locations meeting critical conservation needs and, since a picture is worth many if not a thousand words, they will make the Plan more user-friendly.

State Wildlife Grants



CT DEEP Long Island Sound Trawl Survey Catch Distribution Map for Winter Flounder (April, May, June) 1984 to 2013

Relative abundance is measured as the average geometric mean count per tow per site. These values are classified by quantile and symbolized by color; lighter colors have relatively lower catch than darker colors. Areas not colored were not sampled. 296 of 296 sites (100%) had positive catch.

Geometric Mean Count per Tow per Site

0.72 - 27.03	52.32 - 81.95
27.03 - 52.32	81.95 - 1328.00

Opening Doors for the Next Generation of Anglers

Written by Mike Beauchene, DEEP Inland Fisheries Division; Photos by Mike Beauchene

Good habits formed at youth make all the difference - Aristotle

Surprisingly, many of today's youth have spent more of their formative years indoors than any other generation. Changes in family priorities and societal variables appear to have reduced the number of free hours in the day to a point where we cannot understand how our grandparents found time to hike, hunt, and fish. So now, our children are more detached from the natural world and outdoor play than ever before. They are absorbed instead into a virtual world of texts, posts, likes, and tweets. "Nature Deficit Disorder," first mentioned in Richard Louv's *Last Child in the Woods*, refers to the consequences of being disconnected from outdoor activities. Louv argues the loss of direct contact with nature is responsible for an increase in obesity, diabetes, depression, and on a greater scale, loss of empathy for the environment. Our youth are exchanging play in soil and water for play in a virtual world, based on high definition and super-fast internet connectivity.

Beginning in the late 1980s, the number of people participating in fishing has continually decreased, both in Connecticut and nationwide. A high priority of the DEEP's Bureau of Natural Resources (BNR) is to reverse this trend. Specifically for fishing, we intend to increase participation by 30% – getting 52,000 more people fishing in 2016 than in 2011. Engaging youth and their families is the foundation of this effort. Two primary pathways are the passage of Public Act 14-201 and expansion of Inland Fisheries Division programs.

Public Act 14-201: The Department of Energy and Environmental Protection worked collaboratively with the State Legislature to pass this Act in 2014, which reduces fees and grants flexibility to the BNR to develop innovative ways to increase participation via additional cost savings. Several components of the Act were specifically written to benefit youth.

Fishing opportunities for youth have never been better. DEEP will continue to develop innovative ways to catch the attention of today's youth and their families.

YOUth Fishing Passport holders can participate in two activities. The first, geo-catching, encourages families to travel to various waters about the state, with the challenge to catch a particular type of fish at that location. The second, the fishing challenge, is a scavenger hunt for 20 types of fish, both freshwater and marine, encouraging families to research different fishing techniques and fish for species they may not normally seek. For more information, visit www.ct.gov/deep/YFP.

- **Two for the price of one:** Starting in the 2015 calendar year, the fee for any fishing and hunting license, permit, tag, and stamp for 16 and 17-year-old Connecticut residents was reduced to 50% off the resident price.
- **Fishing license waiver:** A waiver (to have a fishing license) can be granted to all high school students who are participating in a fishing event that is part of a curriculum covering fishing instruction/technique. By providing this waiver, a financial barrier has been removed and schools are encouraged to augment their life skills curriculum with fishing instruction. Interested teachers and school administrators should contact the Connecticut Aquatic Resources Education (CARE) Program to discuss curriculum options (860-663-1656).
- **Fee for group fishing license cut:** The existing fee for a group fishing license has been reduced from $250 to $150. This license enables qualified tax exempt organizations to take up to 50 participants fishing up to 50 times each year.
- **Free License Days:** In addition to the annual Free Fishing Day

Expanding the number of the community fishing waters brings quality fish and fishing to hundreds within a few blocks of tens of thousands of residents. Activities and events held at these locations excite families to return and fish. Andrea Repko, winner of the 2014 Angler's Guide cover contest, is surrounded by many "new" fans. Thank you, Andrea, for being a great role model and ambassador for youth fishing.

– a day when anyone can fish without having to possess a fishing license – the DEEP Commissioner may now designate up to two free license days per calendar year (June 21, 2015 and August 15, 2015). On each of these days, anyone may obtain a one-day fishing license, at no cost, through the DEEP online sportsmen licensing system (www.ct.gov/deep/sportsmenlicensing). All rules and regulations, including fish size and harvest numbers, remain in effect.

- **Flexibility:** From time to time, with the intent to increase participation in fishing, the fee for any fishing license tag or permit may be reduced, provided it is for part of a single calendar year and is made available to all members of the public, those of a certain age group, or those who have successfully completed a course in fishing instruction in the same calendar year. This flexibility enables DEEP to pursue innovative and creative ways to "catch" new anglers.

Inland Fisheries Division Programs

Over the past few years, the Inland Fisheries Division developed and expanded several programs designed to make fishing an activity of choice, including:

- **YOUth Fishing Passport (YFP):** Free for all 15 years old and younger, the YFP is available via the DEEP online sportsmen licensing system (www.ct.gov/deep/sportsmenlicensing). Passport holders can participate in two activities appealing to novice anglers and experts alike.
- **Expanding Community Fishing Waters:** Fifteen ponds (6 new ones in 2014) within municipal parks and located along public transportation routes are stocked annually with trout and/or channel catfish. As these waters are in some of Connecticut's more densely populated neighborhoods, these fish are within a short walk, bike, or bus ride for tens of thousands of residents.
- **Entering the Virtual World:** Fish stories have taken on a whole new meaning and medium as our anglers now post selfies to Instagram, Facebook, and Twitter. DEEP continues to take advantage of social media to get the word out regarding trout stocking updates, recent great catches, and other timely information important to our friends and followers.
- **CARE:** Free family fishing classes form the gateway for families to obtain basic fishing skills. Each year, over 8,000 people successfully complete the one-day class and fishing field trip, and experience the many benefits of fishing.

To reverse the trend of decreasing participation, the BNR is aggressively working to bring 52,000 more people into fishing by 2016 and we need your help. We continue to reach out to youth and their families to take up fishing and enjoy the many benefits fishing has to offer. Using fishing as the mechanism, we want to re-connect youth and their families with the outdoors, encourage them to spend quality time together, visit new parts of the state, and take a "screen" break. After all, when was the last time you posted a photo to Instagram or Facebook of your child playing Minecraft, tweeting, or texting?

Hunter Complaints Up – Deer Numbers Down?

Written by Andy LaBonte, DEEP Wildlife Division

During the past shotgun/rifle deer season, some hunters seemed particularly concerned about deer population numbers being way down because they did not see any deer all season. Hearing such concerns repeatedly makes one wonder if something has drastically gone wrong in the woods of Connecticut and also question deer management in the state. Hunters not only called the Wildlife Division to complain about the lack of deer, but on many occasions expressed their concerns on social media sites and forums. The Division listens to these concerns, re-evaluates available data, and tries to identify if the deer population has actually decreased.

Our responses are not always what hunters want to hear and some hunters may believe their concerns fall on deaf ears, which is not the case at all. As managers, we use a variety of data to monitor deer populations, such as hunter responses to surveys, harvest totals, permit issuance, road kills, aerial surveys, and any other data that may be available for a specific location. Because hunters collectively spend nearly 350,000 days afield during the fall deer hunting season, the Division relies on hunter observations in the decision-making process. So, how did this past hunting season stack up to previous years and is there reason for concern?

We look at several variables on an annual basis to compare one hunting season to the next. One variable is hunter success rates – the total number of deer harvested divided by the total number of permits sold. The overall deer harvest of 11,394 (including the landowner harvest) in 2014 was down nine percent from 2013 (12,549). Harvest numbers are similar to those reported in 2009 and 2010. Additionally, overall permit issuance declined eight percent from 2013 to 2014, so we would expect harvest numbers to be lower this past year. Overall permit issuance has declined 17% from 2009 to 2014, with declines specifically in shotgun/rifle and muzzleloader issuance.

With the onset of the online permit system in 2009, hunters no longer have to obtain their permits in advance. The new online license system allows hunters to purchase permits any time of the year, even during the hunting seasons. This change is likely the main reason for the decline in permit issuance for the shotgun/rifle and muzzleloader seasons. Unlike those hunting seasons, archery permit issuance has actually increased and remained high over the

P. J. FUSCO

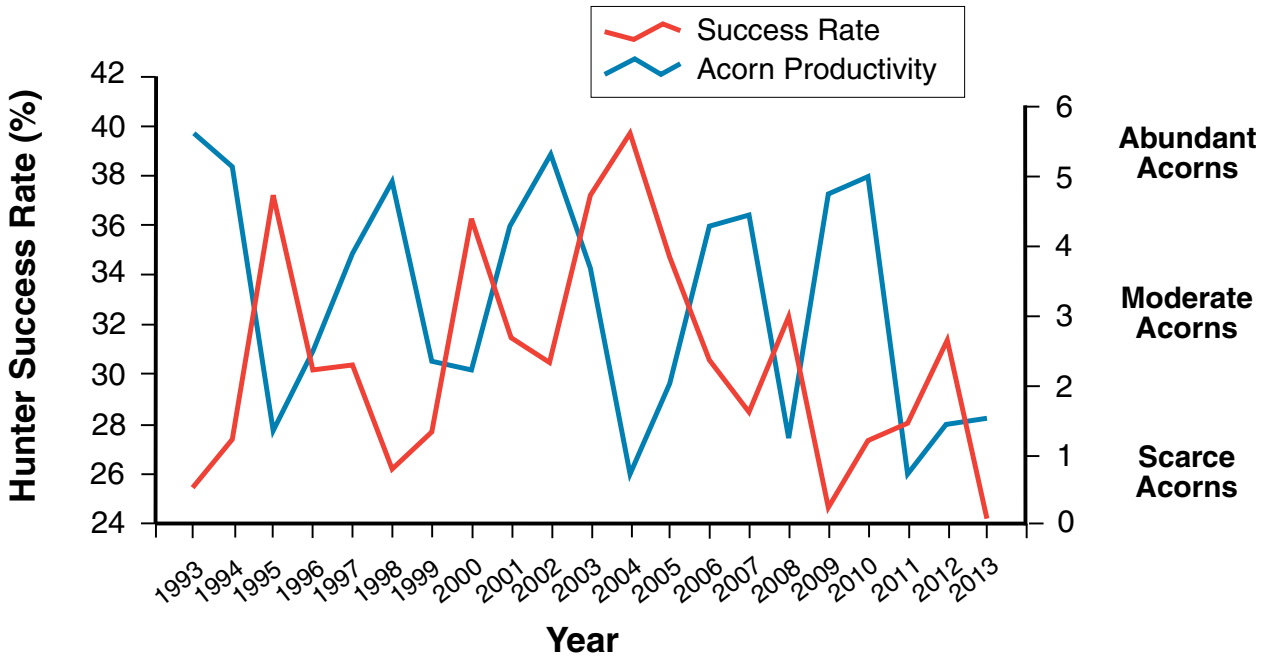
Like the deer seen here, biologists are always keeping a watchful eye on the deer population with the aid of hunters.

Permit issuance, harvest, and success during the archery (Arc), shotgun/rifle (S/R), and muzzleloader (Muz) seasons, and acorn abundance and deer observed, 2009-2014

	Permits				Harvest				Success				Acorn	Deer
Year	Arc	S/R	Muz	Overall[a]	Arc	S/R	Muz	Overall[a]	Arc	S/R	Muz	Overall[a]	Abundance[b]	observed/hr[c]
2009	14,046	27,290	13,280	54,616	4,718	5,082	909	10,709	33.6	18.6	6.8	19.6	4.6	ND
2010	13,276	24,357	11,856	49,849	4,670	5,260	1,031	10,961	35.2	21.6	8.7	21.9	4.9	ND
2011	13,725	23,751	12,293	49,769	5,211	5,367	1,123	11,701	38.0	22.6	9.1	23.5	0.8	1.0
2012	14,341	22,760	11,839	49,885	5,413	5,783	958	12,154	37.7	25.4	8.1	24.3	1.6	1.1
2013	15,800	22,568	11,251	49,619	6,046	4,340	947	11,333	38.3	19.2	8.4	22.8	1.7	1.1
2014	15,200	19,885	10,386	45,571	5,173	4,104	770	10,047	34.0	20.6	7.4	22.0	2.6[d]	1.1

a excludes landowner season.
b Ranked on a scale of 0 to 6, with 6 being the most abundant.
c Based on successful hunter observations during the first month of the archery season.
d Based on DEEP preliminary assessment. Final number will be based on end-of-year hunter surveys.

Relationship between private land shotgun/rifle hunter success rates and fall acorn productivity, 1993-2013.



past six years.

Looking at the fall 2014 hunting season, overall hunter success was slightly lower than it was in 2013, but slightly higher during the shotgun/rifle season. Another variable we use is hunter observation rates – which is the total number of deer observed per hour. This rate is calculated based on hours hunted and deer observed on the day a hunter harvested deer. In 2014, hunters reported seeing about the same number of deer per hour of hunting as in past years.

One factor that can affect harvest, hunter success rates, and deer observation rates is acorn abundance. Acorn abundance in late 2014, based on preliminary assessments throughout the state, was slightly higher than it had been in the past three years. When acorn abundance is high (based on end of the year hunter surveys), hunter success has historically been lower, compared to years with low acorn abundance. Based on increased acorn abundance from the previous three years, we expected that hunter success would be lower in 2014 than in 2013 and similar to hunter success rates seen in 2009 and 2010 when acorn abundance was higher. Based on acorn abundance, hunter sightings of deer, and hunter success this past hunting season, there still appears to be plenty of deer left in the woods.

In February, the end-of-year hunter survey will be distributed to all hunters who provided an email address to DEEP. This survey provides an opportunity for all hunters to share their experiences and opinions with Connecticut Deer Program staff and is used in making future deer management decisions.

P. J. FUSCO

A Habitat Management Paradox:
Invasive Trees at Charles Island Are Both Good and Bad

Written by Peter Picone, DEEP Wildlife Division

Charles Island, a 14-acre wooded island off the coast of Milford, was designated a Natural Area Preserve due to its wildlife resources. It serves as home to one of Connecticut's largest heron and egret breeding colonies (rookeries) and also has been designated an Audubon Important Bird Area and a Long Island Sound Stewardship Area. This unique and important coastal habitat has been heavily impacted by several natural disturbances over the last few years, including severe storms, a plant disease that is affecting vegetation, and damage from deer browsing.

The DEEP Wildlife Division has developed strategies and actions to preserve and restore the habitat at Charles Island over the next several years, and restoration work has already begun. Habitat management actions include controlling and removing invasive non-native plants that are dominating the island.

WILDLIFE DIVISION HABITAT MANAGEMENT PROGRAM

DEEP Habitat Restoration staff standing behind a newly-planted American sycamore tree (*Platanus occidentalis*) at Charles Island. From left to right are: Peter Picone, Paul Rothbart, Rick Napierski, Michael Malek, Jack Miller, Kevin Lamy (sitting on tractor), Adam Hendrick, Heath Brown, Dan Cole, Ron Ruel (up on tractor), Don Andersen, Michael Rosa (red hat), and Frank Shaw.

P. J. FUSCO

DEEP staff taking diameter and height measurements of plantings on Charles Island.

New trees are being planted to replace trees that have been destroyed in storms, as well as trees that are being negatively impacted by a soil fungus (*Armillaria*). The trees provide necessary nesting sites for the herons and egrets. Deer population management was needed to control a large resident deer herd that was hindering regeneration of native plants.

Tackling the Threats

Biologists know that the two biggest threats to wildlife diversity are habitat loss (change) and invasive species. Charles Island is experiencing both of these. On the habitat side, the birds need a healthy forest canopy and crotches in trees where nests can be built. Trees on the island have been toppled over by major storms and some are being negatively affected by the soil fungus.

The irony of the situation is that the trees are comprised of mostly non-native, invasive tree of heaven (*Ailanthus altissima*) and Norway maple (*Acer platanoides*), with a few native sassafras (*Sassafras albidum*) trees. As storms and disease continue to take their toll, the availability of nesting locations is reduced and limited on the island. In regards to invasive species, invasive plants have dominated the island, choking out native plants. This problem has been compounded by intense deer browsing over the years which has prevented the regeneration of a native plant community.

P. J. FUSCO (2)

DEEP staff holding roots of an invasive, non-native bittersweet vine that were pulled from the ground. From left to right are seasonal Robyn Glenney; Mark Rosa and two seasonal staff members from the Wildlife Division's Wetlands Habitat and Mosquito Management Program; Wildlife Division Director Rick Jacobson; and Wildlife Division Habitat Biologists Peter Picone and Ann Kilpatrick.

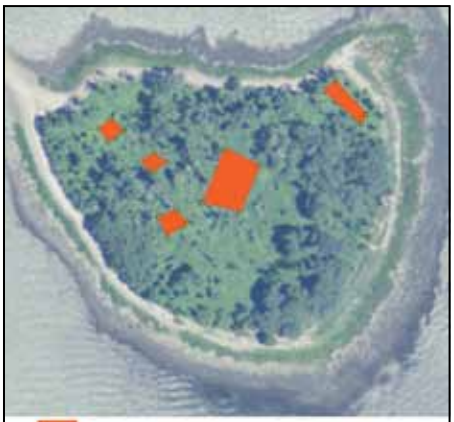
Deer-proof fencing was placed around planted areas on Charles Island.

Project Accomplishments

The following management actions have been implemented by the DEEP Wildlife Division to restore Charles Island's unique habitat features:

- Deer population management and reduction was accomplished by DEEP staff in 2011.
- Management of invasive, non-native species, such as Japanese barberry (*Berberis thunbergii*), was undertaken. DEEP staff and Master Wildlife Conservationists also cut oriental bittersweet (*Celastrus orbiculatus*) vines in 2011 and treated them with herbicides.
- Invasive plants and storm-related downed trees were mowed and drum-chopped with large mowing equipment in September 2014. Large woody debris caused by storms was cut and drum-chopped to allow for the planting of several native trees suitable for the island's habitat conditions. Invasive, non-native understory plants were treated with an herbicide (Triclopyr) to prevent resprouting.
- DEEP's Habitat Management Program, Support Services Division, and Wetlands Habitat and Mosquito Management Program planted 88 native trees in gaps in the forest canopy and erected deer-proof fencing around the trees in October 2014. Additional plantings are scheduled for spring 2015.

During the next several years, habitat restoration will continue with the goal of restoring biological diversity to one of Connecticut's unique coastal habitats.



Restoration planting site locations

Funding for the Charles Island habitat restoration project is being provided by Connecticut's Endangered Species/Wildlife Income Tax Check-off Fund. Residents support this Fund by voluntarily donating a portion of their tax refund to help Connecticut's endangered species, natural area preserves, and watchable wildlife. Some project materials are being provided in lieu of payment of civil penalties as a supplemental environmental project resulting from an enforcement action taken by DEEP in 2010.

Going Back in Time

Written by Paul Chase, Private Landowner; Photos by Judy M. Wilson, DEEP Wildlife Division

In December 2012, landowner Paul Chase was awarded a DEEP Landowner Incentive Program (LIP) grant to create, enhance, and restore 16.5 acres of habitat on his 110-acre property in Montville. The property had been a working farm for hundreds of years, but with the absence of active pasturing and farming, it was growing back into mature forest. LIP Coordinator Judy Wilson worked with Paul to design and implement a project that would restore field habitat and remove low value trees, allowing thick, dense areas of shrubs, young trees, grasses, and weeds to grow and provide important food and cover for wildlife. The following is Paul's experience and thoughts on the project. (Also read the article written by Judy on page 2.)

Paul Chase (right) and his son Jon inspect work being done on their property, which has been in the family since 1824. A portion of the land is being cleared of low value trees so that a dense mix of grasses, weeds, and brush can return to provide young forest habitat for a variety of wildlife. Also pictured are Paul's prized upland bird hunting companions, Jing (held by Paul) and Diomid.

In December 2012, I received word from the DEEP Wildlife Division that my application was approved for the Landowner Incentive Program (LIP), a federally sponsored project to restore and create habitat for wildlife species at risk. Specifically aimed at the New England cottontail, this LIP project automatically addresses the habitat needs of several songbird species, ruffed grouse, American woodcock, and whip-poor-will, all requiring similar habitat as the New England cottontail. The grant was provided by the U.S. Fish and Wildlife Service and administered by the Wildlife Division. I was extremely happy to learn that my project ranked high enough to be funded and the monies would be used to enhance approximately 16.5 acres of my total 110-acre property.

This specialized, low impact forestry equipment, called a "forwarder," was used to move trees that were cut on the Chase property to a log landing near the road.

Wildlife Division biologist Judy Wilson, who would be overseeing the project, met with me for the second time in mid-December 2013, and we mapped out a plan that would abut a recently cleared 1.5 acres on the southwest section of the property, along with some fields that are mowed annually. On the extreme northwest portion of the prop-

An excavator with a specialized mulching head (Denis Cimaf) also was used to clear trees from the site. Select trees, like apple trees, were retained to provide food and cover for wildlife.

erty, the project would connect with the woodcock singing ground (administered under Project Coverts), which I (with help) constructed over two decades ago when it was cleared of timber (apple trees were left standing) and planted with rye. All acreage encompassed in the final plans of the grant was pasture and home to a small "retirement" herd of Jersey cows maintained by my grandfather in the early to mid-1950s. Much of this area is now in late stages of regenerating flora, pole timber, and some mature hardwoods.

Judy agreed with our idea of what should happen in the southeast corner lot. This parcel would be retained and improved, not just for wildlife, but also for family consumption of the highbush blueberries growing there. My son Jon cleared this two-acre lot of hardwoods and left all existing and sprouting blueberry plants. Wild blueberry pies are a family favorite! This past summer, my wife harvested seven quarts of the succulent berries, the initial year of picking in this lot. Yum! In addition, dense eastern red cedar growth was left along the road for wildlife cover and to also shield our view of houses on the opposite side of the road.

Truthfully, I am not a hunter of rabbits but I am interested in the welfare of the New England cottontail, Connecticut's only native rabbit. I also am interested in the other wildlife species that benefit from creating and enhancing habitat for New England cottontails. These species' habitat requirements are similar to those of the New England cottontail. I have not heard the whip-poor-will's song or the ruffed grouse's drumming in more than a decade on our family land. (My maternal family has owned close-by lands in Montville since 1715, and we have owned this parcel since 1824.) Selective cutting of firewood in a wet area north of the proposed project has been instrumental in maintaining prime woodcock habitat for many years. In fact, when Judy, Wildlife Division biologist Mike Gregonis, and I were walking the property to determine final plans, my setters, Jing and Diomid had the good fortune of pointing seven woodcock just north of the subject area within a few minutes. I believe the dog work impressed Judy and Mike (and me, too!) The timing of this little fall of woodcock couldn't have happened at a more opportune time.

After patiently waiting for several months, the work finally began on October 16, 2014. TRLandworks, the winning bidder for the project and an experienced contractor for DEEP, arrived with an excavator equipped with a grinding attachment ("brontosaurus"), as well as a harvester and forwarder. The excavator ground all of the smaller tree growth, the harvester tackled the bigger trees, and the forwarder hauled the logs to a landing along a paved road at the eastern boundary of my property via a road created through the woods.

TRLandworks finished the work on November 4, 2014, having completed the project in just under three weeks. Plenty of slash was left behind to provide cover for wildlife and many brushpiles were created to benefit the New England cottontails. My son Jon (who performs most of the "bull work" around the old farm) and I were pleased with the outcome. Having much experience creating wildlife shrublands throughout Connecticut and other New England states, Ted (the owner of TRLandworks) knows what to leave behind for the benefit of wildlife, such as highbush blueberry, winterberry, blackberry, red raspberry, to name just a few species, eliminating the need for all of these important shrubs to be individually marked by Judy so that they would not be removed during the habitat work. All apple trees were saved. Several large oaks, two buttonballs (what my grandfather called sycamore) located near the spring, a few other hardwoods, and much eastern red cedar were retained for use by wildlife.

While surveying the completed project, it was emotional and gratifying to refresh my memory of how this section of my property appeared back in the 1950s, with some changes of course. Stone walls, undulating terrain, and glacial rock, from which foundation stones had been pinned and feathered 200-300 years ago, have returned to eyesight, and I cannot think of a better way to describe this revelation than going back in time to the days of my youth.

The Constant Talker - Long-tailed Duck

Article and photography by Paul Fusco, DEEP Wildlife Division

Inhabiting the arctic regions of the northern hemisphere, the long-tailed duck is a coldwater visitor to Connecticut. It arrives in late fall to spend most of the winter on Long Island Sound. In migration, it may also be seen inland at large bodies of water. It is right at home in icy rolling waves breaking in the cold winds of winter.

This is a duck with many names. It was formerly known as "oldsquaw" in reference to its talkativeness, but that common name was changed to long-tailed duck to make it consistent with the European version of the common name. Over the years, it has had no shortage of folksy names, including ice duck, scolder, old Billy, knock Molly, quadie, old granny, old injun, ole wife, jack owly, butterfly coot, pine knot, squaw, cockawee, south-southerly, sou-sou-sally, hound, and squeaker. Many of these old names come from the male's loud, yodel-like, persistent call, "*ow-ow-owdle-ow*." When courting, several males will gather around a female, calling noisily. Their calls are given almost constantly, making the long-tailed duck one of our more talkative waterfowl species.

A drake long-tailed duck in winter plumage shows its elongated central tail feathers. Note also the pink and black bicolored bill.

Description

The long-tailed is a hardy, mid-sized sea duck. It has a stocky body with a short neck and short bill. On males, the bill is banded with pink and black, which is more pronounced in winter. The species gets its common name from the male's tail, which has two slender, long central tail feathers. Females do not have the long tail feathers.

Males are somewhat unique and complex in that they have three distinct plumages over the course of the year. Unlike most other ducks, they have a winter plumage, summer plumage, and separate eclipse plumage with overlapping molts. The male's winter plumage is largely white with a white head and neck and a dark patch on the cheek. The breast and back are dark. In summer, the male has a dark head, neck, and breast, and a white face patch. The belly and flanks also are white. The female plumage is more mottled, being mostly pale/white in fall and winter, and brownish/dark in spring and early summer. Both sexes have unmarked, dark wings.

The long-tailed duck is a fast flier. Its bunched, irregular flocks fly low over the water in seemingly constant spirited flux. The ducks are frequently twisting and turning, flashing light and dark, similar to what can be seen with shorebird flocks. They will chase one another and alight on the water's surface by plopping with a splash.

Long-tails are capable of diving up to 200 feet to forage, making them one of our deepest diving ducks.

Male (front) and female in eclipse plumage.

A raft of long-tailed ducks rides the rolling waves along the Atlantic seaboard on a midwinter day. These ducks are right at home in frigid cold and wind off the New England coast.

Propelled mainly by their feet, the ducks forage near or along the bottom where they catch aquatic invertebrates. The diet consists mostly of insects, crustaceans, and some plants during summer, and mollusks, crustaceans, and small fish in winter. Historically, large numbers of long-tailed ducks have been caught in fishing nets on the Great Lakes while diving underwater.

Habitat and Range

Long-tailed ducks are circumpolar. They inhabit arctic regions of the northern hemisphere, including Alaska, Canada, Europe, and Russia. During the breeding season, they are found in shallow wetland habitats north of the boreal forest in northern tundra regions. Most of the year, they use sandy-bottomed coastal and shallow offshore marine environments. During migration, long-tailed ducks also may show up on large inland bodies of water. They migrate mostly at night.

Long-tailed ducks do not reach sexual maturity until they are two to three years old. Their nests are built on dry patches of ground close to water in tundra wetlands. Nesting frequently occurs on peninsulas or islands. A typical nest will hold six to eight pale gray to olive eggs. Incubation is 24 to 29 days. Young leave the nest shortly after hatching and are capable of swimming, diving, and feeding themselves almost immediately. The young can fly after approximately 35 days.

Conservation

Conservation groups categorize the long-tailed duck as a "common bird in steep decline." Population trend estimates indicate the population has been declining in North America by an average of over 5.5% per year since the late 1960s. Despite such significant declines, long-tailed ducks have a large worldwide breeding distribution and remain one of our most abundant arctic waterfowl species.

Population surveys for long-tailed ducks are difficult and may not be comprehensive. Most North American breeding locations are outside traditional waterfowl survey areas. In addition, offshore wintering areas are inherently hard to survey based on logistics, weather, and access, but significant downward trends have been documented in North American and Eurasian long-tailed duck populations for many years.

Many factors may be playing a part in population declines, including pollution, industrialization, habitat degradation, and by-catch from fishing operations. Contaminants, including cadmium, lead, mercury, and pesticides (including organochlorides), have been found at high levels in long-tailed ducks in some parts of their range. It is not known if these chemicals are impacting reproduction. In recent years, long-tailed duck population declines have seemingly stabilized, but population numbers are less than half of what they were when the decline began.

New threats may be emerging, including global climate change and wind energy development. Climate change has the potential to cause ecological imbalance in arctic breeding areas, possibly impacting reproduction. Wind turbines located in migration paths and/or close to offshore winter feeding and roosting areas have the potential to be dangerous to sea ducks. This is disconcerting because significant east coast wintering areas for long-tails include Cape Cod and Nantucket Shoals, two areas that have seen wind energy development in recent years.

Coastal Wildlife Habitat Management at Stewart B. McKinney National Wildlife Refuge

Written by Kristina Vagos, U.S. Fish and Wildlife Service, Stewart B. McKinney National Wildlife Refuge

Stewart B. McKinney National Wildlife Refuge (SBMNWR) is located along 100 miles of Connecticut's coastline from Stonington to Greenwich. It includes eight islands, as well as two salt marsh units and a barrier beach. Established in 1972 and originally called Salt Meadow NWR, the Refuge was renamed in 1987 to honor the late U.S. Congressman Stewart B. McKinney, who was instrumental in expanding it. Located in the Atlantic Flyway, the refuge provides important nesting, feeding, and resting habitat for many wading birds, shorebirds, songbirds, and seabirds, including the federally and state endangered roseate tern.

SBMNWR is part of a larger "system" of wildlife refuges that spans the entire country. There are more than 560 refuges nationwide – most of which are located along bird migration routes and total over 150 million acres. The mission of the National Wildlife Refuge System is to conserve and manage this network of land to provide habitat for wildlife species for the benefit of present and future generations of Americans.

In Connecticut, the Refuge staff is committed to enhancing and protecting habitat for coastal species, such as the state endangered plant, salt marsh pink, and the federally and state threatened piping plover. Here are some highlights of management activities around the Refuge.

Bats, Bees, and Butterflies

Many pollinator species are in decline around the world. In response, Refuge staff has been working to catalogue the pollinators on the Refuge, as well as to create habitat for them.

For the past three years, the Refuge has partnered with the Connecticut Agricultural Experiment Station, under the direction of Dr. Kimberly Stoner, to collect data about bee species at the Salt Meadow Unit in Westbrook. This is a long-term statewide study, with a goal of establishing a baseline of bee species in Connecticut which will help us determine what species are missing or in decline. In 2012, 47 different types of bees were collected on the Refuge, including an uncommon species that was last found in Connecticut in 1915 and one species that had never been recorded in the state. In addition to bees, the Refuge also surveys butterflies and bats at Salt Meadow.

With help from local garden clubs, Refuge staff and volunteers opened ground on Outer Island (in the Thimble Islands of Branford) this past September to make room for a pollinator garden, which will showcase native plant species that benefit butterflies, other insects, and birds. The staff also plans to draw attention to the state-listed prickly pear cactus that occurs there.

Colonial Breeding Birds

There aren't many islands in Long Island Sound where hundreds or even thousands of birds can come together and form "colonies" during the breeding season. Herons, egrets, and terns are just a few examples of "colonial nesters." These species nest in colonies as a defense against predators. The Refuge provides habitat for these species on some of its coastal islands.

Falkner Island – three miles off the coast of Guilford – is home to the largest common tern colony in the state. Thousands of common terns and a small population of endangered roseate terns breed here from May until August each year. Refuge staff members are on the island every day during this period studying productivity of the terns, limiting disturbance to the colony, and recording the leg band combinations of adult birds that are breeding. A lot of work goes into preparing the island for the terns; this work happens in spring and fall. The Refuge is always on the lookout for volunteers willing to help with vegetation control and general maintenance of island research facilities. Additionally, the public can see what is happening on the island thanks to the Faulkner's Light Brigade which has a webcam on the island that can be viewed via their website (faulknerslight.org).

In the 1980s, Chimon Island (Norwalk) hosted one of the largest heron and egret colonies in the Sound. Thousands of birds nested there; yet today, there are none. The cause of the island being abandoned as a colony is unknown; however, it has been suggested that an increase in raccoon presence on the island was at the root of it. Refuge staff would like to see the island restored to its former glory as a wading bird colony, and we are in the process of making this happen. Habitat assessment, improvement, and creation are in the works for 2015.

Shorebirds

The Connecticut coast is a haven for shorebirds stopping during spring and fall migration and raising young during the breeding season. At the same time, it also is desired real estate and attracts thousands of people each spring and summer. The influx of human population density in these coastal areas puts significant pressure on shorebird species. In order to mitigate these effects, it is essential that some coastal habitat be protected for wildlife and – in areas that humans and wildlife must "coexist" – outreach programs are established to educate people about sharing the habitat.

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(Clockwise left to right) A common tern on Falkner Island; Mariah Box, a summer intern, working with the terns on Falkner Island; and an Atlantic Coast piping plover on the McKinney Refuge's Milford Point Unit.

The Refuge's barrier beach on Milford Point provides nesting habitat for the American oystercatcher, piping plover, least tern, and killdeer. The dunes and beaches are closed annually from April to September to allow these species to breed with little to no disturbance. The Refuge also manages a large fenced area as a least tern colony, attracting the birds using tern decoys and sound.

Each year, the Refuge partners with DEEP and the Audubon Alliance for Coastal Waterbirds to train and manage shorebird monitors. These volunteers visit coastal areas where shorebirds nest, keep track of adult and chick survival, and talk with people about these species and their habitat. This program has been ongoing for several years and is extremely successful.

For more information about the Refuge or its management activities, please contact Kris Vagos – the Refuge Wildlife Biologist – at Kristina_Vagos@fws.gov. You also may want to visit the Refuge website (fws.gov/refuge/stewart_b_mckinney/) and check us out on Facebook (facebook.com/SBMcKinneyNWR).

P. J. FUSCO

Give to Wildlife through Connecticut's Endangered Species/ Wildlife Income Tax Check-Off Fund

The "Endangered Species/Wildlife Income Tax Check-Off Fund" was established in 1993 to allow Connecticut state income tax payers to voluntarily donate a portion of their tax refund in support of Connecticut's endangered species, natural area preserves, and watchable wildlife.

Since the fund's inception, donations have helped finance habitat restoration, species monitoring, public outreach, the construction of wildlife viewing areas, and a variety of other activities. Below is a sampling of some of the projects that have been partially or totally funded through the Connecticut "Endangered Species/Wildlife Income Check-off Fund."

Botanical Field Surveys

In 2013, botanical field work was conducted at sites across Connecticut and resulted in the discovery of five new rare plant populations. An additional 50 plus populations were monitored, including occurrences of the federally-listed sandplain gerardia (*Agalinis acuta*) and the geographically-restricted New England blazing star (*Liatris novae-angliae*).

N. DeBARROS

Populations of New England blazing star (*Liatris novae-angliae*), a species of sandplains and rocky cliffs, were surveyed during botanical surveys funded in 2013.

Habitat Restoration for the Ghost Dune Tiger Beetle

This ongoing project is aimed at restoring a rare inland sand dune system which hosts a population of the state endangered ghost dune tiger beetle. Forest succession threatens the quality of this unique habitat and community. Given both the rarity of this tiger beetle and the increasing scarcity of its required habitat, forest management is essential to prevent the extirpation of this animal from Connecticut.

M. THOMAS for DEEP-WILDLIFE

A rare inland sand dune system, which hosts a population of the state endangered ghost dune tiger beetle, is being restored.

Preserving Chimney Swift Roosts through Education

In 2012, this project targeted conservation of the chimney swift, a greatest conservation need bird species that inhabits homes and buildings during the summer in Connecticut. Each year, over a half a million chimney swifts disappear across their range. Many of the roosting structures where swifts congregate are the chimneys of our local schools, making buildings a vital habitat resource for these birds. This project provided educational materials for classroom use and display at local schools and other public buildings with active roosts to engage students and the public about the important role their buildings play in chimney swift conservation.

Indiana Bat Study

The federally-endangered Indiana bat has not been confirmed as a breeding species in Connecticut since the 1940s. This species is especially difficult to study given its rarity and preference for forest habitat. In this 2008 project, study sites in western Connecticut were selected from a predictive map created using landscape and habitat characteristics around known maternity colonies in New York. Bats were captured using mist nets and a new methodology was piloted to improve the statistical validity of the sampling effort.

Monitoring GCN Bird Species in Shrubland and Forest Interior Habitats

In 2010, this project developed two new statistically robust point count survey networks to monitor greatest conservation

The worm-eating warbler depends on large expanses of mature deciduous or mixed deciduous-coniferous forests with patches of dense understory.

P. J. FUSCO (4)

The prairie warbler is declining throughout most of its range, mainly due to the loss of breeding habitat through development and natural succession of shrubby habitat to forest.

need (GCN) bird species, one in early successional forests and managed wildlife openings, and the second within forest interiors. This project also piloted a technique to count fledglings as a tool to assess productivity associated with the point count networks. These survey efforts resulted in new records for DEEP's Natural Diversity Database.

Shrubland bird survey data demonstrated a difference in the presence of birds between management treatments. Forest bird survey data revealed appropriate target species for long-term monitoring and a preliminary estimate of the distribution of target forest interior birds in Connecticut.

Pilot fledgling counts yielded high numbers overall, but may be limited in their ability to discern productivity for target shrubland and forest species. The information from these surveys will tell managers how to prioritize management and conservation to provide successful nesting opportunities for GCN bird species.

Purple Martin Research

The state-threatened purple martin forms breeding colonies and has evolved to become completely dependent on man-made structures for nesting sites. To facilitate this bird's recovery in Connecticut, it is necessary to establish additional colonies. In 2011, this project determined what factors predicted colonization at new locations by assessing dispersal patterns of juvenile martins using color bands. The project also provided additional housing systems within fixed distance bands around known colonies, and modeled habitat and landscape characteristics around known colonies. The work completed under this grant has provided a solid foundation for increased purple martin studies. Information collected from these studies will be used to generate a recovery plan for the purple martin.

You Can Make a Difference

Connecticut residents have a unique opportunity to make a difference for our state's wildlife and natural area preserves by donating to the Tax Check-off Fund, thus supporting important projects and research. To contribute, residents can choose one of the following options:

- Donate when submitting your 2014 Connecticut Income Tax Return; or
- Contribute directly by sending a check payable to "DEEP-Endangered Species/Wildlife Fund" to: DEEP Bureau of Financial and Support Services, 79 Elm Street, Hartford, CT 06106-5127.

Thank you for your support!

Purple martin chicks are weighed and aged, and then fitted with identifying leg bands.

Restoring a True Coastal Preserve in Southeastern CT

Written by Beth Sullivan, Avalonia Land Conservancy; Photos by Roger Wolfe, DEEP Wildlife Division

The DEEP Wildlife Division's Wetlands Habitat and Mosquito Management (WHAMM) Program partners with various municipalities, conservation organizations, and land trusts to accomplish wetland habitat restoration projects throughout the state. Following is one such project as seen through the eyes of the Avalonia Land Conservancy, a non-profit land trust dedicated to the conservation of natural areas in southeastern Connecticut via acquisition. Avalonia holds more than 3,400 acres of land, preserved in perpetuity as natural open space.

Dodge Paddock and Beal Preserve of the Avalonia Land Conservancy is the last open space and true coastal preserve in Stonington Borough. Its history is rich, with generations of changes and uses. But, in the last decade, it has truly been a sad example of how sea level rise can impact the shoreline. Neighbors watched the almost four-acre preserve become wetter and fill with invasive *Phragmites*. Hurricane Sandy devastated walls and flooded the preserve with, not just water, but debris.

In the last two years, the Avalonia Land Conservancy has worked with DEEP's Wetlands Habitat and Mosquito Management Program (WHAMM) to open a new drainage area, remove *Phragmites*, create channels for better flow of floodwaters, and begin a plan for the future.

There is more great news to share. In November 2014, the National Fish and Wildlife Foundation, which administers the Long Island Sound Futures Fund, granted nearly $45,000 to Mystic Aquarium in partnership with the Avalonia Land Conservancy to restore the landscape in Dodge and Beal Preserve. Planning on the project began immediately upon our notification of the grant award and is well underway for public outreach efforts, planting plans, and the organization of volunteers.

An Adaptable Landscape

Resiliency is a term we have been hearing more frequently. As oceans rise and storms increase in intensity, we have to be prepared to change, to adapt. Shoreline towns are developing task forces to discuss and plan for the needs of the communities on many levels. Our landscape will have to adapt as well.

The Preserve will be studied for elevation compared to sea level, soil salinity, water levels, and direction of flow. A team comprised of consultants and experts from many areas will work to develop a specific plan for vegetation and plantings that will enhance the area. The plants will be able to withstand freshwater flooding and periodic salt water inundation. They will help filter pollutants that come from road run-off from within the borough to prevent pollutants from reaching the ocean. Native plants will replace the invasive *Phragmites* and provide much greater appeal, food, and shelter for native wildlife. Plants in other areas will reinforce and support the land itself in the face of other storm events.

This aerial photo of the Dodge Paddock and Beal Preserve shows the wetland area that flooded properties after heavy rains, was filled with *Phragmites*, and produced mosquitoes. Drainage channels were excavated to facilitate water flow, *x* were eliminated, and the area is now ready for restoration and replanting.

(Top) The WHAMM crew prepares to breach a berm of gravel and sand deposited by Hurricane Sandy, which prevented drainage. (Bottom) After the berm was breached, a channel was created to release the impounded waters that flooded the preserve and initiate normal tidal flushing.

Many Benefits

Wildlife will not be the only beneficiaries. The area, when completed, will be available as a model for a resilient landscape. Local environmental groups will be able to bring volunteers to help with the project and also experience the landscape first hand. Educational signage will be installed to enable others to learn from this effort, about the best ways to adapt to the changes that are surely in our future.

Beth Sullivan writes a blog for the Avalonia Land Conservancy. You can find her blog, *Avalonia etrails*, at http://avaloniaetrails.blogspot.com. Learn more about the Avalonia Land Conservancy at http://avalonialandconservancy.org.

Bobcat

Lynx rufus

P. J. FUSCO

Background

The bobcat is the only wild cat found in Connecticut and the most common wild cat in North America. Its status has changed dramatically in our state. Historically, bobcats were not protected in Connecticut and were viewed as a threat to agriculture and game species. The state even had a bounty on bobcats from 1935-1971. By the early 1970s, a large increase in the value of bobcat pelts raised concerns that the population could be overharvested. In addition, deforestation of the state's landscape that peaked in the 1800s greatly reduced habitat for bobcats and many other wildlife species. In 1972, the bobcat was reclassified as a protected furbearer in Connecticut with no hunting or trapping seasons.

Based on observation reports submitted to the Wildlife Division by the public and others, bobcat numbers appear to have increased in Connecticut in recent years. Sighting and vehicle-kill reports indicate that bobcats now reside in all eight Connecticut counties. However, the heaviest concentrations occur in the northwestern corner of the state.

Range

The bobcat's range has historically extended throughout the lower 48 United States into southern Canada and south to central Mexico. This range has remained largely intact due to the species' adaptability to various habitats and human pressures. However, the bobcat has been extirpated from some areas along the mid-Atlantic coast due to overharvest and dense human population and development. Bobcats also are no longer found in those portions of the Midwestern states where intense agriculture has decreased suitable habitat. Bobcat populations are found throughout New England.

Description

The bobcat is a stout-bodied, medium-sized feline, with a short, "bobbed" tail (about six inches in length), prominent cheek ruffs, and tufts of black hair on its pointed ears. The sides and back are generally the same color with faint black spots; grayer in winter and tan in summer. The underparts are white. The tail may have one to several indistinct dark bands and a tip that is black on top and whitish below. Adult males typically weigh between 18 and 35 pounds and measure from 32 to 37 inches in length. Adult females typically weigh between 15 and 30 pounds and measure from 28 to 32 inches in length.

Bobcats are about two to three times the size of their distant relative, the domestic house cat, and the tracks of a young bobcat are often confused with those left by a roaming house cat. Adult house cat tracks, however, are much smaller than adult bobcat tracks. Bobcat tracks have an overall round appearance with four round toe pads in both front and rear prints. There is a fifth toe on the forefoot; however, it does not leave an impression because it is raised high on the foot. The claws do not leave an impression because they are usually retracted.

Habitat and Diet

Bobcats can be found in hardwood (deciduous) forests and mixed hardwood-softwood (coniferous) forests. They have a preference for brushy lowlands and swamps, as well as brushy and rocky woodlands broken by fields, old roads, and farmland. They tend not to prefer mature forest but do flourish in areas with a thick understory. Territorial and home ranges in the Northeast vary from eight to 20 square miles in size. Females tend to have smaller and more exclusive ranges than males. Daily movements of one to four miles are common.

The diet ranges from cottontail rabbits, woodchucks, squirrels, chipmunks, mice, voles, snowshoe hares, white-tailed

The bobcat is the only wild cat found in Connecticut.

deer, birds, and, to a much lesser extent, insects and reptiles. Deer that are taken by bobcats are most likely sick, injured, young, or very old. Bobcats also prey on domestic animals, such as poultry, small pigs, sheep, and goats.

Life History

Bobcats are polygamous (have more than one mate) and do not form lasting pair bonds. They breed between February and March. Females may breed before they are one year old but generally do not produce a litter until they are two years old. Dens are located beneath windfall or in caves, rock crevices and ledges, hollow logs, and trees. The den may be lined with dry leaves, moss, or grass, which are formed into a shallow depression by the female. The same den site may be used for several years.

One to four (usually two) kittens are born in April. Kitten survival is a major factor in annual bobcat population fluctuations; survival is linked to food abundance. When food is plentiful, many young survive; a scarcity of food results in heavy mortality to kittens. Kittens weigh 10 to 12 ounces at birth. They are born blind and their eyes remain closed for three to 11 days. Kittens nurse for about 60 days and may remain with the female until the following spring. Males do not participate in raising the young. At about four weeks of age, kittens begin to leave the den and take solid food provided by the female. Juvenile bobcats leave the female's territory before she gives birth to a litter the following year.

Interesting Facts

Bobcats are most active just after dusk and before dawn. Secretive, solitary, and seldom observed, they tend to hunt and travel in areas of thick cover, relying on their keen eyesight and hearing for locating prey. Bobcats are patient hunters, meaning they spend much of their time either sitting or crouching, watching and listening. Once prey is located, a bobcat will stalk within range and ambush its quarry.

Bobcats may cache, or cover, their kills with leaves, grass, snow, and even hair from the carcass. They will revisit a carcass until most of it is consumed. Other feline species are known to cache their kills for future consumption.

Bobcats rarely cause conflicts with human activities. Infrequently, they kill livestock, especially fowl, and attack domestic cats. Conflicts are addressed on an individual basis and can often be remedied by preventive methods, such as fencing for livestock.

Bobcat attacks on people are extremely rare. Bobcats are not a significant vector of disease and rarely contract the mid-Atlantic strain of rabies.

Report bobcat observations to the DEEP Wildlife Division at deep.wildlife@ct.gov or 860-424-3011.

What You Can Do

The DEEP Wildlife Division continues to record bobcat sightings and also document the number of bobcats hit and killed by vehicles on Connecticut roadways. Between 20 and 30 vehicle-killed bobcats are collected annually and examined for physical condition, age, and breeding condition. Bobcat sightings can be reported to the Wildlife Division at deep.wildlife@ct.gov or by calling 860-424-3011. Information needed is your name and contact information, as well as the date, location, and time of sighting.

P. J. FUSCO

Bobcats flourish in areas with a thick understory.

High Counts for the 2015 Midwinter Waterfowl Survey

Written by Min Huang, DEEP Wildlife Division

Every winter since 1955, the DEEP Wildlife Division has conducted the annual Midwinter Waterfowl Survey to obtain an index of long-term wintering waterfowl trends. This survey is conducted in early January throughout the Atlantic Flyway. (The Atlantic Flyway is a bird migration route that generally follows the Atlantic Coast of North America and the Appalachian Mountains.) Most of the states that make up the Atlantic Flyway participate in the survey. The survey is conducted from a helicopter in Connecticut and a census is obtained from the coast, the three major river systems (Connecticut, Thames, and Housatonic), and selected inland lakes and reservoirs. The survey is a snapshot in time of waterfowl distribution throughout the Flyway.

P. J. FUSCO

Approximately 600 common goldeneyes were counted during the 2015 Midwinter Waterfowl Survey, which is less than the approximately 1,000 counted in 2014.

Due to the dangerous nature of the survey, the cost, and the recent advent of breeding ground surveys for most hunted species, the continued utility of the Midwinter Survey is in question. Currently, regulatory decisions (setting of hunting seasons) for only two species, Atlantic brant and Eastern Population tundra swans, are set using Midwinter Survey data. The extent of the current survey coverage may change in the near future as a result of an ongoing analysis by the U.S. Fish and Wildlife Service and the four Flyway Councils.

The survey in Connecticut was conducted on January 8, 2015. Conditions for the 2015 survey were excellent. A severe cold snap just prior to the survey resulted in widespread freezing of inland waterbodies. The mercury dipped to -5° F across much of the state the night preceding the survey. Many of inland lakes and ponds were frozen and major river systems were 70-90% ice bound. When inland water areas freeze, waterfowl concentrate along the coast and on the major river systems. Clear skies and very light winds on the day of the survey led to unlimited visibility and good flying conditions.

The total number of ducks observed during the survey – 16,901 (total dabbling ducks plus total diving ducks) – was the second highest since 1999. The total duck count in the 2014 survey (19,360) was higher. Similar to last year, the puddle duck count (which includes black ducks and mallards) was high. A total of 9,930 dabbling ducks was counted, just below last year's record count of 10,141 and the second highest since 1985. There has been a slow, but noticeable redistribution of puddle ducks along the state's coastline recently.

Following a recent trend, however, most puddle ducks (particularly mallards) were observed in urban sanctuaries where, in many instances, supplemental feeding by the public is occurring. The Wildlife Division discourages the feeding of waterfowl for a number of reasons, including increased risk of disease transmission and potential for poor nutrition. The Division has published a brochure, "Do Not Feed Waterfowl," that outlines the potential hazards of feeding waterfowl. It is available on the DEEP website at www.ct.gov/deep/wildlife.

Connecticut Midwinter Waterfowl Survey

*Results for Major Species**

Species	2015	2014	Five-year Avg.
Atlantic Brant	600	1,100	1,200
Black Duck	4,800	4,800	3,300
Bufflehead	1,100	1,100	1,100
Canada Goose	8,000	7,600	5,000
Canvasback	0	100	100
Mallard	4,500	4,300	2,800
Merganser	900	1,100	1,100
Mute Swan	500	600	700
Long-tailed Duck	500	600	400
Common Goldeneye	600	1,000	700
Scaup	3,600	5,000	3,000

** rounded to nearest hundred*

FROM THE FIELD

Wildlife Division Welcomes New Staff Member

This past September, the Wildlife Division welcomed Brian Hess as our newest staff member. Brian is working with the Wildlife Diversity Program on a variety of projects. He hails from Lancaster, Pennsylvania, but joined us from Santa Cruz, California. Brian holds dual degrees in wildlife and chemistry, and has worked with a wide variety of species, ranging from California condors to mottled ducks to frogs and more. Brian received his Master's Degree from the University of Wisconsin-Milwaukee. His research focused on female mate selection in greater prairie chickens that were translocated from Minnesota to Wisconsin to enhance genetic variation in existing populations. The results of his work were published in *The Auk*. Brian has conducted field work for many agencies, worked extensively with conservation partners, is skilled in molecular genetic analysis, and has experience in communicating science to the public. Since joining the Division, Brian has been playing a major role in the revision of Connecticut's Wildlife Action Plan. He also will be involved with several Wildlife Diversity Program projects once the field season arrives.

Red Knot Listed as Threatened

The U.S. Fish and Wildlife Service has granted federal protection for the *rufa* subspecies of the red knot, a robin-sized shorebird, designating it as threatened under the federal Endangered Species Act. A "threatened" designation means a species is at risk of becoming endangered throughout all or a significant portion of its range.

This remarkable bird migrates thousands of miles a year from the Canadian Arctic to the southern tip of South America. Unfortunately, this shorebird is no match for the widespread effects of emerging challenges like climate change and coastal development. Since the 1980s, the knot's population has fallen by about 75% in some key areas, due in part to declines in one of its primary food resources – horseshoe crab eggs in Delaware Bay, an important migratory stopover site. Although this threat is now being addressed by extensive state and federal management actions, other threats, including sea-level rise, some shoreline projects, and coastal development, continue to shrink the shorebird's wintering and migratory habitat. Changing climate conditions are also altering breeding habitat in the Arctic.

U.S. Fish and Wildlife Service

A Conservation Partnership to Save the Monarch

The U.S. Fish and Wildlife Service (USFWS) recently launched a major campaign aimed at saving the declining monarch butterfly. The USFWS signed a cooperative agreement with the National Wildlife Federation (NWF), announced a major new funding initiative with the National Fish and Wildlife Foundation, and pledged an additional $2 million in immediate funding for on-the-ground conservation projects around the country.

While monarchs are found across the United States, their numbers have declined by approximately 90% in recent years, a result of numerous threats, particularly loss of habitat due to agricultural practices, development, and cropland conversion. Degradation of wintering habitat in Mexico and California also has had a negative impact on the butterfly.

To directly tackle these challenges, the cooperative effort will build a network of diverse conservation partners and stakeholders to protect and restore important monarch habitat, while also reaching out to Americans of all ages who can play a central role. The memorandum of understanding between NWF and USFWS will serve as a catalyst for national collaboration on monarch conservation, particularly in planting native milkweed and nectar plants, the primary food sources in breeding and migration habitats for the butterfly.

The monarch is perhaps the best-known butterfly species in the United States. Every year they undertake one of the world's most remarkable migrations, traveling thousands of miles over many generations from Mexico, across the United States, to Canada.

Protecting the monarch is not just about saving one species. The monarch serves as an indicator of the health of pollinators and the American landscape. Conserving and connecting habitat for monarchs will benefit other plants, animals, and important insect and avian pollinators.

The USFWS's public engagement effort includes a monarch website (www.fws.gov/savethemonarch) with details and photos on the monarch's plight, information on how Americans can get involved, and direct outreach to schools and communities. Because agriculture also plays a key role in the monarch's survival, partnership efforts will engage farmers and landowners on management practices that will protect and restore habitat.

U.S. Fish and Wildlife Service

P. PICONE, HABITAT MANAGEMENT PROGRAM

Posing with the new bat house at Sessions Woods WMA in Burlington are (from l to r): Matt Hushin, Adam Hushin, Josh Schilling, Ethan Hushin, Jarred Karal, Rick Napierski, Heath Brown (kneeling), and Ron Ruel.

Eagle Scout Erects Bat House

Adam Hushin contacted the DEEP Wildlife Division in search of an Eagle Scout project that would make a difference for wildlife. He chose to build an artificial roost for bats. Adam coordinated the construction of a large bat house with volunteers and received funding for the building materials from the non-profit Friends of Sessions Woods. In September 2014, Eagle Scout Adam Hushin erected the bat house along the Beaver Marsh Trail at the Wildlife Division's Sessions Woods Wildlife Management Area in Burlington with help from his fellow Boy Scouts in Troop #67, Plainville, and Wildlife Division staff members Rick Napierski, Ron Ruel, and Heath Brown. Bat conservation (and education) gets a boost with the new and updated addition of the large bat house.

Interested in making your own bat house? Plans are available on the DEEP website at www.ct.gov/deep/cwp/view.asp?a=2723&q=325964&deepNav_GID=1655.

Peter Picone, DEEP Wildlife Division

Conservation Calendar

Programs at the Sessions Woods Conservation Education Center

Programs are a cooperative venture between the Wildlife Division and the Friends of Sessions Woods. Please pre-register by emailing laura.rogers-castro@ct.gov or calling 860-424-3011 (Mon.-Fri., 8:30 AM-4:30 PM). Programs are free unless noted. An adult must accompany children under 12 years old. No pets allowed! Sessions Woods is located at 341 Milford St. (Route 69) in Burlington.

March 29 ..... **Fungi as Medicine**, from 9:30 AM-11:30 AM. Join the Connecticut Valley Mycological Society during their annual meeting at Sessions Woods for a program on mushrooms. Nutritionist and herbalist Alison Birks will present "Fungi as Medicine," a look at the many kinds of fungi that can be used as part of a holistic approach to maintaining your health. During the program, Alison will highlight some of the most recent scientific discoveries about this amazing group of organisms and discuss how she uses them in her clinical practice. The Mycological Society's meeting will include a coffee and refreshments period at 9:30 a.m., with the presentation from 10:00 to 11:00 a.m. Questions and answers will follow the program.

April 11 ..... **Backpacking Workshop**, from 1:00 PM-3:00 PM. Join Friends of Sessions Woods Director Jan Gatzuras for an introduction to backpacking. This workshop will provide the essentials for beginners to learn about equipment, clothing, food, water treatment, and suggestions for beginner backpack trips. Participants will learn how to safely camp and secure food from wildlife. The resources available to identify wildlife encountered during outdoor activities also will be discussed. Backpacking is healthy, provides an opportunity to spend time outdoors, and is a great way to explore Connecticut's beautiful natural resources.

April 26 ..... **Friends of Sessions Woods Annual Meeting and Live Raptor Program.** A Dessert Extravaganza Potluck is planned for 12:30 PM, so bring a dessert to share. A brief 10-minute business meeting will begin at 1:00 PM, followed by a presentation given by Sharon Audubon and featuring live raptors.

Hunting Season Dates

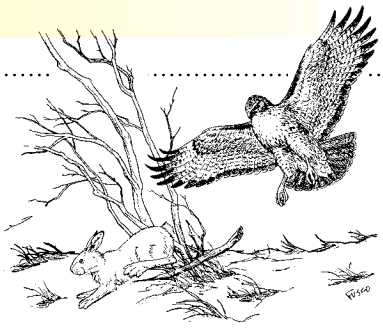
April 29-May 30 ..... Spring Turkey Hunting Season

April 18-25 ..... Youth Spring Turkey Hunter Training Days

Consult the 2015 Connecticut Hunting & Trapping Guide for specific season dates and details. Printed guides can be found at DEEP facilities, town halls, bait and tackle shops, and outdoor equipment stores. Guides also are available on the DEEP website (www.ct.gov/deep/hunting). Go to www.ct.gov/deep/sportsmenlicensing to purchase Connecticut hunting, trapping, and fishing licenses, as well as required deer, turkey, and migratory bird permits and stamps. The system accepts payment by VISA or MasterCard.

***New for 2015!** Fishing, hunting, and trapping license fees for resident 16 and 17-year-olds have been reduced to 50% off the regular fee. Most hunting permits, stamps, and tags also are half price for 16 and 17-year-olds. More specific details are available in the 2015 Connecticut Hunting & Trapping Guide and on the DEEP website at www.ct.gov/deep/hunting or www.ct.gov/deep/fishing. The 2015 Angler's Guide will be available soon.*

Find us on Facebook **www.facebook.com/CTFishandWildlife**



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A drake hooded merganser protects its crab catch from the submarine attack of a would-be pirate.