

January/February 2022

CONNECTICUT  
**Wildlife**



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# From The Director

The start of a new year provides a good opportunity to review the past and look to the future. I can think of no better focus for that kind of reflection than the cover of this issue of Connecticut Wildlife. When



I first joined the Wildlife Division as a biologist with the fledgling “Nonharvested Wildlife Program,” the eastern bluebird nested regularly in just three towns in the entire state. Now found statewide, it is truly one of our biggest conservation success stories. Through the hard work of people of all ages and experiences, artificial nesting habitat was provided; natural habitat to provide year-round food and cover was enhanced; and competition for resources reduced. Today, the bubbly call of the bluebird and the flash of brilliant color we see as they fly by are a true reflection of all we can accomplish when we work together.

The story of the bluebird presents a theme we see in other variations today. They faced challenges of extreme storm events, introduction of invasive exotic species, loss of habitat, and intense competition for nesting cavities from non-native species. You will see many of these challenges reflected in the story of the horned lark in this issue. Several other species face a similar challenge—bats declining due to novel viruses introduced to our populations; amphibians facing habitat loss and exposure to diseases associated with captive species; and New England cottontails battling habitat loss, competition from non-native species, and emerging diseases. While those stories may seem daunting, we need to remember that when we work together, we can successfully navigate many of those challenges. Each year brings renewed opportunities to achieve that next conservation success.

Many other conservation success stories are captured in this issue from the recovery of the bald eagle to the success of our Deer Program in ensuring an abundance of white-tailed deer to the joy we get from finding panfish in our lakes and streams. While we know there are many challenges still ahead, such as climate change, sea level rise, habitat loss, invasive species and novel diseases, and many species with populations in steep decline, there is still a lot to hope for as we move into a new year. Continued conservation partnerships and opportunities to find new ways to work together to find solutions, the opportunity to dedicate new resources to conservation presented by efforts such as Recovering America’s Wildlife Act, and the renewed appreciation we have gained in the past couple of years for the solace of nature and its value to our physical and mental health all combine to point us toward more conservation successes.

Please take a moment to enjoy our outdoor world, appreciate how far we have come, and remember the story of the brilliant bluebird—success is possible when we work together.

Jenny Dickson, Director, DEEP Wildlife Division

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Eagle watchers who observe eagles with legs bands can help document the presence and behavior of bald eagles in Connecticut by reporting band information to the USGS Bird Banding Lab. Learn more by reading the article on page 8.

PHOTO BY P. J. FUSCO

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### Cover:

An Eastern bluebird attempts to hold on to a tree branch that is covered by ice. Now is a good time to erect bluebird nest boxes in appropriate habitat. Learn more at <https://portal.ct.gov/DEEP/Wildlife/Fact-Sheets/Eastern-Bluebird>.

Photo courtesy Paul Fusco

# Wildlife Management Areas: *Their Roots in Indigenous Land and Language*

Written by Laura Rogers-Castro, DEEP Wildlife Division

**H**igganum, Pawcatuck, and Quinebaug are just a few of the names of wildlife management areas (WMAs) with roots in the language of the Indigenous People of what is now called Connecticut. Even the word “Connecticut” has these roots. How many of us repeat these names without truly knowing their background and the history of the tribes of their origin? Many of us hunt and fish these lands without a thought to who walked there before us. How can we learn more about Native Peoples and their homelands, and will this additional knowledge assist us in

our practice to wisely conserve the land?

An interactive map found at the website <https://native-land.ca/> is a good start in the quest to increase our knowledge about indigenous homelands. Users can enter a home address and discover the name of the tribe with present or former territory at that “address”. Tribal names and territories existed for tribes but were not restricted by state boundaries. Boundaries and land “ownership” came later. Connecticut residents are most likely familiar with the Pequots and Mohegans, presently living mainly in eastern Connecticut. Assekonk Swamp WMA in North Stonington and Quinebaug River WMA in the Canterbury/Plainfield area are two examples of WMAs residing on the historic homelands of the Pequots and Mohegans. Menunketesuck WMA in Clinton and Westbrook is located on former Wappinger Hammonasset land. Along the Connecticut River in Portland, Wangunk Meadows WMA provides a clue to the ancestral lands of the Wangunks, Tunxis, and Quinnipiac tribes. In western Connecticut, Housatonic River WMA in the Cornwall and Kent regions is land once belonging to the Mohicans and Pootatucks (Schaghticokes). The Schaghticokes still live in Kent and have been a state recognized tribe for over 300 years. It is important to recognize there are many native people still living in Connecticut!

The above mentioned tribes belong under the umbrella of Algonquian. The Algonquians are a group of tribes that speak dialects of the Algonkin or Algonquin language. Eastern Algonquians once lived throughout eastern coastal North America, including Connecticut, to what is now the Upper South. Many still live here but others now live elsewhere, losing their homelands by force or compelled to sell their land. Algonquians subsisted through hunting and fishing, in addition to cultivation of the “Three Sisters” – corn, beans, and squash. They also moved seasonally to locations based on food supply. Similar to WMAs, land was sometimes managed, but in this case cleared by burning to cultivate food.

Many of the names of our WMAs have Algonquian origin and speak to features of the land and water. The word “Connecticut” is an English spelling of an Algonquian word meaning “land on the long tidal river”. Quin-

P. J. FUSCO (2)



The Quinnipiac River WMA is located on the historic homelands of the Quinnipiac tribe. The Golden Hill Paugussett Reservation in Trumbull is the oldest continuous reservation in Connecticut.



CONTRIBUTED BY VICE CHAIRPERSON BRENDA GEER, EASTERN PEQUOT TRIBAL NATION

Members of the Eastern Pequot Tribal Nation of North Stonington, Connecticut. The Eastern Pequot Reservation has been continually occupied by the Eastern Pequot Tribe since the 1670s.

nipiatic means “people of the long water land”. The Wildlife Division manages the Quinnipiac River Marsh WMA covering almost 564 acres in Hamden, New Haven, and North Haven. Tankerhoosen WMA in Vernon, ancestral lands of the Podunk tribe, is derived from “Watunk-shanoos’e” and means “towards the fast flowing and winding stream” of the Hockanum River. Pequonnock Valley WMA in Trumbull, ancestral lands of the Golden Hill Paugussetts, is named from the Wappinger dialect and some believe means “cleared land”. Golden Hill Paugussetts live today mainly in Trumbull and Colchester.

When past land use is acknowledged before beginning town meetings, educational programs, guided walks, and

lectures, awareness of Indigenous presence is increased. The Native people formerly living, revering, and conserving the land are recognized. Recognition should also be given to the living ancestors of these people, unlikely on the same land. In many cases, diseases brought by the European settlers and wars decimated the native tribes in Connecticut and the remaining joined with others often forced to move to other areas in the country.

The tribal nations of Connecticut have a history of conservation of the land. What value would there be in destroying what you were dependent on? Many communities moved seasonally to reap what was available at the time – berries, nuts, fish, and wild game. Of course, there was no waste

## *The tribal nations of Connecticut have a history of conservation of the land.*



MAP ATTRIBUTED TO H. GRISWOLD AND M. SPEISS. COPYRIGHT M.P. CHENEY



The Mashantucket Pequot Tribal Nation are known in their native language as "The Fox People". A fox is found on their tribal symbol.



Turtles are held in high esteem by many Indigenous Peoples as a connection to Earth.



In Native American symbolism, hawks can represent clear vision, serve as guardians, or messengers from ancestors.

when an animal was harvested, with skins used for warm clothing, blankets, and trade; fat used as food and insulation from the cold; and meat eaten and dried for later meals. All living beings were and still are considered relatives and it is customary to give respect when taken from the wild. Indigenous ways include emotional and spiritual connections. The strong conservation ethics of the Indigenous people contrasts deeply with the settlers whose ancestors eventually needed strict wildlife laws to ensure the future of wildlife populations.

How can contemporary hunters and anglers learn from the native tribes? Many only hunt what will later be used to feed themselves and their families. Wild meat is very healthy and there is a sense of pride to be able to provide for your family. Never take too much. WMAs and other areas used for hunting and fishing should be left better than they were found. Fishing line needs to be disposed of properly. Others using the land should practice the same conservation ethics. All of us should spend time learning about the history of the people and land of Connecticut and support the efforts of native tribes to preserve their heritage, language, and traditional ways.

The author would like to recognize Ed Sarabia, retired DEEP Indian Affairs Coordinator, and Golden Hill Paugussett Clan Mother Shoran Waupatukuay Piper for editing and reviewing this article. Thanks also to Chairperson Brenda Geer of the Eastern Pequot Tribal Nation for assistance with the article. The spelling of tribal names can be inconsistent in written history but were based on the native lands map referenced in the article. True names are often only used by native tribes in close circles and ceremonies.



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Native tribes moved their villages seasonally, traveling to the best fishing, hunting, gathering, and later agricultural locations suitable for the time of year.



The rich diversity of land in the region now called "Connecticut" provided Indigenous Peoples with the means for subsistence, including wildlife, fish, shellfish, and native plants. The Native Tribes, in return, recognize and respect all that is gifted from the land.



White-tailed deer harvested by Eastern Woodland Tribes prior to 1700 were used in their entirety, as food; clothing, blankets, and shoes (hides); tools and scrapers (antlers and bones); and other items.



Beaver pelts were important in trade between Native Tribes and Europeans. The meat was eaten, incisors were used as tools, and fur was used for clothing and blankets.



Wild turkeys have been a part of Indigenous life for hundreds of years. In addition to the meat, the bones were used for tools and in regalia and the fletching of arrows.

# Watchable Wildlife



## Bald Eagles

### Leg Bands Provide Insight

Written by Paul Fusco, DEEP Wildlife Division

When it comes to learning about the lives of birds, leg bands can play an instrumental role. Bands have helped researchers and wildlife managers track specific individual birds, and also learn about avian movements and population trends. Such is the case with bald eagles, where bands have helped build a history of nesting and wintering area use by individual birds both in our state and region. This information has been invaluable in helping wildlife managers make decisions that have improved eagle protections, aiding the efforts to bring our national symbol back from endangered species status across the country. Populations are now healthy and the majestic bald eagle has been delisted from the federal Endangered Species List, as well as from many state lists, even though conservation work continues with the help of leg bands.

Most banded eagles are fitted with leg bands while they are chicks in the nest. When chicks are about five weeks of age, and before they can fly, wildlife managers will visit the nest to apply the bands. Two permanent bands are used,



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State band codes are patterned in three sets around the band, making the band readable from multiple angles.

one federal U.S. Geological Survey (USGS) Bird Banding Lab aluminum band and one state-specific colored band with a letter and number code. Federal aluminum bands have a unique 9-digit number that identifies individual birds.



Leg bands are applied at the nest when eagle chicks are approximately five weeks old. They get one federal USGS Bird Banding Lab aluminum band and one colored state band.

State bands are coated with a base color and then the letter/number code is etched into the aluminum, making the code highly visible. The code is designed to be readable from a distance and different angles. It is patterned three times on the band. Connecticut eagle bands are black with white (bare aluminum) code characters. Eagle watchers with a spotting scope, binoculars, or telephoto camera lens may be able to read the bands and report the date and location to document the sighting of the eagle. This helps with tracking banded eagles from the time they leave their nest and throughout their lives. Biologists are able to determine where Connecticut's eagles go for the win-





**Bald eagle chick P/3 in the nest as it exercises its wings.**

PHOTO BY P. J. FUSCO

ter and if they remain in our state to nest when they become adults at about the age of five years. Besides keeping track of eagle movements, bands can also help us understand survival rates

***Band Colors Used by Regional States and Provinces***

- CT*    *Black*
- MA*    *Gold or Orange*
- MD*    *Purple*
- ME*    *Red*
- NH*    *Black*
- NJ*    *Green*
- NY*    *Blue or Red/Black*
- VA*    *Purple*
- ON\**    *Black*
- QU\**    *Orange*

*\* ON refers to Ontario, Canada, and QU to Quebec, Canada*



B. HESS

**Eagle triplets P/7, R/7, and S/7 in the nest after receiving their bands.**



Adult bald eagle with both leg bands visible. The state leg band is blue, indicating the bird was banded in New York.



Triplets P/7, R/7, and S/7 are seen perched together near their natal nest in the summer of 2018. R/7 (middle) has made news recently by taking up winter residence in Central Park in New York City, where it has been seen hunting gulls and waterfowl. Unfortunately, sibling S/7 (right) was struck and killed by a vehicle in West Virginia while feeding on a road-killed deer carcass in 2018. Highly visible leg bands help the DEEP keep track of eagle movements through the reports of observers. Connecticut eagles have been reported in a number of northeastern states.

and mortality.

Eagle watchers can help document the presence and behavior of bald eagles in Connecticut by reporting band information to the USGS Bird Banding Lab at [www.reportband.gov](http://www.reportband.gov). The reports are entered into a national data base and promptly sent to Connecticut DEEP.

### *Midwinter Eagle Survey*

The DEEP Wildlife Division conducts an annual Midwinter Eagle Survey that tracks the number of eagles using Connecticut habitats from year to year. This documentation helps in plotting trends in eagle populations in Connecticut and the Northeast region. The survey not only indicates trends in eagle populations, but also helps record what habitats are critical for them during the cold winter months.

Eagle watchers can also be on

## Recent Connecticut Bald Eagle Band Reports

<i>Band Mark</i>	<i>Reported Date</i>	<i>Reported Location</i>	<i>Banding Date</i>	<i>Banding Location</i>	<i>Sex</i>	<i>Status</i>
AZ	6/05/21	Dutchess County, NY	5/23/19	Monroe	F	Alive and well
9/D	5/27/21	Windham County, VT	5/15/07	Suffield	F	Alive and well
W3	3/23/21	Hartford County, MD	6/04/15	Kent	M	Alive and well
S/3	3/23/21	Hunterdon County, NJ	5/16/16	Middlebury	F	Alive and well
W/3	3/22/21	Hartford County, MD	6/04/15	Kent	M	Alive and well
R/7	2/27/21	Kings County, NY	5/11/18	New Haven	M	Alive and well
E/7	2/20/21	Dutchess County, NY	5/02/18	Middlebury	M	Alive and well
U/3	2/16/21	Hartford County, CT	6/12/15	Middletown	M	Alive and well
9/V	2/16/21	Middlesex County, CT	5/13/08	Old Lyme	M	Alive and well
9/E	2/12/21	New London, County, CT	5/17/07	Wethersfield	M	Alive and well
U/0	2/10/21	Bergen County, NJ	5/11/09	Easton	M	Alive and well
H/3	2/3/21	Dutchess County, NY	5/19/16	Easton	M	Alive and well
A/4	1/21/21	Hartford County, CT	5/18/17	Easton	M	Alive and well
R/7	1/5/21	Kings County, NY	5/11/18	New Haven	M	Alive and well
E/2	12/16/20	Putnam County, NY	5/20/10	Easton	M	Alive and well
7/X	12/15/20	Windham County, CT	5/13/05	East Windsor	M	Alive and well
8/V	12/13/20	New Haven County, CT	5/30/06	Cromwell	M	Alive and well
R/7	11/08/20	Staten Island, NY	5/11/18	New Haven	M	Alive and well
R/7	11/03/20	Kings County, NY	5/11/18	New Haven	M	Alive and well
D/4	11/01/20	Dutchess County, NY	5/23/17	Guilford	F	Alive and well
A/V	9/21/20	Columbia County, NY	8/27/20	Monroe	F	Deceased
R/7	9/12/20	Kings County, NY	5/11/18	New Haven	M	Alive and well
P/2	6/21/20	New Haven County, CT	5/31/11	Hartford	M	Alive and well
9/D	5/30/20	Windham County, VT	5/15/07	Suffield	F	Alive and well
R/7	3/31/20	GreenWood Cemetery, NY	5/11/18	New Haven	M	Alive and well
A/Z	3/7/20	Bucks County, PA	5/23/19	Monroe	F	Alive and well
B/7	12/23/19	Harmon, NY	6/2/17	Monroe	M	Alive and well
P/3	10/19/19	Hudson County, NJ	5/15/17	New Haven	M	Alive and well
8/W	3/17/19	Cheshire County, NH	5/30/06	Cromwell	M	Alive and well
D/4	3/9/19	New Bedford, NJ	5/23/17	Guilford	F	Alive and well
N/3	1/25/19	Greenwich, CT	5/15/17	New Haven	F	Alive and well
N/3	1/15/19	Westchester County, NY	5/15/17	New Haven	F	Alive and well
P/3	11/2/18	Great River, NY	5/15/17	New Haven	M	Alive and well
S/7	9/13/18	Hardy County, WV	5/11/18	New Haven	M	Deceased - hit by car
V/3	3/11/18	Wapole, NH	5/24/12	Easton	M	Alive and well
8/M	3/11/18	Wapole, NH	6/9/05	Barkhamsted	F	Alive and well
8/E	4/2/17	Windsor Locks, CT	6/7/05	Middletown	M	Alive and well
W/3	12/7/16	Conowingo Dam, MD	6/4/15	Kent	M	Alive and well
C/2	12/12/16	Northern NJ	6/1/09	Middletown	F	Alive and well
9/M	12/11/16	Gaylordsville, CT	6/1/07	Seymour	M	Deceased
9/N	3/1/16	Wilder, VT	6/1/07	Seymour	M	Deceased
Z/2	2/21/16	Croton, NY	5/23/12	Bridgewater	F	Alive and well
R/2	8/11/15	Tiverton, RI	6/2/11	Middletown	M	Alive and well
Z/2	8/9/15	Old Saybrook, CT	5/23/12	Bridgewater	F	Alive and well

*Data provided by the U.S. Geological Survey Bird Banding Laboratory and public reporting.*

the lookout for fish kills that sometimes happen when colder than average temperatures occur for extended periods of time during the winter. Eagles may congregate to take advantage of the scavenging opportunities.

Some of the best winter locations to find bald eagles in Connecticut include any large body of water that is not frozen over with ice. Rivers, including the Connecticut, Housatonic,

Thames, Quinnipiac, and Farmington, are all good places to look. River estuaries and coastal bays and coves can be productive as well. Eagle watchers can also check large lakes, reservoirs, and surrounding areas, including Bantam, Barkhamsted, Candlewood, and North Farms (Wallingford). The key is to have open water so the birds can find food. In mild winters, there will be more open water so bald eagles may

be spread out across the state. In colder winters with a lot of ice, eagles will be more concentrated at open water locations. Some may also move farther south where they can more easily find open water. Midwinter Eagle Survey numbers fluctuate from year to year based on eagle populations and winter conditions.



# Bird of Wide Open Spaces

## *The Horned Lark*

Article and photography by Paul Fusco, DEEP Wildlife Division

Few creatures can be found inhabiting the bleak wind-swept landscapes of the Connecticut shoreline during winter. Frozen fields and desolate beaches are some of our more inhospitable habitats, putting all that venture there in winter at risk. Sometimes called winter wastelands by people, not many will brave the elements to venture forth. These habitats are not wastelands after all, but are home to the horned lark, a small bird that makes a good living in such places.



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Horned larks are seen in typical winter habitats of snow and shoreline in Connecticut. Note the black tuft, or “horn” above the eye in the lower photograph.

### *Description*

Slightly larger than a sparrow, horned larks are small, sandy brown birds with uniquely patterned head markings of black and yellow. Look for the black “sideburns”, black chest crescent, and black tufts above the eyes called “horns” that give the bird its name. The black horns are most prominent

in the breeding season. The bill is short, stout, and pointed. Horned larks have a lemon yellow throat and an elongated, straight hind toe claw, called a larkspur.

Horned larks are well camouflaged against the bare ground or dry vegetation where they forage for seeds. In summer, they will also eat insects and other invertebrates. Being ground birds, they walk or run rather than hop. Horned larks also keep a low profile, often being seen in a crouched position as a way to avoid detection by predators. Their call is soft and sweet, a repeated high-pitched *tsee-titi*.

### *Behavior*

Horned larks prefer large areas of bare, dry ground with sparse, low vegetation. Roadsides, agricultural fields, shorelines, airports, dry plains, and any other wide open habitats are generally good places to look for them. In winter, these birds are gregarious, sometimes forming nomadic flocks of 50 or more birds in our area. Larger flocks are found in other parts of the country, including in the Midwest and prairie states. Flocks have a smooth, straight flight pattern, with the birds often flying close to the ground, calling back and forth to one another as they go.

Horned larks frequently associate with other small, open country ground birds, including snow buntings, longspurs, pipits, and tree sparrows. All of these other birds, together with larks, find food and safety in numbers during winter.

Nests are built on the ground, either in an existing shallow depression, or the female will excavate one. Using fine grasses and other plant material, she builds the nest and lays a clutch of three to five pale greenish eggs, heavily speckled with fine buffs and brown. The eggs are incubated for 11 to 12 days, with young fledging after about 10 days. The female is very secretive while nesting and may exhibit a broken-wing distraction behavior if threatened. These prolific birds may raise up to three broods per year.

### *Range*

Larks are an Old World family of birds. The horned lark is circumpolar and the only representative species of the lark family to be found in North America. Horned larks breed widely across the North American continent from northern tundra latitudes through the Great Plains and southwestern deserts, and into Mexico. Considered a short-distance migrant, they move south from northern portions of their range, including from Alaska and Canada, to areas south of



Horned larks are common winter visitors in Connecticut. Look for them in open habitats, such as in agricultural fields and along the shoreline.

the Canadian border.

Many subspecies, or races, of horned larks are found within their North American range. The races show slight differences in the amount of yellow in the face and how dark or pale the birds are. Generally, those from the Southwest are slightly smaller and paler, while those from the Pacific Northwest are darker. Arctic birds are slightly larger. Having spread to the east after the clearing of the great Eastern forests, the prairie race of horned lark is the type most likely found as a breeder in eastern parts of the country, including Connecticut. Arctic birds may be found in Connecticut during winter.

### *Conservation*

Connecticut habitats have undergone massive changes since the state was first settled. Basically, the once primeval mature forest was gradually cleared for farming. Then, as farming decreased, agricultural land was abandoned, leading to forest succession and maturation. Development and suburbanization gradually increased as well. Over the course of that time, horned larks went from being absent as a breeder, to the first documented breeding in the late 1800s, to today with their breeding population being listed as threatened in

Connecticut. The presence and distribution of the horned lark have closely followed the historical changes in their habitat, with modern day threats being seen as urban development and encroachment, especially in dry coastal areas.

Continently, horned lark populations have declined by an estimated 71% between 1966 and 2015, according to the North American Breeding Bird Survey (U.S. Geological Survey) and Christmas Bird Counts (National Audubon Society). Partners in Flight recognizes the horned lark as a “Common Bird in Steep Decline” and the species is on the National List of the top 20 common birds in steep decline. The reasons for decline are being studied, but leading causes likely include habitat loss, pesticide use, migration hazards, and human encroachment into their habitat.

Connecticut has a limited amount of suitable breeding habitat for the horned lark. It is a rare breeder with widely scattered locations. The dry grassland habitats along the Connecticut River Valley are known breeding areas for this bird.

As a migrant and winter visitor to Connecticut, the horned lark can often be encountered in its preferred open ground habitat, especially along the shoreline and particularly in places with little human disturbance.



# What Makes these Fish So Intelligent?

## *They Are Always in a School*

Written by Mike Beauchene, DEEP Fisheries Division; photos courtesy DEEP Fisheries Division

For millions of anglers, “game fish” include bass, trout, pike, walleye, and catfish. These fish tend to grow large (several pounds or greater), put up a great fight, are the foundation and focus of many fishing clubs, are the subject of many videos and articles, and make for an impressive photo opportunity. But what about the numerous smaller species that are common and abundant, and may reach a pound or two? Well, thanks to the sweet and firm texture of their fillets and the overall shape of the fish, we have the term “panfish”.

Panfish is a term used to describe a collection of fish species from different families of fish, all of which are of moderate-size, abundant, and sought by anglers looking for a healthy and tasty meal. Connecticut is home to several panfish, including the Pumpkinseed, Bluegill, Redbreast, Rock Bass, Black Crappie, Brown Bullhead, White Perch, and Yellow Perch.

This article spotlights two of the most popular – the Yellow Perch and Black Crappie (aka Calico Bass).

### **Yellow Perch**

The Yellow Perch (*Percaflavescens*), one of Connecticut’s native fish, is found in nearly every lake and pond across the state. It is a member of the family Percidae, which also includes darters (tessellated and swamp here in Connecticut), as well as the Walleye (stocked by the Fisheries Division). White Perch, despite the common name, are not in the same family but belong to Moronidae, the temperate basses, and are more closely related to the Striped Bass than Yellow Perch.

Yellow Perch are easy to identify as they are colorful with a distinctive yellow to tan body with about seven broad, olive vertical bars. The pectoral and pelvic fins on the adults are usually vibrant orange. The contrasting orange, yellow, and olive green are a striking combination, unique to this species.

Yellow Perch are one of the state’s most popular panfish. These schooling fish are equally at home in open water and along shorelines. They feed during daylight hours and are typically inactive at night. Yellow Perch are readily caught on a variety of small lures and bait, such as jigs, minnows, and worms. Because these fish actively feed during winter, Yellow Perch are a staple for ice anglers. They are also an important forage fish for large predators, such as bass and pickerel.



The Calico Bass, or Black Crappie, is a favorite among panfish connoisseurs.

As one of the earlier-spawning fishes in Connecticut, Yellow Perch deposit very distinctive and conspicuous curtains of pale yellow eggs that cling to underwater branches and shoreline vegetation during March and April. The eggs were easy to locate and collect by Connecticut’s early fish culturists and, as such, were propagated lakeside and stocked into many lakes and ponds to augment natural reproduction.

### **Black Crappie**

Black Crappie, or Calico Bass, (*Pomoxis nigromaculatus*) were introduced to Connecticut in the mid- to late 1800s. Their native range includes the eastern United States and southern Canada from the Mississippi drainage eastward, excluding most of the Atlantic coastal states from Maine to





The Black Crappie and Yellow Perch are true crowd pleasers. Eager to take a variety of bait or lures, these beautifully-marked fish bring great joy to all who catch one.



Virginia. In Connecticut, Black Crappie occur within all drainages where they are typically uncommon to common in abundance.

Similar to perch, the Black Crappie is easy to identify. Crappie are commonly six to 11 inches long, with occasional whoppers in the 14- to 15-inch range. The fish has a very deep body viewed from the side, but is very thin when looking head on. Black Crappie have many small, dark blotches on the sides that do not form vertical bars. They are olive to grayish-green on the back, brassy yellowish-green to silver on the sides, and white on the belly. Dorsal, anal, and tail fins have many light spots on a darker background. Males can become very dark during spawning season. Juveniles are similar to adults, but markings can be faint. Black Crappie are also called “paper mouths”, describing the thin skin on either side of their open mouth.

Black Crappie prefer at least moderately clear water of lakes and larger ponds, as well as backwaters of larger streams and rivers. They are usually found in small schools and prefer moderate amounts of submerged vegetation. Crappie are often found near cover, such as boulders or fallen trees. Spawning occurs in shallow water, usually near vegetation in the early spring (typically April). The nests are cleared circular areas eight to 10 inches in diameter and not as conspicuous as those of many other sunfish. Crappie can be readily caught by angling on a variety of small baits and lures. Popular baits are small jigs or live minnows.

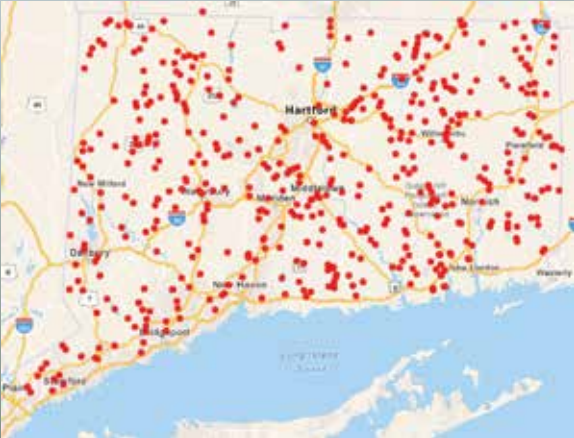
Yellow Perch and Black Crappie have firm white fillets which make a delicious and healthy meal. The fish are easy to fillet, and a popular cooking method is to simply cut the fillet into strips, dredge in a batter, and deep fry. While these fish may be always be in school, I argue it is culinary school.





## *Yellow Perch Fun Facts*

Yellow Perch are a very popular fish, especially with ice anglers. Active throughout winter, Yellow Perch are eager to bite small jigs, live minnows, and a variety of lures. The flesh is firm and sweet, often called “poor man shrimp” when it is cut into strips, flash boiled, and then placed into an ice bath. Serve with cocktail sauce – YUM! Yellow Perch do not build a nest like the sunfish, but instead the female lays eggs in a long connected strand across sticks and branches. Male perch follow along and fertilize the strands.

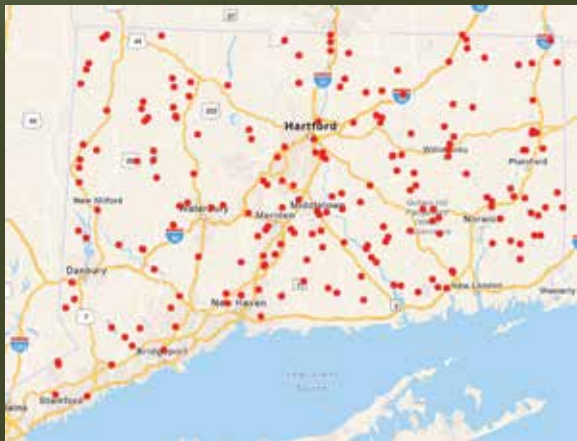


## *Fishing Tips*

Yellow Perch are aggressive feeders and will take a variety of offerings. The best options are small jigs with plastic grubs, small minnow-like lures, worms suspended from a bobber, and small live minnows. When you land a perch, continue to fish the same location as there are likely to be more fish in the same place.

## *Black Crappie Fun Facts*

The Black Crappie is one of the most popular fish in the country. It also goes by the names strawberry bass, papermouth, and sauc-au-lait. Crappie prefer to live in and around submerged brush and, as such, pond habitat can be improved by adding recycled Christmas trees.



## *Fishing Tips*

Crappie are most active at dusk and dawn and are effective predators on smaller fish, insects, and crayfish. The best lures to use are small jigs with colorful plastic grubs. Live minnows suspended on a bobber are also very effective. Active throughout the winter months, many anglers pursue these tasty fish while ice fishing.

*For more about Connecticut's freshwater fish species, scan this code.*



*To watch our “panfish primer”, scan this code.*



# Connecticut's Deer Program

## *CT biologists make national contributions*

Written by Michael Gregonis and Anna Toledo, DEEP Wildlife Division

**W**hite-tailed deer (*Odocoileus virginianus*) have a long history in Connecticut. From the 1700s to 1900s, the state's deer population remained at very low numbers due to unregulated hunting for food and clothing, and habitat loss attributed to land clearing for agriculture. However, over time, Connecticut went from an agricultural society straight into the Industrial Revolution. This change resulted in major human population shifts from areas that are rural to urban and also suburban. Farm abandonment allowed forested habitat to return, which created suitable conditions for deer to thrive. As the deer population grew and expanded, a need arose to manage the state's herd.

In 1974, comprehensive deer management began with the passage of the Deer Management Act. One result of this legislation was the initiation of science-based deer management by hiring a deer biologist. Since that initial hiring, seven individuals have held the Connecticut Deer Program Biologist title; this is their story.

### ***Paul Herig (1969-1981)***

Paul began his work with the Wildlife Bureau (now Division) as a deer biologist five years before the Deer Management Act of 1974 passed. He devoted his time developing and implementing a biologically sound deer management program that included public hunting, controlled hunts for ecological reasons, and other facets of natural resource protection. His work and expertise were instrumental in drafting the Deer Management Act. Paul was directly in-



**Retired Director Paul Herig was CT's first deer biologist. He was responsible for drafting the Deer Management Act of 1974, creating the foundation of the Deer Program.**

WILDLIFE DIVISION FILE PHOTO

involved in the development and design of landowner hunting consent forms; landowner, private land, and state land deer hunting permits and seasons; Deer Kill Incident Reports; devising the computer selection process for state land lottery permits; and determining the biological data to be collected at deer check stations. This program provided revenue to the State treasury, recreational opportunities for citizens, and positive economic impacts to Connecticut businesses through hunter expenditures.

Paul also spent 13 years as the Wildlife Division's Director, during which time he continued to support the Deer Program and also used innovative means

to obtain additional personnel and funding to meet the needs of the Program. As Director, he was involved in the formation of the Northeast Wildlife Administrator's Association and the affiliated Deer Technical Committee, which was created to provide regional discussions and informational exchange regarding wildlife resource issues and management. To provide an avenue to highlight the Wildlife Division's achievements and educate the public, Paul initiated the development of the Sessions Woods Wildlife Management Area educational facility in Burlington and assisted with the development of the *SCOPE* newsletter, which later became *Connecticut Wildlife* magazine. After many years of dedicated service, Paul retired from the Wildlife Division in 1992.

### ***James Spignesi (1981-1990)***

Jim Spignesi is perhaps most well-known for his dedicated service to Connecticut's Environmental Conservation (EnCon) Police force, where he gave his life in the line of duty in 1998. However, before he was an EnCon Officer, Jim served with the Wildlife Division as a deer biologist. He began his work with the Deer Program in 1977 before becoming a full-fledged wildlife biologist in 1981.

As a deer biologist, he initially managed the lottery program on what were then novel mainframe computers. Later, he was instrumental in streamlining the selection process so that all work could be done within the Wildlife Division. Job duties under the lottery included assigning hunting area permits, error checking data entry, and fielding complaints from unlucky hunters who did not receive a

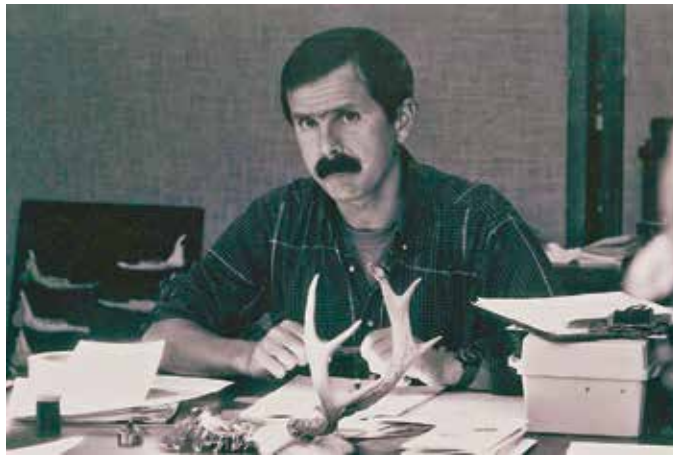
permit for their desired hunting area. Jim expanded the knowledge of Connecticut's deer herd by meticulously maintaining deer check stations and overseeing all data collection and analysis.

Jim's work ethic and drive to do things right played a major role in developing a successful statewide deer management program. He personally marked boundaries and worked with surrounding landowners at a controlled deer hunt in East Lyme to ensure that the hunt would run smoothly for everyone involved. During his tenure, he also coauthored the booklet *Managing Deer in Urban Connecticut*. Jim served the Deer Program well until his transition to the Environmental Conservation Police force in 1990.

### **Julie Victoria (1981-1985)**

Julie began her work with the Deer Program in 1978. Although she was paid by the Young Adult Conservation Corps, a cooperative agreement allowed her to collect data at deer check stations and later to compile data from the 1978 deer season. By 1981, Julie was promoted to a full-time deer biologist, becoming the first female deer biologist in the state's history.

In the early years, Julie put it best, "the whole (deer) program was a research project". Julie and Jim Spignesi worked well together, playing off one another's strengths and weaknesses. By working together, they developed the protocols for administering deer check stations, including developing contracts with vendors; hiring



**Jim Spignesi analyzes deer harvest data during the early years of the Deer Program.**

WILDLIFE DIVISION FILE PHOTO



**Cooperative efforts were developed between Wildlife, Law Enforcement, and Parks to ensure a safe and productive controlled deer hunt at Bluff Point Coastal Reserve.**

PHOTO BY P. J. FUSCO



**The first female deer biologist in Connecticut, Julie Victoria helped establish deer check stations and designed and launched controlled deer hunts. She went on to work with the Division's Wildlife Diversity Program.**

WILDLIFE DIVISION FILE PHOTO

and training staff in areas such as deer aging techniques; and collecting other biological data. Other shared job duties included analyzing data to determine herd health, productivity and abundance; assisting in planning, initiation, and supervision of controlled deer hunts; participating in aerial deer surveys; conducting the state land deer permit lottery using computer programming; working with consultants to reformat lottery program design; coauthoring periodic summaries of deer season results and survey analysis; administration of wildlife rehabilitators and their facilities to rehabilitate orphaned fawns for release back into the wild; compiling information for the state's defense in a case involving deer damage; producing and distributing informational materials about deer to the public; developing a Deer Management Plan to improve the program and benefit the herd; administration of all aspects of a new Deer Damage permit system; and making presentations to interested organizations and school groups. The past work done by Julie and Jim provided a solid foundation upon which to build an effective deer management program. Many of these same job duties continue to be paramount for current day deer biologists.

Julie was involved with the inception and coordination of the Metropolitan District Commission (MDC) controlled deer hunts. While monitoring forest regeneration for timber harvest planning, MDC foresters documented that deer browsing

had begun to impact tree species diversity and hindered forest regeneration on their properties. This research raised a red flag, prompting MDC to contact the Deer Program for assistance in developing a solution to the mounting problem. It was decided that a deer hunt was the most efficient and economical means to deal with the overabundant deer population, and in 1980, the first MDC Controlled Deer Hunt was planned and executed. Julie played a pivotal role both behind the scenes and on the ground to make this controlled hunt work. She often arrived on-site to personally check-in hunters at 5:00 a.m. and stayed until the end of the day to ensure that all hunters had left the area for the day.

Julie's dedication to the Wildlife Division did not end with her tenure as a deer biologist. From 1985 until her retirement in 2011, she continued to work as a wildlife biologist with the Wildlife Diversity Program specializing in invertebrates, raptors, shorebirds, reptiles, and amphibians. She was the recipient of the 2011 Commissioner's Award for Distinguished Service presented to an individual in recognition of outstanding service to the Department of Energy and Environmental Protection.

### **Mark Ellingwood (1985-1994)**

During Mark Ellingwood's time with the Deer Program, he coordinated the collection, analysis, and modeling of Connecticut's deer population and harvest



**Mark Ellingwood collects weight information at a biological deer check station.**

PHOTO BY P. J. FUSCO



**Howard Kilpatrick and Shelly Spohr conduct radio telemetry at Mumford Cove to track deer home range movements.**

PHOTO BY P. J. FUSCO



**Mark Ellingwood (l) and Howard Kilpatrick (r) analyze bone marrow collected from deer harvested at Bluff Point. Bone marrow analysis provides an insight into deer herd health.**

PHOTO BY P. J. FUSCO

data. This work developed into a zonal strategy for managing the state's deer resource, allowing for more precise management of deer populations as the program continued to grow and move forward. He participated and presented at the first national symposium on deer management, outlining Connecticut's deer management policies in a forum designed to improve white-tailed deer research and management for biologists throughout the country.

Mark also authored *A Guide to Implementing a Controlled Deer Hunt* and coauthored *An Evaluation of Deer Management Options*. Both publications proved invaluable to deer biologists throughout the nation.

Throughout his time in Connecticut, Mark maintained an active balance between fieldwork and office responsibilities. One key aspect of his work was public education. He, along with Howard Kilpatrick, took the lead in interactions with those who opposed hunting. They worked to bring the science behind management decisions to the forefront of debates by educating the public on the health and population dynamics of Connecticut's deer herd. These actions specifically focused on Bluff Point State Park and Coastal Reserve and Yale Forest, as both locations were overpopulated by deer and the health of the herds and ecosystems had suffered as a result. It was during this time that Mark brought the concept of "cultural carrying capacity" (CCC) into the public discussion. CCC describes

the number of deer that human populations will tolerate (as opposed to a biological carrying capacity, which defines the number of deer that an environment can maintain in a healthy condition). For his efforts, Mark was awarded The Wildlife Society New England Chapter Professional Achievement Award in 1992.

In 1994, Mark left Connecticut and joined New Hampshire Fish and Game Department, where he eventually became the Wildlife Division Chief until his recent retirement.

### **Howard Kilpatrick (1991-Present)**

Although Howard's title has changed several times during his time with the Wildlife Division, he has maintained his role as a deer biologist since he began working for the Program in 1990. At present, he is responsible for overseeing the deer, moose, wild turkey, small game, migratory bird, furbearer, hunter education and safety, and R3 programs. He has participated in and coordinated the annual deer removal program at Bluff Point State Park in Groton, as well as the Charles Island deer surveys and management. Howard was involved with the development of an Urban Bowhunter Training Program, and also coauthored the state publication *Managing Urban Deer in Connecticut*.

During his time with the Deer Program, Howard has been involved with four major research projects that resulted in over 30 scientific publications related to deer management. The first was a five-year study at Bluff Point. This study looked at deer usage within the park and adjacent properties, methods to estimate deer population size, effects of deer density on home range size, and changes in deer herd health as population densities



**Mike Gregonis and Howard Kilpatrick prepare to shoot a tranquilizer dart to immobilize a deer for research at Mumford Cove.**

PHOTO BY P. J. FUSCO



**Andy Labonte attaches a radio telemetry collar on a doe which was tracked for a fawn mortality project.**

WILDLIFE DIVISION FILE PHOTO



**Bluff Point Coastal Reserve's deer population has been the focus of many research projects for more than 30 years.**

PHOTO BY P. J. FUSCO

shifted over time. This information was used to develop long-term deer management strategies for Bluff Point.

The second study was a 13-year project in Mumford Cove and Groton Long Point. This investigation looked at deer use of residential landscapes, evaluated techniques for capturing deer, evaluated how deer respond to hunting activity, immunocontraception in deer, and the public's perspective about deer and deer hunting in their community. This research project was instrumental in developing deer management programs for residential communities throughout Connecticut, as well as guiding decision-making for future deer management regulations that improved hunting as a deer management tool in residential communities.

The third major research project occurred in Greenwich and was part of his PhD dissertation. This study looked at deer use of the landscape throughout the town of Greenwich, the effects of hunting on the Greenwich deer population, factors affecting bowhunter access in urban/suburban landscapes, use of bait to increase bowhunter success, assessment of strategies to improve bowhunting, and acceptance of deer management strategies by suburban homeowners and bowhunters. This research was valuable in guiding future deer hunting regulations and helped suburban communities address difficult deer management issues.

The fourth study occurred in Redding and the overall goal was to develop a deer management plan for the town. This study assessed the landscape and land use in the town, modeled the deer population, and evaluated and ranked individual properties regarding the potential to af-

fect the town's deer population. These investigations have proven beneficial for assisting towns in the development of deer management recommendations and were instrumental in the efforts of the Wildlife Division to improve zonal deer management regulations.

### **Michael Gregonis (1995-Present)**

Michael started working for the Wildlife Division as a wildlife biologist in 1995, sharing his time between the Deer, Wild Turkey, and Small Game Programs. From 1995 to 2007, Mike administered the Deer Program. His responsibilities included coordinating the collection and analysis of harvest data, preparation of Federal Aid project documentation and reports, serving as Connecticut's representative to the Northeast Deer Technical Committee, and assisting with various research projects. These research projects included radio telemetry home range studies; immunocontraception investigations; overwinter mortality monitoring; analysis of bone marrow and fat indices; relationships between deer densities, tick abundance and tick borne disease; and population trend surveys.

Mike also assisted with modernizing the state land deer lotteries, a process that entailed transitioning from all data running through a mainframe computer to streamlining the lottery through the internet. To obtain harvest information and biological data, he coordinated approximately 25 vendor-operated deer check stations and 15 biological check stations. However, during his tenure most check stations were eliminated, with essential biological data collection transitioning to online harvest reporting and deer hunter surveys.

Mike has spent more time in a helicopter than any other Connecticut deer biologist. From 1996 to 2006, every three years, he conducted statewide aerial surveys to ascertain the trends



**Howard Kilpatrick (r) and assistants process a deer for an immunocontraception research project at Mumford Cove.**

PHOTO BY P. J. FUSCO



**Aerial deer surveys are an important technique for monitoring deer populations on both a zonal and statewide basis. Mike Gregonis prepares to fly a transect in Deer Management Zone 4A.**

PHOTO BY B. HETRICK

in Connecticut's deer population. After 2006, aerial surveys were limited to zones where deer population information was needed to make informed

management decisions.

Deer removal programs were also an essential part of Mike's job duties. In 1996, the first deer removal took place at Bluff Point State Park and Coastal Reserve; in nine days of activity, 233 deer were removed from 806 acres. This provided an opportunity to track Bluff Point's deer herd health by assessing fat indices. Mike coauthored a publication entitled *Fat Indices and Herd Health* to document the fat index research conducted during the first and later deer removal efforts. Bluff Point deer removals continue to this day and fat indices research has shown deer have gone from having terrible body condition to being healthy.

In 2008, Andrew LaBonte became the principal deer biologist; however, Mike continued to oversee certain aspects of the program, including fawn rehabilitation and controlled deer hunt programs. Working with fawn rehabilitators enabled Mike to conduct fawn survival research, which culminated with him coauthoring the publication, *Survival and Movement of Rehabilitated White-tailed Deer Fawns in Connecticut*. Mike has played a pivotal role in coordinating controlled deer hunts at MDC's Barkhamsted and Nepaug Reservoirs. He has provided technical assistance, monitored forest regeneration, and overseen all aspects of these hunts. MDC controlled deer hunts have improved forest health, which in turn maintains clean drinking water for surrounding metropolitan areas. One requirement for the MDC controlled deer hunts is that hunters must attend a pre-hunt informational meeting. Due to the COVID-19 pandemic, this in-person meeting was not possible in 2020. To ensure that MDC controlled deer hunts continued, Mike coordinated the development of a virtual pre-hunt meeting by means of an online video. This illustrates Mike's resourcefulness.

**Andrew LaBonte**  
(2005-Present)

Andrew began working as a Wildlife Technician in 2005, and was promoted to Wildlife Biologist in 2008, at which time he became the principal deer and moose biologist. Currently, one of Andy's primary duties is to spearhead efforts for early detection and prevention of chronic wasting disease (CWD) in the state. CWD is a deadly neurodegenerative disease spread by "prions" (pathogenic agents) in affected live or dead deer. To achieve this goal, he has engaged the media, worked with a large network of professionals to educate the public about CWD, and developed monitoring programs for early detection. Fortunately, at the writing of this article, the disease has not been found in Connecticut. However, through these efforts, fatal hemorrhagic disease, which is spread by biting insects and also has local impacts on deer, was detected for the first time in 2017 and again in 2020.

The Deer Crop Damage Program, designed to help farmers protect their assets from deer browse, is also under Andy's purview and has been redesigned to run more efficiently. He assists in the coordination of controlled deer reduction programs and provides technical assistance to the public and peer professionals. In addition to conducting numerous deer, moose, tick, and human dimensions research projects, Andy also represents the Wildlife Division at professional and technical moose and deer conferences and meetings.

Andy has been instrumental in research efforts within the Deer Program. He has participated in capturing and marking deer to conduct telemetry studies to evaluate home range, habitat use, movement patterns, and causes of mortality in young and adult deer. He



**Deer Check Stations were used by deer biologists to collect biological data on hunter-harvested deer, including weight, antler beam measurements, age, and sex information.**

PHOTO BY P. J. FUSCO



**Since very little was known about moose in the southern part of their range, Andy Labonte developed and implemented a research project to assess movement and habitat preference in Connecticut.**

WILDLIFE DIVISION FILE PHOTO

created an online telephone reporting system for the Crop Damage Program and wildlife kill incident reports program, which allows police and CT Department of Transportation employees to report road-killed deer. Andy coordinates a variety of surveys to estimate the deer population (aerial and spotlight), hunter and public attitudes, deer damage, and tick abundance. He initiated special projects to evaluate hunter use of and satisfaction with deer harvest report-

ing systems, deer hunter compliance with harvest reporting, and methodologies used by state and provincial biologists for deer harvest reporting, which led to several publications. Another of Andy's research projects produced the publication "Opinions About Moose and Moose Management at the Southern Extent of Moose Range in Connecticut". Because of this dedication to research, Andy has been an author of several peer-reviewed papers and popular articles.

In his engagement with the public, Andy has made great strides in bringing the Deer Program and Division into a closer relationship with our constituents. In 2011, he was featured in an episode called "Moose Rampage" in a series called "Invaders" on Nat Geo WILD. During the episode, he used chemical immobilization, by means of a dart gun, to capture moose from a helicopter in order to track moose movements via GPS collars. He has also chaired Discover Outdoor Connecticut Day events each year since 2016. This event brings together many aspects of the Bureau of Natural Resources to share a special day with youth and families, getting them involved with a variety of outdoor activities to help them appreciate and discover the outdoors. Andy's efforts have moved Connecticut's Deer Program into the 21<sup>st</sup> century.

The seven individuals who have held the title Connecticut Deer Program Biologist have left their own unique mark on the program and collectively improved the management of the state's white-tailed deer resource. The long-term success of the Deer Program would not have been possible without the input of each one of these dedicated professionals.



# Hard-working Weasels Attempt to Avoid Standing Out

Written by Kyle Testerman, Wildlife Management Institute

In the English language, being a weasel has negative connotations centered around being sneaky or sly. It certainly is not meant as a compliment. This attitude has led many to think of weasels and their behavior in a similar, negative light, when they are truly one of the hardest working critters you can find. Two species of weasels occur in Connecticut. The long-tailed weasel (*Neogale frenata*) is found throughout the state and most of the United States, while the short-tailed weasel (*Mustela richardsonii*) is primarily restricted to the northwestern corner of the state and does not range as far south into the rest of the country. Until this past year, taxonomists grouped both species into the same genus, *Mustela*. New genetic evidence from around the world led researchers to place the long-tailed weasel into a new genus of New World weasels called *Neogale*, along with the American mink (*Neogale vison*). The short-tailed weasel, which until recently was joined as a single species with short-tailed weasels (*Mustela erminea*) from Eurasia, remains in the genus *Mustela*, but received the new scientific name to reflect the genetic differentiation that has taken place over the last half million or so years.

As nuanced as the taxonomy may seem, differentiating between short-tailed and long-tailed weasels is not any easier for biologists. Despite their names, the tail lengths of individuals in each species have considerable overlap with the other. Long-tailed weasels tend to be slightly larger than short-tailed, but each species also shows some degree of sexual dimorphism contributing to a large range in body sizes, usually ranging from three to nine ounces in weight. Other morphological measurements show enough overlap for biologists to consider genetic testing to be the only reliable way to differentiate the two species where they coexist. From spring through fall, both species have similar brownish-red fur over most of their bodies, with white fur underneath and on their feet. During the colder months, they grow a thick white coat all over. A black tip is found at the end of the tail all year long.

The small body size of both species more closely resembles paper towel tubes with tails than their other taxonomic family members, including the wolverine. Much like the wolverine, weasels are energetic eating machines. In part because of their unique body shape, which has a high surface area to volume ratio, weasels have high energy demands requiring them



WILDLIFE DIVISION FILE PHOTO

**In 2008, this long-tailed weasel was captured in Salem during the Wildlife Division's project to learn more about their distribution across the state. Measurements and tissue samples were collected for analysis.**

to eat or hunt constantly. In fact, weasels need to consume 30% to 40% of their body weight daily. To acquire so much food each day, they must be skilled and determined hunters. Weasels primarily prey on small mammals, such as voles, shrews, mice, and chipmunks, but will hunt almost anything they can subdue, including squirrels, rabbits, and birds. Weasels occasionally even surplus kill, caching some extra food in the springtime when there will be pups to feed. Much of what weasels eat depends on what is available around them. So, it makes sense that these busy mammals stick to prey-dense areas that support abundant and diverse food options. Brushy habitats, areas around rock walls and downed trees, old fields, and barns support lots of small mammal prey through the seasons. These habitats are also host to other predators that prey on weasels. These predators often include hawks, owls, coyotes, red and gray foxes, bobcats, fisher, and even domestic dogs. Weasels use their small size and agile bodies to evade their predators in the same thick cover they hunt in. If caught out in the open, there is little they can do.

## Changing Color and Climate

Weasels stay active during winter when some mammals go into a period of dormancy. A white coat of thick fur is grown each winter, which helps weasels be more effective hunters,



making it difficult for other predators to hunt them. In spring, weasels molt their white fur and can blend back into their browner surroundings. This ability to change coat colors twice a year is guided by genetic signals in response to changes in day length (photoperiod). Like the seasonal coat color changes of arctic fox and snowshoe hares, a change of color is advantageous when the environment experiences seasonal extremes of earthy-brown to snowy-white. What was initially a color abnormality in an individual, millions of years ago, became a selective advantage. Turning all white in winter gave individuals a competitive edge over those that stayed brown. Brown-in-winter individuals were less likely to survive each winter, being more conspicuous to predators, making white-



K. TESTERMAN

**Both species of weasels in Connecticut use thick and brushy habitats to hunt for small mammals and also evade potential predators.**

in-winter genes dominant throughout northern latitudes. The advantage is fully realized when the white fur is shed during the following spring molt. As you can imagine, staying white while the terrain around you turns brown again would make hunting and evading predators just as difficult as staying brown in winter. The further south one looks, the less selective pressure there is for individuals to seasonally change coat colors. Long-tailed weasels in the southern United States are less likely to undergo a white phase as natural selection acts over many generations to favor winter browns where there is rarely snow cover.

A changing climate can lead to mismatched timing of many biological processes across the animal world, including weasels. For example, if weasels in one region typically molt into their thick winter white fur in late November and remain white until March, there needs to be enough days with snow cover during that block of time to make it advantageous to have thick white fur instead of thick brown fur. In the snowiest locations, that should not be a problem. However, in more moderate climates, like Connecticut, changes in climate averages could have more noticeable and negative effects on a population of white winter weasels. Hypothetically, if there are 100 days between the winter and spring molts, and snow starts falling later and melts earlier for several years, there could be significantly more days where white fur could lead to higher mortality from predators across that population. The biological process of molting old fur and growing the thicker winter coat, regardless of color, cannot be delayed because of the survival need of a new coat by December. Scientists are finding that climate change also seems to make weather more “unpredictable”, where more periods of weather are outside of normal ranges. The result could be that there is no clear advantage to being white in winter, but also no ad-

vantage for the few abnormal individuals that stay brown, making populations more at risk of decline. When thinking about species declines, it is important to remember that individuals do not evolve, populations do. It can take many generations for evolution to show its effect within the population in response to changes in a selective pressure. Even if the environment were to favor brown winter fur in weasels, it would take generations of continued selective pressure in the direction for brown winter fur to become a common trait in the population. In the meantime, whole populations are often more vulnerable. Scientists across the globe are finding other examples of mismatches in life cycle process as the climate changes more rapidly than populations can evolve, resulting in generations of decreased survival.

### *Status in Connecticut*

In Connecticut, both weasels are species of Greatest Conservation Need. Research completed by the Wildlife Division in 2009 indicated long-tailed weasels were common throughout the state and short-tailed weasels were found only in a few towns in the northern and western portions of the state. Despite being common, weasels remain an important species of conservation need because of the lack of adequate life history information to make management decisions.

Weasels can be trapped during the regulated trapping season, though few trappers target them. Occasionally, weasels will prey on poultry and domestic rabbits. Finding ways into unsecured enclosures, a weasel can kill many chickens in a night. Nuisance issues like these are best resolved with preventative measures that effectively keep weasels and other predators out. Killing or removing the predator without fixing the underlying problems with the enclosure will lead to continued issues down the road.

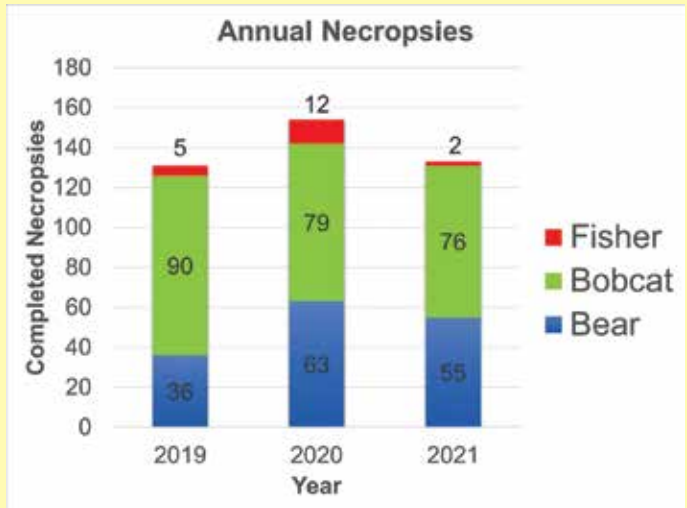




## Wildlife Necropsies

Each year, the Wildlife Division's Furbearer Program conducts necropsies on deceased black bears, bobcats, and fishers. Most specimens are collected from roadways after collisions with motor vehicles. The goal of these examinations is to collect valuable biological data on each species, building a long-term dataset to examine trends and identify changes in certain aspects of their populations. Included in the many pieces of data collected are an examination of stomach contents; examination of reproductive organs for signs of past reproduction; measures of size and weight; sex; age; and overall body condition. Tissue samples are also collected and include hair and tooth samples, which can be further analyzed in a laboratory.

Over the last three years, program biologists and seasonal resource assistants have completed over 400 necropsies on these three species. Some of the interesting findings include human-related foods (including trash and birdseed) in about 50% of bear stomachs; the number of bobcats killed by vehicles is trending up (one of many indicators that the population has been increasing); and the average weights of male and female bobcats examined were 25.9 and 16.2 pounds, respectively.



**Necropsies are completed throughout the year at the Wildlife Division's Sessions Woods WMA in Burlington.**

## In Memoriam

### Remembering Nancy Murray

1957 - 2021

Retired CT DEEP Environmental Analyst/Botanist, Nancy Murray, passed away on December 9, 2021, and her colleagues at DEEP mourn her passing. Nancy began her career at the department in 1985, working in cooperation with The Nature Conservancy. She launched Connecticut's fledgling Endangered Species Program and worked to adopt the State Endangered Species Act, which was passed by the State Legislature in 1989. Nancy served as a botanist in the State Geological and Natural History Survey and the coordinator of the Natural Diversity Data Base (NDDB), working with many regional and national partners to promote rare plant conservation. Her field work specialized in aquatic plants and, in the latter part of her career, Nancy joined DEEP's Inland Fisheries Division, helping to advance the department's policies on aquatic nuisance species and other invasive plants. As an active member of Connecticut's



PHOTO COURTESY K. METZLER

**Nancy (left) is pictured with colleagues, Ken Metzler and Karen Zyko at a Natural Areas Heritage Conference in Quebec, Canada.**

Interstate Fire Crew (CIFC), Nancy was a pioneer and role model at a time when few women participated in the CIFC. She enjoyed sharing her expertise by recruiting, training, and mentoring new CIFC members.

- Written by Karen Zyko, CT DEEP Wildlife Division

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## Conservation Calendar

Jan. - April 18..... Donate to the Endangered Species/Wildlife Income Tax Check-off Fund on your 2021 Connecticut Income Tax Form. Details on how to donate can be found at <https://portal.ct.gov/DEEP/Endangered-Species/Endangered-SpeciesWildlife-Income-Tax-Check-Off>.

May 7..... **Free Fishing Day** - No fishing license is required; however, all other rules and regulations still apply.

June 19 and Aug. 6 A free one-day fishing license is valid on both days. The free one-day fishing license is available through the online license system three weeks prior to each date. Licensing website: <https://portal.ct.gov/CTOutdoorLicenses>

## Nation's 30th National Estuarine Reserve Designated in Southeastern CT

The National Oceanic and Atmospheric Administration (NOAA) announced in January 2022 that a network of state-owned properties in Lyme, Old Lyme, and Groton and portions of the surrounding waters has been designated as the nation's 30th National Estuarine Research Reserve (NERR).

The NERR System is a network of coastal sites – including nearby locations in the Hudson River estuary in New York, Narraganset Bay in Rhode Island, and Waquoit Bay in Massachusetts – designated to protect and study estuarine systems. Established through the Coastal Zone Management Act, they represent a partnership program between NOAA and coastal states. NOAA provides funding and national guidance, and each reserve is led by a state organization with input from local partners. NERRs provide access to a variety of resources, including municipal trainings on coastal best management practices, K-12 programs to engage students and teachers in hands-on science, expanded opportunities for estuarine research and long-term monitoring, and programs for environmental stewardship.

The CT DEEP worked in close partnership with NOAA, the University of Connecticut, Connecticut Sea Grant, Connecticut Audubon Society, and numerous other organizations and individuals to lead the designation process. The resulting Connecticut NERR (CT NERR) includes the land areas of Lord Cove Natural Area Preserve, Roger Tory Peterson Natural Area Preserve (formerly Great Island Wildlife Management Area), Pine Island, Haley Farm State Park, and Bluff Point State Park,

Coastal Reserve and Natural Area Preserve, as well as portions of the surrounding open-water areas of Long Island Sound and the Thames and Connecticut Rivers. It also includes the DEEP Marine District Headquarters in Old Lyme and the UConn Avery Point campus in Groton. These locations provide critical habitat for birds, fish, and other marine and coastal species of plants and animals in the region and the designation of these areas as a NERR will help provide valuable opportunities for these “living laboratories” to advance relevant efforts in environmental science, monitoring, education, and stewardship.

Estuaries and their surrounding wetlands are found where rivers meet the sea. The resulting “brackish waters” – which are saltier than rivers but not as salty as the ocean – support a thriving ecosystem that is home to a variety of unique plants and animals.

Now that the CT NERR is officially designated, UConn will take on the role of the lead state agency responsible for the overall direction of the CT NERR programs and goals, with the Avery Point campus providing the primary administrative, research, and education offices. Since DEEP is the property owner and land manager of many the components, DEEP is recognized through a Memorandum of Agreement as a formal partner, continuing a long-standing tradition of environmental leadership from these two organizations. For more information, visit <https://portal.ct.gov/DEEP/Coastal-Resources/NERR/NERR-Home-Page>. Learn about the National NERR System at <https://coast.noaa.gov/nerrs/>.

# CONNECTICUT Wildlife

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Attaching leg bands that are color-coded and marked with identifying numbers/letters to eagle chicks in the nest before they fledge provides biologists with the opportunity to track the birds and their movements throughout their lives. This female bald eagle wears the leg band N/3. She was banded on May 17, 2017, by CT DEEP Wildlife Division biologists in New Haven. She was observed again on January 15, 2019, in Westchester County, NY, and again on January 25, 2019, in Greenwich, CT. Read the article on page 8 to learn more about eagles and leg bands.