

September/October 2020

# CONNECTICUT Wildlife





# From The Director



*It is hard to believe we have transitioned into the fall of 2020. A lot has changed this year, not just the seasons. We have developed a new lexicon to cover social distancing, responsible recreation, and so much more. We have shown creativity in this time of change and now view masks and neck gaiters as a fashion accessory that can display own personal flair. What has not changed is how much we rely on nature.*

*Time spent outdoors helps both our physical and mental health and we are spending more time in nature seeking out that comfort, connection, and continuity. Nature also teaches us many lessons about the value of diversity and adaptability. As you will read in this issue, the black skimmer is an ideal example of both. It is built very differently than many of the other birds found along our coastline and those physical adaptations have allowed skimmers to take advantage of a unique way to feed.*

*This strange year has also given us the opportunity to expand and explore new technologies to collect data. With limitations on what we have been able to do in person, we have taken advantage of everything from iNaturalist to conduct community science projects to Zoom to present educational programs and even trail cameras to monitor stream flow and fishing use. Be sure to see what else is using our rivers and streams.*

*As always, a lot of work has continued to happen behind the scenes to monitor zoonotic diseases, and even the appearance of new ticks and tick populations. Great cooperative efforts by the Connecticut Agricultural Experiment Station and DEEP are helping to keep us informed and recreating safely.*

*Perhaps no more meaningful, yet often unrecognized, contribution comes from the Connecticut Interstate Fire Crew. The dedicated men and women of our fire crew put their lives on the line to protect natural resources and communities both right here in Connecticut and across North America. The help they were able to provide to the intense western wildfires this year reflects the compassion of our entire state for those facing unimaginable challenges. To give everyone a better understanding of all the fire crew does, we will be making their story a two-part feature, so be sure to look for the November-December issue to read some first-hand accounts from DEEP staff and get a look at some of the specialized skills that are needed to address wildfires.*

*As we transition into fall, take time to seek the solace of nature. Enjoy the myriad of sounds, colors, and fragrances that make this time of year so special and be sure to recreate responsibly.*

Jenny Dickson, Wildlife Division Director

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**Commissioner**

Katie S. Dykes

**Chief, Bureau of Natural Resources**

Rick Jacobson

**Director, Wildlife Division**

Jenny Dickson

**Magazine Staff**

Managing Editor Kathy Herz

Production Editor Paul Fusco

Contributing Editors: Mike Beauchene (Fisheries)

Christopher Martin (Forestry)

Circulation Trish Cernik

**Wildlife Division**

79 Elm Street, Hartford, CT 06106-5127 (860-424-3011)

Office of the Director, Recreation Management, Technical Assistance,  
Natural History Survey

**Sessions Woods Wildlife Management Area**

P.O. Box 1550, Burlington, CT 06013 (860-424-3011)

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**Franklin Wildlife Management Area**

391 Route 32, N. Franklin, CT 06254 (860-424-3011)

Migratory Birds, Deer/Moose, Wild Turkey, Small Game, Wetlands  
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Safety

**Eastern District Area Headquarters**

209 Hebron Road, Marlborough, CT 06447 (860-295-9523)

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E-mail: [deep.ctwildlife@ct.gov](mailto:deep.ctwildlife@ct.gov) Phone: 860-424-3011



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Rabbits, like this eastern cottontail, play an important role in our ecosystem. They help control herbaceous vegetation and are an important part of the food chain for many predators, such as bobcats. PHOTO BY P. J. FUSCO

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#### Cover:

Animal health officials have detected Rabbit Hemorrhagic Disease Virus Serotype 2, or RHDV2, in North America in the past few years. RHDV2 is highly contagious and, unlike other rabbit hemorrhagic disease viruses, it affects both domestic and wild rabbits, including hares, jackrabbits, and cottontails. Learn more on page 18.

Photo courtesy Paul Fusco



# Wildfire Assistance 2020

## Battling Wildfires at Home and Out West

Written by Helene Hochholzer, DEEP Division of Forestry

2020 has been a year of challenges, and one of those has been wildfire, both at home in Connecticut and in western states like California, Oregon, and Colorado. DEEP maintains two crews that are trained in wildfire suppression – a crew of permanent and seasonal DEEP employees that can be called upon to respond to local brush and forest fires, providing assistance to municipal fire departments; and the Connecticut Interstate Fire Crew (CIFC), which is made up of permanent DEEP staff members and other interested private individuals who have been certified to fight forest or wildfires, both in Connecticut and be-

yond its borders under a national qualification system. Both groups have to complete a basic training, and receive annual refresher training and medical clearance.

### Fires in CT

So far this past summer and fall, 57 full-time and seasonal DEEP employees have responded to in-state fires through requests for assistance to the Forestry Division's Forest Protection Program. Many of these employees have wild-

fire response in their job specifications. On scene, the crews are supervised by the local District Fire Control Officer or delegated personnel. This workforce responds as an addition to or as a relief crew for local fire department personnel that initially responded in the various towns where brush and forest fires occurred.

To date in 2020, 471 fires have been recorded in Connecticut, totaling 309 acres. However, the number of fires that started is probably higher than what was turned in to the Forestry Division. Due to ongoing drought conditions, Connecticut spent

most of the summer and fall at Moderate to High Fire Danger, and a few days at Very High (more than a normal year). Overall, the state was fortunate to have no major wind events on hot, dry days, which would have exacerbated our fire danger and the potential of those fires that did start to spread.

This year, Connecticut experienced several large, labor-intensive fires. The Potash Brook Fire in Windham spanned 94 acres and required fire crews to conduct a "burnout" to more easily establish and control the fireline edge. The Riverside Fire in Thompson spanned more than five acres, while the Sylvan Lake Fire in Watertown and the Old Marsh Pond Fire in Bristol both covered more than an acre.

It is very difficult to extinguish summer and fall ground fires, especially during a drought, as they burn deep into the ground. They tend to come back to life with small pop up fires on days with higher than normal temperatures, low humidity, and increased wind activity. Leaf fall increases the risk that pop up fires can spread beyond original containment lines, as they provide a continuous fuel blanket across the forest floor. Sometimes, areas re-burn multiple times due to continuous leaf fall. Occasionally,



CTS#1 crew members during their trip to Modoc National Forest in northern California.

F. HUSSEY, DEEP DIVISION OF FORESTRY



(Above) Members of CTS#1 crew walking in formation at the Allen Fire. (Right) CTS#2 crew member Derek Wnuk holding the fireline at the Red Salmon Complex.

B. ARNOLD, DEEP DIVISION OF FORESTRY





**CTS#2 crew member Derek Wnuk holding the fireline at the Red Salmon Complex.**

M. MURPHY, DEEP DIVISION OF FORESTRY



the crews use leaf blowers to keep containment lines clear. For these reasons, all of the fires previously mentioned were monitored anywhere from weeks to months after they initially started to address fires springing back to life. By the end of October, all fires that DEEP was monitoring had been declared extinguished.

### **CT Interstate Fire Crew**

Connecticut participates in a reciprocal aid program operated by the USDA Forest Service (USFS). Under this program, trained personnel from other parts of the nation are available to assist Connecticut in the event of a fire emergency or other natural disasters in return for the support of Connecticut personnel when needed. All state agency expenses directly associated with these deployments are fully reimbursed by the USFS.

Through a Master Wildland Fire Agreement with the USFS and other federal partners, the CIFIC:



R. SCHENK, DEEP DIVISION OF FORESTRY (2)

**Members of CTS#1 heading out on assignment. From left to right: Brian Rossiter, Amy Burgess, Tony Flamio, Farrah Hussey, Ben Arnold, John Moffat, Jed Morrissey, Justin Wiggins, Mike Kronick, and Emily Shafer.**

- Protects the people and property in Connecticut through the suppression and management of local forest fires;
- Responds to large-scale state requests for assistance, such as severe weather events; and
- Works with government agencies across the nation to protect resources threatened by wildfire.

Over the years, CIFIC responsibili-

ties have expanded to include wildfire suppression in eastern Canada through the Northeastern Forest Fire Protection Compact and large scale FEMA incident responses and other national emergencies declared through the Robert T. Stafford Disaster Relief and Emergency Assistance Act. DEEP takes great pride in contributing to a national response team during times when local resources are overwhelmed and need assistance.

These crew members bring valuable experience back to Connecticut to help us be better prepared in the event of an emergency here.

CIFIC members must complete a rigorous initial training program and participate in an annual physical work capacity test and annual refresher training to acquire and maintain certification. Members also have to use their certification through qualifying field experience within a 5-year timeframe to remain qualified. Participants are constantly encouraged to broaden their knowledge and experience through additional training to help improve crew capabilities and maintain the variety of positions needed to run a successful program, while combating attrition result-



**Igniting the fireline during a burnout on the Potash Brook Fire, Windham, CT. A burnout is setting fire inside a control line to consume fuel between the edge of the fire and the control line.**





CTS#2 crew members during initial briefing on mobilization day.

ing from many other competing demands. Advanced training includes developing leadership skills along with specialized wildfire and emergency response credentials. All qualifications are governed by the National Wildfire Coordinating Group guidelines and criteria. Those interested in the CIFIC should send an email to [deep.forestry@ct.gov](mailto:deep.forestry@ct.gov) to receive detailed information about the application and training process.

### ***Assistance on National Wildfires in 2020***

By mid-October 2020, two 10-person groups of trained CIFIC wildland firefighters had been dispatched to assist with fires in California. The first module (CTS #1), left Connecticut on July 24 and spent two weeks in the Modoc National Forest area in northeastern California. The module was assigned to initial attack, keeping fire starts from becoming larger “event” fires and then later to monitoring the 1,000+ acre Allen Fire, part of the July Complex. The area they were working in had been in extreme fire danger, with recent lightning strikes resulting in large fires throughout the region. The group included two DEEP staff members and eight private sector fire fighters. This important assignment allowed us the opportunity to improve our resource capabilities

within the program by providing opportunities to qualify members in certain positions. The experience gained on these assignments is extremely valuable for the crew in Connecticut and can be used in-state if the need arises.

The second 10-person module (CTS#2), left on September 4 and spent two weeks working first with the Hoopa Valley Tribe on their reservation in Hoopa, California doing initial attack, and then was reassigned nearby to the Red Salmon Complex, on the Shasta-Trinity National Forest. CTS#2 consisted of four full-time DEEP employees, one full-time employee from Rhode Island’s Department of Environmental Management, and five private individuals. This was the first time that Connecticut has sent a crew to work on a Bureau of Indian Affairs assignment, and the Tribal Fire Department was excited to have the Connecticut crew come to help as they had never worked with a crew from the Northeast before. While on the Red Salmon Complex, the crew gained valuable experience with fireline control techniques.

Both groups followed USFS CO-



CTS#2 crew members holding the fireline on a burnout at Red Salmon Complex.



CTS#2 camp on the Hoopa Valley Reservation.

VID-19 protocols throughout their deployments, and also followed state COVID-19 protocols upon their return to Connecticut. They received COVID-19 testing upon returning to the state.

To learn more about a few of the specialized duties and unique training some members of the CIFIC have and read firsthand accounts from a number of the firefighters, be sure to read the next issue of *Connecticut Wildlife*.



# Smile

## You Are on Candid Camera!

Written by Brian Eltz and Mike Beauchene, DEEP Fisheries Division, and Christopher Bellucci, DEEP Bureau of Water Protection and Land Reuse; photos provided by DEEP Fisheries Division

Cameras are capturing more and more video and still images every day. From your doorbell, car dashboard, home security system, or cell phone, capturing high-quality video has never been more convenient, affordable, and easy.

Battery-operated remote cameras (aka trail cameras) have been readily available for many years for hunters and wildlife professionals to capture wildlife movements, behavior, and habitat usage. Recently staff members from the DEEP Water Quality Monitoring and Fisheries Divisions have focused trail cameras away from wildlife-seeking to instead capture useful information on fishing effort and stream water levels without having to be there in person.

### Fishing

A tried and true standard tool to collect information on fishing effort and angler opinion and preference are “angler surveys.” These in-person interviews have been a traditional tool to gather information about the use of a specific waterbody or waterway and the effort for a particular species, as well as to gauge opinion on existing or proposed fisheries regulations. This information allows the Fisheries Division to better manage the resource or gain a better overall understanding of the resource and how anglers are using it.

Typically, a “creel agent” is sent to a specific waterbody on a randomly selected date and time throughout the fishing season. This requires driving to a location, or several locations, as is the case with a river or stream, or launching



A bobcat using a disconnected stream as a travel corridor



This image was captured by a trail camera that was set up to monitor stream connectivity. It shows that bobcats do not like to get their feet wet!

a boat and driving it around an entire lake with the intent to count all anglers actively fishing, and then interview as many as possible within an allotted time. Using the data, we calculate the amount of hours anglers spend fishing on that specific waterbody throughout the course of a season or the entire year, calculate total catch of a specific fish species, or summarize opinions. However, traditional angler surveys as



just described can be expensive, as they require a great deal of staff time, along with vehicle and paper usage.

Using trail cameras, we can now collect angler usage information at waterbodies where catch, angler opinion, or even complete fishing effort information is not needed. This can often be done with far less staff involvement. We have found that multiple, strategically placed cameras along a stream bank provide an almost near complete census at moderately-used streams stocked with trout. At lakes and ponds, information can be collected from all vessels launching from and returning to a boat launch. The total fishing effort for the entire period of camera use can even be calculated when images are captured from a fishing trip, start to finish. Also, at low level usage wild trout streams, where traditional angler surveys are not always effective, strategically placed cameras have shown that their usage can gather better angler usage information at a much lower cost than sending survey agents out traipsing through the woods. Plus, it limits encounters with the dreaded black-legged tick!

Moving forward, the Fisheries Division anticipates using trail cameras at all types of waterbodies to gather useful angling information. Cameras may be used to gather just fishing information on Opening Day trout season or up to an entire year at a selected waterbody. In addition, we hope to deploy more advanced cameras in the future that allow for wireless connectivity, which would allow for even less staff involvement. And, as you will read below, we might be able to tie in our camera placement for counting anglers to assist with data collection for measuring stream connectivity.

### *Measuring Stream Connectivity*

When we think about natural rivers and streams that flow year round, there should be connectivity between pools and riffles for the entire stream length under all but the most extreme drought situations. In many streams in Connecticut, there are thousands of man-made structures (i.e. dams, culverts, and surface and groundwater withdrawal locations) which negatively



**(Top) Nice catch from an angler in Hall Meadow Brook in Torrington.**

**(Middle) Humans aren't the only anglers caught on tape at Hall Meadow Brook.**

**(Bottom) The early bird gets the fish (great blue heron)!**



**Deer using a disconnected stream as a travel corridor.**

impact stream connectivity and can result in aquatic habitat fragmentation. Streams can become disconnected for portions of the year, especially during the low flow period in summer and extending into early fall.

Stream connectivity is important for the ecological health of the stream and disconnection can negatively impact aquatic organisms. For example, brook trout spawn from September-November and prefer riffle areas to build redds (spawning beds). A year class could be lost if a stream becomes disconnected during this period and brook trout cannot access the riffles to spawn. If this happens year after year, we could lose the entire brook





(Top) A full stringer of freshly-caught trout at Hall Meadow Brook.  
 (Middle) Some captured images can be quite grainy, but we did determine this to be an early morning moose caught on tape at Hall Meadow Brook.  
 (Bottom) A late night visit to the ole' fishing hole by a bobcat.



Trail camera images can be used to measure when a stream is connected (top image) and disconnected (bottom images). This is important because we now have a technique using trail cameras to document where and when streams become disconnected, helping to catalog the extent and spatial coverage of the problem.



A couple of anglers fishing Freeman's Hill Brook in Burlington.





A couple of anglers taking advantage of the bridge pool at Hall Meadow Brook.



A bass boat waiting to hit the water at Bashan Lake in East Haddam.

trout population from that stream.

DEEP recently published a scientific article that outlines a novel method to use trail cameras to measure stream connectivity. The article describes the technical details of the method and is published in the journal *Rivers Research and Applications*. The method sorts trail camera images into stream connectivity categories. Once we have categories, we can describe the condition of the stream using metrics developed to quantify stream connectivity and compare to reference stream locations. This is important because we now have a technique to describe where and when streams become disconnected and can catalog the extent and spatial coverage of the problem.

One additional benefit from our trail camera work on streams is that we get some interesting wildlife pictures. For example, not only have we seen bobcats in several locations throughout the state, but we also have proof that they do not like to get their feet wet! Another interesting finding is animals seem to use disconnected streams as travel corridors. Animals are creatures of habit and will use the path of least resistance to get from place to place. We hope the animals do not get too used to using those travelways since we now have a way to quantify impacts to stream connectiv-

ity. It is important to keep water in the streams so they can support the aquatic animals that depend on water year round.

Check out a previous article in the March/April 2020 issue of *Connecticut Wildlife*, “Bringing Wildlife into View”, that explains how trail cameras are used to help wildlife biologists research and monitor wildlife populations.

*The Fisheries Division plans to use trail cameras at all types of waterbodies to gather angling information. Cameras may be used to gather fishing information on Opening Day or up to an entire year at a selected waterbody.*



One additional benefit from our trail camera work on streams is that we get some interesting wildlife pictures. It was discovered that animals seem to use disconnected streams as travel corridors. Animals are creatures of habit and will use the path of least resistance to get from place to place. This black bear is using a disconnected stream as a travel corridor.



# A Unique Addition to the Shoreline

## *The Mysterious Black Skimmer*

Article and photography by Paul Fusco, DEEP Wildlife Division

One of the most mysterious and remarkable birds found in Connecticut is the black skimmer. It has a number of unusual and intriguing physical features and behaviors. To start, the black skimmer has a huge orange and black bill that looks out of place and bizarre, as if the bird belongs in the Amazon jungle instead of on the shores of Connecticut.

The black skimmer is highly gregarious, and generally uses shallow water coastal bays and marshes for foraging and sandy beaches, bars, and flats for roosting and nesting. Skimmers are often found in the company of terns and gulls.

They are about the size of a crow. When seen standing on a beach, their long bill, long wings, and short legs give skimmers an elongated and off-balance appearance. At times, they can be seen resting with their head and bill outstretched, laying flat against the sand.

In this posture, skimmers blend into their surroundings, appearing to be driftwood on the beach.

In flight, skimmers use shallow wing beats, with their long, pointed wings propelling them with power and precision. They are swift and agile in the air. Skimmers often change direction as they quarter back and forth, ranging over a wide area to forage. Flocks fly in synchrony, often using the wind to gain speed. While the wings are long, the tail is fairly short and slightly forked.

Skimmers are the only birds with a vertical pupil in their eyes. It is thought that this helps reduce glare from harsh sunlight when the birds forage over the water using their unique feeding style. The most prominent feature of a black skimmer is its long, laterally compressed bill, in which the lower mandible is noticeably longer than the upper.

### *Feeding Behavior*

To the average person, the skimmer hunting technique looks to be inefficient and makes one wonder how they can catch enough food to keep themselves going, let alone raise as many young as they do. The skimmer uses its knife-like bill to catch its food when flying low over the water. With mouth open, the longer lower mandible cuts through the water's surface. Once the bill touches a fish, the skimmer will clamp down its upper mandible, snatching the prey.

Skimmers are crepuscular, being most active around dawn and dusk. They will often feed close to low tide and when waters are at their calmest, which is usually in the evening, at night, or in early morning. Their primary food is small fish and sometimes crustaceans. Small fish on the menu include killifish, silversides, peanut bunker, snapper bluefish, and others.



Black skimmers typically nest in colonies that may contain hundreds of nesting pairs.





Black skimmer nests, called scrapes, are nothing more than depressions in the sand where adults kick out the sand to make the scrape deeper. During incubation and brooding, adult skimmers often lay flat in the sand, a form of camouflage that makes them appear to be a piece of driftwood.

### *Distribution*

Black skimmers have a widespread distribution, with a breeding range that extends from Cape Cod south along the Atlantic Coast, including the Gulf of Mexico, and down to northern Argentina. They also breed along the Pacific Coast from northwestern Mexico south to Ecuador.

### *Nesting*

Black skimmers nest on open, flat sandy beaches with sparse vegetation. They kick out a depression in the sand, known as a scrape, which becomes the nest. Females typically lay a set of three or four sand-colored or pastel bluish eggs that are splotched with dark markings. Incubation lasts for about 24 days to hatching. Young are mobile and will stray from the nest after a few days. Young chicks may be seen at the water's



Skimmer chicks will stay in the nest, but are quite mobile, often running through the sand and beach grass when adults are delivering food. Young chicks will return to the scrape for safety and brooding. As they get bigger, they become more independent and find safety hiding among clumps of beach grass.



edge as they await the next food delivery from the adults. Young will gradually attain full flight capability after about 24 days. Single skimmer pairs may nest alone but normally nest in colonies that may comprise hundreds of pairs.

### **Connecticut Occurrence**

Black skimmers are at the northern edge of their Atlantic Coast range in southern New England. Historically, they have been classified as a migrant that shows up occasionally in Connecticut. While the population has been gradually increasing in the Northeast over the last century and birds have nested on Long Island and Cape Cod, skimmers were not known to have nested in Connecticut prior to the 1990s.

The first known nesting attempt was in 1983 (Greenwich), but the nest was washed out by extreme high tides. In 1996 another attempt was made (West Haven), and that nest also was washed

out by tides. The black skimmer's status changed in 1998 when the species was added to Connecticut's list of breeding birds. Six pairs showed up and bred in West Haven that summer. This was the first documented successful nesting in the state. The first black skimmer chick hatched on July 11, 1998. By July 16, up to 13 skimmer chicks were being fed. It is thought that at least 13 young fledged in 1998.

### **What We Know**

Since 1998, black skimmers have nested multiple times in Connecticut, all at the same location in West Haven. While records are incomplete, successful nesting occurred again in 1999, when more than a dozen young were fledged. In 2000, 10 adult

### **Beach Nesting Birds Are Terrified by the Presence of Dogs**

Dogs can have a significant impact on beach nesting birds, both directly and indirectly. Free-running dogs may step on and destroy vulnerable eggs and chicks in the sand if they enter a restricted nesting area.

While crushed eggs and chicks are bad enough, the birds are also terrified by having dogs in close proximity to or within their nest colony. They see dogs as predators, no different than the foxes that raid colonies, eating eggs and killing both young and adults.

The birds' reaction to the presence of dogs can result in nest abandonment or even abandonment of the entire colony.

skimmers were present at the traditional West Haven site in early June.

According to DEEP Wildlife Division records, the next year nesting was documented was in 2003. That year, three pairs of adults and at least four chicks were present, and at least two of the chicks fledged. From 2004 to 2006, skimmers nested with varying numbers,



Black skimmers typically feed on small bait fish, including silversides, killifish, peanut bunker, and others. The birds use their long lower mandible to cut through the water while skimming. Once the lower bill touches a fish, the upper mandible clamps down tight on it.



although productivity rose in 2005 with 10 pairs of adults and at least six young fledged. No known nesting attempts by black skimmers were documented in Connecticut from 2007 to 2019.

This year, 14 to 16 black skimmer adults maintained a presence in West Haven with six breeding pairs. Based on DEEP surveys, the six nests held a total of 19 eggs. Chicks can be difficult to count as they become very mobile soon after hatching. They are fast runners and will hide in the beach grass. Once reaching the stage where they can fly (around 24 days), it becomes easier to count the young. A total of 10 fledglings were seen joining the flock of adults in late summer.

Interestingly, one of the adult male skimmers had a numbered yellow leg band, indicating that it was banded on Long Island. Leg bands on coastal waterbirds help researchers identify individual birds and keep track of their movements throughout the year, including migration routes and where important stopover sites are located.

### ***Black Skimmer Conservation***

A number of bird species, including black skimmers, nest on Connecticut's sandy beaches. All beach nesting birds are vulnerable because they are subject to habitat loss, disturbance, and predation. Nesting beaches are in short supply, forcing birds to nest in areas of high human activity and disturbance.

Skimmers often nest within colonies of least and/or common terns. The terns begin nesting in the weeks before skimmers arrive, so the colony is already set up before the skimmers move in. Thus, the early stages of egg and small chick development for skimmers receive added protection by the aggressive mobbing behavior of terns whose nesting is already fully underway.



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**Skimmers are fearless in defense of their nest territories and young. They will not hesitate to go after a peregrine falcon intruder.**

Not only do beach nesting birds face increasing pressure from habitat loss, they also are threatened by the effects of climate change, which is causing sea levels to rise and may increase damaging flooding on nesting beaches. This greatest of threats has the potential to severely impact many of Connecticut's coastal species.

Considering that Connecticut has

a shortage of suitable nesting habitat, together with the impacts of climate change, it becomes uncertain just how stable a nesting population of skimmers can be in the future. Fortunately, during this past summer, a welcome and uncommon sound was heard along parts of our shoreline – the barking yelps of the black skimmer.



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**Young skimmers are capable of flight after about 24 days.**



# Emerging and Exotic Ticks in Connecticut

## *Lone Star and Asian Longhorned Ticks*

Written by Dr. Kirby Stafford III, Connecticut Agricultural Experiment Station; photographs by James Gathany, CDC

Since the emergence of the blacklegged tick, *Ixodes scapularis*, and discovery of Lyme disease in Connecticut in the 1970s, the principal ticks of concern to Connecticut residents have been the blacklegged tick and the long present American dog tick, *Dermacentor variabilis* (not pictured). The blacklegged tick is the vector for human pathogens that cause Lyme disease, babesiosis, anaplasmosis, hard-tick relapsing fever, and Powassan viral encephalitis. While Lyme disease is the principal vector-borne disease in Connecticut and the United States, other tick-borne illnesses accounted for 28% of all U.S. cases reported to the Centers for Disease Control and Prevention in 2018. Recently, we have seen the distribution of some native southeastern tick species expand to northern latitudes in the United States; the lone star tick, *Amblyomma americanum*, and the Gulf Coast tick, *Amblyomma maculatum*; and the establishment of an exotic, invasive tick species, the Asian longhorned tick, *Hemaphysalis longicornis*.

The lone star tick is an aggressive human-biting tick and the vector for human disease pathogens that cause ehrlichiosis, tularemia, rickettsiosis, Heartland virus disease, southern tick-associated rash illness, red meat allergy, and, likely, Bourbon virus disease. This tick began to show up on Long Island, New York, in the early 1990s and established populations have now been documented across most of Long Island, Fairfield and New Haven Counties in Connecticut, coastal Rhode Island, and on Cape Cod and the Islands. The first well-established breeding population of lone star ticks was discovered on Manresa Island in South Norwalk in 2017 (*Connecticut Wildlife*, September/October 2017). Researchers from the Connecticut Agricultural Experiment Station (CAES) and the DEEP Wildlife Division began tagging deer, sampling ticks, and successfully treating the deer for ticks through a self-feeding station



The exotic Asian longhorned tick is a fairly new resident to Connecticut. It was first detected in New Jersey in 2017 and has spread to 14 eastern states. This tick can reproduce without males (parthenogenesis) and quickly build up large populations.

called a 4-poster at Manresa Island from 2018 through 2020 (*Connecticut Wildlife*, November/December 2018). Smaller numbers of lone star ticks have been recovered from sample sites in all four southern Connecticut counties as part of a





(Above) Established populations of the lone star tick have been documented in Fairfield and New Haven Counties in Connecticut (female pictured).

(Right) The blacklegged tick is the vector for human pathogens that cause Lyme disease, babesiosis, anaplasmosis, hard-tick relapsing fever, and Powassan viral encephalitis (female pictured).

(Below) The Gulf Coast tick was detected in coastal Fairfield County in August 2020, the first report of a population of this tick in New England (female pictured).



tick surveillance program begun by CAES in 2019.

The Gulf Coast tick was detected in coastal Fairfield County in August 2020, the first report of a population of this tick in New England. Originally distributed in southeastern states along the Gulf and Atlantic Coasts, this tick has expanded its range north to Virginia, Maryland, and Delaware. While historically a livestock pest, this tick feeds readily on humans and is the vector for *Rickettsia parkeri* that causes a milder form of spotted fever rickettsiosis.

The exotic Asian longhorned tick was first detected on a sheep at a New Jersey farm in 2017 and since then has been found in 14 eastern states, including Connecticut. Native to eastern China and Russia, the Koreas, and Japan, it was introduced into Australia and New Zealand around the turn of the twentieth century where it is a major livestock pest. It is a vector for several human and livestock pathogens in its native range, including severe fever with thrombocytopenia (low levels of blood platelets) in humans. This tick can reproduce without males (parthenogenesis) and quickly build up large populations.

Another exotic tick species, the red sheep tick, *Haemaphysalis punctata*, has been found on Block Island, Rhode Island. Native to Europe, this tick is primarily a parasite of

sheep and cattle, but also occurs on numerous other hosts and occasionally on humans. It is a known vector for a number of animal and human pathogens.

The immature stages of these four tick species parasitize a diversity of bird and mammal species while the adult ticks attack domestic animals and larger mammals like white-tailed deer. Warming temperatures, particularly in winter, may lead to the continued expansion in the range and abundance of these ticks. These new tick species will become an increasing human and animal health concern for Connecticut residents as populations expand and become further established in the state.



# Rabbit Hemorrhagic Disease

## *A Threat to Wild Rabbits*

Connecticut DEEP Wildlife Division Staff; photography by Paul Fusco, CT DEEP Wildlife Division

**R**abbit hemorrhagic disease is a fatal disease in rabbits and is considered a foreign animal disease in the United States. This disease is caused by several virus strains. Animal health officials detected one of these strains, Rabbit Hemorrhagic Disease Virus Serotype 2 or RHDV2, in North America in the past few years. RHDV2 is highly contagious and, unlike other rabbit hemorrhagic disease viruses, it affects both domestic and wild rabbits, including hares, jackrabbits, and cottontails. The New England cottontail, eastern cottontail, and snowshoe hare, which are found in Connecticut, are susceptible to infection and mortality. At this time, RHDV2 is not known to impact humans or other animals.

So far, RHDV2 has appeared in nine U.S. states: Ohio, Washington, Texas, New Mexico, Arizona, Colorado, Nevada, California, and an isolated case in domestic rabbits in New York City. Natural resource agencies have reported events in which three to more than 1,000 rabbits and hares have died. The outbreak in the southwestern U.S. is linked to a different strain than the outbreak in the Pacific Northwest and New York, suggesting at least two separate introductions of the virus. RHDV2 has also infected pet rabbits and feral rabbits (domestic rabbits that have been



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Conservationists have created many acres of young forest and shrubland habitat to assure the New England cottontail's survival. Those acres of habitat provide essential food and hiding cover for many other kinds of northeastern wildlife, including more than 60 "Species of Greatest Conservation Need."

released or escaped from captivity and now live in the wild).

### **Transmission**

The RHDV2 virus is very resistant to extreme temperatures, and can stay viable for months. Rabbits can get the virus from contaminated food and water, contact with infected rabbits, and contact with feces of predators or scavengers that have eaten infected rabbits. People can spread the virus indirectly by carrying it on their clothing

and shoes. The first sign of infection is often the sudden and unexpected death of a previously healthy rabbit.

People can inadvertently spread RHDV2 into the wild by releasing domestic or unwanted pet rabbits or through improper disposal of dead rabbits.

### **Symptoms**

Many times, the only signs of the disease are sudden death and blood-stained noses caused by internal bleed-



ing. Infected rabbits may also develop a fever, be hesitant to eat, or show respiratory or nervous system signs, such as poor balance or involuntary movements.

### ***Is RHDV2 a Conservation Concern?***

Scientists believe that all rabbits and hares are susceptible, including the eastern cottontail, snowshoe hare, and our only native rabbit, the New England cottontail.

While RHDV2 has not been confirmed in wild rabbits in eastern North America, biologists and other experts are very concerned. The disease spreads quickly and easily in the wild and could easily wipe out species with small populations, such as the New England cottontail.

Rabbits play an important role in our ecosystem. They help control herbaceous vegetation and are an important part of the food chain for many predators, such as bobcats.

The New England cottontail is found in parts of Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, and New York east of the Hudson River. An estimated 13,000 of these secretive animals exist today. The species' population has decreased dramatically because its young forest and shrubland habitat is declining. Cooperative efforts between the Connecticut Wildlife Division, U.S. Fish and Wildlife Service, Natural Resources Conservation Service (NRCS), Wildlife Management Institute, other state wildlife agencies, and non-governmental organizations have resulted in habitat restoration, outreach and education, and monitoring and assessment of New England cottontail populations. To help stabi-



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**Hunters can protect rabbits from possible infection of RHDV2 by not harvesting rabbits that appear sick. Wear disposable gloves when handling game, double-bag carcasses and other remains and put them in the trash, and thoroughly clean knives and other equipment.**

lize declining populations and initiate recovery, state fish and wildlife agencies, private landowners, and other conservation partners have worked hard to enhance and protect thousands of acres of young forest and shrubland habitat critical to this rabbit's survival. When animals have abundant habitat that supplies ample food and hiding cover, they will be healthier and less susceptible to diseases.

The Wildlife Division has been working closely with the U.S. Department of Agriculture, the State Veterinarian's office, and the Northeast Wildlife Disease Cooperative to develop monitoring and testing protocols and increase awareness about this very serious disease. The Division is also working closely with other states across the country to monitor the spread of the disease and develop ways to prevent it from impacting new areas.

### ***How to Protect Wild Rabbits***

Never release domestic or pet rabbits or hares into the wild since they

may spread RHDV2, even if they seem healthy. In their early stages, many diseases, including RHDV2, are difficult or impossible to detect visually. (Released pets may also compete with rabbits, hares, and other animals by using food and other resources that wildlife depend on.) If you own a domestic rabbit and it becomes ill or dies suddenly, contact your veterinarian or the Connecticut Department of Agriculture's State Veterinarian. After handling such a rabbit, wash your clothes in hot water and detergent and disinfect all contact surfaces.

Hunters should avoid harvesting rabbits that appear sick. Wear disposable gloves when handling game, double-bag carcasses and other remains and put them in the trash, and thoroughly clean knives and other equipment.

If you see a healthy rabbit suddenly die or find several dead rabbits in the same area, contact the DEEP Wildlife Division at 860-424-3011 or [deep.wildlife@ct.gov](mailto:deep.wildlife@ct.gov).





# Bees in Spring and Summer Yield Iconic Fall Fruits

Article and photos by Kyle Testerman, Wildlife Management Institute

September and October are a time of changing seasons. For many of us, autumn is our favorite time of year, in part because of the changing foliage and enjoyable cool-weather outdoor activities. Two popular activities are picking your own apples and pumpkins. Not only is picking them fun, but so is creating all of the delicious foods and crafts that shape some of the more iconic moments of fall. But, before the work of picking, carving, peeling, cutting, or baking starts, apple and pumpkin flowers must be pollinated months in advance in order to grow into the fruits we love.

## *Apples Need Cross-pollination*

Pollination of apple trees by many different native bees and introduced European honey bees occurs throughout spring. Several species of native bumble bees and orchard mason bees help pollinate apple blossoms, especially where apple trees are in the right habitat.

While a single apple blossom has both male and female parts, cross-pollination from other varieties is required to improve fruit quality. Crab apples are often grown near other apple varieties to help with pollination. Apples benefit from generalist bees that visit several different trees in a short period of time. For native bees to be abundant and effective at apple pollination, the surrounding habitat needs to contain a diversity of other flowering plants, decaying wood, and exposed natural areas to provide nesting sites and food beyond the period of blossoming apple trees.

## *Specialists Best for Pumpkins*

Pumpkins are a type of squash, simi-



**Celebrating the harvest in autumn with pumpkins and apples is not complete without appreciating the bees that make it possible.**

lar to other winter squashes like butternut and acorn. In addition to winter squashes, summer squashes, such as zucchini, zepher, and yellow, are also in the same family of fruiting plants. Squash plants produce separate male and female flowers and rely on bees to move from a male flower to a female flower and inadvertently transfer the pollen from male to female. While some varieties of squash mature quickly after pollination, pumpkins and other winter squashes take several months, right into the fall, to mature.

Several types of bees, including generalists like honey bees, common eastern bumble bees, and bicolored sweat bees, can pollinate squash blossoms. If generalist bees go from one flowering species to another, the pollen from the initial plant will often not reach

its intended target (a flower of its own species). Therefore, some plants benefit from pollination specialists, which only collect pollen from a single plant species or group of closely related species. When it comes to squash, no animal is better at pollinating these plants than squash bees. In Connecticut, the eastern cucurbit bee is the most common species of squash bee, and therefore the best at pollinating wild and cultivated squashes. Females of this solitary, ground-nesting species only feed their developing young with squash pollen, while males often sleep inside squash blossoms, which are only open for a few hours in the morning before withering in the afternoon. If you have ever grown squash in your garden, you may have seen the striped black and white abdomens of squash bees sticking out from deep inside the



flowers. Squash bees are also more efficient at pollinating squash plants than honey bees, not only due to their plant specificity, but also because they are early risers. Squash bees tend to begin their day before sunrise, collecting most of the pollen on a squash blossom within a few hours, before honey bees even have a chance to get to the flowers. This relationship between squash bees and squash plants is the result of coevolution, and for million of years, both plant and bee have depended on each other for successful reproduction year after year.

On today's farms, where patches of the same varieties of plants are grown close together, squash can benefit from generalists like native common eastern bumble bees, which can move large amounts of pollen from one male squash flower to an adjacent female flower with ease.

### ***Food Webs Collapse without Healthy Pollinators***

Pumpkin yields are directly related to the abundance of pollinating bees in the area, and this relationship extends not only to other squashes, but nearly every fruiting plant in the world. Insects, led by bees, pollinate roughly 80% of all plants on Earth, including 30% of all food crops. Your morning coffee, favorite berries, many tree nuts, oilseeds like rapeseed and sunflowers, and even the alfalfa fed to dairy cows is dependent on bees to pollinate flowers for improved fruit yield, quality, and seed production. Without healthy, self-sustaining populations of bees, plant and animal communities would look drastically different and lead to the eventual collapse of food webs and entire ecosystems.

With more than apples and pumpkins riding on the persistence of bees, a few simple steps can positively impact local bee populations. Three of the most important include:

**Reducing or avoiding pesticide use.** Herbicides applied to your



**Two male squash bees (above) wait for females inside a pumpkin flower. Females come to drink nectar and collect pollen for their underground nests. The sticky pollen grains cling to the hairs on the female's legs (left).**

yard can kill plants that insects and other animals need to complete their life cycle. Most insecticides do not discriminate between beneficial insects and ones you perceive as pests, killing them all. Bees that are not killed can still be negatively impacted and their activity, reproduction, and lifespan reduced. Insecticides also reduce the most important food source for many animals, lowering wildlife diversity in the area. Animal physiology is affected when they eat insects or plants that have been treated with pesticides.

**Preserve natural nesting sites for native bees.** While introduced European honey bees can nest in man-made boxes as a single colony, most native bees are solitary and the vast majority nest in the ground or within the soft inner stems of plants. When you cut down and mulch dead plants in your garden in spring or fall, you may be destroying overwintering bees that are dormant in the stems. Leaving the stems standing allows a new generation of native bees to emerge in your garden the following year. Exposed soil, undisturbed ground cover, and decaying wood are important

for nesting and overwintering of bees, and without those on your property, many species of bees will be excluded.

**Increase the diversity of native flowering plants.** Planting one type of pollinator-friendly plant will bring a source of pollen and nectar to your yard, but most plants only bloom for a small window of time during the growing season. When that plant is not blooming, local pollinators will die off or leave the area, abandoning their nests. To support pollinators throughout the growing season, it is important to plant a variety of plant species that attract the greatest number of specialist bee species from early spring through fall. Increasing the diversity of native plants in your yard will improve your garden's fruit and vegetable yield and be a haven for bees in your area.

This fall and winter, while you are enjoying that slice of pie, cup of cider, or carving your jack-o-lantern, show your appreciation for the diversity of bees that are often overlooked and underappreciated. Without them, we would lose a lot more than just pumpkins and apples.





## Welcome to Deputy Commissioner Mason Trumble

DEEP recently welcomed Mason Trumble as the new Deputy Commissioner of Outdoor Recreation and Natural Resources. Mason is an outdoor educator with expertise in promoting and expanding access to outdoor recreation through innovative partnerships between public and private sectors.

In his past role as part of REI’s New England leadership team focused on experiences and brand engagement, Mason worked with many non-profit partners across the state on projects ranging from pollinator pathways to improved access for backcountry hiking and camping. One of his most meaningful achievements at REI includes designing “Cheers for Public Lands,” a political advocacy campaign that built crucial public support for the recently passed constitutional amendment to protect state lands in Connecticut. Mason is the founder of the Connecticut Outdoor Recreation Alliance – a coalition of organizations focused on protecting and promoting Connecticut’s outdoor recreation resources.

An avid outdoorsman and trained outdoor guide, Mason moved to Connecticut after working as a NOLS (National Outdoor Leadership School) instructor in Utah, an operations manager for a whitewater rafting outfitter, and a conference director in Maine. He holds a Bachelor’s degree in business and a Master’s degree in outdoor education.

Despite the challenges posed by the COVID-19 pandemic, Mason has already made an effort to learn about and be involved with various outdoor recreation and natural resource projects and programs, such as the Modified Hunter Safety courses, greeting the Connecticut Interstate Fire Crew after returning from fighting wildfires in the western United States, and visiting the various state parks, forests, wildlife management areas, and natural area preserves.



DEEP’s new Deputy Commissioner Mason Trumble is an avid outdoorsman and trained outdoor guide. As you can see, fishing is one of his pastimes!

## 2019-2020 Trapping Season Highlights

<b>Licensed trappers</b>	<b>1,016</b>
<b>State Land Permits</b>	<b>36</b>
Beavers tagged	769
River Otter	88
Mink	44
Coyote	132
Red Fox	44
Gray Fox	14
Fisher	19
<b>Total tagged**</b>	<b>1,110</b>
<b>Total tagged in 2018-2019</b>	<b>1,363</b>

\*\*Total tagged includes beaver, river otter, mink, coyote, red fox, gray fox, and fisher.

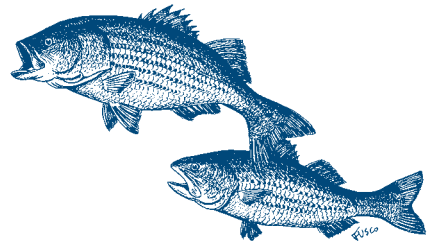
A large percentage of the beavers, foxes, and coyotes harvested each year are in response to nuisance wildlife issues. (i.e., flooding of roads or septic fields, damaging trees, etc.)

Due to the COVID-19 pandemic, traditional pelt tagging stations were canceled. The Wildlife Division worked with trappers to develop an alternate method for reporting and tagging pelts to meet the needs of the 2020 season and comply with COVID-19 guidance.



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## Conservation Calendar

### 2020 Hunting and Season Dates

Oct. 17 ..... Opening Day of the Small Game and Pheasant Hunting Seasons. Learn more details about pheasant hunting and stocking at <https://portal.ct.gov/DEEP/Hunting/Pheasant-Hunting>.

Nov. 7-14 ..... Junior Deer Hunter Training Days (excluding Sunday).

Nov. 18 ..... Opening Day of the Firearms Deer Hunting Season on state and private land.

Dec. 9 ..... Opening Day of the Muzzleloader Deer Hunting Season on state and private land.

Consult the 2020 Connecticut Hunting and Trapping Guide, 2020-2021 Migratory Bird Hunting Guide, and 2020 Connecticut Fishing Guide for specific season dates and details. Guides are available at town halls and outdoor equipment stores, and also on the DEEP website (<https://portal.ct.gov/DEEPHunting>; <https://portal.ct.gov/DEEPFishing>). Go to [www.ct.gov/deep/sportsmenlicensing](http://www.ct.gov/deep/sportsmenlicensing) to purchase Connecticut hunting, trapping, and fishing licenses, as well as required permits and stamps. The system accepts payment by VISA or MasterCard.

Look for the 2021 Connecticut Hunting and Trapping Guide at town halls and outdoor equipment stores starting in early December. It will also be available on the DEEP website at <https://portal.ct.gov/DEEPHunting>.

### Hunter Safety Education Classes

Firearms and Bowhunting Safety Classes are now being held. Students are required to complete all online prerequisites **PRIOR** to registering for a modified field day event. The modified field day meets safety requirements of social distancing and all participants must wear a mask. For registration details and prerequisites, visit <https://portal.ct.gov/DEEP/Hunting/CEFS/Hunter-Education-Modified-Field-Days-COVID-19>.

### Connecticut Aquatic Education Classes

To help mitigate the community spread of COVID-19, Connecticut Aquatic Education (CARE) fishing courses have moved online. The DEEP Fisheries Division has developed a schedule of the very popular "Introduction to Fishing" courses, starting with online ZOOM sessions. For more details and to register, visit <https://portal.ct.gov/DEEP/Fishing/CARE/COVID-19-Updates-CARE-Program>.

Sign up to receive Wildlife Highlights, a free, electronic newsletter for anyone interested in Connecticut's wildlife and the outdoors! [https:// portal.ct.gov/DEEP-Wildlife-Highlights](https://portal.ct.gov/DEEP-Wildlife-Highlights)





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**Black skimmers will often settle territorial disputes by making spectacular aerial flights where they chase and dodge one another as they try to establish position for an assertive strike.**