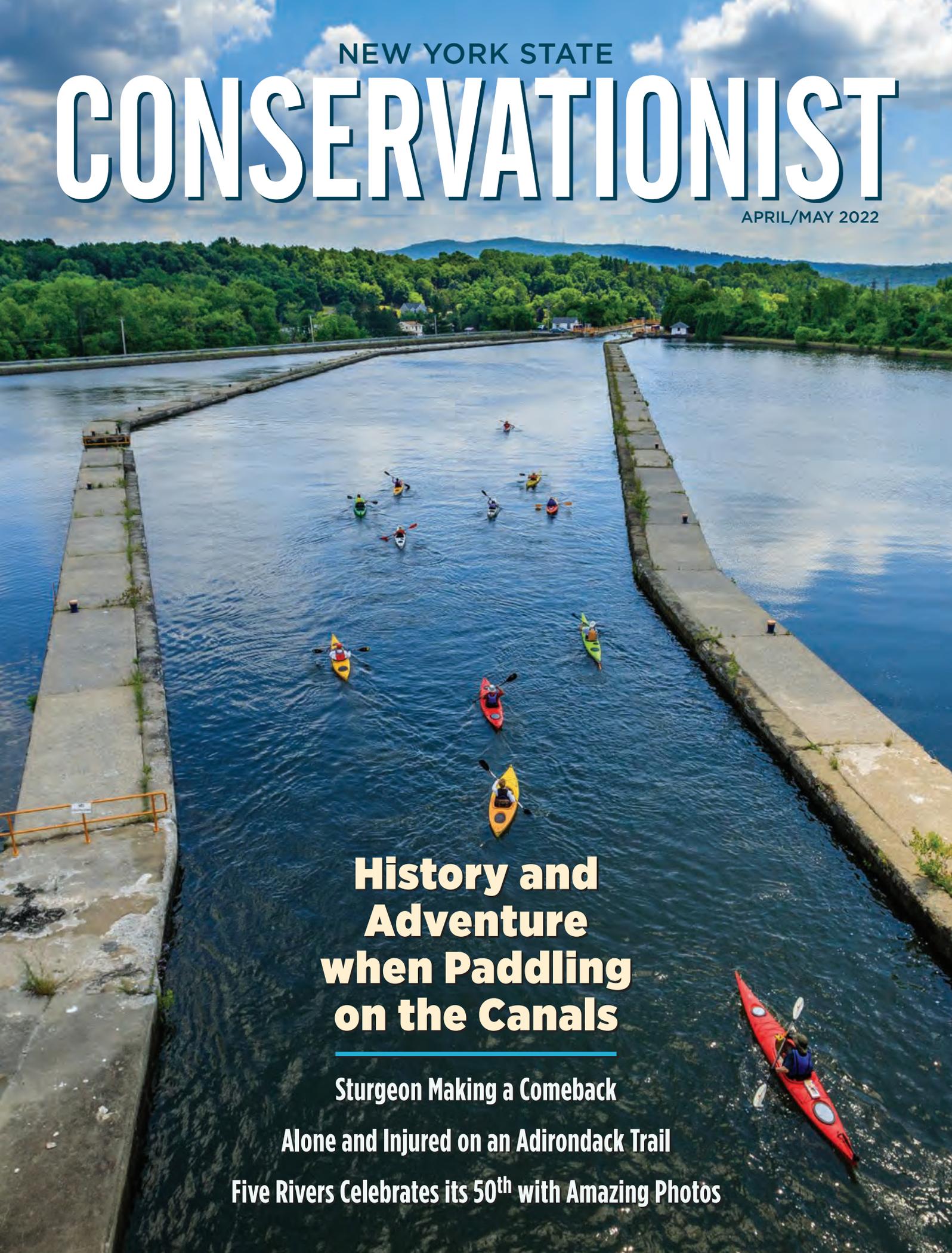


NEW YORK STATE

CONSERVATIONIST

APRIL/MAY 2022



History and Adventure when Paddling on the Canals

Sturgeon Making a Comeback

Alone and Injured on an Adirondack Trail

Five Rivers Celebrates its 50th with Amazing Photos

Dear Readers,

Regular readers of the *Conservationist* know that April is prime time for fishing. New York is home to some of the best fishing in the country and in this issue, you can learn all about sturgeon, a resilient fish that dates back more than 150 million years. This issue also features an article on vintage rods and reels, with interesting information on the craftsmanship of this equipment and how it has evolved over the years.



New York has a variety of special sites throughout the state that are open to the public and offer more than just fishing. You can also learn about paddling adventures on New York's canals, or how to preserve local ecology and promote a healthy and attractive living shoreline near your home.

To help get readers into the spring spirit, this issue also contains helpful information about the Honeoye Inlet Wildlife Management Area in Ontario County and Five Rivers Environmental Education Center in the Capital Region. Five Rivers is a first-class gem that is celebrating its 50th year and it continues to offer an array of exciting activities for people of all ages (the pictures you'll see are sure to inspire a visit).

As the weather gets warmer, the outdoors is a great place to be. When it comes to outdoor adventure, "failing to plan is planning to fail." Always remember to prepare and plan ahead, to be sure you have what you need to be safe. In this issue, you can read about a hiker's harrowing experience when she was injured on an Adirondack trail and the lessons she learned.

New Yorkers are fortunate to live in such a diverse and breathtakingly beautiful state. We encourage everyone to get outside when you can, *I Love New York* land responsibly, respect nature, and make safety a top priority.

Sincerely,
Basil Seggos, Commissioner



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Kathy Hochul, Governor of New York State

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The NYS Canalway Water Trail allows paddlers to discover New York's natural resources and historic treasures.

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Paddling Adventures

ON NEW YORK'S LEGENDARY CANALS

BY MONA KULKARNI CARON

Discover great paddling and recreational opportunities along New York State's legendary canals. Officially designated as the NYS Canalway Water Trail, you can explore this historic waterway by kayak, canoe, or standup paddleboard for an afternoon outing or a multiday adventure.

The NYS Canalway Water Trail comprises over 450 miles of canals and interconnected lakes and rivers with more than 140 public access points for paddlers. The water trail follows the New York State Canal System across the full expanse of upstate New York, offering paddlers a wealth of places to visit and sights to see. The waterway flows through time and history, connecting magnificent scenery and remarkable communities, many of which have been welcoming canal travelers for 200 years.

Among the things that make the NYS Canalway Water Trail distinct from other water trails is the nature of the canal itself. You'll navigate century-old locks, pass stunning stone aqueducts

used to carry boats across rivers and streams in the 1800s, paddle alongside tugboats and cruisers, and experience narrow flatwater stretches and wider river segments.

For a constructed waterway, the canals are surprisingly serene and natural. Paddlers can expect to see a diversity of birds and wildlife, unique geology, and varying terrain.

Launching Your Trip

You won't have to travel far to start your adventure. Launch sites marked with blue and yellow NYS Canalway Water Trail signs are found in nearly every community throughout the state (see the Resources sidebar for locations near you). You'll find rental outfitters at numerous locations, so you can "test the waters" and enjoy paddling, even if you don't own a boat.





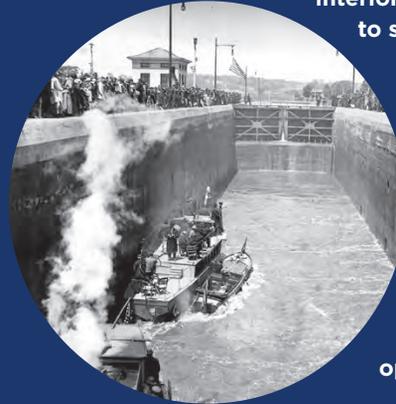
The canals offer opportunities for beginners through advanced paddlers, and for excursions ranging from a few hours to multiday end-to-end journeys. Novices and families with children will find protected sections with flat water, particularly from Tonawanda to Lyons on the Erie Canal and along the Cayuga-Seneca Canal. More experience is needed to paddle river and lake sections where currents and wind can affect conditions.

If you are seeking a multiday adventure, plan a long weekend to traverse more of the waterway. You'll find canal amenity centers with restrooms, showers, and visitor information in many communities. Friendly staff or volunteers at these recreational hubs direct boaters, paddlers, cyclists, and other canal visitors to nearby services and local attractions. Camping is allowed at several designated Biker-Hiker-Boater campsites and at many locks, with permission from the lock operator.

Enjoy spectacular scenery and great paddling on the NYS Canalway Water Trail.

A State and National Treasure

Built between 1817 and 1825, the original Erie Canal traversed 363 miles from Albany to Buffalo. It was the longest artificial waterway and the greatest public works project in North America. The canal put New York on the map as the Empire State—the leader in population, industry, and economic strength. It transformed New York City into the nation's principal seaport and opened the interior of North America to settlement.

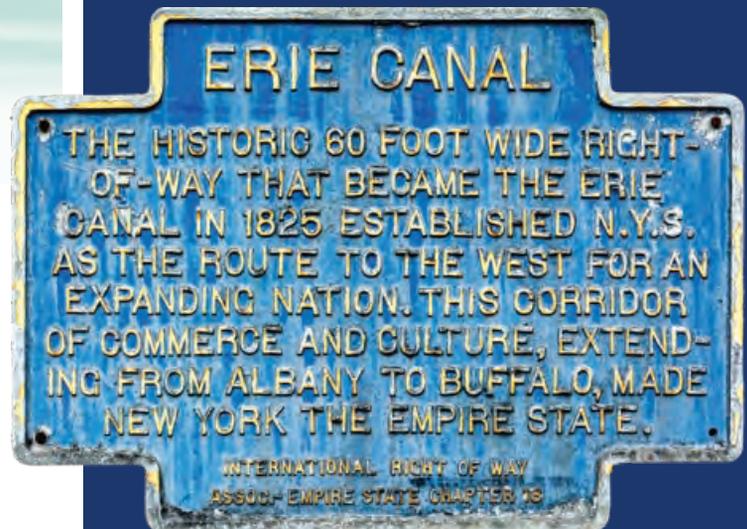


The opening of the first section of the Erie Canal, May 15, 1915.

The New York State Canal System, which includes the Erie, Champlain, Oswego, and Cayuga-Seneca canals, has been in continuous operation longer than any other constructed transportation system in

North America. Since 1825, the canals have been enlarged three times to accommodate larger boats and more traffic. The most recent enlargement, which took place in 1918, produced the system of interconnected canals and waterways that are still in use today.

The New York State Canal System's exceptional scenery, history, culture, and natural resources earned the 524-mile waterway and the communities along its shores Congressional designation as the Erie Canalway National Heritage Corridor in 2000. In 2016, the Canal System was designated a National Historic Landmark.

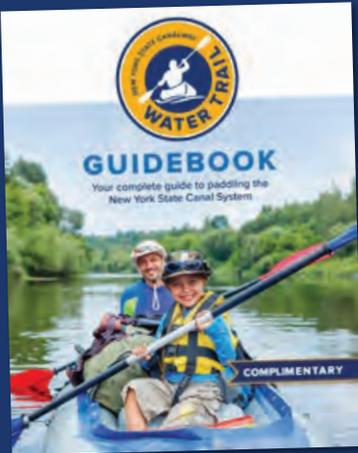


Paddling Resources

NYS CANALWAY WATER TRAIL WEBSITE

Find a wealth of paddling information and resources, including multiday itineraries and Best Bet Day Trips, and sign up for Erie Canalway's monthly Water Trail E-newsletter, at <https://eriecanalway.org>.

NEW YORK STATE CANALWAY WATER TRAIL GUIDEBOOK AND MAP SET



This mile-by-mile guide includes launch sites, paddler friendly facilities, and places of interest. The guidebook features how to go through a lock, plan a day trip or multi-day journey, and what you can see and do on and off the water. The set includes four water-resistant

maps. Order online at <https://eriecanalway.org/explore/watertrail/guidebook>. Note: There is a \$10 shipping and handling fee.

WATER TRAIL COMMUNITY

An active Facebook group with 2,400+ members is open to paddling enthusiasts interested in the NYS Canalway Water Trail. Members ask questions, post photos, share information, and meet others who share a passion for paddling. Go to <https://www.facebook.com/groups/NYSCanalwayWaterTrail>.

NYS CANALS MAP

Use this online map to find paddling access sites, attractions, amenities, parks, campsites, and much more along the New York State Canal System; visit <https://nycanalmap.com>.

NEW YORK STATE CANAL SYSTEM

Find information about the canals, Biker-Hiker-Boater campsites, and Notices to Mariners with the latest information about conditions on the water. Also find On the Canals Excursions, free paddling, cycling, and other recreational excursions offered throughout the year, at <https://canals.ny.gov>.

ADAPTIVE PADDLING

Adaptive and standard paddling rentals are available from the Erie Canal Boat Company, with locations in Fairport and Lockport. The company partners with Rochester Accessible Adventures to provide trained staff to ensure safe and enjoyable paddling excursions and events; visit <https://eriecanalboatcompany.com>.

Paddlers going from Buffalo to Albany on the Erie Canal typically plan for 2.5 to 3 weeks to make the 338-mile journey. This epic experience has been accomplished by kayak, canoe, stand-up paddleboard, and rowing scull, and an increasing number of “end-to-enders” paddle the route successfully each year.

Paddling Through a Lock

Paddling through locks is one of the special experiences of traveling along the canals. The locks are 310 feet long and 45 feet wide, with massive steel gates at either end. Lifts range from six feet to more than 40 feet. From the vantage point of a canoe or kayak, floating into this huge steel and cement chamber can be a bit daunting at first, but it is also exciting! Floating up or down as lock waters rise or empty is surprisingly gentle and takes about 15 to 20 minutes. Lock operators are on hand to recommend the safest place to position your boat, answer any questions you may have, and assist if needed.

Safety

Always wear a properly fitting personal flotation device (PFD) when paddling. New York State Navigation laws require use of PFDs between November 1 and May 1. In addition, a whistle, light, float plan, and wicking clothes are also good safety measures. Equally important is knowing your skill level.

Fishing

As a gateway to New York's waterways, the canals offer access to a wide range of fishing opportunities, from small feeder streams to larger lakes and rivers. You'll find public DEC Fishing Sites that also serve as launch sites along the entire New York State Canal System. Anglers also seek out areas near locks, where fish often congregate. Common catches include walleye, northern pike, small and largemouth bass, and carp. The New York State Canal Corporation schedules water releases in the fall to extend the fishing season in Western New York.

Bird Watching

Paddling and birding is a great combination, and the diversity of species along the canals will not disappoint. Migratory songbirds and waterfowl use the Canalway Corridor on their annual migrations, and many nest along its shores. Watch for dabbling and diving ducks, often with young in tow, swallows swooping and diving over the water, great blue herons stalking in the shallow margins, and eagles and osprey diving for fish. For the best paddling and birding experiences, head to the junction of the Erie and Cayuga-Seneca canals. Here, the waterway passes through the Montezuma National Wildlife Refuge, New York State's premier wetland complex for waterfowl and migratory birds.

Paddling Events

Participating in a paddling event is a great way to experience the canals and meet other paddlers. Watch for group events on the NYS Canalway Water Trail website and On the Canals excursions (see Resources sidebar). Mark your calendar for Paddle the Canal: On the Erie, on August 6, 2022. Offered by the Erie Canalway National Heritage Corridor, this guided 5.5-mile trip will launch from Baldwinsville and head east on the Erie Canal to Willow Bay on Onondaga Lake in Syracuse. Registration opens in May.

Water Trail Stewardship

With an increase in use and awareness, caring for the NYS Canalway Water Trail is vital for the continued enjoyment of all users. Do your part by always carrying out what you carry in and properly disposing of all trash. Prevent the spread of invasive species by inspecting and cleaning your boat before putting it in the water, especially if you paddle in a variety of waterbodies.

In 2021, the Erie Canalway National Heritage Corridor launched a new Water Trail Stewardship Program. Volunteer stewards help care for the waterway and launch sites, serve as the “eyes and ears” on the trail, and act as friendly ambassadors with visitors. Stewards spend four to six hours each month on the trails from May 1 to October 31. Stewardship is open to individuals, families, and groups, and volunteers must be at least 12 years old with adult supervision. If you would like to become involved, learn more at www.eriecanalway.org/watertrail.

The New York State Canal System opens on May 20, 2022, so paddling season will soon be upon us. Enjoy the NYS Canalway Water Trail this summer!



Families find the calm waters of the Erie Canal in Western New York easy to navigate.

Mona Kulkarni Caron (mona_caron@partner.nps.gov) is a program manager with the Erie Canalway National Heritage Corridor, which oversees the development and promotion of the NYS Canalway Water Trail for paddlers. The Erie Canalway National Heritage Corridor preserves New York’s extraordinary canal heritage, promotes the Corridor as a world-class tourism destination, and fosters vibrant communities connected by more than 500 miles of historic waterway.

Join Efforts to Prevent the Spread of an Invasive Fish

In March 2022, DEC and the New York State Canal Corporation launched a comprehensive effort to combat the potential spread of the round goby, an aquatic invasive fish. Research shows that these invasive species are primarily spread from waterbody to waterbody by recreational watercraft, equipment, and bait. Working with partners, DEC and Canals will develop a rapid response plan that will take effect before the opening of the Canal system on May 20. The agencies are working with partners to implement new risk reduction strategies, potential mitigation measures, and provide enhanced public education so all New Yorkers can help prevent the spread of invasives.

If you catch a round goby, take multiple photographs from different angles, and record the date and location of capture. Email photographs and information to: isinfo@dec.ny.gov, which will help DEC continue to monitor this invasive fish.



Are *Dinosaurs* Making a Comeback?



DEC Helping to
Recover Sturgeon
in New York

BY TONY COLYER-PENDAS, AMANDA HIGGS, LISA HOLST,
GREGG KENNEY, KIM MCKOWN, RICH PENDLETON, AND LISA SULLIVAN

Sturgeon are found in fossil records as far back as 150 million years, and they survived the mass extinction event that wiped out the dinosaurs. However, overfishing and habitat loss have led to severe declines in their numbers worldwide. But now, there is hope for the resurgence of these ancient fish.

New York State is home to three different sturgeon species: Atlantic sturgeon (*Acipenser oxyrinchus*), lake sturgeon (*Acipenser fulvescens*), and shortnose sturgeon (*Acipenser brevirostrum*). A combination of factors and actions have resulted in significant declines in the numbers of all three sturgeon species.

During the 1800s and early 1900s, there was a great demand for sturgeon eggs (caviar) and smoked flesh of the fish that resulted in

overexploitation. Construction of dams, for hydroelectric and navigation purposes, cut off sturgeon from their historic upriver spawning grounds. And decades of pollution further hindered recovery in both the Great Lakes and Hudson River.

By the early twentieth century, all three species of New York's sturgeon populations collapsed, and they have been slow to recover. Yet, due to the combined efforts of the New York State Department of Environmental Conservation (DEC), the U.S. Fish and Wildlife Service, the National Marine Fisheries Service (NMFS), the Atlantic States Marine Fisheries Commission (ASMFC), and other partners, recent surveys indicate that these amazing and prehistoric fish may be recovering.



Top: Staff removing an Atlantic sturgeon from the net during sampling. Bottom: An Atlantic sturgeon is temporarily held before being measured, weighed, and tagged.

Atlantic sturgeon

Atlantic sturgeon are the largest species of New York's sturgeon, and one of the largest and longest-lived anadromous fish in North America— anadromous fish spend many years in the ocean until they mature, and then migrate to the freshwater portions of rivers to spawn. Adult Atlantic sturgeon returning to spawn in the Hudson River can weigh more than 300 pounds and reach eight to nine feet in length. In 2019, an Atlantic sturgeon in the Hudson River was estimated to be more than 14 feet long and weigh 800 pounds.

These fish were once plentiful in the Hudson River, until overfishing, pollution, and blockage of access to spawning areas drastically depleted the population. Due to declines in Atlantic sturgeon, New York State established a moratorium on harvest and landings in 1996.



Top: Staff use ropes to lift a sturgeon into the boat to measure, weigh, and tag it. **Bottom:** Before the sturgeon is tagged, it is scanned for any previous tags, to identify the fish.

In 1998, ASMFC issued a coastwide moratorium on the harvest of Atlantic sturgeon to promote species recovery and allow the spawning stock to rebuild. The moratorium remains in effect through at least 2038. In 2012, the National Oceanic Atmospheric Administration (NOAA) listed Atlantic sturgeon in the New York bight as federally Endangered.

The 40-year moratorium is due to the slow maturation of Atlantic sturgeon, which can take 12 years for males and 15 years for females before they are ready to return to the Hudson River to spawn. DEC's Division of Marine Resources, Hudson River Fisheries Unit, in cooperation with Cornell University, have been working together to effectively monitor and protect Atlantic sturgeon in both its marine and freshwater habitats. In the

Hudson River, DEC conducts annual monitoring programs for both juvenile and adult Atlantic sturgeon to inform coastwide management and to track recovery.

For the juveniles, long-term data indicate a significant increase in catch rates since monitoring began—the average catch rate in recent years (2012 to 2019) is two times higher than that observed during the first eight years (2004 to 2011) of monitoring. This increase suggests the effects of the moratorium are benefiting this slow maturing species, and offspring of protected-year classes are returning to produce new offspring of their own.

Newer technologies, such as high-resolution side-scan sonar and acoustic telemetry, provided enhanced population estimates. Acoustic telemetry uses receivers to detect signals emitted from tagged animals, whereas side-scan sonar uses sound to create an image of the

river floor and objects in the water column, which allows researchers to count individual fish. These technologies were merged to estimate the number of fish in New York's spawning areas. The adult estimate combined with the increasing juvenile catches indicate that the Hudson River may hold one of the largest present-day populations of Atlantic sturgeon, yet their numbers on the east coast remain severely depleted.

Lake sturgeon

Lake sturgeon is the largest completely freshwater fish species in New York State, with a lifespan of 50 to 60 years for males, and up to 100 to 150 years for females. Mature adults average between four to five feet in length and 20 to 60 pounds in weight, although they can grow to seven feet long and weigh more than 300 pounds. These sturgeon were formerly abundant from southern

A juvenile lake sturgeon from DEC's Oneida Fish Hatchery is ready for stocking.



Canada to the southeastern U.S., but are currently listed as Threatened in many states, including New York.

A combination of stocking, habitat enhancement, and natural recovery has resulted in slow and steady progress in reestablishing populations of lake sturgeon throughout their historic range in New York State. A restoration stocking program for the species began in 1993, and recovery plans were developed in 1994 and revised in 2000, 2005, and 2018.

Since 1993, more than 275,000 lake sturgeon have been stocked into New York waters. From 1995 to 2004, DEC stocked lake sturgeon in 13 locations. Populations were established in seven waters: the Genesee River, Cayuga Lake, Oneida Lake, the Oswegatchie River, Black Lake, the Raquette River, and the



This lake sturgeon that washed up on a Lake Erie beach in the late 1980s was over 6 feet long.

St. Regis River. In 2021, DEC and the U.S. Fish and Wildlife Service stocked lake sturgeon fingerlings in 10 locations across New York State.

Currently, DEC recovery efforts include stocking thousands of four-month-old lake sturgeon reared from eggs taken from the St. Lawrence River. These stocked fish have survived in sufficient numbers that we are now detecting their own offspring in a few places. Like other sturgeon species, lake sturgeon females are thought to spawn every four to nine years, making recovery slow. Ongoing studies are finding that lake sturgeon numbers seem to be stable or increasing throughout their current range.

DEC recently achieved a milestone with the collection of a spawning female lake sturgeon in the lower Genesee River for the first time in more than 50 years. On May 25, 2021, Dr. Dawn Dittman and the field crew from the U.S. Geological Survey's Tunison Laboratory of Aquatic Science netted a 61-inch, nearly 70-pound female lake sturgeon. DEC began stocking lake sturgeon into the Lower Genesee River in 2003 as part of the State's efforts to support the species' recovery. DEC's investments and efforts to stock and clean up the Genesee River Watershed have started to yield results.

Lake sturgeon have been re-established across the Great Lakes and their tributaries in New York, and current stocking is seeking to enhance the genetic diversity of the stocked populations. Natural recovery is also being monitored in Lake Erie and the lower Niagara River. DEC hopes to gather enough evidence of recovery of sufficient self-sustaining populations of lake

sturgeon to initiate the removal of the fish from the list of Threatened species in New York by 2024.

Shortnose sturgeon

Shortnose sturgeon are the smallest of New York's sturgeons, rarely exceeding 3.5 feet in length and 14 pounds in weight. It is resident year-round in the Hudson River and is amphidromous, moving between saltwater and freshwater for purposes other than breeding. In New York State, these fish migrate up the Hudson River and can be found from the southern tip of Manhattan to their spawning areas between Coxsackie and the Federal Dam at Troy.

Shortnose sturgeon live a long time; the oldest known female reached 67 years of age and the oldest known male was 32 years old. Spawning is not a yearly event for most shortnose sturgeon, as males spawn every other year and females every third year. The shortnose sturgeon was the first fish listed as Endangered federally, with enactment of the 1966 Endangered Species Preservation Act, which later became the 1973 Endangered Species Act. It is also listed as Endangered under New York State's Environmental Conservation Law.

Soon after being listed as Endangered, researchers conducted a population estimate for Hudson River shortnose sturgeon to develop recommendations for managing the recovery of this fish. A second population study, conducted in the 1990s, indicated a substantial increase in the spawning population compared to an earlier study. The Hudson River shortnose sturgeon population may now be the largest in the world. However, this assessment is based on research that is several decades old, and new studies are needed to support the management and recovery actions outlined in the 1998 recovery plan developed by NMFS.



Top left: A shortnose sturgeon is caught for monitoring near its overwintering area on the Hudson River. Top right: Staff quickly remove the shortnose from the nets, measure the fish and release them. Bottom: Staff confirm the species and size of a fish that was identified during a side scan sonar survey.

In the spring of 2021, academic, federal, and state research scientists embarked on a large-scale project that will provide an updated estimate of the Hudson River’s shortnose sturgeon population using similar methods as the adult Atlantic sturgeon estimate. Last April and May, 50 adult shortnose sturgeon were netted north of Coxsackie (Greene County) and surgically implanted with long-lived (10-year) acoustic transmitters. These transmitters will be detected by an array of acoustic receivers as the fish move throughout the Hudson River Estuary. The receivers will store the unique tag number and the date and time that a fish swims past a receiver (like E Z Pass for sturgeon).

This past winter, fisheries staff used side-scan sonar to image and count individual shortnose sturgeon in overwintering areas. These estimates

will be mathematically merged with the river-wide telemetry data to estimate the number of individual fish in the overwintering areas and the Hudson River. This provides a robust and relatively low-cost means to track recovery of America’s first endangered fish and will help determine if the population is continuing to increase since the last estimate conducted in the 1990s.

Sturgeon Today

Most sturgeon are protected and regulated to help maintain or increase their numbers. Targeting these fish while angling is prohibited. Even though all species of sturgeon are protected by state and/or federal laws, they still face risks to recovery, including being captured as bycatch (see call out box), degraded water quality, and lost access to spawning areas from dams.

Since sturgeon are such slow growing, long-lived fish, it may take many years before we see their populations resembling the numbers of the past. The public can help with sturgeon recovery and management efforts by reporting any washed up sturgeon to DEC’s Marine Life Incident Report online survey, which can be found on DEC’s Marine Life webpage at <https://www.dec.ny.gov/animals/117322.html>.

Tony Colyer-Pendas is the Assistant Editor of the *Conservationist*; Lisa Holst is the Rare and Endangered Fish Unit Leader of DEC’s Division of Fish and Wildlife; Amanda Higgs and Rich Pendleton are Research Support Specialists with the Hudson River Estuary Program/Cornell University/DEC Division of Marine Resources; and Gregg Kenney, Kim McKown, and Lisa Sullivan are biologists with DEC’s Division of Marine Resources.

Threats to Sturgeon

While sturgeon are showing signs of recovery, they are still suffering human-induced mortality that is likely slowing the pace of their return. Bycatch (accidental capture) and ship strikes are two of the primary threats that can hinder recovery efforts. Researchers and managers are actively seeking ways to reduce these sources of mortality.



CONNECTIONS

with *Old Rods & Reels*

BY CHERYL O'BRIEN



Vom Hofe reel with Philip Schuyler engraved

My father always enjoyed fishing, especially fly fishing. I am so thankful that he shared his passions for fishing and the outdoors with our family. We enjoyed many outings together in the Catskill and Adirondack Mountains and the Hudson River Valley.

Dad grew up during the Great Depression on a farm in Columbia County. He learned to save everything for possible reuse or repair, so it was quite an undertaking when we cleaned out my parents' home. Tucked away on a high shelf in a corner, was a box labeled "old reels." I expected to find an assortment of

broken reels and replacement parts, but was stunned when I opened the box and saw five old fishing reels in great condition dating back to the late 1800s. I also found a collection of old rods neatly

tucked away in the ceiling rafters, still wrapped in their original cloth cases. The vintage reels and rods were beautifully made works of art.

The quality of craftsmanship and materials used to make the vintage rods, reels, and cases was impressive. I started to do some research and learned that the early fishing tackle included rods and reels made by Edward vom Hofe and Hiram L. Leonard, both well-respected early manufacturers. I learned that there were many skilled early rod and reel makers in New York State, and I wanted to know more about these early makers, to find out what made their rods and reels so sought after by anglers during the late 1800s and early 1900s.

Fishing tackle has evolved significantly over the years. The early makers led the way by experimenting with different materials, lengths of rods, reel designs, and other improvements to satisfy the practical needs of anglers. Many anglers of those early days were very selective of their equipment, just like the fishing enthusiasts of today. Some serious anglers had their names (or initials) and a date engraved on their reels and other equipment, which, along with the patent date labels, helped to accurately date the tackle.

Early tackle maker Edward vom Hofe established his business in Brooklyn in 1867, and his father and brother operated their own successful tackle business nearby. Edward vom Hofe was highly respected for his skilled craftsmanship. His early reels were usually made from German silver. One of my father's early vom Hofe reels included a patent date of November 26, 1867, and "Philip Schuyler, 1877" is beautifully engraved in cursive. Vom Hofe was also known for his expertise in developing hard rubber side plates, often with German silver side bands, for use in his reels.

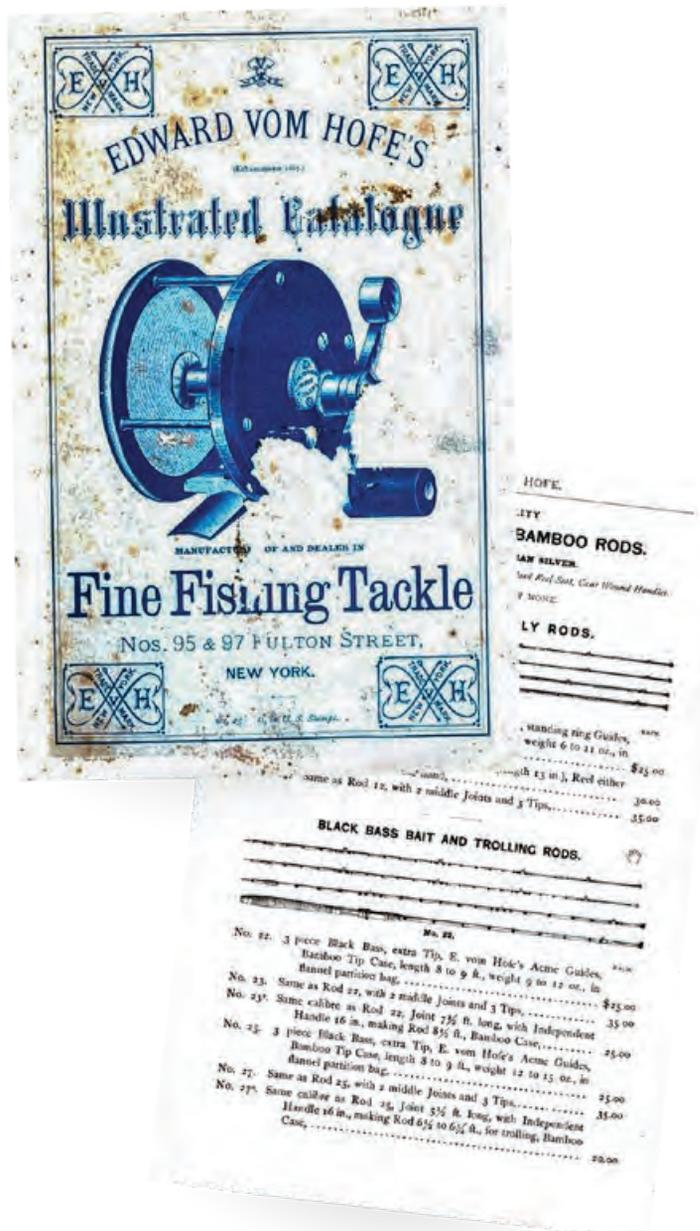
Edward vom Hofe, along with other reel makers, developed improved drag systems and click mechanisms. In 1879, vom Hofe received a patent for a tension device, and later he designed more advanced drag systems. His 1883 patent pertained to a click device that was also used in his fly reels. The click, operated by a button, became the standard of the industry. Other patents and improvements followed, and Vom Hofe even made custom reels.

Vom Hofe was also a well-respected rod maker. After the Civil War, fly fishing and the use of split bamboo rods became increasingly popular. Rods were made with split pieces of bamboo that were planed and glued together to provide better strength, resiliency, and lighter weight.

An early catalog of vom Hofe fishing tackle, dated 1889, provides details and prices of his rods and relates his sincere interest in satisfying his customers. He wrote: *"I would particularly call your attention to the superior quality of the materials used in goods of my manufacture, also to their thorough workmanship. My Stock of Fishing*



Tackle box with vom Hofe reels



1889 vom Hofe catalog



Vom Hofe seven strip rod

Tackle will be found as complete as a careful study of the needs of Anglers can make it, and I am constantly adding all novelties of acknowledged merit.”

One rod design that vom Hofe featured in his 1889 catalog, but later discontinued, was a septangular (seven strip) split bamboo rod. My father’s collection included a septangular rod. Vom Hofe created the seven strip rod during the 1870s, when other well-known manufacturers exclusively built the standard six strip rods. He claimed the septangular split bamboo rod was superior because the seven strips would create a “more perfect round rod... thus making the spring uniform all around.” However, eventually, vom Hofe returned to primarily manufacturing conventional hexagonal split bamboo rods.

After Edward vom Hofe passed away in 1920, his sons continued to operate the business until it was sold in 1939. However, many vom Hofe reels are still being copied by modern reel makers.

A rod made by Hiram Leonard was also included in my father’s collection. Leonard designed and constructed a power beveler in 1876, which made it possible to increase production of bamboo strips, and helped lead the way for mass production of split bamboo rods.

In 1879, William Mills & Son became the sole agents of the rods made by Leonard. Shortly after, Leonard introduced his new rod model, the Catskill. It was designed to be lightweight, weighing only 5 ounces and measuring 10 feet in length. He also made a slightly shorter nine-and-a-half-foot rod.

Catskill rods were first made in Bangor, Maine (for two years) before Leonard moved his business to Central Valley in New York. Leonard and other family members continued to make design modifications, and Leonard-Mills Catskill rods evolved with lighter and shorter versions.

Edward vom Hofe and Hiram Leonard are just two early makers of quality fishing tackle who operated in New York. Many of the basic inventions by early manufacturers are still used. The modifications and improvements they made helped pave the way for the developments utilized in today’s fishing tackle.

I am still learning about early fishing tackle, which has led to many new personal connections. I contacted fishing tackle experts and organizations such as the American Museum of Fly Fishing, and reviewed vintage photos and information from the New York State Museum and New York State Archives. These connections helped me better understand and appreciate the ingenuity of the early tackle manufacturers, the challenges they faced as they strove to improve their products, and the history of fishing and fishing tackle.

The basic needs of today’s anglers are the same as yesterday—to enjoy the challenges and experiences of fishing, with the best equipment available. As I look through my father’s collection, I feel a close connection with the anglers who used the early tackle. I am impressed by the dedication, innovation, and talent of the early makers of fishing tackle and how the changes they made evolved into our modern-day equipment.

Cheryl O’Brien is retired from DEC, where she worked in Region 3 and in the Central Office as a Senior Environmental Analyst. She and her husband, Bill, also a former DEC employee, now live in Wyoming.

Photos by **Bill Sincavage**, Jakey’s Fork Photography



Rods, reels, and canvas and wood cases



On Patrol

Real stories from Environmental Conservation Police Officers and Forest Rangers in the field

Owl Help You—Erie County



On January 30, ECO Mathis responded to a call from a citizen concerned about the welfare of

an owl in Bowmansville. The owl, perched near the entrance of a busy gas station, was unphased by customers passing within feet of its perch. ECO Mathis arrived at the gas station and determined the owl was likely injured after being struck by a vehicle. The ECO secured the Eastern screech-owl and transported it to the Erie County SPCA Wildlife Department for rehabilitation.

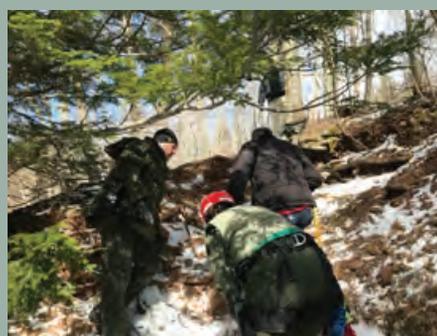
State Land Use Enforcement—Otsego County

While patrolling Susquehanna State Forest, Forest Ranger Petit discovered that 21 trees had been cut down, and noticed fresh-cut stumps and ATV tracks leading from the stumps to an adjacent private property. After a month of attempting to make contact, Ranger Petit met with the neighbor who admitted to cutting and removing the trees, using an ATV to transport the wood to his property, and storing personal property on State land. The property owner was issued multiple tickets and agreed to relocate the ATV in a timely manner.



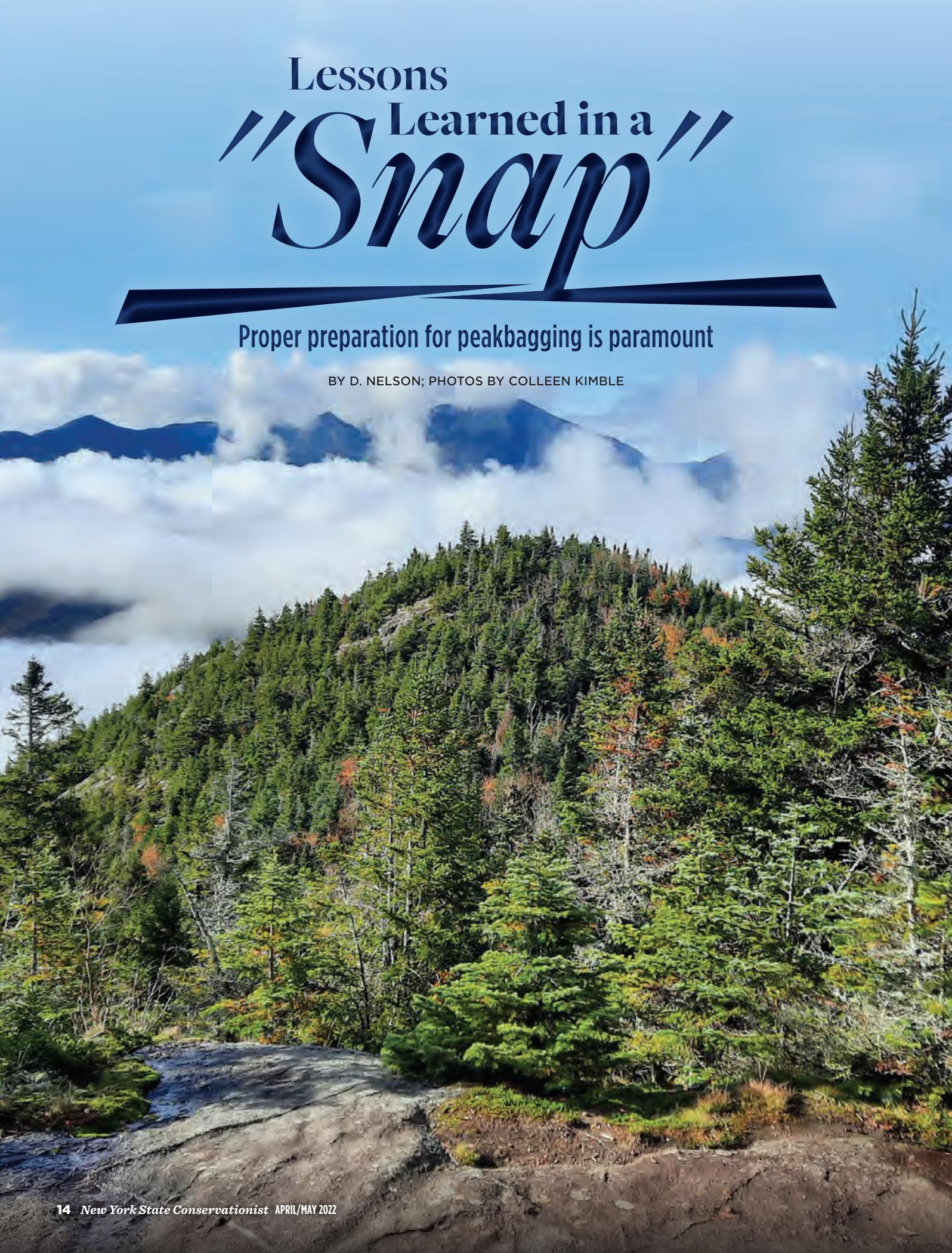
2021 Numbers

In 2021, DEC Forest Rangers conducted 426 search and rescue missions, extinguished wildfires, participated in prescribed fires that served to rejuvenate acres of land, and worked on cases that resulted in thousands of tickets or arrests. Also in 2021, 282 Environmental Conservation Police Officers and Investigators across the state responded to 26,207 calls and worked on cases that resulted in 11,562 tickets or arrests for crimes such as deer poaching, solid waste dumping, illegal mining, the black-market pet trade, and emissions violations.



Wildland Rescue—Greene County

On February 20, Forest Ranger Fox and Environmental Conservation Police Officers (ECOs) Lt. Glorioso and Palmateer responded to a report of a person stuck on the ice approximately seven feet from the edge of Kaaterskill Falls. After locating the subject, ECO Palmateer anchored his throw-bag to a tree, and threw a rope to the subject to prevent him from sliding over the edge. Ranger Fox set up a static line, tied an improvised seat harness to the 56-year-old from New York City, and secured him to the line. Ranger Fox then helped the man work his way back to safety. After providing traction devices, Ranger Fox, Lt. Glorioso, ECO Palmateer, and the Greene County Sheriff's Office helped the man back to his vehicle at the trailhead.



Lessons
Learned in a
"Snap"

Proper preparation for peakbagging is paramount

BY D. NELSON; PHOTOS BY COLLEEN KIMBLE

Wednesday, October 6, 2021 began like any beautiful autumn day in the central Adirondacks. Colleen Kimble had picked this day based on the weather forecast: warm for October and clear skies. No stranger to solo hiking, Colleen had set an ambitious goal, to summit Giant and Rocky Peak Ridge and return the same day.

An experienced hiker, Colleen left instructions with her husband: if she wasn't home by 10:00 p.m., he should call for help. It seemed a bit superfluous at the time, but as a hunter safety instructor for DEC and an avid outdoorswoman, Colleen knew the importance of safe practices.

Colleen picked a perfect day to head to the summit.



leg. "Oh snap," she thought, "that's not good." When her tumble ended, she collected herself, and her thoughts. She gave it a minute, glad that no one had witnessed her awkward misstep. Her left leg hurt, but not too bad. Though she was on a steep section, she was near the end of the trail. She just needed to get to her car. She tried to stand, but her leg wouldn't hold any weight. She rested and tried again with her poles. Nope. That wasn't going to work. She rearranged herself and tried to crawl forward down the rocks. "I can do this," the strong-willed woman thought. Again, nope. Her dangling foot hurt whenever it



Like many experienced hikers, Colleen loves the beauty—and challenge—of the Adirondacks.

Time seemed to slow as she fell forward. The rocks weren't wet; why was she falling? She saw and heard her poles clattering on rocks ahead of her. She felt a break in her leg. "Oh snap," she thought, "that's not good."

"This time will be no different than any other," she casually thought to herself.

Colleen's hiking pack is complete. She carries extra clothing, wicking layers, a first aid kit, multiple lighting sources, her trusty cell phone, an extra battery pack, food, and water. She plans ahead, and it shows.

Colleen left her Saratoga Springs home early and drove to the Chapel Pond parking lot. It was mid-week, so there would be fewer hikers and more freedom than on a weekend. The hike up was as expected: difficult, replete with boulder scrambles and quite steep in places, but rewarding. And Colleen is tough: she accepts challenges willingly and dismisses talk of hardships. Her pictures from the summit show the

beautiful Adirondack landscape and the rewards of the effort of hiking to the top of an Adirondack High Peak.

Later that day, the descent was routine, but light was waning. Near the end of her hike, she passed two independent hikers going up. Weird, she thought. Maybe they were just going to the Washbowl or the Nubble. But no matter, a friendly greeting was all that transpired between them.

As her hike was drawing to a close, only a third of a mile up the trail from the parking lot, Colleen slipped on a large rock. Time seemed to slow as she fell forward. The rocks weren't wet; why was she falling? She saw and heard her poles clattering on rocks ahead of her. She felt a break in her

bumped into something. "Maybe a crab walk, with my foot in the air," she thought. After about 30 yards, Colleen realized she could go no farther. She was stuck right where she was.

She tried her phone, but there was no service. By now, darkness was beginning to set in. Colleen collected her thoughts: it was 6:50 p.m.; help would come, but she would have to wait for hours. "Better get comfortable," she thought. She settled herself mid-trail and blew a couple of times on her plastic whistle. Colleen thought her whistle sounded a lot like a distressed rabbit/coyote predator call, so she decided that was enough of that. Instead, she began to wait.

And wait.

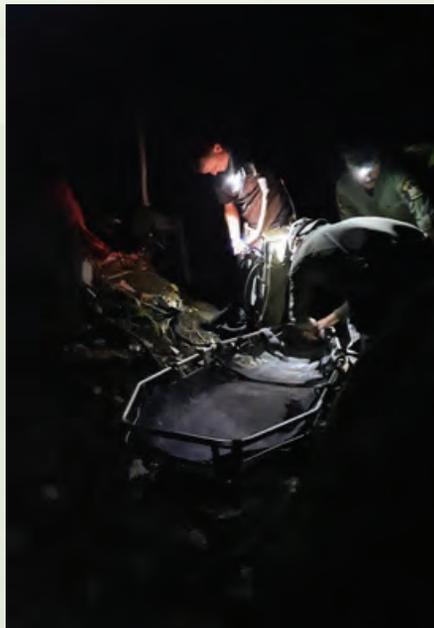
She rearranged herself and tried to crawl forward down the rocks. “I can do this,” the strong-willed woman thought.

Realizing she would probably be there a while, Colleen made several wise choices. Though it wasn't really cold for this time of year, Colleen knew how quickly hypothermia can set in, even in moderate autumn temperatures. She changed into dry clothes, put on a neck gaiter as a hat, put on her raincoat, covered herself with an emergency blanket, and donned her gloves. She sat on her rain pants to keep off the ground. She put some hand warmers in her clothing and turned on her headlamp. She wasn't in shock; at least she didn't think so. She played some games on her phone to distract herself and pass the time, then decided she might want to save her battery for the light instead. At times she switched off her headlamp, and it was dark. Verrry dark. She could see stars through the forest branches overhead. She never panicked, but at times felt vulnerable because she couldn't move much. She switched her light back on, broke a glow stick, and attached it to an overhead branch.

After a while, one of the hikers she had passed earlier luckily came back down the trail. Colleen calmly described her situation (did I mention she's tough?) and asked if he would kindly send for help when he found cell service. As the hiker was driving toward town, he was pulled over by a NYS Police Trooper for a burned-out headlight. Serendipity for both! The hiker explained Colleen's situation; the trooper let him go with a warning and drove to the trailhead to help Colleen.



The rescue crew applied a splint to Colleen's leg and brought her down the trail, which took an hour.



Soon the trooper was hiking up the trail, calling out to Colleen. She was relieved; things were finally starting to look up. Knowing she had a lower leg injury, the trooper had brought a rigid foam splint. Colleen's leg pain was relieved by the splint, but it still couldn't hold any weight. The trooper radioed dispatch for DEC Forest Rangers. "Oh goodie," thought Colleen, a DEC biologist. "I'll have to be rescued by my co-workers. There's no escaping it now!"

When the four Rangers arrived at 10:00 p.m., Colleen was apologetic. The last thing she wanted was to make these colleagues give up their evening to help her out of the woods. Nonsense, they responded, this is what we do. The Rangers worked efficiently as a team, assessing Colleen's injury, preparing a carrying stretcher (called a litter), and strapping her in tightly for the trip down the trail. Though this was Colleen's first time needing assistance, it wasn't the Rangers first rodeo.

Colleen describes the trip down the trail as "harrowing." Foot by foot, the five rescuers slowly made their way down boulders, and around rock scrambles, dodging tree roots and branches as they went. A little more than an hour later, Colleen was at the parking lot. The rescuers helped her into her car, and she drove herself



Foot by foot, the five rescuers slowly made their way down boulders, and around rock scrambles, dodging tree roots and branches as they went.

(did I mention she's tough?) to the hospital near her hometown, arriving there at around 2:00 a.m. on Thursday. Her husband met her there and helped her into the emergency room.

X-rays showed significant fractures of both her tibia and fibula. Colleen was sent home Thursday around 9:00 a.m. with surgery scheduled for Friday. Colleen was hungry; she hadn't eaten much since a snack on the trail the afternoon before.

Colleen's surgery was successful: she now sports nine screws and a plate in her lower leg. She used a scooter for several weeks, graduated to crutches, and is back on her own two feet. Though she is still rehabilitating and regaining strength, she was able to do a little deer hunting this fall from a ground blind only several weeks post-surgery. She's looking forward to hiking again, in the spring. Finishing the Lake George 12 is her next goal. Importantly, when she goes hiking again, she'll do some things differently.

Lessons Learned

The most important lesson that was reaffirmed was to have a plan and stick to it, as Colleen did. Changing plans during an outing can confuse those expecting you and make rescues more difficult. In the future, she will give her husband more details about her plans.

Because you can't rely on your cell phone in remote country, she's considering buying a personal locator beacon. Beacons connect to satellites rather than relying on cell service, which is spotty in lower elevations of the Adirondacks. Though a beacon is costly, she wonders: "What if I had been lost, or hit my head in the fall?"

Colleen's leg injury was serious, but it didn't prevent her from hunting last fall.



The rescuers helped her into her car, and she drove herself to the hospital near her hometown, arriving there at around 2:00 a.m. on Thursday.

A beacon sends out exact coordinates to locate someone easily, even off-trail. And while she had waterproof matches, nothing within reach was dry when she was injured and rendered immobile. In the future, Colleen will carry some Vaseline-coated cotton balls, a wax candle, moss, or other tinder. She'll bring a mat to sit on, and a small packable down quilt. She also upgraded her whistle; she now has one that can be heard for a much greater distance, doesn't sound like a dying rabbit, and won't attract every bear and coyote in the area.

In hindsight, Colleen is grateful to the hiker, trooper, and Rangers for helping her out of the woods, and the medical team that fixed her fractured leg. In turn, they are glad she was so well prepared, making the rescue as simple as possible. She hopes that other hikers might learn lessons from her experience: like the importance of having an itinerary and rescue plan if you hike alone, warm clothing, lights, extra batteries, and staying calm. Though she didn't plan to spend the night in the woods, she was prepared to do so if necessary.

She's also happy that while her rescue made the Forest Ranger monthly highlights at work and over the internet, rescued parties remain anonymous. That is, until someone shares their story.

Dave Nelson, former editor of *Conservationist*, is the Director of Outreach & Promotion for DEC's Bureau of Fish and Wildlife.

Five Rivers Environmental Education Center

50
YEARS

Connecting
New Yorkers
with Wildlife

BY DREW HOPKINS;
PHOTOS BY SCOTT STONER
AND DENISE HACKERT-STONER

Five Rivers Environmental Education Center (Five Rivers) and its community support organization, Friends of Five Rivers, are both celebrating their 50th anniversaries this year. For 50 years, they have been providing educational opportunities and bringing people closer to nature. Today, tens of thousands of visitors annually enjoy this gem, either as members of the public or groups participating in a wide variety of educational programming just 20 minutes from downtown Albany. Five Rivers has 10 miles of trails crossing its approximately 480 acres of stream, wetland, field, and forest habitats.

Beautiful grounds and abundant wildlife provide the foundation for enjoyment of Five Rivers, and the new (2017) visitor center is a great place to start. And you don't need to go far from the visitor center to enjoy the varied habitats or experience its wildlife.

Coming for a Visit

Grounds are open sunrise to sunset, 365 days a year. The visitor center is open Monday through Saturday, 9:00 a.m. to 4:30 p.m.; closed Sundays and state holidays. Pavilions are available on a first come, first served basis. Learn more by contacting the visitor center at (518) 475-0291, or email 5rivers@dec.ny.gov, or visit our webpage at <https://www.dec.ny.gov/education/1835.html>. You can also visit the Friends of Five Rivers' website at <https://friendsoffiverivers.org>.



Yellow-rumped Warbler

This well-named yellow-rumped warbler is one of 23 warbler species regularly admired among forest trees and wetland edges.



Gray Tree Frog

Hiding from the sun and predators, this tree frog has chosen the inside of a trail map box. These well-camouflaged, round-toed frogs are more often heard calling from up in trees than seen.



Eastern Bluebird

Five Rivers has more than 50 bluebird boxes maintained by a group of dedicated volunteers and staff. This New York State symbol can be easily spotted from the trails skirting many Five Rivers' fields.



Monarch Caterpillar

As one of many ongoing citizen science projects, Five Rivers staff and volunteers have been monitoring monarch butterfly populations for years. This caterpillar is about 2,000 times larger than it was two weeks prior to this photo being taken!



American Toad

Spring is announced loud and clear by male eastern American toads seeking females. Likewise, many visitors enjoy seeking the singing toads.



Hoverfly

Small wildlife can be just as intriguing as large. This fly's wings ripple with an everchanging rainbow, while its wasp-like body pattern helps keep birds and other predators at bay.



Green Heron

These strikingly beautiful birds (seen here with a sunfish) are master hunters, and can be found stalking prey in all of Five Rivers' wetlands.



Great Blue Heron

Visitors at the new picnic pavilion were joined by this great blue heron who had just captured a garter snake for lunch.



River Otter

Curious and social, otters are favorite subjects of wildlife photographers.



Eastern Cottontail

One of our most commonly seen mammals, cottontails delight visitors of all ages.



Northern Cardinal

Believe it or not, this picture was taken through the window at the center's bird feeding area the exact moment a large wet snowflake hit a male northern cardinal's beak.



Jones Barn in Winter

Winter snows are special times at Five Rivers. The once farmed fields are now home to deer, coyotes, and other wildlife.



House Wren

It takes speed and agility to catch butterflies for dinner, and this house wren clearly has both.



Cicada Killer Wasp

These fascinating wasps, which can grow up to two inches in length, are best observed by sitting on one of the benches near the visitor center. They are sometimes spotted carrying cicadas to their underground burrows.



Canada Goose

Muskrat lodges are common nesting sites for Canada geese. Geese were raised at the Delmar Experimental Game Farm, operated by DEC's predecessor, the New York State Conservation Department, before the environmental education center was established at the property.



Wood Duck Marsh in autumn

Summer's greenery turns to a mixture of colors in autumn. Ponds and wetlands are just two of the many habitats encountered on a short walk from the visitor center. These habitats are important teaching areas for Five Rivers educators.



Red-Tailed Hawk

You can feel the concentration in its gaze. With more than 100 acres of grasslands at Five Rivers, red-tailed hawks and other open space birds delight school groups learning about bird adaptations.



Beaver

North America's largest rodents are sometimes spotted in the evening. Not surprisingly, Beaver Tree Trail around Beaver Pond has extensive evidence of their activity.



Hummingbird Moth

"Sparkling jewels" has been used to describe these hummingbird mimics. Late summer brings flocks of these energetic clearwing moths to the native flower garden outside the visitor center, offering visitors a close-up view. Like their namesakes, these moths can fly in any direction and rely on nectar they gather using their long proboscis.



Eastern Screech Owl

One recent wildlife celebrity, this eight-inch-tall owl, delighted hundreds of visitors and schoolchildren by "hiding" in a tree next to the Woodlot Trail.



Honeybee

It only takes a few minutes to understand how the phrase "busy as a bee" came about. She will bring back the balls of pollen she has collected on her hind legs to feed the other members of her hive.

LIVING SHORELINES FIND BALANCE BY WORKING WITH NATURE

BY MOLLY FARRELL

People have always been drawn to water, and many can likely visualize their favorite stretch of shoreline. Perhaps you are one of them. But have you ever thought about what drew you to the water's edge in the first place? What do you enjoy about being there? What sites, smells, sounds, and textures come to mind when you think about your favorite shoreline?

Is it the willow trees hanging low over the water, or the herons hunting fish and enjoying the water cooled by the willow's shadow? Are you a birder who enjoys watching an osprey, eagle, or hawk soaring high in the sky? Or a botanist who enjoys trekking across a wetland in search of wildflowers? Are you drawn to sandy beaches and the feel of sand between your toes? Or do you see yourself sitting on a bulkhead or dock, dangling your feet in the water on a warm summer day?

Nancy Martel



Vance Shores, Lake Ontario

The answers will vary depending on the type of shoreline you are imagining. But one constant remains: a healthy shoreline is a noisy, dynamic place, always shifting and changing, teeming with life. A shoreline is not meant to be stationary.

For well over 100 years, we have imposed our own designs and purposes on natural shoreline dynamics, but that approach has proven unsustainable, particularly in the wake of climate change. Traditional hard approaches to shoreline development (rock revetments, concrete walls, bulkheads, or breakwalls) are not resilient, because they do not respect the natural, dynamic processes inherent to shoreline ecology. They are inflexible. In this time of severe weather and sea level rise, we need our shorelines to be as flexible as possible. They need to breathe and shift and regenerate themselves after storm events.

Living shorelines offer a suite of management techniques that build shoreline resilience and provide ecological uplift (i.e., benefits) by mimicking the natural dynamics of a shoreline—using natural processes to achieve and maintain human goals. Softer, living shoreline management techniques can be integrated into other, more traditional stormwater management projects, often improving or enhancing outcomes.

In urban areas, nature-based living shoreline strategies can create significant ecological uplift, helping to improve water quality, restore contaminated lands and shorelines, improve the quality of life by reconnecting communities to the waterfront, address environmental justice issues, generate new economic development, and create a living, breathing space for people to enjoy. They can provide an innovative option for protecting shoreline development and ecological function simultaneously—something that is critically important with the increase in extreme weather events.



Living shoreline construction at Fort de La Presentation

What Does a Living Shoreline Look Like?

Living shorelines blend human needs with ecological functions. It is not an either/or dichotomy. It can be as simple as adding plants to the top of your shoreline bank or to the less trafficked edges of your property, or as complicated as a multi-acre restoration project. The key is to try to mimic nature—the plants you add will help buffer your shoreline from erosion by absorbing runoff and floodwaters, breaking up wave energy, and anchoring soil in place.

It is possible to find a balance between a pristine, undeveloped shoreline and a developed, hardened shoreline. Becoming more adept at balancing human and ecological needs is critical if we are to create sustainable, resilient shorelines that can continue to function in an increasingly unstable climate.

Local and Regional Examples of Living Shorelines

Plants and Rocks Working Together at Fort de La Presentation

Fort de La Presentation is a public park in Ogdensburg, located at the confluence of the St. Lawrence and Oswegatchie Rivers. Two floods within three years pulled a large amount of sediment from the shoreline, destabilizing the trees along a public trail that meanders around the park. Instead of just adding rock to the shoreline, the Fort Association and New York State Office of Parks, Recreation and Historic Preservation chose to craft a softer, living shoreline approach to stabilize soils and address a significant challenge with invasive species.

On the St. Lawrence River shoreline, rock sills with soil lifts were planted with native species to protect the shoreline. Portions of the existing trail were elevated, and a bridge was installed over a flood-prone section of trail to allow water to rise without rendering the trail unusable. Toe-wood and rip rap planted with live stakes were installed on the Oswegatchie River shoreline to create habitat space and protect the shoreline from erosion. A significant Japanese knotweed infestation that plagues the shoreline at the Fort was mitigated by excavating soil laden with the roots of Japanese knotweed before adding rocks and additional plants.

Working with Nature— Designing a Simple Living Shoreline for your Property

STEP 1: ASSESS YOUR SHORELINE—ASK YOURSELF THESE QUESTIONS:

1. How do you interact with your shoreline? What are the areas of heaviest use?
2. What areas are most vulnerable to erosion?
3. What areas tend to be wet?
4. Are you interested in encouraging wildlife or increasing access?
5. What are your current concerns/issues with your shoreline? What goals are you trying to accomplish with your shoreline maintenance project?

STEP 2: DRAW A BASE MAP

This is often called a circle map because it is typically generalized using circles. Include all structures and areas from your shoreline to the road. Include reference measurements so you know how much space there is between structures.

Things to include in your map:

1. Shoreline length
2. Distance between structures
3. Areas that are wetter than others
4. Any areas that are eroding
5. High traffic areas
6. General locations of all existing structures

STEP 3: CONDUCT A SITE INVENTORY

What plants are already on your shoreline that you can add to? What do you need to remove to make your property more resilient or sustainable (e.g., replacing manicured lawn with native plants, removing old, hardened structures that are no longer functioning, etc.)?

If you can, determine the following:

1. Soil pH (you can buy simple kits at any garden center for measuring soil pH)
2. Soil type—is your soil clay, sandy, or loamy?
3. Soil moisture—where are wet areas in your yard, what areas drain well, what areas tend to be somewhere in the middle?
4. Dimensions of the area that you will be naturalizing

Using Oyster Castles to Protect Against Erosion

Sometimes a routine maintenance project creates an opportunity to solve an erosion issue by creating a living shoreline. When the Aquaculture Innovation Center at Rutgers University in Cape May, New Jersey needed to replace an outflow pipe from its oyster growing facilities, they decided to also address an unstable bank near the new pipe. Oyster castles were installed to create habitat space and break up wave energy, and a stream channel was added to help slow water from the outflow pipe as it moved towards the bay. Mudflats will eventually be planted to help stabilize the soil and protect the bank.

Using Plants to Prevent Bank Failures on the St. Lawrence River

Along the St. Lawrence River, you often encounter steep, clay banks that slope down to the water. When larger vegetation is removed from these banks and replaced with a mowed lawn, the clay soils are at risk of sliding off the underlying bedrock when they become saturated during a flood or prolonged rain events. If you travel along the river, you will see properties where the steep bank is fully vegetated, contrasted with properties where the bank is mowed.

Where the shoreline is vegetated, you may see trees, shrubs, and grasses along the bank that slope down to emergent vegetation in the water that help protect the toe of the bank. You may also notice the winding paths people maintain so they can easily walk down to the water. Sometimes when the clay banks collapse, they settle naturally into terraces. When that happens, it creates an opportunity to add plants to help stabilize the soil and prevent the bank from slipping farther. The vegetation, either on terraces or an entire bank, anchors the soils in place and absorbs water, helping to stabilize the bank and prevent future collapse.

Molly Farrell



Oyster castles



Tip of dunes at South Cape May meadows

Improving Flood Protection by Restoring the Dunes in Cape May, New Jersey

On Halloween 1991, a storm breached the dunes at Cape May, only to be followed by a severe winter storm in January 1992 that inflicted more damage on the town. These storms fueled a growing sense of urgency for more effective flood protection strategies. A diverse group of stakeholders developed a comprehensive ecological restoration project to build resilience.

First, they built a one-mile long, 18-foot-tall sand dune and widened two miles of beach. The second phase involved restoring freshwater wetlands and adding drainage culverts to improve waterflow through the wetlands to decrease the potential for flooding. Restoring the beaches, dunes, and wetlands around Cape May significantly improved habitat diversity and ecosystem functions. The project restored nearly 460 acres of coastal habitat. Wider beaches created habitat for nesting shorebirds, the restored wetlands provided stopover habitat for migrating birds, and the removal of invasive species created space for native plants to return. The restored dunes were not breached during Superstorm Sandy in 2012, protecting Cape May from significant damage.

Education and Outreach Hurdles

Many communities, especially on the coast, want to become more resilient, but they lack the necessary resources and/or expertise to achieve that goal. Consequently, communities continue to rely on traditional, hardened structures—seawalls and revetments—that are expensive and static. Significant education and outreach efforts are needed to broaden understanding of how living shoreline management techniques can be used in concert with, or as an alternative to, harder structures.

We need to create coalitions of people—local planning boards, private landowners, regulators at the state and federal levels, environmental engineering firms, and others—who can work together to share and utilize their knowledge and expertise. Through education and outreach, we can reshape the image of an aesthetically pleasing, functional shoreline, moving away from shallow-rooted manicured lawns that slope to rock and concrete at the water's edge, and towards a space that is more adaptive and diversified. A shoreline where natural processes continue to function, and where there is both a viewshed with easy access to the water for people and varied habitats for wildlife.

Regulatory hurdles

The current regulatory systems were designed before living shorelines were accepted as a shoreline management technique. Consequently, it is often easier to permit rip rap or a concrete wall at the top of a bank than to use motorized equipment to transport plants onto a mudflat. The costs associated with potential mitigation requirements can render options for living shorelines unattainable from a budgetary perspective for larger projects. And the paperwork and time required for a project permit can discourage private landowners who are unfamiliar with the permitting process from pursuing more complicated projects.

However, in the wake of the climate crisis and the need to be more adaptive in many aspects of life, it is critical that the regulatory process encourages people to work with nature, rather than against it. By adding plants and strategically placed hard structures, we can help improve resiliency while attracting people and wildlife to our living shorelines.

Molly Farrell is an Environmental Analyst for DEC's Region 6 Watertown Office (Herkimer, Jefferson, Lewis, Oneida, and St. Lawrence counties).

Shannon Malone



Vegetation on bank

HONEOYE INLET WILDLIFE MANAGEMENT AREA

BY MICHAEL PALERMO

Honeoye Inlet Wildlife Management Area (WMA) is located at the south end of Honeoye Lake and is named after the lake and stream that flows through the property. DEC acquired most of the WMA in 2003 and purchased another 660 acres in 2020, and more additions are anticipated. Several other conservation lands are adjacent to this WMA, including a State Park, a Nature Center (owned by the Rochester Museum & Science Center), as well as a nearby State Forest, and other outdoor lands close by, providing valuable protection and recreation



American woodcock
(*Scolopax minor*)

opportunities for much of southern Honeoye Valley.

Habitats on the WMA are diverse and include large patches of alder thicket, grasslands, silver maple-ash swamp, and Appalachian oak-hickory forest. The silver maple-ash swamp is one of the largest in Western New York. Although most of

the ash component will be lost due to the emerald ash borer, the understory of alder, winterberry, and blueberry are expected to thrive, and young maples are likely to grow.

Much of the Honeoye Inlet stream was greatly altered more than 100 years ago when it was rerouted into a straight ditch to improve the drainage of adjacent fields. In 2016, a partnership of several conservation organizations, including DEC, restored approximately 3,500 feet of the inlet by diverting flows from the straight ditch into a new, meandering channel designed to periodically flood the surrounding lowland.

In 2019, DEC developed a habitat management plan for this property (available on the DEC



Eastern newt (*Notophthalmus viridescens*)

website at https://www.dec.ny.gov/docs/wildlife_pdf/yfihoninlethmp.pdf). The primary goals of this plan are to maintain most of the habitat as it currently exists, while increasing the alder thicket and addressing forest health concerns. Because part of the Appalachian oak-hickory forest is in poor condition, a regeneration cut is planned to ensure this forest remains dominated by oak and hickory. This will also create valuable young forest habitat that is essential for many wildlife species. Another important goal of the management plan is to control and slow the spread of non-native, invasive plants, and restore areas that are degraded. Priority invasive species to be removed include knotweed, common reed (*Phragmites*), and stiltgrass.

A great variety of wildlife find high-quality habitat on this WMA, making it a worthwhile stop for birding and other wildlife observation. Wood duck, great blue heron, swamp sparrow, and least flycatcher are abundant in the silver maple-ash swamp. Each spring, thousands of salamanders migrate from the surrounding upland forest into the swamp to breed. Bobolink, savannah sparrow, and



Wood duck (*Aix sponsa*)

red-winged blackbird nest in the grasslands. American woodcock are plentiful, and can be heard singing from these fields each spring. Wood thrush, scarlet tanager, and cerulean warbler—all species of greatest conservation need in New York—breed on the hillsides of the upland forest.

The pursuit of game is also quite good here. Deer, bear, turkey, and cottontail rabbit are common. Each fall, pheasants are released into the larger fields. Woodcock are abundant during migration in and around the alder thickets, hedgerows, and field edges. Trout are present in the upper reaches of the inlet and provide a moderate fishing opportunity, which should improve as the forest develops along the restored channel, enhancing trout habitat. Beaver trapping is also worthwhile in the swamp and along the inlet.

Several miles of trails exist on the WMA. A series of old farm lanes are located around—or traverse through—many of the fields, providing excellent views of the surrounding hills. One of the old farm lanes follows along the inlet through much of the swamp. These lanes are generally mowed only once each year (in late summer), so be prepared for tall grass if you come earlier. A foot trail, with switchbacks, climbs steeply up the eastern hillside through the forest, leading to an overlook (four miles round trip) that provides a fantastic view of the valley below and hills beyond. Paddling is also a great way to experience the inlet and swamp. Kayaks and canoes can be put in just north of the WMA at the Honeoye Lake State Boat Launch (there is a small parking fee).

With its diverse habitats, abundant wildlife, and varied recreational opportunities, Honeoye Inlet WMA is a must-visit destination for outdoor enthusiasts.

Michael Palermo is a Wildlife Biologist in DEC's Avon office.

LOCATED IN the towns of Canadice, Naples, Richmond, and South Bristol, Ontario County, and the Town of Springwater, Livingston County

SIZE: 2,637 acres



White-tailed deer
(*Odocoileus virginianus*)



Site Features



NOTES: Open year-round. Hunting, fishing, trapping, and wildlife observation are all popular activities. Several miles of trails and administrative roads are available for hiking, snowshoeing, and cross-country skiing. There are no bathrooms or other facilities on the WMA. Please be respectful of other visitors, carry out whatever you carry in, and follow other Leave No Trace principles.



DIRECTIONS: From the Village of Honeoye, travel south approximately six miles on either West Lake Road (County Road 36) or East Lake Road. From the Village of Naples, travel northwest approximately 5.5 miles on Hunt Hollow Road (County Road 36).



CONTACT: For more information about Honeoye Inlet WMA, call the DEC Region 8 Wildlife Office at (585) 226-5380 or visit <https://www.dec.ny.gov/outdoor/101157.html>.



Paddling is a popular activity at the WMA.

I Need to Have a

WATER WELL INSTALLED, NOW WHAT?

BY BETH GUIDETTI



We rarely think about the water we use. It's so easy to get water in our homes by simply turning on a faucet. So easy, in fact, that we rarely consider where our water comes from, unless we need to install or repair a water well.

I'll never forget the first time I saw a drill rig in action. It was a hazardous waste site in Syracuse, and I was a green geologist on my first job out of grad school. Another more experienced geologist was training me on how to take soil samples as the well was drilled.

It was so busy at first that I didn't know how I could possibly keep up! Then, as the hole got progressively deeper and it took longer for the drillers to collect a sample, I got to see and understand a little bit how these two operators drilled hundreds of feet into the earth. Huge augers and rods, steel casing to keep the hole open, not to mention the drill rig itself—massive and obnoxiously loud.

DEC's Water Well Contractor Program

In 2008, after years of various jobs as a geologist, I started working at the Department of Environmental Conservation (DEC) in the Water Well Contractor Program. Instead of taking loads of soil and groundwater samples, my work now involves handling loads of applications, reports, and data.

About 500 water well contracting companies operate in New York, drilling thousands of new water wells each year, installing pumps, or making repairs. Each of those companies must register with DEC annually and have at least one Certified Well Driller or Pump Installer on staff; certification requires passing at least two exams for each certification.

For each water well that is drilled, the driller must submit a Water Well Completion Report that details how the well was installed and the subsurface materials encountered as it was drilled (see sidebar). This is for the benefit of the well owners, who at some point may need additional work done on the well. The report is also helpful for a contractor who is repairing a water well that has gone dry, needs to be cleaned out, or needs its pump replaced.

All this well data is entered into a database that currently houses over 20 years of data on more than 130,000 water wells. Organizations such as the New York State Museum and United States Geological Survey, along with professors from many colleges and universities, use the water well data for stratigraphic (rock layer) and hydrogeological studies.

Are You Having A Water Well Installed?

Since many of us don't have experience in having a water well installed, it can be more than a little intimidating to rely on a contractor to provide drinking water to our home or business. To help you understand the process, check out DEC's online Consumer Protection Guide to help you get started (see For More Information... at the end of this article).

It's important to choose a water well contractor that is registered and certified. DEC maintains an online list of these contractors (see For More Information). As a water well owner, you should be aware that the driller must adhere to New York State Department of Health (DOH) water well construction standards. These standards are in place to protect both the people who use the well, and our environment.

One of the first questions to arise is: How much is my well going to cost? Prices can range from the low thousands to more than \$10,000, depending on local subsurface conditions. Local well drillers often have first-hand experience and the knowledge necessary to prepare an accurate estimate. Concerned well drillers and homeowners can also utilize the vast amount of water well data collected during the past 21 years to come up with an educated estimate of how deep the well will need to be and how much well casing will be required.

However, you can never be quite sure what you are going to find during an installation or repair. Water wells that are drilled into rock need to encounter a fracture that is wide

Smith Well Drilling, Inc. of Niverville



The drill rig must be leveled on a sloped surface in order to install the well correctly.

enough to be able to deliver water to the well. Sometimes such a fracture is not found until the well has been drilled deeper than expected. For this reason, an initial estimate may not always be accurate. The well owner should be prepared for that possibility.

A second common question is: Where should my well be located? You want to be sure your water is as clean and protected as possible. DOH's construction standards can help determine the required distance from any potential sources of contamination—from septic tanks and manure piles to cemeteries and landfills. Your water well driller is required to adhere to minimum separation distances from these potential sources.

Smith Well Drilling, Inc. of Niverville



Keeping the job site neat and clean

Smith Well Drilling, Inc. of Niverville



A contractor grouts a well with bentonite

Beth Guidetti



A typical residential water well

Note that in some cases, these separation distances cannot be met due to issues such as small lot sizes. You can contact your local health department to determine if a specific waiver can be obtained for your well. This waiver would allow for other measures to be taken to provide a safe drinking water source on your property, such as installing deeper well casing or controlling runoff from streams or ponds that might flow toward the well.

Water Well Testing and Decommissioning

It is important to know if the water in your installed well is safe to drink, cook with, or bathe in. Residential water testing is the responsibility of the well owner. DOH recommends that you have your water tested when construction and development is complete, prior to its use. Often, this initial sampling can be conducted by the well driller. DOH further recommends that you test for coliform once a year, along with any other contaminants that may be of concern. It is also important that the well be properly maintained, including inspection of the well casing, well cap, and surrounding ground area.

Sometimes, we will no longer need our water well. Perhaps it can no longer provide the necessary amount of water and must be replaced with a new water well, or a public water supply system has been extended to the property. When a water well is no longer in use and being properly maintained, DOH and DEC recommend having the well decommissioned by a registered water well contractor.

Wide-diameter wells are of great concern because they can pose a danger to small children and animals. If you have an old water well on your property that is no longer in use, you should consider having it properly decommissioned (<https://www.dec.ny.gov/lands/86955.html>), which involves removing the well materials and filling the hole to protect the area from groundwater contamination and hazardous ground conditions.

Once a water well is installed, you will probably not think about it very often. But if you run into a problem, you will need to take care of it quickly. These guidelines provide some basic information that can be helpful. Use it as needed, to ensure that you and your family will have clean, accessible water at your fingertips.

Beth Guidetti is a Geologist in the Water Quantity Management Section for DEC's Division of Water.

For More Information...

A list of registered water well contracting companies can be found online at <https://www.dec.ny.gov/lands/33317.html>. Note that each water well contractor is required to carry proof of certification.

Additional information about water wells, including our Consumer Protection Guide, is available on DEC's website at <https://www.dec.ny.gov/lands/4997.html>.

DOH has information regarding water wells including installation and water testing at https://www.health.ny.gov/environmental/water/drinking/private_wells.htm.

New York State's General Business Law 36A requires a written contract for home improvement services and materials that exceed \$500. For more information on home improvement contracts, contact the New York State Attorney General's office at www.ag.ny.gov.

A Water Well Completion Report

Once your water well has been installed, the driller is required to provide a Water Well Completion Report to you (or the well owner) and DEC, which shows that the well has been constructed according to DOH standards. This report includes useful information, such as the well depth, casing length, and yield.

- Well owner and location: The name and mailing address of the well owner, and the address where the well is located. Latitude and longitude should also be provided.
- Well depth.
- Well casing length: Casing must extend at least one foot above ground level and 19 feet below ground level.
- Well screen, if needed: The screen will allow groundwater to flow in through holes or perforations in the well casing. Water wells drilled into bedrock do not require a well screen.
- Well yield: The amount of water the well is capable of producing, ideally at least five gallons per minute. If the well does not produce water at an acceptable rate, a water storage tank can be installed to allow for additional storage.
- Pump: The make, model, depth of installation, and maximum flow rate in gallons per minute.
- Well Log: The materials the driller encounters when drilling the well.



Partnership to Improve Water Quality and Public Recreation

A broad coalition of conservation organizations and private landowners is partnering to protect, enhance, or restore more than 4,700 acres of wildlife habitat in upstate New York. During the next three years, the partners will work on project sites along the St. Lawrence River Valley in Jefferson, Lewis, Oswego, and St. Lawrence counties, using funding from the North American Wetlands Conservation Act (NAWCA). These habitats are crucial for filtering pollutants and improving water quality along the Lake Ontario coastal watershed, and much of the protected land will be available for public recreation.



Onondaga Lake Restoration

DEC, the U.S. Fish and Wildlife Service, and Trustees for the Onondaga Lake Natural Resource Damage settlement are overseeing a series of projects to restore and protect wildlife and water quality, and increase recreational opportunities at Onondaga Lake. The projects include extending the Loop-the-Lake Recreation Trail, creating 100 acres of native grassland habitat, restoring habitat, conserving more than 1,400 acres within the Onondaga Lake watershed, and making improvements to two existing Onondaga Lake outlet jetties to create recreational opportunities for anglers and pedestrians. For more information about Onondaga Lake and its watershed, visit: <https://www.dec.ny.gov/lands/72771.html>.

Construction Begins on New Fish Passage

DEC, Suffolk County, the town of Southampton, and the Peconic Estuary Partnership announced the start of construction on a nearly \$1 million fish passage through Woodhull Dam on the Little River in Riverhead. The fish passage will restore access to 90 acres of high-quality habitat in the Cranberry Bog Preserve and Wildwood Lake, more than doubling the amount of spawning and maturation habitat available for river herring and American eel on the Peconic River. It will also help produce sustainable populations of fish species that are valuable resources for the region's environment, health, and economy. For more information about DEC's work and efforts to restore diadromous fish passages, which allow fish to migrate between freshwater and saltwater, visit: <https://www.dec.ny.gov/lands/111064.html#Diadromous>.

Berry Hill Fire Tower Open

The Berry Hill Fire Tower in the town of McDonough, Chenango County, is open to the public. Originally erected in 1934, Berry Hill is the only fire tower on public lands in Central New York. It served as an active fire lookout station until the end of the 1988 season and was placed on the National Historic Lookout Register (US#54) in 1993. Recent DEC upgrades to the fire tower include enhanced safety and accessibility improvements. Berry Hill is open to the public year-round from sunrise to sunset. For information on visiting New York's fire towers, visit: <https://www.dec.ny.gov/outdoor/100900.html>.





Mystery Eggs

I recently found what appears to be a group of small eggs under some leaves, while I was on a walk in the woods. They were in a hollow of tree roots and frozen soil, and were about 2 mm across. What do you think they are from?

MICHELLE MCILROY | ATHENS

Very interesting, thanks for sharing! Small eggs like this can be difficult to positively identify, although in this case they appear to be either slug eggs or, more likely, the eggs of a harvestmen spider, more commonly known as the daddy longlegs.

—JERRY CARLSON, RESEARCH SCIENTIST, DIVISION OF LANDS AND FORESTS



Frozen Out

This large bullfrog was frozen on the surface of McDonald Pond at Hempstead Lake State Park, on January 13. The way the frog is set into the ice makes me think the surface was wet or slushy when the frog expired. The water level is now low. I'm guessing the frog buried itself for the winter, at the marshy end of the pond when the water level was higher, and was roused when the bottom was exposed.

PETER KAITERIS | WEST HEMPSTEAD

We think you are probably correct. Frogs and many other species will overwinter by burying themselves in the mud, safely below the ice. If the water level dropped during the course of the winter and the ice started to thaw, the frog may have emerged, only to find itself trapped in the thawing ice, and unfortunately, it froze in place.



Too Close for Comfort

I am sharing a couple of images from my trail camera, taken last September. I often see turkeys and deer together, but it looks like this turkey got closer to the little buck than he liked, though I doubt whether he actually touched it.

MICHAEL DELLA ROCCO | ALTAMONT

It certainly does look like the turkey got a little closer to the buck than he wanted! We often get trail cam images of deer and turkeys together, but they generally appear to ignore each other for the most part. This young buck must have been feeling his oats!



Ask the Biologist

Q: I've seen this squirrel around my yard for the past couple of days. At first, I thought it was a squirrel that had a lucky escape from a predator, but I've had increasing doubts. On the other hand, the line of demarcation looks too even for it to be any kind of disease. Could it have been caught in a trap and escaped? Thanks for any information you can give me.

GAYE MCCULLOUGH | WEBSTER

A: We see photos like this every winter, but we rarely have squirrels like this submitted for examination. Possibilities for hair-loss include: ectoparasites (mange mites, lice); fungal or bacterial infections; dietary imbalance/deficiency; anomalous molting; genetic

anomaly; or mechanical removal (overgroomed by other squirrels, fighting). Mange, bacteria/fungi, and possibly mechanical causes could be clarified by a physical exam; the other possible causes would only be speculation and difficult to diagnose. I have heard that diets of mostly sunflower seeds might lead to hair loss in squirrels, but I cannot confirm if this is true or not. Sorry that we do not have a more definitive answer, but in a case like this, the only way to tell for sure would be to examine the (deceased) squirrel.

—KEVIN HYNES, WILDLIFE HEALTH BIOLOGIST



Nuthatch Rescue

I wanted to share this photo with you of a white-breasted nuthatch that had crashed into our patio door. After resting a bit in my hands, it flew to a nearby tree. It was a bit shaky, but appeared otherwise unharmed.

DON HAURY | WEST MONROE

Thank you for sharing your photo with us, and we are glad to hear the nuthatch survived the ordeal intact! Unfortunately, this is a not too uncommon occurrence near bird feeders, as birds will often see the sky and surrounding vegetation reflected in the glass and think that they are flying through open air, rather than into glass. There are many ways of preventing this, ranging from bird tape and decals to netting and screens. Fortunately, many birds that hit windows from nearby feeders are not flying at high speeds, and often survive the ordeal. You can read more about this in the article "When Birds and Glass Don't Mix" from the April 2016 issue of Conservationist.

CONTACT US!



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Back Trails



Recreating Locally and Responsibly—Opportunities Abound

BY TONY COLYER-PENDAS

I am a bit of a traveler, so staying at home and remaining local is harder than I thought. I grew up in south Florida, went to college outside of Philadelphia, then lived in San Francisco for a few years before settling in New York's Capital Region. I have spent time in 46 of the 50 states, including Hawaii and Alaska—and I don't count airports. But the pandemic has severely impacted our travel plans.

I decided to follow the Department of Environmental Conservation's (DEC's) recommendation and started researching opportunities for recreating close to home. New York State owns lands in every county and many parks, wildlife management areas, forests, and trails are open seven days a week. DEC plays an important role in protecting those natural resources and providing opportunities for everyone to enjoy them. For a full list of State lands that you can visit, and to access an interactive map, go to: www.dec.ny.gov/outdoor/82098.html.

New York is open for fishing, and anglers can fish and recreate locally at nearby waterbodies. Many lakes and streams offer great opportunities for fishing in an array of settings throughout the state. Getting outdoors and connecting with nature is a great way to help maintain mental and physical health. DEC's webpages

provide helpful and useful information on fishing access sites. To learn about a site near you, visit: www.dec.ny.gov/outdoor/7749.html.

If you are looking for a trail to bike, walk, or run, or if you're looking for a new trail to explore or want a map of a public trail, visit: <https://parks.ny.gov/recreation/trails/trails-in-new-york.aspx>. This webpage provides resources on local, State, and regional trails, and links to trail maps organized by county.

For many people, their most common encounters with wildlife are with birds, and given that there are more than 450 species of birds in New York State, it's no surprise. DEC's I BIRD NY program provides a variety of resources, information, and suggestions on how to start birding. The web page has resources that can help birders learn which birds may be found near them, what species to look for, and where and when to do so. Birdwatching can be done in many State lands, and even in yards at home. To access the I BIRD NY web page, visit: www.dec.ny.gov/animals/109900.html.

Getting outdoors to walk, jog, hike, ride a bike, fish, or visit a park or State lands is a healthy way to stay

active, spend time with friends and family, and reduce stress and anxiety. However, to keep these places safe and healthy for everyone, we need to be good stewards of our parks and natural areas. In 2021, DEC launched the Love Our NY Lands campaign to encourage visitors to State lands to practice responsible recreation. For more information, visit: <https://www.dec.ny.gov/outdoor/119881.html>.

New York State has created numerous opportunities for people to recreate locally, and DEC has built upon these efforts by increasing access to New York's vast natural resources and promoting low-cost opportunities to explore the great outdoors and connect with nature close to home. Whether you like hiking, fishing, hunting, birding, or just spending time in nature, the opportunities abound, and they are closer than you think.

Tony Colyer-Pendas is the Assistant Editor of the *Conservationist*.

Arbor Day is an annual reminder to celebrate trees and all the benefits they provide.



Consider these vital roles that trees play on our planet:

Climate Change:

Trees pull carbon dioxide out of the atmosphere, reducing the global concentration of greenhouse gases. In one year, some mature trees can absorb more than 48 pounds of carbon dioxide from the atmosphere.

Ecosystem Conservation:

Trees filter pollutants from our air, soil, and water, prevent soil erosion, and buffer against extreme weather and flooding. Trees support ecosystem biodiversity by providing food and habitat for wildlife.

Human Well-being:

Parks and tree-lined streets promote social interaction and a sense of community, and they encourage a healthy, active lifestyle. Spending time around trees helps with stress, depression, attention span, and overall brain health. Trees also reduce human energy consumption by providing shade in the summer and blocking wind in the winter.

To share these benefits with your community, plant a tree this Arbor Day! Proper preparation and care will ensure you reap the rewards of your tree for many years. For information on proper tree planting and care, visit www.dec.ny.gov/lands/5303.html.



Department of
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See page 6

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