

NEW YORK STATE

# CONSERVATIONIST

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AUGUST 2019

View from a  
**FIRE  
TOWER**

Take the Catskill  
Fire Tower Five Challenge

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**Artificial Reefs: New York's Sunken Treasure**  
**Abundant Canada Geese**  
**White Deer in New York**

Dear Reader,

When you think about the outdoors in New York, you may picture our beautiful scenery, or imagine yourself hunting, fishing, or heading out for a hike in the woods. DEC is committed to making sure all New Yorkers and visitors have the opportunity to enjoy and connect with nature, and the *Conservationist* offers insight to activities and sites that visitors from across the country, or across the street, may want to explore.



In this issue, you can read about the unique population of white, white-tailed deer at the former Seneca Army Depot (pg. 24), and learn about New York's Canada geese (pg. 6), including information on how DEC helps manage these birds and promote great hunting opportunities.

We also continue to encourage readers to explore our forests by taking a hike in the Adirondacks or Catskills. DEC is promoting the Catskill Fire Tower Five Challenge (pg. 2), which is encouraging people to hike to the region's five fire towers. These hikes combine great exercise and spectacular views for individuals and families, and there are prizes for those who climb all five towers. Also in this issue, you'll find an article on how DEC is working to make trails more accessible and sustainable for users (pg. 12), so they enjoy the unique attributes of popular trails safely and without causing damage to the ecosystem.

As New York continues to expand outdoor recreation opportunities, we are also working to protect and improve our natural resources. You can read about how DEC is working to manage hydrilla in the Croton River (pg.18) to limit the spread of this invasive species, which has been called "the world's worst invasive aquatic plant."

Whether you are a diver exploring Long Island's artificial reefs (pg. 10), like to hike or bike with friends or family on state-owned trails, or want to explore the beauty of the Catskills from a fire tower, I encourage you to get outdoors as much as you can. The beauty of New York's lands and waters is nature's invitation to people young and old, and the opportunities are endless.

Best wishes,  
Basil Seggos, Commissioner

NEW YORK STATE  
**CONSERVATIONIST**

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Andrew M. Cuomo, Governor of New York State

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Diver explores New York's Shinnecock Reef

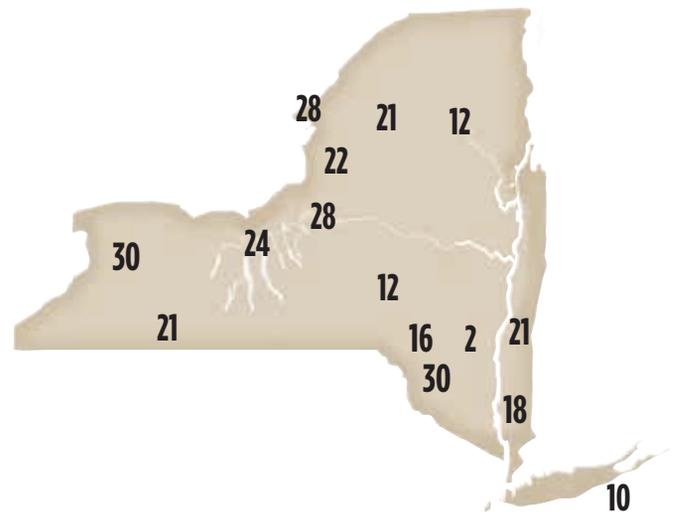
# CONTENTS

- 2 A Tall Tale**  
Hiking a Catskill fire tower  
By Mary Elizabeth
- 6 Canada Geese in New York—Residents or Visitors?**  
By Joshua Stiller
- 10 Exploring New York's Artificial Reefs**  
By Amy Lipsky
- 12 Building for the Future**  
Sustainable trails help visitors leave no trace  
By Jane Raffaldi and McCrea Burnham
- 16 Bear Spring Mountain Wildlife Management Area**  
By Larry Bifaro
- 18 Hydrilla in the Croton River**  
Battling a modern-day mythological monster  
By Nicole White
- 22 Salmon River Fish Hatchery**  
By Thomas Kielbasinski
- 24 Seneca White Deer**  
Home on the range at a former military base  
By Dee Calvasina

August 2019      Volume 74, Number 1

## DEPARTMENTS

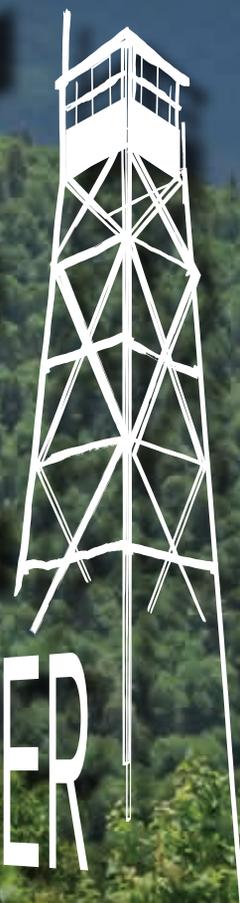
- 21**    On Patrol
- 28**    Briefly
- 30**    Letters
- 32**    Back Trails



**FRONT COVER:** Composite image; Balsam Lake Mountain by Brad Wenskosi and Fire tower by NYS Department of Economic Development (NYSDED)  
**BACK COVER:** Canada geese by Wayne Jones

# A TALL TALE

## HIKING A CATSKILL FIRE TOWER



BY MARY ELIZABETH | PHOTOS BY AUTHOR



The author's daughter admires the view from the John Robb lean-to overlook.

### THE BEST HIKES

are those with little rewards that motivate you to keep going when you've set out into unfamiliar territory. Most times when I hike, that reward is a seemingly infinite view of Adirondack mountain peaks whose weathered crags, bare slides, and treed slopes dissolve into the horizon. In the Catskills, however, the summits of the highest peaks do not often offer panoramas like their northern cousins. Instead, one must climb to the top of one of the five towers that remain in the forest preserve to see many of the grand views of this rugged region.



Always check out a trail map and sign-in at trail registers before heading out.



Junction



The author cools off along the trail.

Since moving to the Hudson Valley nearly twelve years ago, after spending a lifetime of summers exploring the Adirondacks, I've only recently discovered hiking the Catskills. With deep cloves and valleys splitting the higher peaks, the Catskills have a mysterious charm the Hudson River School artists like Thomas Cole and Frederic Church immortalized in their paintings. I started my hikes with an easy, popular trek up Overlook Mountain in Woodstock three years ago and worked my way to hiking (most of) the aptly named Devil's Path.

A few weeks ago, as the Catskills Fire Tower Five Challenge (see page 5) was being announced, I took off into the Catskills with my daughter Amanda to hike Hunter Mountain, the second highest peak in the preserve and topped with one of the five remaining fire towers in the park. This hike would check off one more 3,500 peak (a local hiking club term noting the 35 Catskill peaks above 3,500 ft.) and also add another tower to my challenge.



Eastern swallowtail

Before we set out on our adventure, I reviewed a trail map of the area and looked at some hiking websites, something I do before most of my hikes in the Catskills. There are several routes we could have taken to the summit with varying degrees of difficulty. Amanda was hoping for a trail with water, like a cool stream or waterfall we could dip our feet into, and lucky for her, we found one.

We chose an 8.16-mile loop up the Spruceton trail, located near West Kill. Marked by blue DEC trail markers, this trail starts at a DEC parking area off Spruceton Road, and is also an equine trail for anyone wishing to ride horses to the peak. After signing in at the register, we crossed over Hunter Brook on a wooden bridge and steadily ascended a wide, well-treed, dirt-and-gravel access road through the forest.

Just before the mile and a half mark, we arrived at a grassy, open, three-way junction. We stopped for a snack and watched a dozen or so swallowtail butterflies flit around ferns and tiny white flowers. From here we took a right where the trail became steeper and a bit more overgrown. About a half mile beyond the junction, there is a cold spring that flows out of a pipe into a half barrel, which, after the steep climb, was just what the two of us needed to cool down.

A little farther up from the spring, the trail opened, there was more sky above us, and the trees seemed to look a little shorter. To the right of a large flat boulder



Climbing back to the trail from the John Robb Lean-to

was the John Robb Lean-to, which I think is one of the most beautiful sites to camp I have seen in all my years hiking. To get to the lean-to we walked through a labyrinth of boulders that wound down to a shady clearing with a spectacular lookout over Spruceton Valley and the West Kill Mountain Wilderness. This was another perfect excuse to stop, have another snack, and take pictures.

One more mile of mostly moderate hiking and we made it to the 60-foot, 112-year-old metal tower, soaring upward in a wide-open clearing against a bright blue sky. We were now at an elevation of 4,040 feet. Neither of us hesitated to shed our day packs and head up to the top. Although the observation room wasn't open because it was a weekday, we still got some amazing pictures of the 360-degree views of the Blackhead Range, Twin, Sugar Loaf, and Plateau Mountains that make up a portion of the Devil's Path, and the ski trails on Hunter Mountain below us.

Leaving, we found the yellow blazed trail that would lead to the Devil's Acre Lean-to on the adjoining red trail, which is also part of the Devil's Path. The narrow, muddy trails through fragrant conifers didn't seem to bother us much as we were still feeling pretty good about our accomplishment so far. After maneuvering our way through the trees and mud over a few strategically placed logs, it finally dried up and we exchanged the wet trail for one that became quite steep. We were so focused on getting to Diamond Notch Falls to soak our sore feet that we completely missed the Devil's Acre Lean-to and the views at the next overlook just below that.



Becker Hollow Falls (above)  
Bunchberry dogwood (left)



We could hear the brook to our left and knew we were getting closer to the waterfall. The closer we got, however, the darker the sky was becoming. When we reached the falls, we crossed a great wooden bridge over it. The water-eroded stone below us resembled a topographic map, and I wondered how many thousands of years it took to get that way. No sooner had we taken off our boots when the thunder began to roll in and we saw the first bolt of lightning. One quick foot soak and we were back on the trail, rushing to Spruceton Road and making it to the car just as the rains came down.

As we made our way home, we reflected on what a great day we had and how lucky we are to live so close to the Catskills. We're already making plans to hike to the remaining four fire towers.

Avid hiker **Mary Elizabeth** is a Graphic Designer in DEC's office in Albany.



View from the top of the Hunter Mountain Fire Tower



Hunter Mountain Fire Tower

## Take the Catskills Fire Tower Five Challenge

As part of New York State’s new “See the Catskills Like Never Before” campaign—a multi-faceted effort to highlight the world-class tourism destinations and recreational opportunities in the Mid-Hudson region—Governor Cuomo announced the Catskills Fire Tower Five Challenge, inviting hikers to visit all five towers in the region: Balsam Lake Mountain (Hardenburgh), Hunter Mountain (Hunter), Overlook Mountain (Woodstock), Red Hill (Denning), and Tremper Mountain (Shandaken).

After hiking to all five towers, visitors are encouraged to send a selfie, including hiking partners, from each tower, along with the date and any story from that hike, to [CatskillsChallenge@dec.ny.gov](mailto:CatskillsChallenge@dec.ny.gov). The first 500 people who complete the Challenge will receive a variety of prizes, including a free NYS Parks pass\* for the season, a certificate, and a one-year subscription to *Conservationist* magazine\*.

This competition runs through December 31, 2019. More information is available at [firetowerchallengeny.com](http://firetowerchallengeny.com).

\*Limit one per household.



# Canada Geese in New York

## RESIDENTS OR VISITORS?

BY JOSHUA STILLER | PHOTOS PROVIDED BY AUTHOR

Often viewed as a sign of the changing seasons, V-shaped lines of migrating Canada geese have annually passed through New York since pre-colonial times, en route to northern Canada after wintering in their southern range (or vice versa). Their presence here was once that of a passing visitor during fall and spring migrations; however, today it is difficult to escape their distinctive honk, as they have established themselves as year-round residents. Depending on your viewpoint, they can be a welcome guest and a great opportunity to experience wildlife up close, or, if you've ever stepped in something they've "left behind" in a local park, you've experienced a common problem that causes some people to deem them a nuisance.

Part of the reason for the conflicts between people and Canada geese is the tremendous ability of these birds to adapt to human disturbance and thrive. But to fully understand what causes the public's varied views on these birds, it is important to understand the complex history of the species, their subspecies, and how their populations are managed at state,

national, and international levels. When it comes to these birds, not all geese are the same, even though they may look it.

In the early 1900s, Canada geese in the Atlantic Flyway bred almost exclusively in Ontario, Quebec, and Newfoundland and Labrador. The only nesting geese found in New York State were likely the offspring of the small number released by private individuals.

Canada geese have a complex taxonomy, or classification scheme, and during the past 50 years, there have been many changes to their taxonomic tree.

Currently, the species is differentiated into seven subspecies (Note: At one time, there were thought to be eleven subspecies; however, the four smaller varieties were different enough to be reclassified as a separate species entirely—the cackling goose).



While they may be difficult to tell apart, three distinct subspecies of Canada geese are frequently encountered in New York. Two are migratory populations: interior Canada geese (*Branta canadensis*, the Atlantic Population) and Atlantic Canada geese (*B. c. canadensis*, the North Atlantic Population). The third is a resident: the Atlantic Flyway resident Canada goose, which is a mixture of various subspecies. The resident subspecies is the most abundant and the most frequently associated with nuisance situations in New York.

Historically, Atlantic Canada geese bred in the U.S. portion of the Atlantic Flyway; however, these birds were extirpated (regionally wiped out) from the U.S. during pre-colonial times. The resident geese presently breeding in the eastern U.S. are the result of private and government stocking efforts to reestablish nesting Canada geese during the early 1900s through the 1960s and 1970s.

Although there are only minor differences in their physical appearance, the many subspecies have very different life histories. About the only thing they have in common is that they all migrate to some extent, making the term “resident” a bit of a misnomer. The resident Canada geese that nest in New York do indeed migrate, most notably during the summer.

Around the time of the summer solstice (June 21), you may have noticed large flocks of Canada geese heading north. These birds were adults that failed to successfully nest or were too young to breed (1–3 years old). Many migrate up to 1,500 miles north of where they started, taking advantage of high-quality food resources in northern Quebec and Ontario. Others will travel shorter distances and settle in New York and adjacent states. Then, like clockwork, they begin to return to their normal breeding areas during the third and fourth weeks of September. Their last big movement of the year happens in the inland areas, when ice forces them to move; however, in this situation, they typically only go as far as they have to, seeking open water and accessible food.

In New York, the cards are stacked heavily in favor of resident Canada geese thriving, while migratory geese must deal with many challenges. Resident geese have the luxury of breeding in a temperate climate with few significant predators. Rarely does weather have a major impact on productivity, and adults can re-nest multiple times if their first clutch is destroyed by predators or severe weather events. Resident geese can also put on considerably more weight and tend to exploit areas where their chances of encountering predators (including humans) are far less. By staying in the same area for longer periods of time, these long-lived birds learn how to avoid predators and hunters.

In contrast, migratory geese that breed in northern Quebec are migrating to and breeding in areas that don't even thaw by mid-June. As such, their window for a successful breeding season is much smaller. For example, on June 19, 2018, geese breeding on the Ungava Bay in northern Quebec (Atlantic Population) arrived to mostly frozen waterbodies with heavy snow cover and temperatures between 30°F and 40°F. By comparison, resident geese in the Albany area of New York were able to enjoy lush green grass, artificial feeding from people, and temperatures in the 60°F to 70°F range. In addition, when migratory geese move through New York, they are relatively unfamiliar with the landscape and area, leading to higher mortality than their resident counterparts.

Every year, biologists from the Canadian Wildlife Service and partnering Atlantic Flyway U.S. states (including New York) travel north to the breeding grounds to band migratory geese to learn how many of the young geese are reproducing. In 2018, the majority of migratory geese either failed to nest or didn't even make an attempt, and biologists banded a record-low 30 goslings compared to 3,839 adults, or 0.01 goslings per pair. The number of juveniles per adult pair gives biologists information on productivity. Conversely, in good years, like 2005, migratory geese can be very productive—banding crews marked 1,209 adults and 2,022 goslings. But such boom years only happen occasionally for migratory geese, whereas resident geese encounter high quality breeding conditions and have tremendous reproduction on an annual basis.

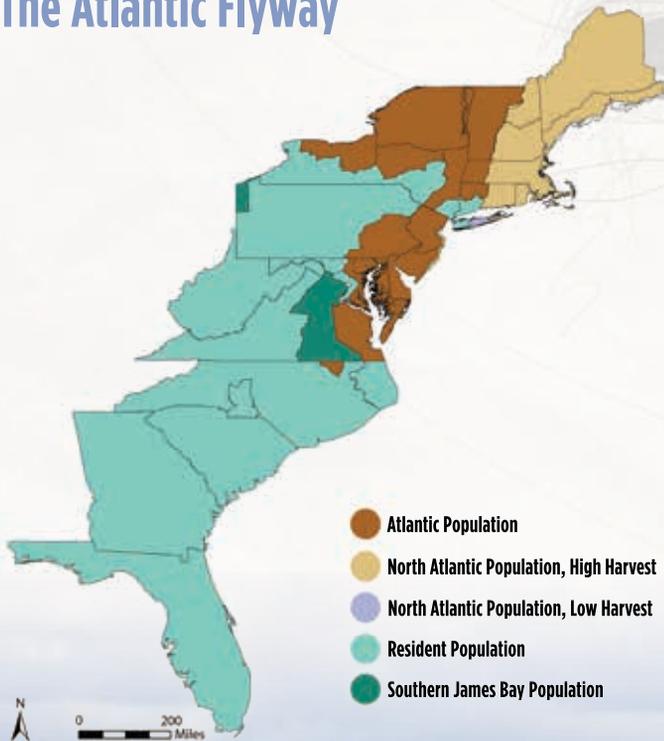


**Biologists band birds to determine survival rates (the proportion of the population that survives from one year to the next), harvest rates (the proportion of the population taken by hunters), and reproductive success (the number of young produced per adult).**



Resident geese enjoy lush green grass, food handouts from people, and a predator free environment.

## The Atlantic Flyway

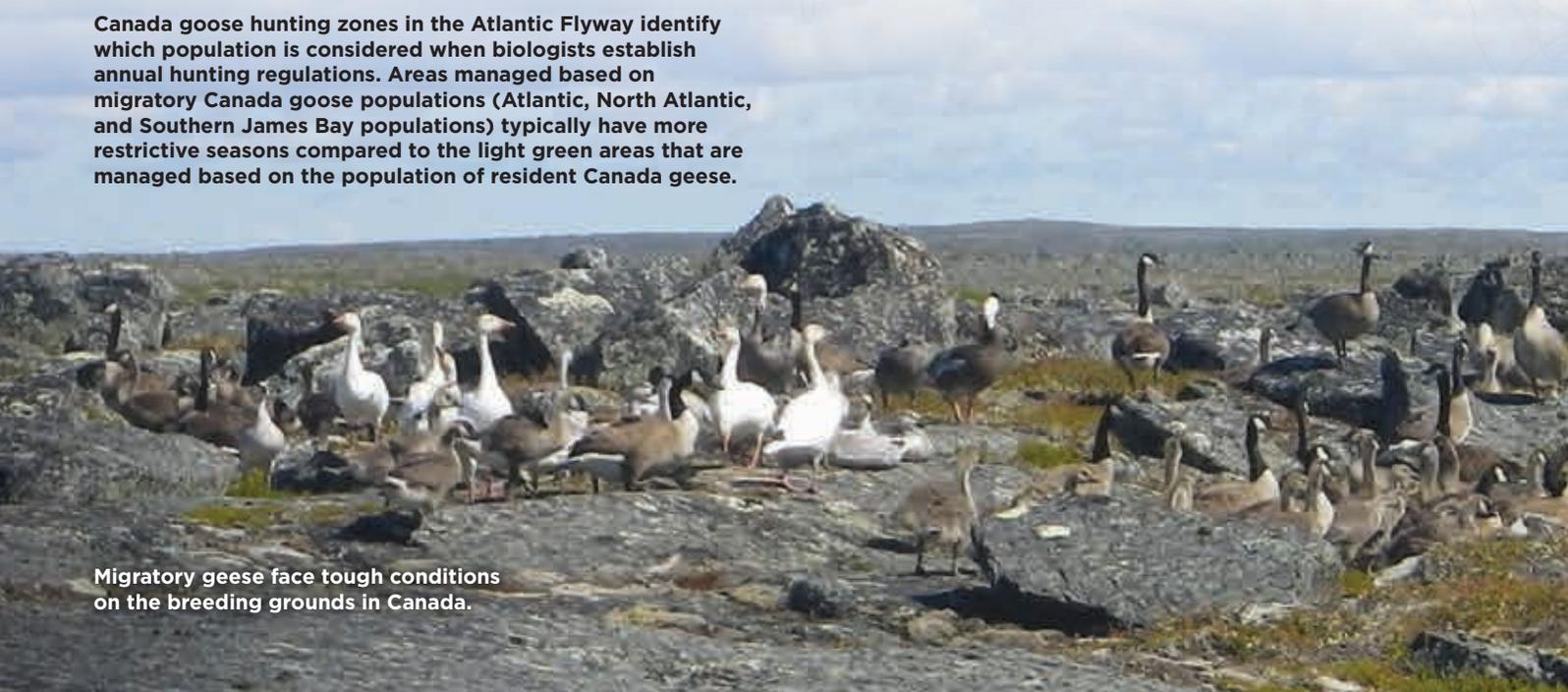


Canada goose hunting zones in the Atlantic Flyway identify which population is considered when biologists establish annual hunting regulations. Areas managed based on migratory Canada goose populations (Atlantic, North Atlantic, and Southern James Bay populations) typically have more restrictive seasons compared to the light green areas that are managed based on the population of resident Canada geese.

Resident Canada geese have also adapted in a number of ways to take better advantage of their easier life. Unlike migratory subspecies that take four to five years to sexually mature, have small clutches of three to five eggs, and achieve variable nest success, resident geese can breed at just two to three years old, lay five to seven (or more) eggs, and generally enjoy consistently high nest success.

Because of the differences in the life history traits between resident and migratory geese, and the fact that their ranges during the fall and winter heavily overlap, managing their populations is exceedingly challenging from both a regulatory and a public perception standpoint. Wildlife professionals primarily manage game species populations through regulated hunting. This can be complicated in New York, as there are nine Canada goose hunting zones with different season dates and bag limits depending on which geese are migrating through and being harvested in each zone.

Hunting zone boundaries were developed using data from band recoveries, neck collar observations, and satellite telemetry studies over the past 30 years. In areas where few migratory geese are harvested, DEC and the U.S. Fish and Wildlife Service can create more liberal seasons, both in terms of bag limits and season length. During the 2019–2020 hunting season, these zones are allowed up to an 80-day season, with a 5-bird bag limit. However, in areas where higher numbers of migratory geese are harvested, the bag limits are more restrictive. The seasons in upstate migratory zones (Atlantic Population) are restricted to a 30-day season and a 2-bird bag limit; restrictions that have been put in place due to a steep decline in their breeding population and several years (7 of the past 10) of poor



Migratory geese face tough conditions on the breeding grounds in Canada.

productivity due to the weather up north. Downstate, the Long Island seasons (North Atlantic Population) are 60–70 days with a 2-bird bag limit. The goal of such complex regulations is to maximize the harvest of the overabundant resident population, while ensuring the migratory populations remain abundant.

Managing Canada geese in North America will always be a challenge due to the complexities of managing populations and subspecies within the larger complex of Canada geese. Their overlapping ranges ensure there will always be situations where regulations are more restrictive to protect migratory geese even though there are many resident birds in the same area. Unfortunately, the situation often leads to confusion and frustration. As we move forward, DEC and wildlife agencies throughout the country will continue to explore innovative ways to reduce resident Canada goose populations to levels that are more compatible with the social carrying capacity (i.e., the number of geese people are willing to accept on the landscape).

In the meantime, it's important to recognize and enjoy the good qualities of this species. It is one of the great success stories in wildlife conservation. Canada geese were brought back from the brink of extinction due to the efforts of people and wildlife agencies across the country that wanted to ensure the birds' ubiquitous honks will continue to be heard throughout North America.

So if you see or hear Canada geese, know that DEC and its partners are working to properly manage the population. And, don't forget to watch where you step.

**Joshua Stiller** is a Wildlife Biologist in DEC's Albany office, specializing in migratory game birds.

## STAFF SPOTLIGHT

### Josh Stiller—A Life of Birds and Bills



When he was young, Josh Stiller's parents would take him and his siblings to Iroquois National Wildlife Refuge each spring to watch Canada geese and ducks fly back from their wintering grounds. It clearly left an impression on him, fostering his love of birds and nature.

Josh earned a bachelor's degree in wildlife management from SUNY Cobleskill, spent a few years as a seasonal technician at DEC, and went on to get a master's degree in fish and wildlife management from SUNY ESF (College of Environmental Science and Forestry). In 2011, he began working full-time at DEC as a wildlife biologist on Long Island, and in 2015, moved into "the position I wanted since I was young"—a migratory game bird biologist in DEC's Central Office. Josh now coordinates statewide migratory game bird management and research programs, and represents New York on the Atlantic Flyway Technical Section, a multi-state advisory group of wildlife biologists who develop management recommendations for the East Coast migratory bird route.

Like many of his colleagues, Josh may have found his dream job, but it took a lot of effort, including working long, odd hours in challenging conditions, and many volunteer hours to get his foot in the door, but he believes it was worth it. "Any day I get out in the field is a good day," he says, noting that times he can go out with project collaborators or graduate students are "a rewarding experience."

Josh also takes great satisfaction every time he and a team complete a research project that adds to their collective knowledge and understanding of a bird species. He will soon be traveling near the Arctic Circle as part of a five-year collaborative project that will involve helicopter trips to corral and band flightless Atlantic brant, cackling geese, and snow geese on their breeding grounds on Baffin Island, the largest island in Canada.

Josh is an avid outdoorsman and enjoys being out on the water fishing, duck hunting, or just relaxing in nature. When asked why he became interested in waterfowl, Josh cites a quote from Aldo Leopold: "To arrive too early in the marsh is an adventure in pure listening..." Such focus may offer some balance to Josh and his wife, who are "obsessive" fans of the New York Mets and Buffalo Bills—in fact, they had a Bills-themed wedding.

John O'Connor

# EXPLORING

BY AMY LIPSKY

Athleticism can often be an inheritance. As children, we grow up watching the sports our parents love, be it soccer, basketball, or football, crowded around the TV, during game-day, rooting for our favorite team.

For my family, it was scuba diving. Our team was a buddy system. My version of counting goals was counting bubbles at the surface until I was old enough to get certified to dive and join my family underwater in places most people only ever get to dream about.

Traveling to explore reefs was a fantastic benefit of the sport, but after seeing what was out there in the southern, warmer waters, the curiosity about what was in my own backyard began to peak.

Hidden within Long Island's waters are several—and some odd—artificial reefs and sunken ships teeming with marine life. Late last season, New York sunk the Canal Corporation's 74-foot tugboat *Reliable*, creating a diving destination where you can find starfish clinging to the unique structures of the boat, and many fish inside its cabin. And it's located just twenty minutes south of Shinnecock Inlet.

"We saw schools of juvenile black fish," said Joseph Sferrazza, president of the NYC Sea Gypsies, a scuba club. He frequently dives the tug, noting that they also see skates, black sea bass (much to the delight of anglers), sea robins, and even eels that can be found hiding out in the crevices of the artificial reef. The structure of the boat is a haven for these fish, providing them with shelter and food as barnacles and mussels cling to the tugs.

"They become their own little ecosystems," Sferrazza noted. Last summer there was even a school of sand-tiger sharks circling the area, drawn in by the abundance of prey that had settled there, which, in turn, drew in more adrenaline-seeking divers. While some people only get to see the sharks at the Long Island Aquarium in Riverhead, divers have the opportunity to see those same misunderstood creatures up close on the dives they do right here in Long Island's waters.



# NEW YORK'S ARTIFICIAL REEFS

Knowing that artificial reefs can help replenish the marine environment means the new reefs being created could be a potential game changer, both for the natural, marine world and for scuba divers all over. “Within the last twenty years or so the scuba diving community has shrunk,” Sferrazza commented, which is something I had noticed as well over the course of my decade-long diving career. Most people tend to flock to warmer waters, not just for the temperature, but also for the marine life down there. But these new and expanded reefs can create a different kind of environment, one that might appeal to the younger generation (with the proper gear to keep you warm of course).

Each reef, whether artificial or natural, is essential to the growth and population of marine life, which not only draws in more divers like myself and my family, but also is tremendously beneficial to the environment. The careful placement and sinking of these ships (and tugboats, barges, and other materials) help the environment flourish, which is important given that a number of natural reefs are dying at a rapid rate.

Diving the reefs of Hawaii when I was ten versus when I was twenty was a shock and wake-up call for me when I got to see firsthand how quickly those reefs were dying, and how much the sea life had shrunk during that decade. An approved, environmentally friendly system of artificial reefs might just be the answer we and our oceans are looking for to give these marine animals a chance to replenish their numbers. New York’s reefs are clearly an investment in our environment and our future.

Long Island native and enthusiastic diver **Amy Lipsky** has completed approximately 200 open-water ocean dives.

**Editor’s note:** To learn more about New York’s artificial reefs, check out the October 2018 issue of *Conservationist*.

## Expanding and Improving Long Island’s Sunken Treasures

Many people may not be familiar with New York’s marine resources, including the artificial reef sites off Long Island, which are affectionately known as “Long Island’s Sunken Treasures.” Located in New York’s coastal waters, these artificial reefs attract popular fish species, expand opportunities for sport fishing, and provide great sites for divers to explore.

In 2018, Governor Cuomo directed the largest expansion of Long Island’s artificial reefs in state history. Twelve existing reef sites received a variety of materials—including rocks and concrete, former bridge materials, and retired vessels—placed in strategic locations to improve marine life and boost the region’s recreation.

We encourage people with an interest in marine diving or fishing to check out the reefs. Marine life, such as scup, fluke, black sea bass, lobster and other marine species, are moving into the reef structures, enhancing these waters and creating exciting new recreational opportunities in the Long Island region, which is already known as a great destination for those who love the outdoors.

Exploring the Tugboat *Reliable*  
on New York’s Shinnecock Reef



Sandra Clapp



# building for the FUTURE

**Sustainable Trails Help Visitors Leave No Trace**

BY JANE RAFFALDI AND McCREA BURNHAM | PHOTOS PROVIDED BY AUTHORS

The allure of nature is hard to resist. Getting out on a trail provides an opportunity to escape the daily routine of life, enjoy the beauty of nature, and replenish your mind, body, and spirit.

When out and about on state lands, you're probably thinking about your destination, maybe hoping to see some wildlife, or trying to escape from the stresses of the work week. You're probably not thinking about the dirt and rock beneath your feet, which is exactly what DEC—specifically its Lands and Forests unit—is aiming for.

**“Motivated by a desire to protect the property’s natural resources and provide a safe experience for visitors, DEC embarked on a conscious, statewide effort to make existing and new state trails more sustainable.”**

For the past few decades, and especially in recent years, DEC has been using sustainable techniques in its building and re-routing of trails to help ensure they last forever, and to provide routes that are more enjoyable for visitors and better for the environment.

Most visitors who enjoy New York’s vast and diverse outdoor resources try to minimize their environmental impact as much as possible, but oftentimes that can be difficult when poorly designed routes invite users to leave the trail. Prior to the 1970s, recreational trails were usually created by taking the most direct route up and down the mountain.

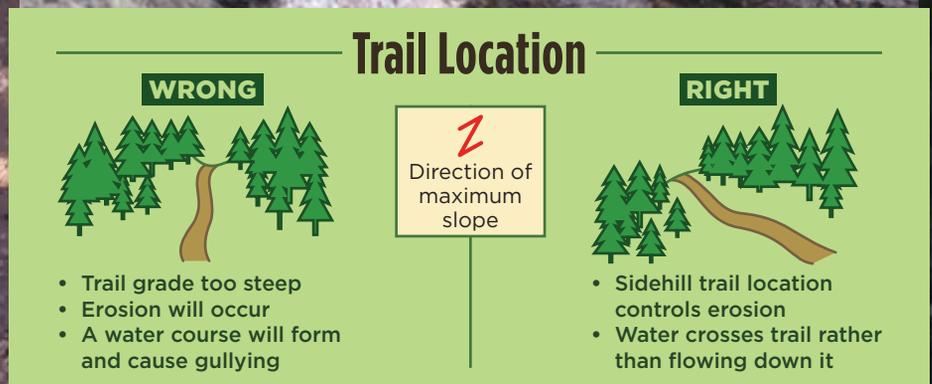
Known as “legacy trails,” they were not planned out or designed, but rather created by fit hikers tackling steep slopes to reach their destination—usually an amazing view—the quickest way possible.

Taking a direct route led to steep and highly compacted trails. During rainfall and snowmelt, these trails transform into flumes, with the flowing water rapidly pulling away sediment. In the process, roots and rocks are exposed and the trail becomes more gullied or U-shaped (like a house gutter), creating a hazardous route for weak and strong ankles alike. Significant erosion affects the visitor experience and the surrounding environment. Soil that gets washed away from the trails can end up in nearby streams, clouding fish habitat,

disrupting nutrient balances in the water, and burying fish eggs and aquatic invertebrates.

After only a few decades, the consequential damage of these direct route trails could be seen both on and off the trails. Motivated by a desire to protect the property’s natural resources and provide a safe experience for visitors, DEC embarked on a conscious, statewide effort to make existing and new state trails more sustainable.

Today, trails are being designed to withstand high amounts of use and allow water to drain, which prevents erosion, making these trails sustainable over the long-term. This is achieved by locating trails in areas where soils are durable and avoiding steep slopes, with most sustainable trails staying below a 10 percent grade (see diagram).



Water and its power to erode are the biggest threats to any trail in the northeast. By eliminating high-power waterflow and the damage it can cause, DEC is helping to ensure the trails will last “forever”—mostly. While any trail will always require maintenance (such as clearing blowdown), the tread of a sustainably-built trail shouldn't require much work over the years.

Before any shovels hit the dirt to build sustainable trails, the most important step is the planning. Staff from the Division of Lands and Forests work with other DEC Divisions to plot the layout and design of new and rerouted trails. During design, staff consider the environmental priorities of a site, as well as the attractions and views visitors are there to see. The final product is typically the most realistic solution; one that balances minimal environmental impacts with a safe, enjoyable, and rewarding experience for visitors.

While its benefits are numerous, building sustainable trails presents challenges. Planning and design of these trails takes more time and money than just allowing people to march up a mountain. Soil types vary across the state, and also vary in how effective they are for draining water. Above 2,500 feet, soils tend to be very thin, making it more difficult to create sufficient drainage. In Wilderness Areas within the Forest Preserve, there is the additional challenge of the “minimal tools concept,” which only permits primitive, non-motorized tools to be used. The only exception is during two, narrow, off-peak windows a year. Among other things, this wilderness concept exists to minimize impacts by reducing both sound and air pollution, and to ensure only



**A sweeping S-turn in progress.**



**Turnpiking uses crushed rock for water drainage, which is then capped with soil.**



**Trail crews from WARF played a major role in the construction of the mountain bike trails at Elm Ridge.**

trained professionals are allowed to use motorized equipment such as chainsaws.

Sustainable updates for existing trails aren't just for general multi-use trails. On trails tailored to specific user groups, such as horseback riders or mountain bikers, DEC explores additional techniques to make the best trail possible. For example, at Elm Ridge Wild Forest near Windham in the Catskills, a new trail network features stacked loops of single-track mountain bike trails that incorporate techniques to avoid inclines for mountain bikers, such as sweeping S-turns. These wider, lengthier turns gain elevation slowly,

which makes for a more enjoyable ride and helps avoid erosion by slowing down water on the trails. The S-turns have the added benefits of encouraging bikers to slow their speeds and discouraging them from going off-trail for a more direct path.

The Elm Ridge trail network was truly a team effort from the brainstorming of these designs to the final product. DEC's Division of Lands and Forests staff worked with the International Mountain Bicycling Association on a concept plan for the area, which was incorporated into the site's unit management plan. The Adirondack Mountain Club, Windham Area Recreational Foundation (WARF), and DEC then worked together to bring the plans to life. The trail network, which is more than 25 miles, has been well-received by cyclists and walkers alike since its recent completion, and is more protective of local resources.

In Central New York, the Brookfield Equestrian Trail System (Madison County) is currently receiving sustainable updates that are expected to be completed this summer. Trail



**A former stream crossing in the Brookfield equestrian trail system.**



**The stream crossing was replaced with a culvert pipe with a gravel tread surface which encourages horses to stay on the trail.**

systems that are designed for horses must defend against a higher level of compaction. Therefore, mineral soils or sandy soils are used because they are best for allowing drainage and are also the most durable. These soils are also used as a tread surface at Brookfield, where stream crossings are being updated to make them more horse-friendly, thereby encouraging horses to stay on the trail. Stream tests at the site have shown that the project has already remediated erosion issues, leading to improved water quality.

In the Adirondacks, sustainable trails are one solution to challenges created by the increasing popularity of the area. As more visitors flock to this region each year, creating and maintaining trails that can withstand high use and deliver a safe and enjoyable experience for users is a top priority. At Lyon Mountain, located near the northern border of the Blue Line, the original trail builders took the most direct route to the top of the mountain during a project to install a fire tower in 1917. Decades later, the original access route to the property was a 50-foot wide easement for a trail straight up the mountain to the fire tower's footprint.

After the tower was closed in 1989, the trail morphed into a recreational trail for visitors seeking grand views of the Adirondacks. In 2008, DEC acquired all of Lyon Mountain as part of the 80,000-acre Domtar purchase, and rerouting the fire tower trail became a top priority. DEC contracted professional trail crews from the Adirondack Mountain Club who worked with the club's volunteers to build the new trail. After a summer of mud, sweat, and heavy lifting, a more gradual, sustainable, and safer trail was unveiled, offering the same rewarding view.

Sustainable trail improvements are also planned for Cascade Mountain and Mount Van Hoevenberg in the

Adirondack High Peaks. Both trails are planned to begin with a shared reroute that will provide a more gradual climb, followed by rerouting the rest of each individual trail. Safety improvements will be made to the trails and also to the parking for those peaks. Parking will be offered at the Olympic Regional Development Authority's Mount Van Hoevenberg Sports Complex as an alternative to roadside parking along Route 73.

New, sustainable trails are helping visitors enjoy nature across New York while reducing their impact. Improved trails are a major step in conserving recreational areas for generations to come, but there is so much more people can do to leave no trace during their visits. Before embarking on your outdoor adventure, be sure to follow the first principle of Leave No Trace by planning ahead and thoroughly preparing for your trip. Always stick to the trail, even if it's muddy, to help protect trailside plants and habitats. By utilizing sustainable trails specifically designed to withstand visitor use, we can limit our impact on our natural resources, and protect the places we know and love for both ourselves and future generations.

**Jane Raffaldi** is an Outreach Specialist in DEC's Division of Lands and Forests (DLF). **McCrea Burnham** is a Stewardship Coordinator in DLF.



**PLAN AHEAD  
AND PREPARE**



**TRAVEL AND CAMP ON  
DURABLE SURFACES**



**DISPOSE OF WASTE  
PROPERLY**



**LEAVE WHAT  
YOU FIND**



**MINIMIZE CAMPFIRE  
IMPACTS**



**RESPECT WILDLIFE**



**BE CONSIDERATE OF  
OTHER VISITORS**

## Trail Supporter Patch

You can help make more state land trails sustainable across New York State by purchasing a trail supporter patch for just \$5. All funds from trail supporter patch sales are used for the maintenance and enhancement of hiking, biking, horseback riding, and other non-motorized trails on state lands. This includes past projects such as materials for the accessible horse-mounting platforms at Brookfield Horse Assembly Area and the boardwalks at Elm Ridge. The patch can be ordered by phone, at all outlets where sporting licenses are sold, or on DEC's website at [www.dec.ny.gov/outdoor/36016.html](http://www.dec.ny.gov/outdoor/36016.html).



# BEAR SPRING MOUNTAIN WILDLIFE MANAGEMENT AREA

BY LARRY BIFARO | PHOTOS BY DEC

Located in the western reaches of the Catskills, Bear Spring Mountain Wildlife Management Area (WMA) provides a full outdoor experience, with beautiful views, mountain streams, ponds, trails, and open fields that can all be easily accessed directly from the roadside. Visitors can hunt, fish, trap, watch wildlife, or hike on miles of trails. The landscape is typical of the Catskill Mountains and includes steep forested mountainsides, gentle slopes, and two valleys. Elevations range from 1,300 to 2,500 feet above sea level, and many small fields are dispersed throughout the property.

The area was first settled in the early 1800s, with logging and farming being a common way of life for settlers. Hard times saw many farms abandoned, and in the early 1930s the federal government purchased many of these local properties. New York State first leased the Bear Spring Mountain lands from the federal government in 1941 for forestry and recreation purposes, and in 1961, the

Conservation Department (predecessor to DEC) purchased the property for those same uses. Today, DEC continues to manage the site's abundant forest products, allowing the public to enjoy thousands of acres for recreation activities.

Hunters can find white-tailed deer, black bear, wild turkey, and grouse, and each year DEC releases pheasants in some of the larger fields off East Trout Brook Road. Anglers can fish for brook and brown trout in the property's two streams, and largemouth bass, sunfish, and bullheads at Russ Grey Pond. Hikers will see multiple bird species, interesting plants, and woodland wildflowers along the trails. There is also a rustic facility for horses at the southern end of East Trout Brook Road, providing an area where horse owners can begin a ride. Winter activities include snowmobiling, snowshoeing, and cross-country skiing.

Like most of the state's WMAs, Bear Spring Mountain is active in New York's Young Forest Initiative. DEC staff cut patches of forest, which results in thick, new growth of



Visitors are treated to beautiful scenery and water views.



A year-round destination: hunting, fishing, skiing, horseback riding, and more.

**LOCATED IN THE TOWNS OF WALTON,  
COLCHESTER AND HANCOCK,  
DELAWARE COUNTY; SIZE: 7,141 ACRES**



## Site Features



**NOTES:** Open year-round. Hunting, trapping, fishing, and hiking are all popular activities. Bear Spring Mountain Campground is a state-operated campground within the WMA boundary that contains 41 individual campsites and facilities. There is a swimming beach and easy access to the trail system on the WMA. For camping reservations, check out <https://newyorkstateparks.reserveamerica.com> or call 1-800-456-CAMP (1-800-456-2267).

Individuals with disabilities can apply for a permit through the Motorized Access Program for People with Disabilities (MAPPWD) to use an ATV on the McCoy Hill Trail (Trail #2). Permittees may also use the Saint John's Field Trail, which begins at a gate on West Trout Brook Road. Permittees are not allowed to use trucks or cars on these trails. Contact the regional DEC office (listed below) for more information.



**DIRECTIONS:** The property is accessed from the north from State Route 206 between the villages of Walton and Downsville, with entries at both East and West Trout Brook Roads. These two roads create a loop, making navigation easy. To access the property from the south, take Shinhopple Brook Road, which is a short drive from Rt 17/86. The WMA has multiple parking areas along the road system, but users can also safely park on the shoulder of both East and West Trout Brook Roads. Note that West Trout Brook Road is open seasonally and is not maintained in the winter.



**CONTACT:** For more information, visit [www.dec.ny.gov/outdoor/85850.html](http://www.dec.ny.gov/outdoor/85850.html) or call the DEC Region 4 Wildlife Office in Stamford at 607-652-7367.

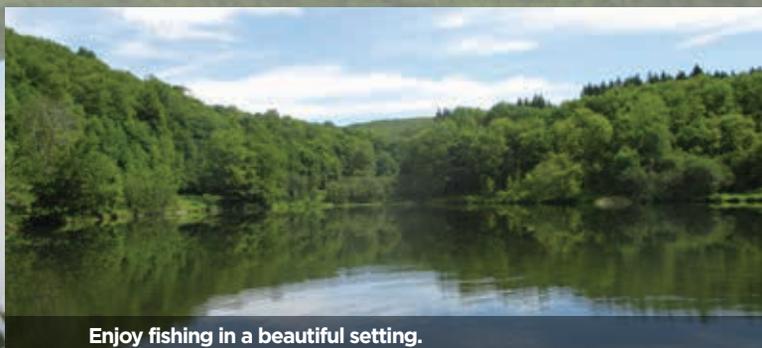
shrubs, seedlings, and saplings. This regeneration of trees and shrubs attracts a variety of birds and mammals that need young forest to survive. Some species from nearby mature forests also visit young forests to feed on the abundant food sources and hide in the dense cover. Visitors to Bear Spring Mountain can expect to see areas in various stages of regrowth throughout the property, offering excellent opportunities for birdwatchers.

A unique feature of the area is a state-operated campground within the WMA boundary. Bear Spring Mountain Campground contains 41 individual campsites and facilities. There is a swimming beach and easy access to the WMA's trail system. Camping reservations can be made at <https://newyorkstateparks.reserveamerica.com> or by calling 1-800-456-CAMP (1-800-456-2267).

Larry Bifaro is a Wildlife Biologist in DEC's Stamford office.



DEC releases pheasants into the fields for hunting season.



Enjoy fishing in a beautiful setting.

# HYDRILLA

## in the Croton River

*Battling  
a modern-day  
mythological*

**MONSTER**

BY NICOLE WHITE |  
DEC PHOTOS UNLESS OTHERWISE NOTED

Flowing from the base of the New Croton Reservoir (part of New York City's water supply system) to the Hudson River Estuary, the Croton River proper is a tailwater ecosystem. The area is quite scenic, and the river is home to a trout fishery as well as an annual migration of river herring. When there are heavy rains, New Croton Reservoir overflows, sending water roaring over New Croton Dam's 1,000-foot spillway and producing

a tremendous wall of foam. The flow plunges downward along nearly 300 feet of steps and crashes into Croton Gorge. From here, the freshwater current tumbles over cobbles and winds around a series of islands. The surge slows, gently lapping forested banks, before it meets the salt on each incoming tide from the Hudson River. The water becomes brackish here, in the lower third of the Croton proper, and empties into the Hudson on each outgoing tide.



Hydrilla

“ Hydrilla was originally brought into the United States in the 1960s, and quickly became a common freshwater aquarium plant. However, the plant’s reputation for taking over waterways led it to be classified as a federally-listed noxious weed and it is regulated as an invasive species in New York State.”



The Croton River is home to a trout fishery and an annual migration of river herring.

Since Europeans came to the Hudson River Valley, the Croton River ecosystem has endured many man-made impacts. Construction of dams, mills, and bridges, and vast commercial fishing pressure have all affected the river ecology. But the most recent man-made issue for the system originated from a seemingly innocuous and unexpected place—a fish tank.

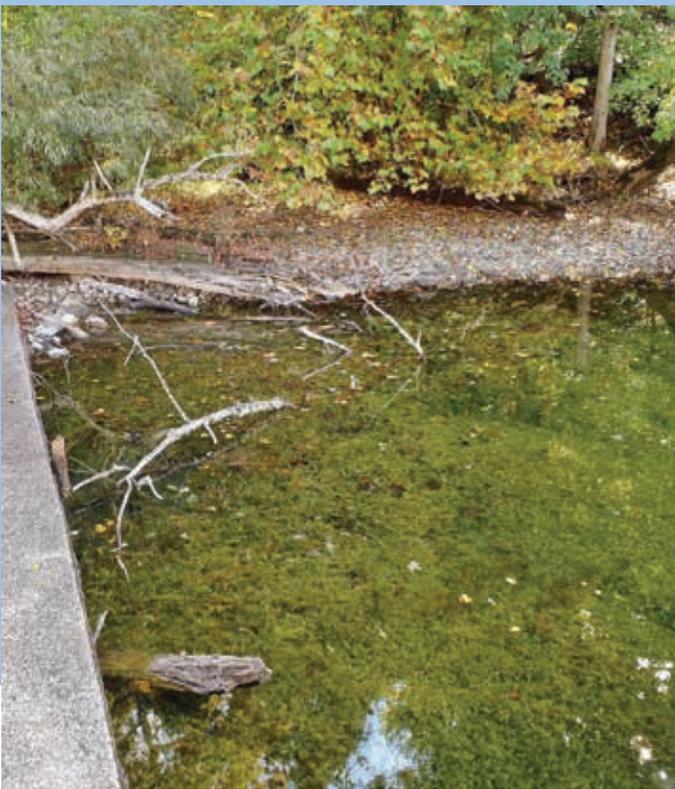
The invasive aquatic plant *Hydrilla verticillata* has been found in the Croton River system, likely introduced when someone dumped the contents of an aquarium into the river waters. Hydrilla was originally brought into the United States in the 1960s, and quickly became a common freshwater aquarium plant. However, the plant’s reputation for taking over waterways led it to be classified as a federally-listed noxious weed and it is regulated as an invasive species in New York State.

Hydrilla is named after the water monster “Hydra” from Greek mythology. According to lore, Hydra could regenerate heads, while hydrilla can regrow entire new plants from even small fragments. Today, hydrilla is often called “the world’s worst invasive aquatic plant.”

The hydrilla infestation was discovered in the Croton system during an aquatic plant survey in 2013. Able to grow an inch per day, and lacking any natural predators, hydrilla had formed large mats and spread throughout the length of the Croton River by 2016. Left unchecked, it would quickly displace native aquatic plants and affect the wildlife that relies on them. Also alarming is that hydrilla fragments could grab a free ride on the tide to reach potential new habitats—causing a significant threat to the Hudson River Estuary and its tributaries.

Recognizing the urgency of the situation, DEC created the Croton Hydrilla Five-Year Management Plan in 2016 to explore all the options to reduce the threat. A couple of the highlights discussed in the plan include:

- Hand-pulling and mechanical removal are not feasible management methods for hydrilla due to its ability to regrow from small fragments and structures called tubers (underground energy storage structures) and turions (detaching overwintering buds).
- The infestation is far too widespread for benthic barriers (aka weed mats), which consist of dark materials placed along the bottom of a body of water to block sunlight and inhibit aquatic plant growth. Such barriers are also not typically effective in high flow systems such as the Croton River.
- Using a biological control like triploid grass carp is impractical in a tidal river, where fish may escape into the Hudson.
- The use of chemicals is limited to those that are safe for fish, wildlife, and public swimming beaches; are effective in flowing systems (both fresh and brackish water); and will not impact the drinking water quality for the Village of Croton-on-Hudson.



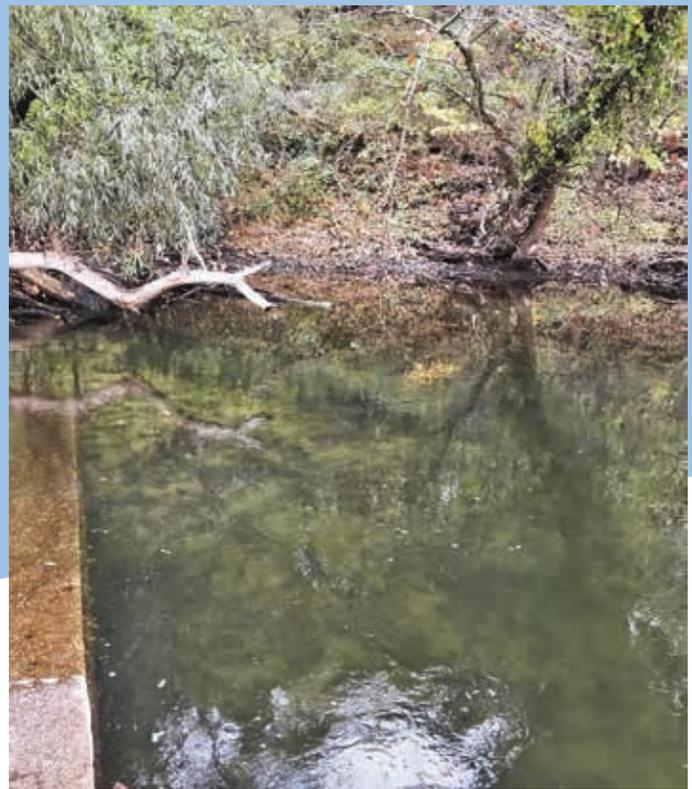
**Oct 14, 2015 – Dense hydrilla topping out at the surface of the Croton River.**

In 2017, DEC began treating the infestation of hydrilla using a very low concentration of the aquatic herbicide fluridone, which can inhibit the plant's photosynthesis. Following two seasons of treatment (2017 and 2018), hydrilla biomass decreased 87 percent throughout the Croton River, and the density of tubers that overwinter in the soil has decreased 83 percent. In addition, turion (overwintering bud) density has decreased 96 percent.

Researchers performed rigorous water quality sampling to ensure the treatment hasn't impacted Croton-on-Hudson's drinking water supply or local aquifers. They also conducted extensive surveys of submerged aquatic plants each year since 2015 to compare plant community data before and after treatment. Of particular interest was wild celery (*Vallisneria americana*), a native plant of concern; results show it has not been impacted.

The results have been encouraging. In 2018, DEC surveyed 5,222 points at 47 sites along the Hudson River Estuary for submerged aquatic plants. No hydrilla was found. In addition, studies conducted during 2017-2018 to assess the health of the aquatic macroinvertebrate community found the fluridone treatment has had no impact. DEC plans to continue hydrilla treatment throughout each growing season (May-October) until 2022 and will then assess whether further treatment is needed.

The success of this control project is due in large part to cooperation among a variety of experts and stakeholders. Aquatic invasive infestations within flowing rivers can be



**Nov 2, 2017 – Hydrilla almost completely controlled in same location following treatment.**

notoriously difficult to manage, and it will be the strong upstream/downstream partnerships that will ultimately control hydrilla. At present, DEC is working closely with the New York City Department of Environmental Protection, which is beginning treatment of hydrilla in the New Croton Reservoir.

Boaters, anglers, and other recreationists can also help prevent and control invasives. DEC has conducted extensive outreach efforts within the Croton River and Hudson River Estuary watersheds to increase awareness about aquatic invasive species, specifically hydrilla. Watercraft inspection stewards are stationed at the public boat launch in Croton-on-Hudson to educate recreational boaters about the risks of spread and inspect watercraft for plant fragments before and after launch.

Our waters serve many purposes, including providing many recreation opportunities, and we must be vigilant protecting them. DEC looks to build on the positive results we've seen in managing hydrilla in the Croton River to ensure the mythological Hydra's modern-day namesake is controlled and people have access to all the benefits the river and its watershed offer.

For more information about hydrilla or the Croton River Hydrilla Control Project, visit: [www.dec.ny.gov/animals/104790.html](http://www.dec.ny.gov/animals/104790.html) or [www.dec.ny.gov/animals/106386.html](http://www.dec.ny.gov/animals/106386.html)

**Nicole White** is the Project Manager for DEC's Croton River Hydrilla Control Project.

# On Patrol

## Real stories from Conservation Officers and Forest Rangers in the field

CONTRIBUTED BY ECO LT. LIZA BOBSEINE AND FOREST RANGER CAPT. SARAH B. GEESLER

### Hold the Nuts— Hamilton County

Early in the evening on July 10, Forest Rangers out of Hamilton County were requested to assist a teenage boy having an allergic reaction to a known nut allergy. A group from Camp Fowler, a non-profit children's camp, in Lake Pleasant, had been hiking the Northville-Placid Trail and were camping at Plumley Point when the teen unknowingly ingested food processed in a facility that also processed nuts. Trip leaders gave him medication to slow the allergic reaction while Ranger Waters responded by boat. Ranger Waters subsequently transported the patient to the Long Lake boat launch, where a Long Lake Rescue Squad was waiting. The teen was transported to Adirondack Medical in Saranac Lake for treatment.

### Not So Humerus— Lewis County

On the afternoon of June 21, Forest Rangers out of Lewis County were requested to assist a woman who had been thrown from her horse while riding in DEC's Otter Creek Horse Trails. The Rangers transported two EMTs from Lewis County Search and Rescue Ambulance Service to the patient. The EMTs evaluated the rider's condition and determined she had an angulated internal compound humerus (upper arm) fracture. She was then packaged on a litter and transported by a Ranger's six-wheeler to a waiting ambulance, and then to Lewis County General Hospital for treatment.

### Reptile Hoarder— Cattaraugus County

In July, DEC charged an Allegany man with multiple violations for the illegal possession and sale of wildlife, resulting in the largest seizure of illegal reptiles in state history. DEC ECOs, Bureau of Environmental Crimes Investigators, and Division of Wildlife staff followed up on a tip and searched the home of the Allegany man where they found 292 animals being kept illegally, including numerous venomous reptiles. Among the seized animals were three king cobras, hundreds of turtles, and six Gila monsters (a venomous lizard native to the southwest U.S. and northern Mexico). The defendant faces numerous charges, including: felony charges of first-degree reckless endangerment; the illegal sale of wildlife; illegally possessing and transporting venomous reptiles; and 283 counts of illegally possessing a wild animal as a pet. The Cattaraugus County District Attorney's Office is prosecuting the case. If convicted on all charges, the defendant faces up to a maximum fine of \$104,000 and/or up to 33 years in prison.



### Stuck Fawn Freed— Dutchess County

On June 18, ECO Zachary Crain responded to a call about a fawn caught in a fence in the Village of Millerton. ECO Crain located the fawn and freed it from the fence it was wedged under. The fawn sustained minor cuts and scrapes from the fence, but was otherwise healthy. ECO Crain walked a short distance down the road with the fawn and the fawn's loud bleats soon brought a concerned doe into view. The ECO let the fawn go and was later told by the original caller that the fawn was seen reunited with its mother.

# SALMON RIVER FISH HATCHERY

BY THOMAS KIELBASINSKI | PHOTOS BY DEC

Often referred to as New York's "Flagship Hatchery," the Salmon River Fish Hatchery supports a world-class trout and salmon fishery in Lake Ontario, Lake Erie, and their tributaries. From the North Country to the Niagara River, fish stocked from the Salmon River Hatchery provide opportunities to catch trophy-sized trout and salmon year-round in New York.

Constructed in 1980, the hatchery is just upstream from the confluence of Beaverdam Brook and the Salmon River. The facility consists of a main hatchery building that houses the "start tank" room, a raw water headbox area where reservoir and well water enter the building, a spawn house where eggs are collected, an egg incubation area, a "reaeration" building which adds oxygen to the reservoir water, and several workshops/storage rooms for equipment and feed. The visitor center offers several large balcony viewing areas that allow people to watch hatchery activities occurring inside and outside the building.

The water used to rear the fish is supplied by multiple sources. A large pipeline feeds the hatchery with approximately 9,000 gallons of water per minute from the Lighthouse Hill Reservoir. Since the temperature of the reservoir water can vary from 32°F to 75°F, a more consistent source of cold water is supplied from a series of deep and shallow wells located on the hatchery's 400+ acres. These wells can provide another

800-1,000 gallons per minute. Depending upon the time of year, these water sources are used alone or in combination to attain appropriate water temperatures.

Hatchery staff rear and stock approximately 3 million Chinook and coho salmon, steelhead, and brown trout in more than 100 public waters in 11 counties, and help federal agencies stock smaller numbers of Atlantic salmon.

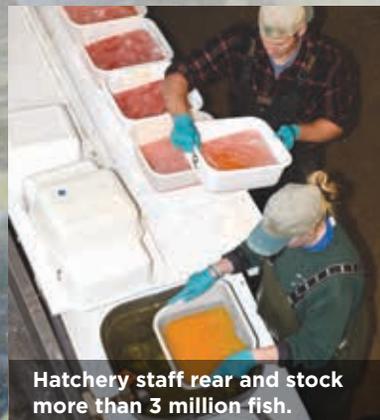
Tens of thousands of people from all over the world visit the hatchery each year, especially during its annual "National Hunting & Fishing Day Open House," held the fourth Saturday in September. The visitor center has three large aquariums and many interpretive displays, and is generally open from April 1<sup>st</sup> until November 30<sup>th</sup>, seven days per week, weather permitting. If you visit the hatchery you might have the opportunity to watch the fish culturists collect eggs from adult fish—salmon in the fall (generally starting the Tuesday after Columbus Day), steelhead in the spring (around April 1<sup>st</sup>).

As the spawning season approaches, adult fish swim up the Salmon River from Lake Ontario and into Beaverdam Brook and then the hatchery's fish ladder. The ladder is a popular spot for visitors to view large fish as they navigate up the ladder and jump into the hatchery's holding pond.

Eggs collected during spawning runs are placed in special incubators that are supplied with a constant flow of water. When the eggs hatch, the emergent fry are



The Visitors Center has three large aquariums and various interpretive displays.



Hatchery staff rear and stock more than 3 million fish.



Balcony views allow visitors to watch hatchery operations.

**LOCATED IN THE VILLAGE OF  
ALTMAR IN OSWEGO COUNTY,  
SOUTHEAST OF PULASKI**



## If You Go

The Salmon River Hatchery—referred to as New York’s “Flagship Hatchery”—is open April through November. Tours for organized groups can be arranged in advance by calling the hatchery manager at 315-298-5051. If you’d like to witness the fall or spring egg takes, contact the hatchery a week or two ahead of your visit.



**LOCATION:** 2133 County Route 22, (Cemetery Road), one mile north of the Village of Altmar



**VISITOR HOURS:** Open 8:30 a.m. – 3:30 p.m. daily, from April 1 to November 30.



**SPECIES RAISED:** Chinook salmon, coho salmon, steelhead, and brown trout



**PHONE:** (315) 298-5051

transferred to aluminum start tanks where they are fed a specially formulated dry diet and begin the process of growing to stockable size.

The fish are stocked from shore into nearshore net pens, and offshore from a landing craft or barge. Barge stocking uses trucks and a reconditioned surplus military landing craft to transport loads of fish to a specified destination. The fish are released well offshore, out of reach of the many avian predators. Stocking season generally runs from late March until early June, with a smaller number of trips in the fall.

Salmon River Hatchery is a busy place with plenty for visitors to see and do. There are always fish in the hatchery’s tanks or eggs in the hatchery’s incubators. Through Governor Cuomo’s NY Works Program, DEC has committed nearly \$14 million in upgrades to the state’s hatchery system, including recent improvements to Salmon River Hatchery’s visitor center: new televisions and photographs; interpretive videos; lighting; and signage. In addition, the governor also recently announced that the state will provide \$5.25 million to modernize the Salmon River Fish Hatchery. This will help ensure Lake Ontario continues to be a world class fishing destination.

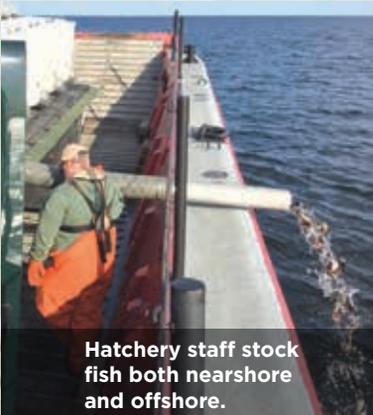
**Thomas Kielbasinski** is the manager at the Salmon River Hatchery.



### SPECIES SPOTLIGHT

## Chinook Salmon

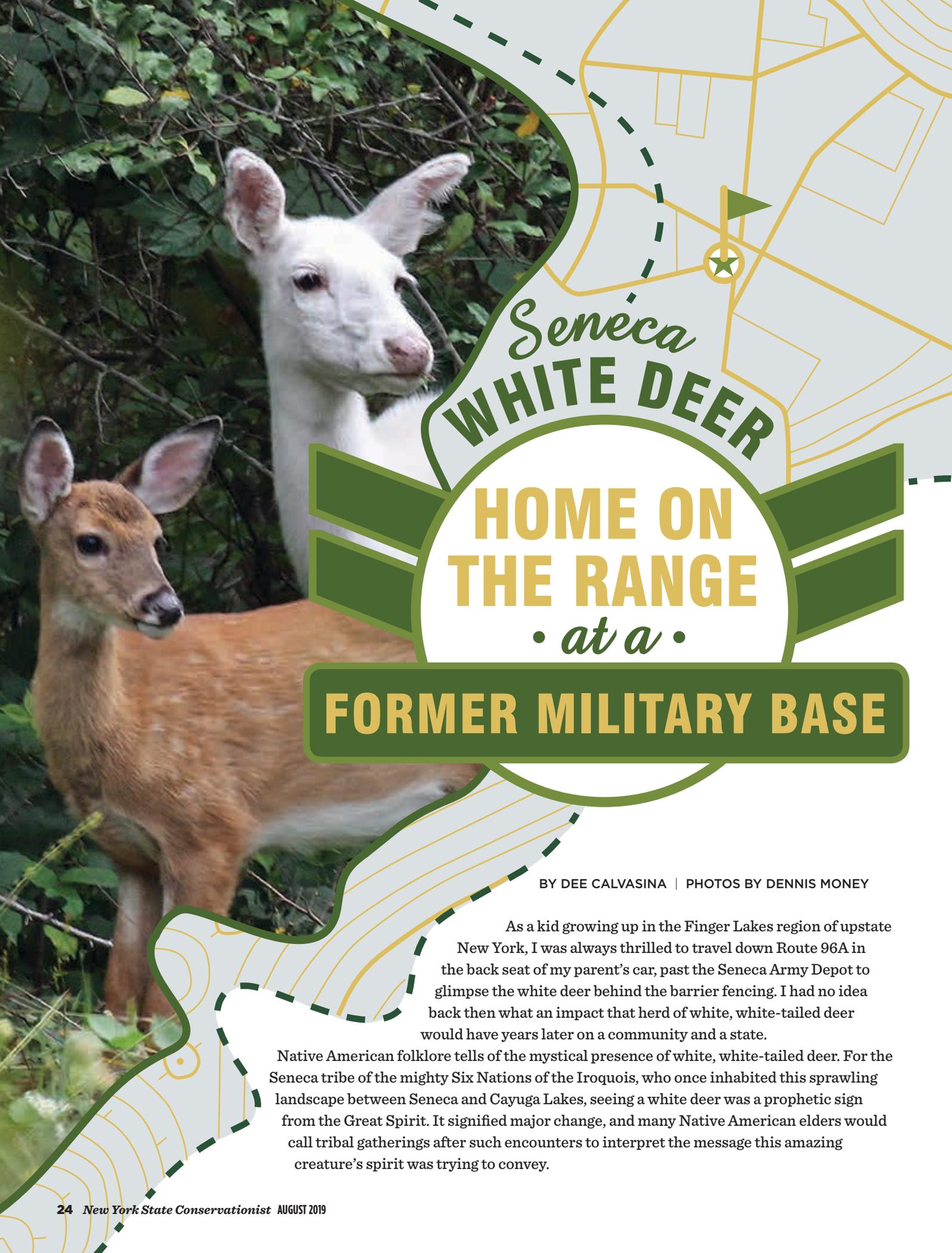
- Not native to New York; first stocked in the Great Lakes in 1873; currently only found in Lakes Erie and Ontario.
- Also called king salmon—largest of the Pacific salmon, can reach 40+ pounds in NY.
- Adult chinooks spend most of their time in deeper, open water, but will follow prey fish into nearshore areas in early spring and late summer or early fall. In the fall, breeding Chinooks congregate or “stage” around the mouths of streams in preparation for making their spawning runs, which generally start in September and are completed by early November. Adult salmon die shortly after spawning.
- Most of the salmon caught in New York’s Great Lakes are hatchery-reared.



Hatchery staff stock fish both nearshore and offshore.



The hatchery produces trout and salmon for NY’s world-class fisheries.



Seneca  
**WHITE DEER**

**HOME ON  
THE RANGE**

• *at a* •

**FORMER MILITARY BASE**

BY DEE CALVASINA | PHOTOS BY DENNIS MONEY

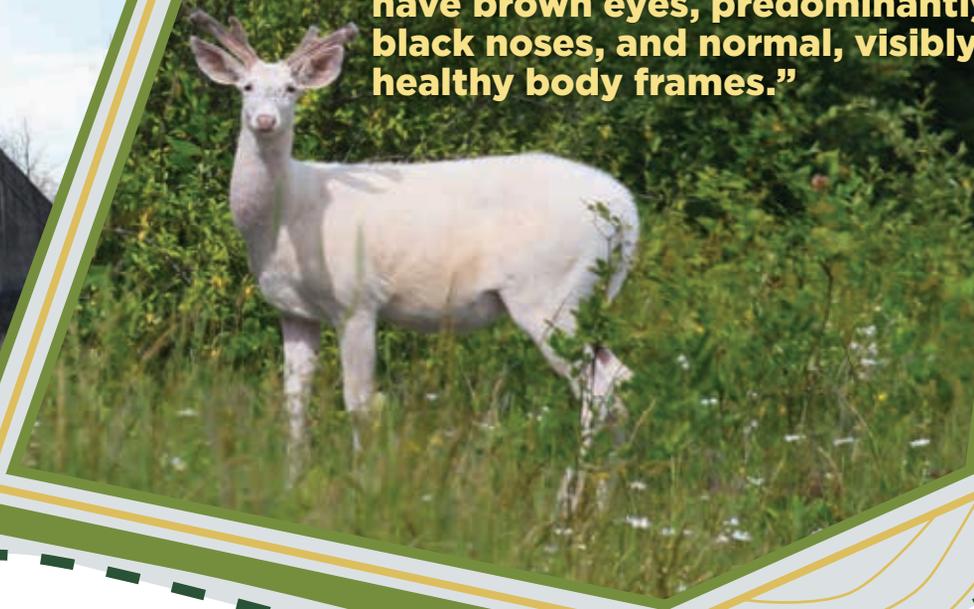
As a kid growing up in the Finger Lakes region of upstate New York, I was always thrilled to travel down Route 96A in the back seat of my parent's car, past the Seneca Army Depot to glimpse the white deer behind the barrier fencing. I had no idea back then what an impact that herd of white, white-tailed deer would have years later on a community and a state.

Native American folklore tells of the mystical presence of white, white-tailed deer. For the Seneca tribe of the mighty Six Nations of the Iroquois, who once inhabited this sprawling landscape between Seneca and Cayuga Lakes, seeing a white deer was a prophetic sign from the Great Spirit. It signified major change, and many Native American elders would call tribal gatherings after such encounters to interpret the message this amazing creature's spirit was trying to convey.

Abandoned bunkers dot the property.



“ While some people think these deer are albinos, they differ from albinos in that they have brown eyes, predominantly black noses, and normal, visibly healthy body frames.”



Centuries later, in 1941, a new, 10,000-acre military munitions storage facility (originally the Seneca Ordnance Depot) was constructed on the site. The white, white-tailed deer would not make an appearance until 1949, when a buck and fawn were first encountered. The intrigue and astonishment at these sightings must have been amazing.

In 1957, Colonel Franklin Kemble, Jr. granted the white deer full military protection. By then, the overall deer population had experienced staggering growth due to lack of predators and a prohibition on hunting within the 24 miles of fencing that served as the base perimeter. Even though the deer could easily hurdle the 6-foot high fence with 18-inch angled barbwire atop, why would they? They did not feel threatened. Unfortunately, by the late 1950s, their population growth had caused starvation in the winter, and those that survived past winter were grossly underweight.

To protect the deer population and the expanding number of white deer births, the Army sought management assistance from the New York State Conservation Department. With the help of some of the department's expert deer biologists, including Bill Severinghaus, Peggy Sauer, and Bill Hesselton, a herd survival plan was developed, which aligned with the protected white deer hunting ban. Through some trial and error, a healthy herd soon resulted, and because of this success, the Seneca Army Depot became a model for deer management in North America.

In 1955, the construction of a “special weapons” area—the “Q-area”—began, and by 1958, these weapons started to arrive at the Depot. Rumors would soon abound that the white deer were the result of a military overspill, or munitions detonation fallout. The truth is, they are a result of a recessive gene for leucism (a condition causing a lack of pigmentation in the hair follicle) that was enabled to artificially expand in numbers because of the population's isolation and protection through fencing and a ban on hunting the white deer. While some people think these deer are albinos, they differ from albinos in that they have brown eyes, predominantly black noses, and normal, visibly healthy body frames.

In 1995, the Department of Defense determined the Depot's function was no longer needed and began the process of downsizing staff and removing munitions. As of July 2000, the new millennium ushered in the official shutdown of the facility, and all personnel were removed, leaving behind 519 vacant munition igloos and numerous support buildings. Oversight of the property was transferred to the Seneca County Industrial Development Agency (IDA). Suddenly, a community and the entire Finger Lakes Region became alarmed at the fate of the white deer, which had always benefited from the blanketed protection of the Army's presence. At this time, there were nearly 200 white deer, the largest known herd of white, white-tailed deer in the world. What would become of them?

Fortunately, Arthur Hall of Waterloo, former President of the Seneca County Federation of Sportsmen, had a vision for the conservation of the land and its wildlife. In 1998, he convened a group to discuss what combined efforts could be made to protect these precious resources. Not long thereafter, the group incorporated as Seneca White Deer, Inc. (SWD), a not-for-profit organization with a mission “committed to the preservation, development, and display of the unique resources of the former Seneca Army Depot, [and to] protect, conserve and educate the world regarding the life and habitat of the world’s largest herd of white, white-tailed deer.”

SWD spent nearly two decades educating the public, both locally and statewide, about the fate of the white deer herd, and appealing for financial support and public voices to be heard to preserve the land and its history. Eventually, in 2016, the IDA decided to auction off the remaining 7,000 acres of former Depot lands through a private bidding process. Seneca Falls entrepreneur Earl Martin submitted the only known proposal (besides that of SWD) that incorporated a plan to preserve 3,000 plus acres for the conservation of the site and to promote an ecotourism opportunity on the property, its military history, and all its wildlife, most notably, the white deer herd.

Martin won the bid and Deer Haven Park, LLC was established. Shortly thereafter, he sought the help of Dennis Money, now president of SWD, along with the organization’s board of directors and numerous volunteers, to make the site an ecotourism adventure open to the public. Autumn 2017 saw the construction of the John and Josephine Ingle Welcome Center at what would soon become the entrance to Deer Haven Park. On November 16 of that year, Seneca White Deer, Inc. officially opened the park to the public, providing year-round guided bus tours throughout the property. Visitors are taught about the property’s military history and get to participate in a unique watchable wildlife experience—seeing white, white-tailed deer in their natural habitat.

For more information, visit:  
[www.senecawhitedeer.org](http://www.senecawhitedeer.org).





**VISITOR ENTRANCE** →



## If You Go

Visitors looking to see the herd of white, white-tailed deer can do so via a 90-minute guided bus tour of the former Seneca Army Depot. Tours are available year-round and include visits to abandoned sites and information about the vast military history of the Finger Lakes Region. Hiking, biking, birding, photography, and personal tours are also available. In addition to the deer, visitors may see bald eagles, wild turkey, beavers, coyotes, osprey, blue heron, songbirds, geese, and fishers.

**Location:** Seneca White Deer's John and Josephine Ingle Welcome Center is located at 5479 Rte. 96A, Romulus, NY 14541; 315-759-8220; email [info@senecawhitedeer.org](mailto:info@senecawhitedeer.org)

**Fee:** \$30 adults, \$27 military and seniors (65+), \$15 children (5-15 yrs.), children under 5 yrs. free; specialized group tour discounts also available. Inquire about private, bike, or hiking options.

**More Info:**  
[www.senecawhitedeer.org](http://www.senecawhitedeer.org)



An array of birds and wildlife call the Seneca Depot home—and you can see them in their natural settings. Visitors can also see the remnants of the Seneca Army Depot, which officially closed in 2000.

**Dee Calvasina** is a freelance writer who has been actively involved in the conservation efforts of Seneca White Deer, Inc. You can read her monthly column, "Beyond the Fence" in the *Finger Lakes Sunday Times* and will often see her when visiting/touring at Deer Haven Park.



## No Exaggeration— It's a Big One

Since 1995, DEC has stocked nearly 11,000 lake sturgeon into Oneida Lake to support a larger population of this prehistoric fish, whose numbers have declined over the years due to the loss of critical spawning habitats. The good news is that the lake sturgeon population is rebounding strongly, as evidenced by the capture of a 72.5-inch, 139-pound lake sturgeon on June 19<sup>th</sup>, the largest recorded since stocking began. The sturgeon, estimated to be 20 years old, was one of 11 captured that day. After biologists measured and weighed the fish, took samples to determine its age, and tagged it, the fish was released back into Oneida Lake. Lake sturgeon reach maximum lengths greater than seven feet and can weigh more than 200 pounds. The largest sturgeon recorded in New York in recent history was an 88-inch, 250-pound behemoth from Lake Erie in 1998. For more info on lake sturgeon, visit [www.dec.ny.gov/animals/26035.html](http://www.dec.ny.gov/animals/26035.html).

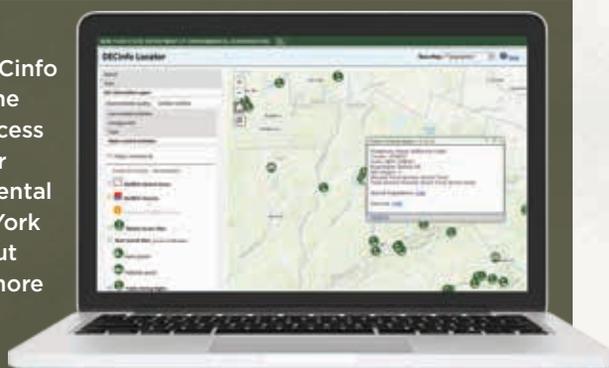


## Free Fishing on Lake Ontario and the St. Lawrence River

Summer is a great time for fishing, and New Yorkers and visitors will be able to fish for free in the New York waters of Lake Ontario (including the Lower Niagara River) and the St. Lawrence River until Sept. 2<sup>nd</sup> at 5 p.m.—no license required. The past few years have provided record-breaking fishing in New York for several popular species, and the 2019 season is again providing excellent opportunities along the state's scenic northern coastline. And don't just take our word for it—in its 2019 rankings, and for the first time ever, *Bassmaster Magazine* named the St. Lawrence River the top bass fishing destination in the nation. The St. Lawrence has diverse aquatic habitats and is home to a wide variety of warmwater fish species. From plentiful panfish, to acrobatic smallmouth bass, to elusive trophy musky, the river provides fishing opportunities for anglers of all abilities. Lake Ontario—which is consistently ranked among the top fishing destinations in the country—is New York's most heavily fished waterbody. Anglers can catch trophy-sized fish from a wide variety of species, including Chinook and coho salmon, steelhead, brown trout, lake trout, Atlantic salmon, bass, walleye, and panfish. Even with recent high waters, fishing remains great throughout the region, so it's no wonder people come from all over to try their hand at landing a trophy fish. And for New York residents and visitors, fishing these waters is now free through Labor Day. For more info, visit [on.ny.gov/freefishing2019](http://on.ny.gov/freefishing2019), and remember, anglers must adhere to all applicable state and federal laws and regulations.

## DECinfo Locator

DEC has just launched the DECinfo Locator—a first-of-its-kind, online interactive map that lets you access many DEC documents and other public data about the environmental quality of specific sites in New York State, and also information about outdoor recreation sites. With more than 50 data layers available, this is the first DEC mapping application that shows both environmental quality monitoring and natural resource information together in one place. For example, the public can use DECinfo Locator to generate maps to find a new favorite fishing location and learn about its water quality. From viewing permits to searching for state land regulations, this new tool provides transparency to our work and helps New Yorkers better understand the full breadth of DEC's work protecting the environment and our communities. To get started, visit: <https://on.ny.gov/DECinfoLocator>



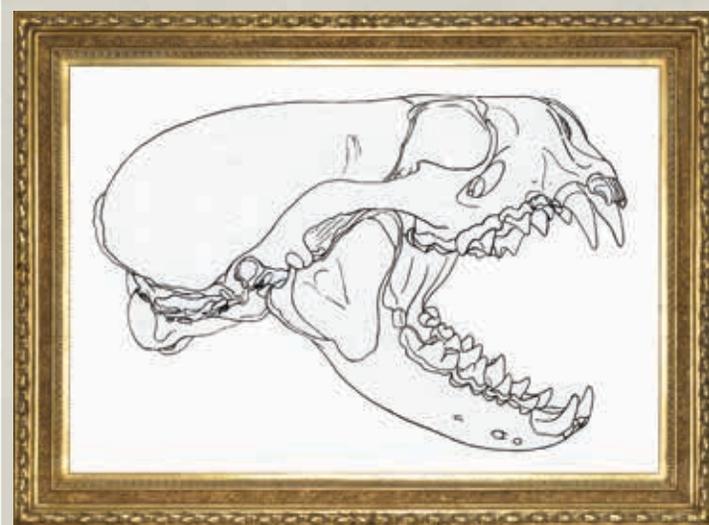


## Jean Gawalt Remembered

Word reached us last month that longtime *Conservationist* and Division of Fish & Wildlife artist extraordinaire, Jean Gawalt, had passed away in retirement in Hawaii. A gentle soul, Jean was a biologist, an artist, and a scientific illustrator who taught me to appreciate the term “study” as it relates to art. Jean truly studied his subjects, drawing and painting from collected specimens. His attention to detail was unsurpassed, down to the actual number of scales on a full-grown snake; no, I am not kidding. While Jean painted many subjects over his long career, he will perhaps be best remembered to longtime *Conservationist* readers as the principal artist of the “of New York” series: Frogs of New York, Turtles of NY, Snakes of NY, Salamanders of NY, Birds of NY, Mammals of NY and so forth, as well as the centerspreads on grouse, moose, mallards, turkeys, whitetails, and a host of other species. The marriage of Jean’s biological background and artistic skill is perhaps most evident in his skull studies: in the bear pullout, or in the Skull Science centerspread which appeared in the April 2006 *Conservationist*.

He will be missed.

—DAVE NELSON,  
FORMER CONSERVATIONIST EDITOR





### Ask the Biologist

**Q:** What is the difference between albinism and leucism?

**A:** Leucism, where there are white patches, or in some cases all white fur, is a rare condition. Albinism, where the animal completely lacks pigment, even in the eyes, is even more rare than leucism. Both leucistic and albinistic animals tend to have high rates of mortality because they are so conspicuous to predators. Thanks to Eric Fedde of Stone Ridge, NY for sending us this photo of an albino chipmunk.

MICHAEL V. SCHIAVONE  
CERTIFIED WILDLIFE BIOLOGIST®

### Going Green

Several readers sent us photos of caterpillars they found while enjoying the outdoors.

*Magnificent! Those are caterpillars of two of our most charismatic moths, the cecropia moth and the Luna moth. These two feed on a variety of hardwood trees and shrub plants, and although they are among our largest caterpillars, they are rarely seen in this stage. The adult moths also are very large, showy, and amazing to see flying as they flutter like a large piece of paper in the wind, seemingly directionless. They both tend to be dusk or night flyers that do not eat or visit flowers, and so despite being fairly abundant in our environment, they are not frequently seen. Also, they both have very abbreviated life spans as adults, living for only a few days to mate and lay their eggs.*

JERRY CARLSON, DEC RESEARCH SCIENTIST



### Life Cycle of Monarchs

*Thanks to Julie Jorling of Saranac Lake and Amy Gould of Jamestown for sending us photos of different stages of the monarch's life. When the monarch caterpillar is large enough, it attaches its hind feet to an overhead surface and shrugs off its skin. The soft green body hardens into the shape of the chrysalis, and inside the body reforms into an adult butterfly. In this picture you can see the wings as the butterfly gets ready to break out and begin its new life. Adult monarchs feed on the nectar of many kinds of flowers, getting the sugars they need for flight to Mexico. Females will lay eggs on milkweed, and the caterpillar cycle will begin again.*

*Read more about monarchs in "Got Milkweed" in the June 2016 Conservationist.*

KATHLEEN O'BRIEN, DEC BIOLOGIST

## Red-haired Beauty

I thought you might be interested in this photo of a very large eastern coyote. It was standing in the grass just off the right side of the highway. I pulled over to get a few photos, and it ran back into the woods when it became aware of my presence.

JOHN SERRAO  
FLORIDA, NY

*Wow, that is a great photo, and the coloring on the coyote is beautiful. Coyote coats vary from blonde or reddish blonde to dark tan washed with black. Read more in the June 2014 Conservationist article "Rise of the Eastern Coyote."*



## At Last

I enjoyed reading "Worm Fishing for Stream Trout," in the April 2019 *Conservationist*, which mentions the DEC Beaverkill Campground. My dad and I fished there every year on our annual fishing trip to Roscoe, NY. Last year, my dad caught three brown trout in front of the Beaverkill Covered Bridge while sitting in a lawn chair—his first trout success in several years. He passed away in February at 86 years of age.

JOHN FEMIA  
ROTTERDAM, NY

*Thanks for sharing your memories of your father with us. It is wonderful that you had that experience together. The Beaverkill Covered Bridge also graced the cover of the April 2018 Conservationist.*



## Quite a Catch

I captured this picture of an osprey flying over Chautauqua Lake carrying a black crappie.

ERICK DURICK  
AKRON, NY

Lucky shot Erick! Ospreys catch fish using their long, hooked talons. An osprey sometimes plunges deep enough into water to momentarily submerge its entire body. Osprey will typically orient the fish head-first in flight to help be more aerodynamic.

Thanks for all the guesses for what was the pic on page 39 of the June issue. It was a bear!

**CONTACT US!**

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# Back Trails

*Perspectives on People and Nature*

## *Breakfast in the Woods*

BY JOSH CLAGUE

When I first met my future wife, Tracey, I was a long way from home. I grew up among the evergreen forests of the Pacific Northwest, and she was raised on a small dairy farm here in the Northeast. Knowing nothing about cows, and feeling quite homesick, I was nervous when she invited me to visit the farm and meet her family for the first time.

Upon my arrival, Tracey offered to show me around the farm to help me feel at ease, and we headed off on a walk down the lane. After passing by a few barns and a pasture, she led me into a 40-acre tract of woods at the center of the farm.

Walking along the road hand-in-hand, Tracey wasn't just creating a romantic moment—these woods were special to her, as much a part of her life as the cows and cornfields, and this walk was about building in me the same connection to this place that she felt. It was about making me feel at home.

As we walked, Tracey shared one of her fondest childhood memories, which occurred among these very trees. At the invitation of her grandfather, Tracey's family and other local dairy farmers had gathered one October morning for a feast to celebrate the hard work and bounty of the previous year. This "breakfast in the woods" was enjoyed so much that it became an annual tradition, highly anticipated by young and old alike. Out of sight from the constant demands of the farm, the adults were able to relax and enjoy one-another's company. The children played among the trees, free to explore, be noisy, and get dirty without a care in the world.

As the warmth and bustle of summer began to give way to the cooler, calmer days of autumn, the forest became the perfect setting for these families to pause and contemplate the challenges and rewards of farming, and to share their hopes for the year ahead.

The woods sit upon the steepest land within the farm, where deep tree roots hold the soil in place and protect the adjacent crop fields from the damaging effects of erosion. When Tracey's grandfather set aside these 40 acres of trees, however, it was more than just a practical soil conservation measure. It was an agreement he forged with future generations, a recognition that land stewardship is a commitment that lasts more than a single lifetime.



Tracey's grandfather also felt a connection to these woods as a place of respite and recreation, a place to relax and reflect. He understood that for his children and grandchildren to value them the same way he did, they needed to spend time here for reasons other than work. It's no coincidence, then, that he chose this forest as the backdrop for that first breakfast celebration.

More than three decades after that first breakfast in the woods, Tracey and I were once again walking hand-in-hand through the forest. Our children ran ahead to greet the rest of our family and friends, enticed by the sound of laughter and smell of good food wafting through the trees.

I never met Tracey's grandfather, but I'm sure he would be pleased to know that my appreciation for these woods has grown deep. Now that bond is being nurtured in the newest members of our family, strengthened by the celebration and sustenance this place provides.

As our small community gathered, a sense of hope and gratitude could be heard in our conversations. Hope for the new generation of farmers who must care for this land while facing the challenges of modern-day farming. And gratitude for the forest surrounding us, which has sustained not just the soil beneath our feet, but also our cherished tradition.

**Josh Clague** is a Section Chief for Forest Preserve Planning in DEC's Division of Lands and Forests.

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Artwork by: Nate Tys



**Department of Environmental Conservation**



See Page 6

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