RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Division of Fish and Wildlife Wild Rhode Island

Summer 2024 8 Volume 17 R Issue 3



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Great blue heron (Ardea Herodias) Photo: Mike Stultz



Young Forest Habitat & Wildlife

By Dr. Lizzi Bonczek, Upland Gamebird Biologist, DFW

I don't remember much about second grade, but I do remember the spotted owl controversy. Loggers were cutting the old-growth forest in the Pacific Northwest, which resulted in a decrease in spotted owls and the habitat they rely on. The whole country was up in arms, including my 8-year-old self. The sentiment that forest management is detrimental to species protection stayed with me as I grew and chose wildlife ecology as my career path, and it wasn't until later in life that I learned it is much more complicated than being simply good or bad.

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Blue-winged warbler (Vermivora cyanoptera) Photo: S. Miller

The Division of Fish and Wildlife Mission Statement

Our mission is to ensure that the freshwater, wildlife, and marine resources of the state of Rhode Island will be conserved and managed for equitable and sustainable use.



Bobcat (Lynx rufus), Narragansett, RI. Photo: C. Coo

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CHECK OUT THE LATEST ISSUE OF <u>WILD RHODE ISLAND</u> <u>EXPLORER!</u>



Wild Rhode Island is a quarterly publication created by the Rhode Island Department of Environmental Management, Division of Fish and Wildlife. Printing is supported by Sportfish & Wildlife Restoration funds.

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NEW BOOK AVAILABLE FOR PURCHASE: REPTILES OF RHODE ISLAND

RIDEM Division of Fish and Wildlife is pleased to announce the publication of *Reptiles of Rhode Island*, available in hard copy with funding from the U.S. Fish and Wildlife Service State Wildlife Grants Program. All revenue generated by the sale of this book will be directed towards wildlife conservation via the Rhode Island Division of Fish and Wildlife.

Reptiles of Rhode Island is the companion volume to *Amphibians of Rhode Island*, published in 2018. It provides meticulous accounts of the state's seven native turtles and 13 native snakes and their respective habitats, accompanied by beautiful photographs. Far more than a field guide, author Christopher Raithel's book also combines an exhaustive search of the historical record and four decades of intense personal study to provide comprehensive information on the state-wide distribution, demography, seasonal movement, reproduction and development,



research needs, and conservation status of each species. An additional chapter is devoted entirely to conservation, detailing overarching threats as well as the actions we can and must take if we are to safeguard the amazing creatures detailed within the book's pages.

Christopher Raithel was hired as the staff zoologist at the outset of the Rhode Island Natural Heritage Program in 1979 and became the nongame and endangered species biologist for the Division of Fish and Wildlife until his retirement in 2018. Books are \$20.00 each; \$15.00 each when you purchase 5 or more.

ORDER BY MAIL:

Mail in a check or money order made out to RIDEM/Div. of Fish and Wildlife. The order form can be found here: <u>https://dem.ri.gov/sites/g/files/xkgbur861/files/2024-06/fish-wildlife-book-order-form.pdf</u>. Please allow a two to three weeks for shipping.

PURCHASE IN PERSON - PROVIDENCE

Reptiles of Rhode Island may be purchased in person at the DEM Division of Boating and Licensing offices located at 235 Promenade Street, Providence RI, weekdays from 8:30AM to 3:30PM. Accepted forms of payment at that location are cash, check, money order or, for an additional fee of \$1.50, credit card.

PURCHASE IN PERSON - GREAT SWAMP FIELD HEADQUARTERS

The book is also for sale at the Division of Fish and Wildlife Headquarters at 277 Great Neck Road, West Kingston RI between the hours of 8:30AM and 4:00PM. Accepted forms of payment are <u>money order or check</u> <u>only. Cash or credit cards cannot be accepted at this location.</u>

MARINE FISHERIES CONSERVATION AND MANAGEMENT GROUP RECOGNIZES RIDEM EMPLOYEES FOR CONTRIBUTIONS TO FISHERIES MANAGEMENT, POLICY, AND SCIENCE

The Rhode Island Department of Environmental Management (DEM) is proud to announce that the States Marine Fisheries Commission Atlantic (ASMFC) has recognized Chief of DEM's Division of Fish and Wildlife, Phil Edwards, and Principal Marine Biologist with DEM's Division of Marine Fisheries, Nicole Lengyel Costa, with Annual Awards of Excellence in Arlington, VA. ASMFC's Annual Awards of Excellence are awarded to individuals for outstanding contributions to management, scientific, and law enforcement efforts along the Atlantic coast.

Phil Edwards received ASMFC's Award of Excellence in Management and Policy Contributions, recognizing his strong policy and fisheries management skills, backed by over 20 years of participation on various technical committees and assessment work for Commission species. ASMFC highlighted Phil as an "active and integral member on several Commission species management boards over the years, including serving as Chair of the American Eel, and Shad and River Herring Boards," and added that "Under his leadership, Phil has been able to deftly guide management of these species. As board chair and member on other boards, Phil has brought a wealth of knowledge and policy acumen to all his Commission endeavors, and the Commission at-large has benefitted from Phil's work ethic, leadership, and expertise." Phil was also recognized for his extensive knowledge and years of dedicated work on fish passage in Rhode Island, which has improved the



Phil Edwards and Nicole Lengyel Costa received the ASMFC's Award for Excellence.

conservation of diadromous fish in Rhode Island and along the East Coast.

Nicole Lengyel Costa received ASMFC's Award of Excellence for Scientific and Technical Contributions, recognizing her strong scientific skill set and keen understanding of fisheries management policy, benefiting not only Rhode Island but fisheries science and management activities along the entire East Coast. ASMFC cited Nicole as an "important member of several Commission technical committees, fish ageing projects, and plan development teams, and has served as Chair of the Atlantic Striped Bass Technical Committee for the past few years," adding that "Aside from her technical contributions, Nicole has helped the Commission develop several particularly tricky management actions for striped bass, including recent actions to stop overfishing and aid in stock rebuilding." Additionally, Nicole is a long serving member of the ACCSP Operations Committee and has been involved with age and growth work used in stock assessments across Commission species.

"Science and informed management decisions drive DEM, and we're lucky to have Phil and Nicole as part of our team of dedicated environmental stewards of the Ocean State's marine resources," said DEM Deputy Director for Natural Resources Jason McNamee. "All of DEM congratulates Phil and Nicole for these awards and for their outstanding contributions to sound fisheries management." For over 80 years, ASMFC has served as a deliberative body of the Atlantic coastal states, including Rhode Island, coordinating the conservation and management of 27 nearshore fish species. ASMFC members participate in deliberations in four main policy arenas: interstate fisheries management, fisheries science, habitat conservation, and law enforcement. Through these activities, the states collectively ensure the sound conservation and management of their shared coastal fishery resources and the resulting benefits to the fishing and nonfishing public.

For more information on DEM programs and initiatives, visit www.dem.ri.gov. Follow DEM on Facebook, Twitter (@RhodeIslandDEM), or Instagram (@rhodeisland.dem) for timely updates.

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Beavertail State Park, Jamestown, R.I. Photo: S. Riley



Young Forest Habitat & Wildlife continued from page 1

Just as spotted owls depend on old-growth forest for their needs, other species exist on the opposite end of the spectrum and depend on young forest. As habitat ages, the vegetation on the landscape progresses through different stages, all marked by different plant species and structure. This ecological process is known as succession. Simplified, a field progresses into a shrubby opening, which progresses to small trees, and then larger trees. The vegetative growth is often dictated by the amount of light that reaches the forest floor. For example, at the beginning of succession in field openings, sunlight can reach all the plants and results in herbaceous growth like grasses and wildflowers. During later stages of succession when mature trees are present, sunlight can't penetrate the canopy, and the forest floor is shaded. Grasses and shrubs are unable to grow, and we see an open forest floor.

Historically, disturbances such as fires would have set back succession to a prior stage, but with the appearance of Smokey the Bear came fire suppression, which left forests to mature unchecked. Currently, Rhode Island is comprised of less than 4% young forest. To put young forest back on the landscape, habitat managers use timber harvests. There are a few different techniques that range from cutting entire areas, to cutting patches, to selectively cutting individual trees. The technique used will depend on the needs of the species and desired habitat outcomes. Additionally, habitat managers may use prescribed fire in a very deliberate manner to open the understory.

To the untrained eye, young forest may look messy or unsightly and in the early stages following a disturbance, areas might seem desolate; but before long, new growth emerges! Following a timber cut, loggers may leave smaller diameter logs and trees behind on the ground, which is a technique used by biologists to create habitat. These smaller diameter logs and branches are called "coarse woody debris" and are utilized by a wide variety of wildlife. Reptiles and amphibians use them as shelter and feeding sites, small mammals use them as cover from predators, and birds such as winter wrens and juncos even nest in leftover upturned tree roots. Furthermore, coarse woody debris is important for nutrient retention and cycling, as it decays over time. Often in Rhode Island, young forest is composed of green briar and blackberry that creates brambles, thick and tangled with vines. Given their thorns, it's easy for us to have a distaste of them—it makes the forest look inhospitable, but on the flip side, briar is a great food source for deer and cottontail rabbits and provides cover and food (in the form of berries) for a wide array of birds and mammals.

Because of the decline in young forest habitat, we have already locally lost species that depend on this type of habitat and others remain at risk. Ruffed grouse, which utilize young forest in the 3–20-year age group, were common in Rhode Island as recently as 50 years ago, but due to the loss of young forest, they have been extirpated from the state. Other species such as the eastern box turtle, New England cottontail, blue-winged warbler, chestnut-sided warbler, and prairie warbler have experienced declines.

As I've learned more throughout the years about wildlife and their habitat, I now understand that species require different conditions to thrive, and habitat conservation isn't a one-size-fits-all solution. Habitat management is most beneficial when the desired outcomes produce a mosaic of habitat types and stages across the landscape that has the potential to fill the needs of a wide array of different species. In a small state like Rhode Island, our goal is to maintain habitat diversity to help as many species as we can!



Lou, the German Wirehaired Pointer, points an American woodcock, a young forest dependent species, in habitat so thick with brambles that you can barely see her! Photo: L. Bonczek

For more information on where

you can visit young forest in Rhode Island and throughout New England please visit <u>https://web.uri.edu/</u> <u>rhodeislandwoods/learning-opportunities/young-forest-demonstration-sites/</u> or <u>https://youngforest.org/</u> <u>projects</u>.

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Check out past issues of *Wild Rhode Island* on the RIDEM Website:

https://dem.ri.gov/natural-resources-bureau/fish-wildlife/reports-publications/wild-ri-journal

Did you know that *Wild Rhode Island* has been in print since 2008? The Division of Fish & Wildlife produces this quarterly journal to highlight our projects, provide information on wildlife, fisheries and habitats throughout the state, and promote our educational programs, public meetings and more! For more information on *Wild Rhode Island*, check out the online archive at the link above, or email DEM.DFW@dem.ri.gov.

Keeping our Waters Clear

What We Stand to Lose When Invasive Plants Take Over

By Katie DeGoosh-DiMarzio, Environmental Scientist, RIDEM Office of Water Resources

On a clear summer day in June, RIDEM Seasonal Field Technician Peter Gnocci cautiously leans over in the side of a canoe in Central Pond. He isn't fishing, but instead grabbing a handful of an aquatic invasive plant called water chestnut (*Trapa natans*). First found just scattered here and there among the native lilies in the East Providence pond in 2009, this notorious invasive plant has grown to cover roughly 66-acres of the water, in this 137acre reservoir.

That's about 50 football fields of water chestnut coverage after just 14 summers. I think about the lilac bush I planted in my yard ten years ago, and today it's still just a shrub in my backyard, it hasn't taken over the property. But water chestnut is sneaky and comes with a competitive advantage. multiplies exponentially, starting off slow, and It within a few short years it begins appearing in record amounts. The water chestnut population nestled in the Ten Mile Watershed is now the largest water chestnut population in the state of Rhode Island. It continues to spread downstream into Turner Reservoir (south of Newman Ave.) and Omega Pond. Its distinct, thorny seeds have even washed up on shore at India Point Park after they drifted over the dam and down into the Seekonk and Providence Rivers.

The Ten Mile River Watershed Council have been longtime stewards of the Ten Mile River, working to improve recreational opportunities and extolling the importance of keeping the water and habitat healthy.



For many years, dedicated watershed volunteers worked with RIDEM and the Rhode Island Saltwater Anglers Association on the river to carefully carry migrant river herring by hand and bucket over the dams that separated them from their historic spawning grounds upstream. However, by April of 2015, with the work of multiple partners, fish ladders had been installed at three dams to improve fish passage. Removing such obstacles for the fish reconnected over 340 acres of freshwater habitat from which anadromous fish had been excluded. The successful 16-year, 7.7 million dollar fish passage projects were the largest fish run restoration project in Rhode Island, and now volunteers simply need to tally the fish they see returning to the watershed from the sea. By 2020, over 20,000 fish per year were counted successfully making the trip upstream from the bay to the fresh waters of Turner Reservoir. River herring are an important keystone species in the Narragansett Bay ecosystem, serving as the base of a very large food chain. They play a pivotal role as food source for larger fish such as striped bass and bluefish, predatory birds such as bald eagles, herons, gulls and osprey, and wildlife like otters and snapping turtles. Pictures of such charismatic animals are often the featured subject matter of nature photographers that take to the waters of Central Pond, who later post their snapshots on social media to the delight of the Ten Mile Watershed Group.



Aerial view of Central Pond, north of Turner Reservoir in East Providence. The water is covered with invasive water chestnut (Trapa natans) making fishing and paddling impossible (August, 2022).

In May, the shining waters are a

calming oasis away from bustling urban sprawl, well buffered by lush, green conservation woodlands along the shoreline. The open water is a destination among paddlers who bring canoes and kayaks for an afternoon trip. The bridges on Newman Ave that bisect the reservoir are popular with local anglers casting off in pursuit of their next big catch, and statewide, the warmwater habitat is known as an important bass fishery. There is a winding greenway and trails along the shoreline, great for bikers, runners, and walkers to peek through the trees for a scenic view of the water.

But by August, the invasive water chest-nut has

emerged at the surface and grown to cover half of the reservoir under a gnarly mat of vegetation floating at the surface. Pictures posted of the pond look more like pictures of an open field as the water is no longer visible, now buried in shiny green leaves. Naive paddlers who attempt to cut through the thick mass of leaves and stems quickly find their momentum blocked and as they struggle in the clogged waterway. Fishermen don't even bother. One can only imagine what it's like for the fish underwater. Where native lilies emerge in May and a few stems develop one leaf that only grows 4-8 inches across, one water chestnut plant tosses out up to 15 stems with a rosette of leaves that can each cover 4 square feet, shading 60 square feet of the water below. For a fish, it must be like someone closed the curtains and dimmed the sunlight. Predatory fish must swim farther to hunt down their meals in the darkness under the shade of chestnut leaves. The birds of prey soaring



DEM Seasonal Technicians spend time harvesting invasive water chestnut at Olney Pond (2019).

above the water in search of their next meal are flying blind. For smaller forage fish, their habitat structure has been physically altered with the addition of all these new fast-growing stems - as if someone dropped a forest into their living room, redirecting their patterns of movement.

This rearrangement of things changes their foraging behavior, similar to people who wander aimlessly around their favorite grocery store after corporate decides to switch the layout. Shopping trips take longer and patrons are not always successful at finding the item they were looking for. It's the same for all the fish and wildlife that call Central Pond home, and these changes can affect an animal's survival. Invasive water chestnut has not only ruined recreational pursuits, it also threatens a healthy balance of native flora and fauna, which are essential to a thriving ecosystem, and it is extremely difficult to get under control.

These things all add up to have economic consequences as well. When anglers aren't stopping in for bait at their local bait shop because they decide to travel to another lake, these businesses lose income. Shoreline homeowners see a demonstrable drop in their property values, which in turn leads to reduced tax revenues. Finally, the costs of restoration efforts can be extremely high.

THERE IS HOPE.

Luckily, the odds of controlling an invasive plant increase significantly if a newly established plant can be found early and weeded out before it begins taking over. RIDEM has had great success keeping water chestnut in check when found early, before plants claim an acre of surface water. Olney and Barney Pond in Lincoln, RI are great examples. While out on the water doing a survey, RIDEM staff found a handful of water chestnut plants in Barney Pond in 2019, so they decided to check upstream at Olney Pond in Lincoln Woods State Park. Sure enough, both ponds had the invasive plant, but in very small amounts. Plants from Barney Pond were enough to fit inside two laundry baskets.

There were slightly more water chestnut plants in Olney Pond. However, a strike team of 5 or 6 summer interns ventured out in canoes and kayaks to take out the water chestnut rosettes one mid-July day. The plants removed from a small 20 x 20 ft. area of Olney Pond all fit into the back of a one-ton dump truck on shore. Since then, RIDEM only spends about 2 days each summer removing plants from those locations. Every year, there are less and less plants to find, and by 2022 there were only a dozen floating rosettes to remove.

Water chestnut is one of the few invasive plants that is an annual plant, germinating in early May, growing flowers, and starting to produce seeds in July, releasing those seeds in August, and then dying off in the fall, all in the same year. It does not survive the winter, nor does it have an extensive root system. So, the trick to eradicating water chestnut is to get to the plants in June or early July and remove them from the water before they produce seeds. Removing the plant prevents it from multiplying next year, so every plant pulled this summer prevents more hard work next year. Unfortunately, those hardy, pointy seeds can hang out in the sediment for up to 12 years before they decide to germinate. So, for example, back in 2018 before the plants were discovered in Olney and Barney Ponds, the water chestnut plants were growing and giving off seeds that could be viable until 2030. Therefore, RIDEM will need to monitor those ponds for water chestnut each year, and pull whatever plants are found,

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but it is much easier to stay on top of the problem and manage it before it gets out of control. Similar monitoring and pulling efforts are underway in Belleville Pond in South Kingstown, Reynolds Pond in West Greenwich, Sylvestre Pond in Woonsocket, and Omega Pond in East Providence. Larger efforts are needed in the Blackstone River and Carl's Pond with the Friends of the Blackstone/Watershed Council as well as at Turner Reservoir with the Ten Mile River Watershed Council. More water chestnut there necessitates recruiting some help from community volunteers for a muddy morning of water chestnut pulling.

Stay tuned for new announcements of any events planned for June and July, it makes for a very rewarding paddle. But even more important is to learn what water chestnut looks like! Being able to spot it early is our best chance at keeping it under control. Find resources online, and if you see a floating rosette while out on the water, take a picture and report it to RIDEM Office of Water Resources.

Watch out for the worst weeds!

Learn to recognize the top two nastiest aquatic invasive weeds in Rhode Island and report plants to RIDEM. Email pictures of the plant to Katie.degoosh@dem.ri.gov to report a new siting.

INVASIVE WATER CHESTNUT



Look at the Leaves:

- Float like water lilies
- Triangle shaped
- Toothed edges (not smooth)
- Shiny, waxy finish
- Leaves are arranged in a circular rosette and radiate from the central stem
- Additional feather-like leaves underwater on stem
- Flowers in July:
- Tiny, size of pencil eraser
- Colored white
- 4 petals
- Found in the center of the rosettes

INVASIVE HYDRILLA

Look at the Leaves:

- Leaves are submersed under water
- Blade shaped leaves
- Jagged, toothed edges (not smooth)
- Five leaves will attach to the stem together at one place (a whorl of 5)
 Each whorl may be centimeters
 - apart along the stem in brand new growth, but they become more densely packed together one on top of each other, especially at the tip top of the stem

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dem.ri.gov/fishwildlife





Photo by M. Stultz at Durfee Hill Wildlife Management Area, Glocester, RI

Not only can you visit our website, www.dem.ri.gov/fishwildlife, to find out about local wildlife, conservation initiatives, management research, and more, but you can now connect with us on social media to stay updated on events and what's new!

Thank you for your continuing support of the Rhode Island DEM Division of Fish & Wildlife!