

Snakeheads Are Thriving in Area Waters

BY GLENDA C. BOOTH
MOUNT VERNON GAZETTE

are here “for the foreseeable future,” he says.

They lurk in the murky, sluggish shallows, their elongated bodies and splotchy, brown skin camouflaged in the shoreline’s woody detritus and dense vegetation. With gaping mouths and sharp, canine-type teeth, they snatch and devour any unsuspecting prey that happens by. They are invasive northern snakehead fish (*Channa argus*). They hit hard and fight hard, say anglers who relish the challenge. Think of a writhing snake up to 35 inches long on the end of your fishing line.

Virginia ichthyologist John Odenkirk and his Virginia Department of Wildlife Resources team are probing Potomac River tributaries -- Little Hunting Creek, Dogue Creek, Aquia Creek and Pohick Creek -- and Belmont Bay and Gunston Cove, to get snakehead population estimates, sampling research he began in 2004. His team buzzes around in a 17-foot aluminum jon boat and “electrofishes” with a metal, spider-like device that dangles off the bow and shoots pulses into the water.

The electrical current temporarily stuns all fish within six-to-eight feet, which causes the exposed fish to float around aimlessly for about 20 seconds. Then the team scoops up the snakeheads with a net, not always effortlessly.

“The snakehead is the hardest fish to shock,” Odenkirk explains. They are strong and belligerent and they recover quickly.

The team attaches tags to some in hopes of eventually recapturing tagged fish to collect data on the fish’s lifespan, migration, growth, spawning success and diet.

Odenkirk records his catch rate, number of fish caught per hour of electrofishing. In Little Hunting Creek, the catch rate peaked in 2012 and 2013 when he caught 11.5 a hour. It’s been declining since and this year, they are catching six snakeheads an hour there. This catch rate is typical of other area waterways as well, he says. But while the catch rate may have dropped since 2013, snakeheads

Snakeheads have made it as far inland as Huntley Meadows Park. Snakeheads and other fish travel up and down the streams that connect to the Potomac River. Karen Sheffield, the park’s manager, says that occasionally, people want to fish in the park, but she stresses that fishing is not allowed there. “Touching, capturing and removing species from the park is prohibited,” she says.

The snakehead’s super-aggressive reputation has attracted eager anglers from as far away as England, Japan and Africa, says Mount Vernon resident Steve Chaconas who runs National Bass Guide Service. “I see snakeheads quite frequently,” he says, “but catching them is a different story as angling skills need to be up to the challenge. They put up a fierce fight.”

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The team scoops up stunned snakeheads for study.

PHOTO BY GLENDA BOOTH

Snakeheads taste like a tender pork chop, some say.



Odenkirk shows the snakehead’s mouth and teeth.

PHOTO BY GLENDA BOOTH



John Odenkirk and team at the Wessynton community dock.

PHOTO BY GLENDA BOOTH



PHOTO BY GLENDA BOOTH

The electrofishing device, a boom and anode array used on Little Hunting Creek and other waterways. The Potomac River is in the background.



PHOTO BY GLENDA BOOTH

Team members measure the caught snakeheads.



PHOTO BY GLENDA BOOTH

Tagging snakeheads



PHOTO BY JACK EYLER

A snakehead's mouth.

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FROM PAGE 6

How Did They Get Here?

Snakeheads are native to Asia. Ecologists generally view invasive or exotic species as problematic because many can outcompete native species, disrupt native biological communities and degrade natural ecosystems.

It's unclear how northern snakeheads got to metropolitan Washington-area waters, but experts speculate that aquarists may have released them when the fish outgrew home tanks, or someone may have intentionally introduced them for food. They have a muscular texture, don't flake and taste like a tender pork chop, some say.

The first, widely-reported snakehead surfaced in the news in 2002 when one was found in a Crofton, Md., pond. Tall tales viralized across the media, hyperbolic reports claiming that the fish could attack people, eat pets and walk on land. These exaggerated claims led to nicknames like "Frankenfish" and "Fishzilla."

Northern Snakeheads were discovered in Virginia in 2004 and can be found in the Potomac River almost anywhere, according to the Virginia Department of Wildlife Resources, from above Great Falls downstream to Chesapeake Bay.

Survivors

Because they can survive in both fresh and saltwater and tolerate polluted, poorly oxygenated water, they have a competitive advantage over many other fish. Females can lay 30,000 to 50,000 eggs.

Snakeheads are opportunistic, voracious eaters. Odenkirk has found 16 fish species, crayfish and frogs in their stomachs. "They'll even eat their own young," he says. "If it's hungry, it will eat it."

The current world record for a snakehead caught was a snakehead shot with a bow and arrow in 2018 in a Potomac tributary, Mattawoman Creek, in Charles County, Md. It was 35 inches long and weighed 19.9 pounds.

Impacts

When snakeheads were first discovered in area waters, some worried that they might adversely affect the Potomac's renowned large-mouth bass fishery because snakeheads and this bass species have the same prey base at certain times of the year. But Odenkirk has not confirmed any negative impacts on large-mouth bass from his 20 years of data for the Potomac and Rappahannock Rivers.

Snakeheads find banded killifish a favored prey. George Mason University data show an increase in banded killifish after the snakeheads arrived, so Odenkirk has concluded that snakeheads' impact on the fish he's studied is not significant. He is not aware of studies of snakehead impact on amphibian or invertebrate populations, such as frogs, crayfish and aquatic insects.

The Future

Snakeheads will expand their range and colonize new waters on their own and through human intervention, Odenkirk predicts. They will be all over the U.S. eventually, he says. Their population numbers seem to peak and then decline and stabilize. "That's what's happening in the Mount Vernon area because they are expanding their range," he explains.

"They are here to stay."

Snakehead Rules

If you catch a snakehead and want to possess it, kill it (by removing the head, gutting it or separating the gill arches from the body), and contact the Department of Wildlife Resources at 804-367-2925. It is illegal to own a live northern snakehead in Virginia without a permit. Visit <https://dwr.virginia.gov/fishing/snakehead/>.

For a Robert Field video, "Fishing for Invasive Northern Snakehead Field Trips Virginia," visit <https://www.youtube.com/watch?v=6HdWNN3HVGQ>.

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Can Our Yards Save the Planet?

Plant native plants for pollinators, food for birds and more.

By GLENDA C. BOOTH
GAZETTE PACKET

When Tami Entabi moved into her Mount Vernon-area home in 2006, the backyard was a thick mass of intertwined English ivy. Today, to her delight, purple violets are spreading and the garden is abuzz with birds, bees, butterflies, moths and other insects from spring through fall.

Entabi removed most of the English ivy, an invasive plant, and wants the violets to take over. They support the great spangled fritillary butterfly and provide nectar plants for other pollinators. She's striving for blooms most of the year. She leaves the leaves and dead wood in her garden beds. Her goal is a woodland garden of native plants that supports native insects, birds and other wildlife.

Entabi and many others are trying to eliminate plants not native to the area. Non-native or invasive plants are plants introduced to an area intentionally or accidentally. Many spread rapidly and lack natural controls. They usually outcompete native plants, alter biological communities and degrade natural ecosystems. Some can cause economic harm.

Trouble Signs

The Earth is losing one to two percent of its insects every year, reported University of Connecticut entomologist David Wagner in January, a trend some call "the insect apocalypse." NatureServe scientists estimate that about one third of all U.S. species of animals and vascular plants are at risk of extinction. A 2020 World Wildlife Fund study found that of nearly 4,400 mammals, amphibians, birds, fish and reptile populations have dropped by 68 percent since 1970.

These studies are signaling that the way we are managing or failing to manage our natural resources is having serious consequences. Experts point to habitat loss and fragmentation, monocultures, invasive species, pesticides, herbicides, insecticides, climate change, light pollution and disease as contributing factors.

In suburbia, lawns and sprawling development have replaced most native biodiversity. Lawns cover 40 to 50 million acres of land in the United States, almost equivalent to all of the country's national parks, wrote Tik Root in the July 1 Washington Post. Lawns and turfgrass



Tami Entabi next to coral honeysuckle, a favorite of hummingbirds.

are the largest "crop" grown in the Chesapeake Bay watershed. And while the perfect green lawn may be an American icon, ecologically, it has very little habitat value.

To reverse the declines in insects, birds and other wildlife and to be better stewards of the environment, many gardeners today are turning to more natural landscaping approaches and native plants.

University of Delaware entomologist Dr. Doug Tallamy offers this: "We have allowed alien plants to replace natives all over the country. Our native animals and plants cannot adapt to this gross and completely unnatural manipulation of their environment in time to negate the consequences."

With his initiative called "Home-grown National Park," Dr. Tallamy argues that our national parks are too small and spread apart to preserve species to the levels needed, that people can restore habitat and the ecological health of our communities.

Examples: Mount Vernon Supervisor Dan Storck and volunteers converted part of the landscape around the Mount Vernon Government Center to native plants. He led an effort started in 2018 and adopted unanimously by the Board of Supervisors in 2020 to apply natural landscaping practices to county properties. Belle View Elementary School teachers created a native garden, outdoor classroom.

Pollinator Gardening

Pollinators include bees, beetles, butterflies, moths, other insects, birds and bats. When a pollinator carries pollen grains from the male anther of a flower to the female stigma of flowers of the same species and fertilizes it, pollination

results and the plant can produce seeds. Around 75 percent of all flowering plants depend on pollinators for fertilization, but many pollinator species are declining. "The main threat facing wild pollinators is loss of habitats," wrote Kathy Reshetiloff for the Bay Journal.

Some pollinators are generalists and can pollinate a variety of plant species, but others are highly specialized. Many pollinators evolved to emerge when their plants are flowering. If the plants are not available, the pollinators cannot survive.

In Entabi's backyard, coreopsis plants attract skipper and fritillary butterflies. Hummingbirds probe coral honeysuckle blossoms. Luna moths visit the pignut hickory trees. Zebra swallowtail butterflies visit the pawpaw trees. Their caterpillars feed at night and spend the day in the leaf litter. Bees love the St. Johnswort. Many insects feed on the goldenrod. Woodpeckers excavate dead wood. Skinks hide out in brush piles. Where a big tree that came down left a big hole, Entabi's making a frog pond. "The soft bottom will be good for hibernating and the trunk will be part of pond and offer places to hide," she says.

Butterfly Gardening

Some people are planting native plants to support butterflies. "Selecting plants that will feed butterflies while also encouraging them to stick around for a while, laying eggs and creating a new generation of butterflies is your goal," advises the North American Butterfly Association's website. "To do this, you will need to choose plants that fall into two groups: nectar plants that will provide adult butterflies with



Tami Entabi explains that bees like the false indigo plant.



Violets now carpet her backyard.



Bumblebee on an obedient plant

energy and caterpillar food plants that will feed caterpillars. With careful selection from these two groups, your garden will provide for the entire life cycle of butterflies."

Some people are planting to specifically help monarch butterflies and support their migration to and

from Mexico. These orange and black butterflies, weighing one-fifth the weight of a penny, are the only butterfly species to regularly undertake a two-way migration, for some, a 3,000-mile trip over three generations. "This is one of the most extraordinary annual migrations on our planet," said monarch expert, the late Dr. Lincoln

Broder of Sweet Briar College.

Most butterfly caterpillars feed on specific plant species, called their host plant. Monarch butterfly caterpillars feed exclusively on milkweed leaves. Host plants generally are the plants on which butterflies lay eggs and their cat-



Monarch caterpillar on milkweed.



Wasp on gray dogwood.



Eastern tiger swallowtail butterfly on fall phlox.



Bumblebee carrying pollen and feeding on milkweed blossoms.



Buckeye butterfly on hyssop



Milkweed garden at the Martha Washington Library on Fort Hunt Road. Belleview Elementary School is in the background, across the street.

terpillars eat. Without milkweed, monarch butterflies cannot complete their life cycle.

The American Horticultural Society's River Farm, Fort Belvoir and Burgundy Farm Country Day School have monarch butterfly gardens. The Martha Washington Library has a milkweed garden.

Tallamy urges people to "re-create" nature. For species in decline, he says, "Their only hope for a sustainable future is for us to inter-

Resources

Pollinator Gardening, www.pollinator.org; www.xerces.org/bringbackthepollinators
Butterfly Gardening, <http://nababutterfly.com/basics-of-butterfly-gardening/>
Guide to Native Plants for Northern Virginia, <https://www.plantnovanatives.org/WildlifeHabitatGardens>: Audubon at Home, www.audubonva.org, <https://www.nwf.org/CertifiedWildlifeHabitat>; Habitat at Home, <https://dwr.virginia.gov/wildlife/habitat/>
"Nature's Best Hope: A New Approach to Conservation That Starts in Your Yard," book By Douglas W. Tallamy

vene to right the wrongs that we have perpetrated. In order to let nature take its course, we must first

re-create nature." Tami Entabi's backyard is a good example.

"On your own property you can make a difference," Entabi says. "It's exciting."

More to Do to Clean Up the Potomac River

Stormwater runoff from urban and suburban areas is the major culprit today polluting the Potomac River, the fastest growing pollutant.

By GLENDA C. BOOTH
MOUNT VERNON GAZETTE

On April 9, Connor Lynch, an angler fishing on the Potomac River near Fletcher's Cove, hooked and released a shortnose sturgeon, a fish not seen in the river since 2007. The Potomac Riverkeeper called the finding "Increasing evidence that the health of the Potomac River is improving."

Common bottlenose dolphins are spotted in the river too, seen as far from the Atlantic Ocean as the U.S. 301 Harry W. Nice Memorial Bridge which connects Charles County, Maryland to King George County, Virginia.

These sightings are indicators that efforts to restore water quality in what George Washington called "the nation's river" are making a difference, Hedrick Belin, President of the Potomac Conservancy, told attendees of a May 26 Zoom meeting of the Friends of Dyke Marsh.

The river is much cleaner today than it was in 1964 when then U.S. President Lyndon Johnson called it "a national disgrace."

But "it's not in the clear," warned Belin. "It is still too polluted for swimming and fishing." The Potomac's health worsened for the first time in a decade, according to Conservancy's latest report card analyzing 2020



Forest and vegetation that come to the edge of the Potomac River help to protect water quality from polluted stormwater runoff.



Potomac River below Old Town Alexandria.



Common bottlenose dolphins are spotted in the Potomac River, seen as far from the Atlantic Ocean as the U.S. 301 Harry W. Nice Memorial Bridge.



away the land's ability to naturally absorb rainwater. Forested shoreline buffers earned an F grade in the report card.

"When it rains, it pours pollution into rivers and streams," Belin said. One inch of rain can generate 2,000 gallons of runoff from a typical suburban home, according to the Conservancy's website.

Climate change is exacerbating the problems. Warming temperatures are bringing more intense storms and more volumes of water over shorter time frames. In 2018, for example, the Washington metropolitan region got almost 16 inches rain compared to a normal of 14 inches. The region is seeing more microbursts, he reported, which can cause more frequent, highly localized flooding.

Some storms can send more pollution from

what are called "combined sewer overflow" (CSO) systems, like the sewer system in Old Town, Alexandria, dating to the 1890s. "The volume has to go somewhere," Belin said, noting that historically engineers designed urban infrastructure to get water off streets. Alexandria and Washington, D.C., are upgrading their combined overflow systems, building underground holding tanks and then treating runoff at AlexRenew on Cameron Run or for Washington, D.C., the Blue Plains Wastewater Treatment Plant on the Maryland side of the river. Eliminating CSOs "will have a big impact," Belin predicted. "Otherwise, you'd be swimming in sewage."

Storms can erode streambanks and send sediments into waterways. Cloudy water impairs the growth of submerged aquatic vegetation that help filter nutrients and pollutants and provide food and habitat for fish, waterfowl and other wildlife. Underwater aquatic plants garnered a C- in the report card. Some fish species are in decline, the Conservancy reported last year. What happens on the land affects the river, Belin said, whether it's parking lots, suburban yards or farm fields. "Healthy communities start with clean water," he said. "Healthy water means healthy people." The Potomac provides drinking water to over five million people in the Washington metropolitan area.

Solutions

On the way forward to a cleaner river, Belin advised, "We need to work with nature, not against it, replicate it." More trees and healthy forests can help capture stormwater runoff. We need to build in smarter ways, strengthen clean water laws and restore degraded areas, including wetlands and flood-

CLEAN WATER CHALLENGES

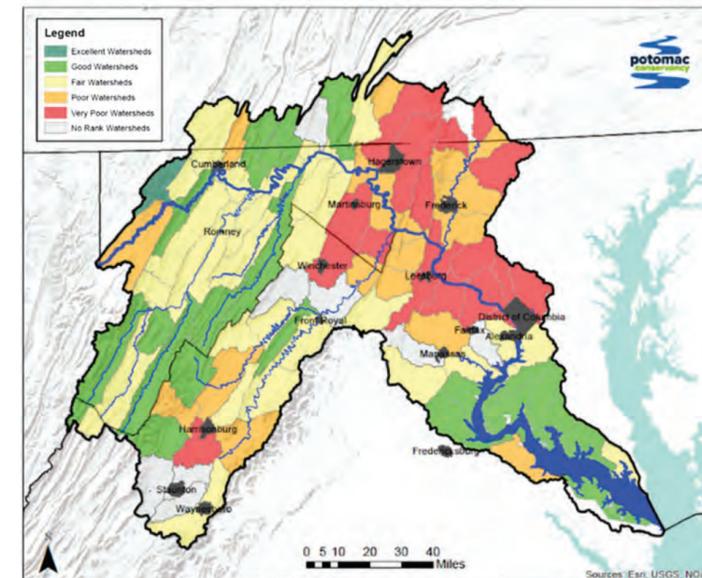


PHOTO COURTESY OF HEDRIK BELIN, POTOMAC.ORG/RIVER-UPDATE

Challenges to the health of the Potomac River remain.

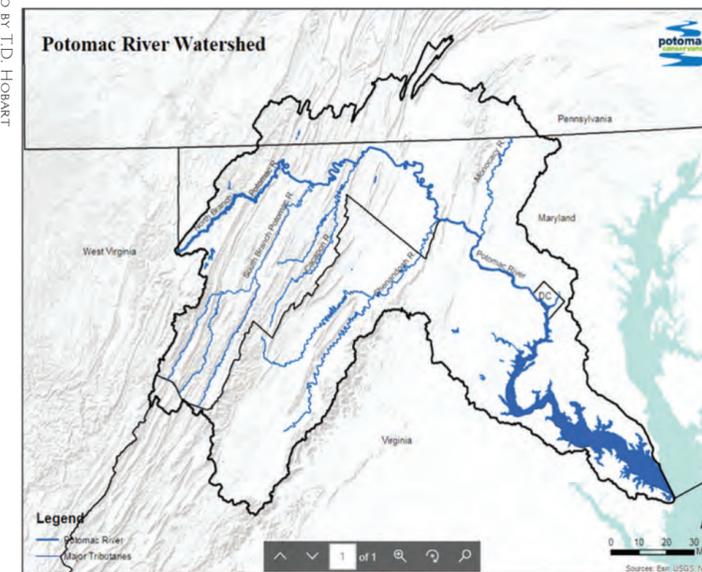


PHOTO COURTESY OF HEDRIK BELIN, POTOMAC.ORG/RIVER-UPDATE

Map of the Potomac River watershed.

plains. He challenged attendees to be Potomac River advocates.

The Conservancy works on multiple fronts to protect and restore the river, like tree planting and influencing public policy. The organization has protected over 60,000 acres and over 100 stream miles in the 14,670-square-mile Potomac River basin. "Clean water's our north star," Belin said. "The river's the star of the show. It's our backyard," adding, "the Potomac's making a comeback but there's still more work to do to get the river to an A."

Cosponsors of the meeting were the Four Mile Run Conservancy, the Friends of Little Hunting Creek, the Friends of Mason Neck State Park, Porto Vecchio Condominium and the Washington, D. C., chapter of the Society for Conservation Biology.

Sturgeons and Dolphins

Shortnose sturgeons (*Acipenser brevirostrum*) live in rivers and coastal waters from Canada to Florida, but spend little time in the ocean, according to the National Oceanic and Atmospheric Administration. They can reach up to 4.5 feet in length. In 1967, the federal government classified the fish as endangered.

Common bottlenose dolphins (*Tursiops truncatus*) live close to the shore and throughout coastal and estuarine waters around the world. They are not considered to be endangered. In the 1840s, dolphins were seen as far upriver as Alexandria, Virginia, Karin Bruillard reported in the Washington Post.



Anglers Josh Cohn and Connor Lynch snapped a photo of the shortnose sturgeon they caught in the Potomac River at Fletcher's Boathouse, keeping it in the water to prevent harm.