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To Catch A Thief

How anglers can help prevent the spread of an invasive species.

BY RUTH HEIL

SUDDENLY THE HATCHES CAME off in abundance and there was a cloud of flies."

Len Hillegass was describing a perfect day fishing for trout. "That's when it gets real fun, especially if you're using a dry fly." The experienced craftsman went on to brag, "I fooled that fish."

First, a man obviously needs free time to carry out this devious plan. Second, he needs unfettered trout waters. While sediment and pollution can cloud plans more than a poorly timed dinner date, others can invade, too: foreign parasites, alien mussels, and even exotic fish. Fortunately, these are easier to address than a spouse who makes plans during trout season, especially when the misplaced species is a rooted invasive plant. That's because aware, observant, and in-the-stream anglers are in a tremendous position to catch

these pleasure-robbing thieves.

"Aquatic invasive species are a serious threat to TU's mission," and "vigilance" is how "you can minimize the thing," said Dave Kumlien, director of Trout Unlimited's Aquatic Invasive Species program.

Some plants cause more trouble than others, and the culprits vary from one region to the next. While Kumlien must battle Eurasian watermilfoil (*Myriophyllum spicatum*) in the cold waters of Bozeman, Montana, conservationists in the Mid-Atlantic states have targeted another big foe: the European water chestnut (*Trapa natans*).

Native to Europe, Asia, and North Africa, its seeds are edible, but it is unrelated to the popular Chinese vegetable. *T. natans* moved to America sometime before 1884 as an addition to a New England

water garden and has since clogged the Great Lakes Basin, Lake Champlain, the Connecticut, Nashua, Sassafras, Hudson and Potomac rivers, and more.

From spring to autumn, a single plant can grow a 15-foot rooted stem from which a rosette of leaves emerges from a 3-inch buoyant stalk. It spreads as quickly as it grows. One rosette can produce 20 seeds, and each seed can become 10 rosettes. In the Mid-Atlantic climate, botanists have seen an acre of chestnut turn into 100 acres the following year.

Moist seeds remain viable for 12 years inside their underwater "nuts," which resemble a "Ninja star" type weapon. The nuts' four points are so sharp they can easily draw blood, pierce a wader, or cling to a goose's feathers. Broken rosettes can become new plants, too.

Why It's a Problem

With infestation, water navigation becomes nearly impossible. Moreover, "It changes the makeup of the biodiversity," Kumlien explained. "If you've got this dense canopy of chestnut [or watermilfoil], sunlight doesn't reach the bottom, and the area underneath becomes relatively sterile. Pretty soon you get some water that might look on the surface to be interesting, but there's nothing there." No bugs, no native plant life, and no fish.

Juvenile fish are forced to the perimeters of the underwater forest. There, the big fish cruise to eat the little ones, and this attracts the advantageous human. Anglers such as Kumlien who understand long-term species survival know that "over time, that increase in predation is going to screw up the fishing."

More problematic, however, is what happens when the first frost hits. All the plants die at once. As the material decomposes, it robs significant amounts of oxygen from the fish.

These effects are felt mainly at the source. Typically, the chestnut roots in the mud of shallow, still, nutrient-rich waters. However, when infestations occur in the headwaters, the eutrophic conditions impact the entire system. Also, seeds and plant pieces that wash downstream during flooding can infect peaceful eddies, coves and estuaries.

One Tough Fight

As the former conservation manager for the Perkiomen Watershed Conservancy in southeast Pennsylvania, where the chestnut issue is relatively new, Krista Scheirer dedicated herself to searching out and

Once established, the European Water Chestnut can take over entire waterways (right) and disrupt its natural balance. Unfortunately, the best way to remove the plant is by hand (left), but because the plant is so prolific, it can take several seasons of work to make any progress.

COURTESY OF THE PERKIOMEN WATERSHED CONSERVANCY



destroying the invader.

When colonies were found, she rounded up hardy volunteers to methodically hand-weed the annuals before they bloomed and formed seeds in summer. At one site they removed mounds of heavy, soaking-wet plant material and collected every seedpod they could find, only to come back the next spring to the same conditions. With the tenacity of steelhead, they fought for three years, employing herbicide only once and with great care. They finally got relief when, in the fourth year, they found only a few plants.

Today, the Conservancy's initiatives have moved to surveying and prevention in the 362-square mile watershed. Meanwhile, in places like the Upper Delaware River in New York, conservationists are doing the same, waiting to tackle the chestnut should it surface.

Scheirer said, "This is an economically, ecologically and recreationally harmful plant. In Pennsylvania, if we keep investing in this problem and educating people so that it stops spreading to other areas, we can stop

it. Otherwise, it's just going to take over."

Kumlien agreed. "The more people understand not just the specific threats, the better off we are, because this is about risk management and risk reduction. Rapid response is a key, whether they're infections or critters or plants."

Jeff Skelding directs the Friends of the Upper Delaware River. He said, "In my opinion, the average fly fisherman has a more heightened sense of ecological stewardship. Perhaps this is because fly fishing requires a more in-depth knowledge of stream systems, insect life, and fish behavior. This tends to instill a deeper understanding of the intricate connections of river systems and broader watershed influences."

And to folks like Hillegass, that means the difference between simply catching a fish and fooling one.

Ruth Heil is a writer who supports conservation-minded outdoor enthusiasts. She lives along Swamp Creek in Green Lane, Pennsylvania and blogs at www.todayswalkoutside.com.

PREVENTING THE SPREAD OF THE EUROPEAN WATER CHESTNUT



The flowering plant of a live European water chestnut plant (left) and its "ninja star" shaped seed pod (right).

- Learn what the culprit looks like.
- Survey the places you fish.
- Avoid traveling through or disturbing a water chestnut infestation.
- If you find a single chestnut, gently wiggle the entire plant out of the sediment and dispose of it far away from where water or floods may reach it. Be careful – a seed is a vector for 120 more plants.
- Inspect boats and equipment for European water chestnut hitchhikers.
- Report all sightings, even suspected ones, to your local or state Fish and Boat Commission, even if you removed the plant. Speak with a fisheries biologist or watershed specialist if possible.
- Teach others how to fight the spread.



COURTESY OF THE MARYLAND DEPARTMENT OF NATURAL RESOURCES

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