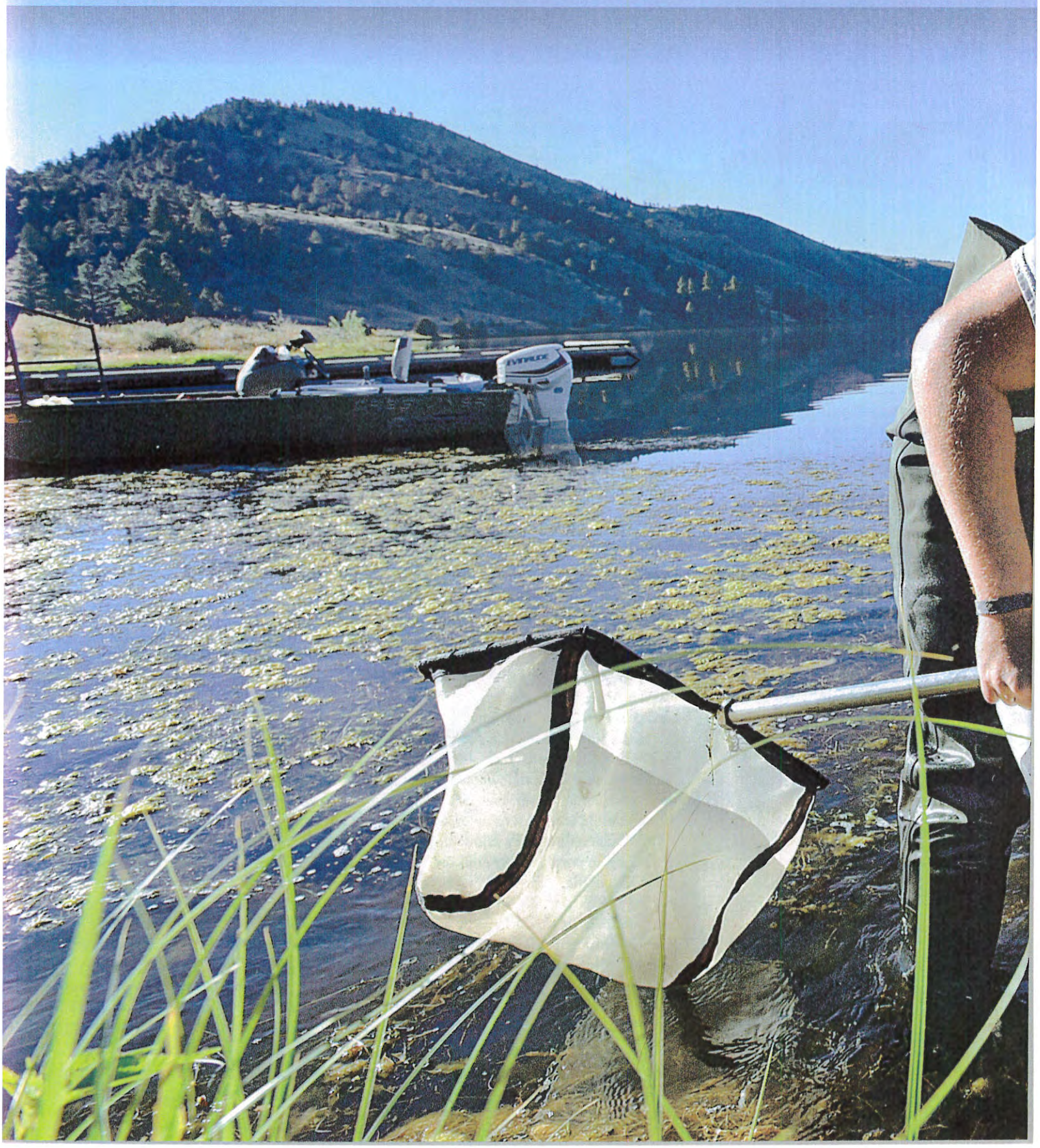
ON THE **PROWL**



Alicia Stickney stood on the shore of Beaver Lake, a few miles west of Whitefish Lake in northwestern Montana, and noticed something strange.

It was fall of 2011, and Stickney, a Montana Department of Natural Resources & Conservation environmental scientist, was on a work field trip. "I saw these strange plants washing up on shore," she says. "I picked some up and thought, 'Gosh, this has a lot of leaflets. I think it's Eurasian watermilfoil.'"

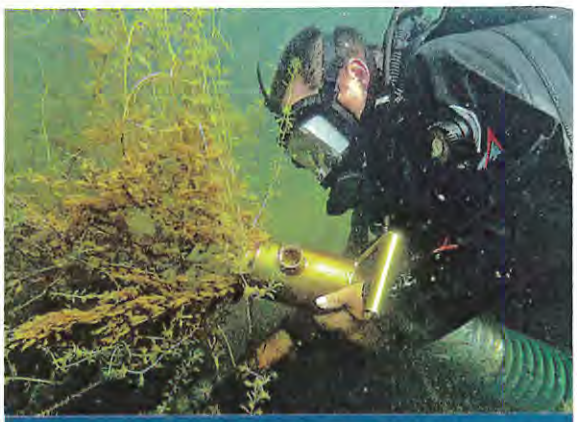
Sure enough, experts with Montana Fish, Wildlife & Parks soon verified that the vegetation was one of the nation's most dreaded non-native plants. Easily confused with the native northern watermilfoil, Eurasian watermilfoil quickly spreads and forms thick mats that carpet lakes and reservoirs. The dense vegetation clogs irrigation pipes and canals, blocks boating lanes, and crowds out swimmers. Infestations can cause lakeside property values to plummet.

The discovery was especially concerning because Beaver Lake is connected by a creek to Whitefish Lake, one of the most popular recreation waters in northwestern Montana.

After Stickney's discovery, the Whitefish Lake Institute, city of Whitefish, and several state agencies quickly deployed crews to kill the largest patches. Afterward, scuba divers used underwater vacuums to suck the plants up by their roots to prevent leaves from fragmenting, spreading, and taking root. Crews also installed a sediment barrier to block milfoil growth and prevent fragments from drifting downstream to Whitefish Lake.

"Our efforts at Beaver Lake have been a success, when few success stories exist with Eurasian watermilfoil invasions," says Mike Koopal, executive director of the Whitefish Lake Institute. Koopal is optimistic that the non-native milfoil can be completely controlled and kept out of Whitefish Lake, "but there's no way that would be possible if we hadn't had a chance to jump on it early, before it was able to spread," he says.

Craig McLane, Aquatic Invasive Species (AIS) Early Detection and Monitoring Program coordinator for FWP, says Beaver Lake exemplifies how early detection can keep invasive species at bay. "Compare that to Noxon Rapids and Cabinet Gorge [reservoirs], where they discovered Eurasian watermilfoil much too late," he says.



VACUUM PICKED A scuba diver uses the DASH method (diver-assisted suction harvest) to remove Eurasian watermilfoil. Vacuuming the invasive species prevents fragments from escaping and reestablishing elsewhere in lakes or reservoirs.

WISCONSIN LAND AND WATER CONSERVATION ASSOCIATION

McLane explains that the rapidly spreading plant, first discovered in the two lower Clark Fork River impoundments in 2007, quickly filled bays and surrounded docks. The plant likely arrived on boats from nearby Idaho, where it had been discovered a few years earlier. Noxon homeowner Richard Reich told the *Missoulian* the weeds were so thick they clogged his boat's propeller and made it impossible for his kids to swim off the dock.

"All we can do now is try to keep it under control with herbicides and harvesting, but there's no way we'll ever get rid of it entirely," McLane says.

RESPONDING TO A MAJOR THREAT

Even worse non-indigenous aquatic plants and animals threaten Montana waters. Most dreaded are invasive mussels (zebra and quagga), which spread at astonishing rates, reaching densities of 700,000 per square meter. The thumbnail-size crustaceans quickly blanket marina piers, jam boat engines, clog irrigation pipes, and disrupt hydropower plant equipment. After they overpopulate and die, the bivalves foul beaches with a putrid stench and razor-sharp shells. In other states, invasive mussels have ravaged aquatic ecosystems.

"Ecologically, most invasives are a disaster," says Stacy Schmidt, an FWP environmental scientist. Eurasian watermilfoil muscles out native vegetation, invasive clams and mussels displace native crustaceans and strip water of nutrients needed by fish and aquatic insects, and some invasive species carry parasites deadly to birds. "Then there are impacts we don't even know about," Schmidt says. "These species are scary to anyone who cares about Montana's ecological health."

Scary also to anyone who cares about the state's economic health. In the Great Lakes region, invasive zebra mussels have cost states, cities, and industries tens of billions of dollars to repair damaged power plants, retool municipal water facilities, and unclog irrigation systems.

SCRAPING SLED AIS crew members use a benthic sled at Lake Elmo to collect invasive clams (below) discovered in 2019. Dragged behind a boat, the sled scrapes a layer off the lake bottom into a net that collects material as small as ¼ inch long.

crayfish and adult snails, mussels, and clams, they use kick nets in shallow water and scrape mud samples from lake bottoms. Crews also rake up aquatic plant samples, scour shorelines, and check under docks and submerged rocks. Snorkelers and scuba divers search for submerged non-natives.

Plankton samples are sent to FWP labs in Helena and Kalispell, where technicians look for mussel larvae through microscopes. In 2020, FWP labs examined 1,852 samples gathered by department crews and another 845 from other partners like the Flathead Lake Biological Station, Clearwater Resource Council, the U.S. Army Corps of Engineers at Fort Peck Reservoir, and Whitefish Lake Institute. Some water samples go to an out-of-state lab that tests for traces of invasive species' DNA.

AIS and diseases also reach new waters when fish are stocked or moved from hatcheries. That's why another component of the AIS offense is annual invasive species and fish health inspections required at federal, state, and commercial hatcheries before fish are transferred within Montana. AIS staff also keep an eye on other states, especially those along the Great Lakes and close to Montana. "We're constantly on the lookout for new species showing up there to know what to look out for here," Schmidt says.

RAPID RESPONSE

Early detection and monitoring work. Over the past 17 years, FWP and partner groups have verified new AIS infestations in more than 50 waterbodies. After a discovery, monitoring crews keep tabs on the population and measure the effectiveness of control measures. The most intensive monitoring has been on Tiber and Canyon Ferry following the 2016 detection of mussel larvae in plankton samples. After searching for three years and finding no further evidence, FWP stopped inspecting and decontaminating boats leaving Canyon Ferry. Similar restrictions could be lifted on Tiber by 2022 if crews continue to find no adult or additional larval mussels there.

Depending on the invasive species and

Tom Dickson is the editor of Montana Outdoors.

NEVER-ENDING SEARCH Top left: Brian Hagan lifts a hunk of vegetation collected with a plant rake at Hauser Reservoir. FWP's AIS crews check 350 to 400 waters each year, and over the past 17 years have verified new infestations in more than 50 waters. Top right: Hagan loads a boat onto a trailer at Hauser. AIS crews motor to the middle of reservoirs and large lakes, where they use plankton nets to search for microscopic larvae of invasive mussels. Before moving to another water, they soak the nets in vinegar to kill any lingering organisms. "We don't want our nets to be a vector that spreads invasive species," says Hagan. Bottom right: Vegetation, plankton samples, and suspect snails and other organisms are sent to the AIS lab in Helena, where Keegan Effertz and another lab technician examine and identify specimens. In 2020, the Helena lab and another in Kalispell examined 1,852 samples gathered by FWP crews and another 845 from partner organizations and agencies. Bottom left: Looking for organisms at Spring Meadow Lake to send to the lab for analysis.

with Swan Valley Connections, the Blackfoot Challenge, the Clearwater Resource Council, and the Missoula County Weed District sample Holland, Van, Lindbergh, and Swan lakes three times each year to look for invasive mussel infestations.

JUST OUT FISHING

Then there's the regular people out fishing, boating, and walking lakeshores who spot something weird and report it. That was the case in 2018 when Tom Jacobson and a friend were walleye fishing on Lake Frances, northwest of Great Falls, and noticed tiny clams and snails clinging to their line and lures. Jacobson, a state senator, put the gastropods in a lure box and delivered them to FWP staff for identification. Though the clams turned out to be native, the snails were invasive faucet snails, which carry parasites deadly to waterfowl and were blamed for the deaths of hundreds of coots on Georgetown Lake in 2006. "That was a great example of how people out recreating are often the first to notice something weird and then report it to FWP," says McLane.

This past December, an angler sent the department photos of invasive red-rimmed melania snails spotted in the Missouri River near Great Falls. An FWP crew quickly investigated the site and found no additional specimens, but will continue to monitor the water in 2021. "We figure the snails got there when someone dumped out their aquarium, which is illegal but unfortunately common," McLane says.

As for Alicia Stickney, the woman who may have saved Whitefish Lake by spotting Eurasian watermilfoil in Beaver Lake, the most important lesson she learned is to always be on the lookout for anything unusual in or along a lake or river. "It's important for people to recognize that Montana has all these pristine waters and then be curious whenever they see something odd that could pose a threat," she says.

The plant or animal might turn out to be harmless. Or it could be a destructive species that, if caught in time, won't have the opportunity to ruin a part of Montana's great outdoors.

CLEAN. DRAIN. DRY.
Learn more about protecting Montana waters from aquatic invasive species and report possible AIS at
CleanDrainDryMT.com

CLOCKWISE FROM TOP LEFT: THOM BRIDGE; THOM BRIDGE; MONTANA FWP; THOM BRIDGE