Aquatic hitchhikers threaten lakes
Don't offer invasive exotics a ride, says Goggin

From hitchhikers to stowaways, invasive aquatic animals sometimes take the road less traveled.
"You might think that all exotic species are transported by natural phenomena such as wind or on animals," said Ron Martin, exotic species specialist for the Wisconsin Department of Natural Resources (DNR).
To the contrary, he said, most new species reach Wisconsin waters through human activities.

"All these new arrivals, whether its zebra mussels or rusty crayfish, share one common trait. They have been introduced into an aquatic environment in which they did not evolve, and consequently have no natural enemies to limit their reproduction and spread," said Martin.
"Given this competitive advantage, invasive species can cause serious problems for native organisms and disrupt natural communities," he said. These species also degrade water quality.

Control is costly
According to the *Aquatic Nuisance Species Task Force*, the costs of controlling exotic species in the United States increase every year. For instance, zebra mussels clog intakes, costing water utilities millions of dollars annually.

Some exotic species may cause significant health problems. Strains of cholera found in ballast water tanks of ships from South America infested oyster and fish populations in Mobile, Alabama in 1991.

Exotic species can have dire ecological impacts. The rapid spread of zebra mussels in the Great Lakes illustrates how profoundly an exotic can alter the aquatic environment. They have decimated native mussel/clam populations and placed valuable ecological communities in jeopardy.

In addition, the proliferation of these species can impair recreational activities over time such as boating, swimming and fishing, and navigation and flood control. On some Wisconsin beaches, people need to wear shoes to get to the water because of zebra mussel shells.

"Locally, several invasive aquatic animals are causing problems in our lakes and streams: rainbow smelt (Osmerus mordax); rusty crayfish (Orconectes rusticus); yellow perch parasite (Heterosporis sp.); and zebra mussels (Dreissena polymorpha)," said Patrick Goggin, county conservationist for the Vilas County Land and Water Conservation Department (LWCD).

Rainbow smelt
These slender fish, typically 6 to 8 inches long, cause problems in our inland lakes, where they were probably used as bait and released.
"Vilas County is one example where rainbow smelt has reduced native fish such as walleye over the past ten years," said Steve Gilbert, WDNR fisheries biologist for Vilas County. "Because of rainbow smelt, six lakes in the county have lost a naturally reproducing walleye population.

He said the department is just now realizing all the adverse impacts that this species is having on our native fish communities.
"Walleye hatch about the same time as smelt do. The young walleye then move to the middle of the lake to eat zooplankton," said Gilbert. "Circumstantial evidence indicates that adult smelt feed on little walleye."
In addition, young walleye compete with young smelt for the same zooplankton food source. "There isn't much left at the dinner table when the smelt are done," noted Gilbert.

Goggin said many people are surprised to learn that rainbow smelt is exotic to Wisconsin, now infesting 15 water bodies in Vilas County.

The smelt is a marine fish native to the north Atlantic coast of North America. Today, smelt are classified as "rough" fish and they cannot be transported live within the state without a permit from the DNR.
"People need to be careful not to transport them to uninfected waters," said Goggin.

Rusty crayfish
Goggin said rusty crayfish were likely brought to Wisconsin as bait. Other sources could include aquarium release by hobbyists, activities of harvesters, and live study specimens release by teachers and students who buy them from biological supply houses, according to Goggin. Rusty crayfish are native to streams in Ohio, Kentucky and Tennessee but populations have expanded since 1960 throughout northern Wisconsin lakes and streams.
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Rusty crayfish are native to streams in Ohio, Kentucky and Tennessee, but populations have expanded since 1960 throughout northern Wisconsin lakes and streams. Some 50-plus water bodies are infested with rusties in Vilas County.
"Eradicating established infestations is incredibly difficult if not impossible," said Goggin. "Your help detecting and reporting new infestations is vital for preventing their spread."

Yellow perch parasite
Heterosporis sp. or yellow perch parasite is a newly identified microsporidian parasite infecting fish, especially yellow perch. The parasite has also been found in northern pike, sauger, and walleye specimens. It was first discovered in perch of the Eagle River Chain of Lakes in Wisconsin and Leech Lake in Minnesota.

According to Susan Marcquenski of the DNR's Bureau of Fisheries Management and Habitat Protection, the parasite infects the muscle cells which causes the flesh to have a cooked or freezer burn appearance. The parasite infection is not visible from the outside of the fish.
"Heterosporis does not infect people; however, infected muscle cells reduce the quality and change the texture of the fillet, and therefore people may choose to discard infected fish or at least the affected portions of fillets," said Marcquenski.

Anglers and boaters on the Eagle River Chain of Lakes are encouraged to avoid throwing back or carelessly discarding infected perch, dry all equipment and boat exteriors before using in other water bodies, and drain all lives wells and disinfect with a half-cup of bleach per five gallons of water.

Zebra mussels
Goggin said zebra mussels look like small clams with a yellowish-brown shell, typically with dark- and light-colored stripes, like a zebra.
He said they can be up to 2 inches long, but most are under an inch. They grow in clusters attaching firmly to any solid underwater objects like rocks, dock pilings, boat hulls/motors, water intake pipes, and more.

He said zebra mussels are filter feeders, taking plankton that young native fish rely on for food. In addition, zebra mussels have a voracious appetite and can out-compete our native mussel and clam populations for food too. They can produce tens of thousands of young mussels each summer, covering lake bottoms, causing extensive damage to lakes and river ecosystems, and to native diversity like mussel and clam species according to Goggin.

"Currently, no Vilas County lakes are infested with zebra mussels; however, these mussels are near with an infestation of Lake Metonga in Forest County," said Goggin.

"This aquatic hitchhiker from eastern Europe moved into the Great Lakes on an ocean freighter and found the habitat to its liking," said Doug Jensen, exotic species information center coordinator for the University of Minnesota Sea Grant. "While first discovered in a Racine harbor in 1990, zebra mussels have expanded their range along the Lake Michigan coast," said Jensen.

Do your part

"By following several simple steps before you remove your boat from the water, you can make a difference in preventing the spread of invasive aquatic species," said Martin. "This is at the heart of the DNR's 'Clean Boats, Clean Waters' message. The idea is that by inspecting and removing all aquatic animals and plants from your boat, motor, and trailer, we can stop the spread of these invasive aquatic species."

"Draining all the lake or river water from your bilge and livewell before you leave the boat landing is essential for control," said Goggin. Washing your boat and trailer thoroughly with tap water when you get home or at a wand wash is a good preventive measure according to Goggin.

"Flush water through your motor's cooling system, livewells, and other areas that hold water or dry your boat and equipment for five days in a sunny location before transferring it to a new body of water," said Goggin.

Accidental release of exotics sometimes happens through the bait business. "It is important for anglers to properly dispose of all bait when fishing. Never dump live fish or crayfish from one body of water to another," recommend Herman.

Identification crucial

Aquatic nuisance species "Attack Packs" used by students contain books, video, samples, activities, and overheads on exotic species in Wisconsin.

"It is a tool used by high schoolers to teach elementary school students about exotic species," said Phil Moy, a fisheries and nonindigenous species specialist for the University of Wisconsin Sea Grant. These materials are packaged in an easy-to-carry backpack. For more information about the Attack Pack or to obtain one for use in your school, contact Moy at (920)-683-4697.

Exotic trunks have been developed by a partnership lead by the University of Wisconsin-Extension that contains effective educational materials on invasive aquatic species.

"The trunks contain teaching props focusing on four species including zebra mussels and rusty crayfish," said Laura Felda, the Wisconsin Lakes Partnership Adopt-A-Lake Coordinator. "This includes specimens, brochures, and other samples."

For more information on how to receive an aquatic exotics trunk, call (715)-346-3366.

Funding shortfalls

Because of the rapid emergence of exotics as a problem, Goggin said new funding has not necessarily kept pace with the need to protect our aquatic resources from these biological pollutants.

He said funds included in the proposed state budget would increase funding in order to strengthen the current DNR's watercraft inspection program at boat landings. Additional funding is aimed at providing control monies to municipalities and lake groups through the DNR Lake Planning Grant Program.

He said other funds point toward increasing monitoring studies statewide, providing more educational outreach on prevention and control techniques, and establishing an invasive species coordinator position within the DNR.