# Aquatic Nuisance Species RESOURCE BRIEF

## Importance

An aquatic nuisance species (ANS) disrupts ecological processes because it is not indigenous to the ecosystem. Invasive organisms can cause species extinction, with the highest extinction rates occurring in freshwater environments. In Yellowstone, three ANS are having a significant detrimental effect:

- **Lake trout** (*Salvelinus namaycush)*, illegally introduced in Yellowstone Lake where they feed on the native Yellowstone cutthroat trout;
- *Myxobolus cerebralis,* a parasite that causes **whirling disease** in cutthroat trout and other species; and
- **New Zealand mud snails** (*Potamopyrgus antipodarum*), which form dense colonies and compete with native species.

Other ANS likely to arrive in Yellowstone are:

- **Eurasian watermilfoil** (*Myriophyllum spicatum*), which can create dense mats on calm water surfaces, shading out and displacing native plants; and
- **Zebra and quagga mussels** (*Dreissena polymorpha* and *D. rostriformis bugensis*) native to eastern Europe, which consume plankton and algae, reducing their availability for native species.

## Status

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- **Lake trout** (*Salvelinus namaycush*), illegally introduced in Yellowstone Lake where they feed on the native Yellowstone cutthroat trout. The gillnetting of almost 350,000 lake trout since 1994 has saved many more cutthroat trout and slowed the lake trout population growth, but whether this effort will keep the lake trout population suppressed remains uncertain.
- Confirmed in the park in 1998, *Myxobolus cerebralis*, a parasite that causes **whirling disease** in cutthroat trout and other species, appears most concentrated in the Yellowstone Lake watershed, where it has diminished the cutthroat trout in Pelican Creek. It's also been found in the Firehole and Yellowstone rivers.
- First detected in the park in 1994, **New Zealand mud snails** (*Potamopyrgus antipodarum*), which form dense colonies and compete with native species, are now in all of the major watersheds.

MICHELLE LAGORY, COURTESY WYOMING GAME & FISH.

Lake trout.

## Discussion

Some ANS have been illegally introduced outside their native range, but most arrive as an inadvertent result of human activity. National Park Service policy requires that non-native species that threaten park resources or public health are to be eliminated or minimized to the extent practical. Preventing the arrival of an ANS is critical because once they become established in an ecosystem, eliminating them is usually impossible and efforts to even reduce their impact can be extremely expensive. ANS are most likely to spread to new watersheds by boat, traveling in bilge water or attaching themselves to hulls or trailers. Park visitors, especially boaters and anglers, are informed about their role in prevention through pamphlets, posters, signage, and video. Visitors who purchase boat permits receive instructions on boat inspection and cleaning their gear. Yellowstone staff are collaborating with other government agencies and non-governmental organizations to develop an aquatic nuisance species management plan for Greater Yellowstone.

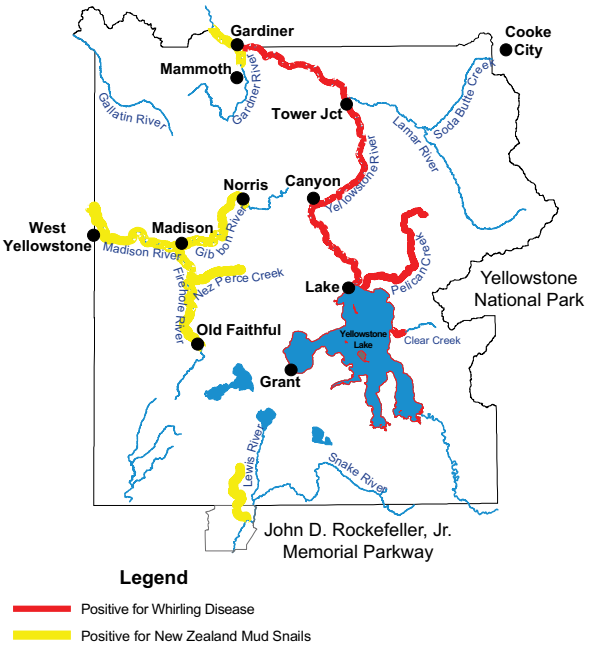


Figure 1. Locations in Yellowstone known to already have whirling disease and New Zealand mud snails.