



Clean the mud off your boots before leaving an area!

# Invasives Gone Wild!!!

## Invasive Species and Recreation on the St. Croix River

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Don't dump unused bait into the water!



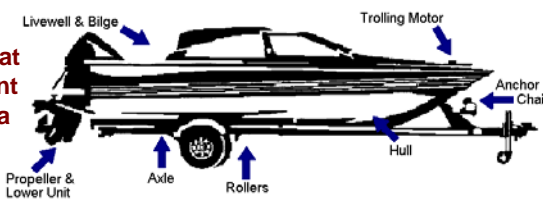
### Interagency Task Force

The St. Croix National Scenic Riverway Aquatic Invasive Species Interagency Task Force (formally the *St. Croix Zebra Mussel Task Force*) was created in 1992 when zebra mussels were first found in the St. Croix. The task force was created to prevent the spread of zebra mussels as well as to identify other threatening invasive species for the river. Participants have included NPS, FWS, WDNR, MDNR, Xcel Energy, MN Sea Grant, Macalester College, USGS, Coast Guard, Army Corps of Engineers, Great Lakes Indian Fish and Wildlife Commission, and St. Croix Marinas Association. The task force creates an action plan yearly to establish goals for the river as well as identify the most current problem species.

### The Wild and Scenic Rivers Act (1968)

The St. Croix National Scenic Riverway was one of the eight original rivers to be protected by the act which works to preserve rivers that “posses outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values” for “the benefit and enjoyment of present and future generations.” The act prohibits development that would take away from the river's wild and scenic qualities.

Clean your boat and equipment after leaving a lake or river!



**STOP AQUATIC HITCHHIKERS!**

Prevent the transport of nuisance species. Clean all recreational equipment.  
[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)



The stop aquatic hitchhikers program was created as part of the Aquatic Nuisance Species task force as a form of public outreach meant to educate people who recreate on the water about invasive species and what they can do to prevent them from spreading. The program is supported by the Fish and Wildlife Service and the Coast Guard. The program has four main suggestions for boaters and they are: remove any visible plants or animals from the boat and equipment before leaving the landing, drain water from boat and equipment before leaving the landing, dispose of bait in the trash not the water, spray rinse or dry boats and equipment before using it somewhere else.



Zebra Mussel	Rusty Crayfish	Asian Carp	Eurasian Water-Milfoil	Purple Loosestrife	Buckthorn	Garlic Mustard
<i>Dreissena polymorpha</i>	<i>Orconectes rusticus</i>	<i>Ctenopharyngodon idella</i> , <i>Hypophthalmichthys nobilis</i> , <i>Hypophthalmichthys molitrix</i>	<i>Myriophyllum spicatum</i>	<i>Lythrum salicaria</i>	<i>Rhamnus cathartica</i> , <i>Rhamnus frangula</i>	<i>Alliaria petiolata</i>
Zebra mussels are a bivalve mussel with a striped shell growing between ¼ and 1 ¼ inches long. They were introduced from Europe to the great lakes, eventually spreading south to other rivers and lakes. They spread by attaching to boats and equipment which is carried upstream or across land.  Zebra Mussels attach to any hard surface including water intake pipes for facilities and boat hulls and motors, causing sever economic impacts. They also attach to native species, impacting their health and abundance. This has been a major concern in the St. Croix, as the river is the habitat for a diverse array of native mussel species. The Zebra Mussels' filter-feeding habits reduce food availability and increase water clarity. With increased water clarity more light can penetrate deeper into the water allowing for macrophyte growth where it may not have been suitable before.  There is no way to eliminate zebra mussels from the river so the task force has set out some regulations and other ways to prevent them from spreading. Travel is restricted past the railroad bridge north of Stillwater. It is illegal to transport zebra mussels or introduce them to a body of water. There is an emphasis on public outreach as well.	Rusty Crayfish have rusty colored spots on their shells with black bands around the tips of their claws, and grow up to 5 inches long.. They are thought to be native to the Ohio River Basin, and were brought north for use as fishing bait.  These aggressive invaders harm native fish and crayfish species by feeding on their eggs and young. Their feeding habits eliminate aquatic vegetation which serves as habitat for fish spawning, cover, and food. Rusty crayfish also hybridize with native crayfish, which are smaller and less aggressive. Rusty crayfish have also been linked to shoreline erosion caused by the loss of macrophytes.  There is no way to safely eliminate the entire population of rusty crayfish in the river. One suggested method of control is to harvest the population for food or use as bait. It is illegal to introduce rusty crayfish into any body of water. In Minnesota it is illegal to use any live crayfish as bait.	Asian Carp (grass carp, bighead carp, and silver carp) are torpedo shaped fish that appear silver and dark green. They are native to parts of Russia and China. Grass Carp were introduced to North America in the 1960's to control aquatic plants in reservoirs and aquaculture farms. Bighead and Silver carp can weigh up to 110 and 60 pounds respectively. These carp were introduced in the 1970's to control plankton in aquaculture ponds. Asian carp spread primarily through the bait business, as fishermen release unused bait into lakes and rivers.  Asian Carp damage habitats and consume large amounts of food, limiting the availability of necessary resources to native species. They reduce water quality through their foraging habits by stirring up sediment and anything that may be in the sediment. Silver Carp also pose a threat to boaters because they jump out of the water in response to outboard motors.  Being that there are no known reproducing populations of bighead, silver, or grass carp in the St. Croix there are no management methods being used. One prevention step being considered is the installation of a sound barrier at the mouth of the river. It is also illegal to transport either of these two species.	Eurasian water-milfoil is an aquatic plant found in shallow areas of lakes and rivers. Its identifiable traits include feathery leaves, long stringy stems, and reddish flowers that protrude from the water in summer months. Eurasian water-milfoil was introduced from Europe in the 1940's, and spreads primarily through stem fragmentation from attaching to boat parts and other equipment used by recreators.  Eurasian water-milfoil forms dense mats which reduce dissolved oxygen content, light penetration, and open water habitat. This limits macrophyte, macroinvertebrate, and fish abundance and diversity by limiting the amount of sunlight that would reach them. The dense mats also inhibit recreation such as fishing and other water-based recreation activities.  There are currently no steps being taken to manage this species on the St. Croix. Some methods used in other areas include the physical removal of the plant or the use of an herbicide. It is illegal to transport this species, or introduce it to a different body of water.	Purple loosestrife is a wetland plant originally from Europe and Asia introduced to North America in the 1800s as decorative garden flower. It has a flower spike at it's top made up of pinkish purple petals with a tall stalk (2 to 7 feet tall). Purple loosestrife is spread when seeds escape from gardens and into lakes and rivers. Seeds are also easily spread by animals.  Purple Loosestrife can dominate wetland ecosystems by forming large monotypic stands. It crowds out native species, reducing biodiversity. By reducing native species abundance, purple loosestrife may have indirect impacts on animal species dependent on them.  The most common management method on the St. Croix is the physical removal of the plant. Herbicide has been used on a few of the particularly bad spots. A form of biocontrol, a beetle that kills the plant, has been used on source populations outside of the parks jurisdiction.	Native to Europe, Buckthorn was introduced to Minnesota in the 1800s as a decorative hedging plant. It grows quickly and is very dense. Buckthorn has egg-shaped leaves that are pointed at the ends, and can grow to 10 feet in height. It spreads mainly through birds and other animals eating its berries and passing the seeds through their systems. Seeds can also get stuck on peoples' shoes or boots when they are hiking, and be transported to another area.  Buckthorn shades out other plant growth, by growing leaves earlier and keeping them longer than native species. The shading out of native plants allows for the erosion of the forest floor. This is caused by lack of plants available to hold the soil down. Buckthorn is also a host to other pests like crown rust fungus and soybean aphid. The berries produced by the trees have little to no nutritional value for the birds and other animals that eat them, so the presence of buckthorn is not beneficial for plant or animal life.  The main method of management for buckthorn is the actual removal of the plant. Another method is the use of herbicide after cutting the plant down. It is illegal to import, sell or transport buckthorn.	Garlic Mustard is a terrestrial plant with weak stems growing between 1-3 feet in height, flowering in early spring. Its triangular leaves and stems smell like onion or garlic when crushed. Garlic Mustard originally came from Europe, and is now found in 27 states and in Canada.  The presence of garlic mustard reduces the abundance of native herbs in an ecosystem by aggressively monopolizing light and resources. It also has effects on seedling regeneration of dominant canopy trees by killing/inhibiting microbial fungi on which some species depend. Garlic mustard also alters habitat suitability for native insects.  The best management method for this plant is the physical removal of it. Other control methods include cutting flowering stems, burning, or herbicide use. It is illegal to import, sell, or transport this species.

References: MN DNR. *Invasive Species*. (2008) Accessed on 3/13/08 from: <http://www.dnr.state.mn.us/invasives/index.html>; WI DNR. *Invasive Species*. (2008) Accessed on 3/13/08 from: <http://www.dnr.state.wi.us/invasives/>; Naturereserve. *Explorer*. (2008) Accessed on 3/13/08 from: <http://www.natureserve.org/explorer/>; Minnesota Sea Grant. *Aquatic Invasive Species*. (2008) Accessed on 3/13/08 from: <http://seaqrant.umn.edu/aie/>; The Nature Conservancy. *Global Invasives Special Team*. (2008) Accessed on 3/13/08 from: <http://invasives.usdms.edu/learnmore.html>; Watershed Council. *Aquatic Invasive Species*. (2008) Accessed on 3/13/08 from: <http://www.watershedcouncil.org/aquaticinvasivespecies.html>; U.S. Fish and Wildlife Service. *Invasive Species*. (2008) Accessed on 3/13/08 from: <http://www.fws.gov/invasives/>; St. Croix National Scenic Riverway Aquatic Invasive Species Interagency Task Force. *2008 Action Plan*. 2/15/08; ANS Task Force. *Stop Aquatic Hitchhikers*. (2008) Accessed on 3/13/08 from: <http://www.protectyourwaters.net/hitchhikers/>; USGS. *Upper Midwest Environmental Sciences Center*. Asian Carp. (2008) Accessed on 3/21/08 from: [http://www.umesc.usgs.gov/invasive\\_species/asian\\_carp.html](http://www.umesc.usgs.gov/invasive_species/asian_carp.html)