



Wisconsin DNR

If you observe a large-scale fish kill: Contact your local DNR office immediately or e-mail the information to DNR-FISH-Report-Fish-Kills@michigan.gov.

How does the disease spread between waters?

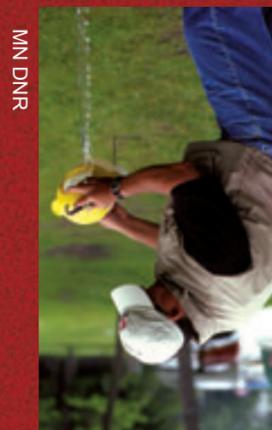
1. Moving VHS-infected fish from one body of water to another. This includes live gamefish caught in an infected body of water and released in another water, or live baitfish caught or used in an infected body of water and transported, used or released into another body of water.
2. Moving infected water from one body of water and discharging into another. Examples would be the discharge of infected water and fish from ships, discharge of infected water from live wells on fishing boats, and discharge of infected bilge water from recreational and fishing boats.
3. Stocking or releasing VHS-infected fish or water from infected fish hatcheries.
4. The natural movement of infected fish from one body of water to another.



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• Allow everything to dry thoroughly.

• Clean boats, trailers and equipment thoroughly. Disinfect live wells and bilges with a bleach solution (1/2 cup bleach to 5 gallons water) or other approved disinfectant.



MN DNR

• Do not release live baitfish into any body of water.

• DISPOSE of unwanted baitfish and fish parts in the trash. Do not release live bait into any body of water.

• Do not move any water between water bodies. DRAIN water from boat, motor, bilge, livewells and bait containers before leaving the access site.

How can we prevent the spread of VHS?

PREVENTION

To protect hatchery stocks of fish from possible VHS infection, the use of baitfish and roe (fish eggs) is prohibited in certain waters of the state, including portions of the following waters in Benzie, Chippewa and Marquette counties. Check the DNR Web site at www.michigan.gov/vhs for a more detailed description of these waters.

- Benzie County: Brundage, Kinney and Stanley Creeks.
- Chippewa County: Pencil Lake (T47N, R4W, S25, 26) and Pencil, Sullivan and Vidian Creeks.
- Marquette County: Cherry Creek.

Protect the waters that supply our hatcheries

- Learn to identify the species of baitfish you are using. Species known to be susceptible to VHS and typically used as live bait include emerald shiners, spottail shiners, and white suckers. Other species occasionally used as bait that are susceptible to VHS include bluntnose minnows, trout perch, gizzard shad, shorthead redhorse, and silver redhorse.
- Request that your local bait store sell baitfish that are certified disease-free. Purchase and use only baitfish that are certified disease-free.
- Never move live fish between bodies of water.
- Check the Michigan Fishing Guide for current regulations and follow the regulations restricting baitfish use.
- Disinfect bait bucket between uses.

What about other waters in Michigan?

While VHS has not yet been confirmed in all waters of the state, other areas are at risk for VHS infection. To prevent or slow the spread of VHS to other waters, anglers are reminded to keep the following tips in mind when using baitfish:

- Learn to identify the species of baitfish you are using. Species known to be susceptible to VHS and typically used as live bait include emerald shiners, spottail shiners, and white suckers. Other species occasionally used as bait that are susceptible to VHS include bluntnose minnows, trout perch, gizzard shad, shorthead redhorse, and silver redhorse.
- Request that your local bait store sell baitfish that are certified disease-free. Purchase and use only baitfish that are certified disease-free.
- Never move live fish between bodies of water.
- Check the Michigan Fishing Guide for current regulations and follow the regulations restricting baitfish use.
- Disinfect bait bucket between uses.

To date, we have found VHS in the following waters: Lake Huron including Saginaw Bay, the St. Clair River, Lake St. Clair, the Detroit River, Lake Erie and all tributaries up to the first dam or barrier. VHS also has been documented in Budd Lake in Clare County and in Baseline Lake in Washtenaw County. As other areas are identified positive for VHS, they will be listed online at www.michigan.gov/vhs.

Where has VHS been found in Michigan waters?

No. The virus will not affect humans regardless of whether you touch or eat it because it dies at human body temperatures.



MI DNR David Kenyon



Exophthalmia (popeye) is one symptom of VHS. Photo courtesy of Dr. Mohamed Faisal.

VIRAL HEMORRHAGIC SEPTICEMIA

VHS



Lake St. Clair gizzard shad with hemorrhagic skin. Photo courtesy of Dr. Mohamed Faisal.

VHS is an extremely serious disease of fresh and saltwater fish. It is spreading into the Great Lakes region of the United States and Canada.



www.michigan.gov/vhs

What is VHS?

Viral hemorrhagic septicemia (VHS) is an extremely serious viral disease of fresh and saltwater fish. It has recently spread into the Great Lakes region of the United States and Canada. VHS virus has been found in Lake Huron, Lake St. Clair, Lake Erie, Lake Ontario, Lake Michigan, and the St. Lawrence River in New York. The virus also has infected several inland lakes in New York, Michigan, and Wisconsin. The disease can cause large-scale fish kills and have severe economic consequences.

What are the symptoms?

At a low level of infection, fish might not display any noticeable symptoms. As the infection intensifies, fish will display widespread hemorrhages (bleeding) throughout body surface (eye, skin and fins) and within the internal organs (swim bladder, intestine, kidney, etc.). Because of the bleeding, gills and liver might appear pale. Sick fish often will be listless, swim in circles, and frequently are observed at the surface of the water.



This VHS-infected fish exhibits widespread hemorrhages. Photo courtesy of Dr. Jim Winton.

NOTE: Confirming VHS infection requires laboratory testing. A diagnosis cannot be made based solely on observation because many different diseases of fish have very similar symptoms.

Prohibited fish species

It is illegal to import baitfish into Michigan unless they have been certified disease-free.

The following fish species are known to be susceptible to VHS and are subject to the restrictions imposed by Fish Disease Control Order FO-245. The most up-to-date information is maintained at www.michigan.gov/vhs.

- Black Crappie
- Bluegill
- Bluntnose Minnow
- Brown Bullhead
- Brown Trout
- Burbot
- Channel Catfish
- Chinook Salmon
- Coho Salmon
- Emerald Shiner
- Freshwater Drum
- Gizzard Shad
- Lake Whitefish
- Largemouth Bass
- Muskellunge
- Northern Pike
- Pacific Herring
- Pink Salmon
- Pumpkinseed
- Rainbow Trout
- Rock Bass
- Round Goby
- Shorthead Redhorse
- Silver Redhorse
- Smallmouth Bass
- Spottail Shiner
- Trout Perch
- Walleye
- White Bass
- White Perch
- White Sucker
- Yellow Perch



Household bleach can be used to disinfect equipment.

For more information, contact:

Michigan Department of Natural Resources
P.O. Box 30446
Lansing, MI 48909
(517) 373-1280
www.michigan.gov/dnr

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Prevent the transport of nuisance species. Clean all recreational equipment.