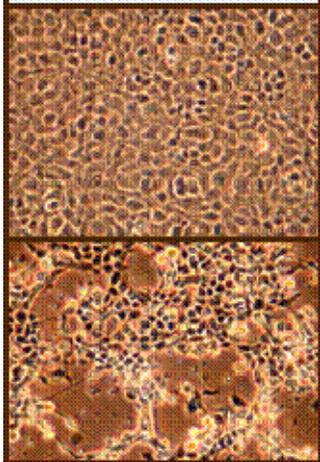


# U.S. Fish & Wildlife Service

## *La Crosse Fish Health Center*

### **Viral Hemorrhagic Septicemia Virus (VHSV) In the Great Lakes**

**Top:** a layer of healthy cultured fish cells as seen under microscope. **Bottom:** cells infected with VHSV showing areas of cell death. (Sarah Bauer USFWS)



VHSV is a serious disease of hatchery and wild fish. Originally native to Western Europe, it was discovered in Washington state salmon in 1988. The first report of VHS virus in the Great Lakes was a Freshwater drum kill that occurred in the Bay of Quinte/Lake Ontario (Ontario, Canada) during the summer of 2005. Infected fish become darkened and lethargic, cease to swim or eat, and display external hemorrhages. Many different species of fish are affected by this virus including walleye, rainbow trout, northern pike, bluegill, channel catfish, and largemouth bass.

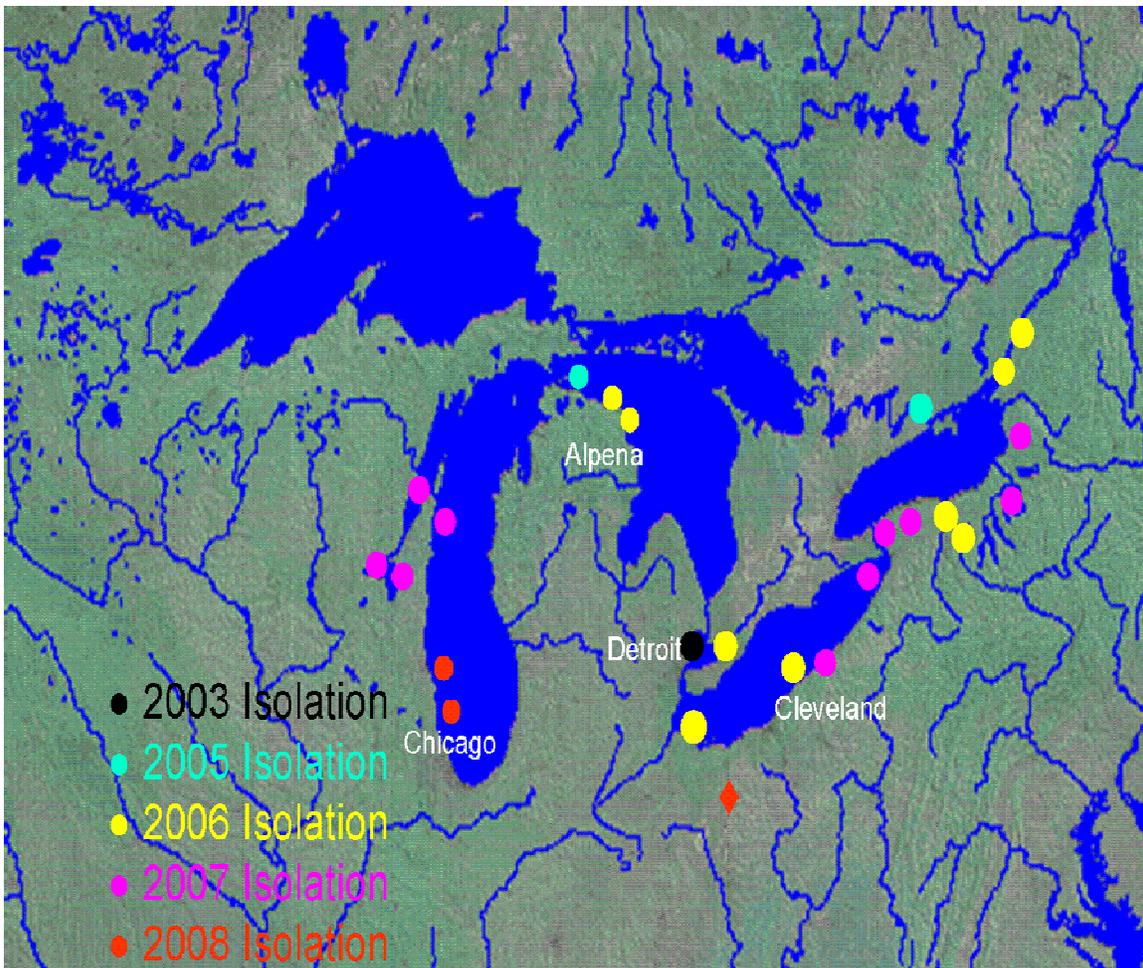
VHSV outbreaks in North America have resulted in high mortalities and can create enormous fish kills. As of November 8, 2007 twenty-eight species of North-American freshwater fish had been shown to be susceptible to the virus.

In response to the significant number and size of VHSV-related fish kills that occurred in the Great Lakes during 2006, USDA—APHIS implemented an Emergency Federal Order ([www.aphis.usda.gov/vs/aqua](http://www.aphis.usda.gov/vs/aqua)) severely restricting the interstate movement of fish from the region.

Ballast water is suspected in the introduction and spread of VHS in the Great Lakes. Fish transfers and natural fish movements may also aid the spread of VHSV.



*A yellow perch exhibiting signs of VHS (hemorrhages, “pop-eye,” and distended abdomen). (USFWS)*



*Locations where VHS has been detected in the Great Lakes. (Ken Phillips LFHC)*

