

# **Baitfish Regulation Proposal**

## **Viral Hemorrhagic Septicemia and Baitfish Use**

### **Public Hearings Presentation**

**January 29 – February 6, 2008**

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Vermont Dept. Fish & Wildlife**



# VT Fish & Wildlife Mission

*The mission of the Vermont Fish and Wildlife Department is the conservation of all species of fish, wildlife, and plants and their habitats for the people of Vermont. To accomplish this mission, the integrity, diversity, and vitality of their natural systems must be protected.*

# What is VHS ?

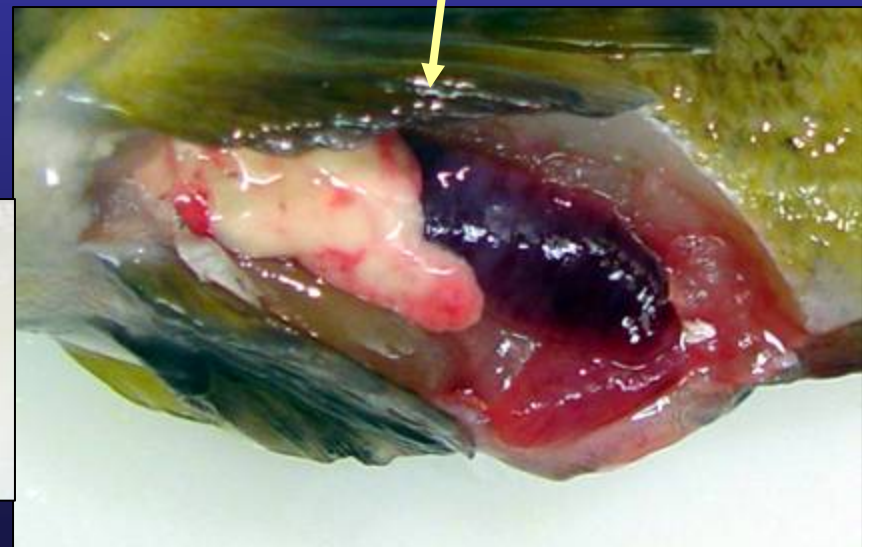
- Viral Hemorrhagic Septicemia – Rhabdovirus
- Four known “strains”
  - 3 European
  - 1 North American
- Causes large scale hemorrhaging in internal organs and osmotic regulation failure
- Previously known to cause large scale mortalities in rainbow trout and turbot in Europe
- Reportable disease by the World Organization for Animal Health

# What is VHS ?

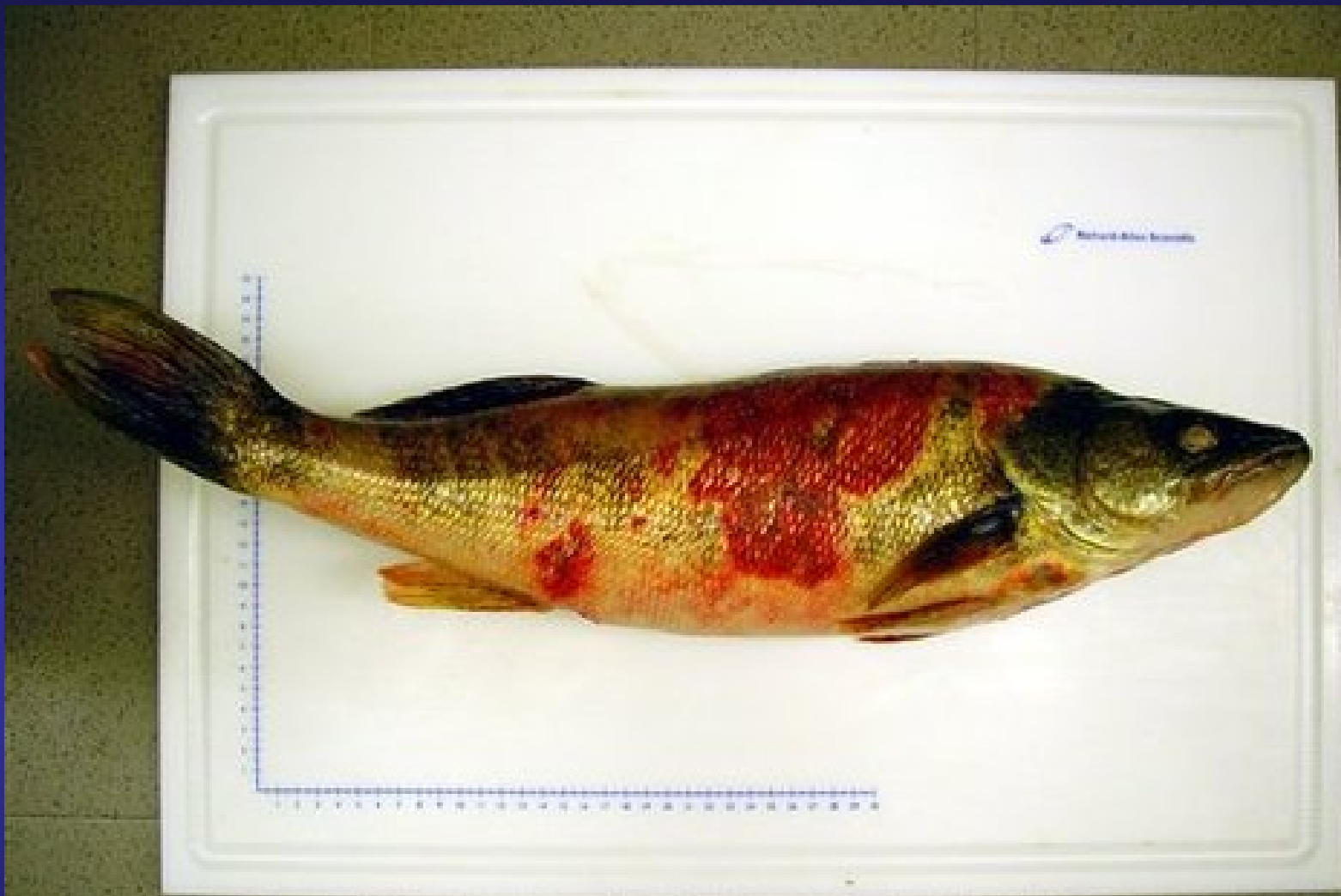
- Causes fish to bleed internally



- It reproduces in cells primarily in the kidney, spleen and liver







NYDEC



Andy Noyes, NYDEC

# VHS

- Transmissible to fish of all ages
- Colder water disease
- Survivors can be lifelong carriers
- Virus outbreaks triggered by other environmental stress
- Currently known to affect 37 North American freshwater fish species

# Freshwater Fish Species Known to be Susceptible to VHS

- Black crappie *Pomoxis nigromaculatus*
- Bluegill *Lepomis macrochirus*
- Bluntnose minnow *Pimephales notatus*
- Brown bullhead *Ictalurus nebulosus*
- Brown trout *Salmo trutta*
- Burbot *Lota lota*
- Channel catfish *Ictalurus punctatus*
- Chinook salmon *Oncorhynchus tshawytscha*
- Coho salmon *Oncorhynchus kisutch*
- Chum salmon *Oncorhynchus keta*
- Emerald shiner *Notropis atherinoides*
- Freshwater drum *Aplodinotus grunniens*
- Gizzard shad *Dorosoma cepedianum*
- Largemouth bass *Micropterus salmoides*
- Muskellunge *Esox masquinongy*
- Northern pike *Esox lucius*
- Pumpkinseed *Lepomis gibbosus*
- Rainbow trout *Oncorhynchus mykiss*
- Redhorse sucker *Moxostoma spp*
- Rock bass *Ambloplites rupestris*
- Round goby *Neogobius melanostomus*
- Smallmouth bass *Micropterus dolomieu*
- Spottail shiner *Notropis hudsonius*
- Trout-perch *Percopsis omiscomaycus*
- Walleye *Sander vitreus*
- White bass *Morone chrysops*
- White perch *Morone americana*
- Whitefish *Coregonus spp*
- Yellow perch *Perca flavescens*

# How is VHS Spread ?

- Ballast water discharge
- Natural fish movements
- Transfer of fish from one body of water to another (including baitfish)
- Recreational boating / angling
- Fisheries management activities
- Movement of “wet” equipment
- Birds

High Risk



Low Risk

# VHS: Before the Great Lakes

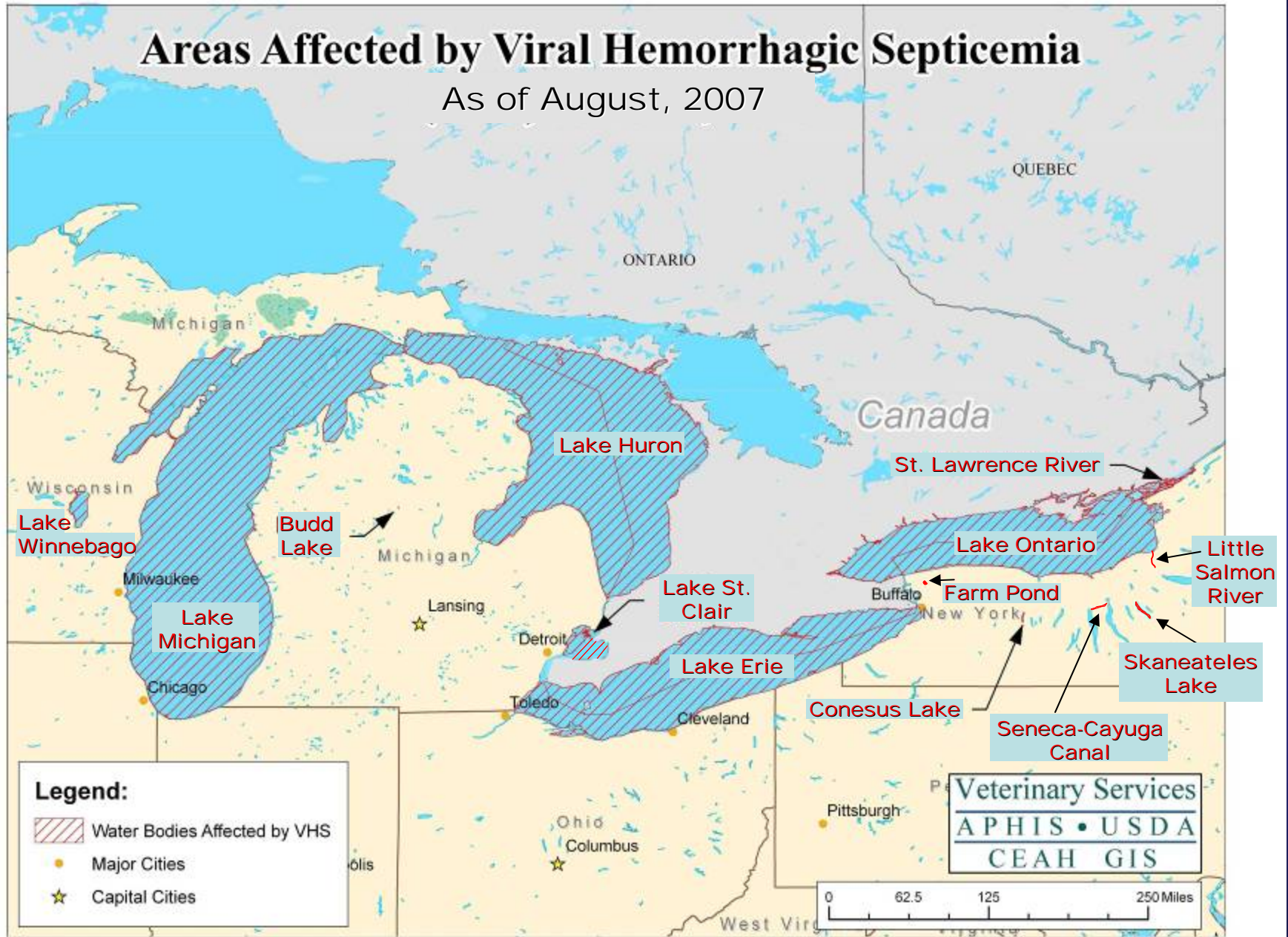
- 1960's - Disease of freshwater fish in Europe
  - Catastrophic losses in farmed rainbow trout
- 1965 - Industry & Gov't collaborated in voluntary control programs
- 1965-1976: 481 hatcheries depopulated
- 1980-1997: "Stamping out" 20-40 farms per year
- Europeans (gov't & Industry) have invested billions of dollars to eradicate VHS from aquaculture facilities
- 1990's - principally a virus of marine fish in North Atlantic and Eastern North Pacific

## Timeline of Great Lakes and Inland Spread of VHS

April 2005	- Freshwater drum > 10,000 - Hundreds of gobies, some muskellunge	Lake Ontario
November 2005	- Smallmouth bass, muskellunge ~2,500	Lake St. Clair
May - August 2006	- Multiple species die offs - 10 new species identified including walleye, white bass, bluegill, crappie, gizzard shad, redhorse sucker, northern pike, yellow perch - Tens of thousands of fish of all species involved - Hundreds of 40-50"+ muskie in the SLR	St. Lawrence River Lakes Ontario & Erie
August 2006	- Walleye – several hundred	Conesus Lake, NY
September 2006	- 11 additional species including emerald shiners, bluntnose minnows	Lakes Ontario & Erie
January 2007	- Chinook salmon, walleye, lake whitefish	Lake Huron
May 2007	- Brown trout, Chinook salmon	Lake Michigan
May 2007	- Smallmouth bass, muskie, black crappie, bluegill, - 1,000's	Budd Lake, MI
May 2007	- Freshwater drum, bass, panfish, 100's	Lakes Butte des Morts, Winnebago, Fox River system, WI (lock/canal emergency closures)
June 2007	- 1,000's smallmouth bass and rock bass	Skaneateles Lake, NY
July 2007	- Rainbow Trout – 1 individual - Sunfish - hundreds - Sunfish and koi – dozens	Little Salmon River, NY Seneca-Cayuga Canal, NY Farm Pond, Niagara County, NY
August 2007	- Walleye & smallmouth bass, 100's	Thames River, Ontario

# Areas Affected by Viral Hemorrhagic Septicemia

As of August, 2007



**Containing the spread of the virus will require restrictions on the movement of live fish and water, and fish testing and surveillance**

- *Gary Whelan, Michigan DNR*