

AIS

Aquatic Invasive Species

SPRING VIREMIA OF CARP

COMMON NAMES: Spring viremia of carp, SVC, SVCV

SCIENTIFIC NAME: *Rhabdovirus carpio*

DISTRIBUTION: First diagnosed in Yugoslavia, *Rhabdovirus carpio* has been identified in Europe, Russia and the Middle East. The first report of this disease in the United States was documented in 2002 in North Carolina and it has since been found in Wisconsin, Illinois, Missouri, and Washington.

DESCRIPTION: Spring viremia of carp is a viral disease caused by *Rhabdovirus carpio*, a bullet-shaped RNA virus. Described as systemic and acute, this disease is highly contagious. Externally, SVC is identified by bulging eyes, skin hemorrhages, bloated appearance, a darkening of the skin, and vent protrusion. Internally, fluids build up in all organs and the body cavity of the infected fish and there are hemorrhages in the swim bladder as well as inflamed intestines. Fish infected with the disease may appear lethargic, have slowed respiration, and have a loss of equilibrium. Though most prevalent in common carp, other members of the Family *Cyprinidae* (minnow family) and possibly northern pike are susceptible.

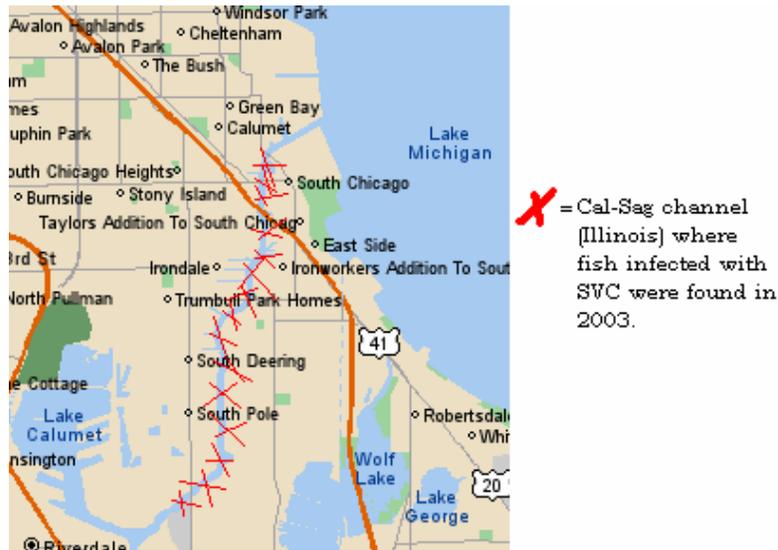


Bulging eyes, skin hemorrhages & bloated appearance are indications of SVC.

LIFE CYCLE BIOLOGY: SVC usually occurs in the spring where water temperatures are less than 18°C. Infected fish shed this virus through feces and possibly through urine and gill mucus. The virus enters fish through the gills or can enter through parasites, such as the carp louse or the leech. Alternatively, the virus has also been found in ovarian fluids, making transmittal through reproduction a potential, however, studies among fry and fingerling fish have shown a lack of outbreaks.

PATHWAYS/HISTORY: First described in a 1971 diagnosis in Yugoslavia, this disease has also been identified in Europe, Russia and the Middle East. In 2002, *Rhabdovirus carpio* was first reported in U.S. waters at a North Carolina koi hatchery. Unfortunately, there is evidence that koi had been distributed from this hatchery to most of the 48 contiguous states before being confirmed with SVC. The first common carp die-off of wild fish that tested positive for SVC occurred in 2002 at Cedar Lake, Wisconsin. In 2004, the virus was found in common carp from Missouri and

Washington. Perhaps most threatening to Indiana, the virus was found in common carp caught from the Cal-Sag Channel near Calumet, Illinois in 2003. While there was no carp mortality observed, the fish were carriers of *Rhabdovirus carpio*. This waterway is just a few miles from extreme northwest Indiana. Infected carp are free to swim from the Cal-Sag Channel, into Lake Michigan, and finally enter Indiana's tributaries of Lake Michigan.



RISKS/IMPACTS: This highly contagious virus has a 70% mortality rate among yearling carp.

MANAGEMENT/PREVENTION: Currently, no vaccination exists for SVC, so the best method for preventing the spread of this disease is avoidance. Commercial farms can use spring, well or other disease free water to prevent exposure risks. Also, eggs and equipment may be disinfected and proper disposal methods may be employed to lessen the risk of exposure. You can also help by practicing a few good techniques for stopping the spread of SVC and other aquatic invasive species.

- ✓ Never transfer live fish from one body of water to another.
- ✓ Never empty your bait bucket into a different body of water from where you obtained your bait.
- ✓ Dispose of unused bait in the trash rather than in the water.
- ✓ Never discard fish entrails and skeletal parts in rivers or streams.
- ✓ Rinse any mud and/or debris from equipment and wading gear and drain any water from boats before leaving drainage areas.

- ✓ Report dead or dying carp to the district fisheries biologist so that they may be tested for SVC.

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