

# AIIS

## Aquatic Invasive Species

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### LARGEMOUTH BASS VIRUS



**COMMON NAME:** Largemouth Bass Virus

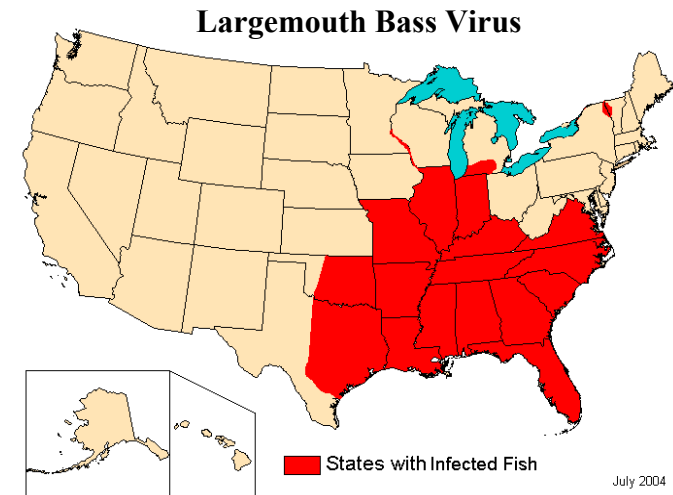
Some other common names have been suggested for Largemouth Bass Virus (LMBV), like Lake Weir iridovirus, Lake Weir ranavirus, and Santee-Cooper ranavirus. These names credit the water bodies where the virus was first isolated, Lake Weir, and the reservoir where the first fish kill occurred, Santee-Cooper Reservoir. As of now Largemouth Bass Virus is the accepted common name.

**SCIENTIFIC NAME:** Virus

LMBV is in the family Iridoviridae. There are four genus level groups in the Iridoviridae family, *Iridovirus*, *Chloriridovirus*, *Ranavirus* and *Lymphocystisvirus*. It is not known what genus this specific virus belongs to.

**DISTRIBUTION:** The origin of LMBV is unknown. It was first discovered in the United States in Florida. It has since been detected in 18 other states including Alabama, Arkansas, Georgia, Illinois, Indiana, Kentucky, Louisiana, Michigan, Missouri, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, Vermont and Wisconsin.

**Indiana:** In Indiana the first confirmed case of LMBV was in 2000 at Lake George which lies on the Indiana/Michigan border. A largemouth bass die off at the lake prompted testing of the fish which showed the fish were positive for LMBV. Subsequent bass mortality with the fish testing positive for LMBV were found at Hamilton Lake (Steuben Co.), Little Long Lake (Indiana/Michigan border), Dewart Lake (Kosciusko Co.), Chapman Lake (Kosciusko Co.), Dogwood Lake (Davies Co.), and Starve Hollow Lake (Jackson Co.).



**DESCRIPTION:** The signs of a fish infected with LMBV are sometimes hard to recognize. Some carriers of the virus will seem completely normal. If the virus has triggered disease in a fish that fish will be near the surface, having trouble staying upright, and having difficulty swimming. LMBV seems to infect the swim bladder of fish. Some bladders will have a thick yellow or brown exude, or it could only be slightly red and over inflated, and sometimes the swim bladder will look normal. For precise diagnosis a DNA based test must be preformed.

**LIFE CYCLE BIOLOGY:** LMBV does not only infect largemouth bass, it also has been found in guppies, smallmouth bass, spotted bass, Suwanee bass, bluegill, redbreasted sunfish, white crappie and black crappie. This virus usually only causes death in largemouth bass. It is unknown why this virus kills largemouth bass and not other fish. Often largemouth bass infected with LMBV will show no signs of disease. It is believed that stress triggers the disease of the virus. Stressful factors include hot weather, poor water quality, pollution, crowding in livewell tanks, frequent handling by anglers, and other pathogens. The virus attacks the swim bladder of infected individuals. Besides fish, LMBV has been found in other cold-blooded animals like amphibians and reptiles. LMBV has never been detected in warm-blooded animals, including humans. Infected fish are edible as long as they are cooked properly.

**PATHWAYS/HISTORY:** This virus was first isolated in Lake Weir in Florida in 1991. A fish kill in Santee-Cooper Reservoir of South Carolina occurred in 1995 and LMBV was detected. In 1998, kills occurred in Alabama, Georgia, South Carolina, Mississippi and Texas. In 1999, fish kills were reported from Missouri, Arkansas, Mississippi, two

from Texas and two in Louisiana. Arkansas, Oklahoma, Louisiana, Michigan, Illinois, Wisconsin, Vermont and Indiana all suffered losses from 2000 to 2002. Since then Virginia, North Carolina, Tennessee and Kentucky all joined the list of states that have detected LMBV.

**DISPERSAL/SPREAD:** It seems that LMBV can be transmitted through the water, fish to fish contact, and by consuming infected prey. Because LMBV can survive in the water for up to seven days, it can be transferred in the live wells of boats. Other fish carry the disease so infected but not diseased fish could be stocked and transfer the virus into new waters. The virus is present in the cutaneous mucus of infected fish which allows for spread by fish to fish contact.

**RISKS/IMPACTS:** A disease outbreak of LMBV usually attacks adult largemouth bass which causes concern among anglers. Anglers are worried that this virus could damage the fishery at their favorite fishing spot. Usually the number of fish that die from the disease is relatively low compared to the entire population. Fishing may be poor following a fish kill but it is thought that there are no long-term effects on largemouth bass populations. Fish kills only seem to occur during or after stressful situations, so theoretically a fish could be carrying the virus but feel none of the effects. Much has yet to be learned about LMBV so precautions should be taken to ensure that this virus does not spread into new waters.

**MANAGEMENT/PREVENTION:** There is nothing that can be done to eradicate LMBV in the wild. What we can do is educate the public on how to prevent the spread of this virus and ways to minimize its impacts. We also need to learn more about the virus so we can then turn to finding ways to manage it. You can reduce the likelihood of spreading this disease if you follow a few simple guidelines.

- ✓ Dispose of all unused bait in the trash or on land, never into the water.
- ✓ Never transfer live fish from one body of water to another.
- ✓ Never discard fish entrails or skeletal parts in a body of water.
- ✓ Rinse any mud and/or debris from equipment and wading gear and drain any water from boats before leaving the launch area. Remember that LMBV can live for seven days in water so this step is important.
- ✓ Handle bass gently if you intend to release them.
- ✓ Stage fishing tournaments in cooler weather to reduce stress on caught bass.
- ✓ If you see any dead or dying fish, report your observation to the district fisheries biologist so that they may be tested for the virus.

**REFERENCES:**

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