HETEROSPORIS SP.

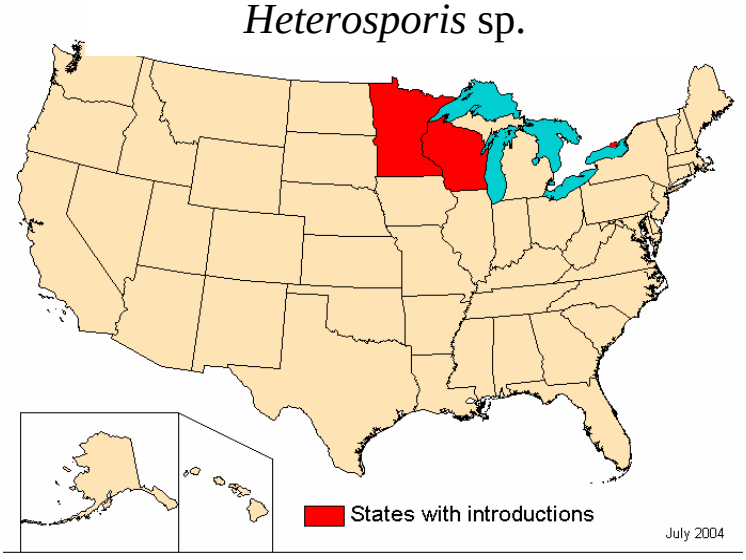
COMMON NAME: Heterosporis Parasite
Some have called this the yellow perch parasite though it is not specific to yellow perch.

SCIENTIFIC NAME: *Heterosporis* sp.
This parasite has not been identified past the genus level. It is still not understood whether the parasite here in the U.S. is the same species as those found in cultured fish from Europe and Asia.

DISTRIBUTION: Originally *Heterosporis* was reported from cultured eels in Japan, cultured angelfish from France, and cultured cichlids and loricarid catfish from Germany. The *Heterosporis* parasite is currently found in fish from Wisconsin, Minnesota, and Ontario, Canada.

Indiana: The *Heterosporis* parasite has not been detected in Indiana, but it is on our Aquatic Nuisance Species Watch List.

Heterosporis sp.



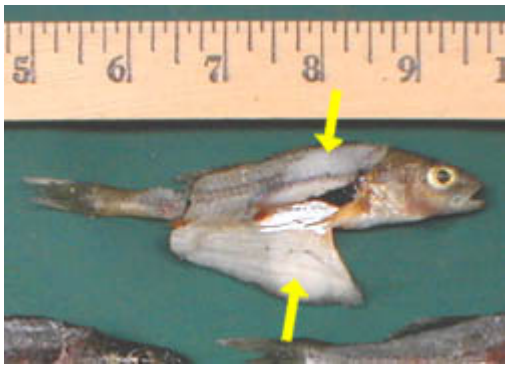


*photo borrowed from Wisconsin DNR

Muscle infected with *Heterosporis* is opaque/white when compared to the uninfected muscle.

DESCRIPTION: The muscle, or the fillet, of a fish that is infected with *Heterosporis* will appear white and opaque. It will look as though the fish has already been cooked or is freezer burned. The fillet will also feel granular in texture.

LIFE CYCLE BIOLOGY: This parasite is very new to the United States especially in wild fish populations so little is known about the actual life cycle of *Heterosporis*. Additional research is being done to learn more about this invasive exotic. Hopefully research can show how this parasite spreads, what its life cycle is, and how it affects fish populations. *Heterosporis* is a microsporidian parasite. It seems to more closely resemble fungi than a fish parasite, as it releases spores. An infected fish will develop a sudden and severe infection of spores. It has been seen where 90% of the fish fillet is made up of the parasite spores rather than muscle. It seems that *Heterosporis* does not directly causes fish mortality. It causes loss of muscle tissue and loss of commercial value. In studies, *Heterosporis* has lived in water in a refrigerator for about one year. There is no evidence that the *Heterosporis* parasite can infect humans.

PATHWAYS/HISTORY: *Heterosporis* was first discovered in the United States in Wisconsin in 2000. Yellow perch in the Eagle River Chain of Lakes were the first fish to be seen infected in Wisconsin. Later that same year *Heterosporis* was discovered in Minnesota, also infecting yellow perch. In 2001 Ontario, Canada reported more infected yellow perch from the Bay of Quinte in Lake Ontario. These are the only reports of *Heterosporis* in not only North America but in the Western Hemisphere. These are also the first documented cases of *Heterosporis* in wild fish in the world.

DISPERSAL/SPREAD: The sudden appearance of this parasite could be from an exotic parasite introduction of an infected ornamental fish. It has been said that this parasite may actually be native to North America but it had not reached enough intensity to be noticed until now. It seems as though fish contract this parasite when the spores are released from decaying infected fish and another fish comes in contact with them, or by scavenging the dead infected fish. *Heterosporis* may be transported via fish in bait buckets, stocked fish, and even some unknown pathways yet to be discovered.

RISKS/IMPACTS: Studies have shown that *Heterosporis* may be able to infect more fish species than originally thought. It seems that the parasite severely infects perch, rainbow trout, channel catfish, walleye and fathead minnows. It does not have as great an affect on largemouth bass and bluegill. Wisconsin even found infected sculpin and Minnesota found one infected northern pike. Many of the species that the parasite attacks are sport fish, so the potential for reductions in sport fish populations due to the parasite are a potential risk. Infected fish are not edible, therefore they are non marketable. This could hurt the commercial fish industry.

MANAGEMENT AND PREVENTION: There is little that can be done in the way of management once the parasite has infected a fish. The most we can do now is prevent the spread of the *Heterosporis* parasite into new waters. To help in this effort it is suggested you follow these guidelines:

- ✓ Bury or burn infected fish, never throw them back into the lake.
- ✓ Dry all of your aquatic equipment thoroughly because *Heterosporis* can survive in moist conditions. Drain all live wells and bilges and disinfect them with a bleach solution.
- ✓ If you fillet a fish and suspect is it infected with Heterosporis, please report the finding to the district fisheries biologist so that the fish may be tested for the parasite.

REFERENCES:

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