

Fish Grubs

What exactly are they and where did they come from?

By John Davenport, Holdenville State Fish Hatchery manager

The Department of Wildlife receives many inquiries each year from people who have seen or caught fish which have yellowish bumps or black spots on their fins or in their flesh. So what are these bumps or spots? And is the fish safe to eat? The answer to the first question is these spots or bumps are caused by the yellow and/or black grubs.

Fish most often infested with grubs are in the sunfish family which includes bluegill, largemouth bass and green sunfish, but grubs can infest all fish species. The yellow grub (*Clinostomum complanatum*) is the larval stage of a parasitic fluke which must be eaten by fish eating birds, such as herons, egrets and bitterns. The grub matures in the throat of the bird, and eggs wash into the water from the bird's mouth when feeding. The eggs hatch and the first larval stage, called miracidia, swim by means of fine hair like cilia until they find a snail of genus (*Helisoma*). Unless they find this snail they die within a few hours.

While living and growing in their snail host, the parasite goes through several developmental stages during which they multiply, finally leaving the snail as a free swimming cercariae. Unless the cercariae find a fish within a few hours, they also die. Should the cercariae

attach themselves to a fish, they burrow through the skin and encyst where they develop into metacercariae, which are the yellow grubs. There they remain until eaten by the bird host, thus completing the life cycle.

The grubs may live for several years in the fish. It is possible that yellow grub may kill fish under some circumstances, but normally a fish is not adversely affected by the parasite.

The life cycle of the black grub (*Climostomum neascus*) is basically the same except the grub embeds in the bird's intestines and eggs are passed out in waste. Some people find the thought of eating fish with grubs offensive but grubs are not harmful to humans.

So are your fish fillets with grubs in them safe to eat? If fish are properly cleaned and cooked thoroughly, this will kill any parasite or bacteria and the flavor of the fish is unaffected.

So how can you get rid of fish grubs? Well, unfortunately, the total elimination of these parasites can prove to be very difficult. Snails and fish-eating birds cannot be kept out of ponds at certain times, but any measure taken to disturb the life cycle of the grub will lower the number

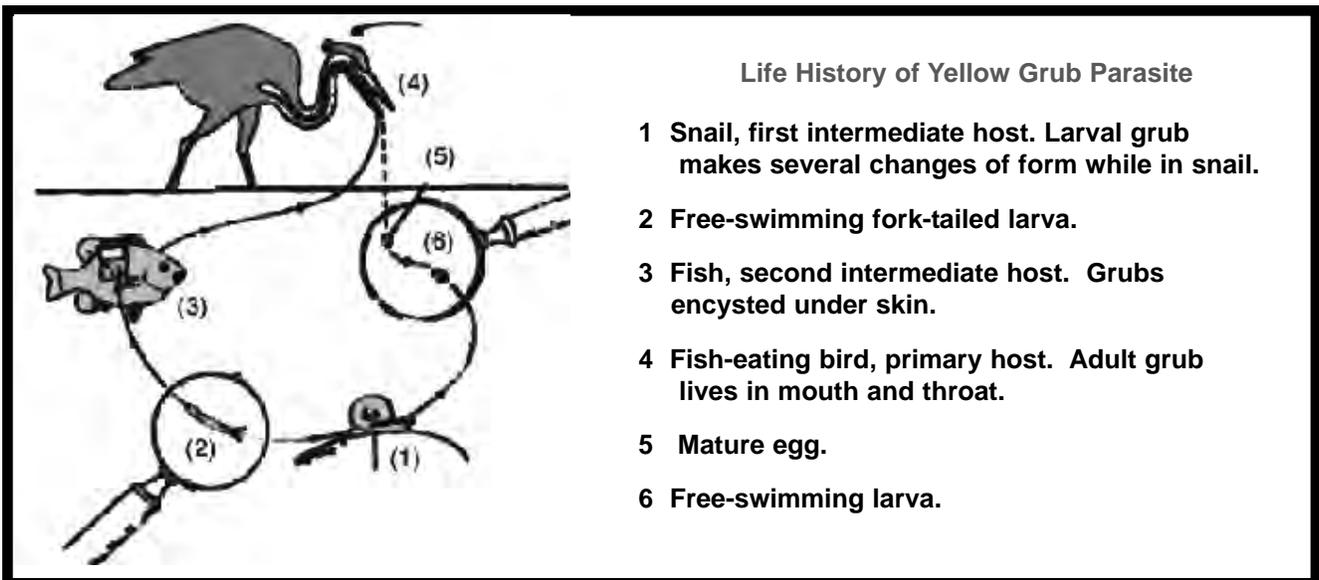
of grubs found in fish. Several steps can be taken to reduce the number of snails in a pond. Because snails feed on aquatic plants, the

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reduction of plants in ponds will reduce their food source and lower the number of

snails. Mowing the sides of the pond will allow the sun and wind to dry vegetation and decrease egg masses laid by snails.

The stocking of red-eared sunfish, often known by the nickname, "shell crackers" can sometimes be used because these fish are known to eat snails. A combination of these techniques can be used to further reduce the snail population. There are many varieties of bird scare devices on the market today to frighten birds away. Varying the times and varieties of techniques used will help keep birds from becoming accustomed to the methods being used. Shooting birds may not be an option because many birds are protected by federal law.



Life History of Yellow Grub Parasite

- 1 Snail, first intermediate host. Larval grub makes several changes of form while in snail.
- 2 Free-swimming fork-tailed larva.
- 3 Fish, second intermediate host. Grubs encysted under skin.
- 4 Fish-eating bird, primary host. Adult grub lives in mouth and throat.
- 5 Mature egg.
- 6 Free-swimming larva.