Relevant Literature

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The Special Publication Series is a joint project between the Fish Parasite Laboratory at SMU and the Nova Scotia Department of Fisheries and Aquaculture aimed at providing scientific information to fishers.

We welcome inquiries about any aspect of parasites and fish that is of interest by the general public.

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Parasites of Trout In Nova Scotia

"Black Spot" Parasite

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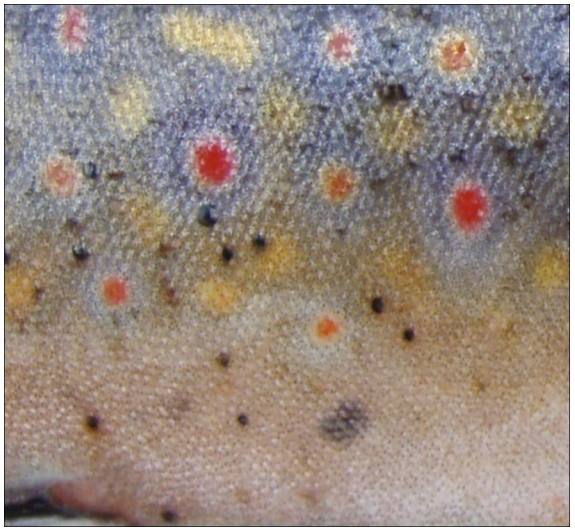
NOVA SCOTIA

"Black Spot" Parasite

"Black spot" parasite occurs in trout from streams and lakes throughout Nova Scotia. The small black marks in the skin can be so heavy the fish looks like it has been covered with crushed pepper, and is ready for the pan.

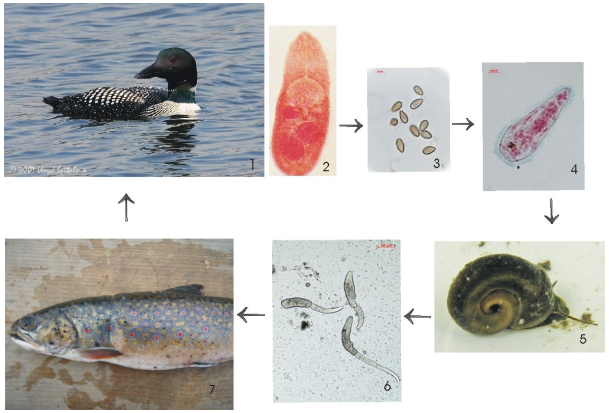
The spots are a developing stage (metacercaria) of a parasite (*Apophallus* sp.) which lives as an adult in the intestine of fish-eating birds. The parasites belong to a group called "flatworms" or more technically the Digenea (Platyhelminthes).

Normally the parasite is not pathogenic to trout. There is some evidence to suggest that fish covered with the black spots are more vulnerable to fish -eating predators.



Life Cycle

This parasite has a complex life cycle involving snails, trout, and fish-eating birds such as loons. The adult parasite lives in the bird's intestine where it feeds and reproduces (Fig. 1 and 2). Parasite eggs leave the bird with feces and enter the environment.



The eggs (Fig. 3) hatch and a small free-swimming larva (miracidium) (Fig. 4) burrows into a snail (Fig. 5). There it undergoes asexual reproduction to produce an infective stage (cercaria) (Fig. 6) which emerges from the snail in search of a trout. The cercaria are active swimmers and short-lived (day) at summer water temperatures. If successful at finding a trout, the cercaria sheds its tail and enters the skin to form a metacercarial resting stage, which when covered by host pigment cells, form the recognizable "black spot".

When fish-eating birds eat an infected trout the parasites emerge in the intestine where they mature to lay eggs.

Other Facts:

1) Although "black spot" is sometimes referred to as a parasitic disease, it does not influence the overall health of the fish and, **it is not harmful to humans if consumed**.

2) The presence of these parasites in a lake means that the pH of the water is likely near neutral, as snails do not thrive in acidic waters.

3) The presence of these parasites in a lake also means that there is a presence of fish-eating birds sharing the aquatic habitat with the snails and trout,

4) In sea-run trout, black spot involves a different species of parasite (*Cryptocotyle)* than what is found in trout in freshwater lakes.