

Skin tumours of fishes in Alberta

(Various viruses)

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Transmission Cycle

Viruses replicate in large numbers within invaded cells (different cell types are used by different viruses). When such cells rupture, massive numbers of viral particles are released into the water, particles which are highly infectious to other fish. Physical contact between fish during spawning, a time when fish congregate and increased activity invariably leads to nicks, cuts, and abrasions to the skin, likely promotes transmission of the viruses to other individuals.

Distribution in Alberta

Skin tumours are relatively common in walleye and northern pike, particularly in northern lakes, such as Primrose, South Buck, Touchwood, and Wolf lakes. Occasionally the external lumps are seen on perch in lakes near Ft. McMurray.

Importance for Wildlife Management

The majority of skin tumours in fish are not associated with mortality or even serious damage to affected fishes. Growth generally is self-limited and the tumour remains relatively small. Tumour masses eventually die and either fall off the fish or are replaced with white scar tissue.

Summary

Most skin tumours in fish are caused by viruses. Walleye are suitable habitat for a variety of tumour viruses but growths on northern pike and perch also occur. Tumours disappear from infected fish and usually have no lasting effect on the health of the fish. Infected fish are not a known human health risk and may be eaten although the aesthetics of that may put many people off. Many anglers release affected fish.

Additional Information

Canadian Cooperative Wildlife Health Centre: <http://wildlife1.usask.ca/ccwhc2003/newsletters/newsletter3-2.htm#besoin>

Government of Saskatchewan, Environment: http://www.se.gov.sk.ca/media/saskatchewan%20environmentnewsline/fish_disease.htm

Government of Maine: <http://www.state.me.us/ifw/fishing/fishlab/vol4issue12.htm>

Great Lakes Fishery Commission: <http://www.glfc.org/tumor/tumor2.htm>

There are no documented effects of tumour viruses on fish populations. For the most part, the viruses live in harmony with the fishes the tumours exist for a short time and then disappear. In rare cases, the tumour may get unusually large or occur in vital tissues such as the gills. Such growths may result in stunted growth, lower fitness, and even death of individual fish.

Public Significance

Although the viruses themselves are not harmful to people and there is no evidence of a link between fish tumours and cancer in humans, it is probably not appropriate to eat affected fish or feed them to pets. Affected fish should be released unharmed. They do not pose a threat to other fish and do not affect the number of future tumours in a lake. Affected fish usually survive infection and show no signs of the previous tumours.

Prevention/Control

Tumour viruses are a natural component of watersheds around the world. Currently there are no control methods in place nor are any warranted for these viruses in wild populations.