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# 14. The Effect of Parasite on Freshwater Fishes

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**Abstract**

Many fishes are infected by parasite it is ubiquitous and primarily surviving a dynamic and with host and they are often overlooked in fish health assessment. Environment is changes anthropogenic and environmental can parasite and causes disease in fish. When fish kills occur it can may be associated parasite changes of density and community composition. The fishes is lightly infected will show few signs of the parasite while a heavily infected fish may become physiological impaired and even die. It can cause mechanical damage gill lamellae tissue replacement and physiological damage and reproductive damage.

**Key words:** Fish, Parasites, Community

## Introduction

Fishes are living in waters (fresh and marine) it is susceptible and pron to diseases this fish living in temperate waters because the former provides favorable condition for introduction and spread of disease. Such waters get easily polluted form unused food and decomposing organic matters leading to rapid unhinging condition. Abrupt fluctuation in temperature is frequent and also alteration of pH ranges between extreme limits from too acidic condition to too alkaline ones.

Parasitic species can be found everywhere, and on every living organism. Their presence in their host is generally at equilibrium in aquatic organisms and the most common lifestyle on the planet Consequently, it is difficult to find any environment or organism that can be labeled as 'pristine' or parasite-free. When researchers describe control sites as being pristine, pathogen free, they are merely describing the lack of viruses, bacteria and xenobiotics, and are not generally referring to parasites.

**Reproductive Damage**

Parasites often influence their hosts through the diversion of resources either directly by using up energy and nutrients or indirectly by increasing the activity of the immune system Parasites may also change the behavior and food intake of the host. This causes a trade-off between the allocations of limited resources used in reproduction, parasitic infestations, and parasite resistance .With unlimited resources, there may be no deleterious effect of the parasite on the fish host, whereas the effect of the parasite may increase with a decrease in resource availability examined the effects of parasitic larval nematodes, Eustrongylidesignotus, on male mate choice in the western mosquito fish. She found that male mosquito fish preferred to mate with non-parasitized rather than parasitized females, but showed no differences in association time between females .The nematode also decreased female body mass and fecundity via reduction in embryos However, when studied wild courting three- spined stickleback males infected with the tapeworm, Schistocephalus solidus, they found that courting stickleback males were less infected than shoaling males. However, in the laboratory both uninfected and infected males built nests and courted females. They also determined that in the field, infected males that did court females expressed less red nuptial coloration than uninfected courting males, but in the laboratory color differences were not detected). These differences can be explained by the fact that in laboratory conditions, there is no resource limitations to the infected fish and reproduction could occur without negative effects on the parasite

**Physiological Damage**

**Cell Proliferation.** Proliferation of a single type of cell can cause detrimental effects in the fish host. This same proliferation of cell types is found in human diseases such as cancer. For example, carcinogenesis, especially during the initiation and promotion stages, may include interactions between a variety of agents .Generalized cell hyperplasia or cellular proliferation, observed in carcinogenesis, is recognized as a causative factor in human liver cancer. Cell proliferation is often caused by the presence of parasites; for example, epithelial cell proliferation is commonly found in Atlantic salmon and mucous cell hyperplasia has been found in Atlantic halibut. In our lab, parasites are often seen in association with bile duct proliferation in the liver of brown bullheads. Although the relationship between parasites and cancer is rarely studied, these parasites may act as causative agents for carcinogenesis observed in fish species. Although the above statement is speculative, this remains a relatively unresearched topic in fish health

**Conclusion**

Researchers need to constantly consider the effects that parasites have on fish health. Parasites affect fish health through, physical and reproductive damage and mechanical damages. These changes can reduce growth fecundity and survival, change behavior and sexual characteristics, and result in many other maladaptive alterations of the infected host. These changes could have significant consequences at not only the individual level, but population, community and ecosystem.

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