

# How to save endangered freshwater pearl mussel?

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The multilateral and complex relationships of freshwater pearl mussel (FPM), salmonids and other co-infectants can influence potentially in the conservation of FPM. The human impacts – habitats degradation, loss of host fish, siltation, pollution, and overexploitation affect a considerable decline of this species.

M.Sc. Motiur R. Chowdhury from the University of Jyväskylä, Finland, studied in his Ph.D. project the multilateral relationships between FPM, its salmonid host and other co-infectants (parasites and pathogens) of the host in the laboratory. His most striking result was that FPM infestation protects brown trout against *Flavobacterium columnare*, a pathogen that is very harmful for fish farming. In addition, he concluded that the year of the young (0+) salmonid is the most effective [host](#) for the success of the FPM.

Chowdhury also found that salmon and brown trout developed acquired immunity against FPM glochidia, but exposure to other mussel species (duck mussel) did not induce immunity against FPM.

Although FPM infestation increased resistance against *Flavobacterium*, it, on the other hand, decreased the growth of fish and increased vulnerability to the eye fluke infection, says Chowdhury.

The long-lived (>200 years) freshwater pearl [mussel](#) provides valuable ecosystem services by improving the water quality through filtration activities. FPM is endangered worldwide. For example in Finland, new

individuals are found only less than 10 populations (among about 120).

Motiur Chowdhury defends his doctoral dissertation "Relationship between the Endangered Freshwater Pearl Mussel *Margaritifera margaritifera*, Its Salmonid Host and Co-infectants" on Saturday 15th of December 2018 in lecture hall YAA303 in Ambiotica. Opponent is Dr. Nicoletta Riccardi (CNR Institute of Ecosystem Study, Italy) and custos is Professor Jouni Taskinen (University of Jyväskylä). The doctoral dissertation is held in English.

Motiur Chowdhury studied M.Sc. in Sustainable Management of Inland Aquatic Resources in the University of Jyväskylä. He has started doctoral studies in 2015 financed by Maj ja Tor Nessling Foundation and the doctoral program of the Department of Biological and Environmental Science.

**More information:** Relationship between the endangered freshwater pearl mussel *Margaritifera margaritifera*, its salmonid host and co-infectants [urn.fi/URN:ISBN:978-951-39-7626-2](https://urn.fi/URN:ISBN:978-951-39-7626-2)

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