



The endangered whitefish (*Coregonus lavaretus pallasii*) population in the Koitajoki River, eastern Finland: the present state and threats

Helena Haakana* & Hannu Huuskonen

with 10 figures and 1 table

Abstract: About half of the indigenous populations of river spawning, densely rakered whitefish (*Coregonus lavaretus pallasii*) are threatened in Finland. The Koitajoki River supports one of the few remaining, self-sustaining populations of this densely rakered form. However, the Koitajoki River is affected by sediment loading from forestry and peat mining, and there has been concern regarding their affect on the condition of whitefish spawning grounds. Other possible threats to the population include overexploitation and hybridization with lake spawning sparsely rakered whitefish (*C. l. wartmanni*). In this study, we assessed the suitability of spawning grounds for successful embryonic development of Koitajoki river whitefish and investigated whether they reproduce naturally in the area. In addition, population samples of Koitajoki river whitefish were collected from local fishermen to determine growth and parasite loads of adult spawners. A layer of fine sediment covered all studied spawning grounds. In spite of this, natural reproduction of whitefish was verified by the presence of successfully incubated whitefish eggs and newly hatched larvae. There was large annual variation in the incubation success of whitefish eggs, and part of the variation could be attributed to water oxygen concentration at the end of the incubation period in the Koitajoki River. The frequency distribution of gill raker number of whitefish in the population samples indicates the presence of low-rakered whitefish, and suggests that hybridization between two whitefish forms has occurred. The prevalence of cestode parasites was high and may have depressed adult whitefish growth rates.

Keywords: *Coregonus lavaretus pallasii*, whitefish, River Koitajoki, spawning ground parasites, gill raker number

Introduction

About half of the indigenous populations of river spawning, densely rakered whitefish (*Coregonus lavaretus pallasii*) are threatened to some degree in Finland, the main threat being water engineering works (KAUKORANTA et al. 2000). The Koitajoki River whitefish in eastern

Authors' address:

Department of Biology, Faculty of Science and Forestry, University of Eastern Finland, P. O. Box 111, 80101 Joensuu, Finland

* Corresponding author, e-mail: helena.haakana@uef.fi