

# Invasive waterflea can change ecosystems in the Bothnian Bay

July 6 2016

---



Water flea. Credit: Umea University

The highly bioinvasive water flea, *Cercopagis pengoi*, has spread from the Caspian Sea to greater parts of the Baltic Sea. In the Bothnian Bay, it seems to meet a barrier in the area between the Bothnian Sea and the Bothnian Bay. Climate change can lead to the barrier of northward spreading is torn down, with huge consequences to the Bothnian Bay ecosystem and fishery. This according to a study within the research programme EcoChange at Umeå University.

The highly bio invasive [water flea](#), *Cercopagis pengoi*, has spread through ballast waters from the Caspian Sea to, for instance, the Baltic

Sea. It is a generalist predator capable of capturing both small and large prey. It can disturb or alter native ecosystems that it colonises, and may also interfere with fisheries by clogging nets and fishing gear. At present, it has spread to greater parts of the Baltic Sea, but in the Bothnian Bay, only a few single samples have been found.

*Cercopagis pengoi* is known to compete for prey with other zooplankton-eating organisms, at the same time as they are eaten themselves. Field studies in the current research programme EcoChange for instance show that sticklebacks caught in the Bothnian Sea had eaten these water fleas.

## **Distribution barrier**

There appears to be a barrier for the invasion of the water flea somewhere in the border area between the Bothnian Sea and the Bothnian Bay. Temperature may be a possible factor. The flea originates from warmer seas and is probably at a disadvantage in the lower temperatures up north. Access to prey seems to be another factor that affects the spread. *Cercopagis pengoi* eat other zooplankton, and the abundance and composition of zooplankton differ between the Bothnian Sea and the Bothnian Bay.

## **Future changes**



Credit: Umea University

The water flea seems to have come to stay in the Bothnian Sea, while physical and biological factors represent a barrier for its expansion into the Bothnian Bay. However, increased temperature and altered ecosystems due to future climate changes might liberate *Cercopagis pengoi* from the barrier. The problems present further south, with natural species being driven out and fishing nets clogging up, can become reality also in the Bothnian Bay. EcoChange researchers are continuing their studies to analyse explanations to the present [barrier](#), and predict the effects of [climate change](#) when it comes to the spread of

foreign species in the Baltic Sea.

**More information:** Owen F. Rowe et al. A potential barrier to the spread of the invasive cladoceran *Cercopagis pengoi* (Ostroumov 1891) in the Northern Baltic Sea, *Regional Studies in Marine Science* (2016).

[DOI: 10.1016/j.rsma.2015.12.004](https://doi.org/10.1016/j.rsma.2015.12.004)

Provided by Umea University

Citation: Invasive waterflea can change ecosystems in the Bothnian Bay (2016, July 6) retrieved 27 April 2024 from

<https://phys.org/news/2016-07-invasive-waterflea-ecosystems-bothnian-bay.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.