

DAPHNIA HYBRIDIZATION IN PERI-ALPINE LAKES OVER SPACE AND TIME

PIET SPAAK

Eawag, Swiss Federal Institute of Aquatic Science and Technology, 8600 Dübendorf, Switzerland

VREMENSKA I PROSTORNA HIBRIDIZACIJA *DAPHNIA* U PERI-ALPSKIH JEZERIMA

Apstrakt

Tri vrste dafnija *D. longispina* kompleksa (*D. galeata*, *D. longispina* and *D. cucullata*) i njihovi hibridi se mogu naći u jezerima širom Evrope. Mnogi faktori (npr. kvalitet i količina hrane, predacija, bolesti, kompeticija) su analizirani u cilju ispitivanja koegzistencije parentala i hibrida. Analizom uzoraka sedimenata rekonstruisali smo neke od populacija *Daphnia* severno od Alpa i pokazali da je eutrofikacija važan faktor koji utiče na sastava populacija *Daphnia* tokom vremena. U cilju prostornog analiziranja sastava, ispitivali smo populacije *Daphnia* severno i južno od Švajcarskih Alpa. Utvrdili smo da su jezera severno od Alpa invadirana jednom vrstom dafnija, *D. galatea*, i postavili hipotezu da su jezera južno od Alpa invadirana drugom vrstom dafnija, *D. longispina*. Prvi eksperiment koji se bavio životnim ciklusom je pokazao izvesnu potvrdu ove hipoteze. Za dalje ispitivanje ove hipoteze potrebno je analizirati uzorke sedimenta iz jezera na južnoj strani Alpa. Predstaviti nove rezultate ovih istraživanja.

Cljučne reči: Daphnia longispina kompleks, Švajcarski alpi, analiza sedimenata

Abstract

The three *Daphnia* species of the *D. longispina* complex (*D. galeata*, *D. longispina* and *D. cucullata*) and their hybrids can be found in lakes all over Europe. Many factors (e.g. food quality and quantity, predation, diseases, competition) have been studied to explain why parentals and hybrids co-occur. We reconstructed some of the *Daphnia* populations North of the Alps over time, using sediment cores, and showed that eutrophication is an important factor in determining the composition of *Daphnia* populations over time. To study on a spatial scale the composition of *Daphnia* populations we surveyed *Daphnia* populati-

ons north and south of the Swiss Alps. We found that Lakes North of the Alps were invaded with one species (*D. galeata*) and hypothesize that lakes south of the Alps were invaded with *D. longispina*. A first life history experiment shows some evidence for this hypothesis. Further, testing of this hypothesis needs to come from sediment cores from lakes from the south side of the Alps. I will present recent data about these studies.

Keywords: Daphnia longispina complex, Swiss Alps, sediment cores