



2015 Aquatic Sciences Meeting

Aquatic Sciences: Global And Regional Perspectives — North Meets South

22-27 February 2015 — Granada, Spain

Sponsored by — Association for the Sciences of Limnology & Oceanography

[Program & Agenda](#) • [For Presenters](#) • [Registration](#) • [Students & Early Career](#) • [Travel & Hotels](#) • [Sponsors, Organizers & Exhibits](#) • [Search](#) • [Login](#)

ABSTRACT

DENSITY-DEPENDENT EFFECTS OVERRIDE TEMPERATURE AS DRIVERS OF INTRASPECIFIC SIZE-STRUCTURE IN SIX LAKE FISH SPECIES ACROSS EUROPE

Large scale studies on individual size distribution of fish have primarily been done at community level, but little attention is paid at species level. We described fish size structure by using mean size, size diversity and the slope of linear size spectra of six common European fish species to compare whether these metrics responded to the same large-scale continental gradients. As predictors, we included several environmental variables and relative estimates of abundance (catch per unit effort) as indicator of density-dependent effects. We found differences in the strength of the main predictors of size structure between the six species, but the direction of the response was relatively similar and consistent for most of the size metrics. Temperature variations across Europe weakly induced the similar negative response to the size metrics for most species. However, we found an unexpectedly strong density dependence of size structure in all species, resulting in lower mean body size and size diversity and steeper size spectra slopes. This suggests that the density-dependent effect is so far an underestimated driver of fish size structure.

AUTHORS

Arranz, I. U., University of Vic-UCC, Spain,
ignasiarranz@gmail.com

Mehner, T., Leibniz-institute of Freshwater Ecology and
Inland Fisheries, Germany, mehner@igb-berlin.de

Benejam, L., University of Vic-UCC, lluis.benejam@uvic.cat

Argillier, C., Irstea UR HYAX, Centre d'Aix-en-Provence,
France, christine.argillier@irstea.fr

Holmgren, K., Swedish University of Agricultural Sciences,
Department of Aquatic Resources, Freshwater Institute,
Sweden, kerstin.holmgren@slu.se

Jeppesen, E., Department of Bioscience, Aarhus University,
Denmark, ej@dmu.dk

Lauridsen, T. L., Department of Bioscience, Aarhus
University, Denmark, tll@dmu.dk

Volta, P. J., Consiglio Nazionale delle Ricerche, Institute of
Ecosystem Study, Italy, p.volta@ise.cnr.it

Winfield, I. J., Lake Ecosystems Group, Centre for Ecology
& Hydrology, Lancaster Environment Centre, Library
Avenue, United Kingdom, ijw@ceh.ac.uk

Brucet, S., University of Vic-UCC, Spain,
sandra.brucet@uvic.cat

DETAILS

Oral presentation

Session #:143

Date: 2/25/2015

Time: 09:45

Location: Andalucia 3 (Floor 1)

Presentation is given by student: Yes