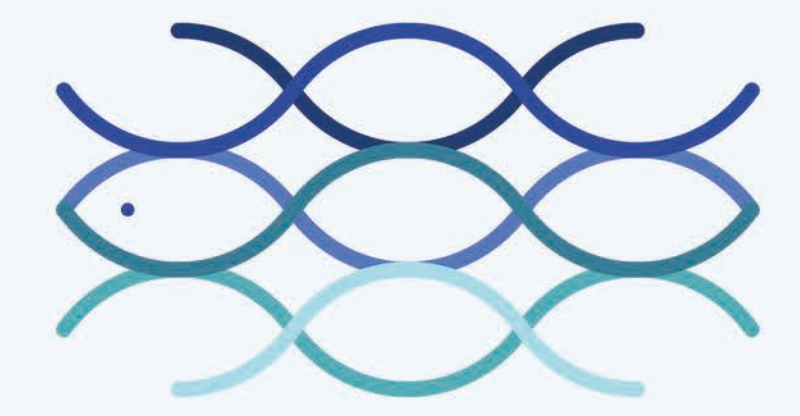


Fish less, know more

L12: Development and application of methods for fish fauna assessment in large and deep lakes

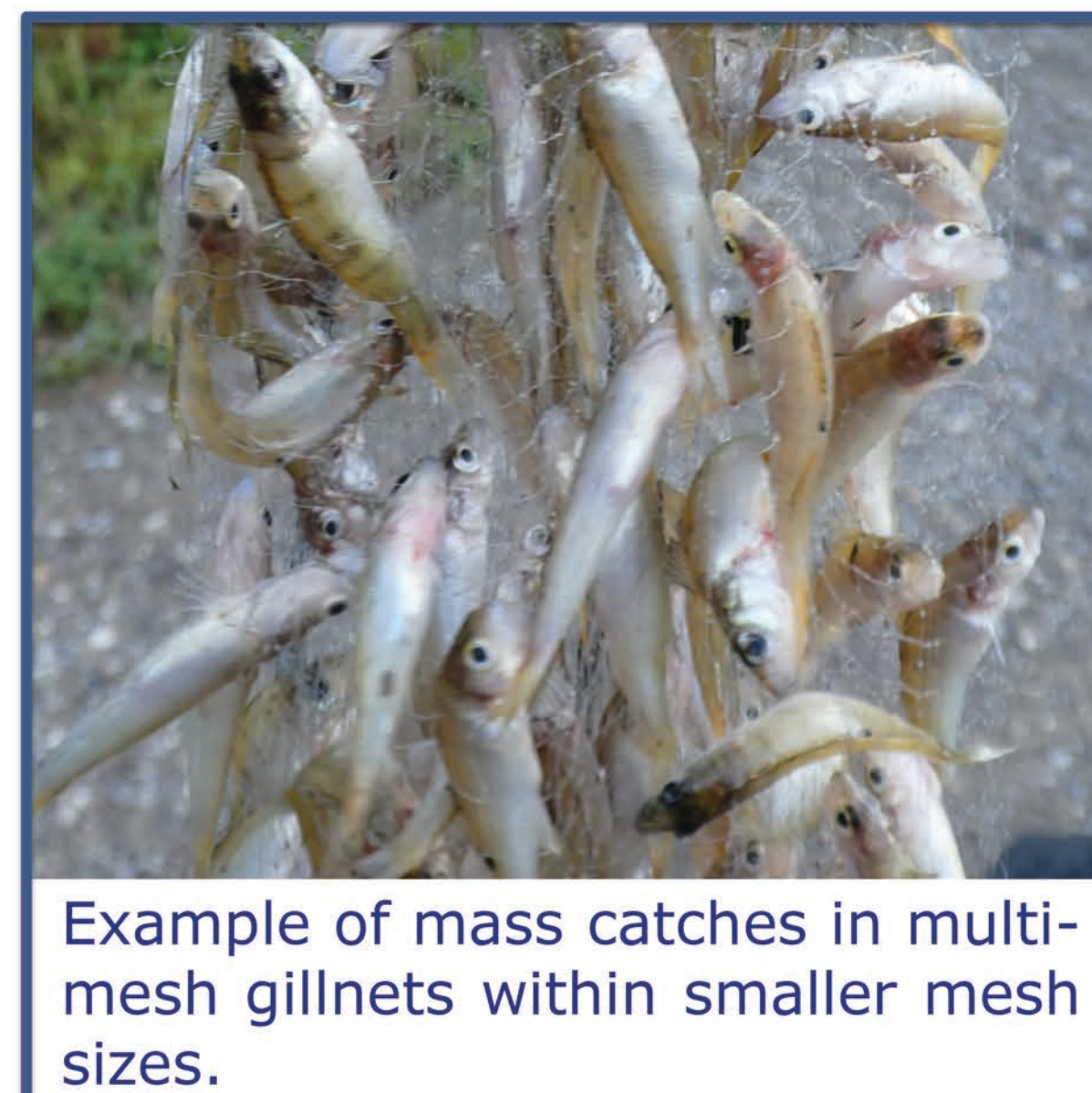
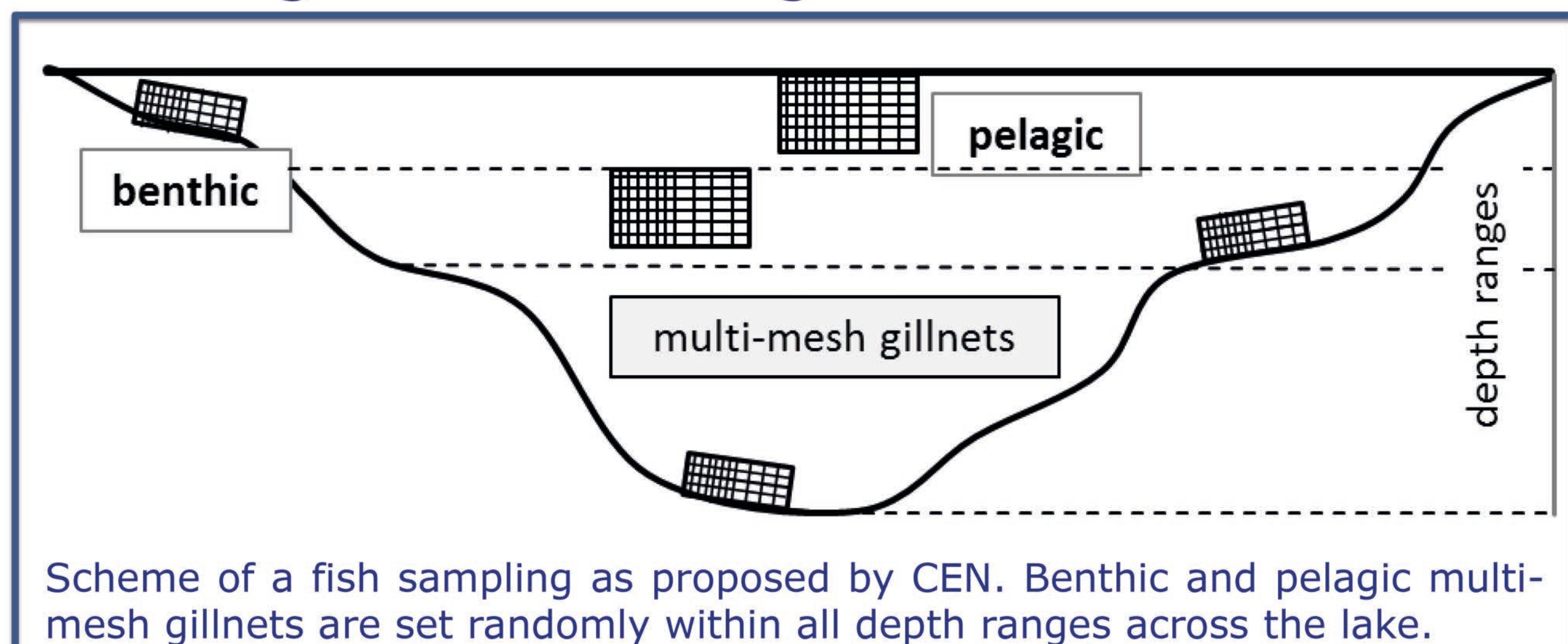


SeeWandel

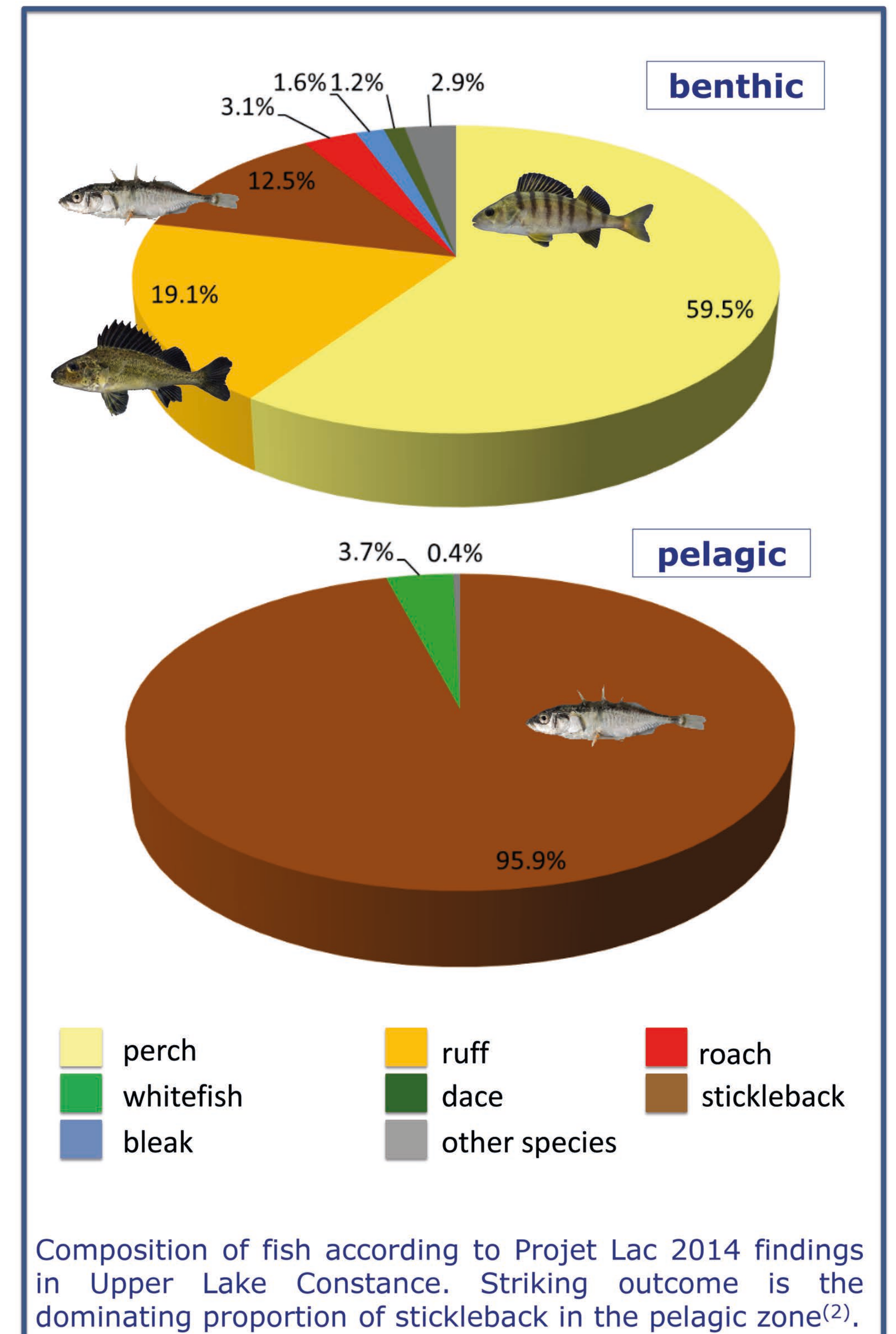
Leben im Bodensee –
gestern, heute und morgen

Background

The EU **Water Framework Directive** stresses the importance of a standardized fish monitoring in lakes⁽¹⁾. Projet Lac 2014 has additionally underlined the **necessity of a monitoring** by revealing otherwise unnoticed essential findings⁽²⁾. The European Standard CEN⁽³⁾ suggests a stratified random sampling protocol using multi-mesh gillnets. However, the required high number of nets in large and deep lakes results in a very high fishing effort. Mass catches, which often occur in smaller mesh sizes, lead further to unnecessarily high mortality. Such a sampling protocol can thus not be maintained for a regular monitoring.



Example of mass catches in multi-mesh gillnets within smaller mesh sizes.



Aim

Establishment of a **standardized fish monitoring protocol** for **large and deep lakes** which secures a **reliable fish fauna assessment** while **minimizing fish mortality** and being **logistically and financially feasible**.

By performing an intensive sampling in Lake Constance and comparing the results of the randomized standard sampling with effort-reduced protocols, the following research questions will be addressed:

- Reducing **net number** via habitat-specific rather than random selection of net position?
- Reducing **net number** by increasing chance of catching rare length classes per net via enlarging area of specific mesh sizes?
- Reducing **net area of specific mesh sizes** in order to avoid mass catches?
- Optimizing developed protocol by a cost-effective **multi-method** design?

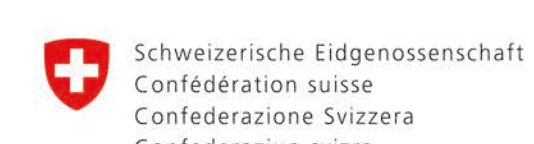
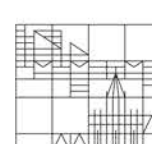
(1) Water Framework Directive 2000/60/EC (2000): Directive 2000/60/EC of the European Parliament and the Council of 23 October 2000 establishing a framework for Community action in the field of water policy 22.12.2000
(2) Alexander T.J., Vonlanthen P., Périat G., Raymond, J.C., Degiorgi, F., Seehausen O. (2016). Artenvielfalt und Zusammensetzung der Fischpopulation im Bodensee. Projet Lac, Eawag, Kastanienbaum.
(3) Comité Européen de Normalisation (2005). Water quality - Sampling of fish with multi-mesh gillnets (CEN 14757). European Committee for Standardization, Brussels.

People

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