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MONITORING PLAN OF CATCH AND FISHING EFFORT IN TRASIMENO LAKE (UMBRIA, ITALY): PRELIMINARY RESULTS

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INTRODUCTION. Trasimeno Lake is the largest laminar lake in Italy (124.3 km^2); professional fishing is still an important economic activity and the local community of professional fishermen is one of the most numerous in Italy.

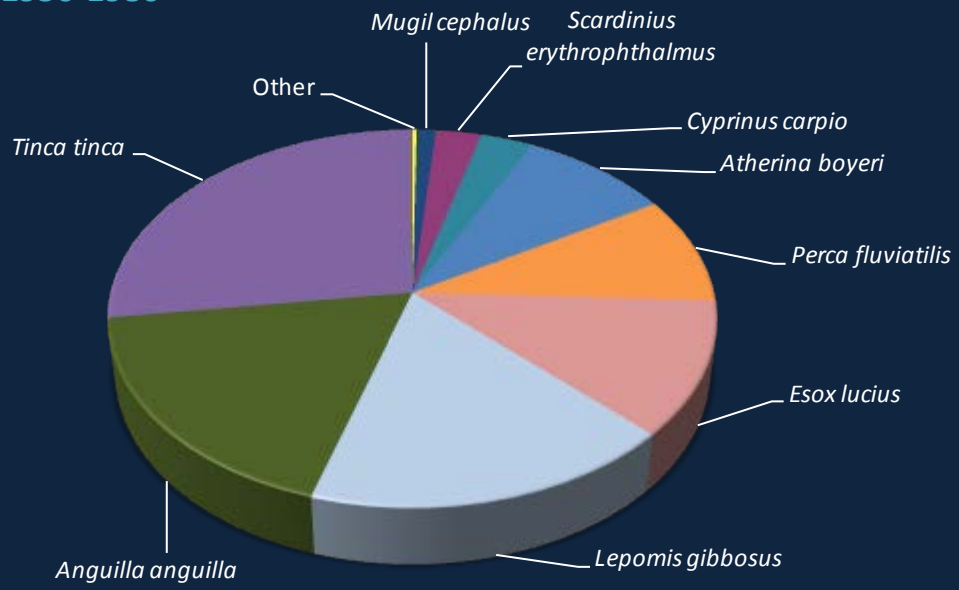
The slow decline of the stock of commercial species and the massive introduction and spread of alien species, make increasingly urgent adoption of measures to conciliate the economic choices with the ecological needs. In the past, estimates of fish stock have been attempted, but the information collected were incomplete and fragmented.

Since 2011 a project to monitor the commercial catch of the professional fishermen and the fishing effort daily applied on the lake has been started.

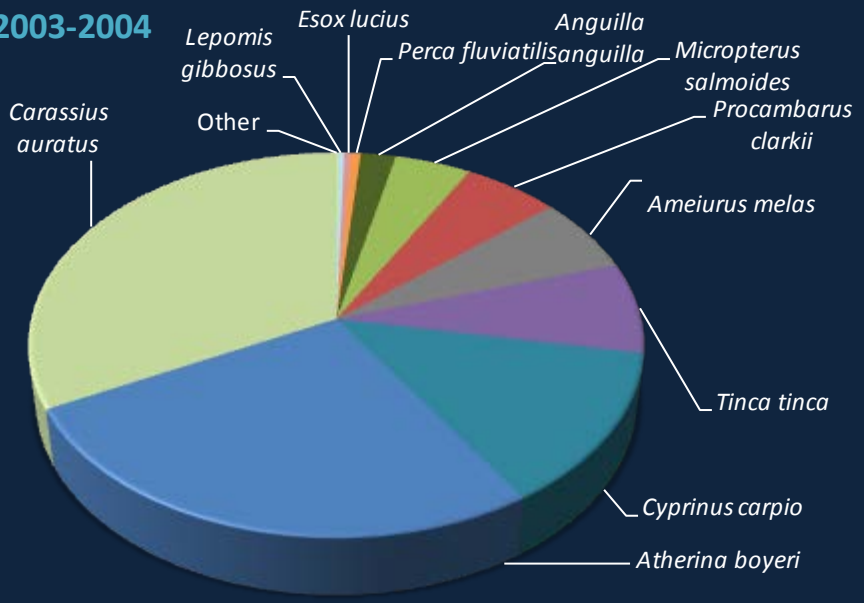
Trasimeno Lake (Umbria, Italy).

MATERIAL AND METHODS. Thanks to the collaboration of 26 professional fishermen, data of catch and fishing effort in Trasimeno Lake were collected during the period May 2011-February 2012. Two types of net were used: fyke-nets and gill-nets. The gill-nets were assembled from panels of different-sized mesh (7, 22, 23, 24, 25, 28, 30, 32, 40, 45, 50, 70, 80, 90 and 100 mm knot to knot), each of which was 1 m high and 50 m long; each fyke-net had a total length of 8 m and a mesh of 20 mm (mouth width: 1.5 m). All nets were positioned for one night. The daily catch of each fisherman were standardized with regard to the fishing effort (CPUE = catch per unit effort), defined as the number of nets used. The CPUE (kg/n°nets) were calculated daily and separately for the two types of gear. The results were compared with those of a previous monitoring carried out in the 2003-2004 with the same methodology.

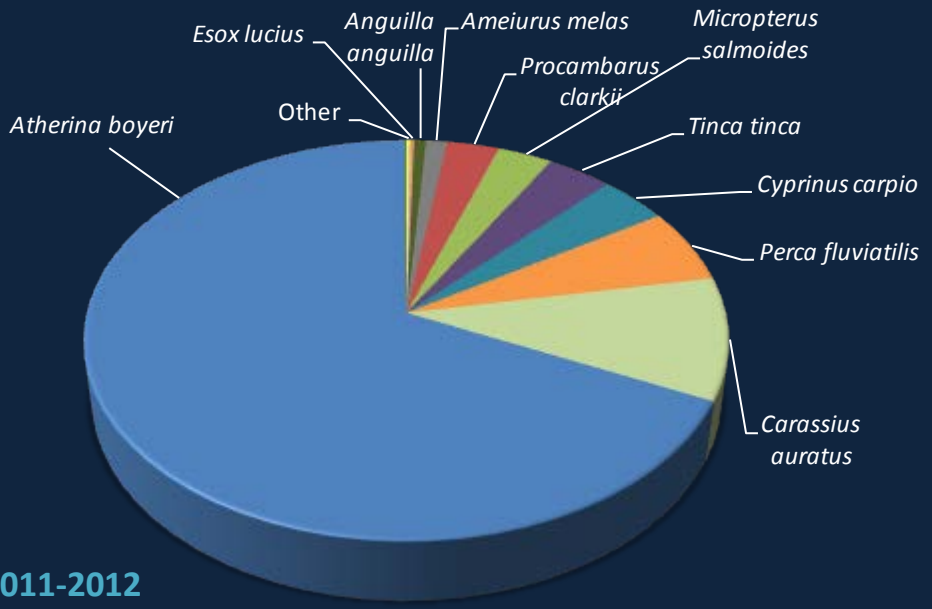
1956-1980



2003-2004



1956-1980: two autochthonous species (*T. tinca* and *A. anguilla*) represented the 45% of total catch expressed as biomass.



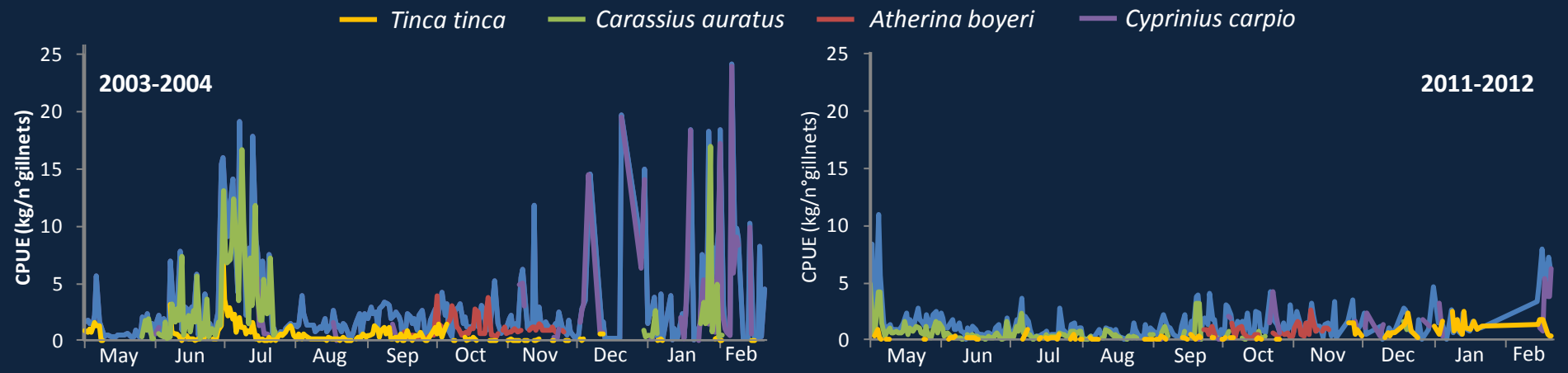
2011-2012

2003-2004: fish fauna composition and abundance of species have changed significantly from the past: exotic species have increased, with the spread of *A. boyeri* and *C. auratus*.

2011-2012: the most caught species are the same than in 2003-2004, but the abundances have varied: *A. boyeri* has doubled its amounts, while *C. auratus* has slightly decreased compared to the previous period.
All native species, including *T. tinca* and *E. lucius*, continue to decline.

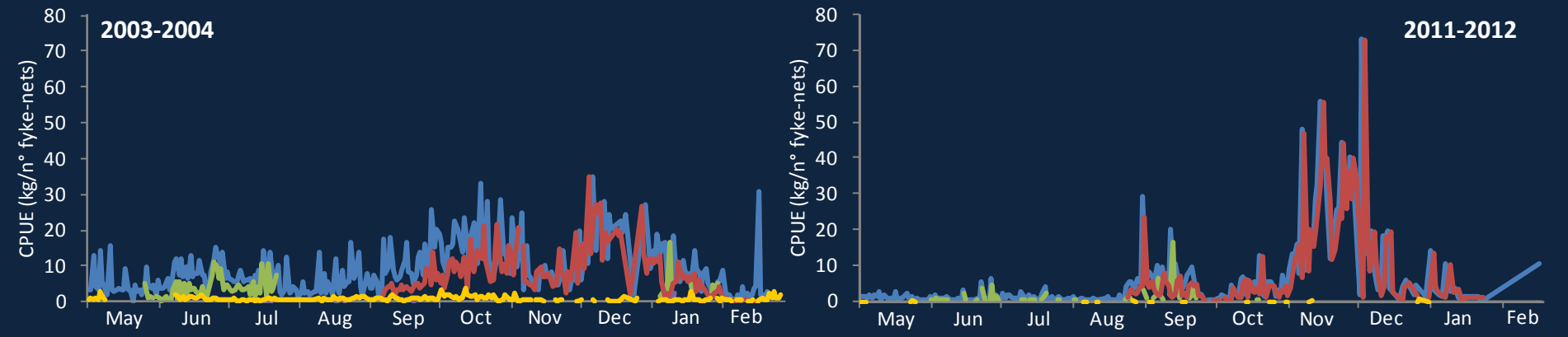
Therefore, professional fishermen have changed the fishing strategy.

GILL-NETS



In 2011-2012 the CPUE of the gill-nets have decreased if compared with the past, despite the number of nets utilized has increased (2003-2004: n=86509; 2011-2012: n=102672).

FYKE-NETS



The great recent increase of *A.boyeri* has brought fishermen to focus fishing effort on a single species and on a short period (autumn). This species ensures high level of CPUE utilizing a lower number of fyke-nets (2003-2004: n=55476; 2011-2012: n=21299).

The preliminary results of the study allowed to comprehend the trend of abundances of fish fauna and showed the need of a long-term monitoring.

The information thus gained, analyzed as a function of other environmental variables, will enable to analyze temporal evolution of the lake, for understanding of which fish fauna and fishing are two of the most important components.