

FOOD DYNAMICS OF COMMON CARP IN AQUACULTURE PONDS: FROM AVAILABLE RESOURCES TO ACTUAL CONSUMPTION

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RESEARCH BACKGROUND

Pond Aquaculture in Europe: Primarily focuses on common carp (*Cyprinus carpio*) production.

Management Approach: Carp are raised under semi-intensive systems, relying on both natural prey and supplemental feed (mainly cereals).

Dietary Habits: Common carp are omnivores, consuming a wide range of food sources.

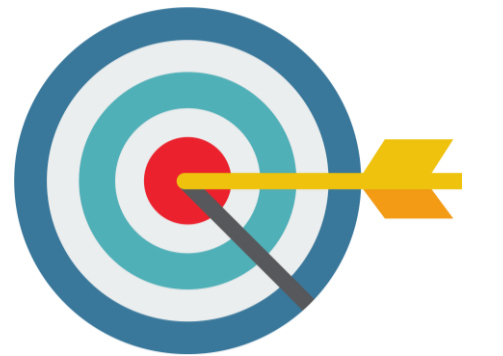
MATERIAL AND METHODS

Stocking: 2-year-old common carp (267.9 ± 15.2 mm, 337.2 ± 56.6 g) stocked at 938 individuals ha^{-1} , biomass 316 kg ha^{-1} .

Feeding: Cereals provided from May onwards.

Sampling: food items (zooplankton and zoobenthos) and water quality parameters in monthly intervals as well as fish growth and carp gut content – gut content sampling using the **non-lethal method of gut flushing**.

RESEARCH OBJECTIVES

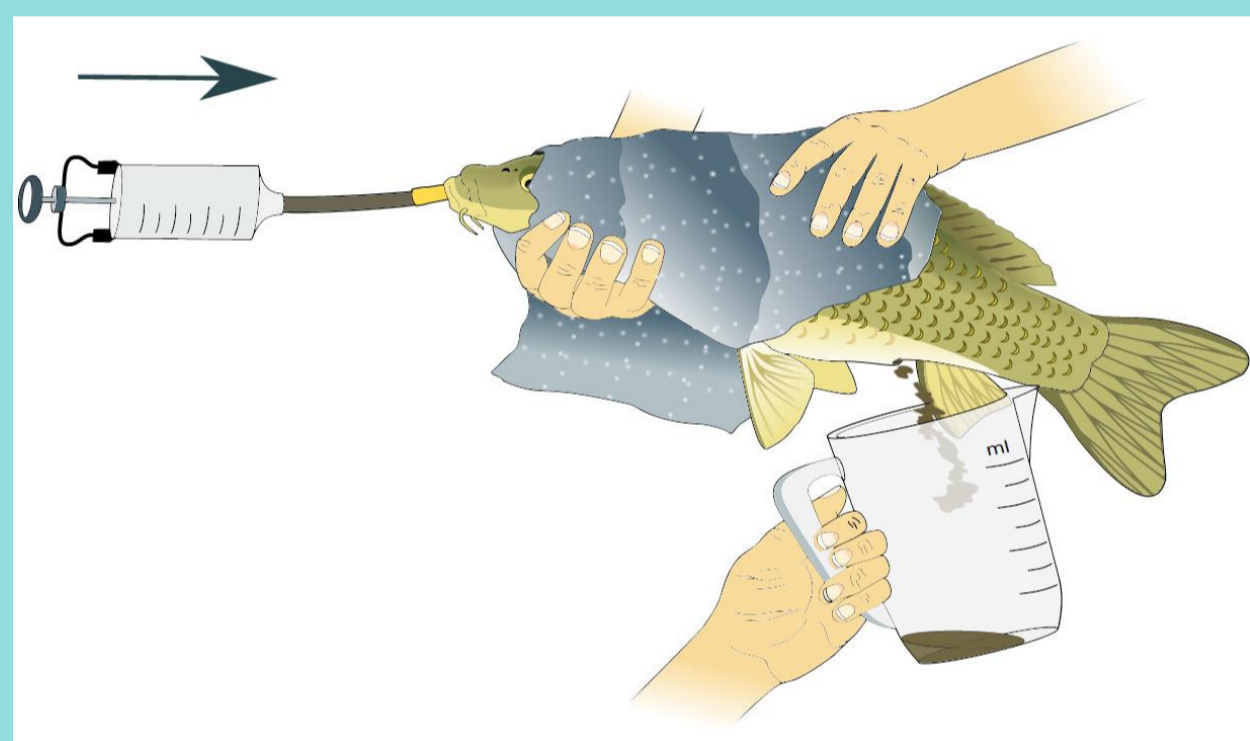


Analyze the dietary preferences of common carp in aquaculture ponds.

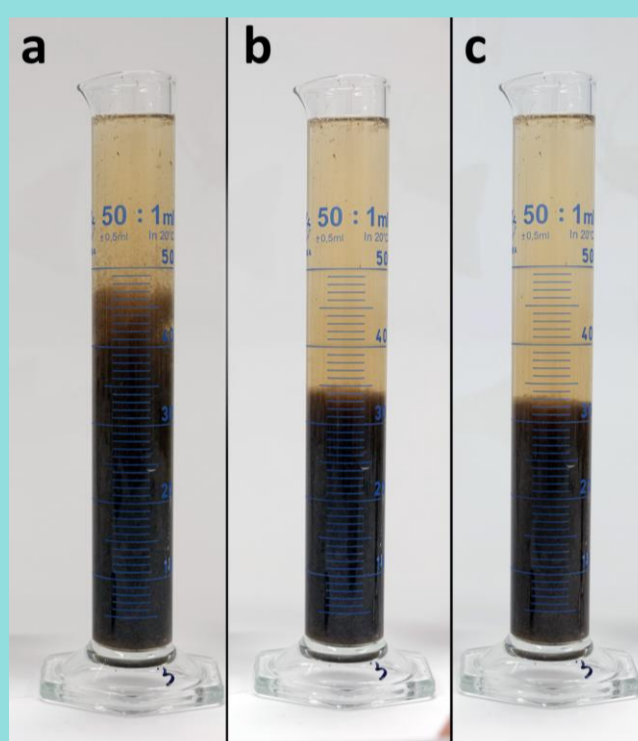
Enhance understanding of common carp feeding behavior in different seasons.



Location: Three experimental ponds in South Bohemia, Czechia (0.16 ha, 80 cm depth).



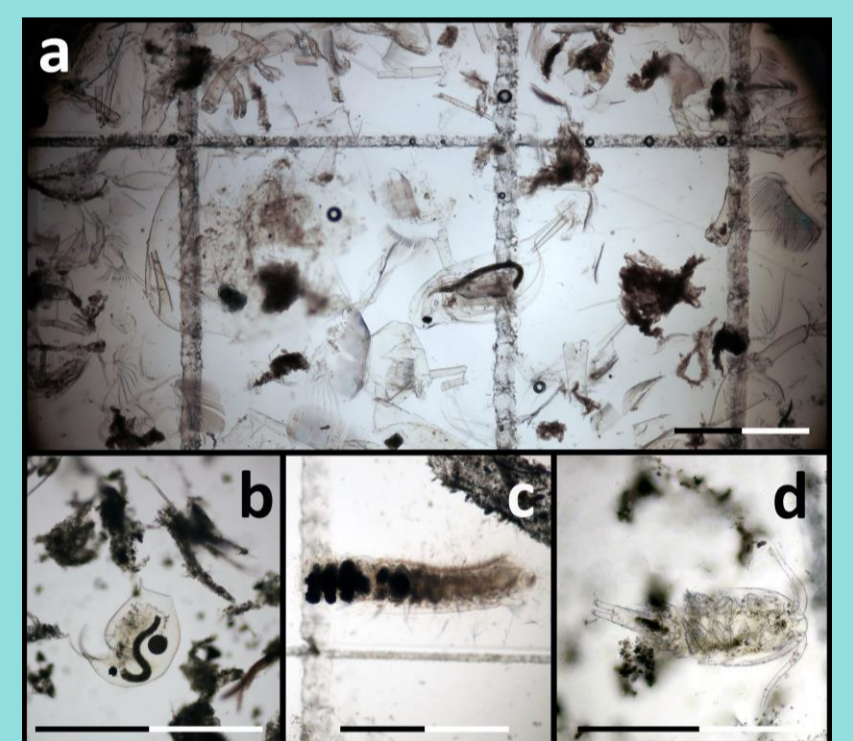
The flushing of the digestive tract of carp with the insertion of a catheter and collection of the gut content to the container.



The estimation of volume of the digestive tract contents of carps.



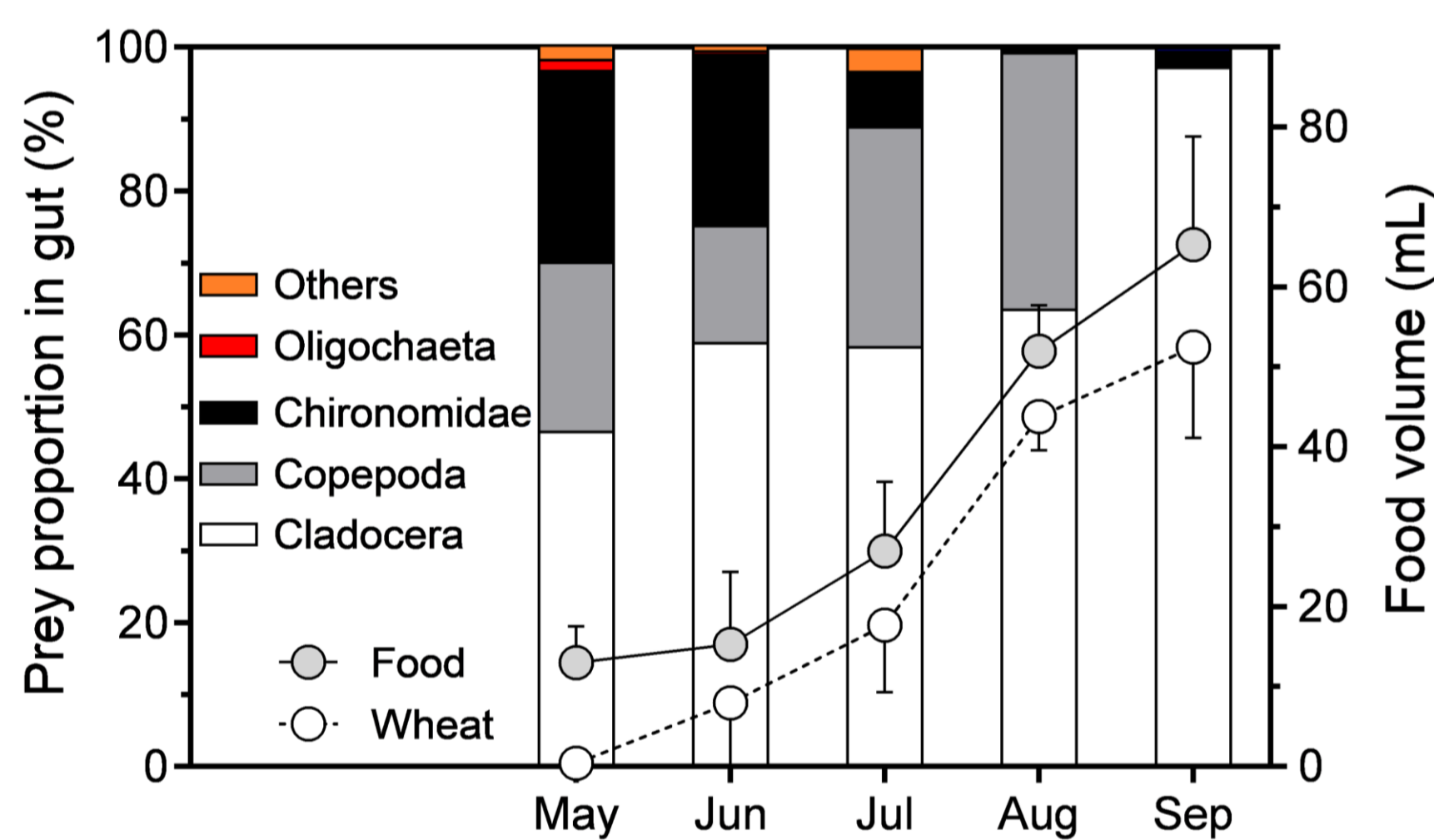
(a) Equipment for microscopic evaluation; (b) subsample of carp digestive tract contents in a counting chamber ready for microscopy.



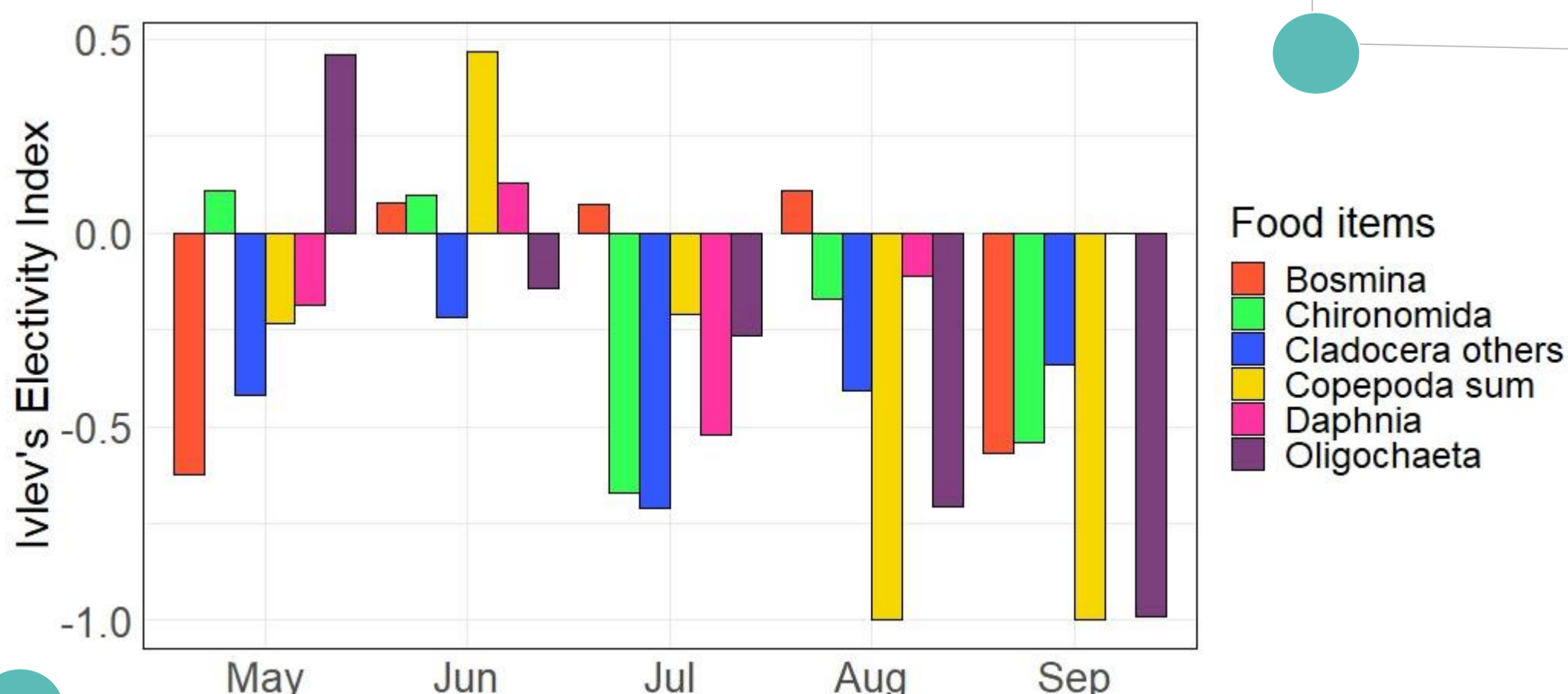
(a) Subsample of carp food at 4x magnification; (b) *Bosmina longirostris* (10x); (c) Oligochaete fragment (10x); (d) *Acanthocyclops americanus* (10x).

Results AND DISCUSSION

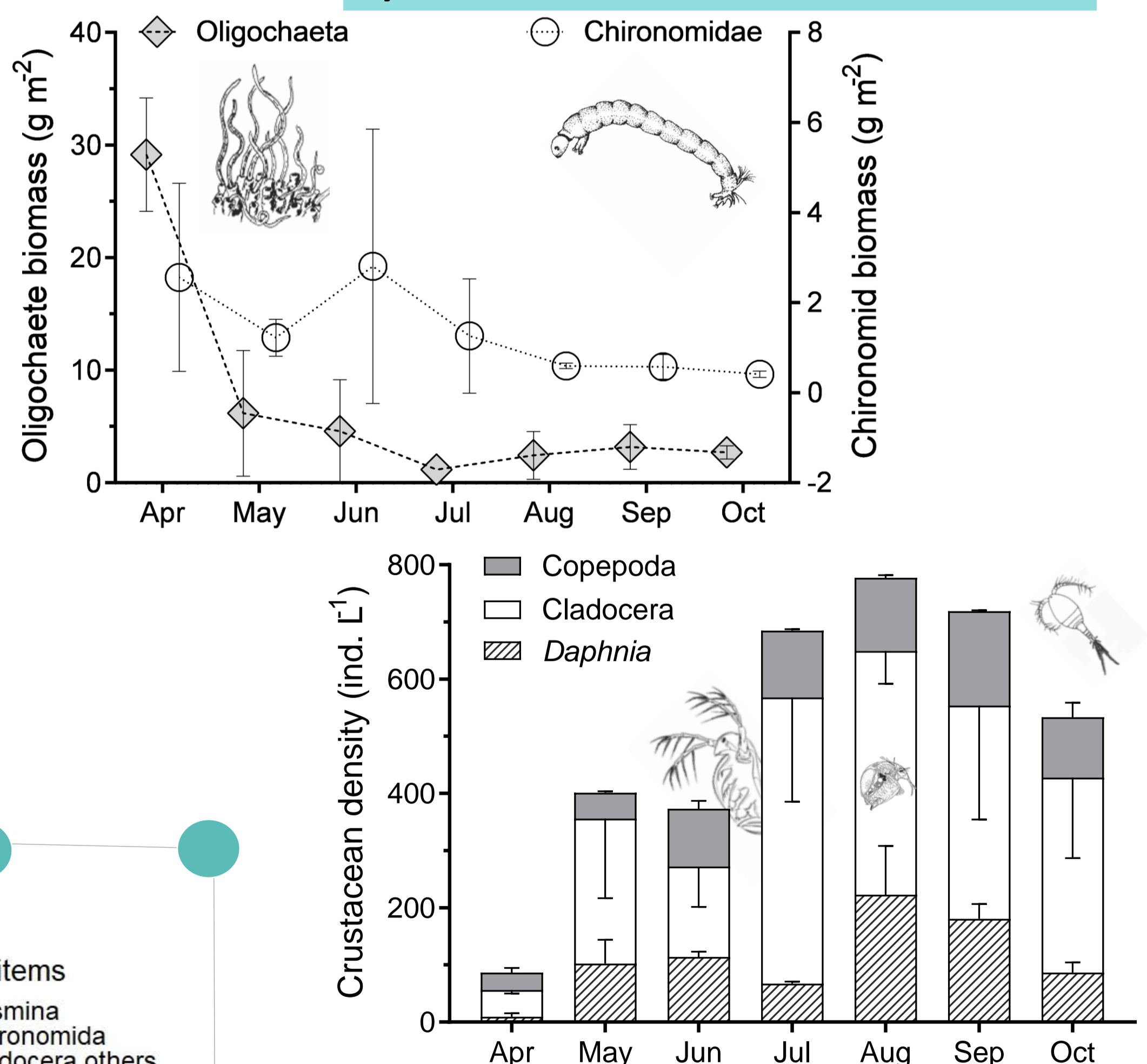
Dynamics of food items in the carp gut



Ivlev's electivity index



Dynamics of food items in the environment



Conclusions AND IMPLICATIONS

AND IMPLICATIONS

Diet Diversity: Carp preferences shifted from chironomids and bosminas early in the season to cereals later on.

Broad Food Utilization: The indices showed carp's ability to utilize a wide range of food items proportionally to their availability, considering carp size and growth needs

Daphnids: Large nutritious daphnids were not preferred food items but remained important for ecosystem function.

Seasonal Adaptation: Carp adapted its diet to seasonal food availability, as reflected in the changing selectivity indices.