



Spolufinancováno  
Evropskou unií

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## Nature friendly fish management as a tool for protection of fishponds.


Granted by EHP a Norwegian 2014-2021 – program  
CZ – ENVIRONMENT

*Call: Rago - Pilotní projekty a inovativní řešení pro zlepšování stavu ekosystémů*

**Number of call: NF Call-1 - 3.1.1.1, Number of project:  
3211100004**



**SŠRV**  
**TŘEBŇ**  
JAKUBA KRČÍNA

 Bundesamt  
für Wasserwirtschaft



Fakulta rybařství  
a ochrany vod  
Faculty of Fisheries  
and Protection  
of Waters

Jihočeská univerzita  
v Českých Budějovicích  
University of South Bohemia  
in České Budějovice



PŘÍRODA JE NAŠE  
DĚDICTVÍ I BUDOUCNOST

[www.nature.cz](http://www.nature.cz)



VOJENSKÉ LESY A STATKY ČR, s.p.



MUZEUM KARLOVY VARY

Norské fondy přispívají ke snižování hospodářských a sociálních rozdílů v Evropském hospodářském prostoru  
Norské fondy posilují bilaterální vztahy mezi Norskem a Českou republikou.

# Goals of the project

**To conduct** a trial run of the suggested alternative fish populations and management techniques on a minimum of 6 ponds with a distinct OP designation;

**To complete** 2 entire business cycles;

**To validate** the procedures outlined in the upcoming "Guidelines for Nature and Landscape Conservation - Eco-Friendly Pond Management";

**To select** at least 3 locations to aid in the preservation of rare or threatened species, as outlined in the red list;

**To assess** the economic sustainability of these practices to determine whether resource-efficient farming holds economic viability.

**Pilotně** ověřit navrhované alternativní obsádky a způsoby managementu na minimálně 6 rybnících se zvláštním statutem OP.

**Zrealizovat** 2 kompletní hospodářské cykly.

**Ověřit** postupy, které jsou navrženy jako doporučení ve vznikajícím „Standardu péče o přírodu a krajinu – K přírodě šetrné hospodaření na rybnících“.

**Využít** alespoň 3 lokality k podpůrné ochraně druhů vzácných či ohrožených, dle červeného seznamu.

**Vyhodnotit** ekonomickou soběstačnost hospodaření. Odpovědět na otázku, zda šetrné hospodaření může být ekonomicky smysluplné.

# Targeted protection of ecosystems

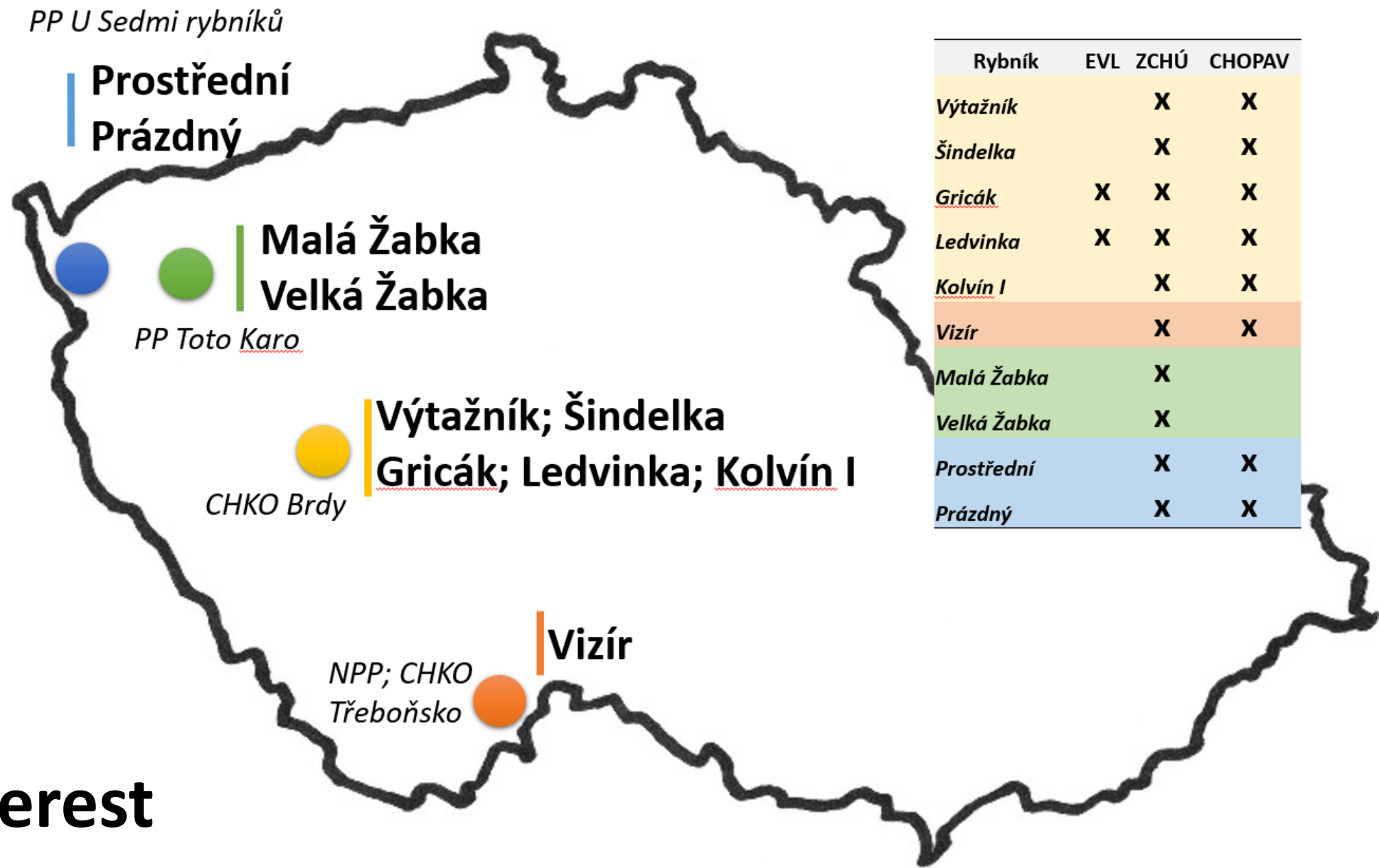
Cílená ochrana ekosystémů

# Motivation



Motivation

# Sites of interest



A common issue

**Difficult to  
manage**

A common issue

**Difficult to  
manage**





**What did we  
do?**

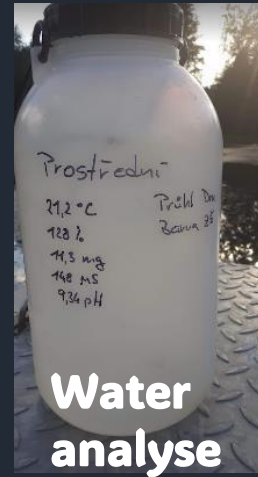
**A co jsme tedy prováděli?**



**Fish stocking**



**Harvesting**



**Water  
analyse**



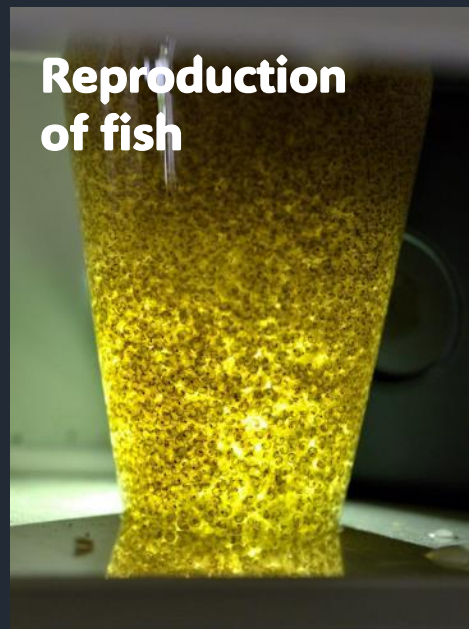
**Phytocenological  
surveys**



**Fight with  
invasive species**



**Support of disappearing  
fish species**



**Reproduction  
of fish**



**Monitoring**



**Biodiversity  
surveys**

**Example of  
results**

Every year on springs  
telemetric stations  
have been installed.

*Oxygen*  
*Temperature*  
*Solar radiation*  
*pH level*  
*Air humidity*  
*Precipitation*

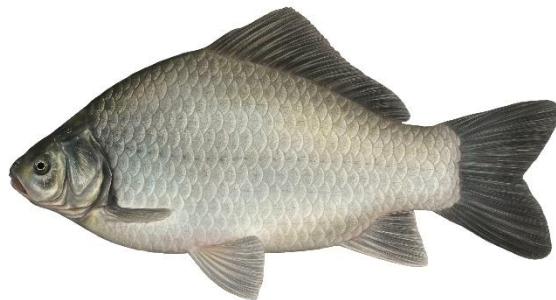


Telemetrické stanice

## Rescue



## Reduction



2022: **800 kg** of invasive species of fish have been harvested



2023: only **40kg** have been harvested

**2022**

*aprox. 500 000 pcs.  
of fingerlings has  
been stocking*



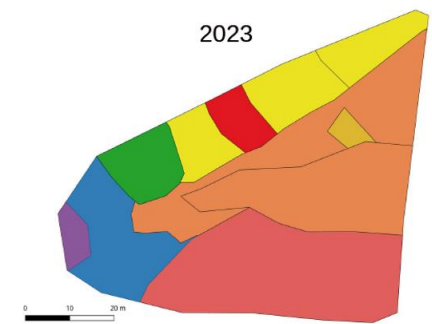
**2023**

*aprox. 300 000 pcs.  
of fingerlings has  
been stocking*

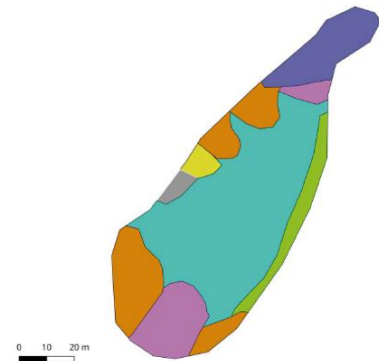
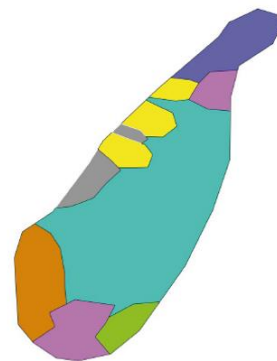


Evaluation of the vegetation and comparison between two seasons have been finished. The maps have been created.

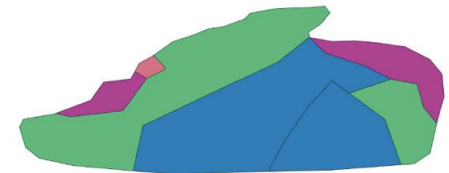
Prostřední



Velká Žabka

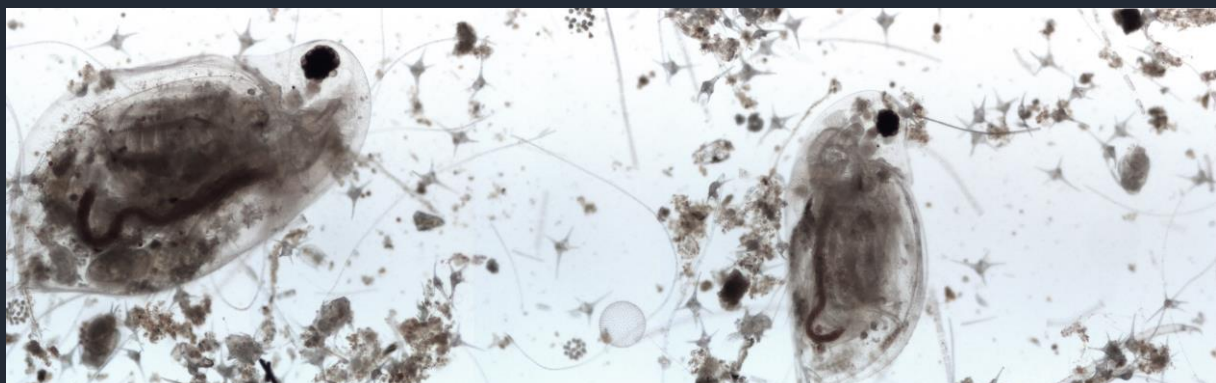


Malá Žabka

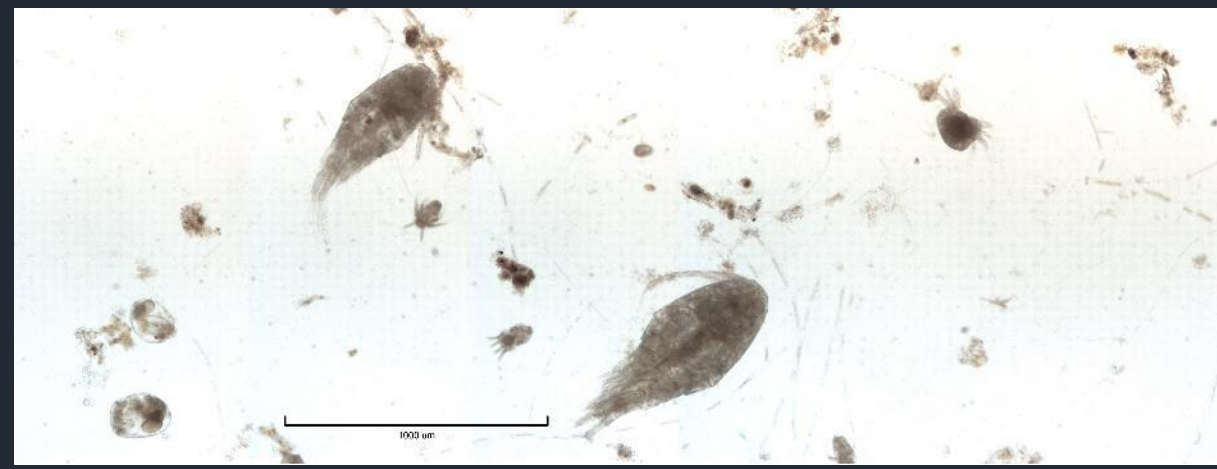




2022

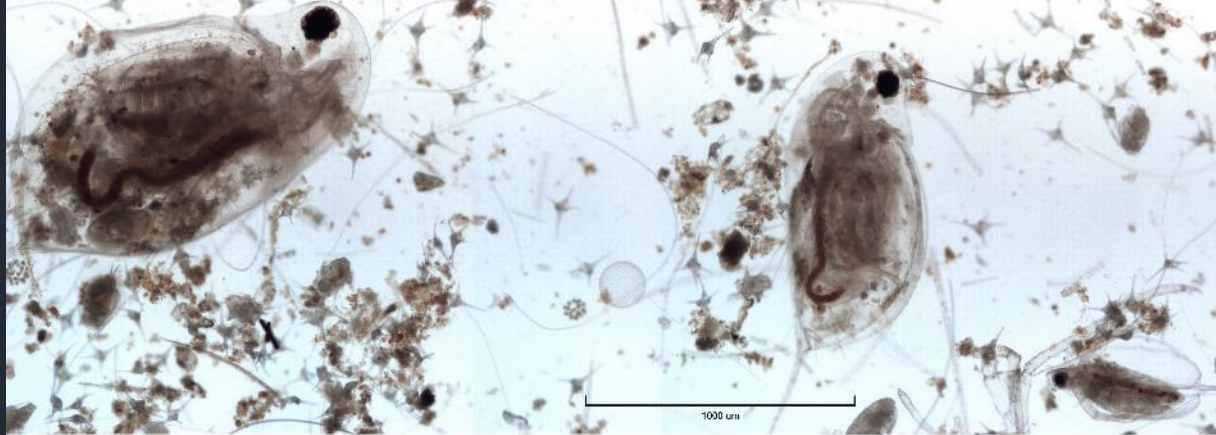


2023

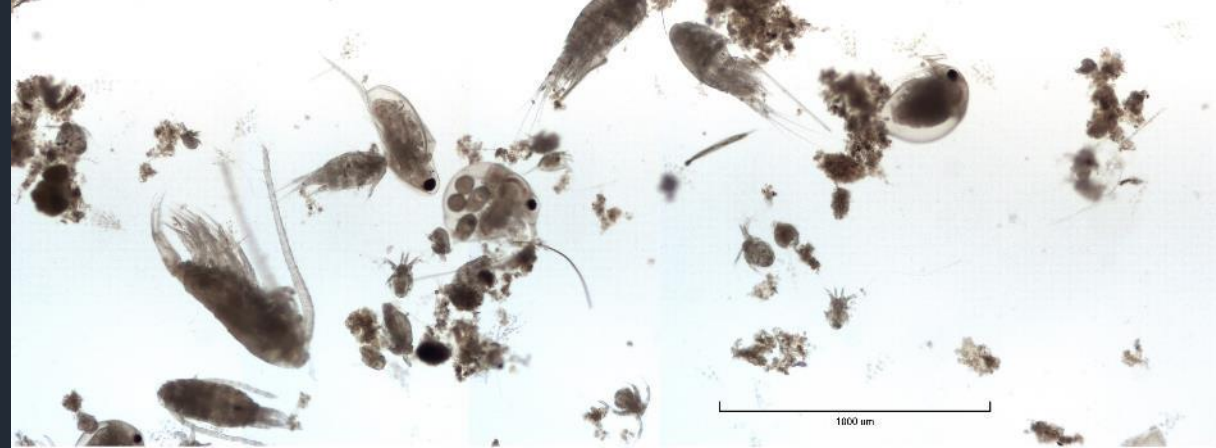


V.

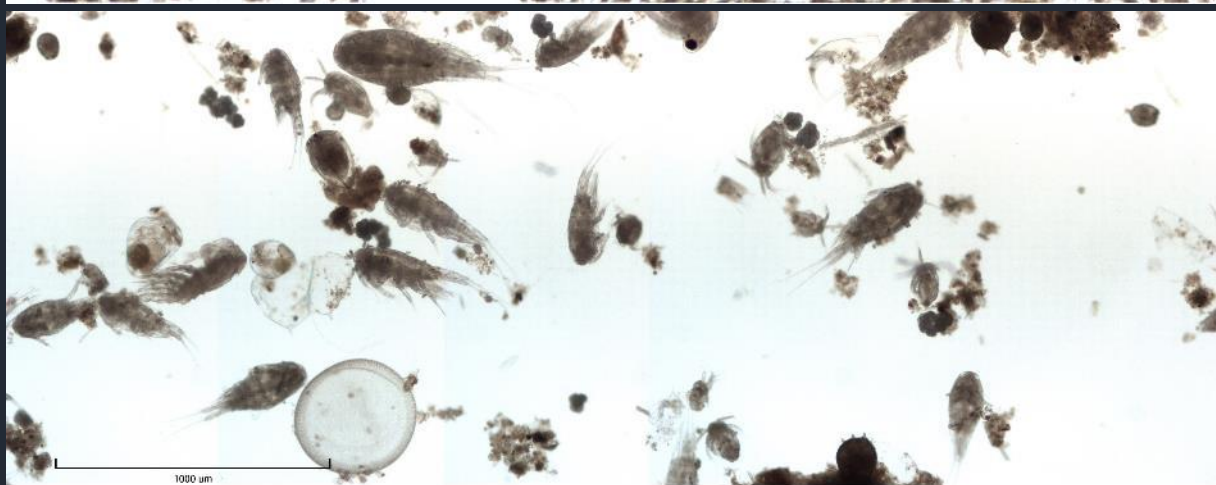
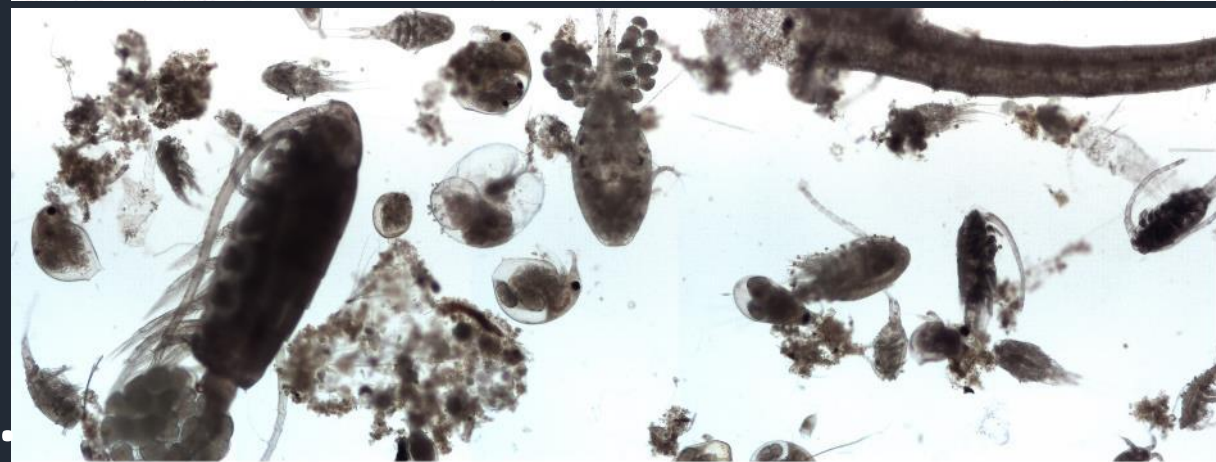
VI.



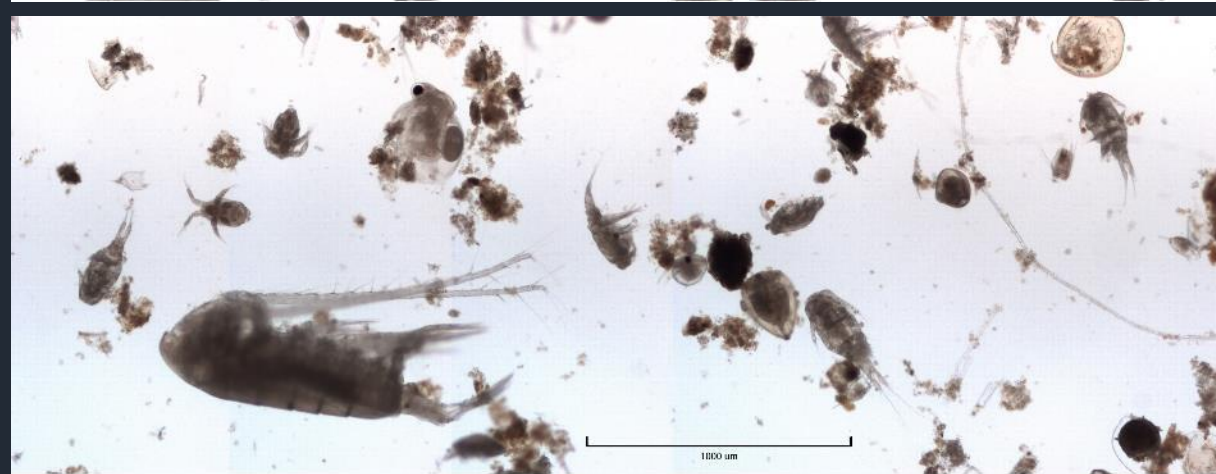
VII.



VIII.



IX.



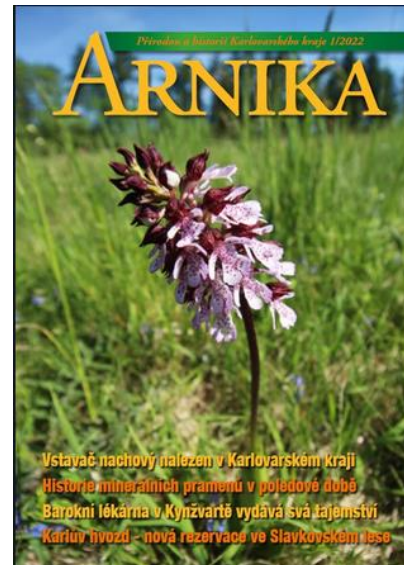
# Articles

Kolář V., Baxa M., Hesoun P. (2024): Brouci, ploštice, a vážky v PP Toto-Karo a PR U Sedmi rybníků, *Arnika 2*: 19-23.).

Kolář V., Boukal D. (2024): Průběžná zpráva o výsledcích monitoringu výskytu potápníka dvojčárého (*Graphoderus bilineatus*, De Geer, 1774) na rybníce Vizír a v jeho okolí v roce 2023, 1-11.

*Hydrobiologia:*

Markéta Dvořáková Prokešová, M., Rahi Roy, D., Regenda, J., Hanzlík, P., Šmejkal, M., Prokeš, M., Stejskal, V. a Kouřil, J.: Effect of water temperature on the early development and conservation rearing of a locally threatened species – crucian carp (*Carassius carassius*)



Effect of water temperature on the early development and conservation rearing of a locally threatened species – crucian carp (*Carassius carassius*)

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ORCID: <https://orcid.org/0000-0002-4951-7030>

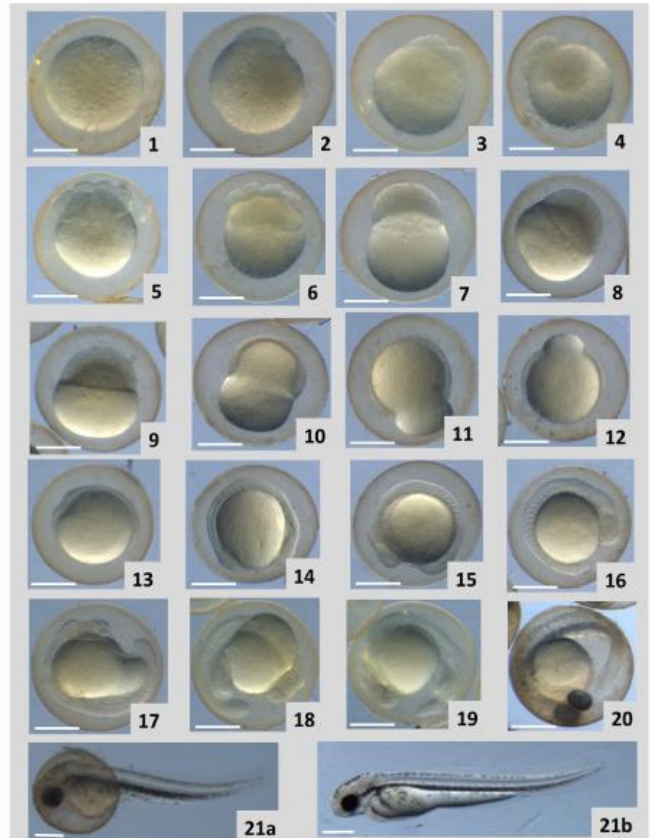


Fig. 2. The embryonic development of *C. carassius* from zygote to hatching (a total of 21 developmental stages; i.e., zygote, 1-cell, 2-cell, 4-cell, 8-cell, 16-cell, multi-cell, beginning of epiboly, 25%-epiboly, 50%-epiboly, 75%-epiboly, 95%-epiboly, 100%-epiboly, 6-somite, 10-somite, 14-somite, 18-somite, 22-somite, early and middle pharyngula, and hatching stage; scale bar = 500  $\mu$ m).

# Economy of nature-friendly management



<b>Průměr</b>	<b>1,92 ha</b>
Medián	0,70 ha
Min.	0,62 ha
Max.	10,00 ha

# Economicaly evaluation of nature-friendly managment



**COSTS**

**35.000 Kč**

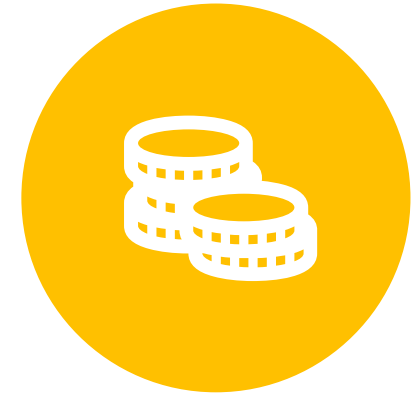
**1.500 EUR**



**HYPOTHETIC SALES**

**18.500 Kč**

**800 EUR**



**ONLY TWO  
FISPONDS IN PROFIT**

*AVG – all fishponds, two seasons*

# Final conference





We are continue with management and with surveys of the localities