Chinese carp in Hungary

Dr. Béla Urbányi*°

*University of Győr, Albert Kázmér Faculty of Agricultural and Food Sciences, Mosonmagyaróvár, HUNGARY

°Institute of Agricultural Economics, Budapest, HUNGARY

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Agenda

- Introduction of Chinese carps
  - Physiological characteristics
    - Facts
      - Solutions and conclusions
        - Final messages

Facts from world/Hungarian aquaculture production

Species in aquaculture and capture fisheries	2022 (tonnes)
Grass carp-white carp (*Ctenopharyngodon idella*)	6 200 000
Silver carp (*Hipopthalmichthys molitrix*)	5 100 000
Total aquaculture production in 2022	130 900 000

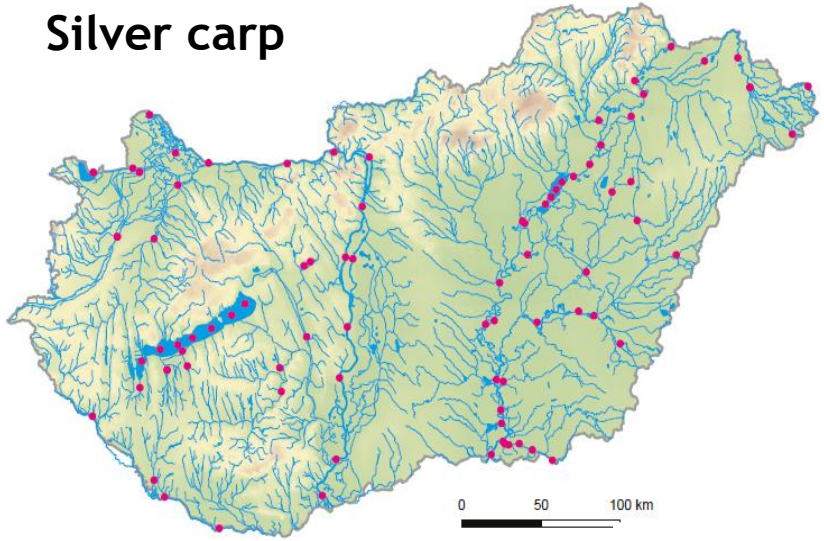
Source: FAO, 2024

Source: AKI, 2025

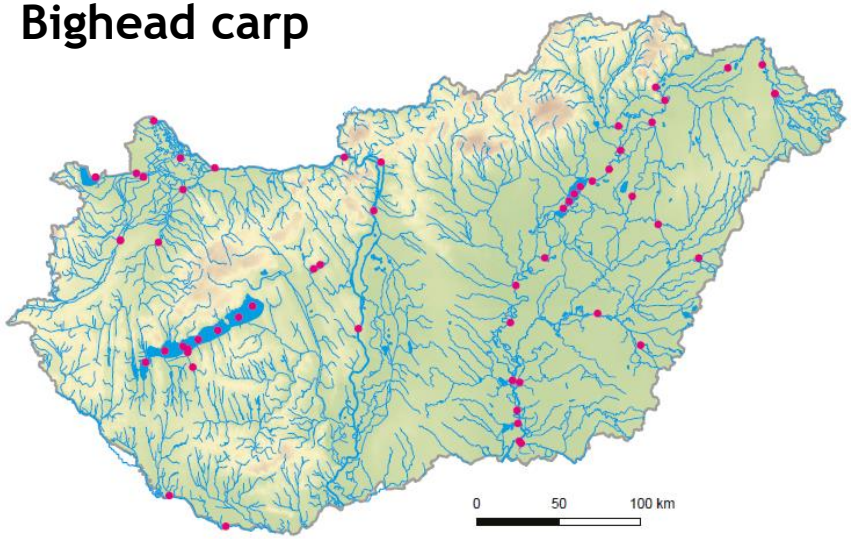
		2020	2021	2022	2023	2024
		kg	kg	kg	kg	kg
Grass carp	Market size	480 002	470 696	406 563	562 903	602 018
	Breeders	8 173	6 297	8 954	4 744	5 154
	Two-summer old	195 232	195 835	176 632	181 926	221 784
	Juveniles	63 020	49 145	59 763	29 848	50 269
	Total	746 428	721 973	651 912	779 421	879 225
Silver carp	Market size	909 533	930 224	848 174	972 195	1 025 561
	Breeders	4 351	4 105	3 599	3 079	2 040
	Two-summer old	253 688	196 847	336 832	276 445	392 009
	Juveniles	56 133	79 134	59 336	65 720	56 020
	Total	1 223 705	1 210 310	1 247 941	1 317 439	1 475 630

Distribution in Hungary

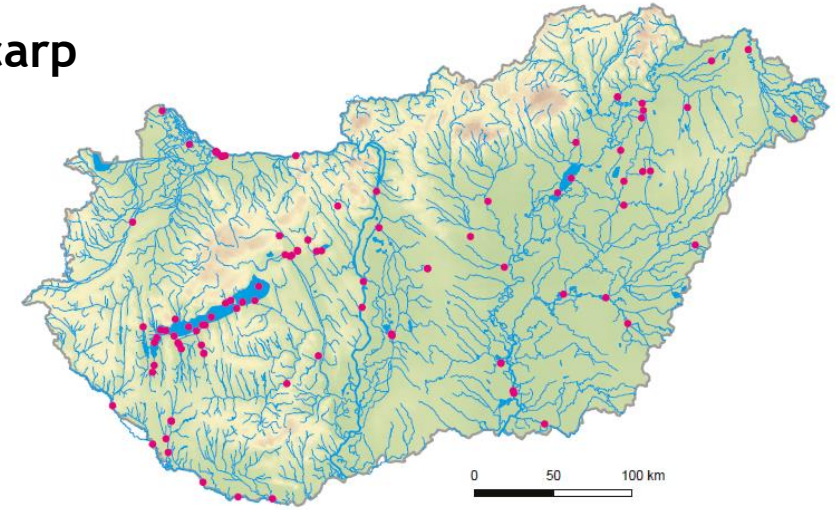
Silver carp



Bighead carp



Grass carp

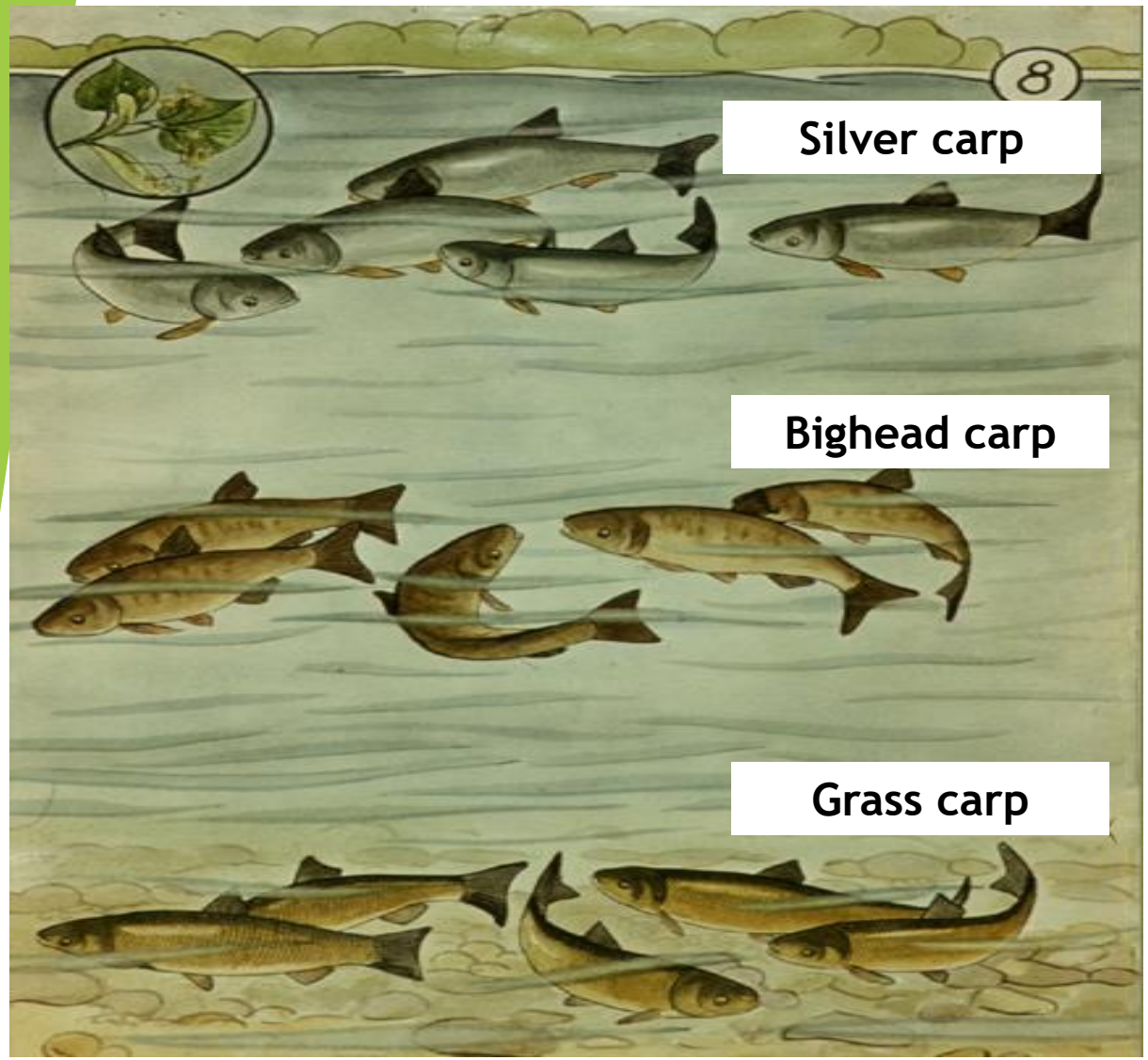


Source: Ferincz et al., 2023

Chinese carps in Hungary

Grass carp	Silver carp	Bighead carp
		
Feed: macrovegetation	Feed: phytoplankton	Feed: zooplankton
Status in aquaculture: cultured	Status in aquaculture: cultured	Status in aquaculture: cultured
Conservation classification: alien	Conservation classification: alien	Conservation classification: alien
Introduction to Hungary: 1964	Introduction to Hungary: 1963	Introduction to Hungary: 1963

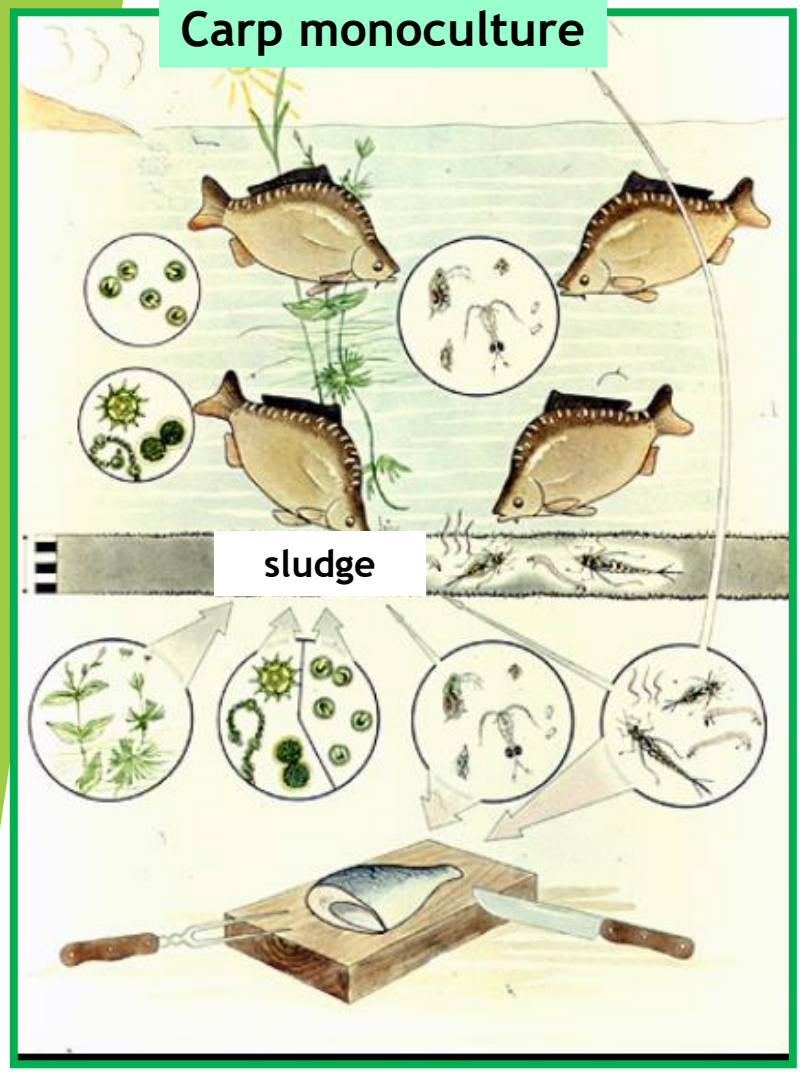
Spawning in nature

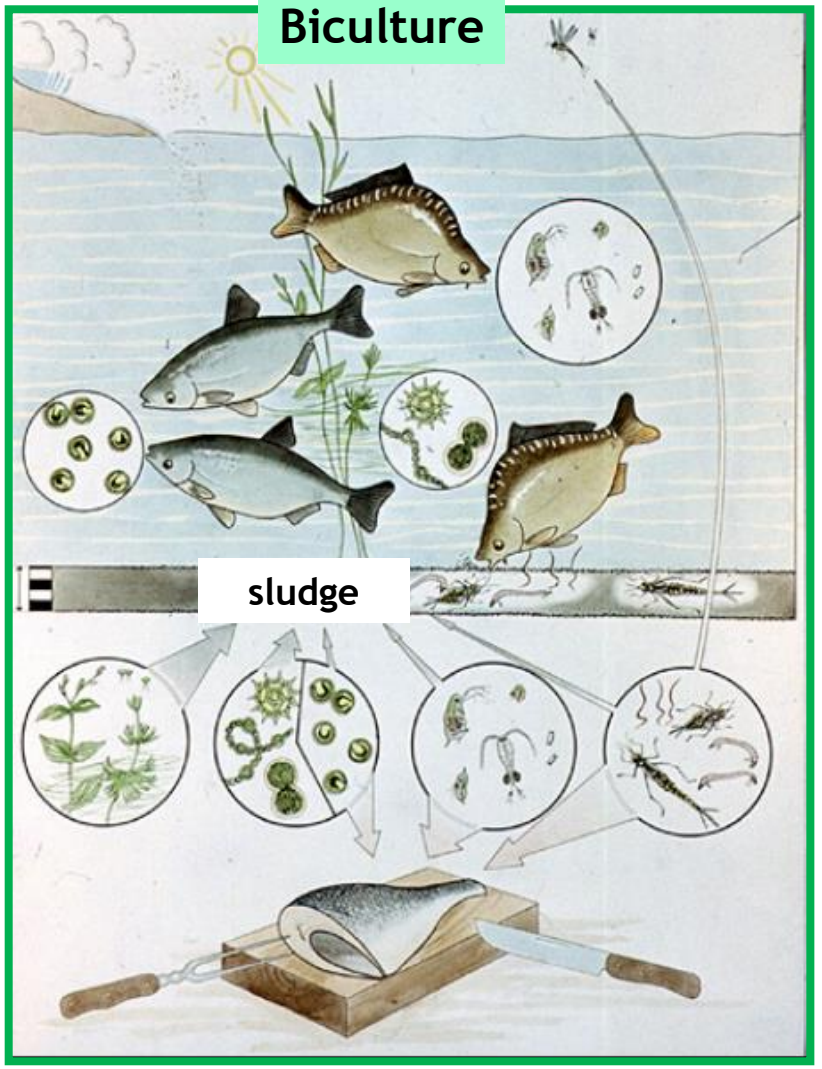


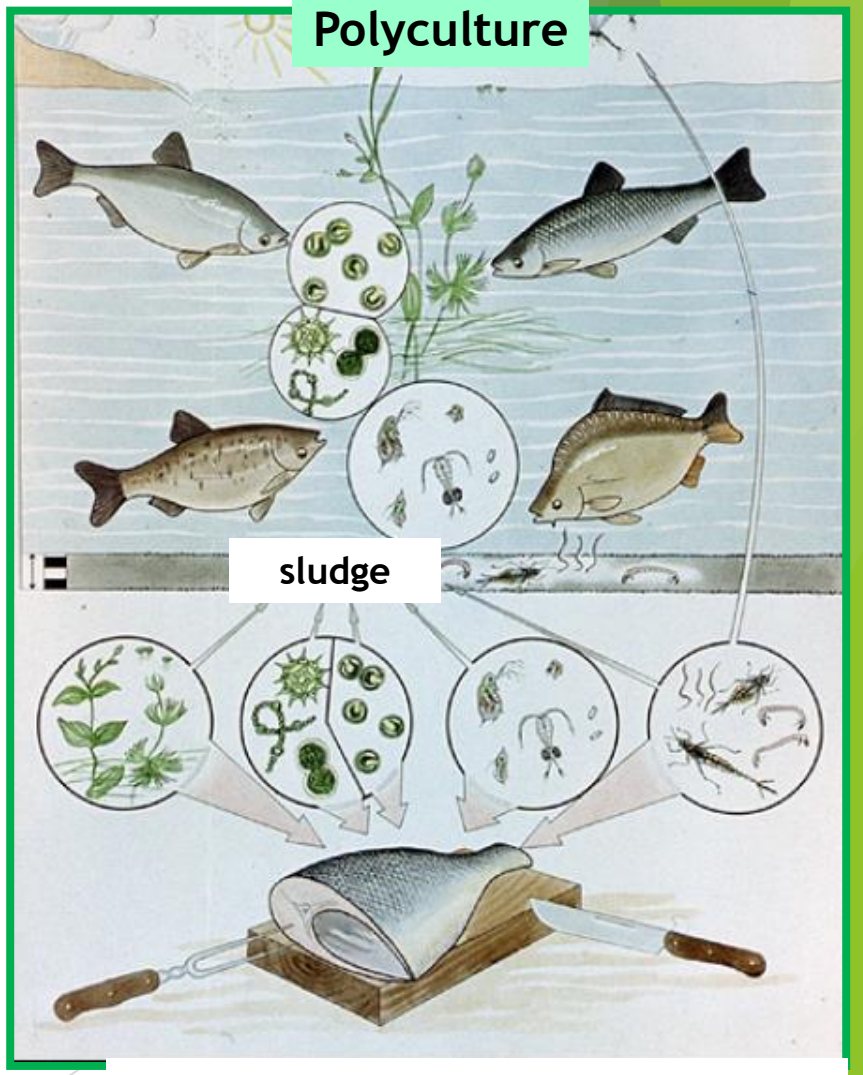
Main factors:

- Warm water (over 24 °C at minimum 7 days)
- Rapidly flowing river sections
- In Hungary: June-July (linden tree flowering)

Economic relevance in pond







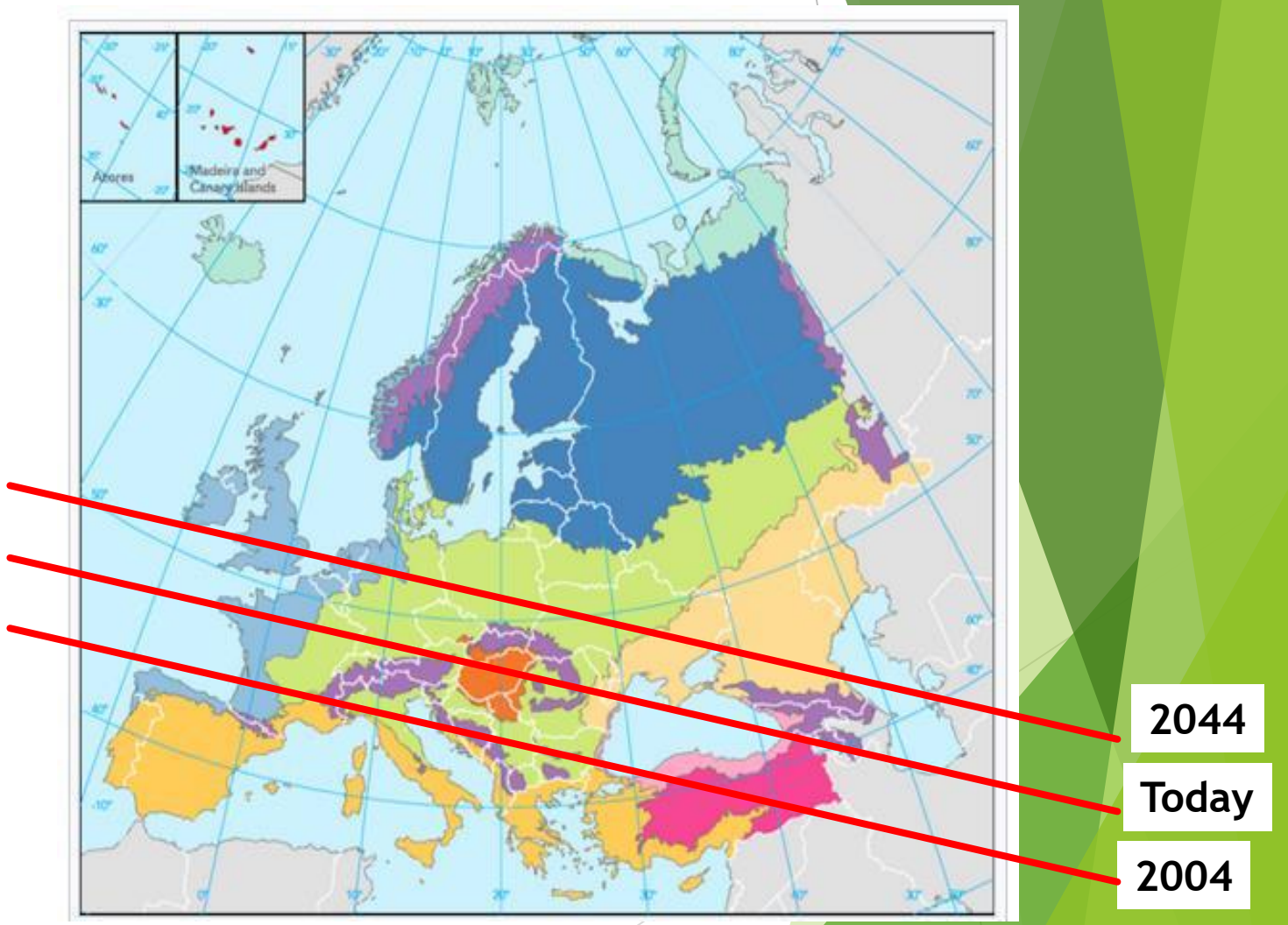
Source: Woynarovich, E. and Horváth, L, 1980

Facts 1.-regulation

- The Regulation concerning the use of alien and locally absent species in aquaculture (Regulation (EC) No 708/2007) and the Regulation on invasive species (Regulation (EU) 1143/2014).
- The Environmental Assessment Directive (Directive 2011/92/EU); and the Strategic Impact Assessment Directive (Directive 2001/42/EC).
- From 2016, traditional, commercial fishing was stopped in all natural waters of Hungary.
- The Hungarian legal framework is being reformed.

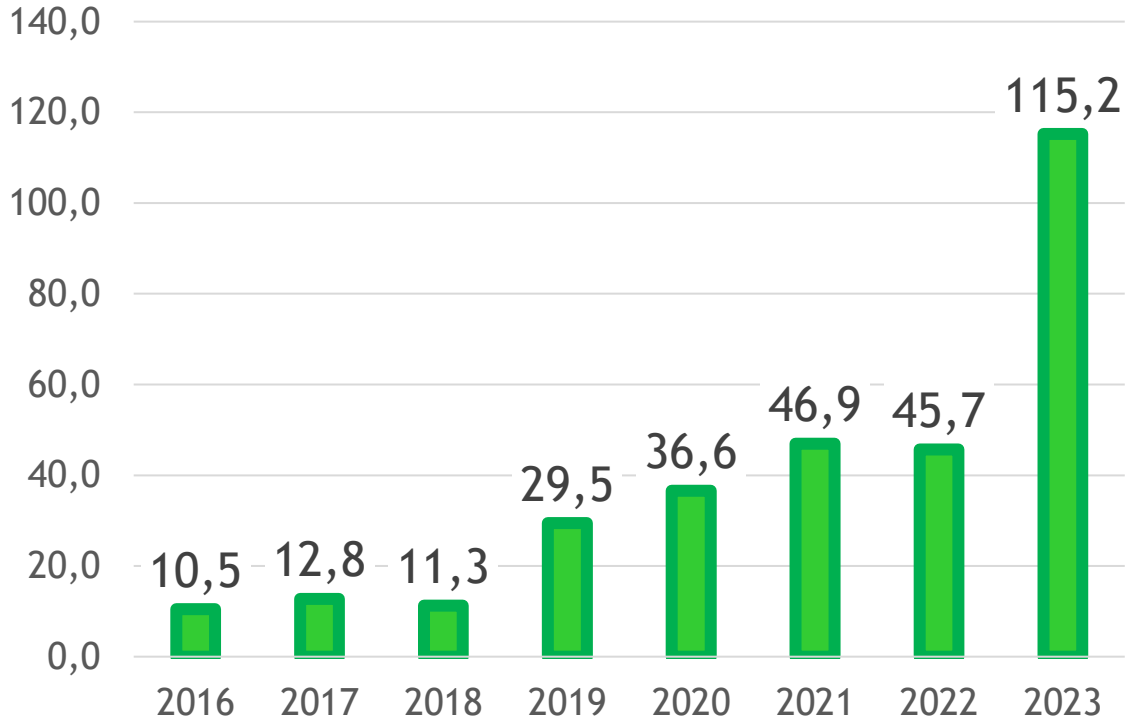
Facts 2.-climate change

- Mediterranean climate heading north at ~400 km/20 years
- Hungary currently = Croatia 20 years ago!!!
- In the last 5 years, there have been 24 times in the spring period water levels (floods) that favour the reproduction of Chinese carps



Source: Ditrich-The future is called life, 2021

Facts 3.-angling situation



Source: Vitál, Z. et al., 2025

Angling catches of silver carp, bighead carp and their hybrids (in tons)

Facts 4.-spawning detection

- In recent years, there have been several instances of weather situations that have created a suitable environment for Chinese carp to spawn in the wild.
- The juveniles captured from natural waters did not consist of individuals released from pond farms.
- These observations have been reported in several cases (Harka et al., 2009; Sallai et al., 2019; Sólyom et al., 2019; Juhász, 2023; Vitál et al., 2024.).

Silver carp juveniles

Source: Z. Sallai, 2019

Source: M. Juhász and G. Papp, 2019

Grass carp juveniles

Source: Z. Sallai, 2019

Source: N. Sólyom, 2019

Sonar video of Silver carp breeders

MP4 file

Source: Vitál, Z. et al., 2025

Potential solutions

- Introduce efficient fishing technologies, allow „ecological” (selective) fishing in natural waters.
- Review the regulatory environment, tighten it where necessary, and monitor it continuously.
- Production, genetic testing and stocking of sterile triploid fish stocks in the waters concerned.
- Sharing good and bad practices helps to improve and reduce the risk of making bad decisions.

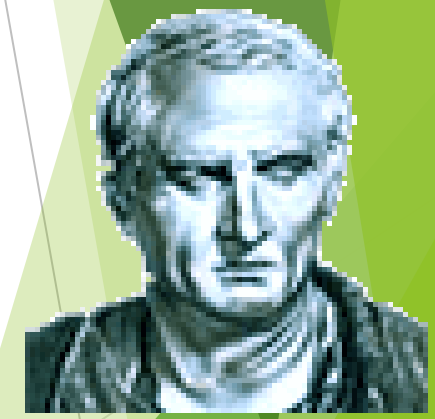
Conclusions

- Dialogue.
- Collaboration in national and international level.
- Fish farmers and anglers are expected to reduce the size of Chinese carp populations in natural waters.
- Communicating good practices.
- Education and innovation.

The solution to this problem is not a national level, but an international level.

Final messages

We need to get to know each other, and we need to work together because this way we will be stronger – COOPERATION!



”Ibi semper est victoria ubi concordia est”
Where there is unity, there is always victory.
(after Publilius Syrius)

Thank you for your attention!

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