



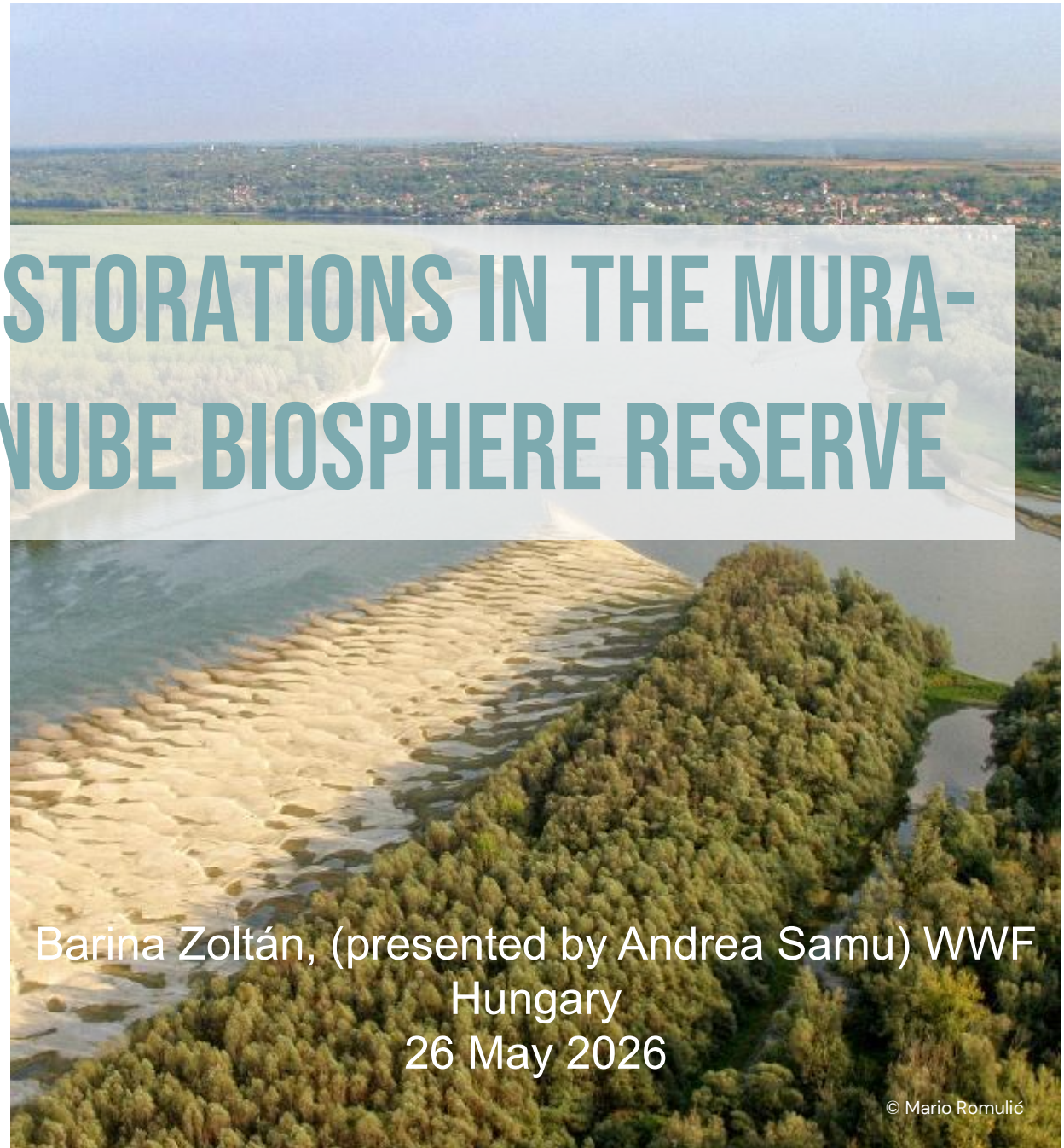
# LIFE RESTORE FOR MDD

UNESCO Five-country  
Biosphere Reserve



# HABITAT RESTORATIONS IN THE MURA- DRAVA-DANUBE BIOSPHERE RESERVE

# MURA DRAVA DANUBE





# WWF Hungary – Living Rivers program

- Danube – the condition of the Danube and its habitats should not deteriorate
- Tisza – natural water retention and water-based landscape use along the Tisza
- **Drava – let us preserve and restore the dynamic flow and diverse habitats of the Drava**
- General: increase the awareness and appreciation of our rivers and wetlands

# Projects and restorations



## Liberty Island (Hungarian lower Danube section)

2009 – 2013

LIFE+ NAT/H/00320



# Project details

- “Protection of floodplain habitats of community importance on the Szabadság island and its tributary in the Béda-Karapancsa special nature conservation area (pSCI)” (DANUBE ISLANDS)
- January 1, 2009 – December 31, 2013, 60 months
- EU funding: 75%, average 60% due to infrastructure element
- Targeted habitat: floodplain softwood grove forests (*Salicion albae*) (91E0) Natura2000 area: HUDD10004 SPA, HUDD20045 pSCIBéda-Karapancsa landscape unit, part of the DDNPI since 1996, highly protected
- Total budget: EUR 1,795,529, eligible part: EUR 1,434,529, total approx. HUF 480 million

## Targeted problems:

- Invasive species
- side-branch recharge, with the disappearance of the coastal softwood forest, the merging of the island and the coast
- Wood production forestry
- Decreasing water volume in the tributary, stagnant water, deteriorating water quality



## Habitat restoration technical details

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- Formation of the reef: early 1900s, current island form: from ca. 1940s, cross dam: 1983
- 160 thousand cubic meters of dredged sediment Replacement of two 70 cm water pipes, 168.0 m<sup>2</sup> and 175.0 m<sup>2</sup> drilled sections and a total of 100.0 m<sup>2</sup> covered sections at the 4 connections
- Removal of 6000 cubic meters of rock when opening the rock dam
- 47 ha of floodplain forest under DDNPI asset management
- Renovation of 5 hectares of native forest, 47 hectares of invasive-free forest
- The largest nature conservation dredging operation affecting the main channel of the Danube
- Monitoring: 2018, 2019, 2020



## Results for nature

- Natural forest on the island, invasive species in decline
- Returning species – more favorable living conditions for them
- The tributary flows, a more diverse ecosystem

## Results from a human perspective

- Helping to protect drinking water resources
- Fishing, rowing, beach, hiking
- The living river, living tributary: better groundwater management, diverse landscape use, richer agriculture, flood protection.



# Old Drava restoration at Barcs (2014-2018)

First HU-HR Life Nature project



Public institution for management of protected parts of nature and ecological network in Virovitica Podravina county

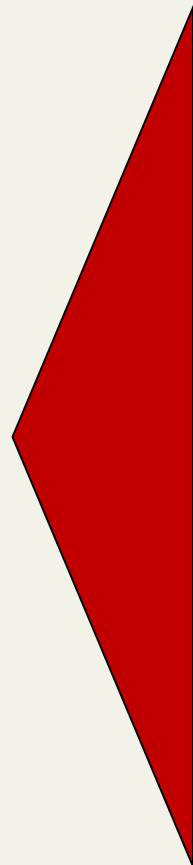
## Main problem: poor water supply

### Causes

- Sinking Drava riverbed;
- Water outflow towards the Drava is becoming more intense
- No water replenishment from the Drava
- Decreasing rainfall

### Consequences

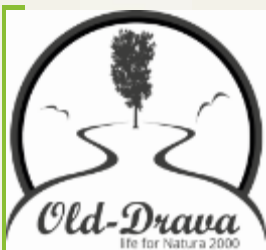
- No water flow
- The riverbed is overgrown and silted up, the open water surface is getting smaller
- Decreasing groundwater level, deteriorating water supply to the riverside forest



### Objective:

- Improve water supply to the habitat
- Ensure water level stability
- Preserve standing water ecosystem
- Preserve and improve the condition of the gallery forest along the waterside
- Reduce human impacts





# Activities within the framework of the project

- Water retention, reaching a predetermined water level
  - 1 sluice, with fish pass
- Managing human-induced pressures:
  - Demolition of illegal fishing camps, construction of new ones
  - Attitude formation
- Additional works
  - Habitat mapping, monitoring
  - Ecosystem services assessment
  - Permitting procedures



**UNESCO Mura-Drava-Danube Transboundary  
Biosphere Reserve (MDD TBR)**



# Protected Areas along the European Lifeline Danube-Drava-Mura

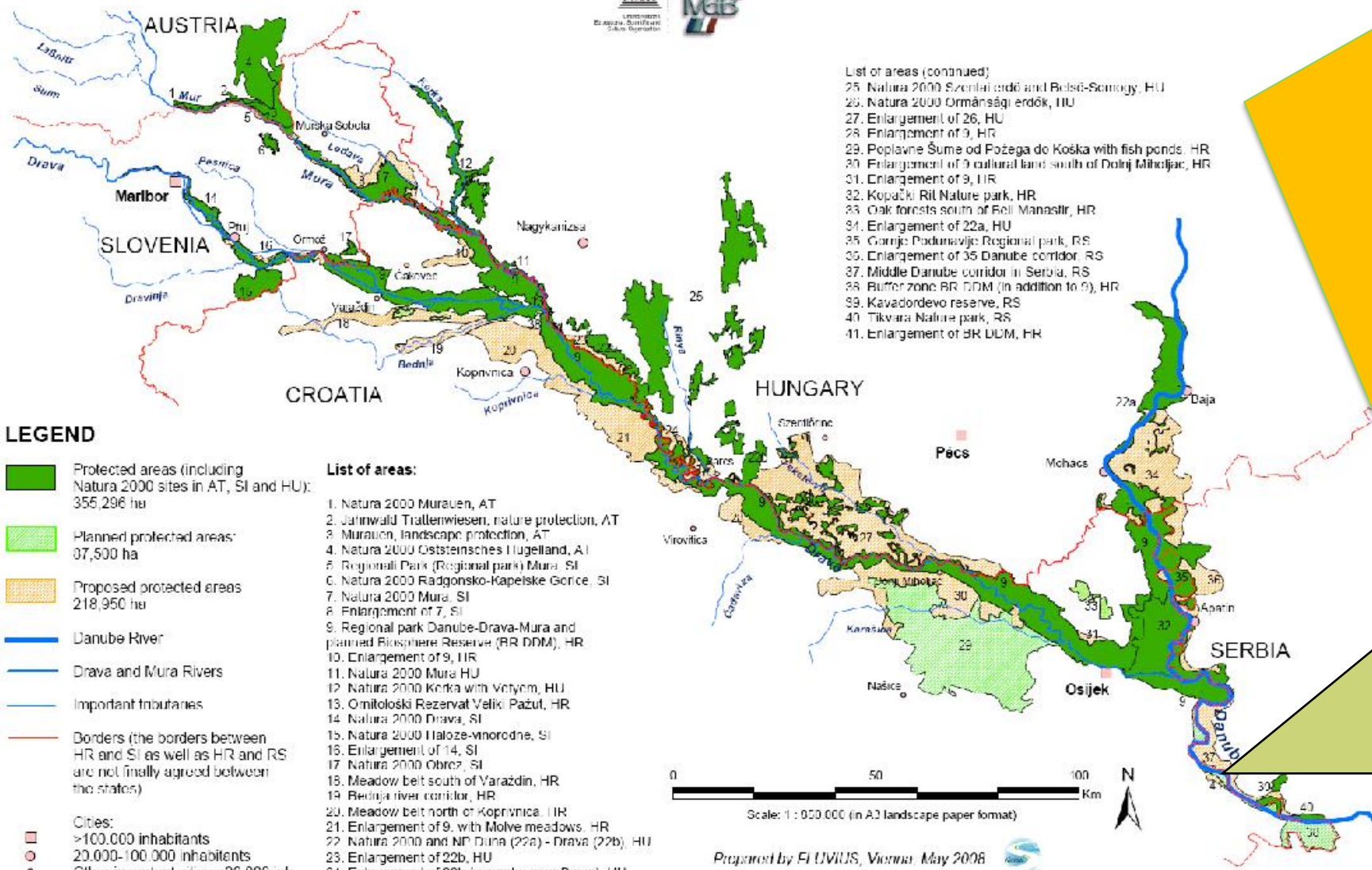
Proposal for a Trans-Boundary Biosphere Reserve "Danube-Drava-Mura" within the framework of UNESCO's Programme on Man and the Biosphere (MAB)



Product of WWF and EURONATUR



Declared: 15.09.2021.



**VISION:**

- 3 rivers
- 5 countries
- 13 protected areas
- Shared management
- Connected wetlands
- Sustainable approach

**PRESERVATION RESTORATION AVOIDANCE OF HAZARDS**

# UNESCO Mura-Drava-Danube Transboundary Biosphere Reserve (MDD TBR)

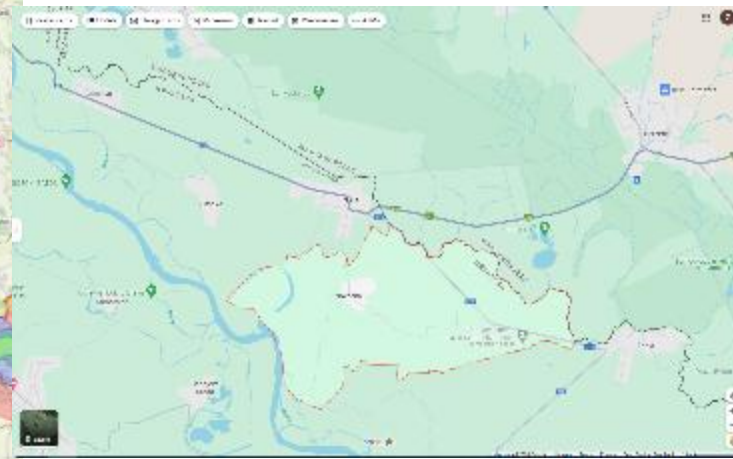
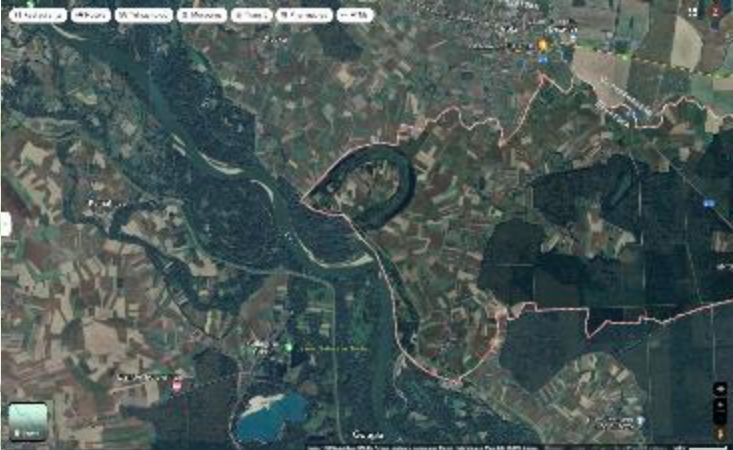
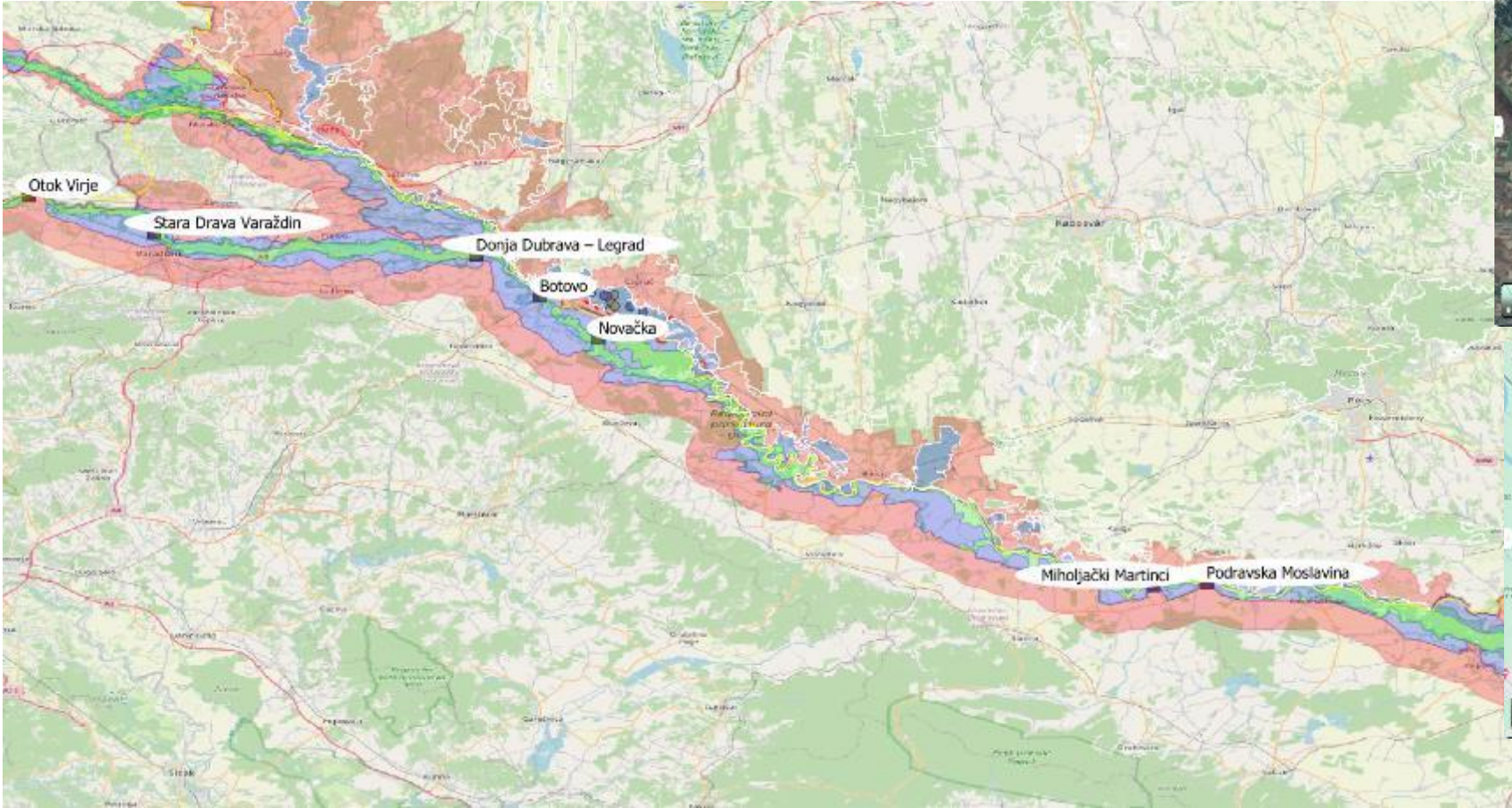
**Mission:** the preservation, restoration and wise use of the Mura, Drava and Danube rivers and their ecosystems within the world's first 5-country UNESCO Transboundary Biosphere Reserve.

## Long-term objectives

- Ecological conservation and ecosystem services
- Conservation and restoration of ecosystems, habitats and species
- Conservation and restoration of natural water systems and processes
- Support for harmonised zoning and management of protected areas
- Socio-economic sustainable development and livelihoods
- Strengthening regional identity and protection of cultural heritage
- Strengthening sustainable agriculture, forestry, hunting and fisheries
- Support for territorial development and sustainable tourism
- Logistical support and capacity building
- Scientific research and monitoring
- Promoting environmental interpretation, education and public awareness
- Safe information exchange and participation
- Transboundary management and cooperation

# DravaLIFE (2018-2026)

- HR Vode
- WWF Adria



# lifelineMDD (2020-2022)

Establishing the scientific knowledge base

- studies (sediment), modelling, metadatabase

Cross-sectoral restoration of connectivity

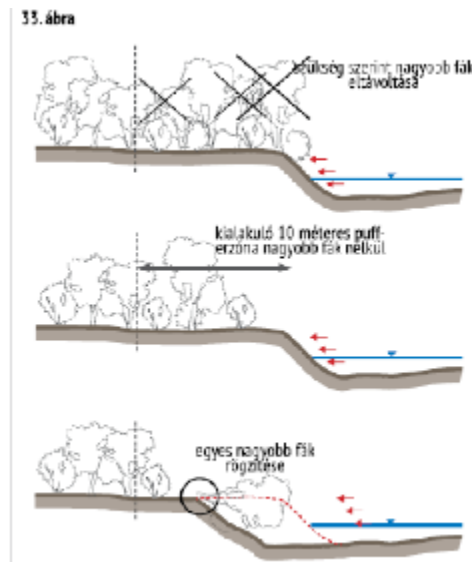
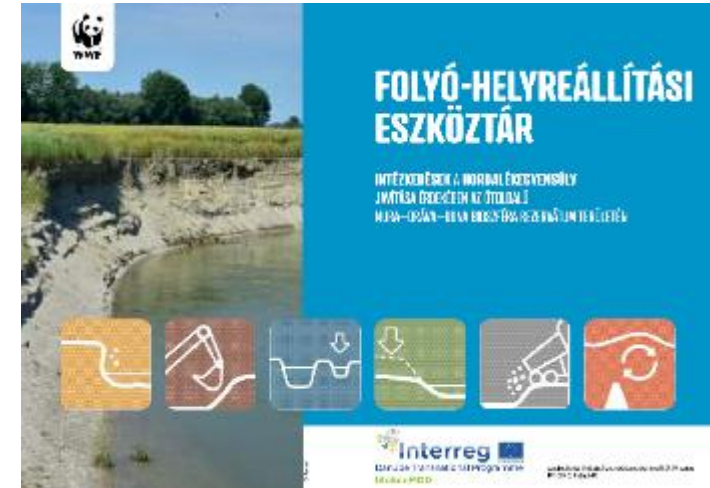
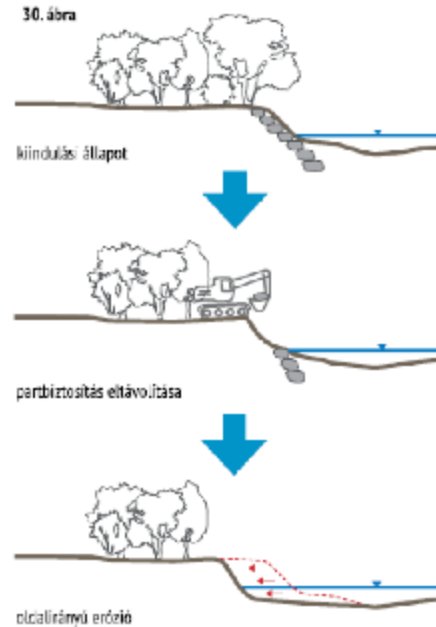
- Habitat restorations, study trips, conferences
- Drava Day
- River Restoration Toolbox
- study trips for students and professors

Local awareness for living rivers

Stakeholder platforms for sustainable cooperation

Communication

- voluntary actions, publications, papers
- kid's summer camps



Döntéshozatal során figyelembe kell venni a fennálló ökológiai állapotot.

- Erodable banks
- Mechanical widening
- Initial channel
- Lowering the floodplain
- sediment recharge
- Erosion control works
- Additional sediment mobilization strategies

# WISE DRAVA

Wise water management along Drava river in order to preserve riverine and floodplain habitats (2018-2024)



## Water retention works (Lankóc Forest)

Land purchase (43 ha)

Replacement of White locust

Common oak

Common alder

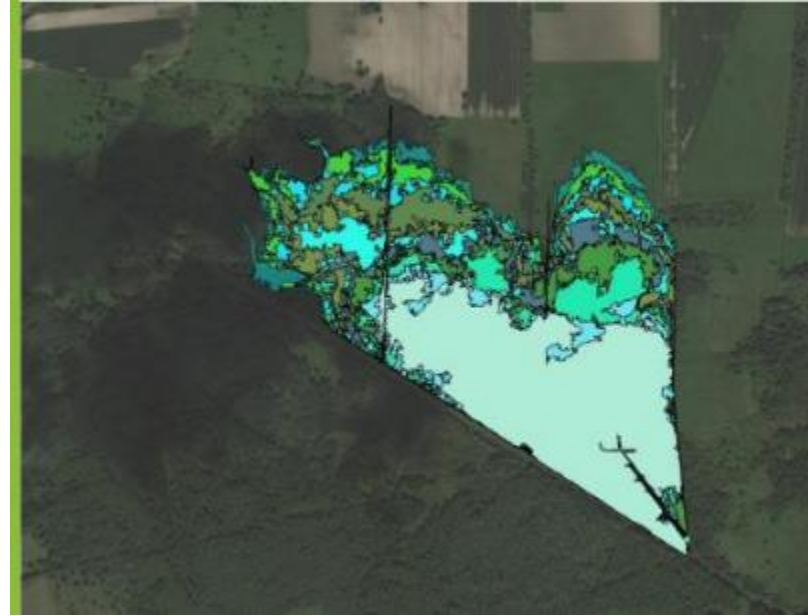
Narrowleaf ash

Wild cherry

Installing black stork nests  
and bat boxes

3 artificial nests

51 bat boxes





## Modification of river regulating works:

- Vejti I
- Vejti II
- Felsőszentmárton

## *side-branch reconnection*

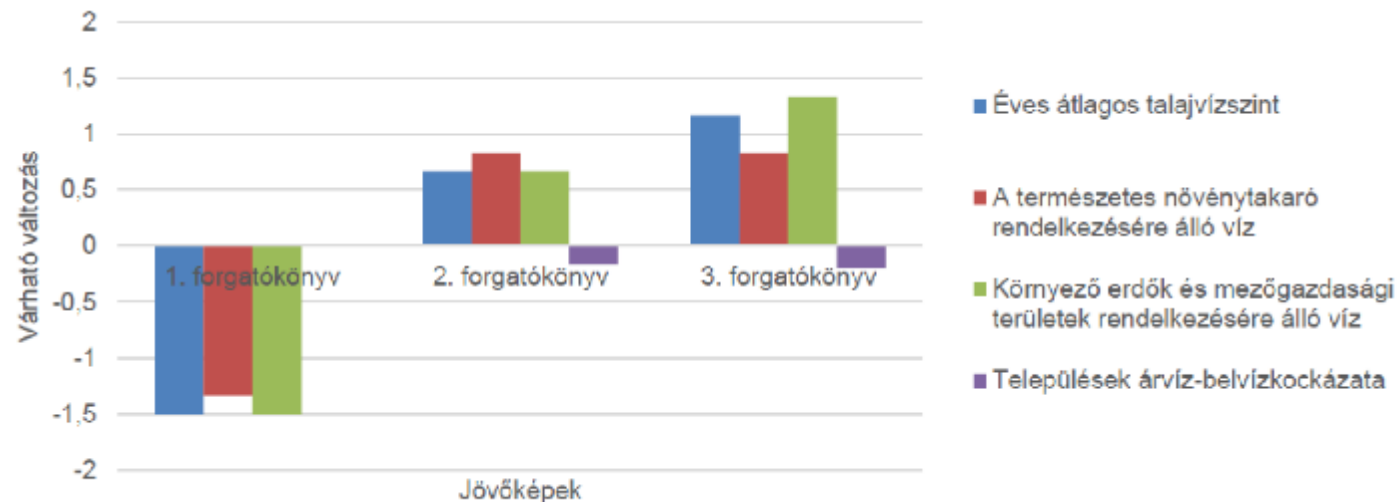
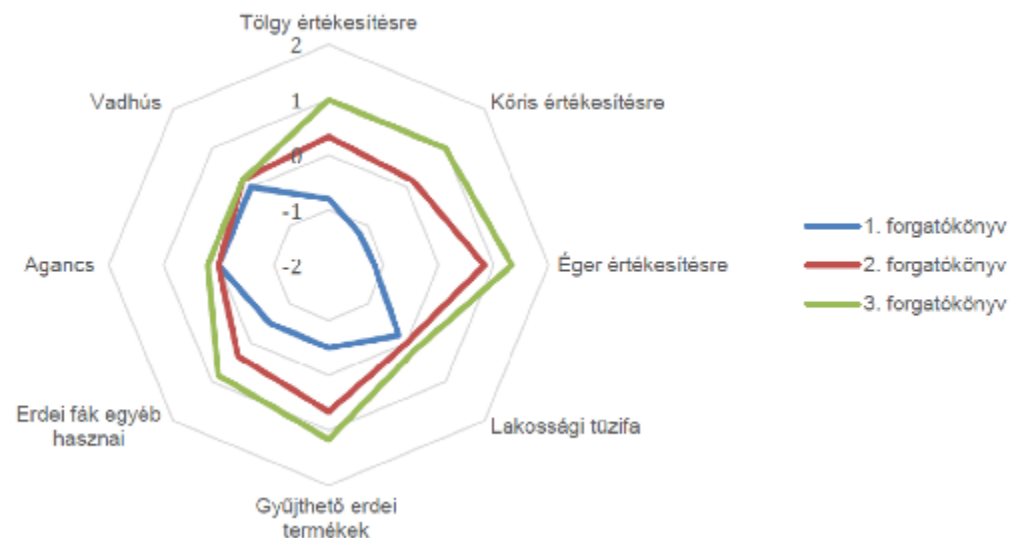


## Local stakeholder engagement

- forum
- contact
- interviews

## Involving experts with knowledge of the area

- examining future visions





# Knowledge dissemination

- Website ([www.wwf.hu/wisedrava](http://www.wwf.hu/wisedrava))
- Drava magazine
- Animation
- Infographics
- <https://www.youtube.com/watch?v=apIZWwoc9C0>



# WISE DRAVA



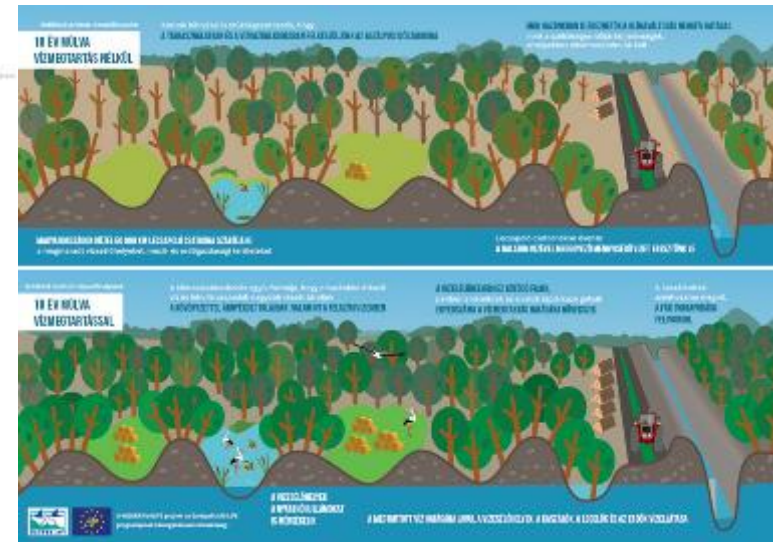
## Európa AMAZONASA Magyarországon van és GYÖNYÖRŰ!

106K views · 7 days ago



A technika: Olympus Kamera: <https://www.olympusmintabolt.hu/om-system-om-1-vaz-fekete Objektiv#1>

4K



# Amazon of Europe (2022-2027)

Restoring the Amazon of Europe: Reconnecting Riverine Habitats in the First five-country UNESCO Biosphere Reserve



- WWF Adria (WWF HU, Lendava, HR Vode, Kopački Rit Nature Park)
- 4 project sites
  - Kopački rit (side-branch, Danube, CRO)
  - Drava site (Mura-Dráva confluence)
  - Mura (Lendva, hay meadow)
  - Gornje Podunavlje (riverine forest)

## Restoration Task Force

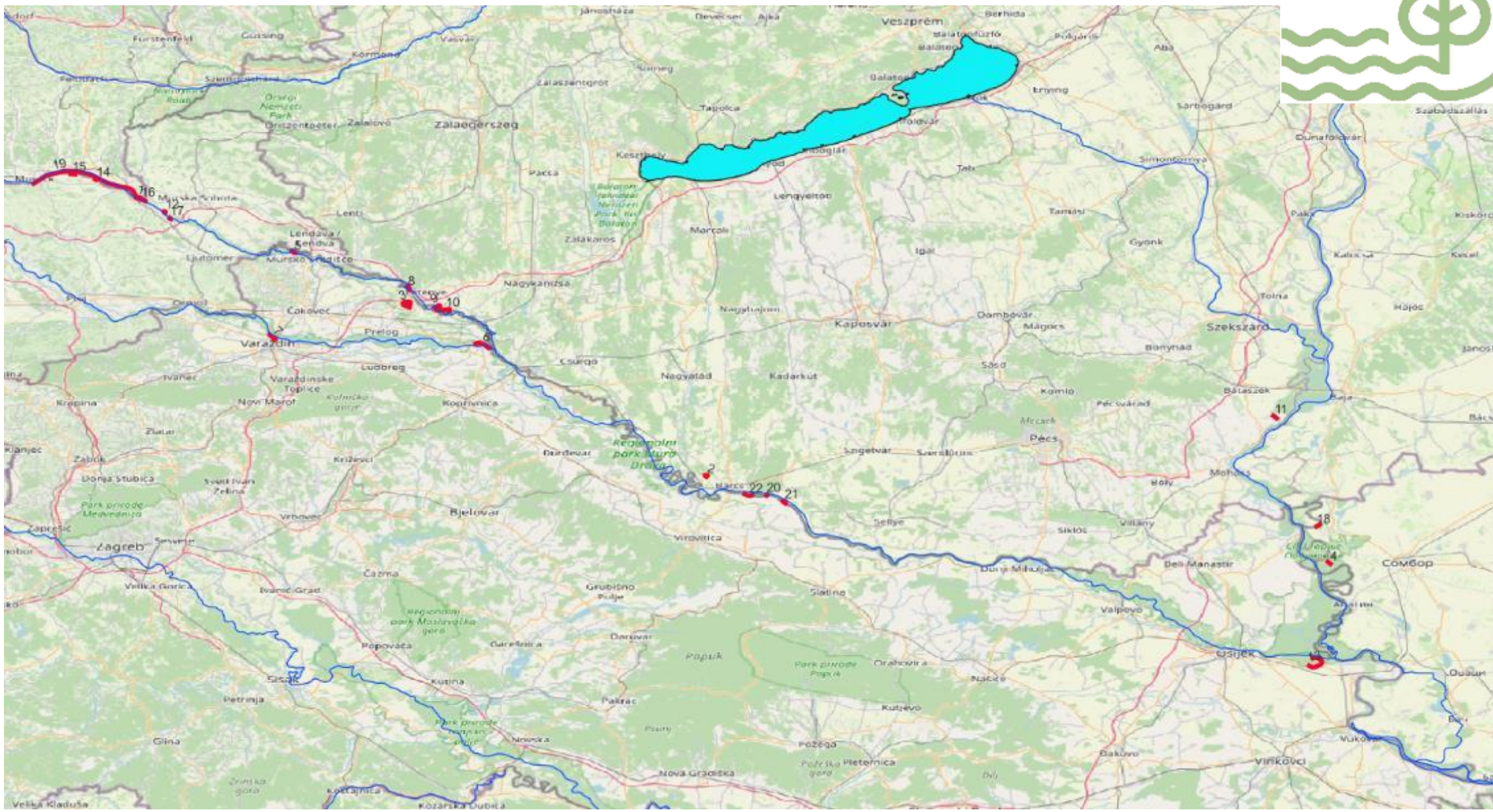
- supervision and monitoring habitat restorations
- catalyze further habitat restoration
- promoting the transition to a nature-based economy
- Involving local communities

# LifeRestore for MDD (2023-2028)



## Preserving and restoring floodplain forest habitats along the Mura-Drava-Danube rivers

- 5 countries
- 30 partners
- 20 project sites
- Monitoring WP lead by WWF HU

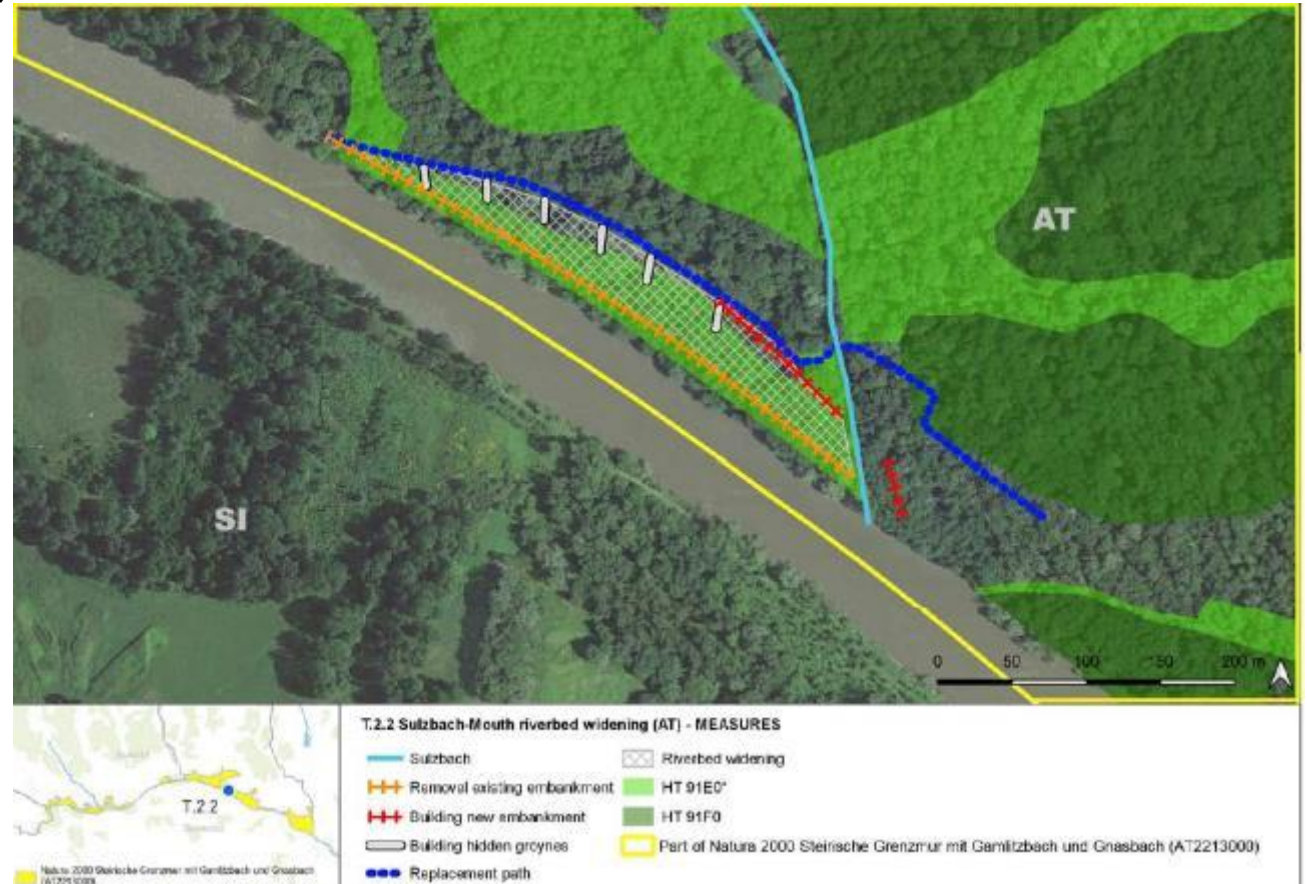


## WP2 – Restoring river dynamics



Know-how exchange and alignment on river restoration

- T.2.2 Sulzbach-Mouth riverbed widening (AT)
- T.2.3 Konjšče 2 riverbed widening (SI)
- T.2.4 Mele riverbed widening (SI)
- T.2.5 Hrastje Mota 2 riverbed widening (SI)

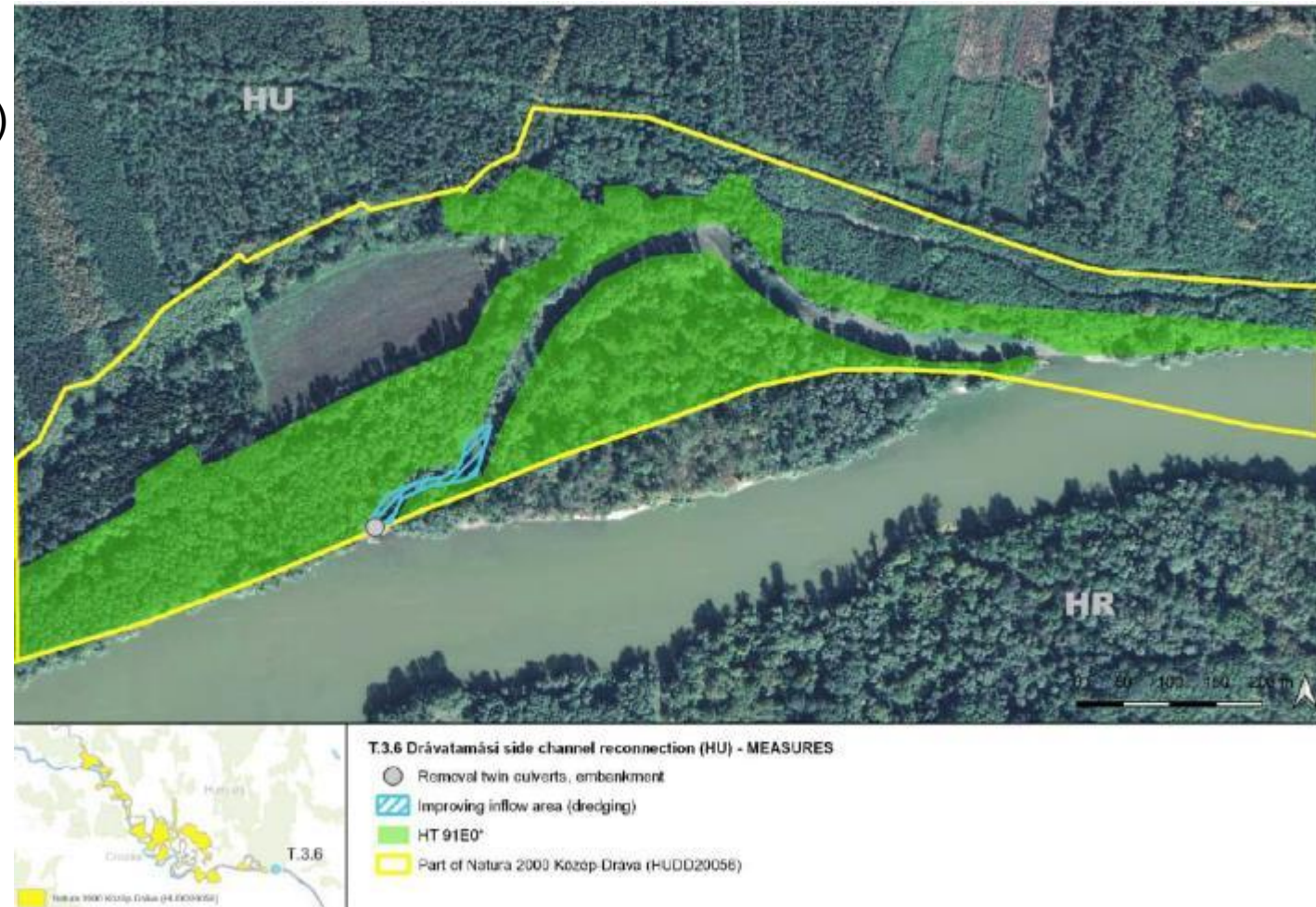


## WP3 – Restoring floodplain connectivity



Know-how exchange and alignment on river restoration

- Mühlbach – side channel improvement (AT)
- Drauchenbach – alluvial creek restoration (AT)
- Benica side channel restoration (SI)
- Orlovo selište side channel reconnection (HR)
- Drávatamási side channel reconnection (HU)
- Tótújfalú side channel reconnection (HU)
- Monoštorski rit side channel extension and improvement (RS)

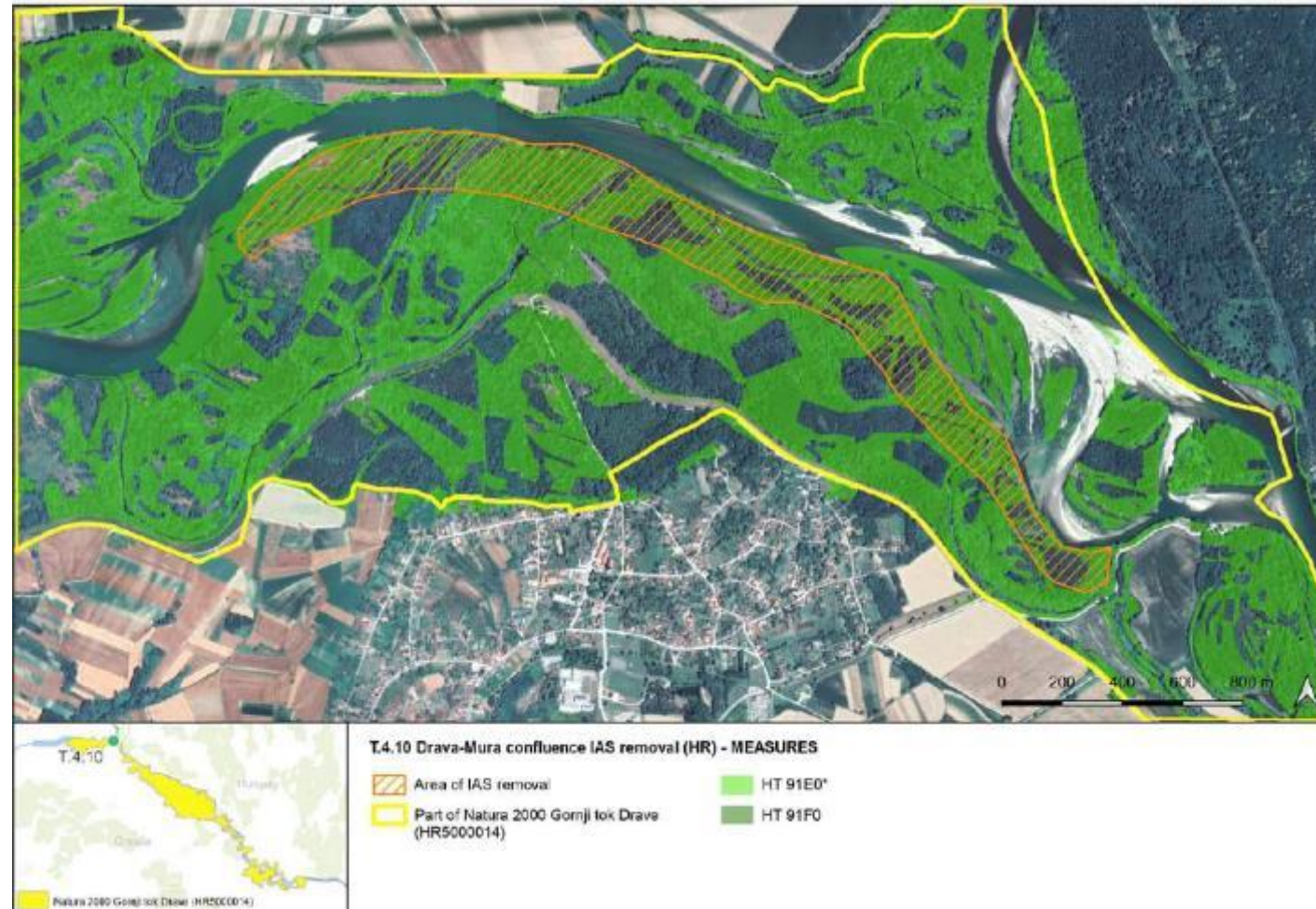


## WP4 – Preserving and restoring floodplain forests



Know-how exchange and alignment on river restoration

- T.4.2 Preservation and reproduction HT 91E0\* and HT 91F0 tree species (SI)
- T.4.3 Restoration of HT 91E0\* (SI)
- T.4.4 Restoration of HT 91F0 (SI)
- T.4.5 Purchase of land with most valuable habitats (SI)
- T.4.6 Proposal for establishment of protected areas (SI)
- T.4.7 Hlapičina forest IAS removal (HR)
- T.4.8 Purchase of land with most valuable habitats (HR)
- T.4.9 Drava forest park IAS removal (HR)
- T.4.10 Drava-Mura confluence IAS removal (HR)
- T.4.11 Monoštor forest restoration (RS)



## WP5 – Restoring habitat structures in floodplain forests



Know-how exchange and alignment on river restoration

- T.5.2 Gradišče oxbow lake restoration (SI)
- T.5.3 Bodzás oxbow lake restoration (HU)
- T.5.4 Donje Međimurje floodplain meadow restoration (HR)
- T.5.5 Hosszúvíz oxbow lake restoration (HU)
- T.5.6 Tótszerdahely oxbow lake restoration (HU)
- T.5.7 Drávaszentes complex habitat restoration (HU)
- T.5.8 Bjelobrdska oxbow lake restoration (HR)
- T.5.9 Báta oxbow lake restoration (HU)



**Thank you for the attention!**