

The AquaPinka project

A Pinka

- Its spring is in Austria, it is one of the major tributaries of the Rába.
- A watercourse intersected multiple times by a border, forming a border in some sections

➤ Typical discharges:

- Felsőcsatár: $Q_{aug, 80\%}$: 1,05 m³/s, KÖQ: 3,16 m³/s, LNQ: 97,1 m³/s

➤ Typical water uses:

- Hydropower plants (7 pcs.)
- Purified wastewater inlets (6 pcs.)
- Water extraction for irrigation
- Fishing, tourism





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The AquaPinka project

The Project

- The new challenge is the **climate change**, which results **extreme weather events**
- The frequency of extreme water conditions (**floods** and **low water**) is increasing
- The problem is the **sharing of water resources** and the **provision of ecological water demand**
- It is a solution to carry out **joint water resources management** on the common water course

AquaPINKA

Jelenlegi állapot

Célok



Hiányelemzés

Vízgazdálkodási Terv

Intézkedések koncepciója



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The goal of the AquaPinka project

The implementation of the Hungarian-Austrian project **AquaPinka - The Sustainable Water Management of Pinka** was supported by the **Interreg V-A Austria-Hungary Cooperation Program 2014-2020**.

All costs:	638.650 €
➤ NYUDUVIZIG:	231.150 €
➤ Land Burgenland:	407.500 €

The AquaPinka project was implemented **between January 1, 2020 and December 31, 2022**.

The primary goal of the project was to **explore the current water resources of the Pinka and the effects of interventions affecting the water resources**, as well as to learn about the link between the Pinka and the groundwater of the valley.

The most important result of the project was the **development of the water management plan**, which contains **regulations and measures to regulate the use of water resources and measures to improve the hydromorphological state of the water course**.



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The contents of the AquaPinka project

1. Monitoring

Simultaneous, coordinated collection of **surface water** and **groundwater hydrographical** and **water quality** and **fish fauna** data in the Pinka and Pinka's valleys in Hungary and Austria.

2. Modelling

Construction, calibration and verification of surface water and groundwater **hydrodynamic models**. Identification of **water resource management** and **water quality loads** from the modeling results.

3. Creation of a water resource management plan

Development of a **system of rules** and **measures** that ensures the **sustainable use of water** for both member countries both **in terms of quantity** and **quality**, taking into account the future state of water resources. Furthermore, development of **measures to improve the hydromorphological status** of the water course in order to **improve water habitats**.



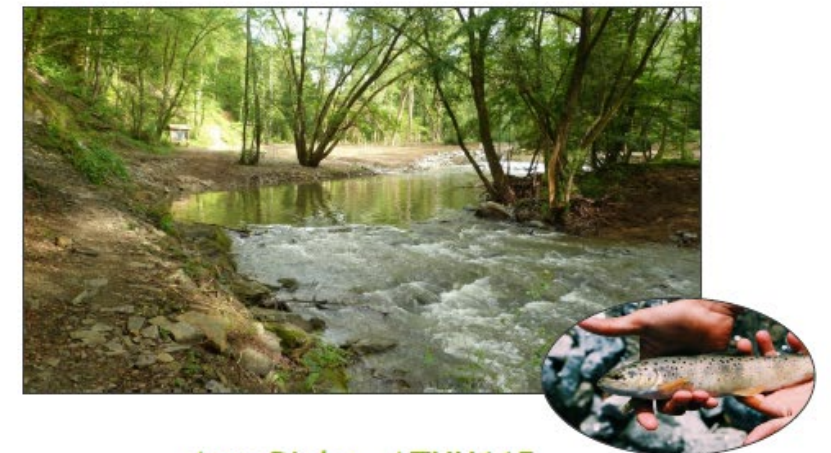
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Contents of Pinka's low water management plan

1. Introduction, general purpose of the project
2. Main objectives, sectoral objectives
3. Presentation of the project area
4. Previous projects
5. Water uses
6. Available data
7. Expansion of the monitoring system
8. Implementation of the monitoring
9. Monitoring results - the low water state of the Pinka
10. Low water modelling
11. Integrated evaluation of Pinka's state according to the defined goals
12. Measures concept



A Pinka kisvízi vízgazdálkodási terve



AquaPinka - ATHU115

A Pinka fenntartható vízgazdálkodása

Interreg V-A Austria- Hungary Cooperation Programme

Measures concept

12.1 Determine the ecological water resource

- **Goal:** Harmonious satisfaction of ecological, social and economic needs
- Proposal for the ecological discharge of Pinka
- To lay down the principle of distribution of water resources between the two countries

Állomás	$Q_{1\%}$ [m ³ /s]	LNQ [m ³ /s]	LKQ [m ³ /s]	KÖQ; MQ [m ³ /s]	MJNQ [m ³ /s]	MJNQ _t [m ³ /s]	$Q_{95\%}$ [m ³ /s]	$Q_{aug,80\%}$ [m ³ /s]	LNV [cm]	LKV [cm]
Pinka - Woppendorf				2,25	0,305	0,71	0,65			
Pinka - Burg				2,77	0,37	0,887	0,789			
Pinka - Felsőcsatár	240	97,1 (1982. 08.08)	0,042 (1992. 09.06)	3,16		0,971	0,85	1,05	402 (2009. 06.24)	1 (1992. 09.06)
Pinka - Moschendorf				2,78	0,37	0,889	0,793			
Pinka - Kemestaródfa	295	34,5 (2013. 02.27)	-	2,69		0,66	0,58	0,83	499 (2009. 06.27)	-
Strém - Kemestaródfa	141	118 (2013. 02.27)	-	1,52		-	-	-	476 (2009. 06.25)	-

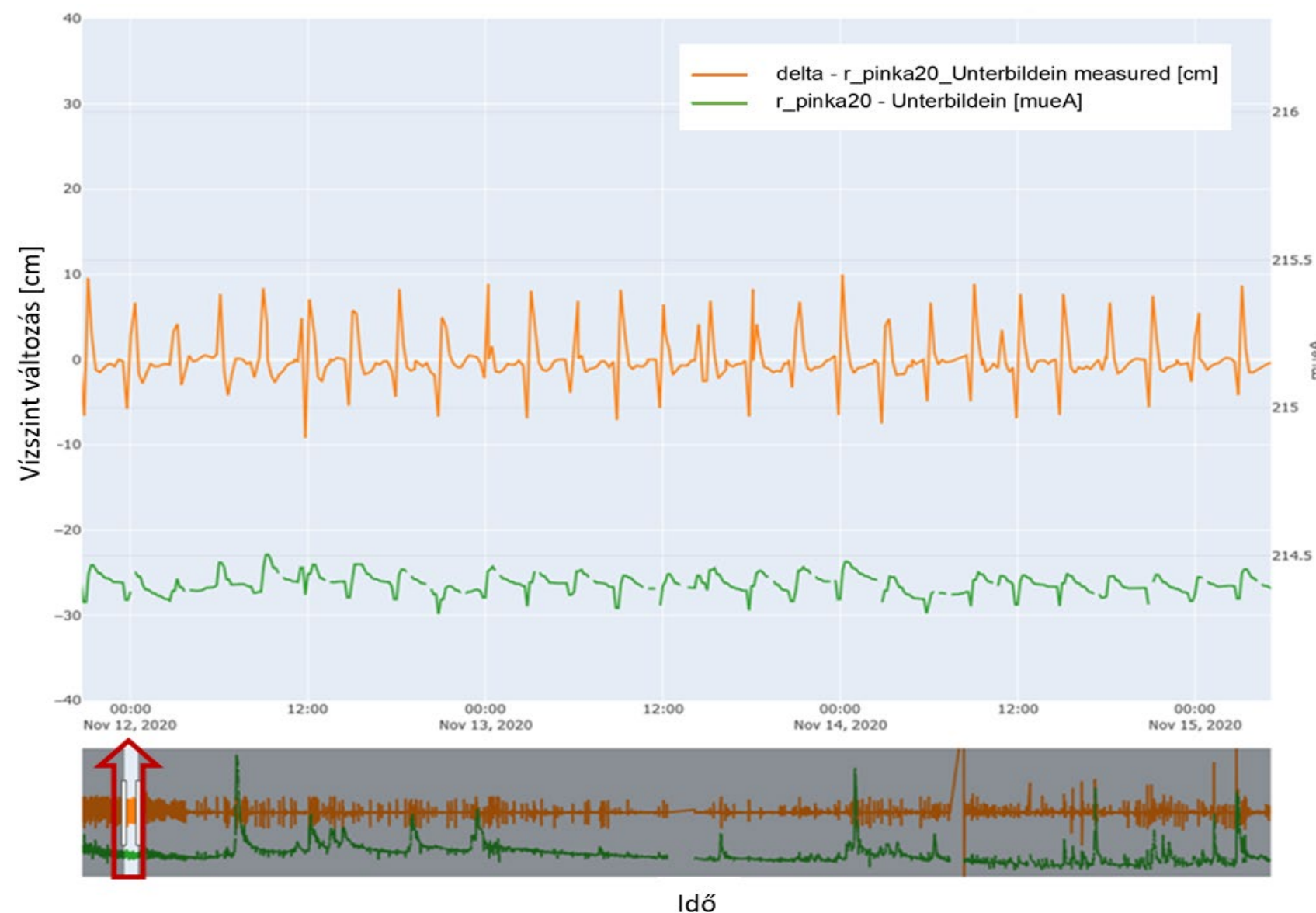


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12.2 Regulation of the operation of hydropower plants

- **Goal:** Elimination of the hydropeaking, the ban must be enforced
- Proposal to amend the operating permits of power plants
- Creating and operating hydrographical gauging stations, registering the data so that the proper operation of the power plants can be checked immediately during low water periods.

Measures concept

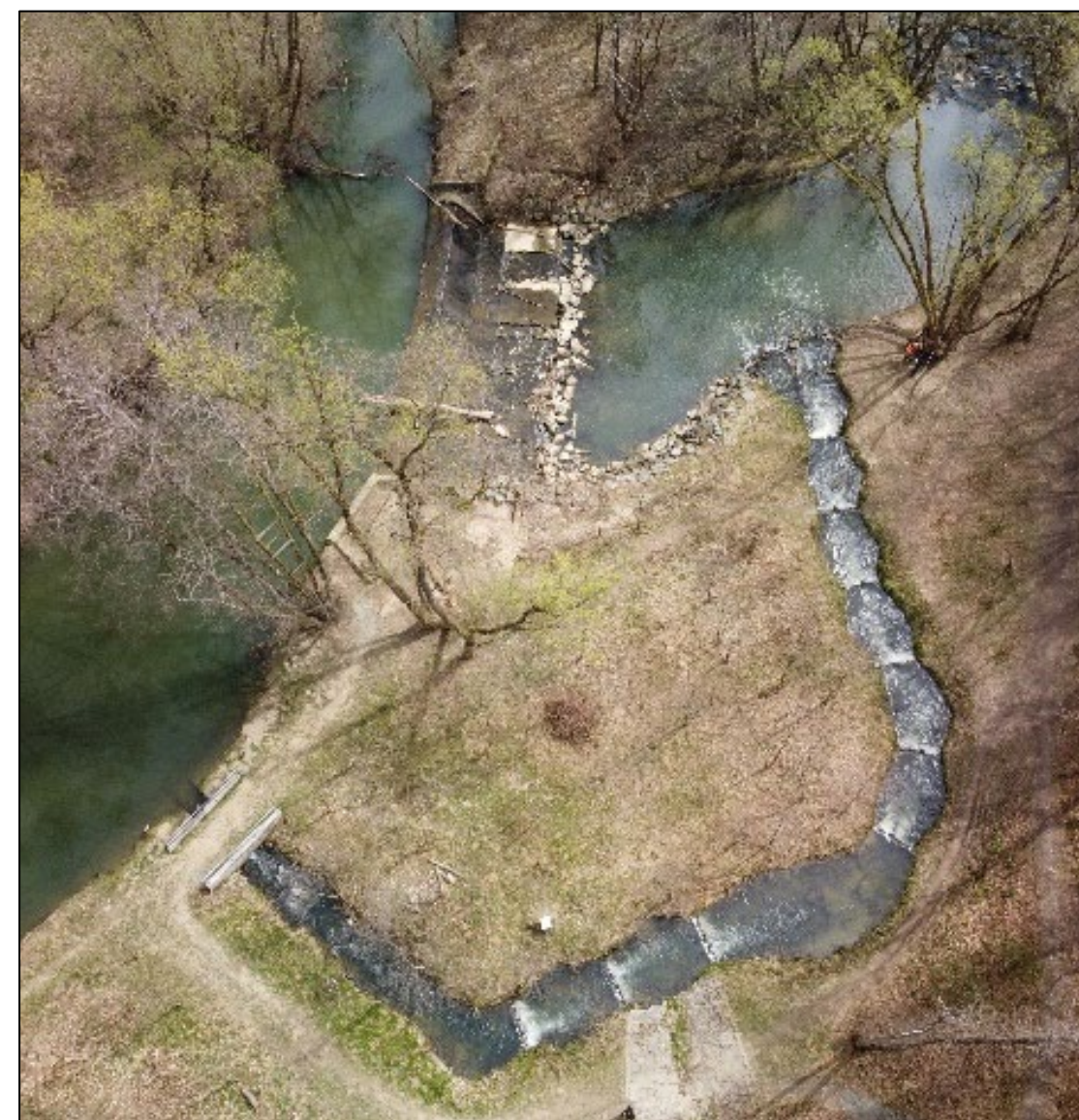


Water level and **10 minute water level change** between November 12, 2020 and November 15, 2020 at the Unterbildein hydrographical gauging station

Measures concept

12.3 Regulation of the operation of fish passages

- **Goal:** Preservation and improvement of the good ecological condition of Pinka
- Proposal to standardize the licensing practice of fish passages (operational discharge)
- Construction of the fish passage in Vaskeresztes
- Review of the functionality of the fish passages before the spawning migration in spring
- After the floods, maintenance of the fish passages must be ensured
- Fish passages must be reviewed every five years after they are put into operation
- Recording of the proposed measures in the operating permits
- Eliminating the deficiencies discovered on the fish passages



The fish passage in Felsőcsatár

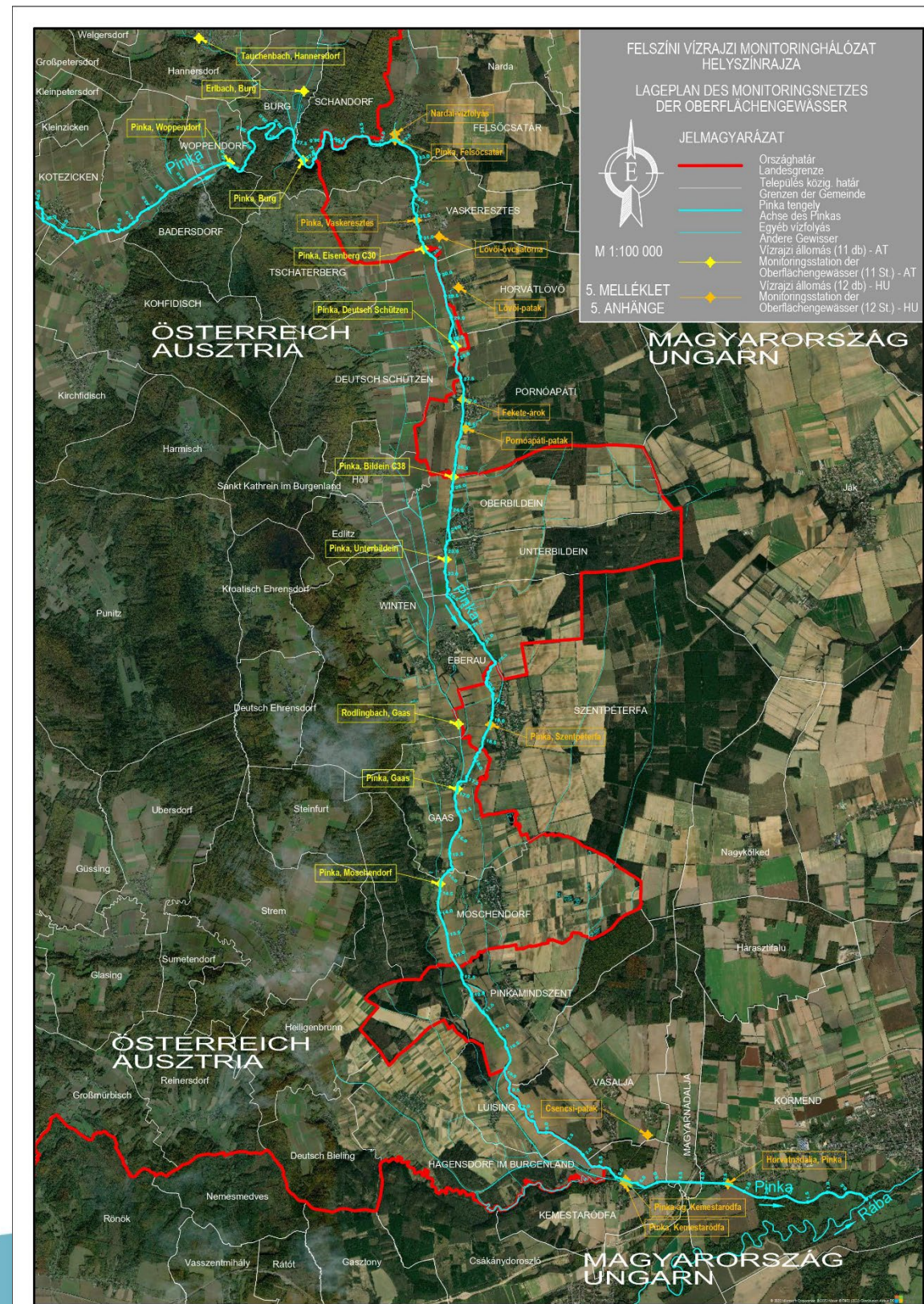


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Measures concept

12.4 Development of a uniform monitoring and examination system, data exchange

- **Goal:** Creation of a common hydrographical and water quality database for responsible management of water resources and continuous monitoring of the state of water bodies
- Maintaining the established monitoring system
- Exchange of monitoring system data on a common platform
- The display of low water periods on the websites so that water users carry out their activities in accordance with the measures specified in their revised permit





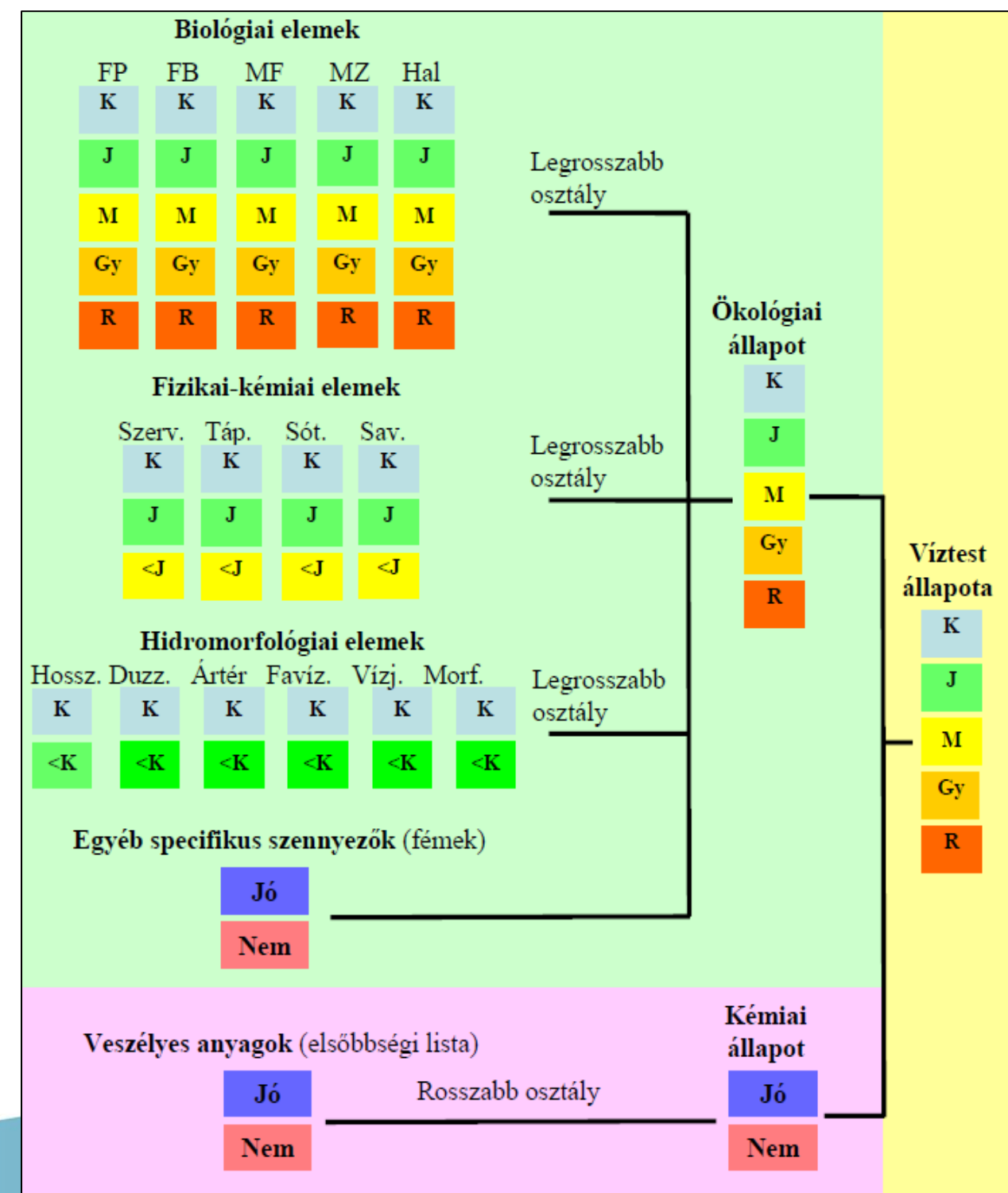
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Measures concept

12.5 Uniform periodic assessment of the ecological status of Pinka

- **Goal:** Joint evaluation of the ecological status of Pinka according to a uniform methodology
- Proposal for the annual assessment of the ecological status of Pinka
- Development of a common evaluation system for Pinka

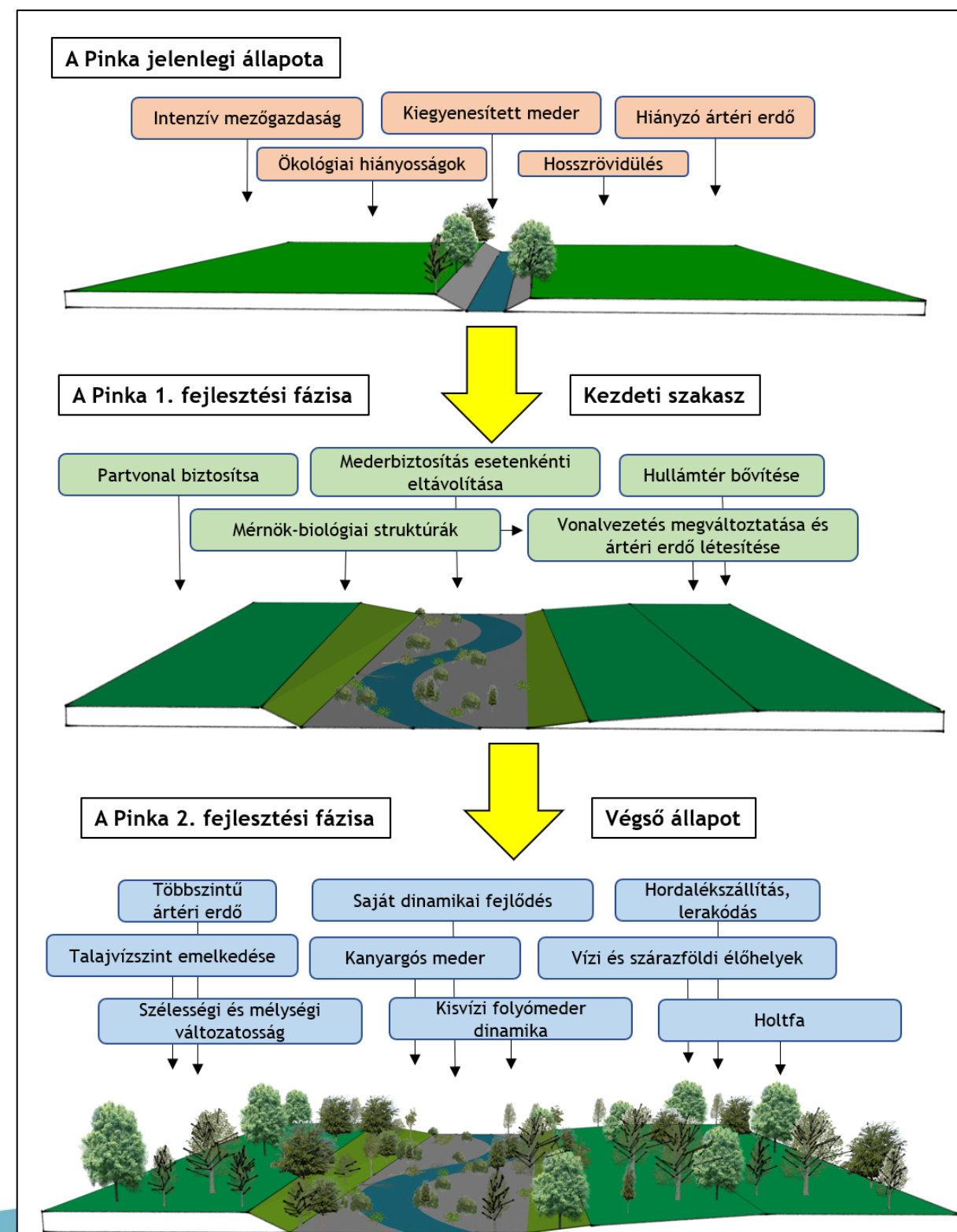
Mintavétel helye	pH	Cl ⁻ (mg/L)	Fajlagos elektromos vezetőképesség (μS/cm)	Oldott oxigén (mg/L)-helyszíni	Oxigén telítettség (%) -helyszíni	BOI5 (mg/L)	KOI _k (mg/L)	TOC (mg/L)	NH ₄ -N (mg/L)	Összes szerves nitrogén (mg/L)	Összes nitrogén (mg/L)	PO ₄ -P (mg/L)	Összes P (mg/L)	Savasság	Sótartalom	Oxigén háztartás, szerves anyag tartalom	Tápanyag tartalom	Minősítés
Burg	1	1	1	1	1	2	1	2	1	1	1	1	2	1	1	1	1	1
Felsőcsatár	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1
Pornóapáti erőmű alatt	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Pornóapáti szennyvíztelep alatt	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Bilden	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
Szentpéterfa	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Gaas	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1
Pinkamindszent	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
Kemestaródfa	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1
Horvátnádajka	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1



Measures concept

12.6 Status improving morphological interventions

- **Goal:** Improving the hydromorphological condition of the water course
- Revitalization of oxbows, improvement of water retention
- Creation of ecological shelters
- Elimination of critical shallow water depths
- Reconnecting former floodplains
- Increasing variety (depth, width and speed)
- Restoration of the heterogeneous and near-natural riverbed
- Tearing down the coastal defenses in places
- Installation of flood protection belts (ecological belts).
- Restoration of ecosystems characteristic of the area
- Creation of aquatic habitats in surrounding areas





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Thank you for your attention!

A PINKA CSODÁLATOS VÍZI VILÁGA

DIE WUNDERBARE WASSERWELT DER PINKA

- Vízirigó**
Kedvelt élőhelye a tiszta, gyorsfolyású és oxigéndús vízfolyások. Állandó madár.
Wasseramsel
Bevorzugter Lebensraum sind klare, strömungs- und sauerstoffreiche Fließgewässer. Standvogel.
- Jégmadár**
Hazánk egyik legszínesebb madara, mely folyó- vagy állóvizek mentén található meredek partfalakba vájt üregekben költ.
Eisvogel
Einer der farbenfrohesten, heimischen Vögel der in Nisthöhlen an Steilufern von fließenden oder stehenden Gewässern brütet.
- Sávos szitakötő**
A sávos szitakötő a napsütötte, víz- és vízparti növényekben gazdag vizeket kedveli.
Gebänderte Prachtlibelle
Die Gebänderte Prachtlibelle bevorzugt Gewässer mit höherem Besonnungsgrad und ausreichender Verkräutung mit Wasser- und Uferpflanzen.
- Tegzes lárvá**
Apró ásványi anyagokból vagy szerves törmelékből lakócsöveket (tegez) készítenek. Egyes tegzes fajok a táplálékszerzéshez fogóhálót szőnek.
Köcherfliegenlarve
Aus kleinen Mineralien oder organischen Abfällen stellen sie Wohnröhren (Köcher) her. Manche Köcherfliegenarten weben zur Nahrungsbeschaffung Fangnetze.
- Sebes pisztráng**
Kavicsos vagy görgeteges medrű, oxigéndús, hideg, tiszta vizű folyók lakója.
Forelle
Ein Bewohner von Flüssen mit kaltem, klarem, sauerstoffreichem Wasser und einem Flussbett mit Kies oder Gerölle.
- Álkerész**
Az álkerészek lárvái vízben fejlődnek. A kifejlett rovarok vízfolyások közelében élnek, többnyire a partközeli ágakon vagy köveken tartózkodnak.
Steinfliege
Die Larven der Steinfliegen leben im Wasser. Die ausgewachsenen Insekten leben in der Nähe der Fließgewässer, halten sich meist in Ufernähe an Zweigen oder Steinen auf.

A MI VÍZÜGYÜNK

