Zahajovací konference Programu Udržitelný turismus a posílení biodiverzity

Kaiserštejnský palác
21. listopad 2024

Program
ŠVÝCARSKO – ČESKÉ
spolupráce

Ministerstvo životního prostředí

Recovery of River Connectivity in the Czech Republic

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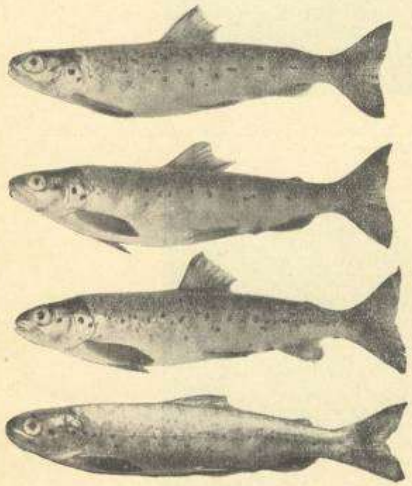
Zahajovací konference Programu Udržitelný turismus a posílení biodiverzity – 21. listopad 2024

Program ŠVÝCARSKO–ČESKÉ spolupráce

CHAPTER I.
ONCE UPON A TIME IN CZECH REPUBLIC (INTRO TO BIG TROUBLE)

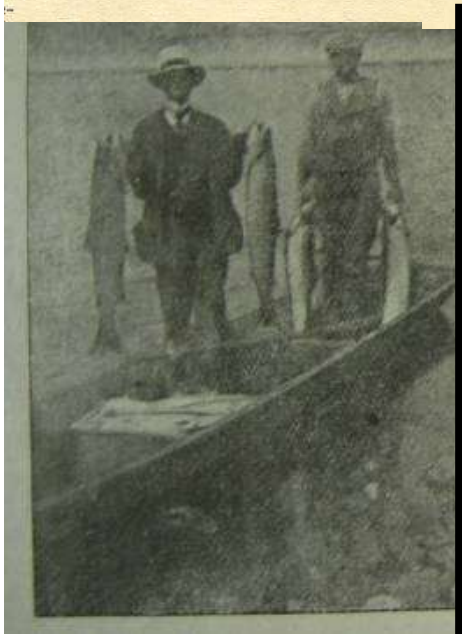
Úlovek lososa v Písku v roce 1929. Ulovil p. L. Pravda.

hových.



Obr. 1. Lososi — strdlice z Vltavy — vesměs pohlavně dospělí. Délka 20—22 cm, váha 18—21 dkg. Prvé tři nalité jikernačky s dokonale vyvinutými jikrami. Čtvrtý dospělý mlíčák. Mají napříč těla tmavé pruhy, jež jsou charakteristické pouze pro mladé Salmonidy. (Foto Dr. Schäferna.)

Úlovek lososa v Sušici na Pátečku v r. 1926. Ulovil p. Bauer z Nuzerova.



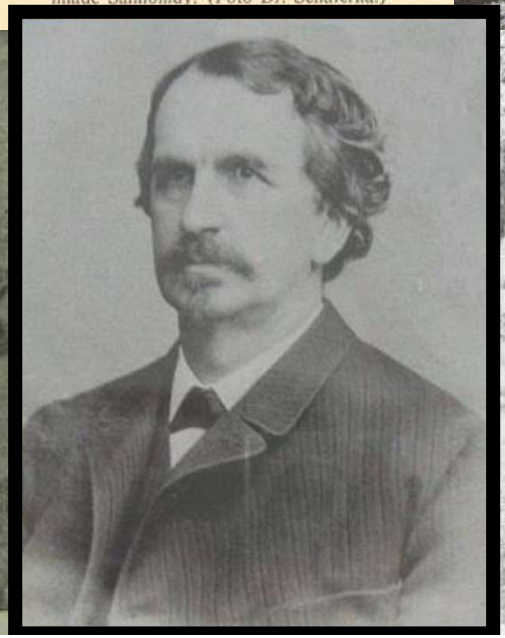
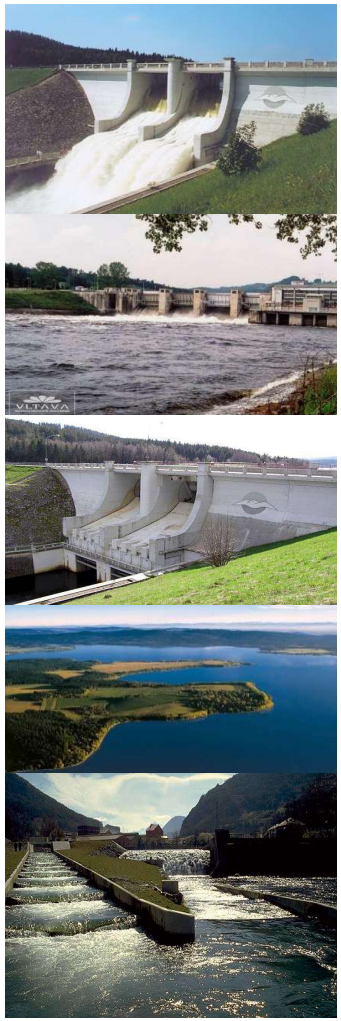



foto: Jana Chytrá

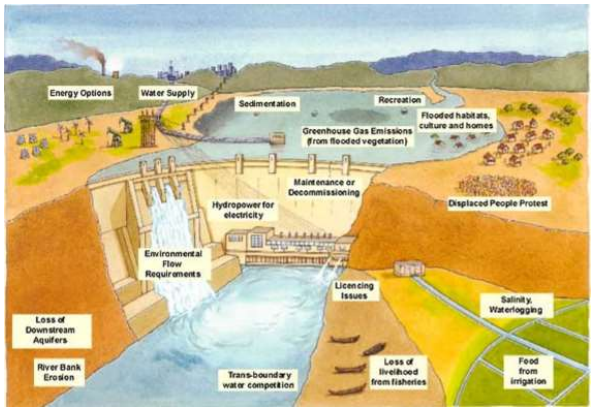
CHAPTER II.
ENVIRONMENTAL IMPACTS

ENVIRONMENTAL IMPACTS – HABITAT CHANGES



Functional exchange pathways of matter, energy and organisms (Ward and Standford, 1995)

vs



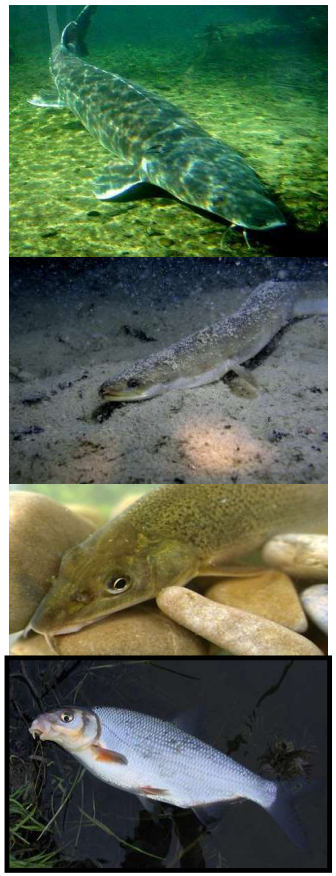
- **productivity**
- **dynamics**
- **aquatic communities**

Ecosystem processes
Ecosystem structure

Biodiversity loss
(e.g. Cowx et al., 2002)

In Europe, > 74% of river systems are strongly affected (Nilsson et al., 2005)

ENVIRONMENTAL IMPACTS ON FISH MIGRATION



- **species distribution (diadromous fishes)**
- **availability of vital habitats**
- **timing of migration (reproduction success)**
- **izolation in space (genetic variability)**
- **conpensatory migration (climate change...)**
- **fish injuries and/or mortality**

⇩

Viability and stability of population

Ecological Indicators 23 (2012) 634–640

Contents lists available at SciVerse ScienceDirect

Ecological Indicators

journal homepage: www.elsevier.com/locate/ecolind

The response of the young of the year fish to river obstacles: Functional and numerical linkages between dams, weirs, fish habitat guilds and biotic integrity across large spatial scale

Jiří Musil *, Pavel Horký, Ondřej Slavík, Aleš Zbořil, Petra Horká

T.G. Masaryk Water Research Institute, Department of Aquatic Ecology, Podbabská 30, 160 00 Prague 6, Czech Republic

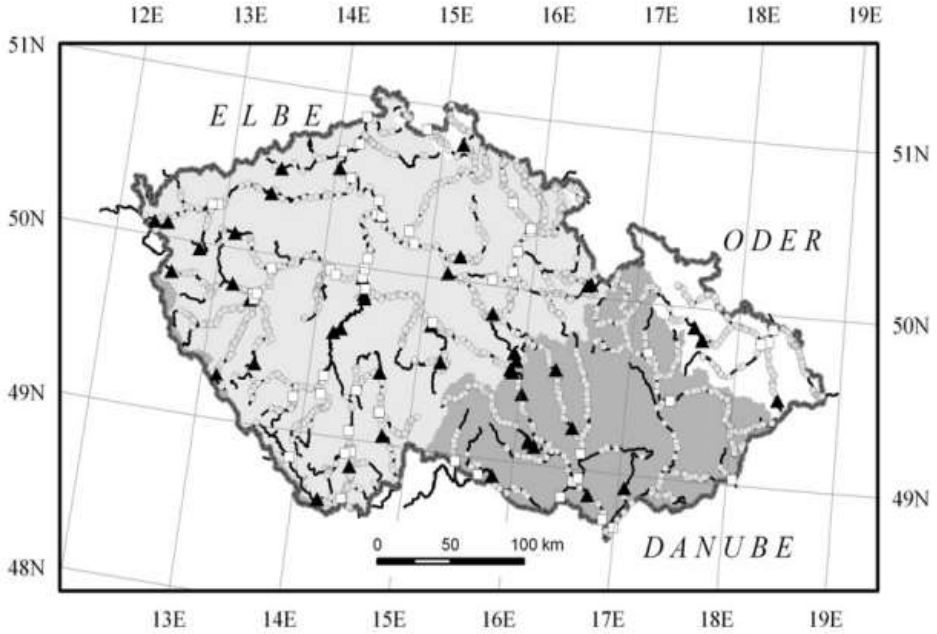
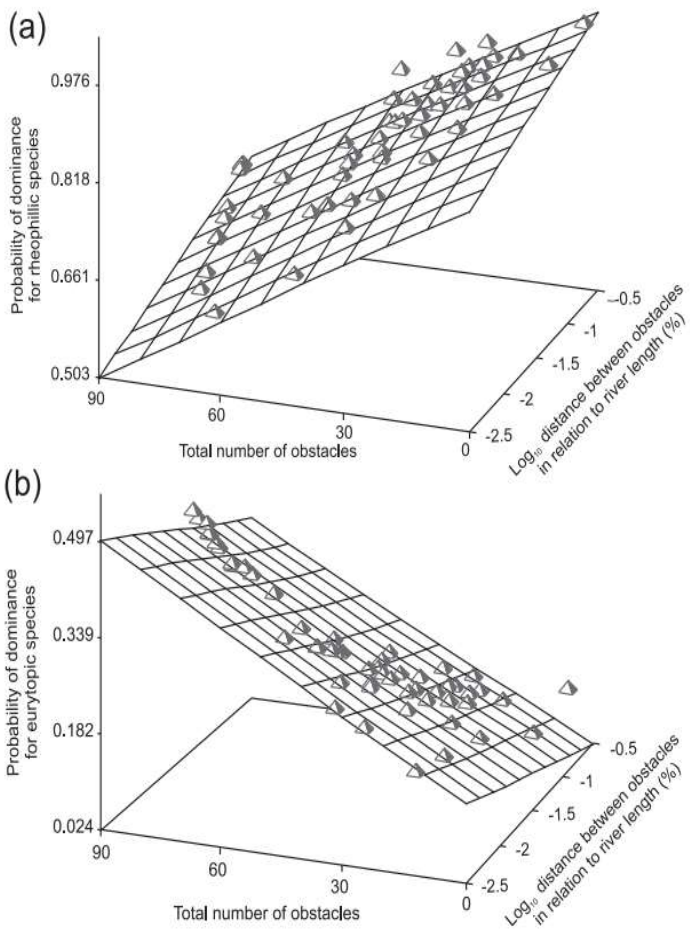
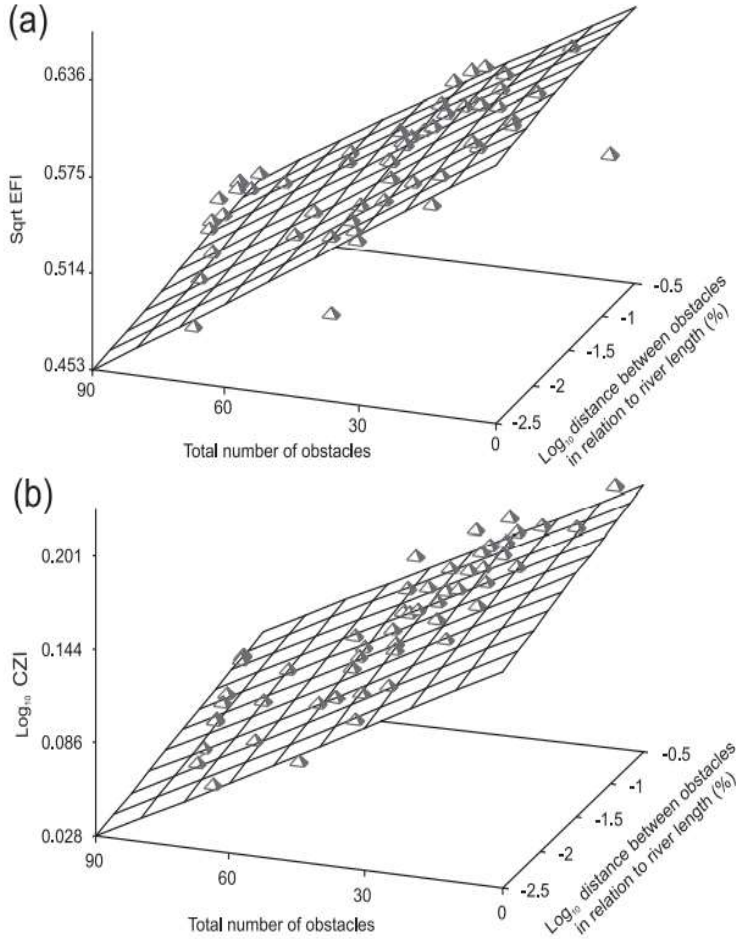


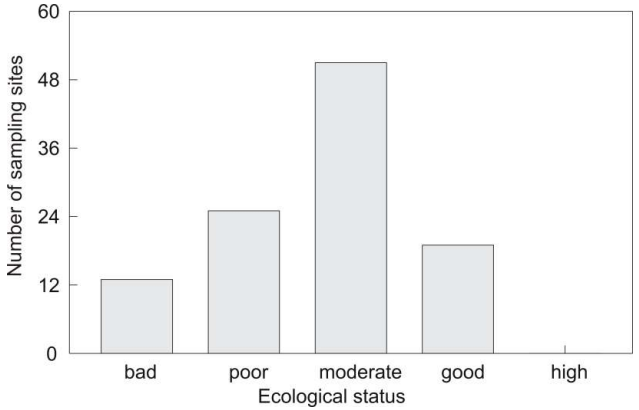
Fig. 1. Map of the Czech Republic showing three hydrological networks with the locations of dams (▲), weirs (○), and sampling sites (□) analysed in this study.

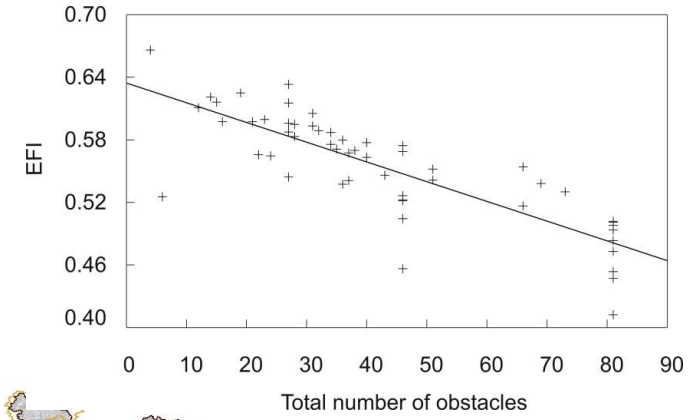
- Animalia
  - Chordata
    - Vertebrata
      - Petromyzoniformes
        - Petromyzonidae
          - *Lampetra fluviatilis*
          - *Petromyzon marinus*
      - Actinopterygii
        - Acipenseriformes
          - Acipenseridae
            - *Acipenser stellatus*
            - *Acipenser ruthenus*
            - *Acipenser sturio*
            - *Huso huso*
        - Anguilliformes
          - Anguillidae
            - ***Anguilla anguilla***
        - Clupeiformes
          - Clupeidae
            - *Alosa alosa*
        - Salmoniformes
          - Salmonidae
            - *Coregonus oxyrinchus*
            - ***Salmo salar***
            - *Salmo trutta m. trutta*
        - Pleuronectiformes
          - Pleuronectidae
            - *Platichthys flesus*

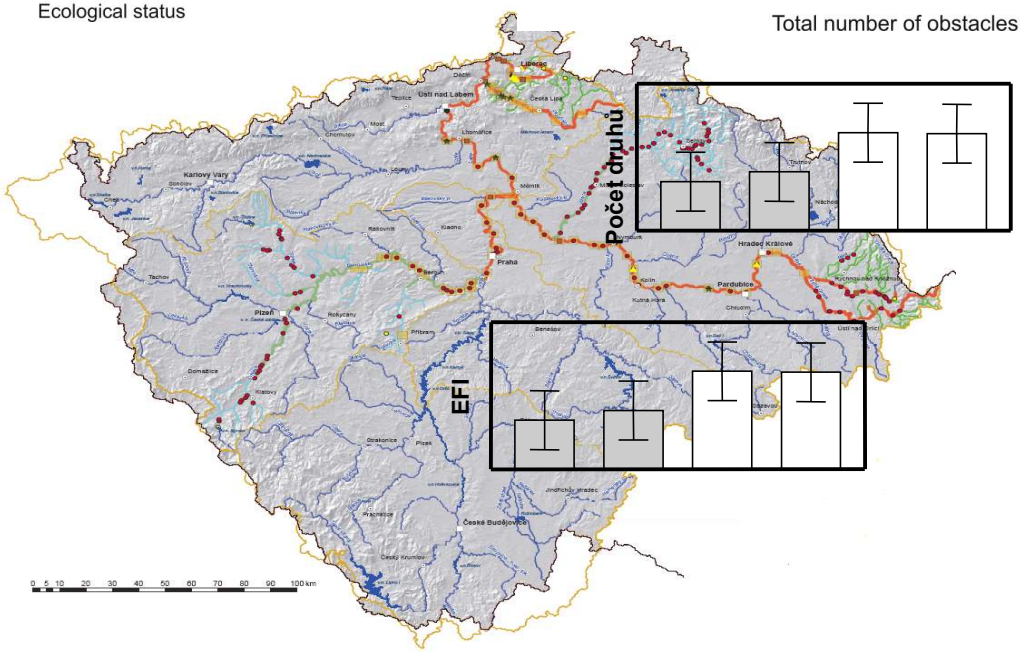

(a)
Probability of dominance for rheophilic species
0.976
0.818
0.661
0.503
90
60
30
0
Total number of obstacles
-0.5
-1
-1.5
-2
-2.5
Log10 distance between obstacles in relation to river length (%)
(b)
Probability of dominance for eurytopic species
0.497
0.339
0.182
0.024
90
60
30
0
Total number of obstacles
-0.5
-1
-1.5
-2
-2.5
Log10 distance between obstacles in relation to river length (%)


(a)
Sqrt EFI
0.636
0.575
0.514
0.453
90
60
30
0
Total number of obstacles
-0.5
-1
-1.5
-2
-2.5
Log10 distance between obstacles in relation to river length (%)
(b)
Log10 CZI
0.201
0.144
0.086
0.028
90
60
30
0
Total number of obstacles
-0.5
-1
-1.5
-2
-2.5
Log10 distance between obstacles in relation to river length (%)

ECOLOGICAL STATUS (CZECH REP.)

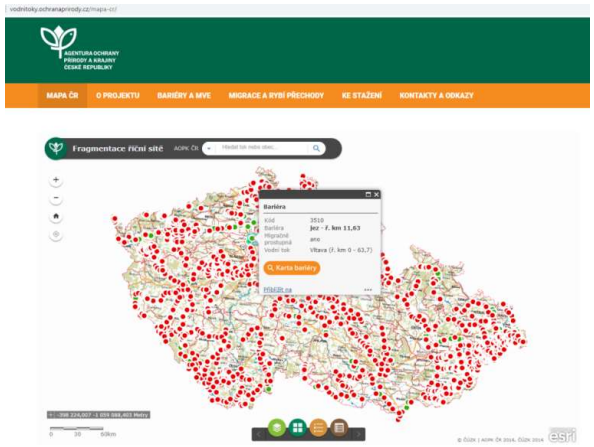


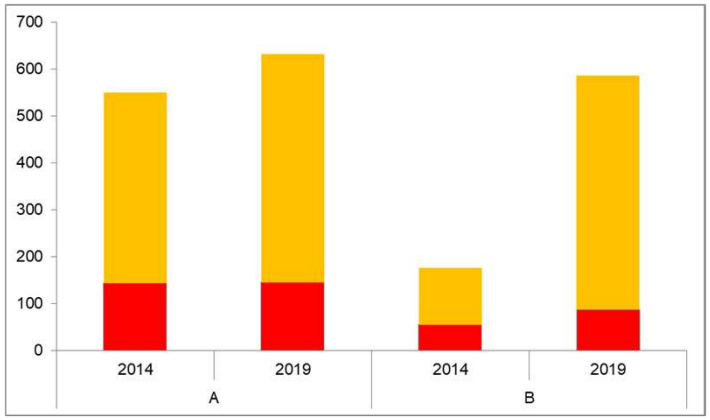


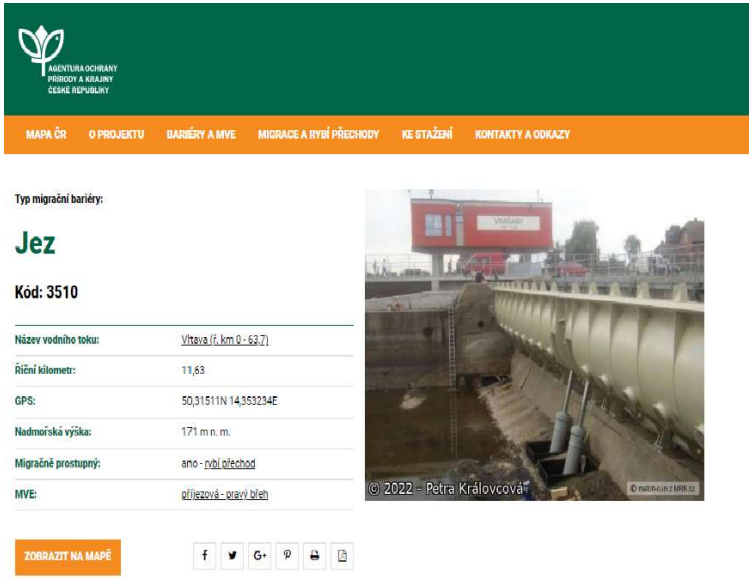


Chapter III.
mapping, monitoring, Strategical planning and actions forward (where we are)

Mapping of migration barriers
(in Czech only)







Methodological/technical guidelines and standards

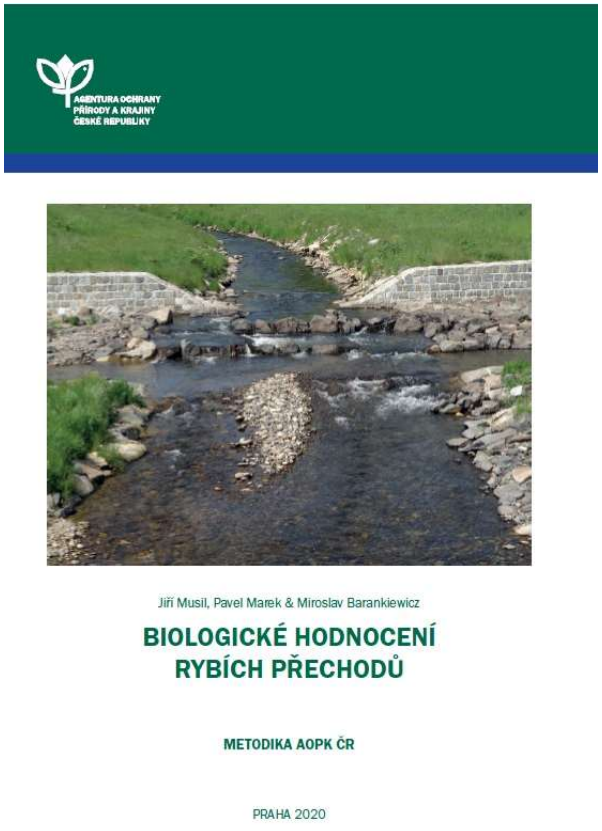
Environmentální rizika provozu malých vodních elektráren ve vazbě na poproudovou migraci ryb a nápravná řešení

Jiří Musil, Tereza Barteková, Miroslav Barankiewicz

Technologická agentura České republiky

Ministerstvo životního prostředí České republiky

VÝZKUMNÝ ÚSTAV VODOHOSPODÁŘSKÝ T. G. MASARYKA



Jiří Musil, Pavel Marek & Miroslav Barankiewicz

BIOLOGICKÉ HODNOCENÍ RYBÍCH PŘECHODŮ

METODIKA AOPK ČR

PRAHA 2020

Ministry of Environment„strategy“ to ensure fish passage in river network of the Czech republic

(since 2009, reviewed in 2014 and 2020)

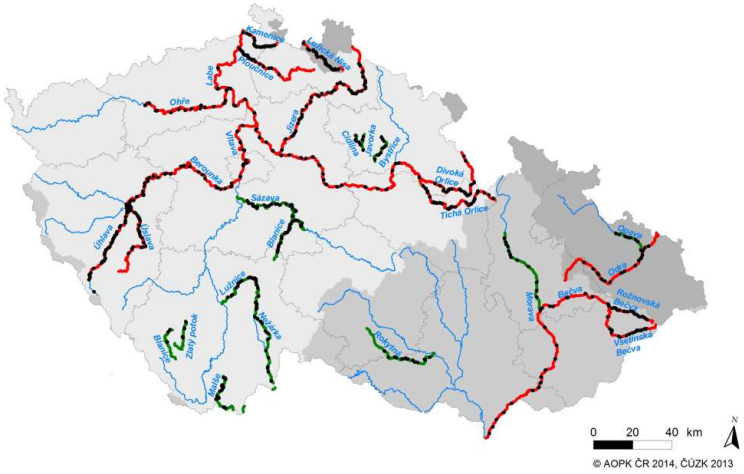
Koncepce zprůchodnění říční sítě ČR

Ministerstvo životního prostředí

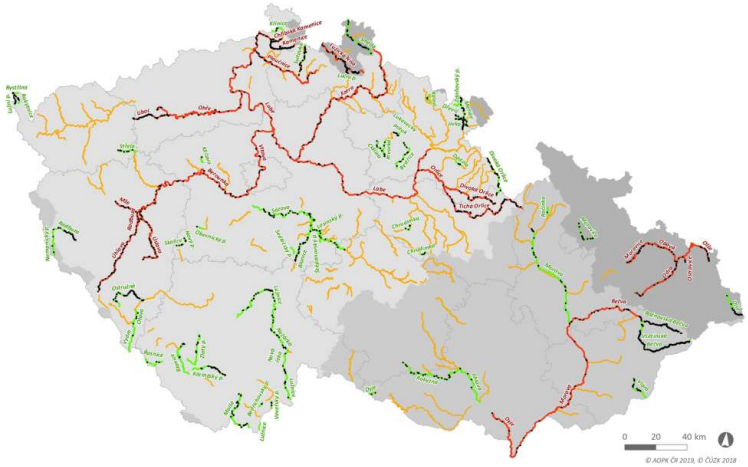
Ministry of the Environment
of the Czech Republic

VÚV
TGM
100

2014

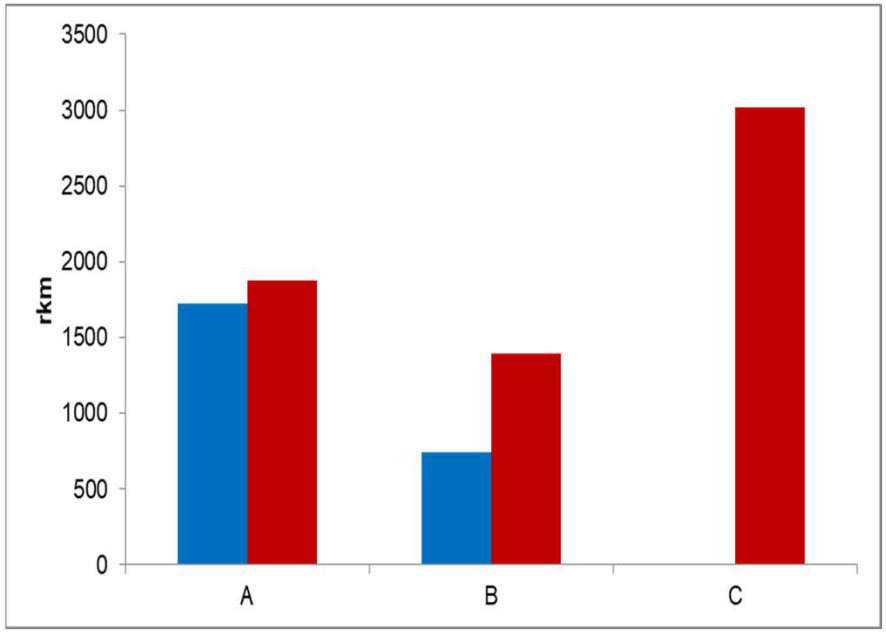


2020



A – transboundary biocorridors
B – national priority
since 2020
C – regional priority

STATE ENVIRONMENTAL
FUND OF THE
CZECH REPUBLIC



CHAPTER IV.
WHICH WAY TO GO

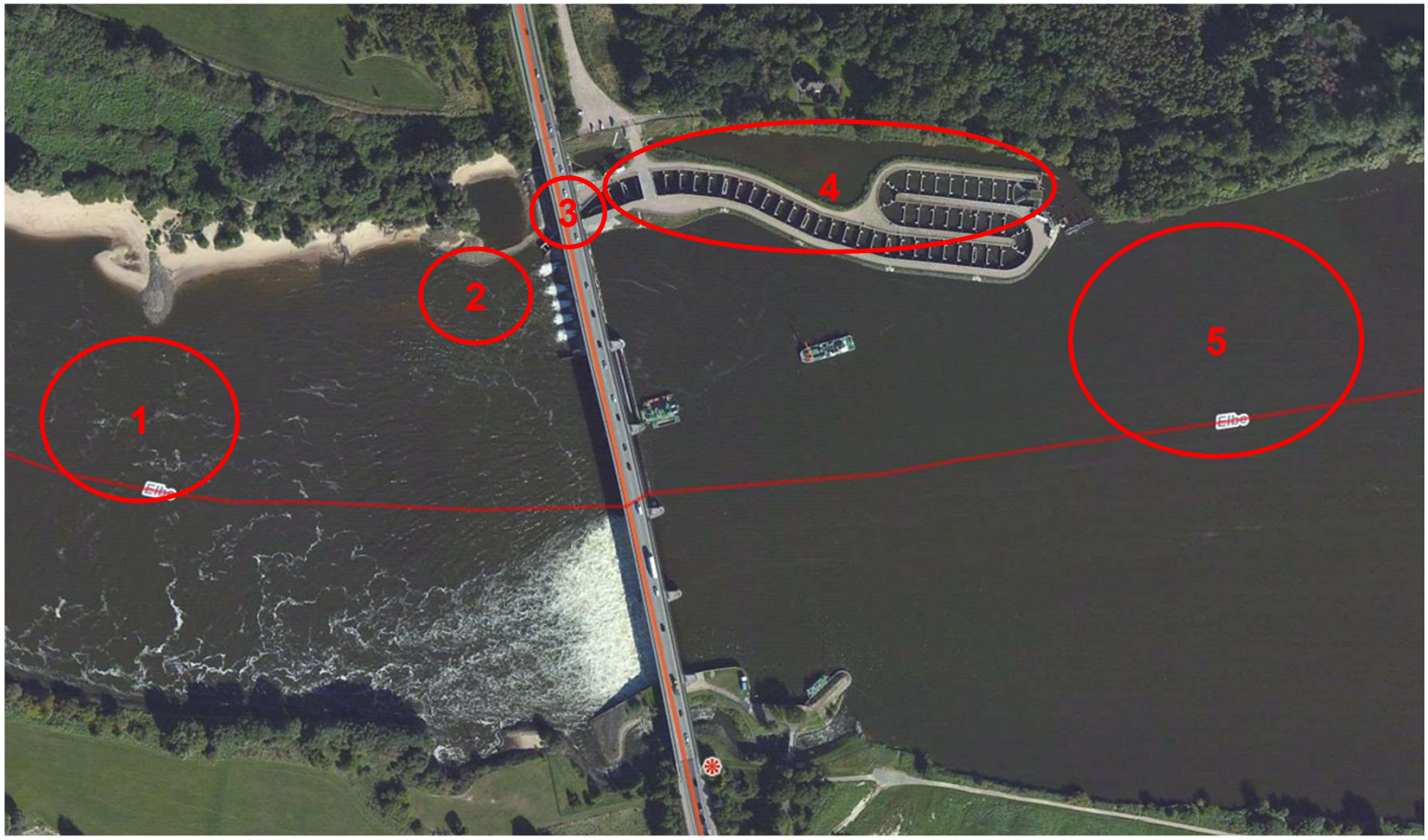
Hydropower is essential for the future energy system

Energy Transition	Climate Change	Environmental Protection	Flood Protection
Hydropower is suitable for **providing the base load; it is flexible, reliable and can be planned**, meaning it complements the fluctuating feed-in from wind and solar power perfectly.	By generating emission-free electricity, it **slows down climate change** and leads to huge investments in ecological improvements. As traction power for trains, it facilitates **emission-free e-mobility**.	It ensures **clean rivers** and streams by removing consumer waste and garbage from the water flow.	It makes an important contribution to **flood protection** and actively helps to deal with **low-water phases.**

FIThydro

22.9.2007 EN Official Journal of the European Union

COUNCIL REGULATION (EC) No 1100/2007
of 18 September 2007
establishing measures for the recovery of the stock of European eel



1 – motivation, **2 – navigation**, **3 - entrance**, 4 – migration trough, **5 – ecological impacts (reproduction, predation, mortality…)**

(Castro-Santos a kol., 2009)

CentrumVoda

Task 7. Recovery of aquatic ecosystems

7.2. River fragmentation and fish migrations

Goals: evidence, biological monitoring (longitudinal and lateral dimensions) and strategical planning update
and
experimental channel and pilot application of acustic telemetry in large rivers

(standardization, river basin approach and advanced monitoring technologies)

T A Č R Tento projekt je spolufinancován se státní podporou Technologické agentury ČR a Ministerstva životního prostředí v rámci **Programu Prostředí pro život**.
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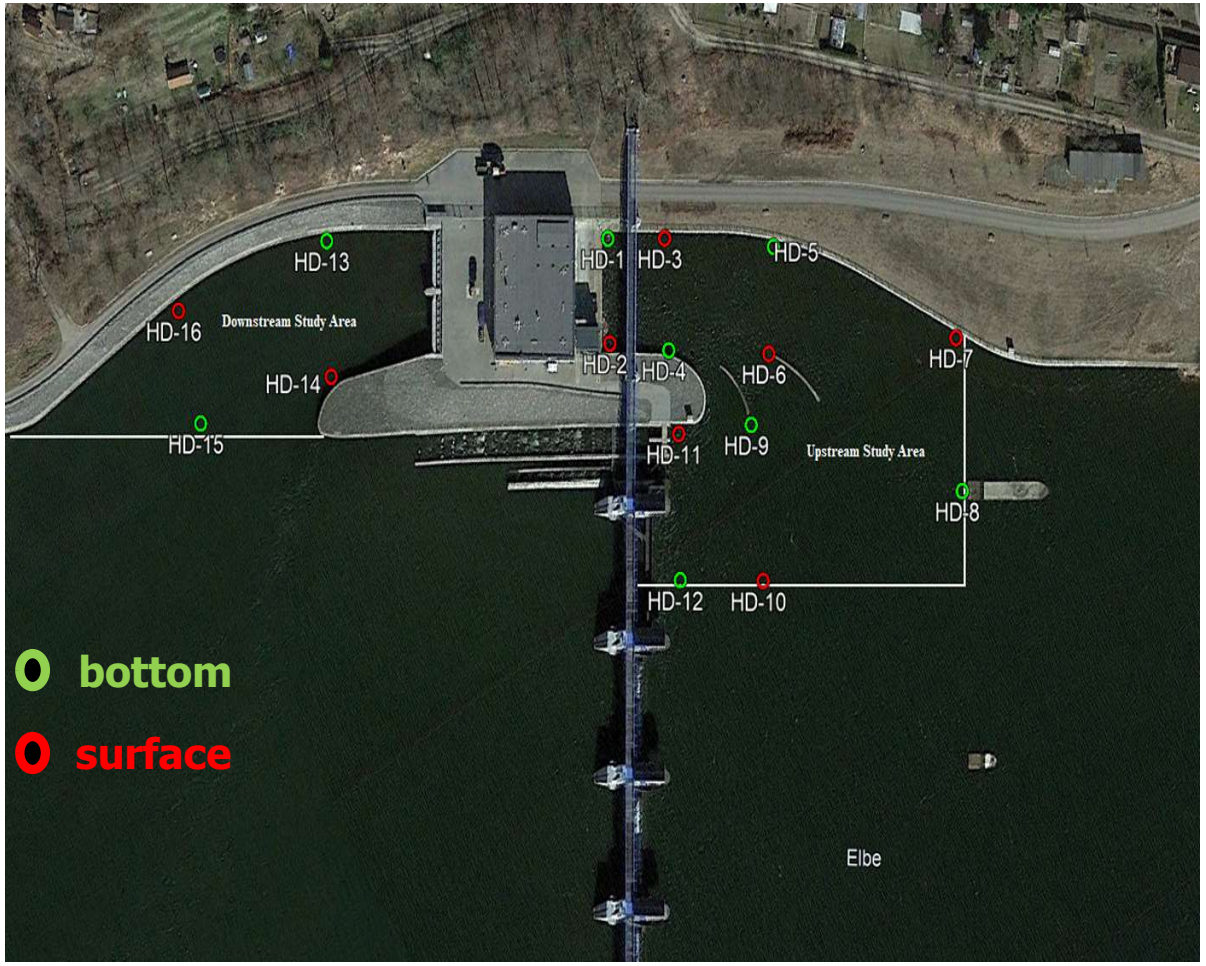
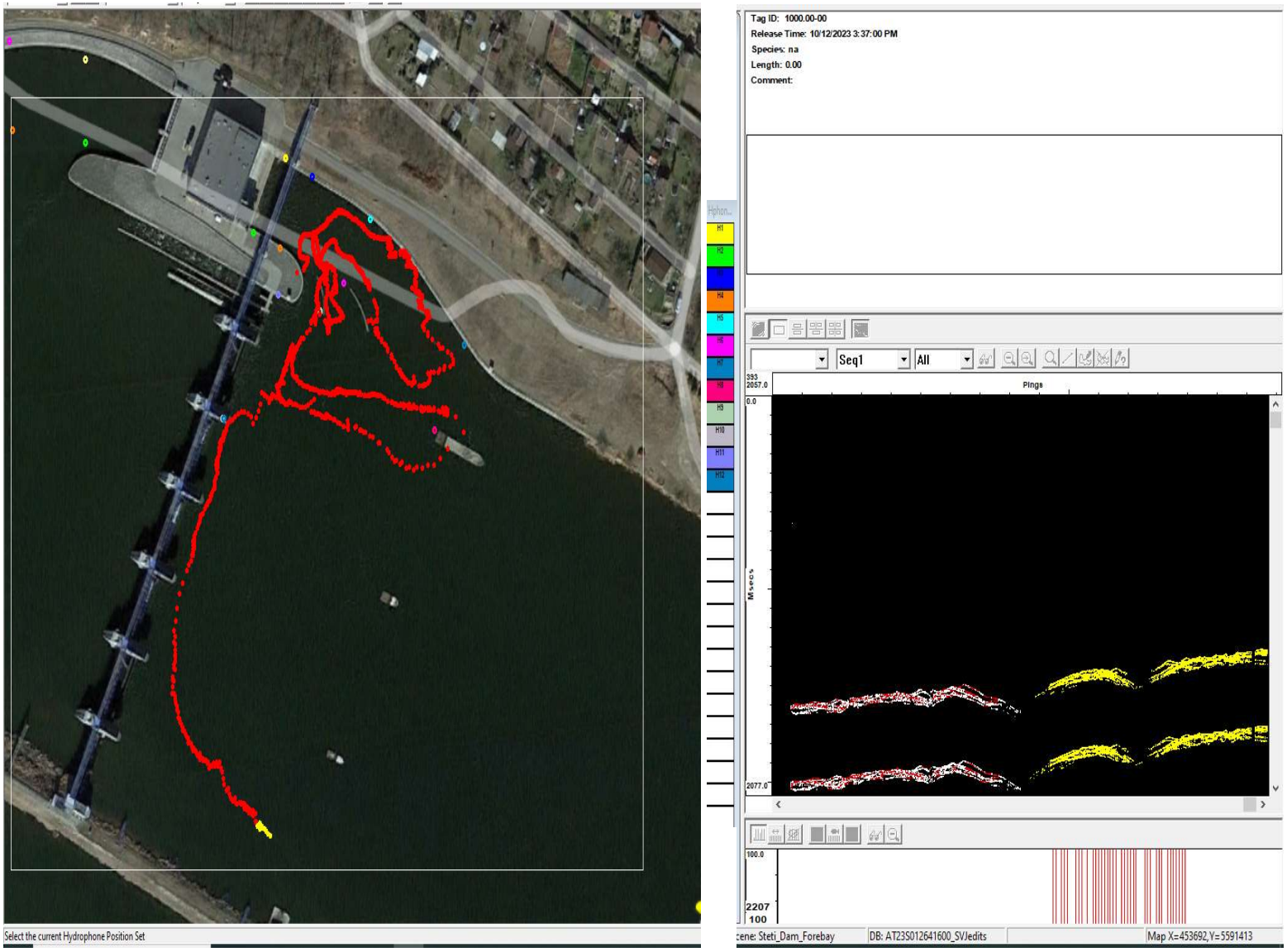
VÚV TGM 100

ČHMÚ

HYDROACOUSTIC TECHNOLOGY, INC.

INNOVASEA

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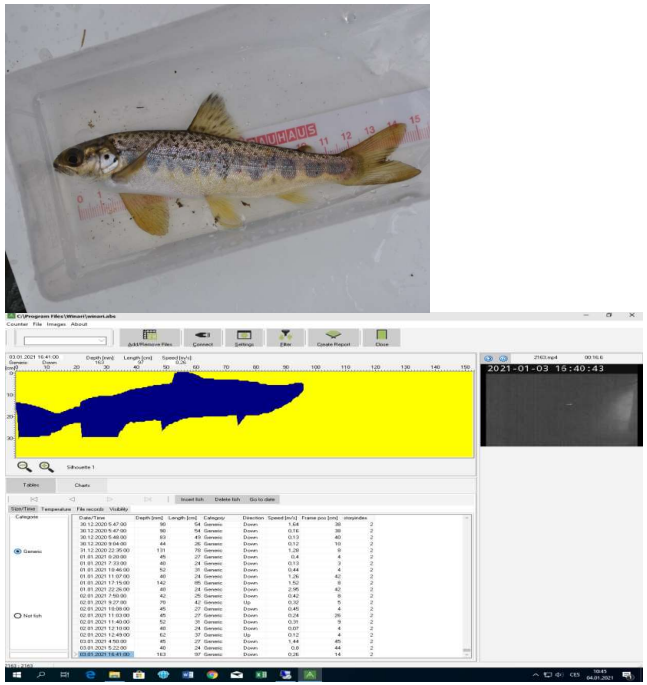

2021-01-03 16:40:43

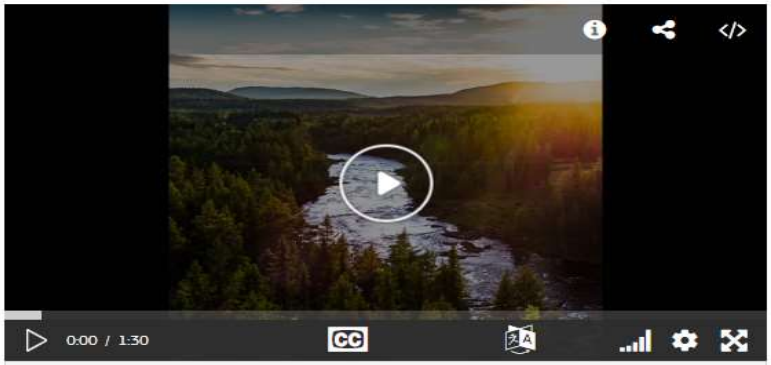
Nature restoration law

The Commission has proposed a new law to restore ecosystems for people, the climate and the planet.

The European Commission's proposal for a Nature Restoration Law is the first continent-wide, comprehensive law of its kind. It is a key element of the EU Biodiversity Strategy, which calls for binding targets to restore degraded ecosystems, in particular those with the most potential to capture and store carbon and to prevent and reduce the impact of natural disasters.

Europe's nature is in alarming decline, with more than 80% of habitats in poor condition. Restoring wetlands, rivers, forests, grasslands, marine ecosystems, and the species they host will help

- increase biodiversity
- secure the things nature does for free, like cleaning our water and air, pollinating crops, and protecting us from floods
- limit global warming to 1.5°C
- build up Europe's resilience and strategic autonomy, preventing natural disasters and reducing risks to food security



Nature Restoration Law

Many thanks for your attention and support

T A
Č R

Tento projekt je spolufinancován se státní podporou Technologické agentury ČR a Ministerstva životního prostředí v rámci **Programu Prostředí pro život**.

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