Implementation of the EU WFD and consequences for freshwater biodiversity research- regional experience

2nd Joint Danube Survey (JDS2)

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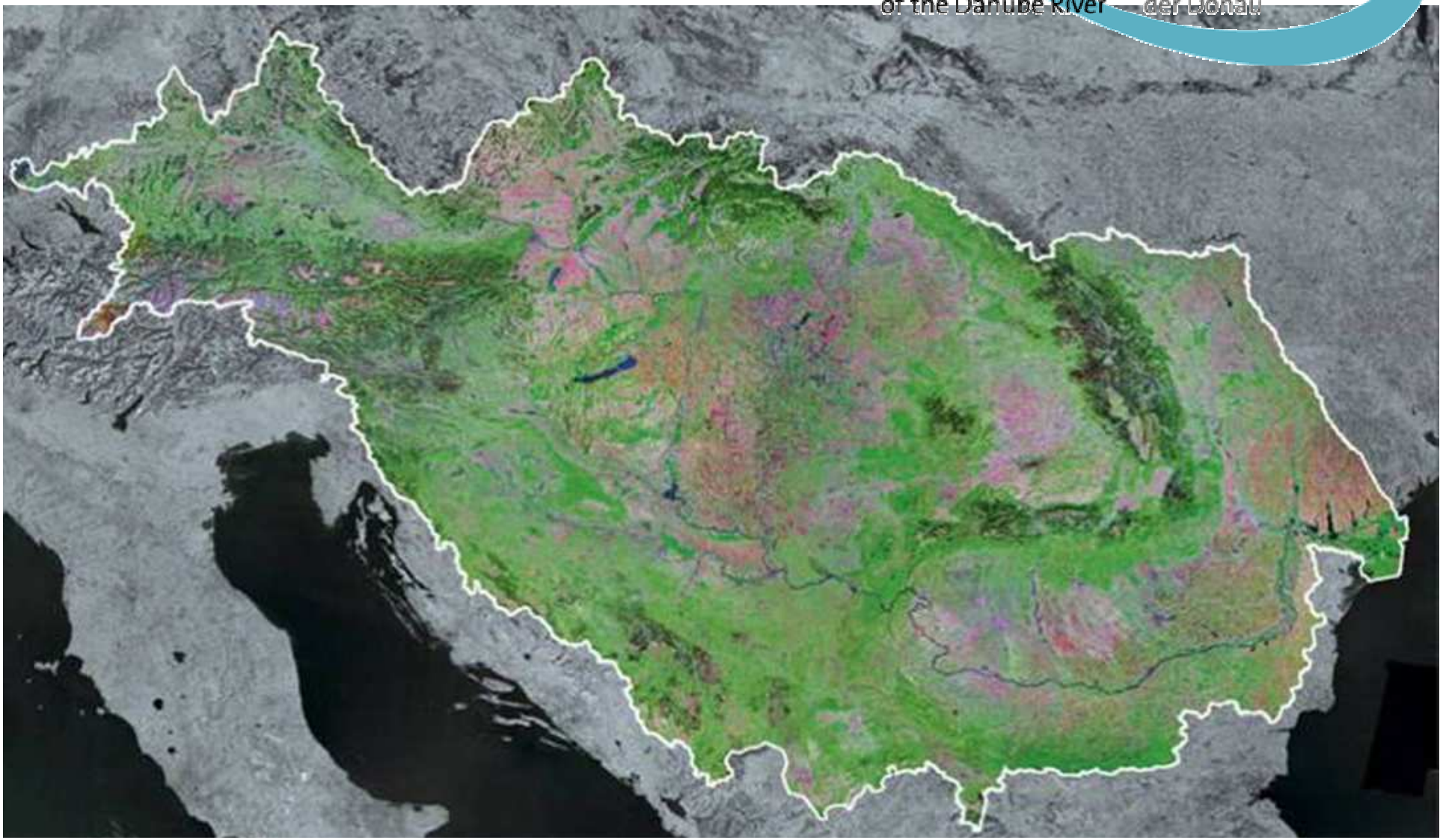
Danube Basin

icpdr iksd

International Commission for the Protection of the Danube River

Internationale Kommission zum Schutz der Donau



Previous experiences on the Danube

- National sampling programs before EU WFD - TNMN
- UN Balkan Task Force after the war in YU (1999)

January-february 2000 – Cyanide & heavy metal spill on the Tisza River

22 December 2000: EU Water Framework Directive

- Bioindicator Study (HU-YU section) in 2000
- JDS1 in 2001
- AQUATERRA in 2004
- Sediment sampling in Iron Gate I. in 2006
- JDS2 in 2007
- WFD compliant TNMN

2nd Joint Danube Survey - JDS 2

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Objectives of JDS 2

International longitudinal ship survey
Water quality for the whole Danube River & the major tributaries

Specific objectives and technical goals

To produce a homogenous data set
To screen WFD priority pollutants & relevant hazardous substances
Microbiological analysis + River morphological study+ Fish
To provide a forum for riparian/river basin - participation for sampling and inter-comparison exercises
To facilitate specific training
To promote public awareness

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New objectives of JDS 2

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Compare the results with the JDS 1
Biological validation of the Danube typology
Ecological assessment of the Danube River in line with the WFD
Assessment and confirmation of the pressures and impacts as stated in the Roof report 2004
Contribution to the Danube Intercalibration Exercise
General overview of the habitat morphology of the Danube river
Analysis of radioisotopes, pharmaceuticals

2nd Joint Danube Survey - JDS 2

General time plan – 4 phases

Preparation of the survey

Planning/preparation (MA WG, technical coordinator)

Conducting the survey

Cruise on Danube: 14 August -28 September 2007

Carrying out the laboratory analyses and assessment of the results

Several laboratories from the Danube Basin

Reporting

2nd Joint Danube Survey - JDS 2

Target area and sampling points

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Setup similar to JDS1

- 96 sampling sites - Danube River between
- u/s Iller (2600 rkm) and the Danube Delta
- 26 sampling sites on 8 tributaries: Morava, Drava, Tisza, Sava, Velika Morava, Arges, Olt, Prut.
- 12 + 6 Core Team Members

  (General CT & Fish CT)
- 3 vessels: Széchenyi (HU), Argus (Serbia), Vienna 115 (SK)

2nd Joint Danube Survey - JDS 2

Matrices & physical, chemical and biological components

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Water, Sediment, Suspended solids, Mussels/fish

Physico/chemical components (more than 250 chemical compounds) : temperature, SS, pH, DO, alkalinity, main nutrients, dissolved silicates

Persistent organic and inorganic micropollutants

Biological samples: phyto- and zooplankton, phytobenthos, macrophytes, macroinvertebrates, fish

Large scale river morphological characters

Methodological problems of EU WFD implementation

- Water body delineation
- Typology – Section types of the Danube?
  Type specific characterization is necessary
- Referential conditions: „best available status”?
  lowland & land use
  population growth
  industrial revolution
  river regulation

REFCOND Guidance Document

Methodological problems of EU WFD implementation

- Problem of multiple stressors

  Nutrients, organic, dangerous substances,

  river alteration/river morphology
- Risk assessment – using different (non-WFD-compliant) biological data

  Five different biological elements
- Biological validation of water types

  Five different biological elements

Methodological problems of EU WFD implementation

- Intercalibration exercise

  IC EG + ECOSTAT WG → Boundary setting protocol

  Problem in case of EC GIG: large/lowland rivers

- Ecological quality/potential status

  too many types, type specificity is difficult

Methodological problems – Summary

Typology

Biological validation (with different biological elements)

Type-specific basis of comparison (REFCOND)

Stressor-specific community pattern

Too many data are missing

Several Requirements → LACKING DATA

River Invertebrate Prediction Assessment and Classification System: RIVPACS