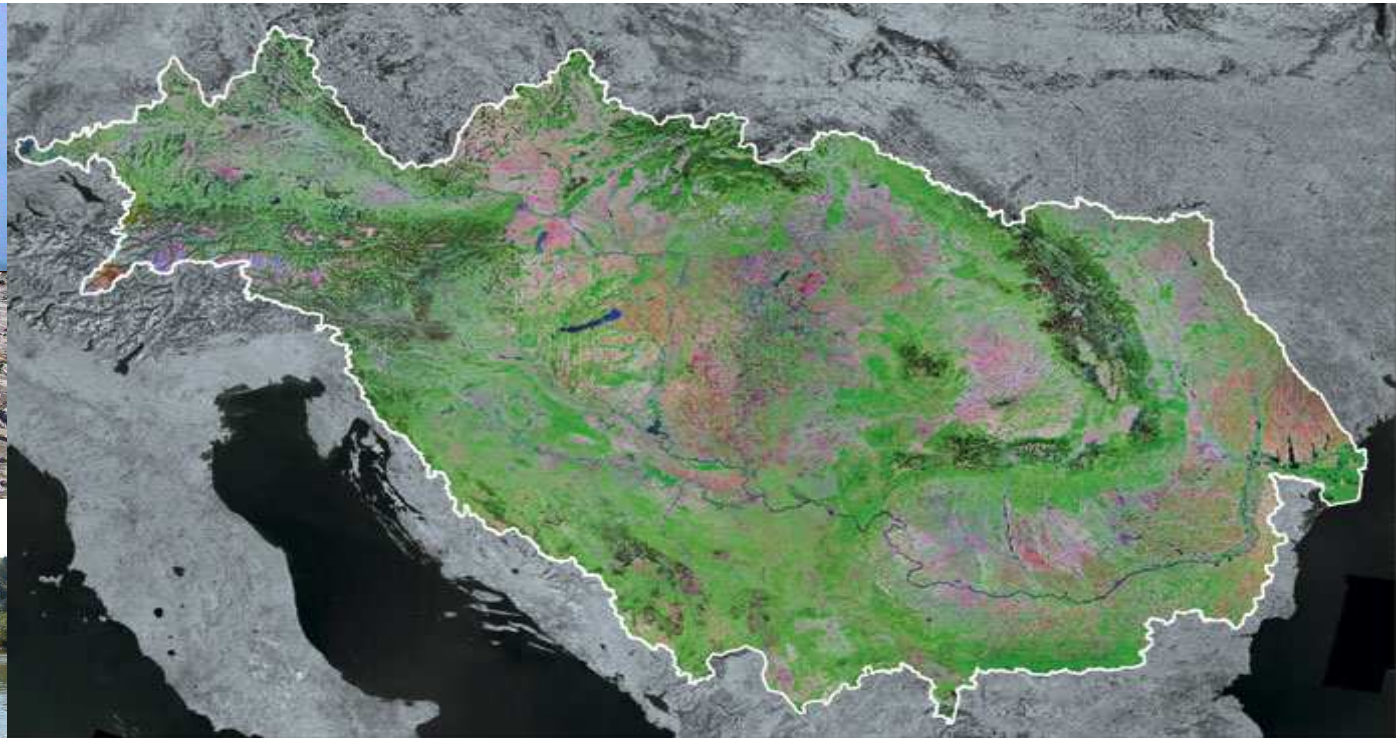


Danube River Basin Monitoring: Grenzüberschreitende Koordination



Philip Weller
ICPDR Executive Secretary
Essen, 23. September 2010

Das internationalste Einzugsgebiet der Welt



Donau EZG - FAKTEN



Donau EZG = 19 Staaten in Europa

Länge der Donau: 2.875 km, EZ-Gebiet: ~800.000 km²

EU Status der Donauländer:

- ✓ EU Mitgliedsstaaten
- ✓ EU Beitrittskandidat
- ✓ Nicht Mitgliedsstaaten

Ziel: Koordination aller Länder und Aktivitäten

Donau EZG wird durch zahlreiche Faktoren geprägt

Donauschutzkonvention



Legalen Rahmen zur Kooperation um den
Schutz und die nachhaltige Nutzung
der Wasser- und ökologischen Ressourcen im
Donaeinzugsgebiet sicherzustellen.

Unterschrieben: 29. Juni 1994, Sofia

Vertragsländer

icpdr **iksd**

International
Commission
for the Protection
of the Danube River

Internationale
Kommission
zum Schutz
der Donau

 Deutschland

 Österreich

 Tschechien

 Slowakei

 Ungarn

 Slowenien

 Kroatien

 Montenegro

 Bosnien & Herzegovina

 Serbien

 Rumänien

 Bulgarien

 Moldawien

 Ukraine

 Europäische Union

IKSD -

Internationale Kommission zum Schutz der Donau



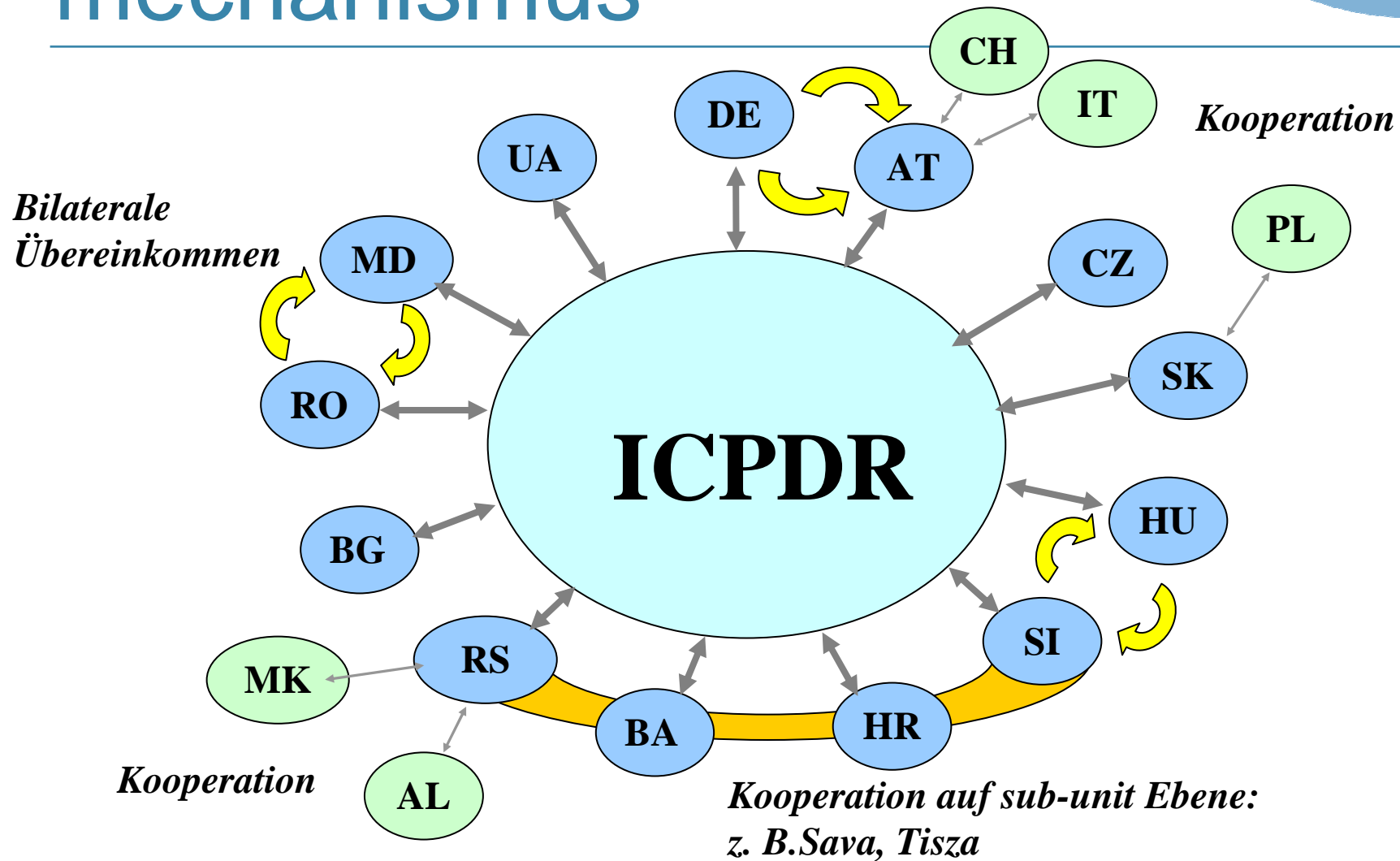
Implementierung des Donauschutzübereinkommens:

- ⇒ Internationale Kooperation
- ⇒ Sicherstellung von nachhaltiger Wasserbewirtschaftung
- ⇒ Sicherstellung von Schutz, Verbesserung und verantwortungsbewußtem Umgang mit Oberflächen- und Grundwässern
- ⇒ Reduktion der Einträge von Nährstoffen und gefährlichen Substanzen
- ⇒ Kontrolle von Hochwässern
- ⇒ Reduktion der Schmutzfrachten in das Schwarze Meer

Koordinierungsmechanismus

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Internationale Kommission zum Schutz der Donau



ICPDR Working Structure

icpdr **iksd**

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of the Danube River
Internationale
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zum Schutz
der Donau

**ICPDR –
Delegations of the Contracting Parties**

**Ordinary/ Standing
Working Group Meetings**

ICPDR Secretariat

River Basin
Management
Expert Group

Pressures
and
Measures
Expert Group

Monitoring
and
Assessment
Expert Group

Flood
Protection
Expert Group

Info
Management
and GIS
Expert Group

Public
Participation
Expert Group

**Hydro-
morphology
Task Group**

**Accident
Prevention
Task
Group**

**Economics
Task Group**

**Ground-
water
Task Group**

**Nutrients
Task Group**

**Accident
Emergency
Warning
System
TG**

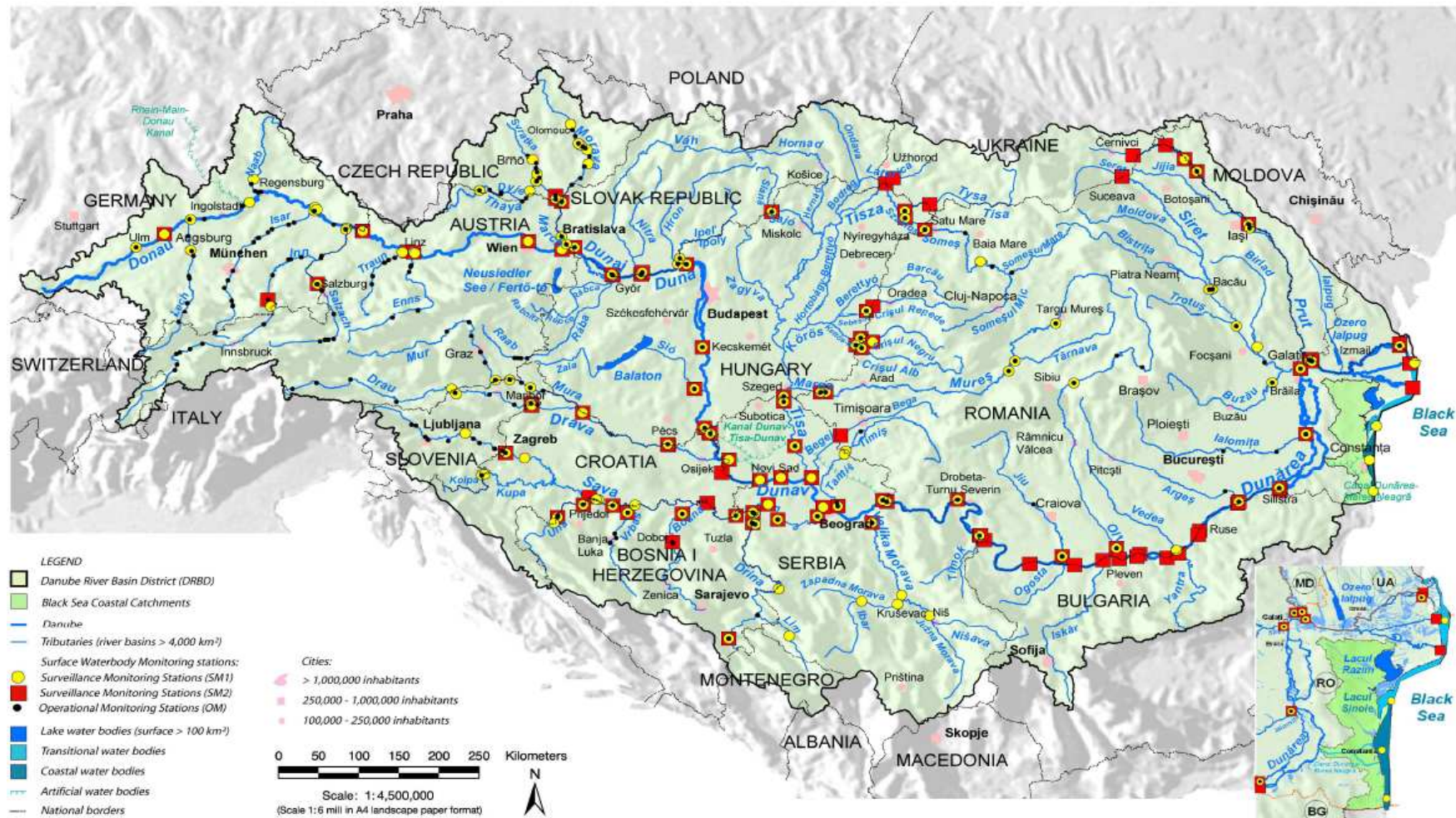
**Ad hoc Strategic Expert
Group**

Trans National Monitoring Network – TNMN

new setup surface waters

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 Internationale Kommission zum Schutz der Donau



-
- ➔ Surveillance Monitoring I
 - ➔ Surveillance Monitoring II
 - ➔ Operational monitoring
 - ➔ Investigative monitoring
 - ➔ Key activity at the basin-wide level = JDS
 - ➔ Organized once in each RBM Plan period

Surveillance monitoring I



⇒ **Monitoring of surface water status**

⇒ Provides assessment of the overall surface water status in the DRB

Sampling and assessment: Once in the RBM plan period

Quality elements:

- ⇒ all biological quality elements,
- ⇒ hydromorphological parameters,
- ⇒ all general physico-chemical quality parameters,
- ⇒ priority list pollutants which are discharged into the basin,
- ⇒ other pollutants discharged in significant quantities

Operational Monitoring



Objectives:

- ⇒ assess status of those water bodies identified as being at risk of failing to meet their environmental objectives
- ⇒ assess any changes in the status of such bodies resulting from the programmes of measures.

The selection of parameters for the operational monitoring is individual for a particular sampling site that represents an affected water body.

IKSD – Flussgebietsmanagement



EU Wasserrahmenrichtlinie

- ⇒ Umsetzung = höchste Priorität
- ⇒ Verpflichtend für alle EU MS
- ⇒ Verpflichtend für Beitrittskandidaten
- ⇒ Alle weiteren Donauländer haben sich bereiterklärt die WRRL umzusetzen (Sofia, December 2000)

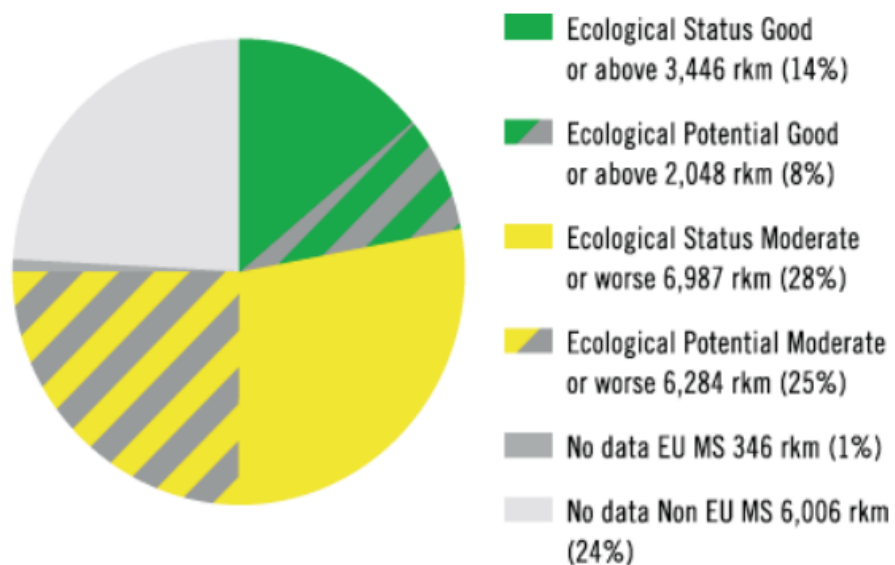


Status/Potential of Rivers - 2009

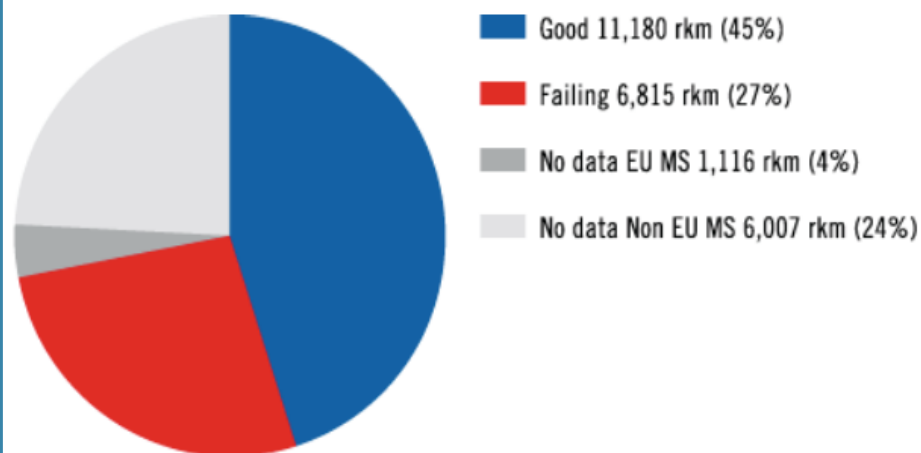
icpdr ikisd

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Ecological Status



Chemical Status



Danube River Basin District: Ecological Status and Ecological Potential of Surface Water Bodies



This ICPDR product is based on national information provided by the Contracting Parties to the ICPDR (AT, BA, BG, CZ, DE, HR, HU, MD, RO, RS, SI, SK, UA) and CH, except for the following: EuroGlobalMap v2.1 from EuroGeographics was used for national borders of AT, CZ, DE, HR, HU, MD, RO, SI, SK and UA; ESRI data was used for national borders of AL, ME, MK, Shuttle Radar Topography Mission (SRTM) from USGS Seamless Data Distribution System was used as topographic layer; data from the European Commission (Joint Research Center) was used for the outer border of the DRBD of AL, IT, ME and PL.

Danube River Basin District: Chemical Status of Surface Water Bodies



LEGEND

- Good status / high confidence
- Good status / medium confidence
- ... Good status / low confidence
- Failing good status / high confidence
- Failing good status / medium confidence
- ... Failing good status / low confidence

Non EU Member States*

- No risk
- Possibly at risk
- At risk
- Unknown

Cities:

- 100,000 - 250,000 inhabitants
- ◻ 250,000 - 1,000,000 inhabitants
- ◻ > 1,000,000 inhabitants

0 50 100 200 Kilometers

Scale: 1 : 4,500,000

(Scale 1: 6,000,000 in A4 landscape paper format)

* Details on the risk assessment regarding the risk for failure of the WFD environmental objectives performed by the Non EU Member States are part of the Danube River Basin Management Plan Annex 14.

This ICPDR product is based on national information provided by the Contracting Parties to the ICPDR (AT, BA, BG, CZ, DE, HR, HU, MD, RO, RS, SI, SK, UA) and CH, except for the following: EuroGlobalMap v2.1 from EuroGeographics was used for national borders of AT, CZ, DE, HR, HU, MD, RO, SI, SK and UA; ESRI data was used for national borders of AL, ME, MK; Shuttle Radar Topography Mission (SRTM) from USGS Seamless Data Distribution System was used as topographic layer; data from the European Commission (Joint Research Center) was used for the outer border of the DRBD of AL, IT, ME and PL.

Surveillance monitoring II



- ⇒ **Monitoring of specific pressures**
- ⇒ Provides assessment of long term trends of specific pollutants
- ⇒ Sound basis for load estimation transferred in marine environment

Sampling and assessment: annually

Quality elements:

- ⇒ organic pollution
- ⇒ nutrient pollution
- ⇒ hazardous substances
- ⇒ Biology (selected)
- ⇒ hydromorphological parameters (site specific)

SM2 - Chemie

Parameter	Surveillance Monitoring 2	
	Water	Water
	concentrations	load assessment
Flow	anually / 12 x per year	daily
Temperature	anually / 12 x per year	anually / 26 x per year
Transparency (1)	anually / 12 x per year	
Suspended Solids (5)	anually / 12 x per year	anually / 26 x per year
Dissolved Oxygen	anually / 12 x per year	
pH (5)	anually / 12 x per year	
Conductivity @ 20 °C (5)	anually / 12 x per year	
Alkalinity (5)	anually / 12 x per year	
Ammonium (NH ₄ ⁺ -N) (5)	anually / 12 x per year	anually / 26 x per year
Nitrite (NO ₂ ⁻ -N)	anually / 12 x per year	anually / 26 x per year
Nitrate (NO ₃ ⁻ -N)	anually / 12 x per year	anually / 26 x per year
Organic Nitrogen	anually / 12 x per year	anually / 26 x per year
Total Nitrogen	anually / 12 x per year	anually / 26 x per year
Ortho-Phosphate (PO ₄ ³⁻ -P) (2)	anually / 12 x per year	anually / 26 x per year
Total Phosphorus	anually / 12 x per year	anually / 26 x per year
Calcium (Ca ²⁺) (3, 4, 5)	anually / 12 x per year	
Magnesium (Mg ²⁺) (4, 5)	anually / 12 x per year	
Chloride (Cl)	anually / 12 x per year	
Atrazine	anually / 12 x per year	
Cadmium (6)	anually / 12 x per year	
Lindane	anually / 12 x per year	
Lead (6)	anually / 12 x per year	
Mercury (6)	anually / 12 x per year	
Nickel (6)	anually / 12 x per year	
Arsenic (6)	anually / 12 x per year	
Copper (6)	anually / 12 x per year	
Chromium (6)	anually / 12 x per year	
Zinc (6)	anually / 12 x per year	
p,p'-DDT and its derivatives (7)	anually / 1 or 12 x per year	
CODCr (5)	anually / 12 x per year	
CODMn (5)	anually / 12 x per year	
Dissolved Silica		anually / 26 x per year
BOD5	anually / 12 x	

- (1) Only in coastal waters
- (2) Soluble reactive phosphorus SRP
- (3) Mentioned in the tables of the CIS Guidance document but not in the related mind map
- (4) Supporting parameter for hardness-dependent eqs of PS metals
- (5) Not for coastal waters
- (6) Measured in a dissolved form. Measurement of total concentration is optional
- (7) ; In areas with no risk of failure to meet the environmental objectives for DDT the monitoring frequency is once per year; in case of risk the frequency is 12 x year

SM2 - Biologie

PHYTOPLANKTON

↪ chlorophyll-a

BENTHIC MACROINVERTEBRATES

↪ Saprobic index and number of families (ASPT
and EPT taxa optional)

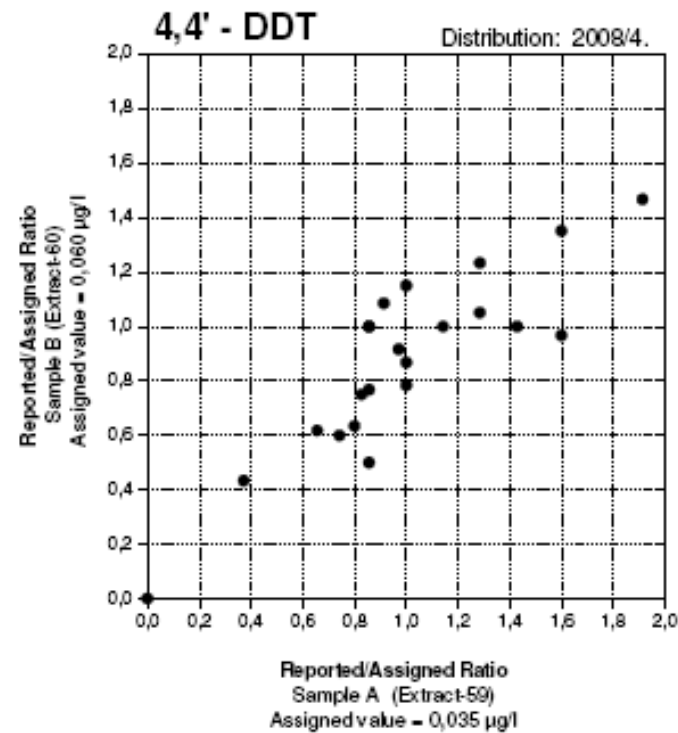
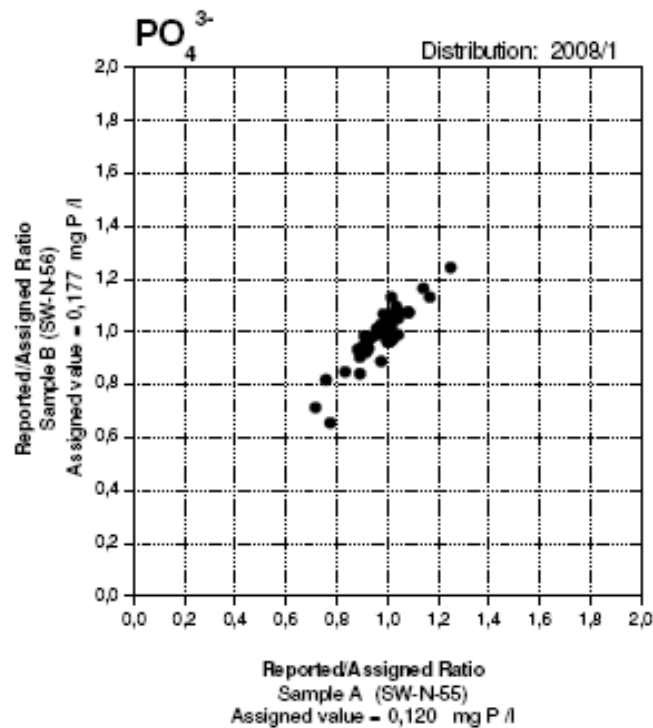
PHYTOBENTHOS

⇒ benthic diatoms –optional parameter

Analytische Qualitätskontrolle

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Variation in the reported values of PO₄-P and DDT in AQC samples

Messprogramm zur Frachtenerhebung



Integrated with the TNMN

Loads are calculated for BOD₅, inorganic nitrogen, ortho-phosphate-phosphorus, dissolved phosphorus, total phosphorus, suspended solids and chlorides (*voluntary*)

Minimum sampling frequency - at least 24 per year

Investigatives Monitoring

...in erster Linie eine nationale
Aufgabe.

Für das gesamte Einzugsgebiet:

Joint Danube Surveys (alle sechs Jahre) werden dazu

benutzt investigatives Monitoring durchzuführen

⇒ Test neuer Methoden

⇒ Check der Auswirkungen "neuer" chemischer Substanzen



JDS2 – Allgemeine Ziele

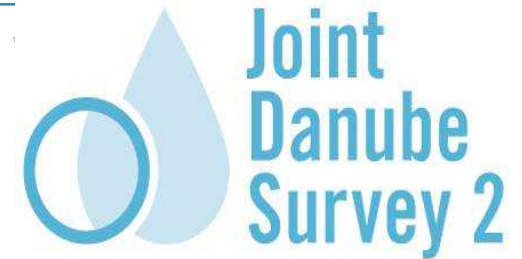


-
- ➔ Eine internationale, zeitlich begrenzte, Untersuchung entlang des Flusses durchzuführen um einheitliche Informationen zur Wasserqualität zu schaffen – für die ganze Donau und auch die größeren Zuflüsse.
 - ➔ Informationen zu liefern, die für die Umsetzung der EU-Wasserrahmenrichtlinie (ökologischer und chemischer Status) notwendig sind.
 - ➔ Die mit JDS1 gestartete Erfolgsstory fortzuführen.



JDS2

Probennahme & Daten – evaluierung



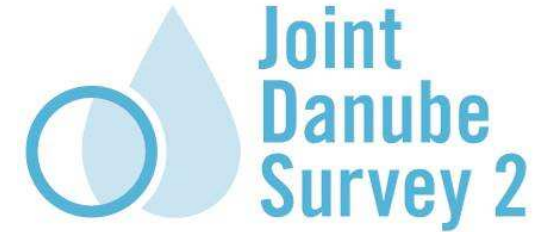
Watch your Danube

Regensburg, 14 Aug → Wien, 20 Aug →
Bratislava, 22 Aug → Budapest, 28 Aug →
Osijek, 2 Sep → Beograd, 6 Sep →
Turnu Severin, 12 Sep → Ruse, 19 Sep →
Vilkovo, 25 Sep → Tulcea, 27 Sep



JDS2

Bewußtseinsbildung



Watch your Danube

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Bratislava, 22 Aug → Budapest, 28 Aug →
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Organisationen mit Beobachterstatus



Black Sea Commission



Navigation Commission



Friends of Nature



Die Donau -
Tourism
Commission



Europ. Angling Ass.



GWP CEE



UNESCO - IHP



VGB Power Tech



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Danke für Ihre Aufmerksamkeit!

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icpdr@unvienna.org