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Legal Framework - WFD

- The objective of achieving good water status should be pursued for each river basin, so that measures in respect of surface water and groundwaters belonging to the same ecological, hydrological and hydrogeological system are coordinated.
- For the purposes of environmental protection there is a need for a greater integration of qualitative and quantitative aspects of both surface waters and groundwaters, taking into account the natural flow conditions of water within the hydrological cycle.

WFD: Ecological Status of Surface Waters

Quality elements for the classification of ecological status - Rivers

A) Biological elements

- Composition and abundance of aquatic flora
- Composition and abundance of benthic invertebrate fauna
- Composition, abundance and age structure of fish fauna

B) Hydromorphological elements supporting the biological elements

- Hydrological regime
 - + quantity and dynamics of water flow
 - + connection to ground water bodies

- River continuity

- Morphological conditions

- + river depth and width variation
- + structure and substrate of the river bed
- + structure of the riparian zone

C) Chemical and physicochemical elements supporting the biological elements

WFD: Hydromorphological Quality Components

Element	High Status
Hydrological regime	The quantity and dynamics of flow, and the resultant connection to groundwaters, reflect totally, or nearly totally, undisturbed conditions.
River continuity	The continuity of the river is not disturbed by anthropogenic activities and allows undisturbed migration of aquatic organisms and sediment transport.
Morphological conditions	Channel patterns, width and depth variations, flow velocities, substrate conditions and both the structure and condition of the riparian zones correspond totally or nearly totally to undisturbed conditions.

WFD: Hydromorphological Quality Components

Element	Good Status
Hydrological regime	Conditions consistent with the achievement of the values specified above for the biological quality elements.
River continuity	Conditions consistent with the achievement of the values specified above for the biological quality elements.
Morphological conditions	Conditions consistent with the achievement of the values specified above for the biological quality elements.



European Water Policy 1972 – 2000

- **User Orientation 1972 - 1990**
Bathing waters Dir., Fishing waters Dir.,
Trinking waters Dir., Dangerous substances Dir., etc.
- **Focus on Impact Sources 1990 - 2000**
Settlement Sewage Dir., Nitrate Dir.,
- **Total restructuring and increasing of water policy 2000**
WFD



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WFD – Framework for measures

Basis: Sustainable Water Management

Overall protection of waters

Goal: Good Ecological Status of waters until 2015

Surface water, Groundwater, HMWB

Definition of quality aims

Management – River catchment

Support of sustainable usage

Public participation

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WFD – main areas

- Avoiding further negative development
- Protection and improvement of all running water and groundwater
- Improvement of a sustainable use based on longterm resources protection
- stepwise reduction of input of dangerous substances
- minimization of increasing droughts and floods

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WFD – main principles

Combined approach:

principle of cause effect and future protection

Economical analysis:

cost covering – measure combination (economically optimal)

Public participation:

Information

Partizipation

Public involvement

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WFD – implementation

Spatial dimension
river catchment

International river basins
for Austria: Danube, Rhine, Elbe
coordination is necessary

River basin management plan



WFD – River basin management

- Analysis of existing situation
river basins, water bodies, impacts and effects, economical analysis
- risk analysis
- definition of quality aims – optimal situation
- Monitoring
- Deviation analysis existing situation – optimal situation
- Measures program

Reaching of goal „good status“

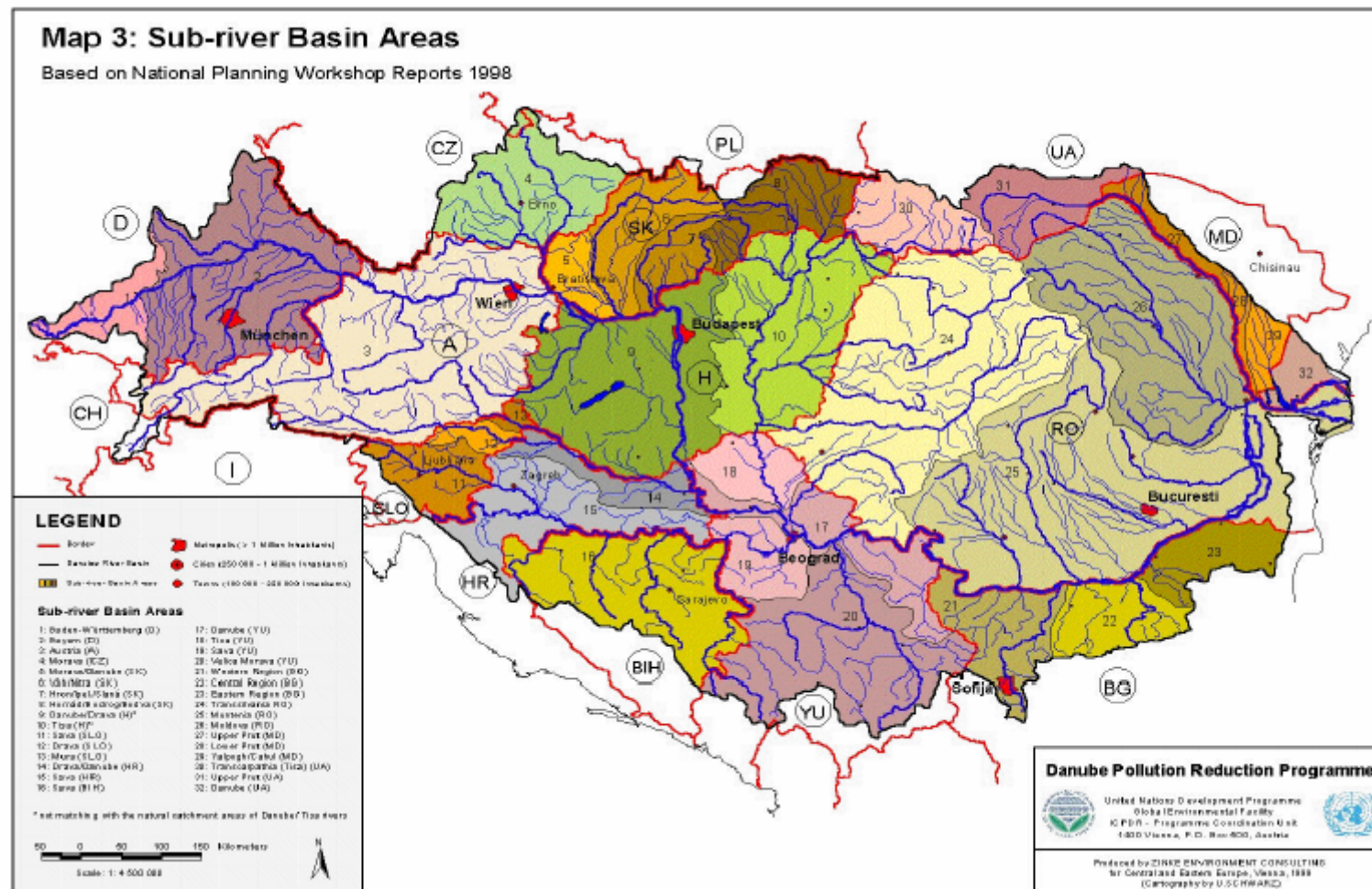


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WFD – plan of implementation

transformation into national law	2003
identification of river basins	2003
Analysis of existing situation	2004
Monitoring	2006
Start public participation	2006
River basin management plan	2009
Measures for cost covering	2010
Realisation of measures	2012
Reaching of good status	2015
Revolving	(2021)/(2027)

WFD – Subriver basins



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WFD – Catchment sizes

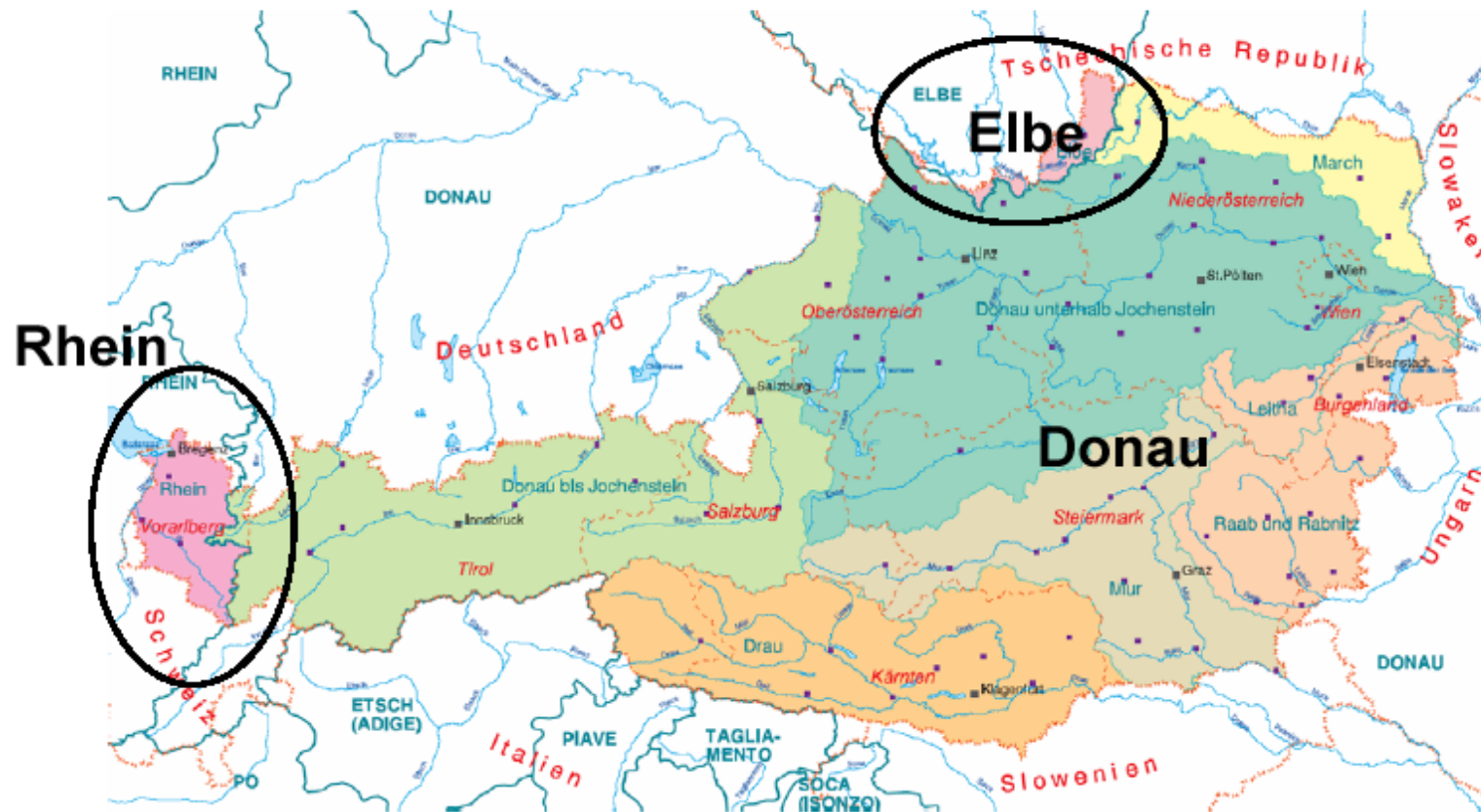
Austria

	Fläche [km²]	ö. Anteil [km²]	%	Staaten
Donau	~ 802 000	80 565	10	18
Rhein	185 000	2 365	1	9
Elbe	148 000	920	0,6	4
Summe	1 135 000	83 850	7	31(22)

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WFD – river basins Austria

WWPL in Österreich nach der WRRL / WRG (3)



Marent, 2004

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WFD – planning regions Austria

- PR „Danube above Jochenstein“
- PR „Danube below Jochenstein“
- PR „March“ and „Elbe“
- PR „Leitha – Raab – Rabnitz“
- PR „Mur“
- PR „Drau“
- PR „Rhein“

WFD – bioregions

6 ecoregions



abiotic types

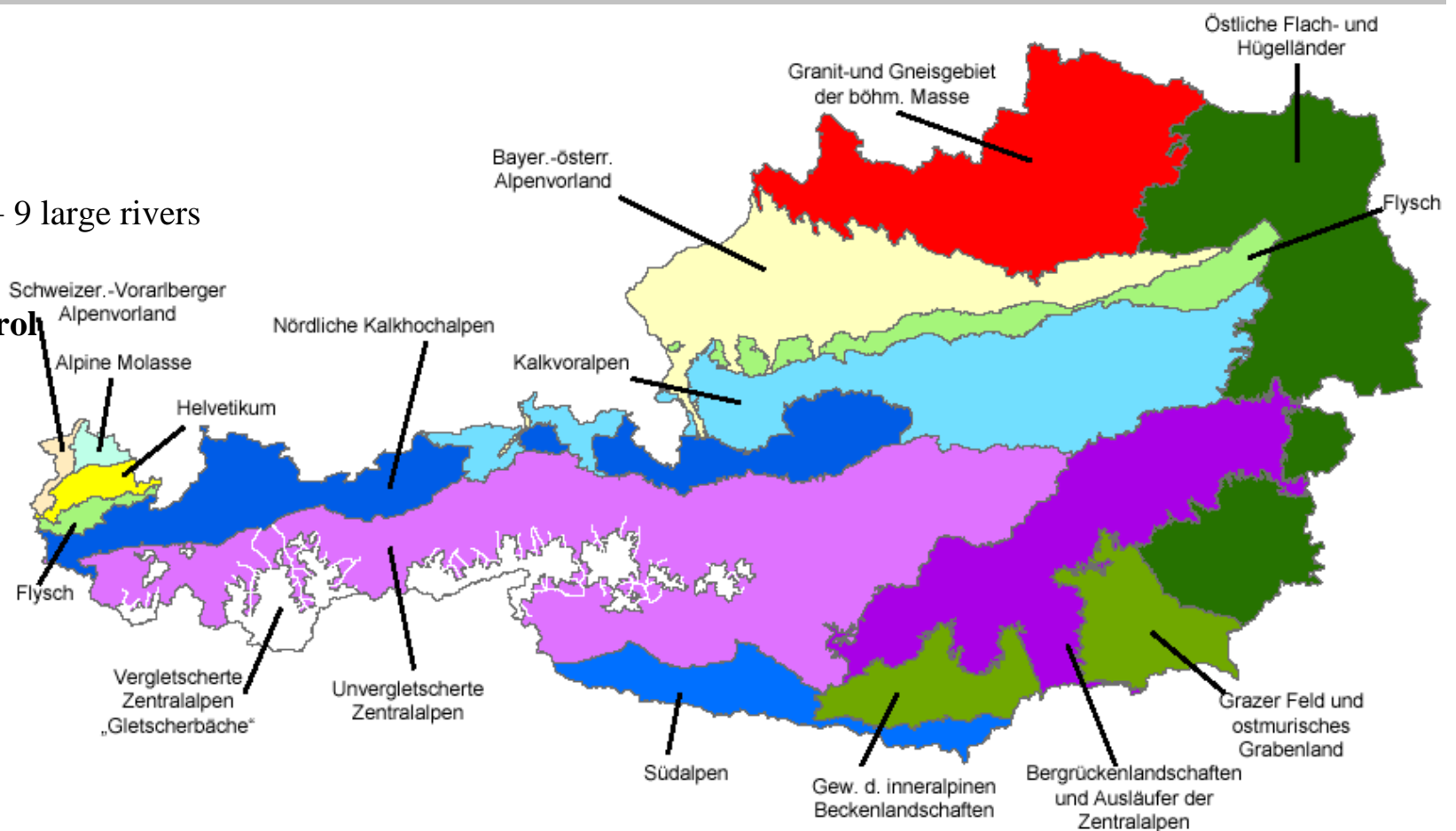
26 basic types + 9 large rivers



biological control



15 bioregions



Ofenbeck, 2004