

Danube Commission, Budapest  
January 29 – 30, 2009

Ministry of Environment SR  
Water and Energy Sources  
Department

## Removal of Bottlenecks



ICPDR:

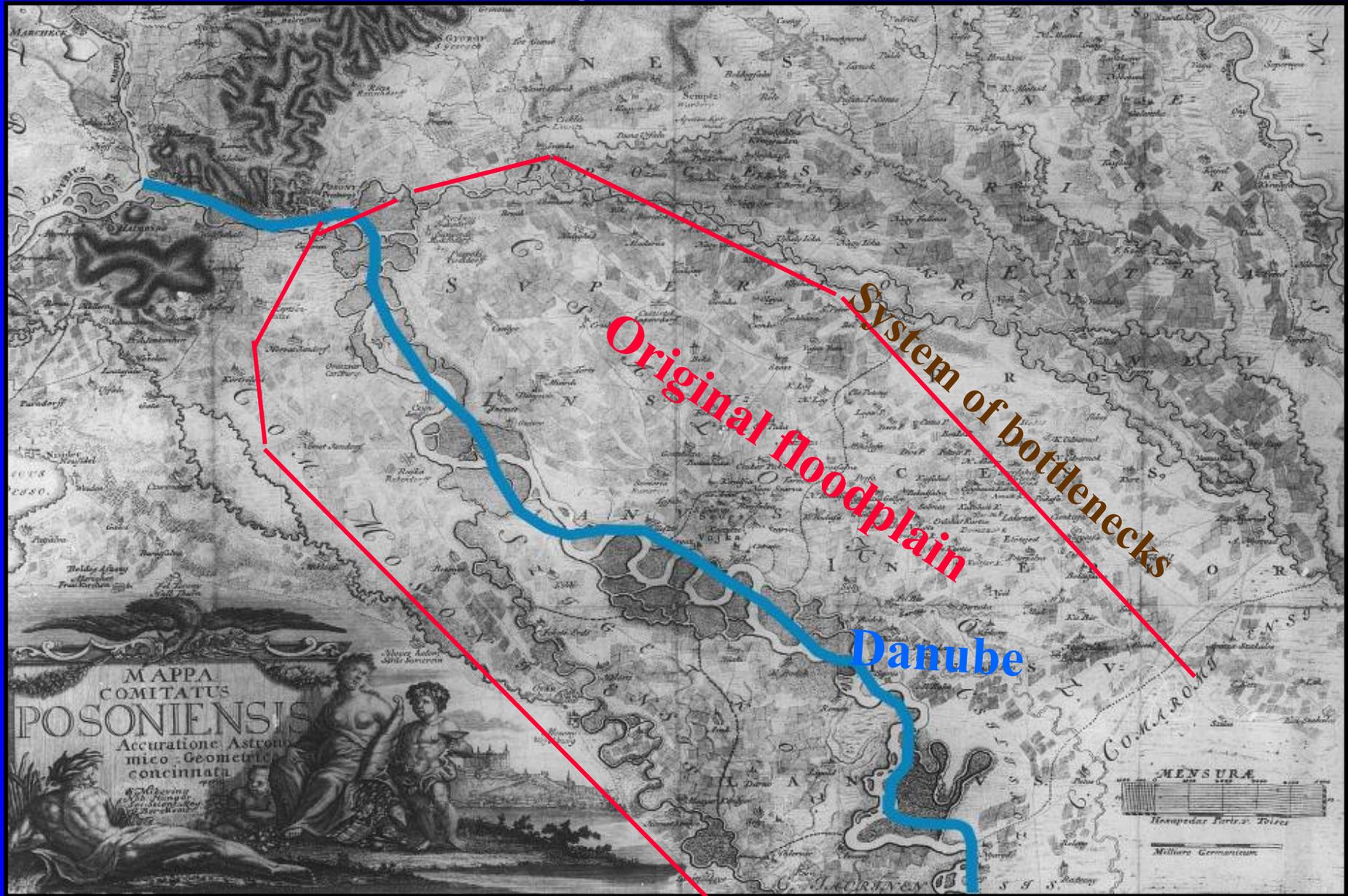
“IWT projects should not further deteriorate the riverine landscape but aim at improving/restoring it”

Philip Weller

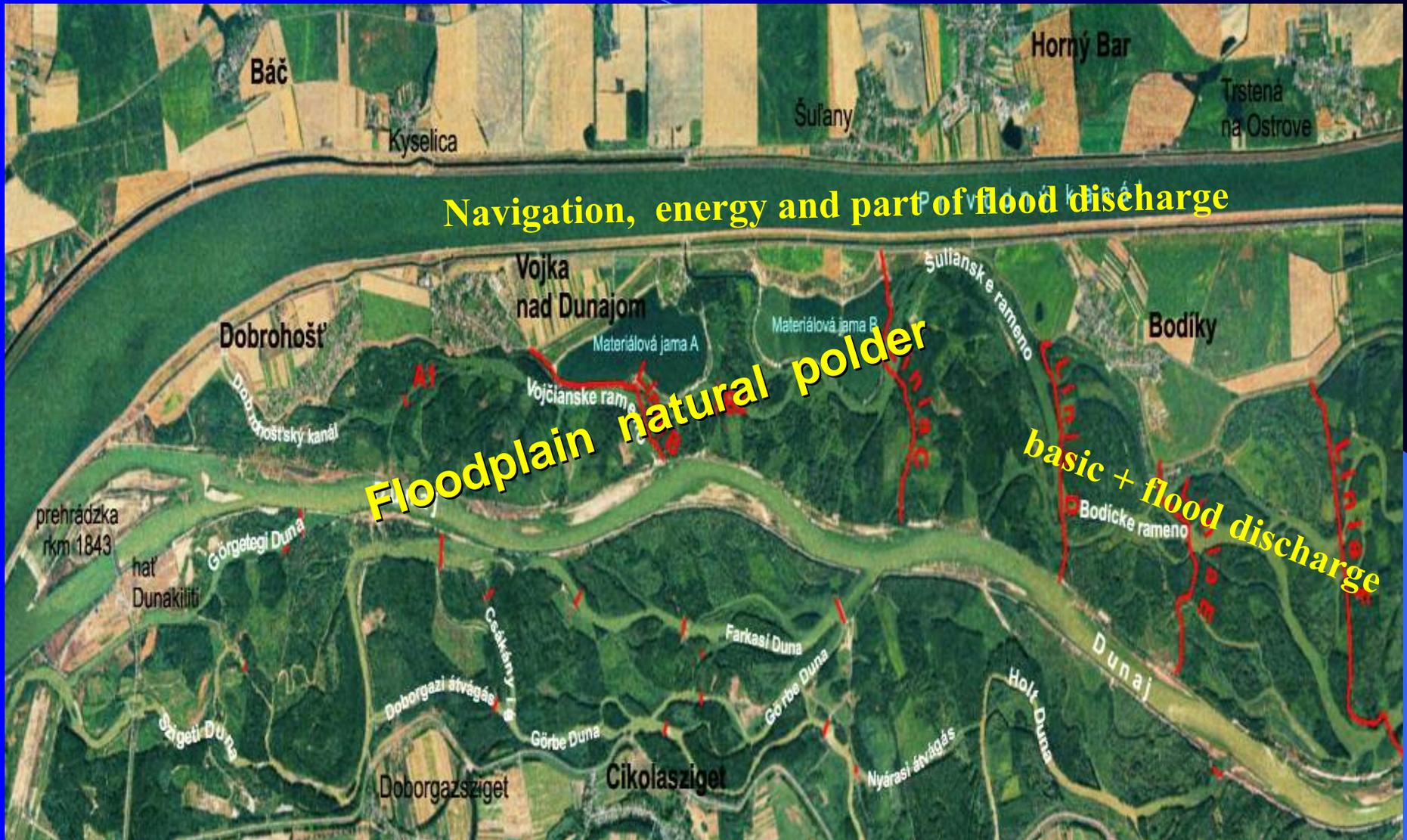


The Danube Floodplain  
supplied with water  
is protected area

# Mikovini map (1733) and state of the Danube in 1990

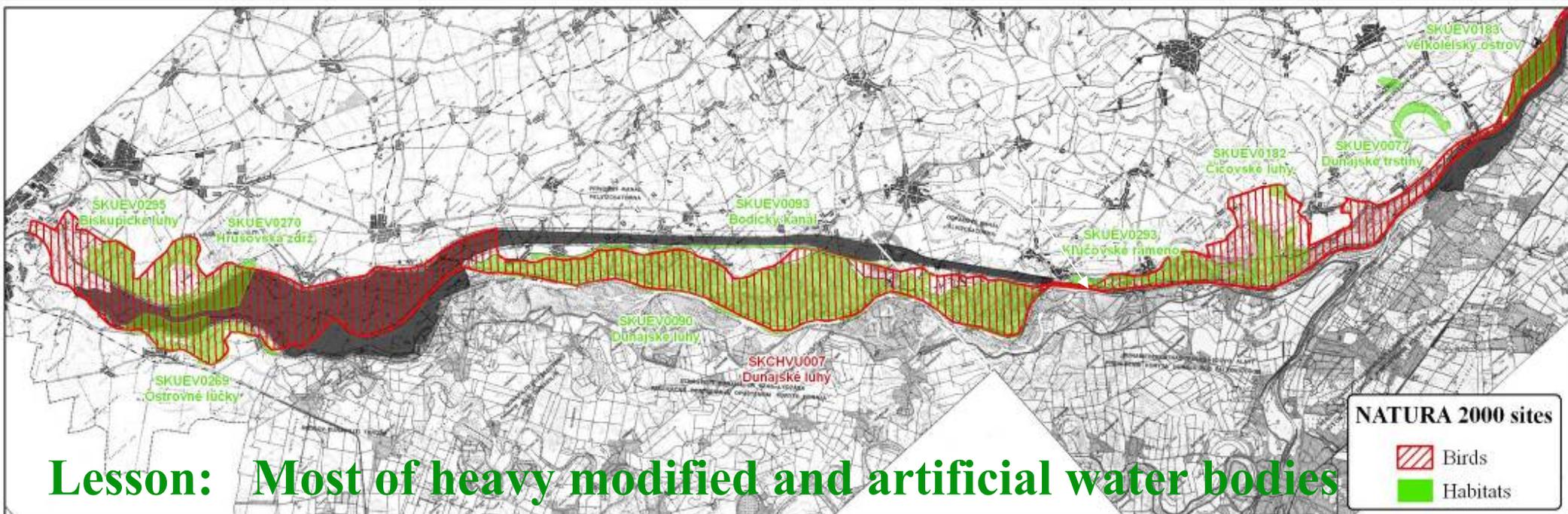


# REMOVAL OF BOTTLENECKS

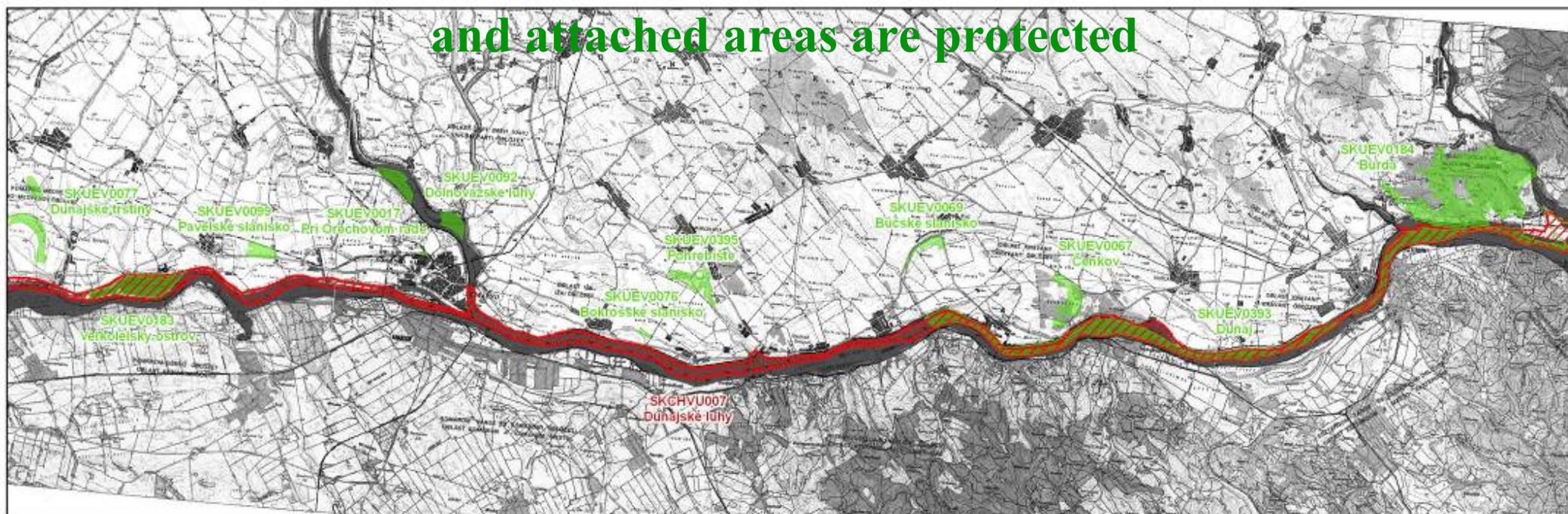


# NATURA 2000 sites (Birds, Habitats) on the Slovak area

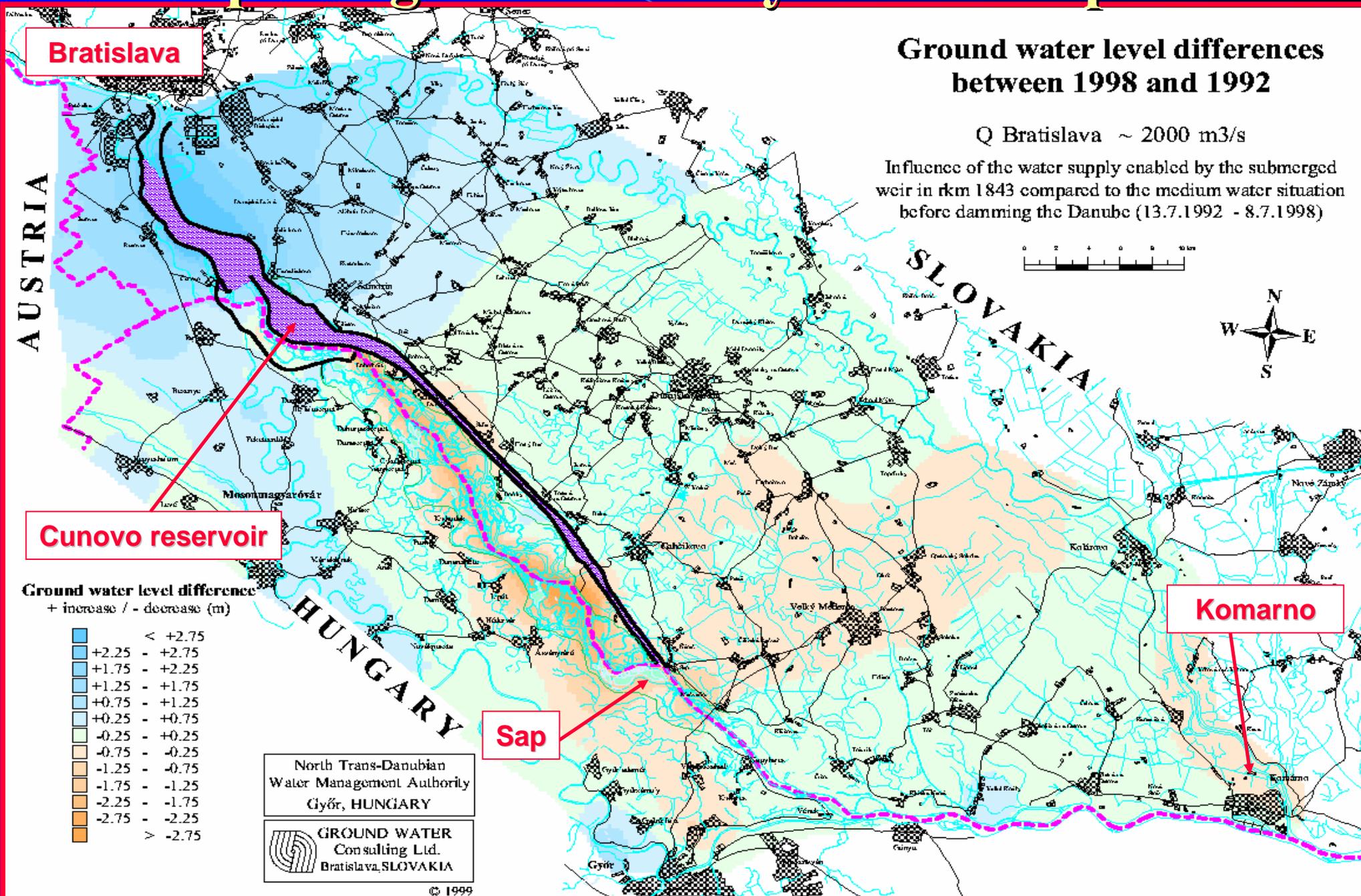
Groundwater of the whole Slovak Danube alluvium is protected



**Lesson: Most of heavy modified and artificial water bodies and attached areas are protected**



# Corresponding increase of ground water level after putting Gabčíkovo system into operation



## Example of reduction of Culmination flow rates downstream during the flood event in AUGUST 2002

Station, River km	Time of Culmination (day, hour)	Max. Water level $H_{\max}$ (cm)	Max. Flow $Q_{\max}$ ( $\text{m}^3\text{s}^{-1}$ )	Difference from previous station ( $\text{m}^3\text{s}^{-1}$ )
Bratislava-Devín, 1879, 78	16.8., 1-2	948	<b>10390</b>	-
Bratislava, 1868,75	16.8., 2-4	991	<b>10310</b>	<b>80</b>
Medved'ov, 1806,30	17.8., 3-6	852	<b>9240</b>	Gabčíkovo <b>1070</b>
Komárno, 1767,80	17.-18.8., 22-1	842	<b>8940</b>	<b>300</b>
Budapest	20.8.		<b>8250</b>	<b>690 + X</b>
Difference Devín - Budapest				<b>2140 + X</b>

**X** – flow rate of the Danube confluents between Devín and Budapest, approximately **300 – 400  $\text{m}^3/\text{s}$** . Peak flow in Budapest was lower by app. **2500  $\text{m}^3/\text{s}$**  than the peak flow in Bratislava.



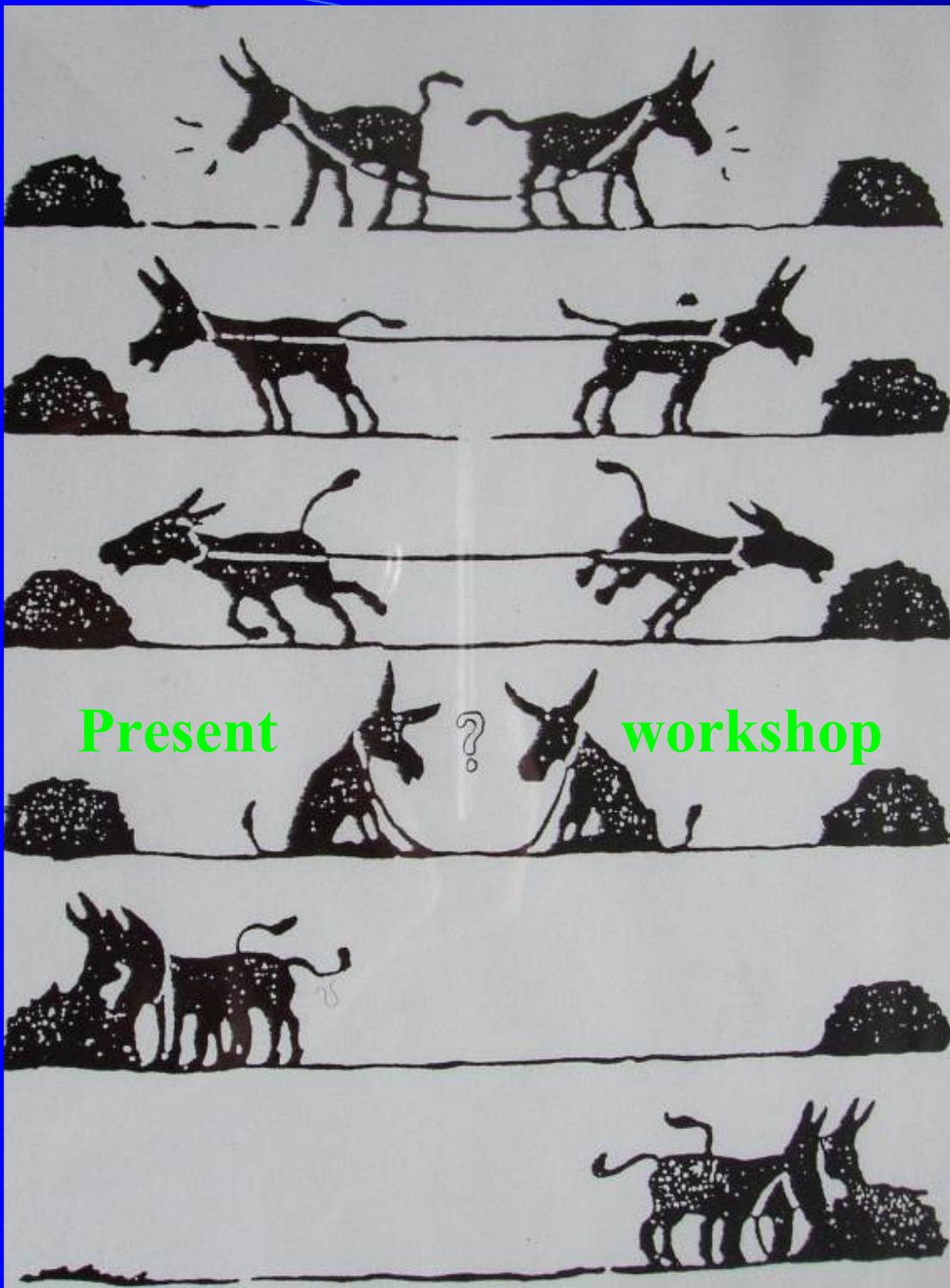
**New water stream**

**new eupotamal**

Interconnection of main arms,  
conditions for preservation  
of various water formations  
(river arms of all types,  
lakes, inundation pools,  
water holes etc.,  
all between the  
protective dikes.

**Proposal**

**Lisický, Mucha, 2003**



**Objectives - Impacts**

?

**Integration**

**Adaptive management**

**Monitoring**



● Thank you!