



# **Restoration potential for Danube River Basin, lower Danube and Mura-Drava- Danube Biosphere Reserve**

ERRC 2013, Vienna

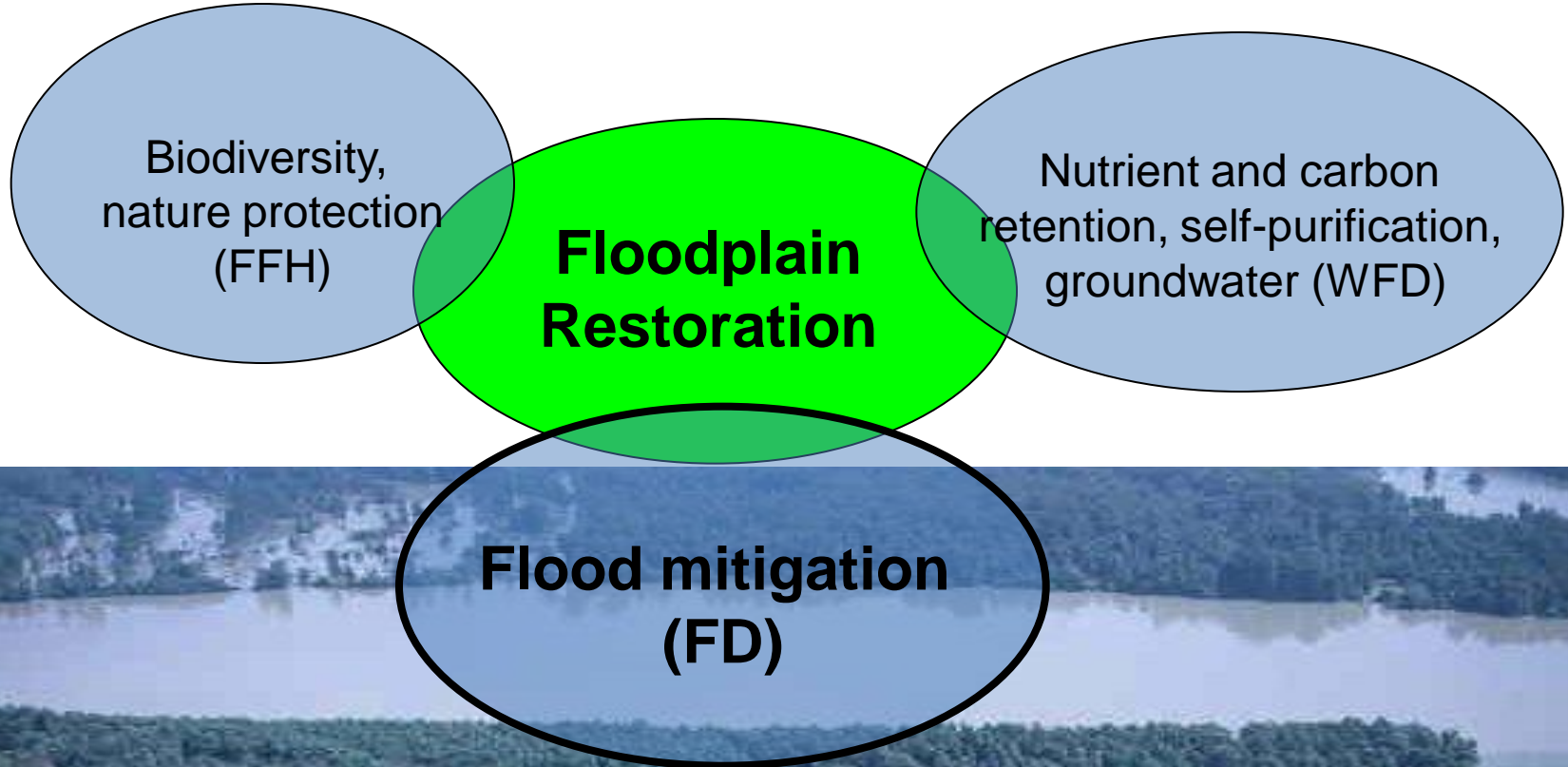


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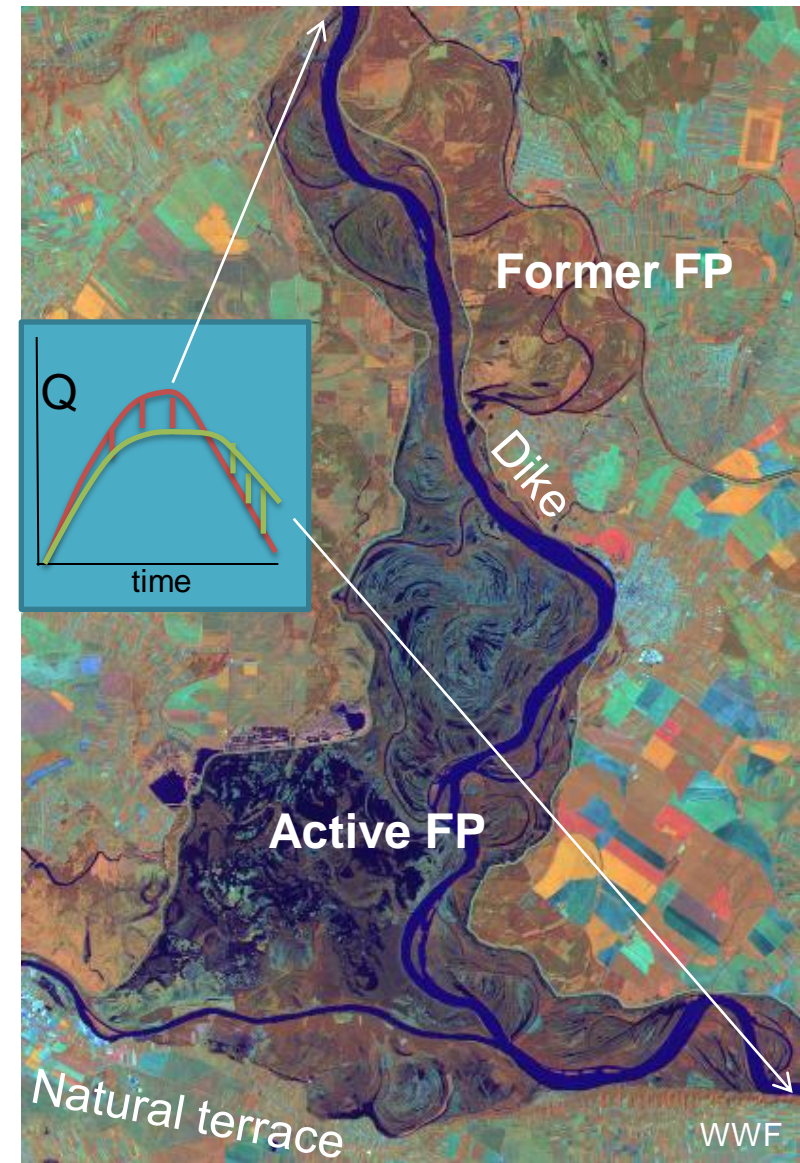


# Context „Floodplain restoration“



# Flood retention in floodplains

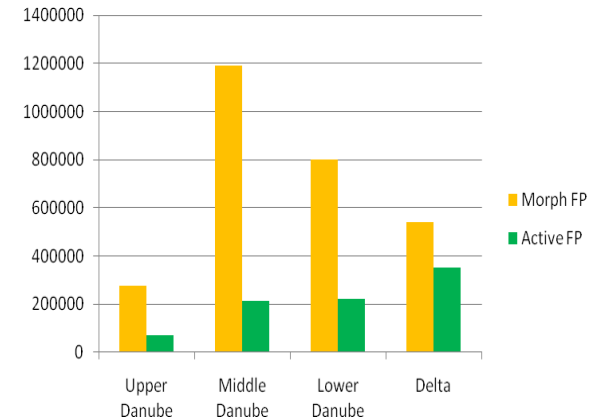
- Reduction of flood wave volume and propagation speed
- Retention volume defined by size, slope, shape (width) and roughness of floodplain area
- ❖ Pragmatic approach for large scale retention capacity estimation: Inventory of **active and former** floodplain; calculation of capacity by size and average water depth





# Large scale Floodplain assessment

- 1. Floodplain delineation:** Significant loss of active floodplains
- 2. Floodplain assessment:** Land use/habitats, hydromorphological conditions, coverage of protected areas
- 3. Potential sites for floodplain restoration in former floodplain (interactive selection and prioritisation):**
  - Hydromorphology and lateral/long. connectivity
  - Land use (settlements are excluded “no go”)
  - Hydromorphology and lateral/long. Connectivity
  - Size, width, length, shape of potential sites, position (tributary confluences, upstream of flood conveyance bottlenecks)
  - Protected areas, bio-corridor

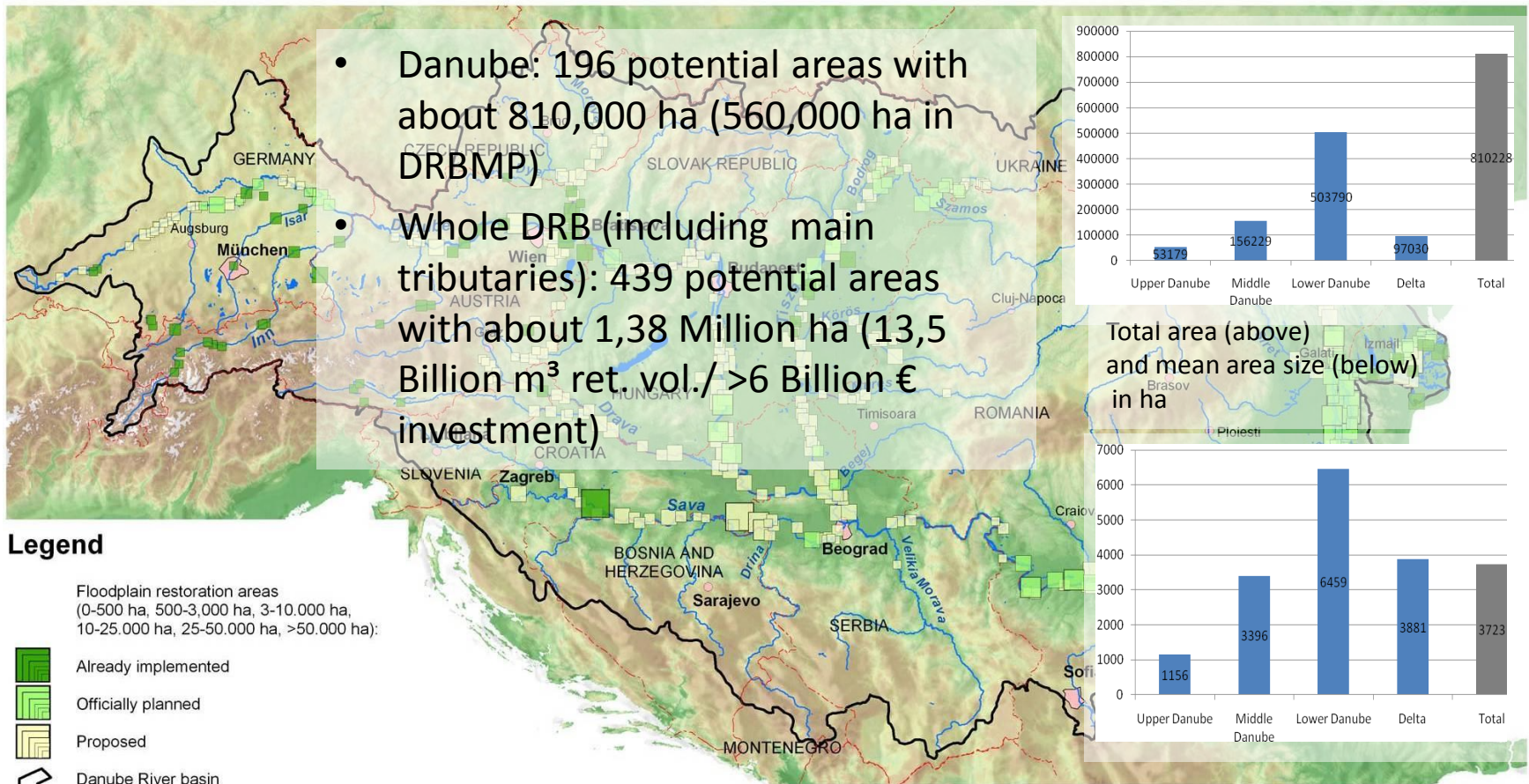


# Danube River basin



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Floodplain restoration areas (implemented, planned, proposed)  
along the Danube and major tributaries



0 75 150 300 Kilometers





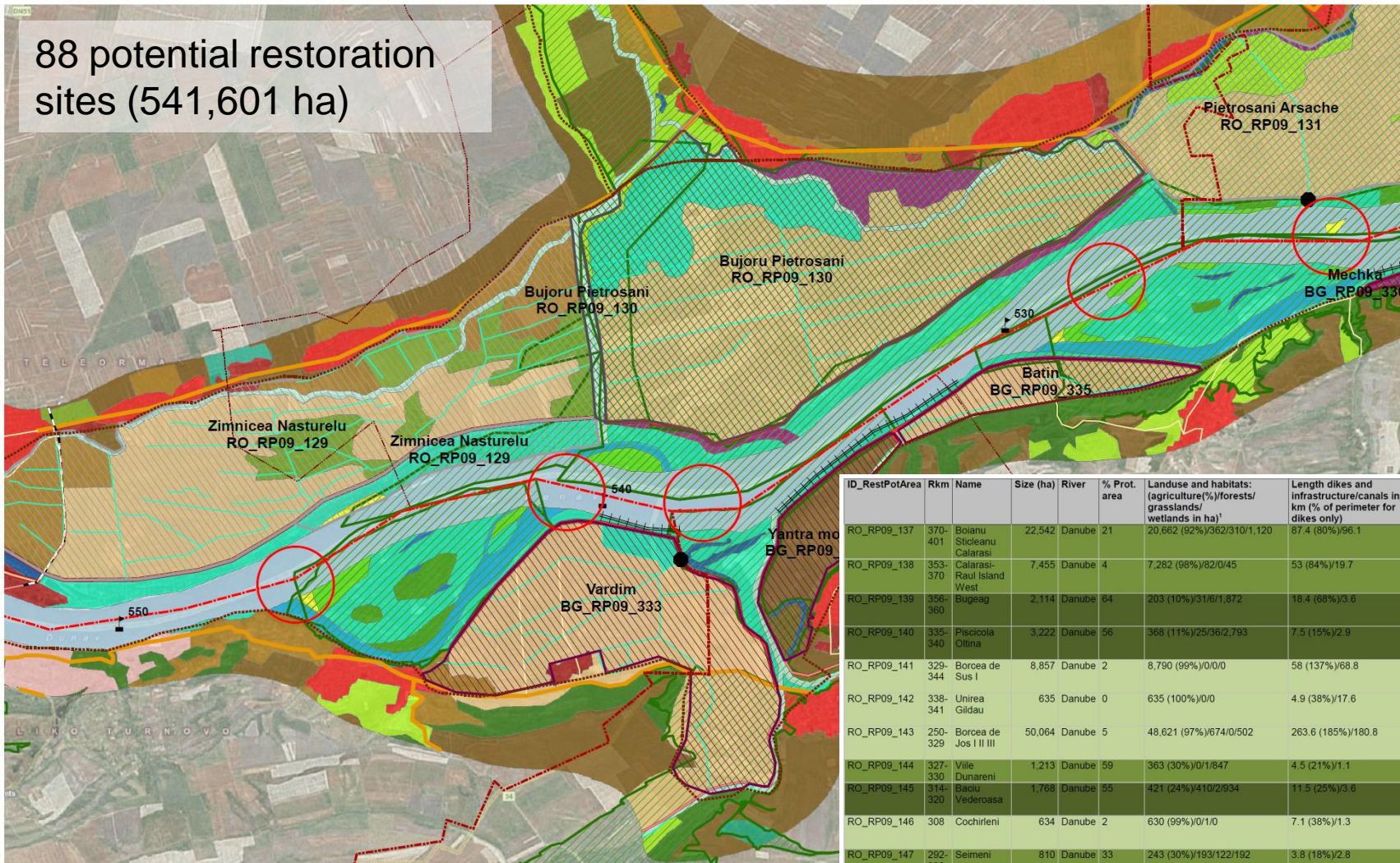
# Lower Danube (without delta)

Floodplain restoration areas along the Lower Danube  
Map 20



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88 potential restoration sites (541,601 ha)



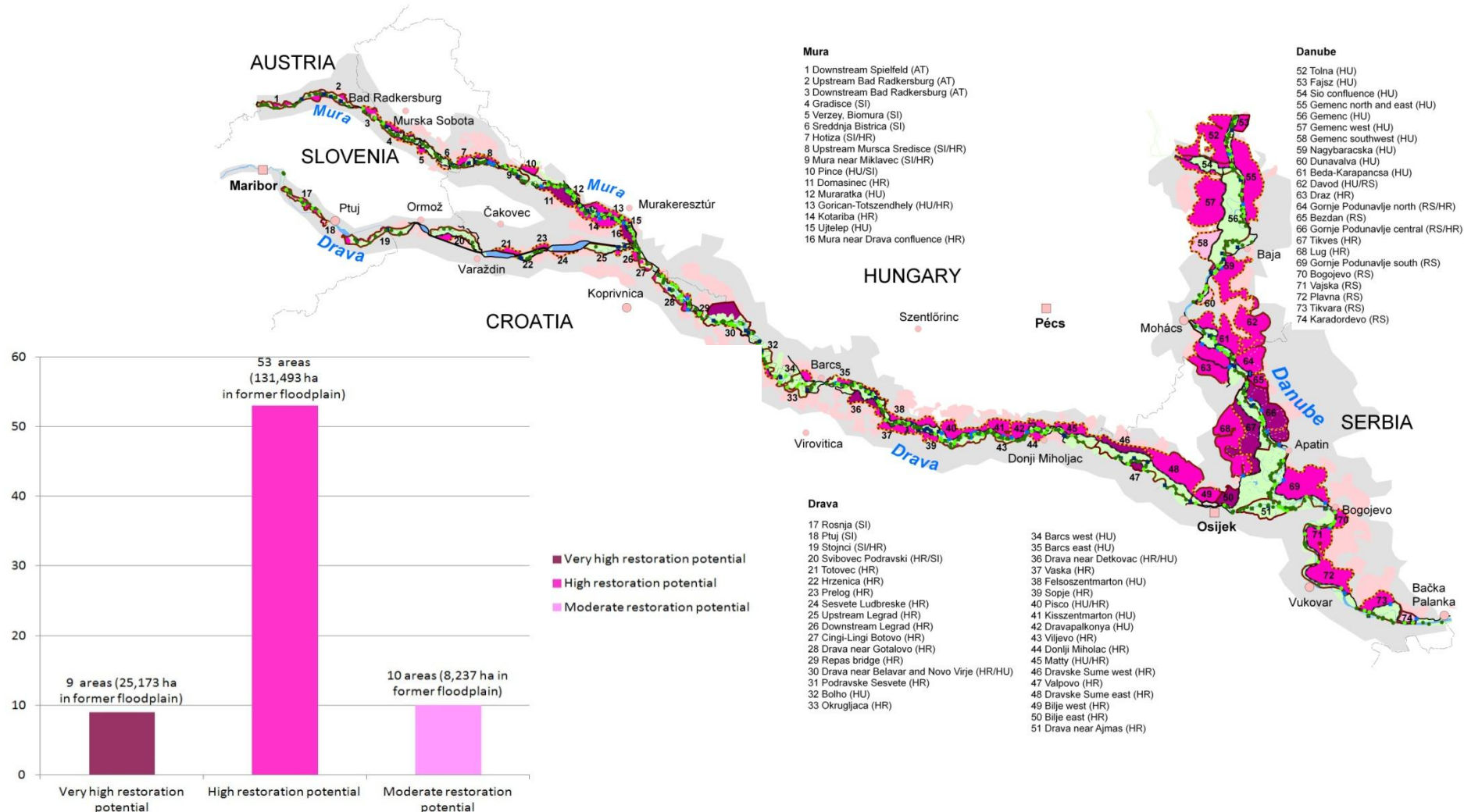
ID_RestPotArea	Rkm	Name	Size (ha)	River	% Prot. area	Landuse and habitats: (agriculture(%)/forests/ grasslands/ wetlands in ha)¹	Length dikes and infrastructure/canals in km (% of perimeter for dikes only)	Priority (and status)
RO_RP09_137	370-401	Bolanu Sticleanu Calarasi	22,542	Danube	21	20,662 (82%)/362/310/1,120	87.4 (80%)/96.1	High (officially planned)
RO_RP09_138	353-370	Calarasi-Raul Island West	7,455	Danube	4	7,282 (98%)/82/0/45	53 (84%)/19.7	High (officially planned)
RO_RP09_139	356-360	Bugeag	2,114	Danube	64	203 (10%)/31/6/1,872	18.4 (68%)/3.6	Very high (officially planned)
RO_RP09_140	335-340	Pliscicola Olina	3,222	Danube	56	368 (11%)/25/362/793	7.5 (15%)/2.9	Very high (officially planned)
RO_RP09_141	329-344	Borcea de Sus I	8,857	Danube	2	8,790 (99%)/0/0/0	58 (137%)/68.8	Low (officially planned)
RO_RP09_142	338-341	Unirea Gildau	635	Danube	0	635 (100%)/0/0	4.9 (38%)/17.6	Low (officially planned)
RO_RP09_143	250-329	Borcea de Jos I II III	50,064	Danube	5	48,621 (97%)/674/0/502	263.6 (185%)/180.8	Low (officially planned)
RO_RP09_144	327-330	Vile Dunareni	1,213	Danube	59	363 (30%)/0/1/847	4.5 (21%)/1.1	High (officially planned)
RO_RP09_145	314-320	Bacu Vederoasa	1,768	Danube	55	421 (24%)/410/2/934	11.5 (25%)/3.6	Very high (officially planned)
RO_RP09_146	308	Cochirleni	634	Danube	2	630 (99%)/0/1/0	7.1 (38%)/1.3	Low (officially planned)
RO_RP09_147	292-298	Seimeni	810	Danube	33	243 (30%)/193/122/192	3.8 (18%)/2.8	High (officially planned)



# Mura-Drava-Danube-TBR

## Assessment of the Restoration Potential in the TBR MDD

### Potential Restoration Areas and all Restoration Measures



# Implication for flood mitigation

- Understand the longitudinal and lateral river-floodplain continuum as whole management unit (flood development in the catchment)
- Floodplain restoration in a larger scale (between settlements) could significantly support flood mitigation (overall reduction of flood wave volume) as a core ecosystem service
- Larger and more intact floodplains can better mitigate climate change effects (floods and droughts)
- Development of national floodplain restoration Action Plans to support/ supported by river management and flood protection regulations timelines