



A. Márkus - B. Trócsányi

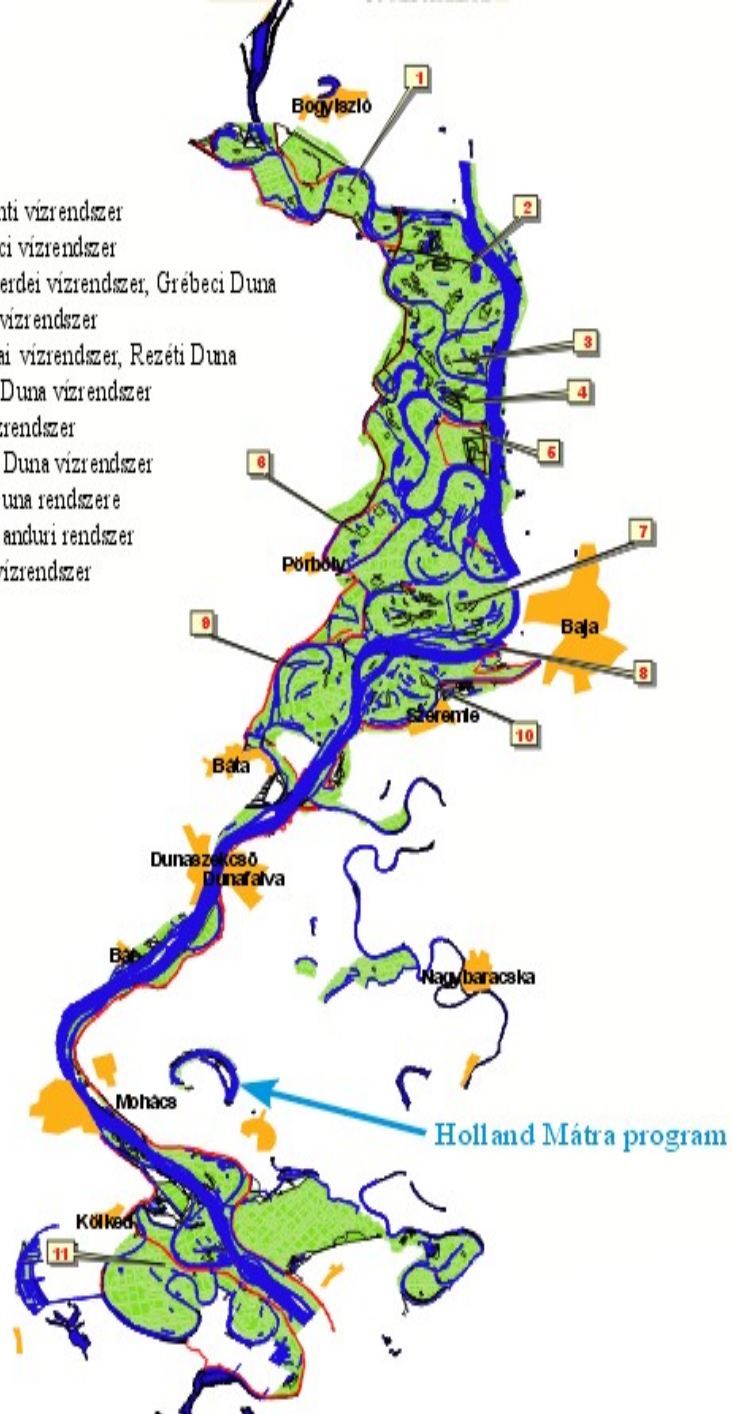
June-2007

**Nutrient Reduction
by the Rehabilitation
of Natural Floodland Functions**

Background

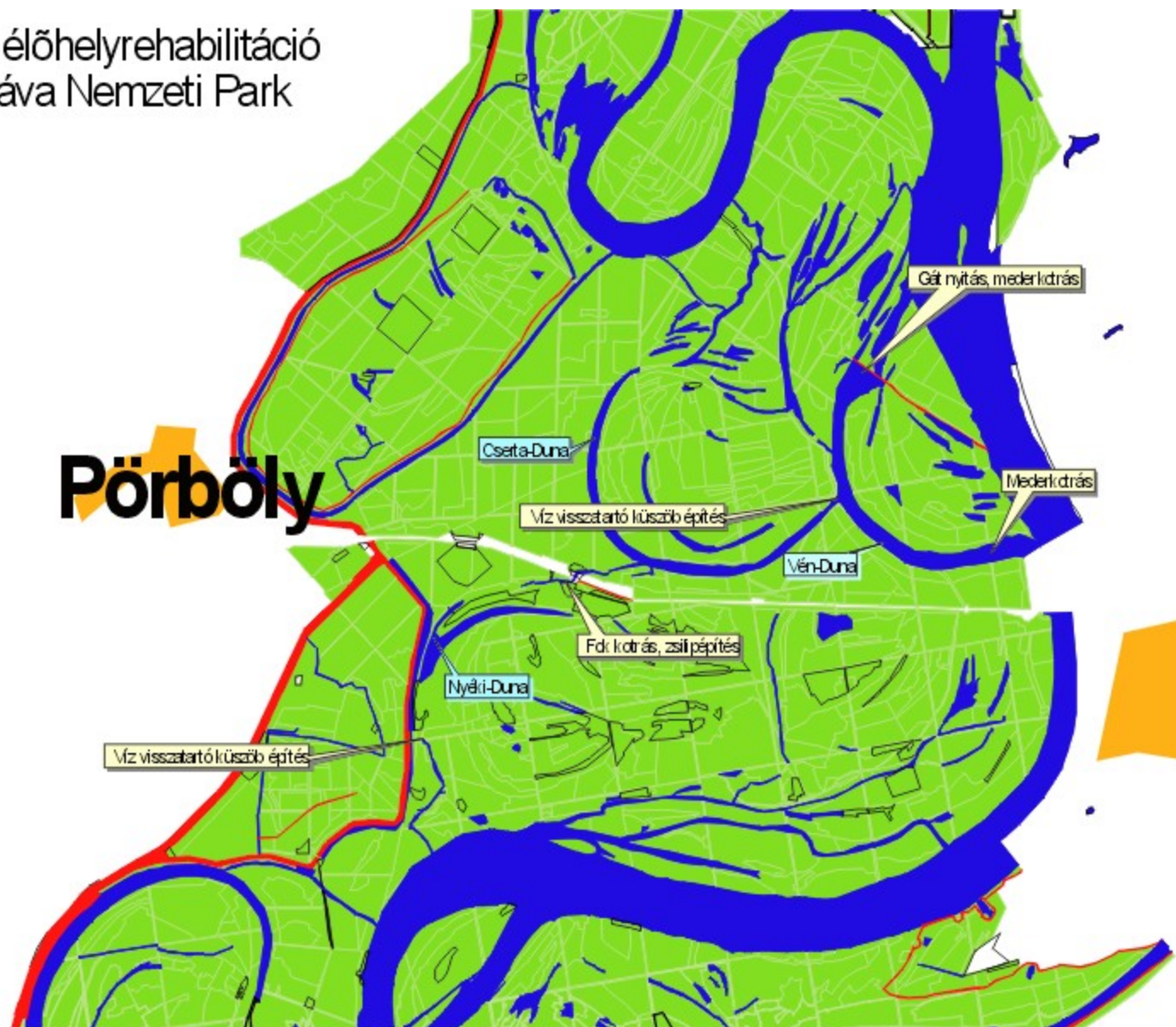
- **The ancient state of the Danube**
- **Flood prevention and the regulated river**
- **Riverbed deepening, erosion, alluvial deposition**
- **Nutrient retention capacity of floodlands:**
- **Hydrological restoration possibilities - a Dutch study**

- 1 Sió menti vízrendszer
- 2 Gemenci vízrendszer
- 3 Fekete erdei vízrendszer, Grébeci Duna
- 4 Buvati vízrendszer
- 5 Veránkai vízrendszer, Rezéti Duna
- 6 Kertülő Duna vízrendszer
- 7 Béli vízrendszer
- 8 Mónicz Duna vízrendszer
- 9 Bátai Duna rendszere
- 10 Nagy-Panduri rendszer
- 11 Bédai vízrendszer



Vén-Duna élőhelyrehabilitáció Duna-Dráva Nemzeti Park

Pörboly



Mohács

Holtág rehabilitációk a Duna-Dráva Nemzeti Parkban Béda-Karapancsa Tájegység



Project costs: former and current investments

Target area	Project stage	Cost (USD)
Vén-Duna	I. stage	270 000
Vén-Duna	II. stage	135 000
Lassi-Malomtelelő-Decsi	I. stage	177 000
Béda	I. stage	115 500
		697 500

Project costs: costs of planned GEF investments

Sub-project name	Area (ha)	Estimated cost (thousand USD)
1. „Veránka” water system, „Rezéti-Duna”	1100	750
2. „Buvat” water system	400	500
3. „Béda” water system	2500	600
4. Water system at the Sió-canal	800	400
5. „Gemenc” water system	1400	450
6. „Bátai-Duna” water system	1800	550
7. „Fekete-erdei” water system, „Grébeci-Duna”	520	500
8. „Kerülő-Duna” water system	640	350
9. „Báli” water system	290	200
10. „Móricz-Duna” water system	360	250
11. „Nagy-Pandur” water system	1200	450
	11010	5000

Nutrient reduction capacity of floodland habitat types

Habitat type / plant association	Reduction capacity (kg/ha/year)	
	Nitrogen (N)	Phosphorus (P)
Water with sparse vegetation	79-230	10-29
Moist soil	224-380	30-48
Bulrush/sedge/reedbeds	275-500	34-63
Wet meadow	250-310	31-39
Dry grassland	70-145	9-18
Poplar	415-685	52-86
Willow	282-322	35-40
Hardwoods	305-342	38-43

Cost-effectiveness of former wetland revitalisation projects

Project	Nutrient reduction capacity (t)		Cost (USD)	Effectiveness	
	N	P		USD/kg _[N]	USD/kg _[P]
Vén-Duna, Nyéki-Holt-Duna revitalisation	50	7	405 000	8,1	57,85
Lassi-Malomtelelő-Decsi reconstruction	35	5	117 000	5,06	35,4
Bédai-Duna revitalisation	115	16	115 000	1,01	7,22

Schedules: Preparation and Implementation

I. Selection

Task	Months	1	1	1	1	1, 2	2	2	2	2	2	2	2	3	3	3	3	3, 4	4	4	4	4	4	4	5	5	5
Produce TOR for preparation phase		⊕																									
World Bank revision			⊕	⊕																							
Advertise TOR (QCBS)					⊕																						
Expressions of interest received					⊕	⊕																					
Short-listing (evaluation committee, 3-6 firms)							⊕																				
Send out documentation requesting proposals								⊕																			
Receive proposals									⊕	⊕	⊕	⊕															
Professional evaluation													⊕	⊕													
Notify successful applicants																			⊕								
Evaluate financial proposals																				⊕							
Produce Evaluation Report																					⊕						
Sign contract																						⊕					
Produce Feasibility Study																								⊕	⊕	⊕	
Produce Financial and Economic report																								⊕	⊕	⊕	
Produce social analysis																								⊕	⊕	⊕	
Produce environmental analysis																								⊕	⊕	⊕	

Schedules: Preparation and Implementation II.

I. PD Documents and Implementation

Activity (months)	1	2	3	4	5	6	7	8	9	10
1. Produce TOR										
2. Selection procedure										
3. Feasibility Study										
4. Social analysis. + Financial-Economic Analysis.										
5. Environmental Analysis (WB)										
6. Technical plans (inc. authority procedure and IA)										

Activity (months)	11	12	13	14	15	16	17	18	19	20
1. Produce TOR										
2. Selection procedure										
3. Feasibility Study										
4. Social analysis. + Financial-Economic Analysis.										
5. Environmental Analysis (WB)										
6. Technical plans (inc. authority procedure and IA)										

Activity (months)	21	22	23	24	25	26	27	28	29	30
1. Produce TOR										
2. Selection procedure										
3. Feasibility Study										
4. Social analysis. + Financial-Economic Analysis.										
5. Environmental Analysis (WB)										
6. Technical plans (inc. authority procedure and IA)										

Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Produce technical designs	●	●	●	●	●	●	●	●	●						
Carry out Environmental Impact Assessment	●	●	●	●	●	●	●	●	●						
Implementation										●	●	●	●	●	●

Project Implementation Unit

