

REPORT

on the results of the biomonitoring carried out in the area affected by the bottom-sil water-recharge system

The bottom-sil water recharge-system that have been operated since 22nd June 1995 brought considerable changes in the water bodies of the Upper and Lower Szigetköz (Mosoni-Duna, water bodies outside the dikes, channels, side-branches in the flood-plain). From biological point of view the essence of the events: in most of the year increased amount of water arrived into the water bodies.

All the circumstances and the important notions we considered relevant in 1995 on the effects exerted on the biota by the bottom-sil system are still valid.

Taxa involved in the monitoring

In accordance with the joint agreement on the biomonitoring in the Szigetköz area we list here the data of the target taxa (aquatic macrophytes, plant coenology, molluscans, planctonic crustaceans, dragonflies, ephemeropterans, trichopterans, fish). The data of 1996 is given in the table format already used in 1995.

The sampling points

The sampling points are only partly identical with those used in the last year. The changes were caused by various reasons (the location became inaccessible, the point disappeared /e.g. the forest was cleared/, and so on).

The summary of our findings

On the basis of the analysis of the data collected in 1996, the only straightforward conclusion is that changes were detected. Only very uncertain extrapolations can be gained on the nature of these changes and on the long-term trends. We have already stressed last year that the biomonitoring is a method capable of detecting only long-term changes, but with a few evident exceptions, the effect of the water recharge is impossible to separate from the other factors such as the population dynamics changes. Even a very cautious analysis must be based on a much more extensive data base than the one gained in the data exchange. This is a natural consequence of the complexity of biological processes.

We have to divide the taxa into two groups when studying the effects of the water recharge:

- the aquatic organisms,
- the terrestrial organisms partly linked to water.

To must simply state that both groups indicate the same environmental changes, but on a different way. In the case of the first group the indication is direct. According to the physical and chemical characteristics of the arriving water a corresponding planctonic Crustacean fauna will form, and usually it is characterised by low number of species and individuals. The reaction of the aquatic Molluscs to the changes is slower, and the chance for at least partial regeneration is given. As a consequence of the operation of the water recharge system the fish of the main-channel can again get into the side-branches of the flood-plain, the conditions of the fish fauna of the water bodies outside the dikes improved, but the extension of the marsh fish habitats, which are very important from conservation point of view, has shrunk.

The organisms belonging to the second group usually exhibit a prolonged reaction, with a time lag after the environmental change. Further desiccation process is showed by the data of the phytocoenological investigations of the wet meadows and hardwood gallery forests. The changes of the insect fauna of the water bodies of the flood-plain and outside the dikes is contradicting. The number of species and individuals of the Trichoptera fauna has increased as a consequence of the appearance of species characteristic of fast flowing water bodies. This increase shows great fluctuations, which is characteristic of the initial phase of association formation. Degradation was clearly detected in the Trichoptera fauna of the main-channel. A parallel decrease in species number of dragonflies was detected, and the increase in the proportion of riverine, more tolerant species.

Closing comments

1. For the description of the state of the biota the best expression is chaotic.
2. The water recharge supplied water to extensive areas. Its positive effect is the partial reintroduction or at least its chance for the aquatic fauna and flora.
3. The continuous water recharge led to the formation of a uniform, less characteristic riverine formation of the fauna and flora. The change of the semiaquatic fauna is ambiguous. Presently the state created by the water recharge is better than the state without it.
4. The desiccation trend continues. The problems of the decrease and the regime of the groundwater level were not solved by the water recharge system. The floods are missing from the system. On the long-run for the persistence of the biota the most important problem will be the deficiency of water in the vegetation period.

MOLLUSCA

Number of the sampling point: 16

Location : Ásványráró (Ásványi-Duna the lower end)

Species list	Number of individuals collected at the sampling 14.09.	Abundance year	Dominance year %
<i>Viviparus acerosus</i>	2	2	1,2
<i>Valvata cristata</i>	3	3	1,8
<i>Valvata piscinalis</i>	10	10	6,0
<i>Potamopyrgus jenkinsi</i>	1	1	0,6
<i>Bithynia tentaculata</i>	18	18	10,8
<i>Lymnaea stagnalis</i>	3	3	1,8
<i>Lymnaea palustris</i>	3	3	1,8
<i>Lymnaea truncatula</i>	30	30	18,0
<i>Lymnaea auricularia</i>	8	8	4,8
<i>Lymnaea peregra</i>	23	23	13,8
<i>Physella acuta</i>	12	12	7,2
<i>Planorbarius corneus</i>	1	1	0,6
<i>Planorbis planorbis</i>	3	3	1,8
<i>Anisus vortex</i>	3	3	1,8
<i>Gyraulus albus</i>	8	8	4,8
<i>Dreissena polymorpha</i>	15	15	9,0
<i>Anodonta cygnea</i>	0,5	0,5	0,3
<i>Unio pictorum</i>	1	1	0,6
<i>Sphaerium corneum</i>	10	10	6,0
<i>Pisidium henslowanum</i>	9	9	5,4
<i>Pisidium supinum</i>	3	3	1,8

Location, characterisation of the sampling point and the sampling method:

Side-branch, the right bank of the Eastern end of Ásványi-Duna. Built and destroyed bank section. Constantly changing, usually 20-40 cm deep water. Drifted timber and floating debris sediment is frequently present. The collection of larger species were carried out by singling, the smaller ones were sifted from the mud at the location at a 100 square meter section of the bank. Number of individuals is referring to a square meter.

MOLLUSCA

Number of the sampling point: 17

Location: Arak (Nagy-Kerek)

Species list	Number of individuals collected at the sampling 14. 09.	Abundance year	Dominance year %
<i>Viviparus contectus</i>	4	4	0,4
<i>Valvata cristata</i>	29	29	2,8
<i>Bithynia tentaculata</i>	14	14	1,4
<i>Bithynia leachi</i>	115	115	11,2
<i>Lymnaea truncatula</i>	24	24	2,3
<i>Physa fontinalis</i>	21	21	2,0
<i>Planorbarius corneus</i>	17	17	1,7
<i>Planorbis planorbis</i>	184	184	18,0
<i>Anisus spirorbis</i>	31	31	3,0
<i>Anisus vortex</i>	104	104	10,1
<i>Anisus vorticulus</i>	14	14	1,4
<i>Bathymorphalus contortus</i>	206	206	20,0
<i>Hippeutis complanatus</i>	32	32	3,1
<i>Segmentina nitida</i>	171	171	16,7
<i>Sphaerium corneum</i>	17	17	1,7
<i>Pisidium casertanum</i>	8	8	0,8
<i>Pisidium milium</i>	21	21	2,0
<i>Pisidium nitidum</i>	5	5	0,5
<i>Pisidium obtusale</i>	9	9	0,9

Location, characterisation of the sampling point and the sampling method:

A former side-branch outside the dikes, now a protected marsh with alders. The status of the aquatic mollusc community seems to be stable. Sampling from the aquatic vegetation.

MOLLUSCA

Number of the sampling point: 18

Location: Cikolasziget (Lower end of the Cikolai-Duna)

Species list	Number of individuals collected at the sampling 09.14.	Abundance year	Dominance year %
<i>Viviparus acerosus</i>	2	2	2,4
<i>Valvata cristata</i>	1	1	1,2
<i>Valvata piscinalis</i>	11	11	13,1
<i>Bithynia tentaculata</i>	7	7	8,3
<i>Lymnaea stagnalis</i>	1	1	1,2
<i>Lymnaea palustris</i>	1	1	1,2
<i>Lymnaea truncatula</i>	5	5	5,9
<i>Lymnaea auricularia</i>	9	9	10,7
<i>Physella acuta</i>	7	7	8,3
<i>Planorbarius corneus</i>	1	1	1,2
<i>Planorbis planorbis</i>	8	8	9,5
<i>Gyraulus albus</i>	5	5	5,9
<i>Dreissena polymorpha</i>	12	12	14,3
<i>Anodonta cygnea</i>	2	2	2,3
<i>Unio pictorum</i>	1	1	1,2
<i>Sphaerium corneum</i>	5	5	5,9
<i>Pisidium henslowanum</i>	4	4	4,8
<i>Pisidium supinum A.</i>	2	2	2,3

Location, characterization of the sampling point and the sampling method:

At the outlet end of the dammed Cikola-branch. A stagnant, muddy bottomed water body the bank is only moderately inclining. There is no aquatic plant community here, the bank is overgrown with lowland tall herb weed communities. Singling was performed in a 3-4 m wide section of the bank. Number of individuals is referring to a square meter.

MOLLUSCA

Number of the sampling point: 19

Location: Ásványráró

Species list	Number of individuals collected at the sampling 14. 09.	Abundance year	Dominance year %
<i>Carychium minimum</i>	35	35	21,7
<i>Cochlicopa lubrica</i>	8	8	5,0
<i>Oxyloma elegans</i>	13	13	8,0
<i>Succinea putris</i>	5	5	3,1
<i>Cochlodina laminata</i>	2	2	1,2
<i>Clausilia pumila</i>	1	1	0,6
<i>Balea biplicata</i>	7	7	4,3
<i>Semilimax semilimax</i>	2	2	1,2
<i>Zonitoides nitidus</i>	31	31	19,2
<i>Aegopinella nitens</i>	8	8	5,0
<i>Bradybaena fruticum</i>	2	2	1,2
<i>Perforatella incarnata</i>	11	11	6,8
<i>Perforatella umbrosa</i>	1	1	0,6
<i>Trichia unidentata</i>	0,5	0,5	0,3
<i>Trichia striolata</i>	5	5	3,1
<i>Trichia hispida</i>	4	4	2,5
<i>Helicigona arbustorum</i>	19	19	11,8
<i>Cepaea hortensis</i>	7	7	4,3

Location, characterisation of the sampling point and the sampling method:

Terrestrial snails of a flood-plain gallery forest mosaic. The smaller individuals were collected by sifting from litter, the larger species by singling. Number of individuals refers to a square meter.

TRICHOPTERANS

Number of the sampling point: 13

Location: Rajka, Mosoni-Duna

Species list	The number of individuals collected at the samplings		Abundance year	Dominance year %
	10.06.	04.07.		
<i>Agapetus laniger</i>	1	49	50	2,1
<i>Orthotrichia costalis</i>	-	4	4	0,2
<i>Hydroptila sparsa</i>	-	2	2	0,1
<i>Hydropsyche bulbifera</i>	5	6	11	0,5
<i>Hydropsyche bulgaromanorum</i>	45	139	184	7,7
<i>Hydropsyche contubernalis</i>	26	53	79	3,3
<i>Hydropsyche modesta</i>	2	1	3	0,1
<i>Hydropsyche pellucidula</i>	6	31	37	1,6
<i>Hydropsyche angustipennis</i>	2	-	2	0,1
<i>Hydropsyche sp.</i>	490	336	826	34,7
<i>Cheumatopsyche lepida</i>	-	5	5	0,2
<i>Psychomyia pusilla</i>	116	355	471	19,8
<i>Phryganea grandis</i>	2	-	2	0,1
<i>Ecnomus tenellus</i>	-	1	1	-
<i>Colpotaulius incisus</i>	-	1	1	-
<i>Goera pilosa</i>	112	7	119	5,0
<i>Lepidostoma hirtum</i>	43	63	106	4,5
<i>Athripsodes cinereus</i>	3	7	10	0,4
<i>Ceraclea alboguttata</i>	-	1	1	-
<i>Ceraclea dissimilis</i>	75	79	154	6,5
<i>Mystacides longicornis</i>	7	8	15	0,6
<i>Oecetis lacustris</i>	5	41	46	1,9
<i>Oecetis notata</i>	-	1	1	-
<i>Oecetis ochracea</i>	145	103	248	10,4
<i>Leptocerus tineiformis</i>	-	1	1	-

Location, characterisation of the sampling points and the sampling method:

The bank of the Mosoni-Duna, practically high water level around the year, quite high water velocity. Sampling with 125 W mercury evaporation lamp.

TRICHOPTERANS

Number of the sampling point: 14

Location: Cikolasziget, at the foot of a stone bridge

Species list	Number of individuals collected at the sampling 01.07.	Abundance year	Dominance year %
<i>Orthotrichia costalis</i>	15	15	2,6
<i>Hydroptila sparsa</i>	20	20	3,4
<i>Hydropsyche angustipennis</i>	16	16	2,8
<i>Hydropsyche bulbifera</i>	4	4	0,7
<i>Hydropsyche bulgaromanerum</i>	6	6	1,0
<i>Hydropsyche contubernalis</i>	10	10	1,7
<i>Hydropsyche modesta</i>	1	1	0,2
<i>Hydropsyche pellucidula</i>	9	9	1,5
<i>Hydropsyche sp.</i>	236	236	40,6
<i>Neureclipsis bimaculata</i>	1	1	0,2
<i>Psychomyia pusilla</i>	77	77	13,3
<i>Ecnomus tenellus</i>	123	123	21,2
<i>Goera pilosa</i>	8	8	1,4
<i>Lepidostoma hirtum</i>	1	1	0,2
<i>Athripsodes cinereus</i>	4	4	0,7
<i>Ceraclea dissimilis</i>	25	25	4,3
<i>Mystacides longicornis</i>	1	1	0,2
<i>Oecetis lacustris</i>	30	30	5,2
<i>Oecetis ochracea</i>	9	9	1,5

Location, characterisation of the sampling points and the sampling method:

Next to the main channel of the water-recharge system. Locally extremely high water velocity, almost complete lack of aquatic vegetation. Sampling method as above.

TRICHOPTERANS

Number of the sampling point: 15

Location: Püski, Zátonyi-holt-Duna

Species list	Number of individuals collected at the sampling		Abundance year	Dominance year %
	10-06.	04. 07.		
<i>Agapetus laniger</i>	-	1	1	0,02
<i>Orthotrichia costalis</i>	2	5	7	0,1
<i>Orthotrichia tragetti</i>	1	-	1	0,02
<i>Oxigethria flavicornis</i>	-	2	2	0,04
<i>Hydroptila sparsa</i>	1	275	276	5,0
<i>Agaylea sexmaculata</i>	-	1	1	0,02
<i>Hydropsyche angustipennis</i>	1	2	3	0,05
<i>Hydropsyche bulbifera</i>	9	30	39	0,7
<i>Hydropsyche contubernalis</i>	155	545	700	12,8
<i>Hydropsyche modesta</i>	4	44	48	0,9
<i>Hydropsyche pellucidula</i>	5	31	36	0,7
<i>Hydropsyche bulgaromanorum</i>	-	3	3	0,05
<i>Hydropsyche sp.</i>	565	632	1197	22,0
<i>Neureclipsis bimaculata</i>	59	196	255	4,7
<i>Cyrnus crenaticornis</i>	1	-	1	0,02
<i>Psychomyia pusilla</i>	273	99	372	6,8
<i>Ecnomus tenellus</i>	35	7	42	7,7
<i>Agrypnia pagetana</i>	1	-	1	0,02
<i>Phryganea bipunctata</i>	1	-	1	0,02
<i>Phryganea grandis</i>	19	7	26	4,8
<i>Colpotaulius incisus</i>	1	1	2	0,04
<i>Goera pilosa</i>	8	-	8	0,1
<i>Lepidostoma hirtum</i>	1	16	17	0,3
<i>Athripsodes aterrimus</i>	7	1	8	0,1
<i>Athripsodes cinereus</i>	45	9	54	1,0
<i>Ceraclea alboguttata</i>	22	27	49	0,9
<i>Ceraclea dissimilis</i>	462	1085	1547	28,3
<i>Ceraclea senilis</i>	14	4	18	0,3
<i>Mystacides azurea</i>	3	2	5	0,1
<i>Mystacides longicornis</i>	44	18	62	1,1
<i>Trienodes bicolor</i>	1	-	1	0,02
<i>Oecetis furva</i>	20	6	26	0,5
<i>Oecetis lacustris</i>	75	48	123	2,2
<i>Oecetis notata</i>	5	7	12	0,2
<i>Oecetis ochracea</i>	15	41	56	1,0
<i>Leptocerus tineiformis</i>	325	128	453	10,0

Location, characterisation of the sampling points and the sampling method:

A stagnant water body with dense aquatic vegetation outside the dikes. The water level is continuously high. Sampling method as above.

CRUSTACEANS

Number of the sampling point: 7

Location: Öreg-Duna, 1828 rkm

Species list	Number of individuals collected at the sampling (ind/l)			Abundance year	Dominance year %
	21.06.	30.07.	17.09.		
<i>Simocephalus vetulus</i>	414	27,6	0,9	442,5	18,68
<i>Chydorus sphaericus</i>	331,2	10,8	8,7	350,7	14,80
<i>Eurycercus lamellatus</i>	333,6	3,6	-	337,2	14,23
<i>Scapholeberis mucronata</i>	226,8	-	2,7	229,5	9,69
<i>Pleuroxus aduncus var.coelatus</i>	208,8	-	-	208,8	8,81
<i>Simocephalus exspinosus</i>	76,8	-	-	76,8	3,24
<i>Sida crystallina</i>	56,4	3,0	-	59,4	2,51
<i>Graptoleberis testudinara</i>	19,2	4,2	-	23,4	0,99
<i>Simocephalus serrulatus</i>	-	10,8	0,6	11,4	0,48
<i>Pleuroxus aduncus</i>	-	9,0	-	9,0	0,38
<i>Peracantha truncata</i>	-	1,2	0,3	1,5	0,06
<i>Chydorus ovalis</i>	-	-	1,2	1,2	0,05
<i>Ceriodaphnia megops</i>	-	-	0,3	0,3	0,01
<i>Eucyclops serrulatus</i>	211,2	38,4	37,8	287,4	12,13
<i>Eucyclops macruroides</i>	97,2	-	-	97,2	4,10
<i>Macrocylops albidus</i>	-	49,8	16,2	66,0	2,79
<i>Eucyclops speratus</i>	62,4	-	1,5	63,9	2,70
<i>Microcylops varicans</i>	56,4	-	-	56,4	2,38
<i>Acanthocyclops robustus</i>	38,4	-	-	38,4	1,62
<i>Ectocyclops phaleratus</i>	-	-	5,4	5,4	0,23
<i>Thermocyclops crassus</i>	-	-	2,7	2,7	0,11

Location, characterisation of the sampling points and the sampling method:

Abandoned Danube stretch, separated marginal lake by the lower cut-off the Bodaki side-arm system.

Stagnant water body, littoral and submersed macrovegetation, water depth is 50-60 cm.

Sampling as above.

CRUSTACEANS

Number of the sampling point: 2

Location: Öreg-Duna 1839 rkm

Species list	Number of individuals collected at the sampling (ind/l)			Abundance year	Dominance year %
	21.06.	30.07.	17.09.		
<i>Chydorus sphaericus</i>	114,4	0,6	96,1	211,1	23,04
<i>Simocephalus vetulus</i>	105,8	0,4	6	112,2	12,25
<i>Eurycercus lamellatus</i>	95,4	-	-	95,4	10,41
<i>Scapholeberis mucronata</i>	66,8	-	-	66,8	7,29
<i>Scapholeberis aurita</i>	21,4	-	-	21,4	2,34
<i>Sida crystallina</i>	13,2	6	0,2	19,4	2,12
<i>Diaphanosoma brachyurum</i>	16	-	-	16	1,75
<i>Alona quadrangularis</i>	10,4	-	-	10,4	1,13
<i>Macrothrix hirsuticornis</i>	4,2	-	-	4,2	0,46
<i>Peracantha truncata</i>	3,6	-	-	3,6	0,39
<i>Simocephalus serrlatus</i>	0,6	-	0,6	1,2	0,13
<i>Eucyclops serrulatus</i>	165,2	4,8	93	306,2	33,41
<i>Acanthocyclops robustus</i>	6,4	-	15,0	21,4	2,34
<i>Eucyclops speratus</i>	10,4	-	0,3	10,7	1,17
<i>Ectocyclops phaleratus</i>	3,2	1,5	-	4,7	0,51
<i>Macrocyclops albidus</i>	-	0,8	3,2	4	0,43
<i>Megacyclops viridus</i>	3,6	-	-	3,6	0,39
<i>Paracyclops poppei</i>	2	-	-	2	0,22
<i>Paracyclops fimbriatus</i>	-	-	1,2	1,2	0,13
<i>Eurytemora velox</i>	-	-	0,9	0,9	0,10

Location, characterisation of the sampling points and the sampling method:

Abandoned Danube section, below a bottom-sil.

Moderate water movement, dependent on water level; the vegetation is composed of litoral reed, submersed macrophyton stands, water depth is 30-40 cm. Taking 5-10 x 1 litres of water among macrophyton stands, random from an area of approximately 5 square metres. Sieving the water through a plankton-net (mesh size: 70 micron). Counting and determining the animals in the filtrate.

CRUSTACEANS

Number of the sampling point: 3

Location: Öreg-Duna, 1832,5 rkm

Species list	Number of individuals collected at the sampling (ind/l)			Abundance year	Dominance year %
	21.06.	30.07.	17.09.		
<i>Simocephalus vetulus</i>	147	44,3	-	191,3	10,59
<i>Pleuroxus aduncus</i>	96	36,2	-	132,2	7,32
<i>Eurycercus lamellatus</i>	82	16,3	-	98,3	5,44
<i>Sida crystallina</i>	29	-	-	29	1,61
<i>Ceriodaphnia pulchella</i>	4	20	-	24	1,33
<i>Simocephalus exspinosus</i>	18	-	-	18	1,00
<i>Chydorus sphaericus</i>	-	14	-	14	0,77
<i>Alona quadrangularis</i>	12	1	-	13	0,72
<i>Peracantha truncata</i>	-	8,2	-	8,2	0,45
<i>Simocephalus serrulatus</i>	-	5,8	-	5,8	0,32
<i>Alona rectangula</i>	-	3,5	-	3,5	0,19
<i>Diaphanosoma brachyurum</i>	-	2,3	-	2,3	0,13
<i>Pseudochydorus globosus</i>	-	1	-	1	0,06
<i>Eucyclops serrulatus</i>	1052	50,2	5	1107,2	61,29
<i>Macrocyclus albidus</i>	87	37,3	-	124,3	6,88
<i>Eucyclops macruroides</i>	32	-	-	32	1,77
<i>Acanthocyclops robustus</i>	-	2,3	-	2,3	0,13

Location, characterisation of the sampling points and the sampling method:

Bay, at the lower cut-off of the Cikola side-arm system.

Stagnant water body with moderate water movement, dependent on the water level; vegetation is composed of litoral reed, submers macrophyton stands, water depth is 60-70 cm. Sampling as above.

CRUSTACEANS

Number of the sampling point: 4

Location: Dunasziget, Schisler-holtág

Species list	Number of individuals collected at the sampling (ind/l)			Abundance year	Dominance year %
	21.06.	30.07.	17.09.		
<i>Graptoleberis testudinaria</i>	177,3	85,6	3,5	266,3	27,58
<i>Chydorus sphaericus</i>	160,1	88,8	0,6	249,5	25,84
<i>Alona rectangula</i>	136,8	50	1	187,8	19,45
<i>Simocephalus vetulus</i>	0,3	21,6	0,6	22,5	2,33
<i>Alona intermedia</i>	-	-	17,6	1,6	1,82
<i>Diaphanosoma brachyurum</i>	4,3	1	-	5,3	0,55
<i>Sida crystallina</i>	-	2,4	1,6	4,0	0,41
<i>Alona guttata</i>	-	3,6	-	3,6	0,37
<i>Scapholeberis mucronata</i>	0,6	1,4	,3	2,3	0,24
<i>Peracantha truncata</i>	-	1,0	1,2	2,2	0,23
<i>Mesocyclops leuckarti</i>	79,4	10,4	6,9	96,7	10,01
<i>Thermocyclops crassus</i>	56,9	-	-	56,9	5,89
<i>Thermocyclops oithonoides</i>	22,6	9,4	5,8	37,8	3,91
<i>Eucyclops serrulatus</i>	-	3,2	4,2	7,4	0,77
<i>Ectocyclops phaleratus</i>	0,5	1,6	0,4	2,5	0,26
<i>Eurytemora velox</i>	2,4	-	-	2,4	0,25
<i>Paracyclops fimbriatus</i>	-	0,6	-	0,6	0,06
<i>Eudiaptomus gracilis</i>	0,3	-	-	0,3	0,03

Location, characterisation of the sampling points and the sampling method:

Stagnant water body, with massive production of submers macrovegetation, littoral reed, water depth is: 80-120 cm. Sampling as above.

CRUSTACEANS

Number of the sampling point: 5

Location: Zátonyi Duna

Species list	Number of individuals collected at the sampling (ind/l)			Abundance year	Dominance year %
	21.06.	30.07.	17.09.		
<i>Chydorus sphaericus</i>	66,4	87,2	9,6	163,2	22,43
<i>Peracantha truncata</i>	29,6	47,3	35,6	112,5	15,47
<i>Pleuroxus aduncus</i>	3,6	21,8	74,8	100,2	13,77
<i>Chydorus ovalis</i>	-	77,4	-	77,4	10,63
<i>Simocephalus serrulatus</i>	22,8	14,7	188	56,3	7,73
<i>Graptoleberis testudinaria</i>	10,6	8,0	-	18,6	2,56
<i>Sida crystallina</i>	13,2	3	-	16,2	2,23
<i>Pseudochydorus globosus</i>	7,2	4,4	3,6	15,2	2,10
<i>Oxyurella tenuicaudis</i>	12,4	-	-	12,4	1,70
<i>Scapholeberis mucronata</i>	4,8	1,4	1,8	1,1	1,51
<i>Simocephalus vetulus</i>	0,6	-	6,8	7,4	1,02
<i>Alona rectangula</i>	3,2	-	-	3,2	0,44
<i>Pleuroxus laevis</i>	-	1,1	0,8	1,9	0,26
<i>Disparalona rostrata</i>	-	0,6	-	,6	0,08
<i>Macrocyclops albidus</i>	10,8	40,3	8,8	59,9	8,23
<i>Eucyclops serrulatus</i>	4,0	18,6	10,8	33,4	4,59
<i>Ectocyclops phaleratus</i>	2,8	7,3	-	101	1,39
<i>Thermocyclops crassus</i>	-	7,2	-	7,2	0,99
<i>Eucyclops speratus</i>	-	6,1	-	6,1	0,84
<i>Eurytemora velox</i>	-	2,9	3,2	6,1	0,84
<i>Eucyclops macruroides</i>	6,0	-	-	6	0,82
<i>Eucyclops macrurus</i>	-	2,2	-	2,2	0,31
<i>Acanthocyclops robustus</i>	0,4	-	-	0,4	0,05

Location, characterization of the sampling points and the sampling method:

Fast flowing water (as a consequence of water replenishment), moderate reed belt and submers macrovegetaion, water depth is 120-150 cm. Sampling as above.

CRUSTACEANS

Number of the sampling point: 6

Location: Lipót (Lipóti morotva)

Species list	Number of individuals collected at the sampling (ind/l.)			Abundance year	Dominance year %
	21.06.	30.07.	17.09.		
<i>Simocephalus vetulus</i>	106,2	187	2,4	295,6	17,92
<i>Pleuroxus aduncus</i>	49,2	219	-	268,2	16,27
<i>Chydorus sphaericus</i>	157,2	34	-	191,2	11,60
<i>Sida crystallina</i>	95,8	74	9,6	179,4	10,88
<i>Eurycercus lamellatus</i>	100,3	24	-	124,3	7,54
<i>Ceriodaphnia megops</i>	57,6	11	-	68,6	4,16
<i>Acroperus harpae</i>	11,2	48	7,2	66,4	4,03
<i>Chydorus latus</i>	40,6	-	-	40,6	2,46
<i>Diaphanosoma brachyurum</i>	23,7	14	1,8	39,5	2,40
<i>Scapholeberis mucronata</i>	20	12,5	-	32,5	1,97
<i>Ceriodaphnia pulchella</i>	13,6	6	11,4	31	1,88
<i>Graptoleberis testudinaria</i>	10,4	15,5	-	25,9	1,57
<i>Simocephalus serrulatus</i>	-	21	3	24	1,46
<i>Peracantha truncata</i>	15	1	-	16	0,97
<i>Polyphemus pediculus</i>	1,7	12	-	13,7	0,83
<i>Alona guttata</i>	-	-	8,4	8,4	0,51
<i>Chydorus ovalis</i>	6,7	-	-	6,7	0,40
<i>Camptocercus lilljeborgi</i>	5,2	-	-	5,2	0,32
<i>Pseudochydorus globosus</i>	5	-	-	5	,30
<i>Oxyurella tenuicaudis</i>	-	1	3,6	4,6	0,28
<i>Ceriodaphnia setosa</i>	3,6	-	-	3,6	0,22
<i>Daphnia longispina</i>	0,4	-	-	0,4	0,02
<i>Eucyclops serrulatus</i>	34	25	14,4	73,4	4,45
<i>Macrocyclus albidus</i>	35,5	33	-	68,5	4,16
<i>Mesocyclops leuckarti</i>	-	-	22,2	22,2	1,35
<i>Eucyclops macruroides</i>	7,2	8,5	-	157	0,95
<i>Thermocyclops crassus</i>	-	-	10,2	10,2	0,62
<i>Macrocyclus fuscus</i>	5,8	-	-	5,8	0,35
<i>Ectocyclops phaleratus</i>	-	-	2,4	2,4	0,15

Location, characterization of the sampling points and the sampling method:

Stagnant water body outside the dikes, presently affected by the operation of the water replenishment system. At some places moderate water movement, dense reed belt, medium cover of submers macrovegetation, water depth is 80-120 cm. Sampling as above.

PISCES

Number of the sampling point: 10

Location: Duna főág, 1833 rkm

Species list	Number of individuals collected at the sampling (20 sample) 05. 10.	ind./sample	Dominance year %
<i>Barbus barbus</i>	2	0,1	2
<i>Leuciscus leuciscus</i>	6	0,3	6
<i>Chondrostoma nasus</i>	4	0,2	4
<i>Vimba vimba</i>	2	0,1	2
<i>Aspius aspius</i>	3	0,15	3
<i>Leuciscus cephalus</i>	7	0,35	6
<i>Leuciscus idus</i>	2	0,1	2
<i>Alburnus alburnus</i>	60	3	56
<i>Proterorhinus marmoratus</i>	5	0,25	5
<i>Perca fluviatilis</i>	1	0,05	1
<i>Rutilus rutilus</i>	11	0,55	10
<i>Esox lucius</i>	2	0,1	2

Location, characterisation of the sampling points and the sampling method:

Riparian zone at the bank of main channel, which has a permanent flow. Water depth is 0,3-1,2 m. Bottom is composed of stones and gravel, bank protection boulders are present. Suspended sediment load is high, vertical stratification in temperature and oxygen is negligible. Macrophytes are missing. Diversity of fish species is great, community is dominated by rheophilic species, the biomass of fish is low. Analysis of the O+ juvenile fish assemblages. The fish samples were collected with random point abundance sampling strategy using electrofishing.

PISCES

Number of the sampling point: 12

Location: Gazfői Duna

Species list	Number of individuals collected at the sampling (20 sampling) 08.03.	ind./sampling	Dominance year %
<i>Proterorhinus marmoratus</i>	2	0,10	3
<i>Blicca bjoerkna</i>	7	0,35	11
<i>Perca fluviatilis</i>	2	0,10	3
<i>Rhodeus sericeus amarus</i>	5	0,25	8
<i>Rutilus rutilus</i>	8	0,40	13
<i>Lepomis gibbosus</i>	2	0,10	3
<i>Esox lucius</i>	4	0,20	6
<i>Scardinius erythrophthalmus</i>	25	1,25	40
<i>Tinca tinca</i>	2	0,10	3
<i>Carassius carassius</i>	6	0,30	10

Location, characterisation of the sampling points and the sampling method:

Gazfői Danube arm, located outside the dikes. Lentic section of side arm has had a permanent flow since the operation of water replenishment system. Water depth is 0,5-1,5 m. Bottom consists of silt. Suspended sediment load is low. There is vertical stratification in temperature and oxygen. Macrophytes are diverse and grow densely. Diversity of fish species is moderate, the community is dominated by limnophilic and neutrophilic species. Sampling as above.

PISCES

Number of the sampling point: 11

Location: Duna főág, 1843 rkm

Species list	Number of individuals collected at the sampling (20 sampling) 08. 10.	ind./sampling	Dominance year %
<i>Cottus gobio</i>	6	0,30	20
<i>Barbus barbus</i>	10	0,50	33
<i>Leuciscus leuciscus</i>	3	0,15	10
<i>Chondrostoms nasus</i>	3	0,15	10
<i>Proterorhinus marmoratus</i>	8	0,40	27

Location, characterisation of the sampling points and the sampling method:

Special microhabitat of the main channel on the surface of the bottom sill. The high gradient section has a permanent and turbulent flow. Water depth is 0,2-0,5 m. Bottom composed of stones. Suspended sediment load is high, vertical stratification in temperature and oxygen is negligible. Macrophytes are missing. Diversity of fish species is great, the community is dominated by rheophilic species. Sampling as above.

PISCES

Number of the sampling point: 9

Location: Cikola-ágrendszer, Csákányi-mellékág

Species list	Number of individuals collected at the sampling (20 and 30 sampling)		ind./sampling	Dominance year %
	28.06.	09.10.		
<i>Barbus barbus</i>	1	-	0,02	0,32
<i>Leuciscus leuciscus</i>	39	-	0,80	12,6
<i>Gobio albipinnatus</i>	3	3	0,12	1,90
<i>Leuciscus cephalus</i>	34	3	0,74	12,0
<i>Leuciscus idus</i>	2	5	0,14	2,3
<i>Alburnus alburnus</i>	50	65	2,30	37,2
<i>Proterorhinus marmoratus</i>	5	4	0,18	2,9
<i>Blicca bjoerka</i>	2	6	0,16	2,6
<i>Carassius auratus</i>	-	2	0,04	0,6
<i>Abramis brama</i>	-	3	0,06	1,0
<i>Perca fluviatilis</i>	-	2	0,04	0,6
<i>Rhodeus sericeus amarus</i>	10	25	0,7	11,3
<i>Rutilus rutilus</i>	14	33	0,94	15,2
<i>Esox lucius</i>	-	7	0,14	2,3

Location, characterisation of the sampling points and the sampling method:

Riparian zone of side arm has had a permanent flow since the operation of water replenishment system. Water depth is 0,5-1,5 m. Bottom composed of gravel mixed with sand and silt. Suspended sediment load is high, vertical stratification in temperature and oxygen is negligible. Macrophytes are scarce. Diversity of fish species is great, the community is dominated by neutrophilic species, and rheophilic species appeared in 1996. Sampling as above.

PISCES

Number of the sampling point: 4

Location: Dunasziget, Schisler-holtág

Species list	Number of individuals collected at sampling (20 sampling) 18.10.	ind./sampling	Dominance year %
<i>Carassius auratus</i>	9	0,45	-

Location, characterisation of the sampling points and the sampling method:

Disconnected side arm isolated completely since the Danube diversion with stagnant water. Water depth is 0,7-1,8 m. Bottom consist of silt. Suspended sediment load is low. There is vertical stratification in temperature and oxygen. Macrophytes grow densely. Fish fauna is poor, the community is dominated by one species. Sampling as above.

PISCES

Number of the sampling point: 5

Location: Lipóti morotva (Lipót)

Species list	Number of individuals collected at the sampling (30 sampling) 18.10.	ind./sampling	Dominance year %
<i>Vimba vimba</i>	1	0,03	0,7
<i>Aspius aspius</i>	2	0,05	1,4
<i>Leuciscus idus</i>	1	0,03	0,7
<i>Alburnus alburnus</i>	62	1,55	43,0
<i>Blicca bjoerkna</i>	7	0,18	4,9
<i>Perca fluviatilis</i>	4	0,10	2,8
<i>Rhodeus sericeus amarus</i>	5	0,13	3,5
<i>Rutilus rutilus</i>	34	0,85	23,6
<i>Esox lucius</i>	6	0,15	4,2
<i>Scardinius erythrophthalmus</i>	22	0,55	15,3

Location, characterisation of the sampling points and the sampling method:

Dredged section at the concave bank of the oxbow lake, which has had a slow flow since the operation of the water replenishment. Water depth is 0,4-1,0 m. Bottom consists of silt. Suspended sediment load is moderate. There is vertical stratification in temperature and oxygen. Macrophytes grow densely. Diversity of fish species is high, community dominated by limnophilic and neutrophilic species, and rheophilic species occurred in 1996. Sampling as above.

ODONATA (larva)

Number of the sampling point: 20

Location: Mosonmagyaróvár

Species list	number of individuals collected at the sampling 05.07.	Abundance year	Dominance year %
<i>Calopteryx splendens</i>	9	9	18,4
<i>Platycnemis pennipes</i>	14	14	28,6
<i>Stylurus flavipes</i>	5	5	10,2
<i>Gomphus vulgatissimus</i>	6	6	12,2
<i>Ophiogomphus cecilia</i>	1	1	2,0
<i>Somatochlora metallica</i>	14	14	28,6

Location, characterization of the sampling points and the sampling method:

Mosoni-Duna, higher than average water regime. Sampling was carried out with a 40 cm diameter net of 2 mm mesh size, from the bottom and submerged plants for 30 minutes.

ODONATA (larva)

Number of the sampling point: 21

Location: Rajka

Species list	number of individuals collected at the sampling		Abundance year	Dominance year %
	05.07.	08.08.		
<i>Lestes viridis</i>	3	-	3	0,4
<i>Sympecma fusca</i>	32	27	59	8,5
<i>Erythromma viridulum</i>	121	-	121	17,5
<i>Coenagrion puella</i>	3	-	3	0,4
<i>Enallagma cyathigerum</i>	9	-	9	1,3
<i>Ischnura pumilio</i>	58	26	84	12,1
<i>Ischnura elegans pontica</i>	160	95	255	36,8
<i>Ischnura imperator</i>	6	7	13	1,9
<i>Anax parthenope</i>	-	5	5	0,7
<i>Hemianax ephippiger</i>	-	1	1	0,1
<i>Libellula quadrimaculata</i>	-	1	1	0,1
<i>Orthetrum cancellatum</i>	18	5	23	3,3
<i>Orthetrum albistylum</i>	8	2	10	1,4
<i>Crocothemis erythraea</i>	1	25	26	3,7
<i>Sympetrum striolatum</i>	18	5	23	3,3
<i>Sympetrum vulgatum</i>	8	3	11	1,6
<i>Sympetrum meridionale</i>	1	2	3	0,4
<i>Sympetrum fonscolombii</i>	1	27	28	4,0
<i>Sympetrum sanguineum</i>	12	2	14	2,0

Location, characterization of the sampling points and the sampling method:

Gravel pit lake inside the dikes, its edge is covered with dense aquatic vegetation. Sampling as above.

ODONATA (larva)

Number of the sampling point: 22

Location: Lipót

Species list	number of individuals collected at the sampling			Abundance year	Dominance year %
	23.05.	05.07.	11.09.		
<i>Calopteryx splendens</i>	-	-	5	5	20,8
<i>Platycnemis pennipens</i>	-	5	5	10	41,6
<i>Coenagrion pulchellum</i>	3	-	-	3	12,5
<i>Ischnura elegans pontica</i>	-	-	3	3	12,5
<i>Anaciaeschna isosceles</i>	-	-	1	1	4,1
<i>Orthetrum albistylum</i>	-	1	-	1	4,1
<i>Sympetrum striolatum</i>	-	1	-	1	4,1

Location, characterization of the sampling points and the sampling method:

A channel outside the dikes, frequent, strong sediment eradication. Significantly increased water regime. Sampling as above.

ODONATA (larva)

Number of the sampling point: 23

Location: Mosonmagyaróvár, Parti-erdő

Species list	number of individuals collected at the sampling			Abundance year	Dominance year %
	05.07.	08.08.	11.09.		
<i>Lestes viridis</i>	9	-	-	9	20,5
<i>Coenagrion puella</i>	-	-	5	5	11,6
<i>Aeschna mixta</i>	3	11	-	14	31,8
<i>Libellula quadrimaculata</i>	-	-	1	1	2,3
<i>Sympetrum striolatum</i>	-	1	-	1	2,3
<i>Sympetrum vulgatum</i>	-	3	8	11	25,0
<i>Sympetrum sanguineum</i>	3	-	-	3	6,8

Location, characterization of the sampling points and the sampling method:

Marsh with alder stand, surrounded by closed, hard-wood riparian gallery forest.
Sampling as above.

EPHEMEROPTERA

Number of the sampling point: 24

Location: Rajka

Species list	number of individuals collected at the sampling			Abundance year	Dominance year %
	23.05.	24.06.	26.08.		
<i>Baetis fuscatus</i>	1	-	-	-	-
<i>Cloeon dipterum</i>	-	1	-	-	-
<i>Heptagenia sulphurea</i>	-	1	-	-	-
<i>Caernis luctuosa</i>	-	-	1	-	-

Location, characterization of the sampling points and the sampling method:

A drying willow shrub. After the construction of the bottom-sil the bank became significantly elevated. Sampling was carried out with 3 non drying Tangle-traps at every locations, supplemented with foliage netting of 100 square metres, and occasionally with light trapping.

EPHEMEROPTERA

Number of the sampling point: 25

Location: Lipót

Species list	number of individuals collected at the sampling			Abundance year	Dominance year %
	23.05.	24.06.	26.08.		
<i>Baetis fuscatus</i>	-	2	-	2	0,56
<i>Baetis vernus</i>	-	1	-	1	0,28
<i>Caenis horaria</i>	132	-	188	320	90,1
<i>Caenis luctuosa</i>	2	-	30	32	9,0

Location, characterization of the sampling points and the sampling method:

A drying willow shrub, at the bank of a stagnant side-branch. Sampling as above.

EPHEMEROPTERA

Number of the sampling point: 26

Location: Nagybajcs

Species list	number of individuals collected at the sampling			Abundance year	Dominance year %
	23.05.	24.06.	26.08.		
<i>Cloeon dipterum</i>	-	1	1	-	-
<i>Heptagenia flava</i>	-	1	-	-	-
<i>Heptagenia sulphurea</i>	-	3	-	-	-

Location, characterization of the sampling points and the sampling method:

Soft-wood riparian forest and willow shrub. Sampling as above.

EPHEMEROPTERA

Number of the sampling point: 27

Location: Feketeerdő

Species list	number of individuals collected at the sampling			Abundance year	Dominance year %
	23.05.	24.06.	26.08.		
<i>Baetis fuscatus</i>	5	13	10	28	26,6
<i>Baetis vernus</i>	1	19	3	23	21,9
<i>Cloeon dipterum</i>	-	-	1	1	0,9
<i>Ephemerella ignita</i>	-	8	7	15	14,2
<i>Ephemerella notata</i>	-	1	-	1	0,9
<i>Ephemerella major</i>	-	1	-	1	0,9
<i>Heptagenia flava</i>	-	1	2	3	2,8
<i>Heptagenia sulphurea</i>	-	1	-	1	0,9
<i>Caenis lactea</i>	-	4	-	4	3,8
<i>Caenis pseudoriualorum</i>	-	2	7	9	8,6
<i>Ephemera vulgata</i>	-	1	-	1	0,9
<i>Potamanthus luteus</i>	-	18	-	18	17,1

Location, characterization of the sampling points and the sampling method:

A softwood riparian forest at the bank of the Mosoni-Duna. Sampling as above.

AQUATIC MACROPHYTES

Number of the sampling point: 2

Location: Duna főág, 1839 km

Species list	Kohler-index		growth form
	21. 06.	30.07.	
<i>Cladophora sp.</i>	-	2	mp
<i>Lemna minor</i>	-	1	ap
<i>Potamogeton crispus</i>	-	1	rs
<i>Potamogeton pectinatus</i>	1	2	rs
<i>Potamogeton perfoliatus</i>	-	1	rs
<i>Zannichellia palustris</i>	-	3	rs

AQUATIC MACROPHYTES

Number of the sampling point: 7

Location: Duna főág, 1828 rkm

Species list	Kohler-index			growth form
	21.06.	30.07.	17.09.	
<i>Ceratophyllum demersum</i>	1	3	3	mp
<i>Lemna minor</i>	2	2	2	ap
<i>Potamogeton nodosus</i>	1	2	2	rf

AQUATIC MACROPHYTES

Number of the sampling point: 4

Location: Dunasziget, Schisler-holtág (flood-plain)

Species list	Kohler-index		growth form
	21.06.	30.07.	
<i>Ceratophyllum demersum</i>	4	5	mp
<i>Myriophyllum spicatum</i>	3	5	rs
<i>Potamogeton crispus</i>	1	-	rs
<i>Potamogeton pectinatus</i>	1	1	rs
<i>Potamogeton pectinatus var. scoparius</i>	2	2	rs
<i>Potamogeton perfoliatus</i>	-	1	rs
<i>Ranunculus circinatus</i>	1	-	rs

AQUATIC MACROPHYTES

Number of the sampling point: 9

Location: Csákányi-Duna (flood-plain)

Species list	Kohler-index			growth form
	21. 06.	30.07.	17.09.	
<i>Ceratophyllum demersum</i>	-	-	1	mp
<i>Lemna minor</i>	-	-	1	ap
<i>Myriophyllum spicatum</i>	-	1	1	rs
<i>Najas marina</i>	-	-	2	rs
<i>Potamogeton crispus</i>	1	1	-	rs
<i>Potamogeton lucens</i>	-	2	2	rs
<i>Potamogeton nodosus</i>	-	-	2	rf
<i>Potamogeton pectinatus</i>	1	2	2	rs
<i>Potamogeton perfoliatus</i>	1	3	3	rs
<i>Potamogeton pusillus</i>	-	1	-	rs

AQUATIC MACROPHYTES

Number of the sampling point: 8

Location: Zátonyi-Duna (outside the dikes)

Species list	Kohler-index			growth form
	21.06.	30.07.	17.09.	
<i>Butomus umbellatus</i> var. <i>submersus</i>	1	1	-	rs
<i>Ceratophyllum demersum</i>	1	1	1	mp
<i>Nuphar lutea</i>	1	2	2	rf
<i>Nymphaea alba</i>	2	3	3	rf
<i>Polygonum amphibium</i> f. <i>aquaticum</i>	1	2	2	rf
<i>Potamogeton lucens</i>	3	3	2	rs

AQUATIC MACROPHYTES

Number of the sampling point: 6

Location: Lipót, Lipóti morotva

Species list	Kohler-index			growth form
	21.06.	30.07.	17.09.	
<i>Cladophora</i> sp.	-	2	-	mp
<i>Hippuris vulgaris</i>	-	1	1	rs
<i>Lemna minor</i>	-	1	1	ap
<i>Nuphar lutea</i>	3	3	2	rf
<i>Nymphaea alba</i>	1	1	1	rf
<i>Nymphoides peltata</i>	1	1	-	rf
<i>Polygonum amphibium</i> f. <i>aquaticum</i>	-	1	-	rf
<i>Potamogeton lucens</i>	-	2	1	rs
<i>Potamogeton pectinatus</i>	3	2	-	rs
<i>Salvinia natans</i>	1	2	2	ap

PLANT COENOLOGY

Number of the sampling point: 28

Location: Dunasziget

species list		A-D value	V value	Nature Conservation Value
<i>Acer negundo</i>		+	5	TZ
<i>Achillea millefolium</i>		+	3	TZ
<i>Achillea ptarmica</i>		+	7	K
<i>Agropyron repens</i>		1-2	3	GY
<i>Agrostis stolonifera</i>		+	8	E
<i>Alopecurus pratensis</i>		+	8	E
<i>Arctium nemorosum</i>		+	6	T
<i>Bromus mollis</i>	x	-	3	TZ
<i>Capsella bursa-pastoris</i>	x	-	7	TZ
<i>Carex acutiformis</i>		+	10	E
<i>Carex hirta</i>		+	7	GY
<i>Carex riparia</i>		+	10	E
<i>Carduus crispus</i>		+	4	K
<i>Centaurea pannonica</i>		+	6	Z
<i>Cerastium fontanum</i>	x	-	5	.
<i>Chenopodium album</i>	x	-	5	GY
<i>Chrysanthemum leucanthemum</i>	x	-	4	K
<i>Cirsium arvense</i>		2	4	GY
<i>Dactylis glomerata</i>		1	6	TZ
<i>Daucus carota</i>	x	-	5	TZ
<i>Echinochloa crus-galli</i>	x	-	9	GY
<i>Equisetum arvense</i>		+1	8	.
<i>Erigeron canadensis</i>		+	4	GY
<i>Festuca arundinacea</i>		2	8	TZ
<i>Festuca pratensis</i>		2	8	TZ
<i>Galinsoga parviflora</i>	x	-	6	GY
<i>Galium aparine</i>		+	7	GY
<i>Galium mollugo</i>		+	2	K
<i>Glechoma hederacea</i>		1	6	K
<i>Lathyrus pratensis</i>		+	7	TZ
<i>Lathyrus tuberosus</i>	x	-	3	GY
<i>Lotus corniculatus</i>	x	-	4	TZ
<i>Lysimachia nummularia</i>		+	8	K
<i>Lysimachia vulgaris</i>		+	9	K
<i>Lythrum salicaria</i>		+	9	K
<i>Matricaria discoide</i>	x	-	6	A
<i>Matricaria inodora</i>		+	5	GY
<i>Medicago lupulina</i>		+	6	GY
<i>Mentha arvensis</i>		+1	5	K
<i>Pastinaca sativa</i>		+	6	TZ
<i>Pimpinella major</i>	x	-	6	K

- CONTINUED - LOCATION : Dunasziget

species list		A-D value	V value	Nature Conservation Value
<i>Plantago altissima, lanceolata</i>		4	7	TZ
<i>Plantago altissima, lanceolata</i>		4	4	TZ
<i>Plantago major</i>		+	7	GY
<i>Poa angustifolia</i>		+	3	E
<i>Poa palustris</i>	x	-	9	K
<i>Poa pratensis</i>		+1	6	K
<i>Poa trivialis</i>	x	-	9	TZ
<i>Polygonum mite</i>	x	-	9	TZ
<i>Potentilla anserina</i>		+	7	GY
<i>Potentilla reptans</i>		+	6	GY
<i>Prunella vulgaris</i>		+	6	TZ
<i>Ranunculus acris</i>		+	7	TZ
<i>Ranunculus repens</i>		1-2	8	TZ
<i>Rhinanthus minor</i>		+	5	K
<i>Robinia pseudo-acacia</i>	x	-	3	G
<i>Rorippa sylvestris</i>	x	-	6	GY
<i>Rubus caesius</i>		+	8	TZ
<i>Rumex crispus</i>		+	5	TZ
<i>Solidago gigantea</i>		+	8	K
<i>Stenactis annua</i>	x	-	8	TZ
<i>Symphytum officinale</i>		+	8	K
<i>Taraxacum officinale</i>	x	-	5	GY
<i>Trifolium campestre</i>	x	-	4	TZ
<i>Trifolium hybridum</i>	x	-	8	K
<i>Trifolium pratense</i>		+	6	TZ
<i>Trifolium repens</i>		+	5	TZ
<i>Urtica dioica</i>		+	5	TZ
<i>Vicia cracca</i>		+	4	TZ
<i>Vicia grandiflora</i>		+	.	GY

Location, characterization of the sampling points and the sampling method:

Mezophylous meadow (*Cirsio cani* - *Festucetum pratensis*), which was not cut in 1996. The coenological sampling was carried out on standard 25 m X 25 m areas, with Braun-Blanquet method. A-D = the quantity of plants, V = score according to water need (a value indicating the need for soil moisture on a scale 1-11),

Nature Conservation value = score indicating naturalness of a species, U - unique or rare species (endemics, subendemics, relics), KV - Strongly protected species, similar to those in the preceding category, but relatively widespread in nature reserves, V - Species protected in Hungary, TP - Natural pioneer elements, A - adventives, Gy - Cosmopolitan weed, K - main component, also native to the area, TZ - Native species that tolerates disturbance, E - Natural species predominating in plant communities, G - Cultivated plants, x = species not found in 1996 in the quadrat, J = Juvenile specimens. Sampling date: 4th of June.

PLANT COENOLOGY

Number of the sampling point: 28

Location: Dunasziget, forest

SPECIES LIST		A-D value	V value	Nature Conservation Value
<i>Acer negundo</i>		+	5	GY
<i>Acer pseudoplatanus</i>		1	6	K
<i>Acer pseudoplatanus</i>	J	+	6	K
<i>Agrostis stolonifera</i>	x	-	8	E
<i>Alliaria petiolata</i>		+	4	TZ
<i>Allium scorodoprasum</i>	x	-	3	TZ
<i>Alnus glutinosa</i>		1-2	10	E
<i>Alnus incana</i>		+	7	K
<i>Angelica sylvestris</i>		+	8	K
<i>Ballota nigra</i>		+	3	GY
<i>Brachypodium sylvaticum</i>		+	5	K
<i>Carex remota</i>		1	8	K
<i>Cerasus avium</i>	J	+	5	K
<i>Circaea lutetiana</i>		+1	5	K
<i>Crataegus monogyna</i>		+	4	K
<i>Euonymus europaeus</i>		+	5	K
<i>Equisetum arvense</i>	x	-	8	GY
<i>Festuca gigantea</i>	x	-	7	K
<i>Fraxinus angustifolia</i>		+	7	E
<i>Fraxinus pennsylvanica</i>		3-4	4	.
<i>Fraxinus pennsylvanica</i>	J	+	4	.
<i>Galeopsis tetrahit</i>		+	4	GY
<i>Galium aparine</i>		2-3	7	GY
<i>Geum urbanum</i>		+	4	K
<i>Glechoma hederacea</i>		+	6	K
<i>Humulus lupulus</i>		+	7	TZ
<i>Impatiens glandulifera</i>		+1	8	A
<i>Impatiens noli-tangere</i>		1	6	K
<i>Impatiens parviflora</i>		+1	6	A
<i>Lysimachia nummularia</i>		+	8	K
<i>Oxalis stricta</i>	x	-	6	GY
<i>Poa nemoralis</i>		+	4	TZ
<i>Poa trivialis</i>	x	-	9	TZ
<i>Phalaris arundinacea</i>	x	-	10	K
<i>Prunus padus</i>	J	+	6	K
<i>Prunus spinosa</i>	J	+	3	TZ
<i>Quercus robur</i>		2	6	E

- CONTINUED - LOCATION : Dunasziget, forest

species list		A-D value	V-value	Nature Conservation value
<i>Quercus robur</i>	J	+	.	.
<i>Ranunculus repens</i>	x	-	8	TZ
<i>Rubus caesius</i>		+1	8	TZ
<i>Rumex sanguineus</i>		+	7	K
<i>Sambucus nigra</i>		+1	5	GY
<i>Solanum dulcamara</i>		+	9	TZ
<i>Solidago serotina</i>		+	8	K
<i>Symphytum officinale</i>	x	-	8	K
<i>Thalictrum flavum</i>		+	4	K
<i>Urtica dioica</i>		2-3	5	TZ

Location, characterization of the sampling points and the sampling method:

Hard-wood stand(*Fraxino pannonicae* - *Ulmetum*). Sampling as above. Sampling date 04th June.

PLANT COENOLOGY

Number of the sampling point: 29

Location: Dunaremete

species list		A-D val ue	V value	Nature ConservationVal ue
<i>Acer negundo</i>	J	+	5	TZ
<i>Agrostia stolonifera</i>		+	8	E
<i>Alisma plantago-aquatica</i>	x	-	11	K
<i>Alopecurus geniculatus</i>	x	-	9	TZ
<i>Angelica sylvestris</i>		+	8	K
<i>Artemisia vulgaris</i>		+	4	GY
<i>Aster tradescantii</i>		1-2	7	A
<i>Bidens tripartitus</i>	x	-	9	TZ
<i>Botrydium granulatum</i>	x	-	.	.
<i>Calystegia sepium</i>		+	9	K
<i>Cardamine pratensis</i>	x	-	9	K
<i>Carduus crispus</i>	x	-	4	K
<i>Carex gracilis</i>		+	10	K
<i>Carex vulpina</i>		+	9	K
<i>Ceratophyllum demersum</i>	x	-	11	K
<i>Chenopodium album</i>	x	-	5	GY
<i>Circae lutetiana</i>	x	-	5	K
<i>Cirsium arvense</i>		+	4	GY
<i>Cystopteris fragilis</i>	x	-	7	K
<i>Dryopteris carthusiana</i>	x	-	7	K
<i>Echinochloa crus-galli</i>	x	-	9	GY
<i>Erigeron canadensis</i>	x	-	4	GY
<i>Fraxinus excelsior epifita</i>		+	5	K
<i>Fraxinus pennsylvanica</i>		+	.	.
<i>Galium aparine</i>		+	7	GY
<i>Galium palustre var. Maxima</i>	x	-	10	K
<i>Gnaphalium uliginosum</i>	x	-	10	TP
<i>Humulus lupulus</i>		+	7	TZ
<i>Impatiens glandulifera</i>		+	8	A
<i>Impatiens noli-tangere</i>		+	9	K
<i>Impatiens parviflora</i>		+	6	A
<i>Iris pseudacorus</i>		+	10	V
<i>Lactuca serriola</i>	x	-	2	GY
<i>Lemna minor</i>	x	-	11	E
<i>Lycopus europaeus</i>		+	9	K
<i>Lysimachia nummularia</i>	x	-	8	K
<i>Lythrum salicaria</i>	x	-	9	K
<i>Matricaria inodora</i>	x	-	6	GY
<i>Mentha pulegium</i>	x	-	8	TZ
<i>Morus nigra</i>		+	5	G
<i>Myosotis palustris</i>	x	-	8	K

- CONTINUED - LOCATION: Dunaremete

Species list		A-D value	V value	nature Conservation value
<i>Myosoton aquatica</i>	x	-	8	GY
<i>Oenanthe aquatica</i>	x	-	11	K
<i>Phalaroides arundinacea</i>		+1	10	K
<i>Phragmites australis</i>		1	10	E
<i>Plantago major</i>	x	-	7	GY
<i>Poa palustris</i>		+	9	K
<i>Poa trivialis</i>		+	9	TZ
<i>Polygonum convolvulus</i>	x	-	4	GY
<i>Polygonum hydropiper</i>	x	-	9	TZ
<i>Polygonum persicaria</i>	x	-	.	.
<i>Polygonum sp.</i>	x	-	.	.
<i>Populus nigra</i>		+	7	E
<i>Potamogeton lucens</i>	x	-	11	K
<i>Potentilla supina</i>	x	-	7	GY
<i>Quercus robur epifita!</i>		+	6	E
<i>Ranunculus repens</i>	x	-	8	TZ
<i>Ranunculus sceleratus</i>	x	-	.	GY
<i>Rorippa armoracioides</i>	x	-	.	.
<i>Rorippa islandica</i>	x	-	.	.
<i>Rorippa sylvestris</i>	x	-	6	GY
<i>Rubus caesius +epifita</i>		+	8	TZ
<i>Rumex conglomeratus</i>	x	-	-	TZ
<i>Rumex crispus</i>		+	5	TZ
<i>Rumex hidrolapathum</i>		+	10	Z
<i>Rumex sanguineus</i>	x	-	7	K
<i>Salix alba</i>		+	9	E
<i>Salvinia natans</i>	x	-	.	.
<i>Sambucus nigra</i>		+	5	GY
<i>Scrophularia nodosa</i>	x	-	6	TZ
<i>Scutellaria galericulata</i>	x	-	9	K
<i>Sium latifolium</i>	x	-	10	K
<i>Solanum dulcamara</i>		+	9	GY
<i>Solidago gigantea</i>		+	8	K
<i>Spirodela polyrrhiza</i>	x	-	.	.
<i>Stachys palustris</i>	x	-	10	K
<i>Stenactis strigosa</i>	x	-	8	TZ
<i>Symphytum officinale</i>	x	-	8	K
<i>Taraxacum officinale</i>	x	-	5	GY
<i>Urtica dioica</i>		2-3	5	TZ
<i>Veronica anagalloides</i>	x	-	8	K

Location, characterization of the sampling points and the sampling method:

Willow shrub community (*Salicetum albae - Fragilis*). In most of the vegetation period in 1996 it was covered by water. Sampling as above. Sampling date: 22nd June.

PLANT COENOLOGY

Number of the sampling point: 30

Location: Lipót

Species list		A-D value	V value	nature Conservation value
<i>Agropyron caninum</i>		+	6	K
<i>Agrostis stolonifera</i>		+	8	E
<i>Arctium lappa</i>		+	6	TZ
<i>Aster tradescantii</i>		+	7	A
<i>Bidens tripartitus</i>		+	9	TZ
<i>Carduus crispus</i>		+1	4	K
<i>Carex riparia</i>		+	10	E
<i>Circaea lutetiana</i>		+	5	K
<i>Cirsium arvense</i>		+1	4	GY
<i>Chenopodium album</i>		+	5	GY
<i>Cornus sanguinea</i>		+1	4	K
<i>Festuca gigantea</i>	x	-	7	K
<i>Galeopsis speciosa</i>		+	5	TZ
<i>Galium aparine</i>		3	7	GY
<i>Glechoma hederacea</i>		3-4	6	K
<i>Humulus lupulus</i>		+	7	TZ
<i>Impatiens glandulifera</i>		3-4	8	A
<i>Impatiens noli-tangere</i>		+	9	K
<i>Impatiens parviflora</i>		+	6	A
<i>Lycopus europaeus</i>		+	9	K
<i>Myosoton aquatica</i>		+	8	GY
<i>Mentha arvensis</i>		+	5	K
<i>Phalaroides arundinacea</i>		+	9	K
<i>Poa palustris</i>		+	9	K
<i>Poa trivialis</i>		+	9	TZ
<i>Polygonum sp.</i>		+	9	K
<i>Populus euramericana</i>		3	9	G
<i>Prunella vulgaris</i>		+	6	TZ
<i>Ranunculus acer</i>		+	7	TZ
<i>Ranunculus repens</i>		+	8	TZ
<i>Rubus caesius</i>		+1	8	TZ
<i>Rumex sanguineus</i>		+	7	K
<i>Sonchus asper</i>	x	-	5	GY
<i>Solanum dulcamara</i>		+	9	TZ
<i>Solidago gigantea</i>		+	8	K
<i>Stachys palustris</i>		+	10	K

- CONTINUED - LOCATION: Lipót

<i>Symphytum officinale</i>		+1	8	K
<i>Taraxacum officinalis</i>		+	5	GY
<i>Urtica dioica</i>		4	5	TZ

Location, characterization of the sampling points and the sampling method:

Poplar plantation (*Populus italica*). Sampling as above. Sampling date: 06th June.

PLANT COENOLOGY

Number of the sampling point: 31

Location: Halászi, Derék-erdő

Species list		A-D value	V value	nature Conservation value
<i>Acer campestre</i>		1	4	K
<i>Acer campestre</i>	J	+1	4	K
<i>Acer platanoides</i>		1-2	5	K
<i>Acer platanoides</i>	J	+	5	K
<i>Actaea spicata</i>		+	6	K
<i>Aegopodium podagraria</i>		1-2	7	K
<i>Alliaria petiolata</i>	x	+	4	TZ
<i>Arctium nemorosum</i>		+1	5	TZ
<i>Asarum europaeum</i>		+1	6	K
<i>Asperula odorata</i>		+	5	K
<i>Bilderdyckia dumetorum</i>	x	-	3	GY
<i>Berberis vulgaris</i>		+	3	K
<i>Brachypodium sylvaticum</i>		+1	5	K
<i>Bromus ramosus</i>		+	4	K
<i>Campanula trachelium</i>		+	6	K
<i>Cardamine impatiens</i>	x	-	4	TZ
<i>Carex alba</i>		1-2	4	K
<i>Carpinus betulus</i>		1-2	5	E
<i>Cirsium vulgare</i>	x	-	5	GY
<i>Clematis vitalba</i>		1	5	K
<i>Convallaria majalis</i>		2-3	4	K
<i>Cornus mas</i>		+	3	K
<i>Cornus sanguinea</i>		+	4	K
<i>Corylus avellana</i>		+	5	K
<i>Crataegus monogyna</i>	J	+	4	K
<i>Euonymus europaeus</i>		+	5	K
<i>Euonymus verrucosus</i>	J	+	4	K
<i>Euphorbia cyparissias</i>	x	-	3	GY
<i>Fraxinus excelsior</i>		3	5	K
<i>Fraxinus excelsior</i>	J	+	5	K
<i>Fraxinus pennsylvanica</i>	J	+	4	GY
<i>Galium aparine</i>		+	7	GY
<i>Galium mollugo</i>		+	2	K
<i>Hedera helix</i>		+1	5	K
<i>Heracleum sphondylium</i>		+	6	K
<i>Hieracium sabaudum</i>	x	-	3	K
<i>Impatiens parviflora</i>		+	6	A

-CONTINUED - LOCATION: Halászi, Derék-erdő

Species list		A-D value	V value	Nature Conservation value
<i>Ligustrum vulgare</i>		+	4	E
<i>Lithospermum purp.-coeruleum</i>		+1	3	K
<i>Lonicera xylosteum</i>		+	5	K
<i>Majanthemum bifolium</i>		+	4	K
<i>Melica nutans</i>		+1	5	K
<i>Neottia nidus-avis</i>	x	-	6	V
<i>Paris quadrifolia</i>	x	-	6	K
<i>Polygonatum latifolium</i>		+1	5	K
<i>Polygonatum multiflorum</i>		+	5	K
<i>Populus alba</i>		+	6	E
<i>Populus tremula</i>		+	4	TZ
<i>Prunus spinosa</i>		+	3	TZ
<i>Physalis alkekengi</i>		+1	5	K
<i>Quercus robur</i>		2	6	E
<i>Quercus robur</i>	J	+	6	E
<i>Rhamnus catharticus</i>		+	4	K
<i>Robinia pseudo-acacia</i>	x	-	3	G
<i>Solidago gigantea</i>		+	8	K
<i>Stachys sylvatica</i>	x	-	6	K
<i>Tilia cordata</i>		+	5	K
<i>Tilia plathyphyllos</i>		+	4	K
<i>Ulmus procera</i>		+	6	K
<i>Ulmus scabra</i>		+	7	K
<i>Verbascum thapsus</i>	x	-	3	TZ
<i>Viburnum lantana</i>		+	4	K
<i>Viola hirta</i>		+	3	K
<i>Viola mirabilis</i>		2	5	K
<i>Viola odorata</i>		+	4	K

Location, characterization of the sampling points and the sampling method:

Querco-Carpinetum association. This stand practically did not change. Sampling as above. Sampling date: 05th June.