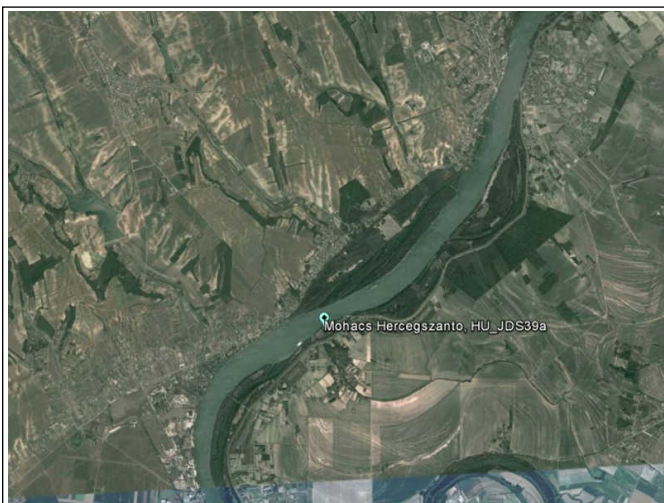


Danube**Mohacs Hercegszanto, HU_JDS39a (HU_JDS39a), 29.August 2013****FDA_ID 235**

Pic. 1: Map of monitoring site / ÖK 1:50.000



Pic. 2: Monitoring site Mohacs Hercegszanto, HU_JDS39a

Description of monitoring site*- no data -***Assessment****Estimated assessment of the ecological status class (FÖZ)**

Biological quality element fish	None
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Ecological status class, current survey, 29.August 2013

Biological quality element fish	FIA 4.00	Class 4	Poor
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Former classifications

None				
None				
None				

Information about and sampling conditions and location

Table 1: Key data and information on sampling, monitoring site Mohacs Hercegszanto, HU_JDS39a

Watercourse name	Danube	Federal state	not available
Monitoring site	Mohacs Hercegszanto, HU_JDS39a	District	
Monitoring site number	HU_JDS39a	Community	
Turnus number		Longitude (WGS 84, decimal) O	18.71453
sampling number		Latitude (WGS 84, decimal) N	46.038318
Survey-ID (FDA)	235	Route-ID	
Date	8/29/2013	River-km [monitoring site]	
Contracting authority	ICPDR	Number of planing area	
Contractor	BAW-IGF	Detail waterbody	
Project manager	Vinzenz Bammer		
Reason of survey	JDS 3		
Fishing category			
Bioregion		Waters ordinal number	09
Fish bioregion	Pannonian Plain Danube (1497-1075) (6)	Huet-zonation	bream zone
Biocenotic Region	Metapotamon	Adapt. Reference	115
River km from	1,446.0	Altitude [m.a.s]	79
River km to	1,441.0	Ø catchment basin [km²]	211,503
Section length [m]	5,000	Catchment-class	more than 10.000km²
Ø channel width [m]	390	Slope [‰]	0.03
Original stream character	lowland stream -river	Discharge regime	
Actual site character			
Actual impact		Reference watergauge (name, number)	
Flow [semiquant.]		Distance from source [km]	1,401.0
Average water depth [m]		Lake above	No
Maximum water depth [m]		Distance lake upstream [km]	
Geology	calcareous	Lake below	
Influence of sediment transport	slightly affected	Distance lake downstream [km]	
Ø wetted width [m]	390	Flow condition	
pH-value		Visible depth	
SBV		Fishing conditions	
Water temperature [°C] (F117)	23.6	Average annual air temperature [°C]	11.2
Conductance, 25°C [µS/cm] (F118)	386		
Methods used and effort			
Strip-fishing, day		Number of runs	1
Fished length [m]	2,980	E-devices output [kW]	11
Fished area [m²]	8,760	Output voltage	600
		Number of anodes	
		Number of strips/sections	10
and additional methods	Fished area [m²]	additional methods	Effort [UE]
E-Fishing by night	10,005		

Comments on survey:

- *no data* -

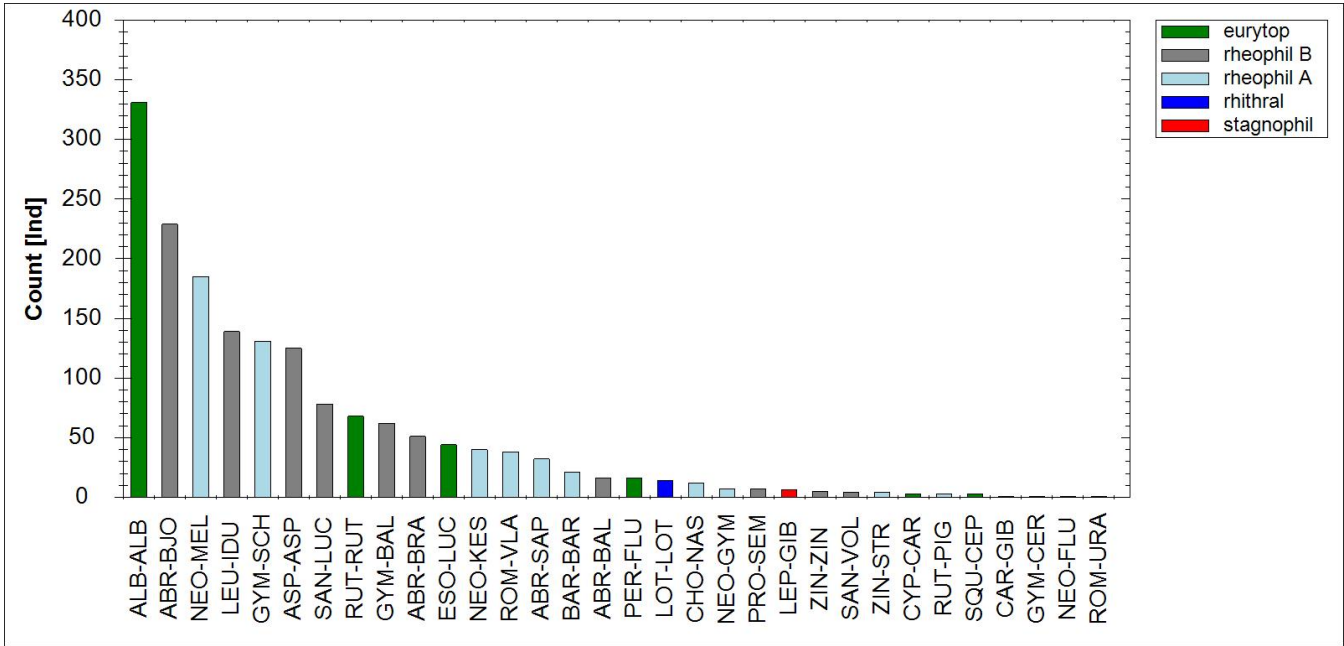
Table 2: Sampling effort at the monitoring site Mohacs Hercegszanto, HU_JDS39a, August 2013

Habitat	Str. no	DG	Length [m]	Width [m]	UE	Method
rip-rap	6	1	300	3		E-fishing day boat
rip-rap	7	1	350	3		E-fishing day boat
rip-rap	10	1	120	1.5		E-fishing day boat
rip-rap	11	1	130	1.5		E-fishing night
rock	22	1	320	3		E-fishing night
rock	23	1	500	3		E-fishing night
rock	24	1	500	3		E-fishing night
rock	25	1	260	3		E-fishing night
rock	26	1	500	3		E-fishing night
undet. middle of the river	16	1	500	2		electric beam trawl
undet. middle of the river	17	1	500	2		electric beam trawl
undet. middle of the river	18	1	500	2		electric beam trawl
undet. middle of the river	19	1	500	2		electric beam trawl
undet. middle of the river	20	1	500	2		electric beam trawl
undet. middle of the river	21	1	500	2		electric beam trawl
sand/mud bar	3	1	350	3		E-fishing day boat
sand/mud bar	9	1	400	3		E-fishing day boat
sand/mud bar	14	1	330	3		E-fishing night
sand/mud bar	15	1	310	3		E-fishing night
other natural bank	1	1	400	3		E-fishing day boat
other natural bank	2	1	250	3		E-fishing day boat
other natural bank	4	1	280	3		E-fishing day boat
other natural bank	5	1	230	3		E-fishing day boat
other natural bank	8	1	300	3		E-fishing day boat
other natural bank	12	1	250	3		E-fishing night
other natural bank	13	1	300	3		E-fishing night

Table 3: Habitat weighting used at the monitoring site Mohacs Hercegszanto, HU_JDS39a

Habitat	%
other natural bank	30
rip-rap	25
rock	0
sand/mud bar	45
undet. middle of the river	0

Catch result, fish assemblage and threatening status



Pic. 3: Species ranking diagramm of catch resultsDanube, Mohacs Hercegszanto, HU_JDS39a

Table 4: Reference fish assemblage, allochthonous species and threat status

Family	English name	Scient. name of species	Reference fish assemblage	FHH	Red List	IUCN	Count
Petromyzontidae	Ukrainian lamprey	<i>Eudontomyzon mariae</i>	s	II	VU	DD	
Salmonidae	Danube salmon	<i>Hucho hucho</i>	s	II; V	EN	EN	
Cyprinidae	Asp	<i>Aspius aspius</i>	b	II	EN	DD	125
	Barbel	<i>Barbus barbus</i>	I	V	NT	LC	21
	Bitterling	<i>Rhodeus amarus</i>	b	II	VU	LC	
	Black Sea roach	<i>Rutilus meidingeri</i>	s	II; V	EN	EN	
	Bleak	<i>Alburnus alburnus</i>	I	-	LC	LC	331
	Blue bream	<i>Abramis ballerus</i>	b	-	EN		16
	Bream	<i>Abramis brama</i>	I	-	LC		51
	Carp	<i>Cyprinus carpio</i>	b	-	EN	DD	3
	Chub	<i>Squalius cephalus</i>	s	-	LC	LC	3
	Crucian carp	<i>Carassius carassius</i>	b	-	EN	LC	
	Dace	<i>Leuciscus leuciscus</i>	b	-	NT	LC	
	Danube barbel	<i>Barbus balcanicus</i>	s	II	CR	NT	
	Danube roach	<i>Rutilus pigus</i>	b	II; V	EN	DD	3
	Danubian gudgeon	<i>Romanogobio uranoscopus</i>	s	II	CR	DD	1
	Gudgeon	<i>Gobio gobio</i>	b	-	LC	LC	
	Ide	<i>Leuciscus idus</i>	I	-	EN	LC	139
	Kessler's gudgeon	<i>Romanogobio kesslerii</i>	s	II	EN	DD	
	Minnow	<i>Phoxinus phoxinus</i>	s	-	NT	LC	
	Nase	<i>Chondrostoma nasus</i>	I	-	NT	LC	12
	Prussian carp	<i>Carassius gibelio</i>	s	-	LC		1
	Roach	<i>Rutilus rutilus</i>	I	-	LC	LC	68
	Rudd	<i>Scardinius erythrophthalmus</i>	s	-	LC	LC	
	Sabre carp	<i>Pelecus cultratus</i>	s	II; V	NT	DD	
	Spirin	<i>Alburnoides bipunctatus</i>	s	-	LC	LC	
	Sunbleak	<i>Leucaspis delineatus</i>	s	-	EN	LC	
	Tench	<i>Tinca tinca</i>	s	-	VU	LC	
	Vimba bream	<i>Vimba vimba</i>	b	-	VU	LC	
	White bream	<i>Blicca bjoerkna</i>	I	-	LC	LC	229
	White-finned gudgeon	<i>Romanogobio vladykovi</i>	b	II	LC	DD	38
Esocidae	Pike	<i>Esox lucius</i>	b	-	NT		44
Gadidae	Burbot	<i>Lota lota</i>	b	-	VU		14
Percidae	Danube ruffe	<i>Gymnocephalus baloni</i>	b	II; IV	VU	DD	62
	Perch	<i>Perca fluviatilis</i>	I	-	LC	LC	16
	Pikeperch	<i>Sander lucioperca</i>	I	-	NT	LC	78
	Ruffe	<i>Gymnocephalus cernuus</i>	b	-	LC	LC	1
	Schraetser	<i>Gymnocephalus schraetser</i>	b	II; V	VU	VU	131
	Streber	<i>Zingel streber</i>	b	II	EN	VU	4
	Volga pikeperch	<i>Sander volgensis</i>	s	-	EN	DD	4
	Zingel	<i>Zingel zingel</i>	b	II; V	VU	VU	5
Siluridae	Wels catfish	<i>Silurus glanis</i>	b	-	VU	LC	
Cottidae	Bullhead	<i>Cottus gobio</i>	s	II	NT	LC	
Cobitidae	Balkan loach	<i>Sabanejewia balcanica</i>	s	II	EN	DD	
	Danubian spined loach	<i>Cobitis elongatoides</i>	b	-			

Family	English name	Scient. name of species	Reference fish assemblage	FHH	Red List	IUCN	Count
	Weatherfish	<i>Misgurnus fossilis</i>	s	II	CR	NT	
Balitoridae	Danube bream	<i>Abramis sapo</i>	b	-	EN		32
	Stone loach	<i>Barbatula barbatula</i>	s	-	LC	LC	
Acipenseridae	Danube sturgeon	<i>Acipenser gueldenstaedtii</i>	s	V	RE	EN	
	Fringebarbel sturgeon	<i>Acipenser nudiiventris</i>	s	V	RE	EN	
	Giant sturgeon	<i>Huso huso</i>	s	V	RE	EN	
	Starry sturgeon	<i>Acipenser stellatus</i>	s	V	RE	EN	
	Sterlet	<i>Acipenser ruthenus</i>	b	V	CR	VU	
Clupeidae	European mud-minnow	<i>Umbra krameri</i>	s	II	CR	VU	
	Pontic shad	<i>Alosa immaculata</i>	s	-			
Gobiidae	Bighead goby	<i>Neogobius kessleri</i>		-	NE	DD	40
	Monkey goby	<i>Neogobius fluviatilis</i>		-	NE	DD	1
	Racer goby	<i>Neogobius gymnotrachelus</i>		-	NE	DD	7
	Round goby	<i>Neogobius melanostomus</i>		-	NE	DD	185
	Tubenose goby	<i>Proterorhinus semilunaris</i>		-	EN	LC	7
Centrarchidae	Pumpkinseed	<i>Lepomis gibbosus</i>		-	NE		6

Observed:: reference fish assemblage 26Taxa :: 55Taxa

Taxa complete 32

Count species of reference fish assemblage 1,432

Total count 1,678

Fish ecological reference fish assemblage (Haunschmid et al., 2006)

- I Dominant species
- b Subdominant species
- s Rare species
- a! Allochthon
- N! Neozoa

FFH...Fauna-Flora-Habitat-Directive (Council Directive 92/43/EEC of 21.Mai 1992)

- II Species listed in Annex II of the FFH- Directive (nature reserves have to be set out for this species)
- IV Species listed in Annex IV of the FFH- Directive (strict protection of animals and plants)
- V Species listed in Annex V of the FFH- Directive (species whose collection and use is subject to administrative control)
- RE Regionally extinct
- CR Critically endangered
- EN Endangered
- VU Vulnerable
- NT Near threatened
- LR Lower risk
- LC Least concern
- DD Available data is not sufficient for classification (data deficient)
- NE Not evaluated, usually widespread and replicating alien species

Abundance and biomass

Table 5: abundance and biomass (e-fishings) Danube, Mohacs Hercegszanto, HU_JDS39a, 8/29/2013

English name	Species Code	Count	Abu [Ind/ha]	95% Konfid.	Biom [kg/ha]	95% Konfid.	Weight [g] median all over	Mean Weight [g] total	Population structure	Reference fish assemblage
Asp	ASP-ASP	125	106.7		24.2		15.0	226.5	1	b
Barbel	BAR-BAR	21	1.7		0.0		8.0	6.6	3	I
Bighead goby	NEO-KES	40	26.8		0.2		7.4	6.1	2	
Bleak	ALB-ALB	331	1,006.9		11.9		10.5	11.8	1	I

English name	Species Code	Count	Abu [Ind/ha]	95% Konfid.	Biom [kg/ha]	95% Konfid.	Weight [g] median allover	Mean Weight [g] total	Population structure	Reference fish assemblage
Blue bream	ABR-BAL	16	31.6		0.1		7.9	4.1	3	b
Bream	ABR-BRA	51	3.4		0.0		12.3	7.1	2	l
Burbot	LOT-LOT	14	10.1		0.1		14.3	10.5	3	b
Carp	CYP-CAR	3	0.0		0.0	0.0	50.7	0.0	4	b
Chub	SQU-CEP	3	1.7		0.0		12.0	7.2	4	s
Danube bream	ABR-SAP	32	0.0		0.0	0.0	7.9	0.0	2	b
Danube roach	RUT-PIG	3	0.0		0.0	0.0	14.2	0.0	3	b
Danube ruffe	GYM-BAL	62	3.4		0.0		6.7	4.5	2	b
Danubian gudgeon	ROM-URA	1	0.0		0.0	0.0	6.4	0.0	4	s
Ide	LEU-IDU	139	119.6		0.8		10.7	6.3	2	l
Monkey goby	NEO-FLU	1	0.0		0.0	0.0	11.0	0.0	4	
Nase	CHO-NAS	12	0.0		0.0	0.0	19.1	0.0	3	l
Perch	PER-FLU	16	5.1		0.0		6.7	3.6	3	l
Pike	ESO-LUC	44	24.3		4.3		31.8	175.0	2	b
Pikeperch	SAN-LUC	78	0.0		0.0	0.0	14.0	0.0	2	l
Prussian carp	CAR-GIB	1	0.0		0.0	0.0	25.0	0.0	4	s
Pumkinseed	LEP-GIB	6	0.0		0.0	0.0	5.9	0.0	3	
Racer goby	NEO-GYM	7	1.7		0.0		6.2	3.7	3	
Roach	RUT-RUT	68	48.7		0.6		8.3	11.5	2	l
Round goby	NEO-MEL	185	83.8		0.5		7.3	5.6	1	
Ruffe	GYM-CER	1	0.0		0.0	0.0	14.0	0.0	4	b
Schraetser	GYM-SCH	131	0.0		0.0	0.0	6.8	0.0	1	b
Streber	ZIN-STR	4	0.0		0.0	0.0	10.2	0.0	3	b
Tubenose goby	PRO-SEM	7	6.7		0.0		4.4	1.2	2	
Volga pikeperch	SAN-VOL	4	0.0		0.0	0.0	6.8	0.0	4	s
White bream	ABR-BJO	229	0.0		0.0	0.0	11.8	0.0	1	l
White-finned gudgeon	ROM-VLA	38	0.0		0.0	0.0	4.8	0.0	1	b
Zingel	ZIN-ZIN	5	0.0		0.0	0.0	14.5	0.0	3	b

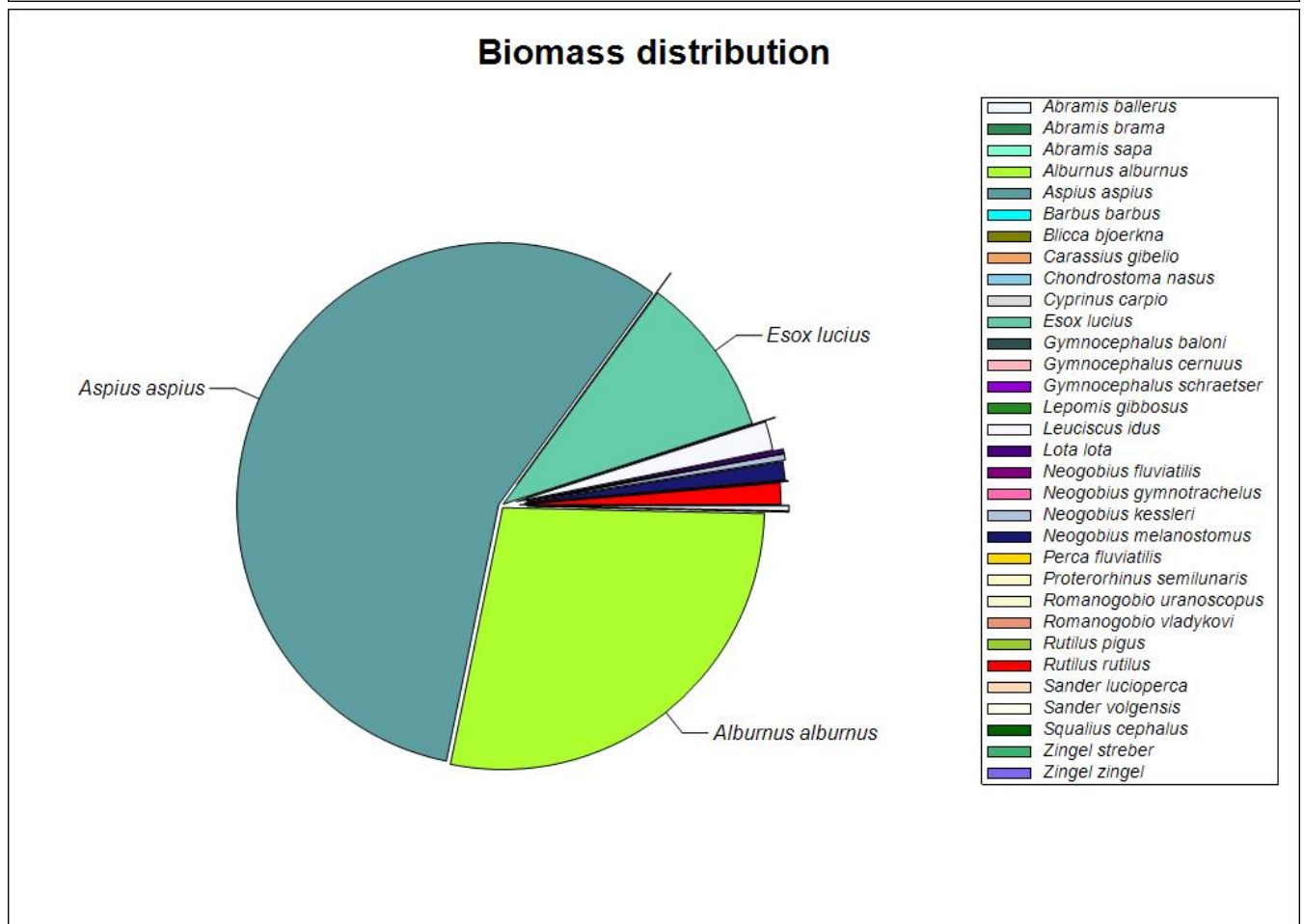
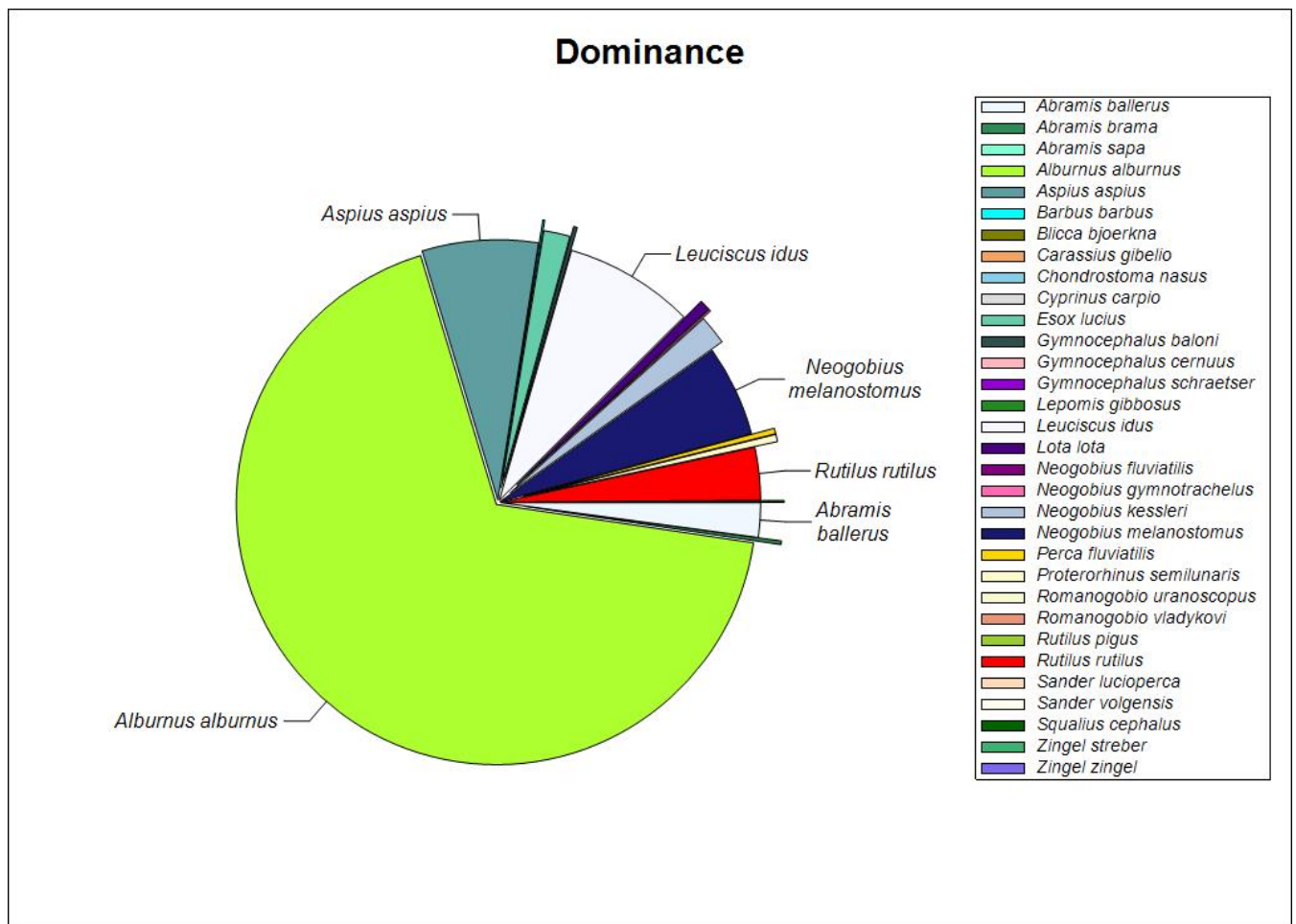
26 species of 55

Total

1,678

1,482.2

42.6



Pic. 4: Dominance und Biomass distribution

Shannon-Index: 2.663

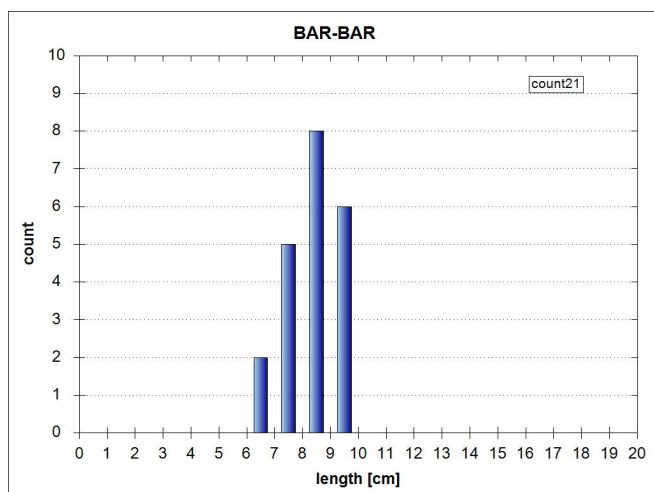
Equitability: 0.768

Biometrics and catch rate

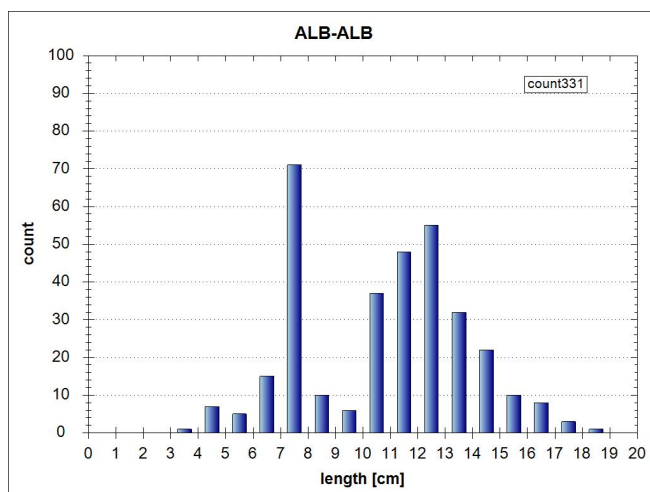
Table 6: biometrics of each species and catch specific parameters

Fish species	Lt [cm]		n	Statist.	Catch-	Catch-effectivity		
	Min	Max		Method	Probability [%]	Min	MW	Max
Asp	1.0	15.0	65.0	125		0.20	0.53	0.80
Barbel	6.0	8.0	9.0	21		0.40	0.41	0.70
Bighead goby	4.5	7.4	15.0	40		0.40	0.56	0.70
Bleak	3.0	10.5	18.0	331		0.05	0.25	0.70
Blue bream	6.2	7.9	10.0	16		0.10	0.41	0.80
Bream	3.0	12.3	47.0	51		0.40	0.48	0.70
Burbot	11.0	14.3	32.0	14		0.40	0.53	0.70
Carp	38.0	50.7	75.0	3		0.50	0.83	1.00
Chub	9.0	12.0	17.0	3		0.40	0.53	0.70
Danube bream	4.8	7.9	20.0	32		0.40	0.56	0.70
Danube roach	6.0	14.2	29.0	3		0.50	0.50	0.50
Danube ruffe	4.5	6.7	12.5	62		0.30	0.47	0.70
Danubian gudgeon	6.4	6.4	6.4	1		0.70	0.70	0.70
Ide	5.0	10.7	40.0	139		0.20	0.58	0.70
Monkey goby	11.0	11.0	11.0	1		0.50	0.50	0.50
Nase	4.5	19.1	29.0	12		0.50	0.53	0.70
Perch	5.0	6.7	20.5	16		0.20	0.49	0.70
Pike	18.0	31.8	51.0	44		0.20	0.46	0.66
Pikeperch	7.5	14.0	35.0	78		0.40	0.51	0.70
Prussian carp	25.0	25.0	25.0	1		0.40	0.40	0.40
Pumkinseed	5.0	5.9	7.5	6		0.50	0.50	0.50
Racer goby	4.5	6.2	8.0	7		0.50	0.53	0.70
Roach	4.0	8.3	17.0	68		0.20	0.50	0.70
Round goby	3.0	7.3	12.0	185		0.10	0.50	0.70
Ruffe	14.0	14.0	14.0	1		0.50	0.50	0.50
Schraetser	4.2	6.8	16.5	131		0.40	0.58	0.70
Streber	4.2	10.2	15.2	4		0.70	0.70	0.70
Tubenose goby	3.5	4.4	5.5	7		0.40	0.59	0.70
Volga pikeperch	5.5	6.8	9.5	4		0.50	0.50	0.50
White bream	5.0	11.8	27.0	229		0.10	0.43	0.70
White-finned gudgeon	2.6	4.8	10.0	38		0.50	0.68	0.70
Zingel	7.8	14.5	21.0	5		0.40	0.54	0.70
32 species		Sum	1,678					

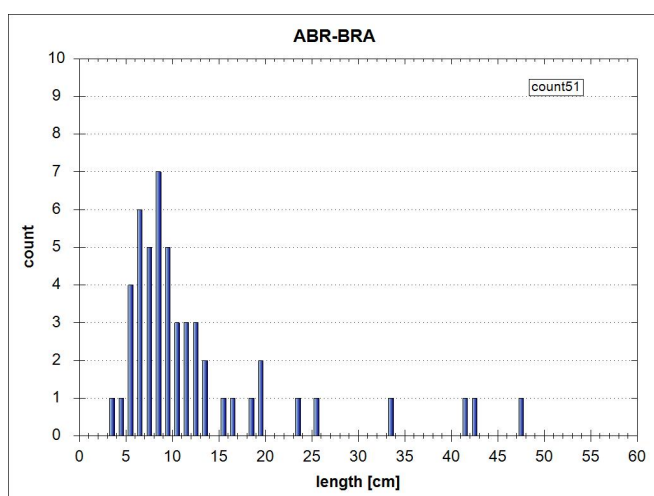
Population structure of dominant species and subdominant species (total catch)



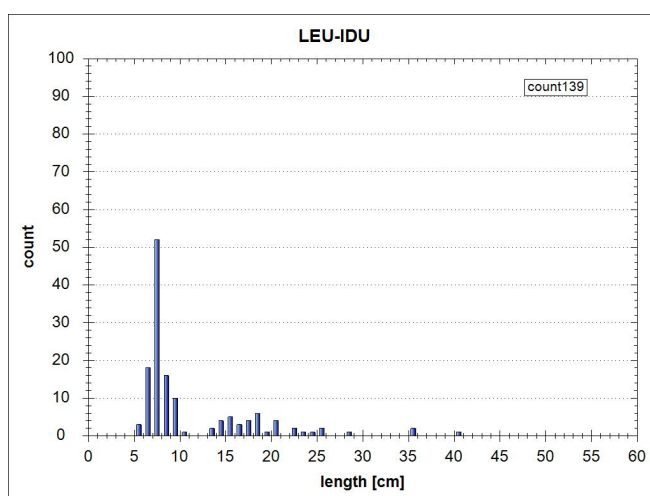
Barbel (*Barbus barbus*), 3



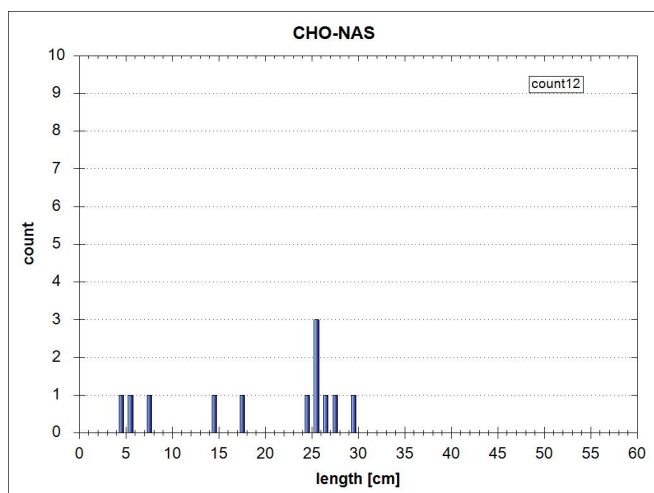
Bleak (*Alburnus alburnus*), 1



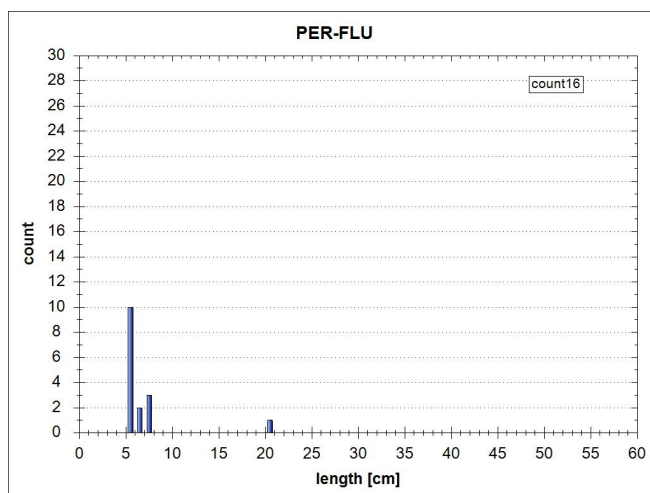
Bream (*Abramis brama*), 2



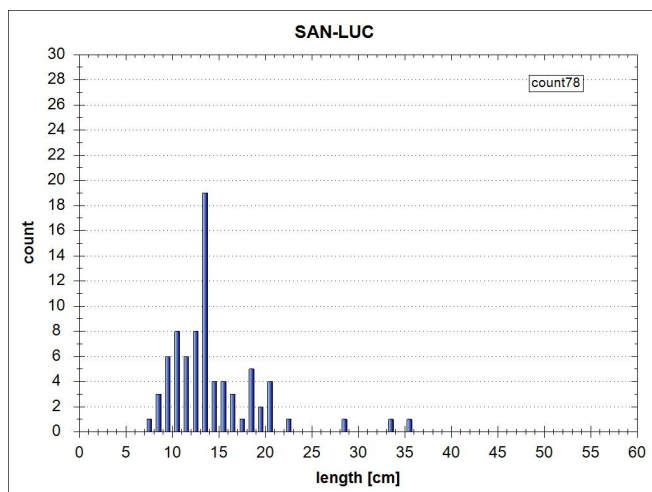
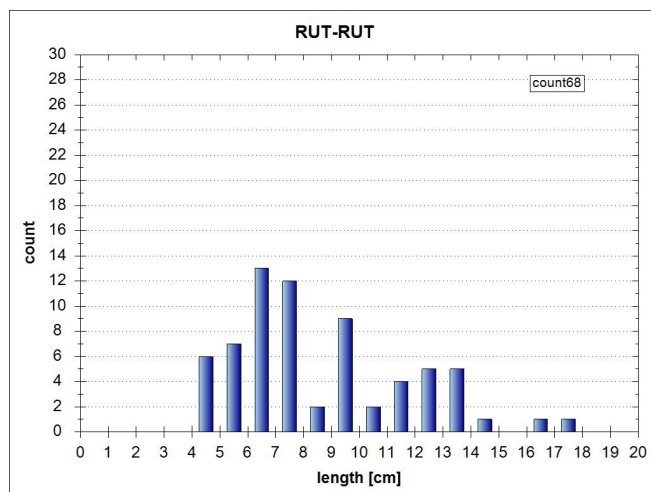
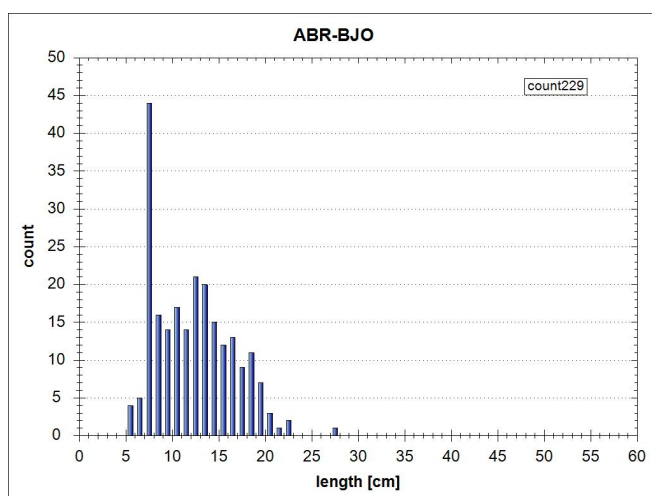
Ide (*Leuciscus idus*), 2



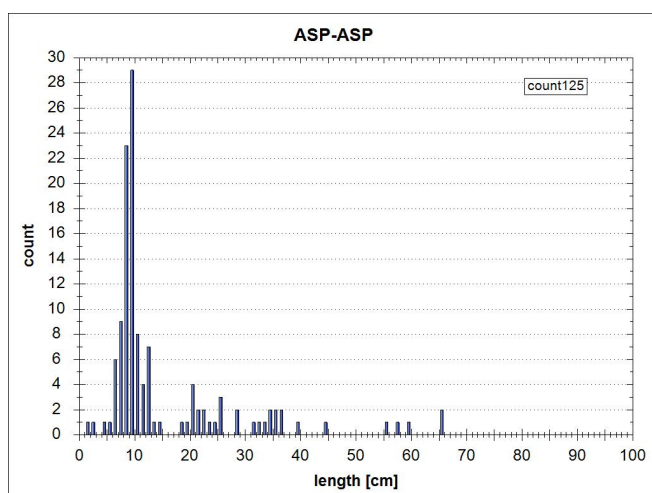
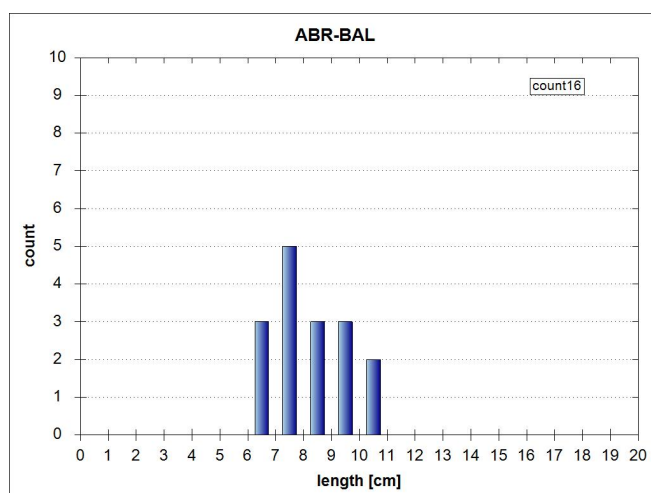
Nase (*Chondrostoma nasus*), 3

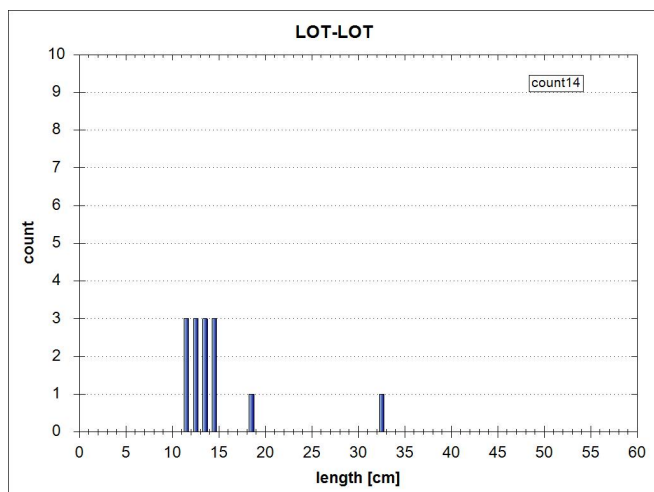
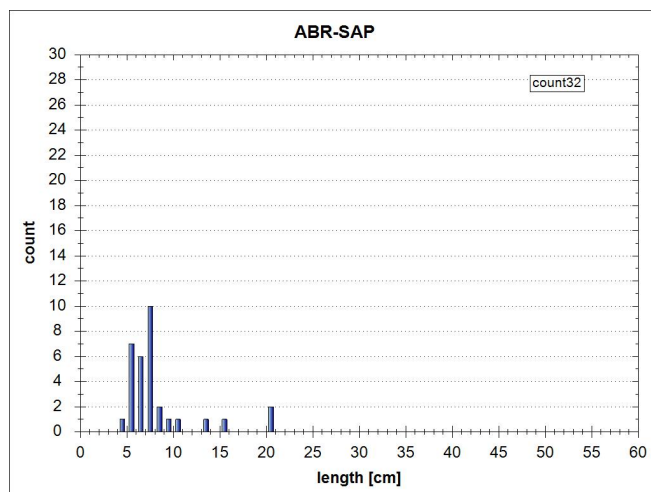
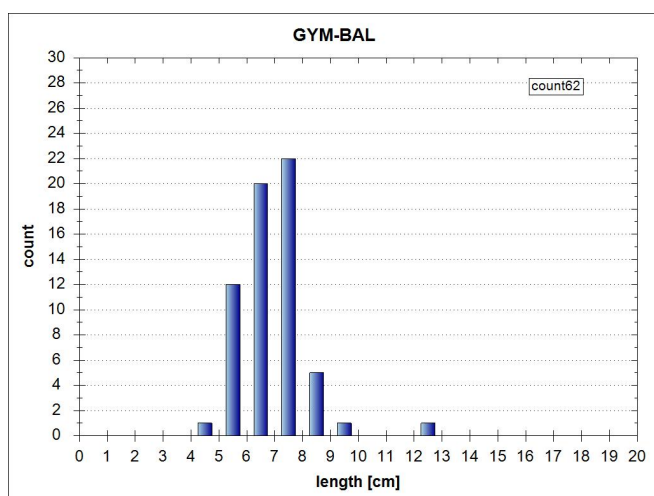
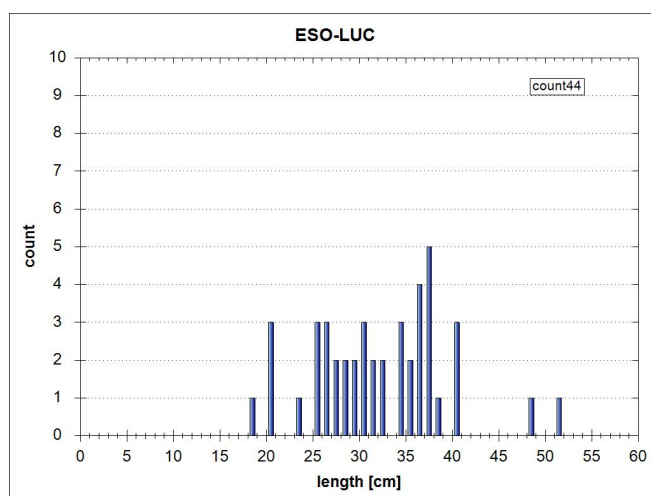
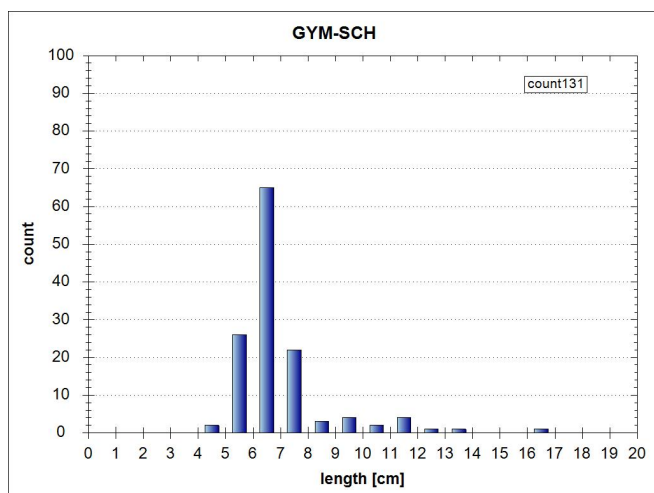
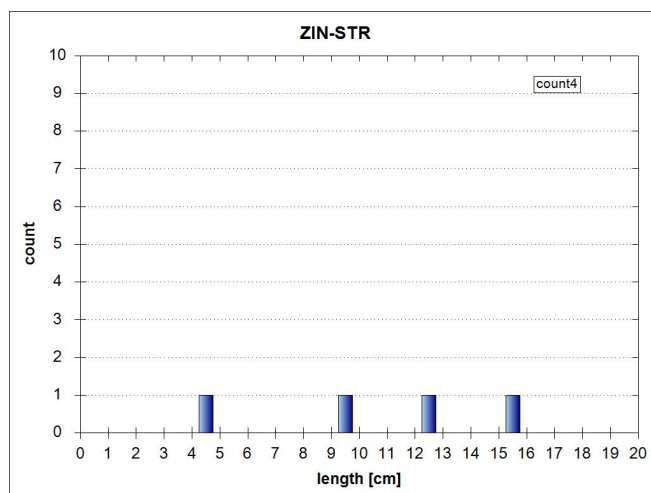


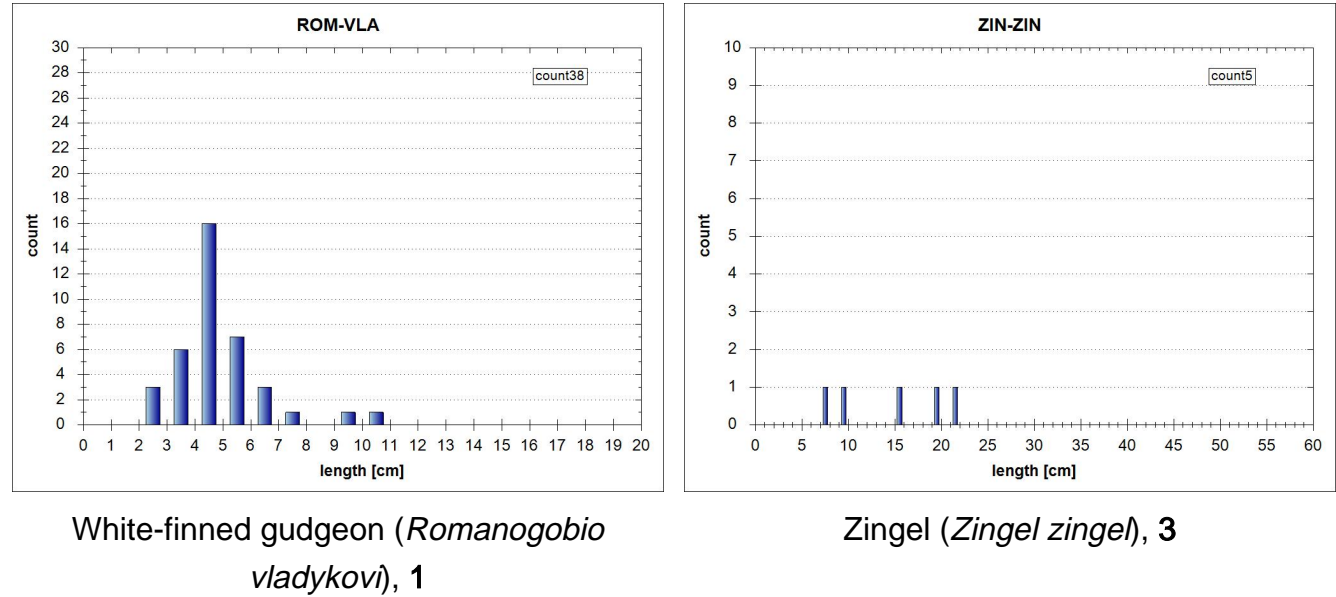
Perch (*Perca fluviatilis*), 3

Pikeperch (*Sander lucioperca*), 2Roach (*Rutilus rutilus*), 2White bream (*Blicca bjoerkna*), 1

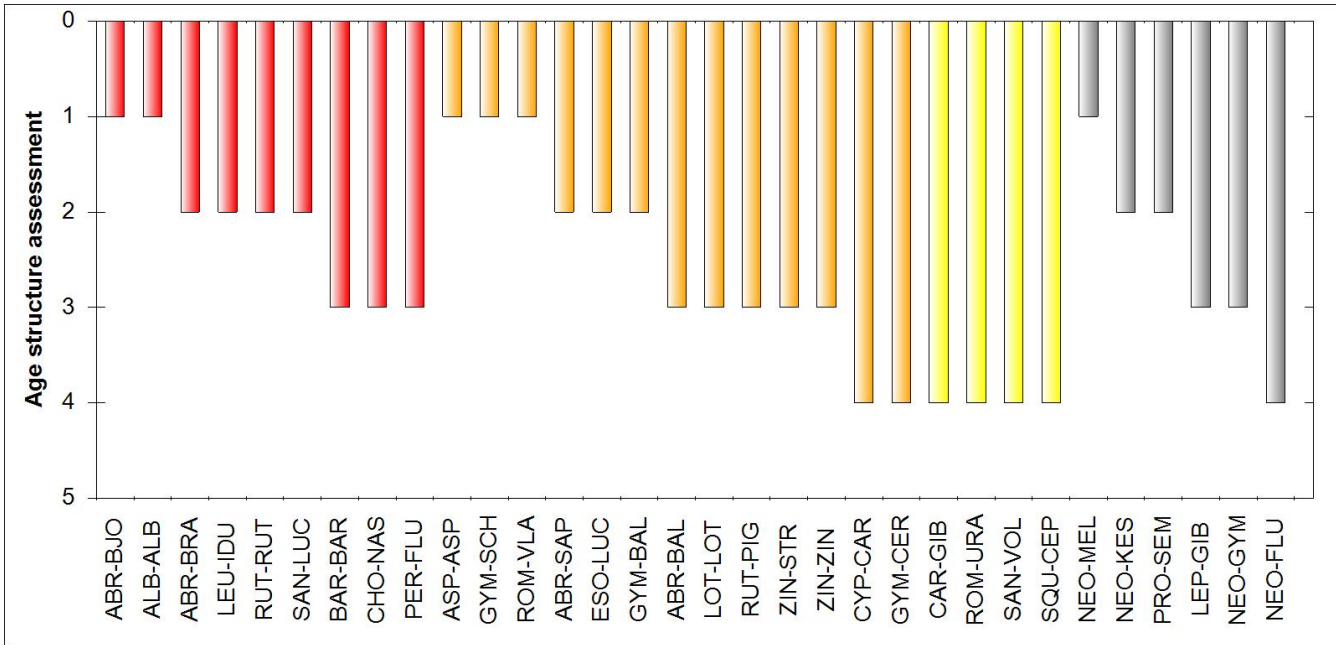
Pic. 5: Length-frequency diagram of dominant species (n>3), Aug. 2013

Asp (*Aspius aspius*), 1Blue bream (*Abramis ballerus*), 3

Burbot (*Lota lota*), 3Danube bream (*Abramis sapa*), 2Danube ruffe (*Gymnocephalus baloni*), 2Pike (*Esox lucius*), 2Schraetser (*Gymnocephalus schraetser*), 1Streber (*Zingel streber*), 3



Pic. 6: Length-frequency diagram of subdominant species (n>3), Aug. 2013



Pic. 7: Age structure of present species

Comment on population structure of dominat and subdominant species

- no comment -

Fish ecological assessment (FIA, FISH INDEX AUSTRIA)

Table 7: fish ecologic assessment, Danube, Mohacs Hercegszanto, HU_JDS39a, 8/29/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	1,362.9	41.9		ko-crit	4
1. Species	Reference fish assemblage	actual (current)	Ratio/Deviation	Partial rating	
Species					
Dominant species	9	9	100%	1.0	
Subdominant species	21	13	62%	2.0	
Rare species	25	4	16%	3.0	
				2.0	
Ecological guilds					
Flow	5	4	1	2.0	
Reproduction	7	4	3	4.0	
				3.0	
Species diversity & guilds overall					1.9
2. Dominance	Reference fish assemblage	actual (current)	Difference		
Fish region index	6.4	6.4	0.0		1.0
3. Population structure	Reference fish assemblage	actual (current)		Partial rating (1-5)	
Dominant species	9	9		2.1	
Subdominant species	21	13		3.4	
					2.6
Fishindex Austria without active ko-criterion					2.07
Biological quality element fish		FIA 4.00	Class 4	Poor	

Date of Assessment:3/3/2014

Comment BAW-IGF

- no comment -

Discussion of fish ecological assessment, plausibility, deficits and measures (AN)

Recommended improvements with priority ranking if possible;