

Danube**Chilia Arm-Valcov, RO JDS 93a (RO JDS 93a), 23.September 2013**

FDA_ID 218



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

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, 23.September 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 Chilia Arm-Valcov, RO JDS 93a

Watercourse name	Danube	Federal state	not available
Monitoring site	Chilia Arm-Valcov, RO JDS 93a	District	
Monitoring site number	RO JDS 93a	Community	
Turnus number		Longitude (WGS 84, decimal) O	28.972028
sampling number		Latitude (WGS 84, decimal) N	45.331444
Survey-ID (FDA)	218	Route-ID	
Date	9/23/2013	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	
Fish bioregion	Danube Delta (C)	Huet-zonation	bream zone
Biocenotic Region	Metapotamon	Adapt. Reference	122
River km mean	60.0	Altitude [m.a.s]	0
		Ø catchment basin [km²]	801,000
Section length [m]	2,500	Catchment-class	more than 10.000km²
Ø channel width [m]	450	Slope [‰]	0.01
Original stream character	lowland stream -river	Discharge regime	
Actual site character			
Actual impact		Reference watergauge (name, number)	
Flow [semiquant.]		Distance from source [km]	2,785.0
Average water depth [m]	2m - 5m	Lake above	No
Maximum water depth [m]	>10m	Distance lake upstream [km]	
Geology	calcareous	Lake below	
Influence of sediment transport	slightly affected	Distance lake downstream [km]	
Ø wetted width [m]	450	Flow condition	MQ - mean water up to riparian vegetation
pH-value		Visible depth	1.5
SBV		Fishing conditions	good
Water temperature [°C] (F117)	19.8	Average annual air temperature [°C]	
Conductance, 25°C [µS/cm] (F118)	386		
Methods used and effort			
Strip-fishing, day		Number of runs	1
Fished length [m]	3,050	E-devices output [kW]	11
Fished area [m²]	9,150	Output voltage	601/600
		Number of anodes	
		Number of strips/sections	10
and additional methods	Fished area [m²]	additional methods	Effort [UE]
E-Fishing by night	4,380		
drift net	25,000		

Comments on survey:

Professional fisherman caught Barbus barbus (650 mm, 600mm), Abramis brama 450mm, 12 Acipenser ruthenus between 250 and 600mm ->strip 23

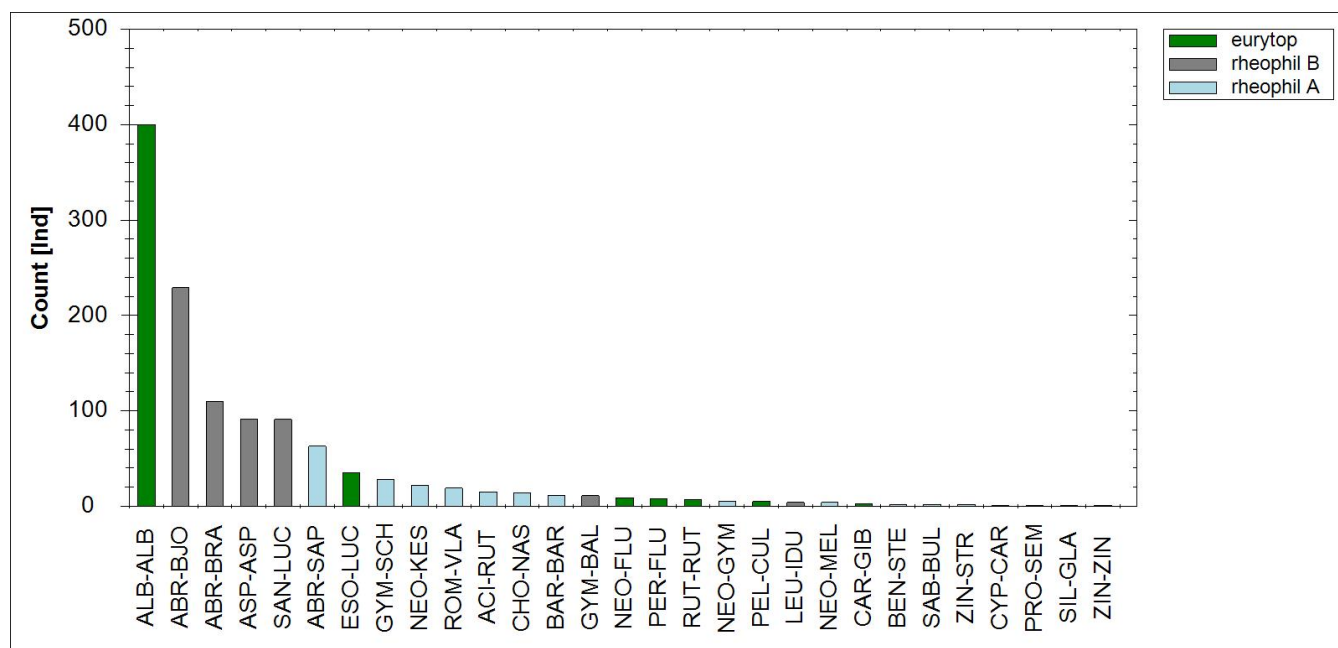
Table 2: Sampling effort at the monitoring site Chilia Arm-Valcov, RO JDS 93a, September 2013

Habitat	Str. no	DG	Length [m]	Width [m]	UE	Method
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	600	2		electric beam trawl
undet. middle of the river	22	1	500	2		electric beam trawl
undet. middle of the river	23	1	500	50		drift net
sand/mud bar	1	1	300	3		E-fishing day boat
sand/mud bar	2	1	350	3		E-fishing night
other technical bank type	1	1	220	3		E-fishing day boat
other technical bank type	2	1	350	3		E-fishing day boat
other technical bank type	3	1	300	3		E-fishing day boat
other technical bank type	4	1	240	3		E-fishing night
other technical bank type	5	1	280	3		E-fishing night
other natural bank	1	1	350	3		E-fishing day boat
other natural bank	2	1	300	3		E-fishing day boat
other natural bank	3	1	350	3		E-fishing day boat
other natural bank	4	1	350	3		E-fishing day boat
other natural bank	5	1	230	3		E-fishing day boat
other natural bank	6	1	300	3		E-fishing day boat
bluff	1	1	290	3		E-fishing night
bluff	2	1	300	3		E-fishing night

Table 3: Habitat weighting used at the monitoring site Chilia Arm-Valcov, RO JDS 93a

Habitat	%
bluff	30
other natural bank	50
other technical bank type	10
sand/mud bar	10
undet. middle of the river	0

Catch result, fish assemblage and threatening status



Pic. 2: Species ranking diagramm of catch resultsDanube, Chilia Arm-Valcov, RO JDS 93a

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
Syngnathidae	Black-striped pipefish	<i>Syngnathus abaster</i>	s	-			
Petromyzontidae	Ukrainian lamprey	<i>Eudontomyzon mariae</i>	s	II	VU	DD	
Salmonidae	Black Sea trout	<i>Salmo labrax</i>	s	-			
Cyprinidae	Asp	<i>Aspius aspius</i>	b	II	EN	DD	91
	Barbel	<i>Barbus barbus</i>	I	V	NT	LC	11
	Bitterling	<i>Rhodeus amarus</i>	b	II	VU	LC	
	Bleak	<i>Alburnus alburnus</i>	I	-	LC	LC	400
	Blue bream	<i>Abramis ballerus</i>	b	-	EN		
	Bream	<i>Abramis brama</i>	I	-	LC		110
	Carp	<i>Cyprinus carpio</i>	b	-	EN	DD	1
	Chub	<i>Squalius cephalus</i>	s	-	LC	LC	
	Crucian carp	<i>Carassius carassius</i>	s	-	EN	LC	
	Dace	<i>Leuciscus leuciscus</i>	s	-	NT	LC	
	Danube bleak	<i>Alburnus mento</i>	s	II	LC	DD	
	Ide	<i>Leuciscus idus</i>	b	-	EN	LC	4
	Kessler's gudgeon	<i>Romanogobio kesslerii</i>	s	II	EN	DD	
	Nase	<i>Chondrostoma nasus</i>	s	-	NT	LC	14
	Prussian carp	<i>Carassius gibelio</i>	b	-	LC		3
	Roach	<i>Rutilus rutilus</i>	I	-	LC	LC	7
	Rudd	<i>Scardinius erythrophthalmus</i>	b	-	LC	LC	
	Sabre carp	<i>Pelecus cultratus</i>	b	II; V	NT	DD	5
	Sunbleak	<i>Leucaspis delineatus</i>	s	-	EN	LC	
	Tench	<i>Tinca tinca</i>	b	-	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	19
Esocidae	Pike	<i>Esox lucius</i>	b	-	NT		35
Gadidae	Burbot	<i>Lota lota</i>	s	-	VU		
Percidae	Danube ruffe	<i>Gymnocephalus baloni</i>	s	II; IV	VU	DD	11
	Perch	<i>Perca fluviatilis</i>	b	-	LC	LC	8
	Pikeperch	<i>Sander lucioperca</i>	b	-	NT	LC	91
	Ruffe	<i>Gymnocephalus cernuus</i>	s	-	LC	LC	
	Schraetser	<i>Gymnocephalus schraetser</i>	s	II; V	VU	VU	28
	Streber	<i>Zingel streber</i>	s	II	EN	VU	2
	Volga pikeperch	<i>Sander volgensis</i>	s	-	EN	DD	
	Zingel	<i>Zingel zingel</i>	b	II; V	VU	VU	1
Siluridae	Wels catfish	<i>Silurus glanis</i>	b	-	VU	LC	1
Gobiidae	Beardless tadpole goby	<i>Benthophiloides brauneri</i>	s	-			
	Bighead goby	<i>Neogobius kessleri</i>	b	-	NE	DD	22
	Monkey goby	<i>Neogobius fluviatilis</i>	b	-	NE	DD	9
	Mushroom goby	<i>Neogobius eurycephalus</i>	s	-			
	Racer goby	<i>Neogobius gymnotrachelus</i>	s	-	NE	DD	5
	Round goby	<i>Neogobius melanostomus</i>	s	-	NE	DD	4
	Stellate tadpole-goby	<i>Benthophilus stellatus</i>	s				2
	Tubenose goby	<i>Proterorhinus semilunaris</i>	b	-	EN	LC	1

Family	English name	Scient. name of species	Reference fish assemblage	FHH	Red List	IUCN	Count
Gasterosteidae	Threespine stickleback	<i>Gasterosteus aculeatus</i>	s	-	NE	LC	
Cobitidae	Balkan loach	<i>Sabanejewia balcanica</i>	s	II	EN	DD	
	Bulgarian golden loach	<i>Sabanejewia bulgarica</i>	s				2
	Danubian spined loach	<i>Cobitis elongatoides</i>	s	-			
	Weatherfish	<i>Misgurnus fossilis</i>	s	II	CR	NT	
Balitoridae	Danube bream	<i>Abramis sapa</i>	I	-	EN		63
Anguillidae	Eel	<i>Anquilla anguilla</i>	s	-	RE		
Acipenseridae	Danube sturgeon	<i>Acipenser gueldenstaedtii</i>	b	V	RE	EN	
	Fringebarbel sturgeon	<i>Acipenser nudiiventris</i>	s	V	RE	EN	
	Giant sturgeon	<i>Huso huso</i>	b	V	RE	EN	
	Starry sturgeon	<i>Acipenser stellatus</i>	b	V	RE	EN	
	Sterlet	<i>Acipenser ruthenus</i>	b	V	CR	VU	15
Clupeidae	Azov shad	<i>Alosa tanaica</i>	s				
	Black Sea sprat	<i>Clupeonella cultriventris</i>	s				
	European mud-minnow	<i>Umbra krameri</i>	s	II	CR	VU	
	Pontic shad	<i>Alosa immaculata</i>	s	-			

Observed:: reference fish assemblage 29Taxa :: 61Taxa

Taxa complete 29

Count species of reference fish assemblage 1,194

Total count 1,194

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, Chilia Arm-Valcov, RO JDS 93a, 9/23/2013

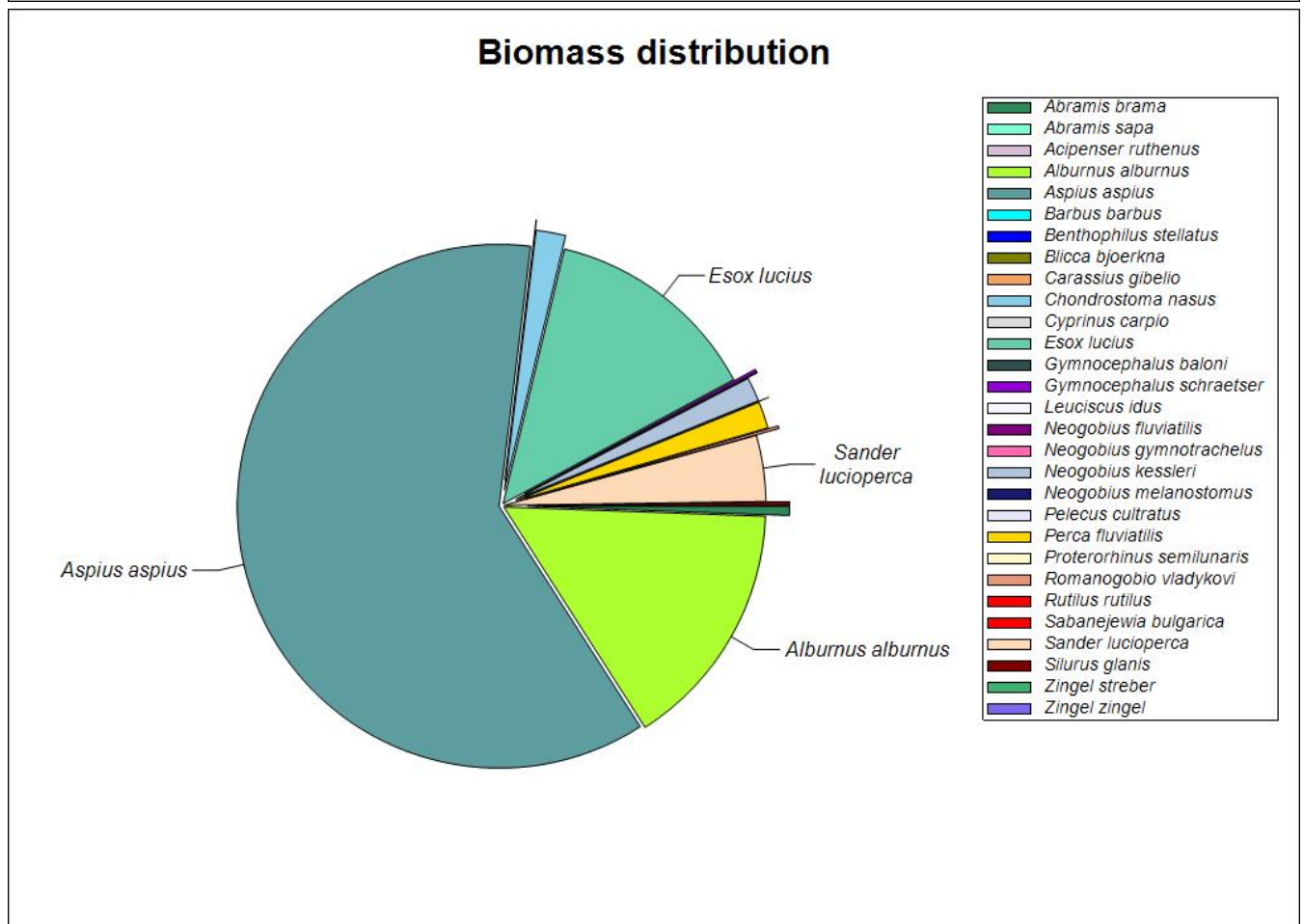
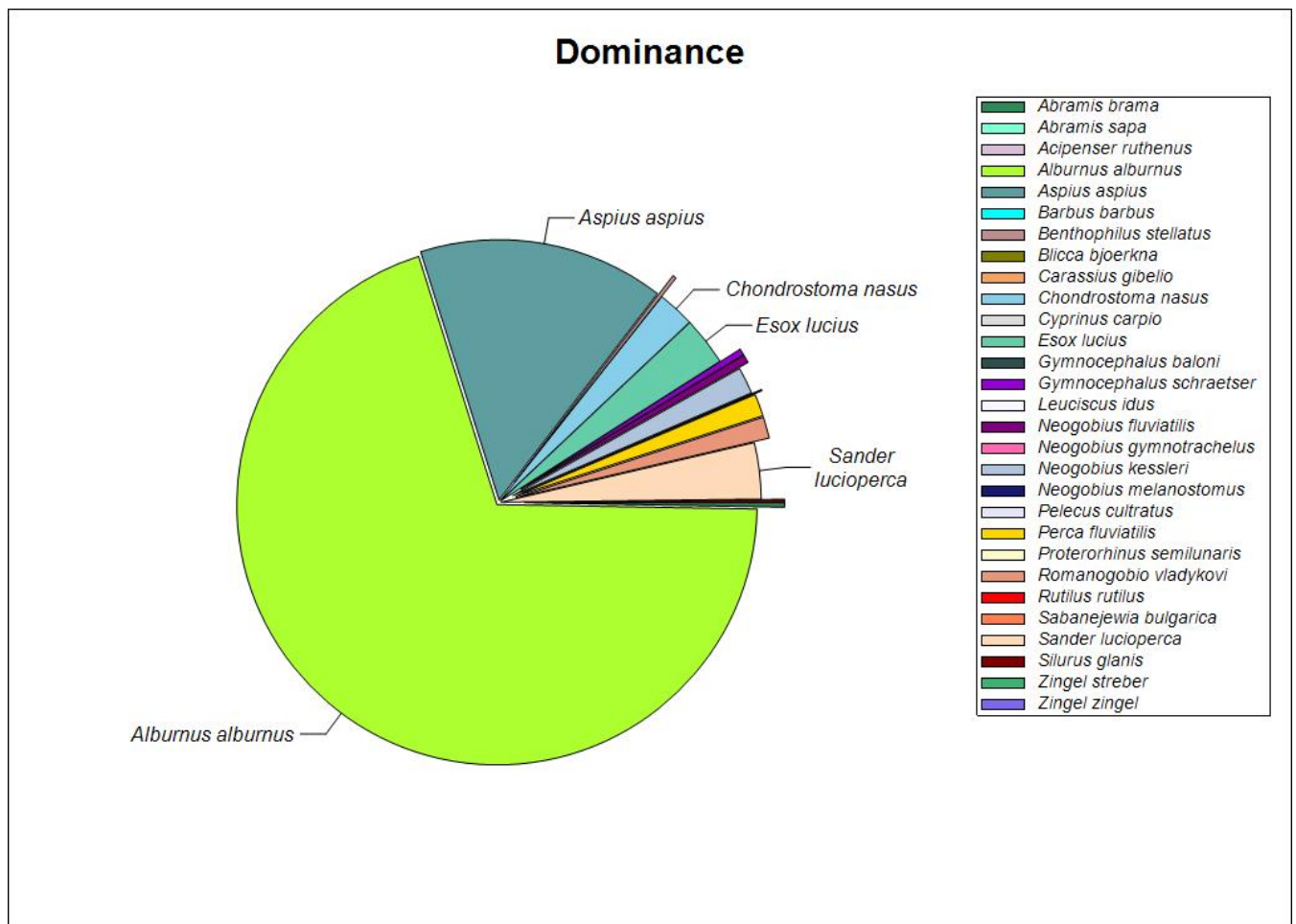
English name	Species Code	Count	Abu [Ind/ha]	95% Konfid.	Biom [kg/ha]	95% Konfid.	Weight [g] median all over	Mean Weight [g] total	Population structure	Reference fish assemblage
Asp	ASP-ASP	91	142.9		19.3		23.2	134.7	3	b
Barbel	BAR-BAR	11	0.0		0.0	0.0	33.7	0.0	3	I
Bighead goby	NEO-KES	22	15.4		0.5		9.3	30.5	3	b
Bleak	ALB-ALB	400	652.7		4.9		9.3	7.4	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
Bream	ABR-BRA	110	2.5		0.2		12.5	70.7	3	l
Bulgarian golden loach	SAB-BUL	2	0.0		0.0	0.0	3.4	0.0	4	s
Carp	CYP-CAR	1	0.0		0.0	0.0	33.0	0.0	4	b
Danube bream	ABR-SAP	63	0.0		0.0	0.0	9.3	0.0	3	l
Danube ruffe	GYM-BAL	11	0.0		0.0	0.0	8.0	0.0	3	s
Ide	LEU-IDU	4	0.0		0.0	0.0	25.3	0.0	3	b
Monkey goby	NEO-FLU	9	4.8		0.0		5.6	3.7	3	b
Nase	CHO-NAS	14	21.5		0.6		15.6	26.8	3	s
Perch	PER-FLU	8	12.9		0.5		14.5	40.5	3	b
Pike	ESO-LUC	35	28.1		4.2		29.9	150.3	3	b
Pikeperch	SAN-LUC	91	32.6		1.3		21.2	39.4	3	b
Prussian carp	CAR-GIB	3	0.0		0.0	0.0	25.2	0.0	4	b
Racer goby	NEO-GYM	5	0.0		0.0	0.0	4.0	0.0	3	s
Roach	RUT-RUT	7	0.0		0.0	0.0	18.4	0.0	3	l
Round goby	NEO-MEL	4	0.8		0.0		6.4	2.8	3	s
Sabre carp	PEL-CUL	5	0.0		0.0	0.0	15.0	0.0	3	b
Schraetser	GYM-SCH	28	3.7		0.1		8.8	14.9	2	s
Stellate tadpole-goby	BEN-STE	2	2.2		0.0		3.4	1.3	3	s
Sterlet	ACI-RUT	15	0.0		0.0	0.0	33.8	0.0	3	b
Streber	ZIN-STR	2	0.0		0.0	0.0	5.5	0.0	4	s
Tubenose goby	PRO-SEM	1	0.0		0.0	0.0	2.6	0.0	4	b
Wels catfish	SIL-GLA	1	1.8		0.1		18.0	41.7	4	b
White bream	ABR-BJO	229	0.0		0.0	0.0	12.2	0.0	1	l
White-finned gudgeon	ROM-VLA	19	12.4		0.1		6.9	4.4	1	b
Zingel	ZIN-ZIN	1	0.0		0.0	0.0	9.3	0.0	4	b

29 species of 61

Total 1,194 934.3

31.6



Pic. 3: Dominance und Biomass distribution

Shannon-Index: 2.230

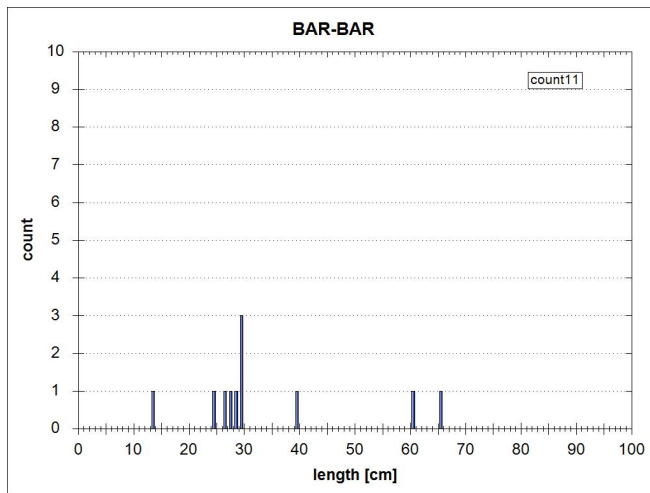
Equitability: 0.662

Biometrics and catch rate

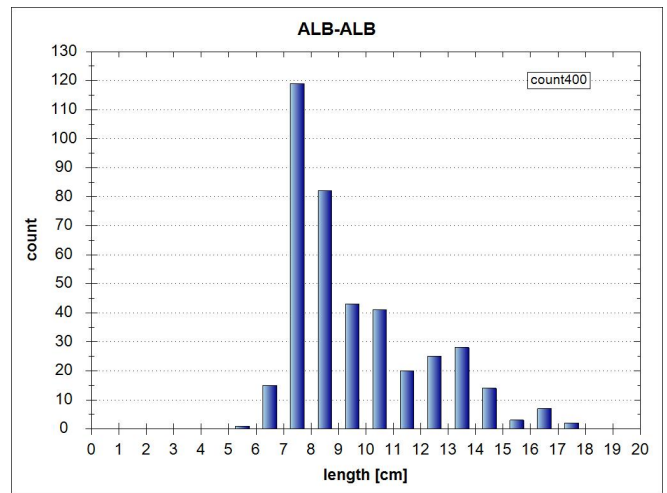
Table 6: biometrics of each species and catch specific parameters

Fish species	Lt [cm]			n	Statist. Method	Catch- Probability [%]	Catch-effectivity		
	Min		Max				Min	MW	Max
Asp	10.0	23.2	46.0	91			0.20	0.48	0.70
Barbel	13.7	33.7	65.0	11			0.30	0.45	0.70
Bighead goby	6.0	9.3	16.5	22			0.20	0.42	0.70
Bleak	5.0	9.3	17.5	400			0.20	0.42	0.60
Bream	6.0	12.5	45.0	110			0.30	0.35	0.70
Bulgarian golden loach	2.8	3.4	4.1	2			0.70	0.70	0.70
Carp	33.0	33.0	33.0	1			0.30	0.30	0.30
Danube bream	6.2	9.3	24.5	63			0.30	0.57	0.70
Danube ruffe	4.0	8.0	16.0	11			0.30	0.55	0.70
Ide	22.0	25.3	32.0	4			0.30	0.30	0.30
Monkey goby	3.1	5.6	7.5	9			0.30	0.54	0.70
Nase	9.0	15.6	33.0	14			0.30	0.46	0.50
Perch	6.0	14.5	19.0	8			0.30	0.39	0.60
Pike	20.0	29.9	47.0	35			0.30	0.45	0.70
Pikeperch	8.2	21.2	64.0	91			0.30	0.41	0.70
Prussian carp	21.5	25.2	28.0	3			0.30	0.30	0.30
Racer goby	3.3	4.0	5.3	5			0.70	0.70	0.70
Roach	14.5	18.4	22.0	7			0.30	0.39	0.70
Round goby	5.5	6.4	7.5	4			0.30	0.55	0.70
Sabre carp	14.0	15.0	16.0	5			0.30	0.36	0.40
Schraetser	6.2	8.8	15.0	28			0.30	0.61	0.70
Stellate tadpole-goby	2.3	3.4	4.5	2			0.50	0.60	0.70
Sterlet	25.0	33.8	47.0	15			0.70	0.70	0.70
Streber	4.9	5.5	6.1	2			0.70	0.70	0.70
Tubenose goby	2.6	2.6	2.6	1			0.70	0.70	0.70
Wels catfish	18.0	18.0	18.0	1			0.50	0.50	0.50
White bream	5.4	12.2	30.0	229			0.30	0.48	0.70
White-finned gudgeon	4.6	6.9	9.5	19			0.20	0.64	0.70
Zingel	9.3	9.3	9.3	1			0.70	0.70	0.70
29 species			Sum	1,194					

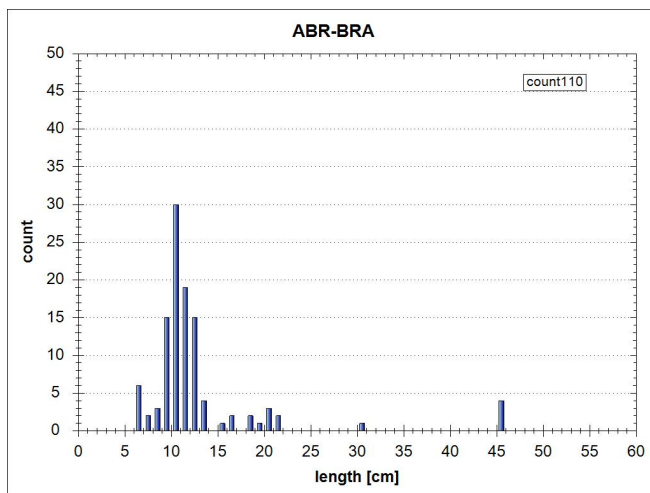
Population structure of dominant species and subdominant species (total catch)



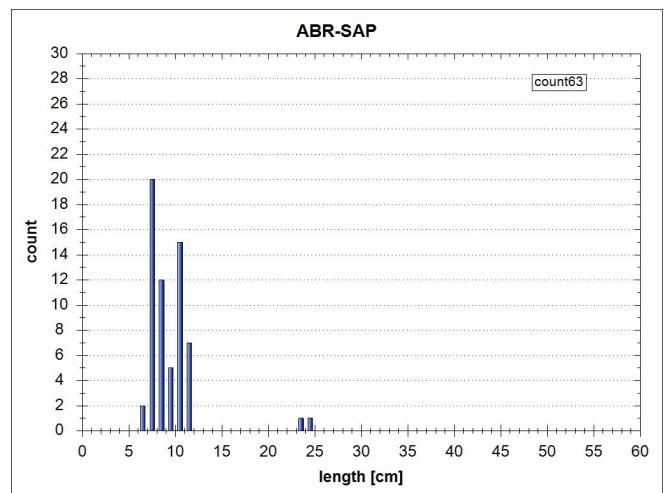
Barbel (*Barbus barbus*), 3



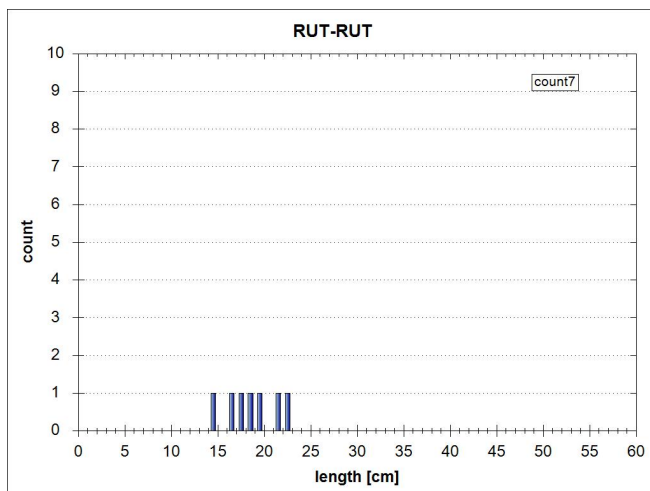
Bleak (*Alburnus alburnus*), 1



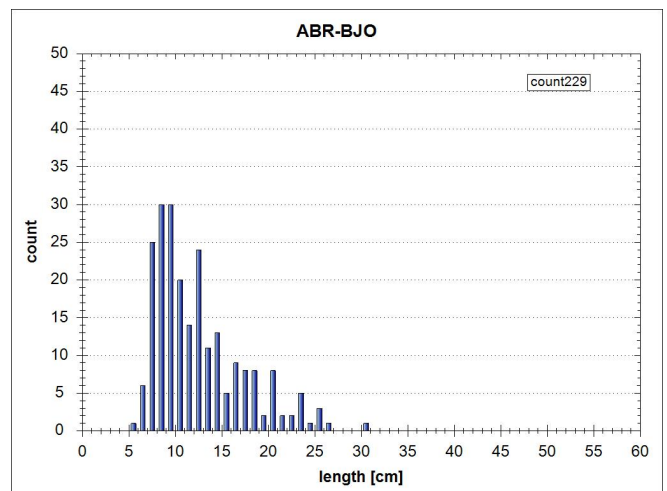
Bream (*Abramis brama*), 3



Danube bream (*Abramis sapa*), 3

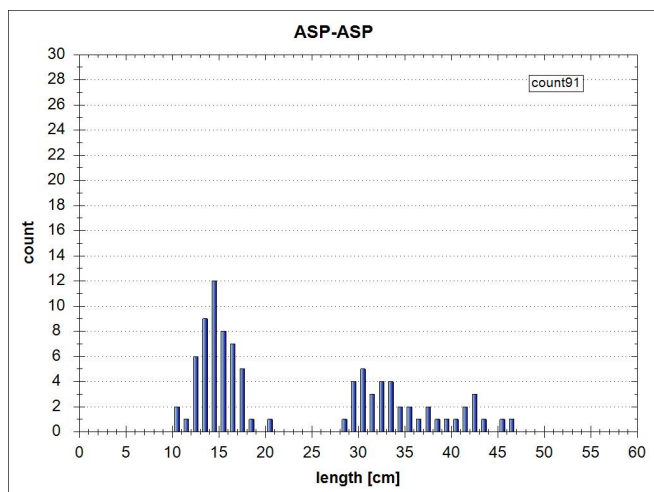
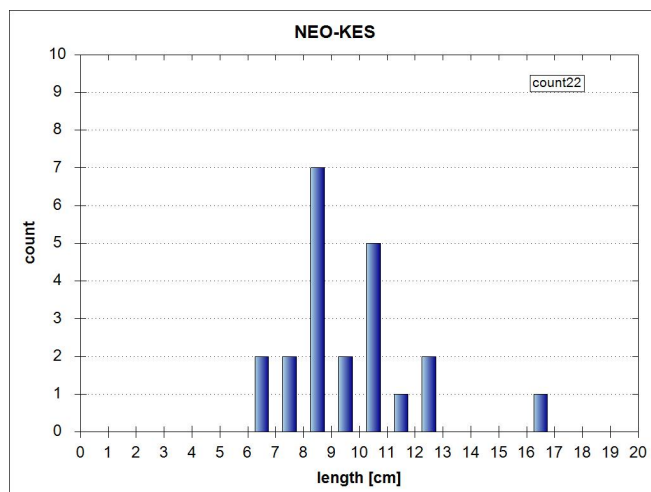
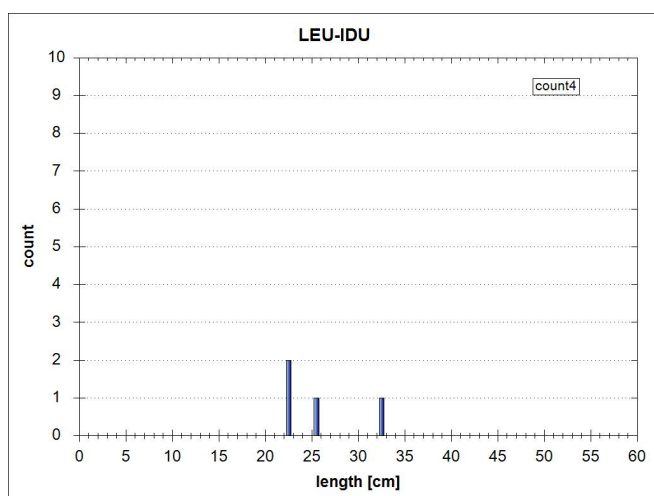
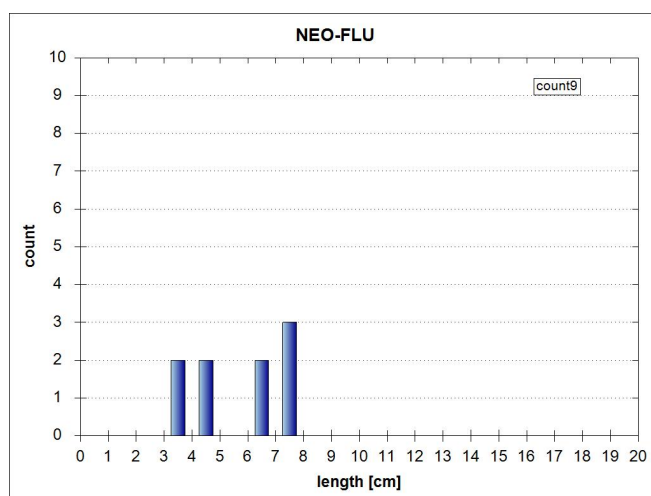
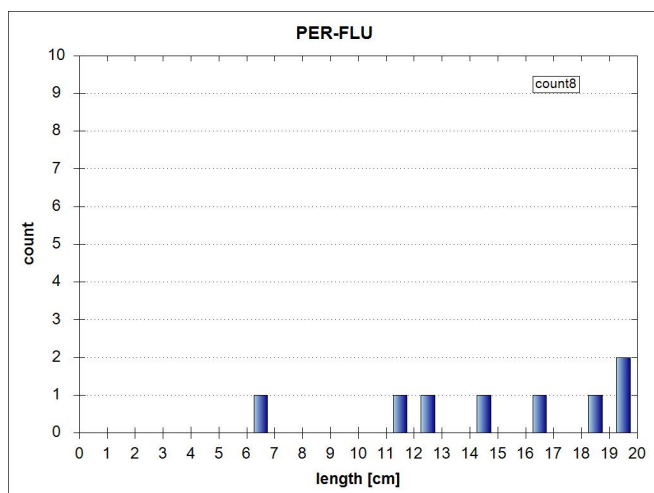
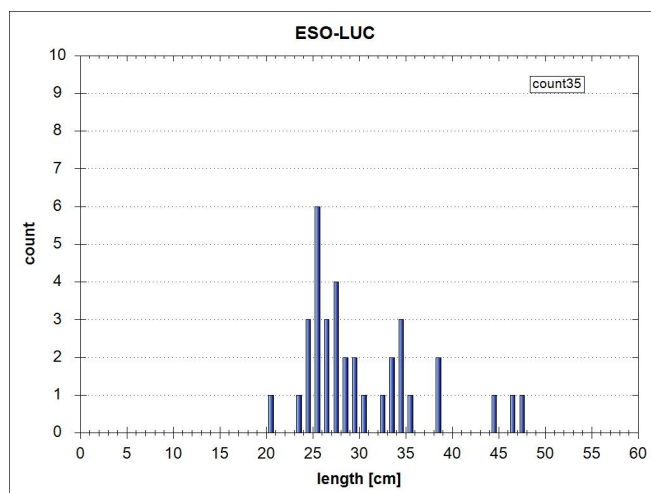


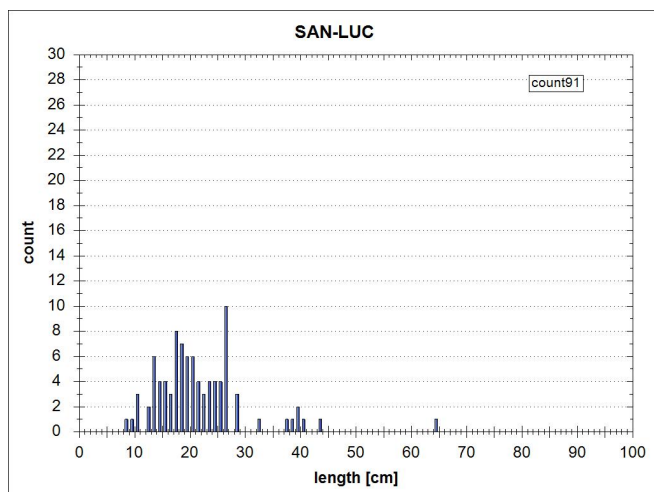
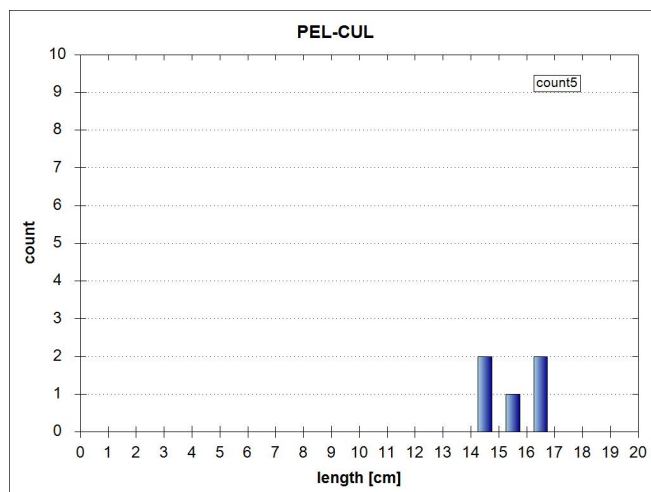
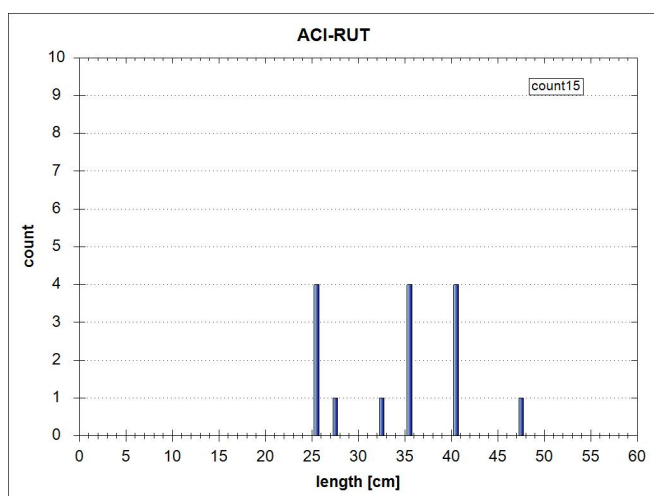
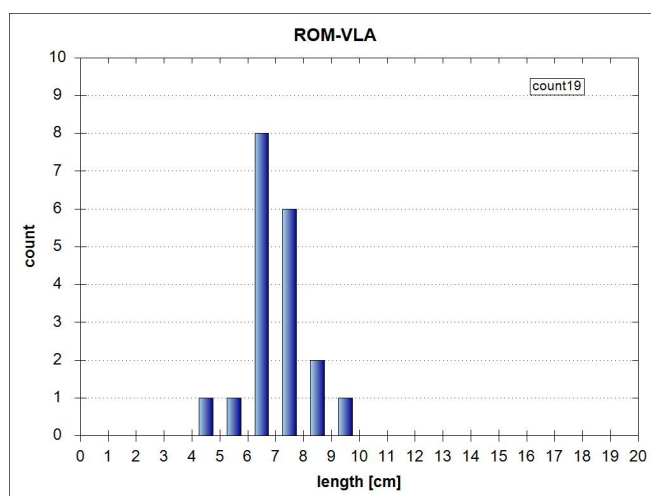
Roach (*Rutilus rutilus*), 3



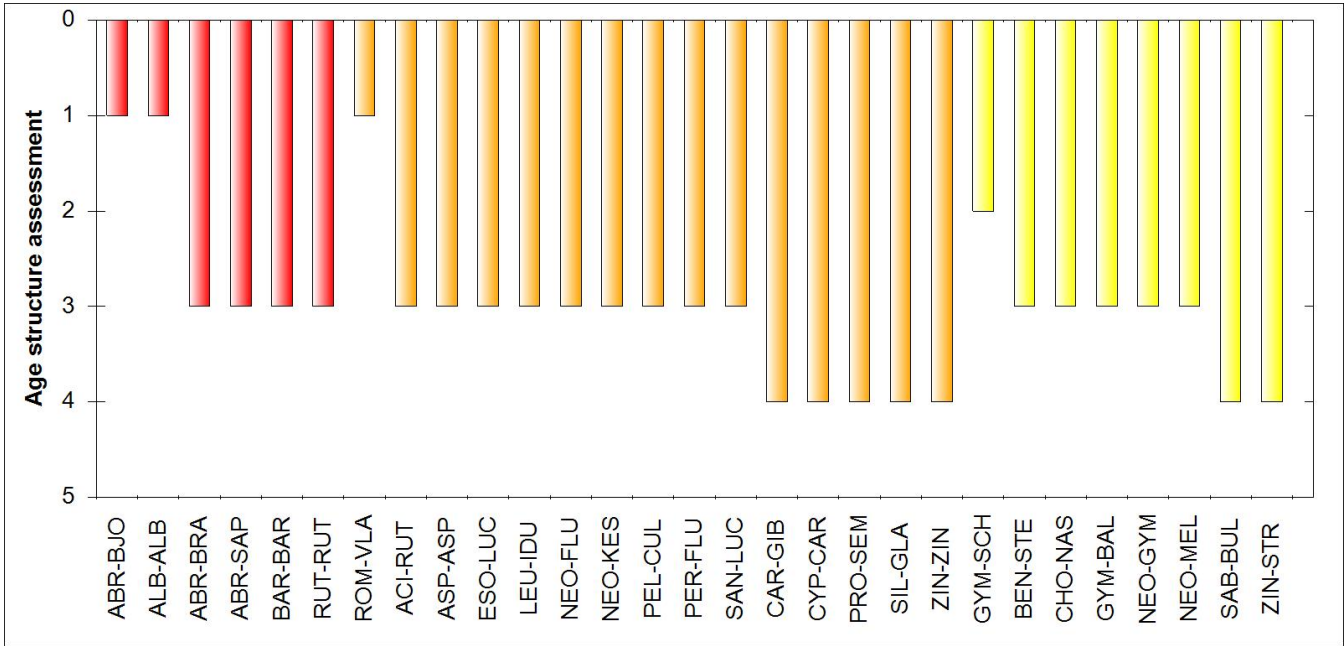
White bream (*Blicca bjoerkna*), 1

Pic. 4: Length-frequency diagram of dominant species (n>3), Sep. 2013

Asp (*Aspius aspius*), 3Bighead goby (*Neogobius kessleri*), 3Ide (*Leuciscus idus*), 3Monkey goby (*Neogobius fluviatilis*), 3Perch (*Perca fluviatilis*), 3Pike (*Esox lucius*), 3

Pikeperch (*Sander lucioperca*), 3Sabre carp (*Pelecus cultratus*), 3Sterlet (*Acipenser ruthenus*), 3White-finned gudgeon (*Romanogobio vladykovi*), 1

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



Pic. 6: 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, Chilia Arm-Valcov, RO JDS 93a, 9/23/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	934.3	31.6		ko-crit	4
1. Species	Reference fish assemblage	actual (current)	Ratio/Deviation	Partial rating	
Species					
Dominant species	6	6	100%	1.0	
Subdominant species	23	15	65%	2.0	
Rare species	32	8	25%	2.0	
				1.7	
Ecological guilds					
Flow	7	3	4	4.0	
Reproduction	7	5	2	3.0	
				3.5	
Species diversity & guilds overall					1.9
2. Dominance	Reference fish assemblage	actual (current)	Difference		
Fish region index	6.5	6.4	0.1		1.0
3. Population structure	Reference fish assemblage	actual (current)		Partial rating (1-5)	
Dominant species	6	6		2.3	
Subdominant species	23	15		3.8	
					2.8
Fishindex Austria without active ko-criterion					2.21
Biological quality element fish		FIA 4.00	Class 4	Poor	

Date of Assessment:3/18/2014

Comment BAW-IGF

- no comment -

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

Recommended improvements with priority ranking if possible;