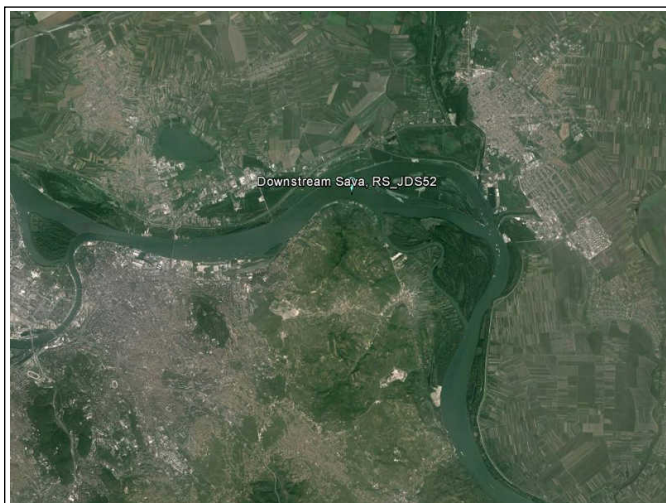


**Danube****Downstream Sava, RS\_JDS52 (RS\_JDS52 ), 05.September 2013****FDA\_ID 229**

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



Pic. 2: Monitoring site Downstream Sava, RS\_JDS52

**Description of monitoring site**

downstream Belgrad, urban area

**Assessment****Estimated assessment of the ecological status class (FÖZ)**

Biological quality element fish	None
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**Ecological status class, current survey, 05.September 2013**

Biological quality element fish	FIA 2.78	Class 3	Moderate
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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 siteDownstream Sava, RS\_JDS52

Watercourse name	<b>Danube</b>	Federal state	<b>not availabvle</b>
Monitoring site	<b>Downstream Sava, RS_JDS52</b>	District	
Monitoring site number	<b>RS_JDS52</b>	Community	
Turnus number		Longitude (WGS 84, decimal) O	<b>20.57587</b>
sampling number		Latitude (WGS 84, decimal) N	<b>44.84919</b>
Survey-ID (FDA)	<b>229</b>	Route-ID	
Date	<b>9/5/2013</b>	River-km [monitoring site]	
Contracting authority	<b>ICPDR</b>	Number of planing area	
Contractor	<b>BAW-IGF</b>	Detail waterbody	
Project manager	<b>Vinzenz Bammer</b>		
Reason of survey	<b>JDS 3</b>		
Fishing category			
Bioregion		Waters ordinal number	
Fish bioregion	<b>Pannonian Plain Danube (1497-1075) (6)</b>	Huet-zonation	<b>bream zone</b>
Biocenotic Region	<b>Metapotamon</b>	Adapt. Reference	<b>113</b>
River km mean	<b>1,163.0</b>	Altitude [m.a.s]	<b>70</b>
		Ø catchment basin [km²]	<b>525,000</b>
Section length [m]	<b>3,000</b>	Catchment-class	<b>more than 10.000km²</b>
Ø channel width [m]	<b>800</b>	Slope [‰]	<b>0.01</b>
Original stream character	<b>lowland stream -river</b>	Discharge regime	
Actual site character			
Actual impact		Reference watergauge (name, number)	
Flow [semiquant.]		Distance from source [km]	<b>1,683.0</b>
Average water depth [m]		Lake above	<b>No</b>
Maximum water depth [m]		Distance lake upstream [km]	
Geology	<b>calcareous</b>	Lake below	
Influence of sediment transport	<b>slightly affected</b>	Distance lake downstream [km]	
Ø wetted width [m]	<b>800</b>	Flow condition	
pH-value		Visible depth	
SBV		Fishing conditions	
Water temperature [°C] (F117)	<b>22.9</b>	Average annual air temperature [°C]	<b>12.3</b>
Conductance, 25°C [µS/cm] (F118)	<b>355</b>		
Methods used and effort			
<b>Strip-fishing, day</b>		Number of runs	<b>1</b>
Fished length [m]	<b>2,810</b>	E-devices output [kW]	<b>11</b>
Fished area [m²]	<b>8,430</b>	Output voltage	<b>600</b>
		Number of anodes	
		Number of strips/sections	<b>10</b>
and additional methods	<b>Fished area [m²]</b>	additional methods	<b>Effort [UE]</b>
E-Fishing by night	<b>4,380</b>		

### Comments on survey:

- no data -

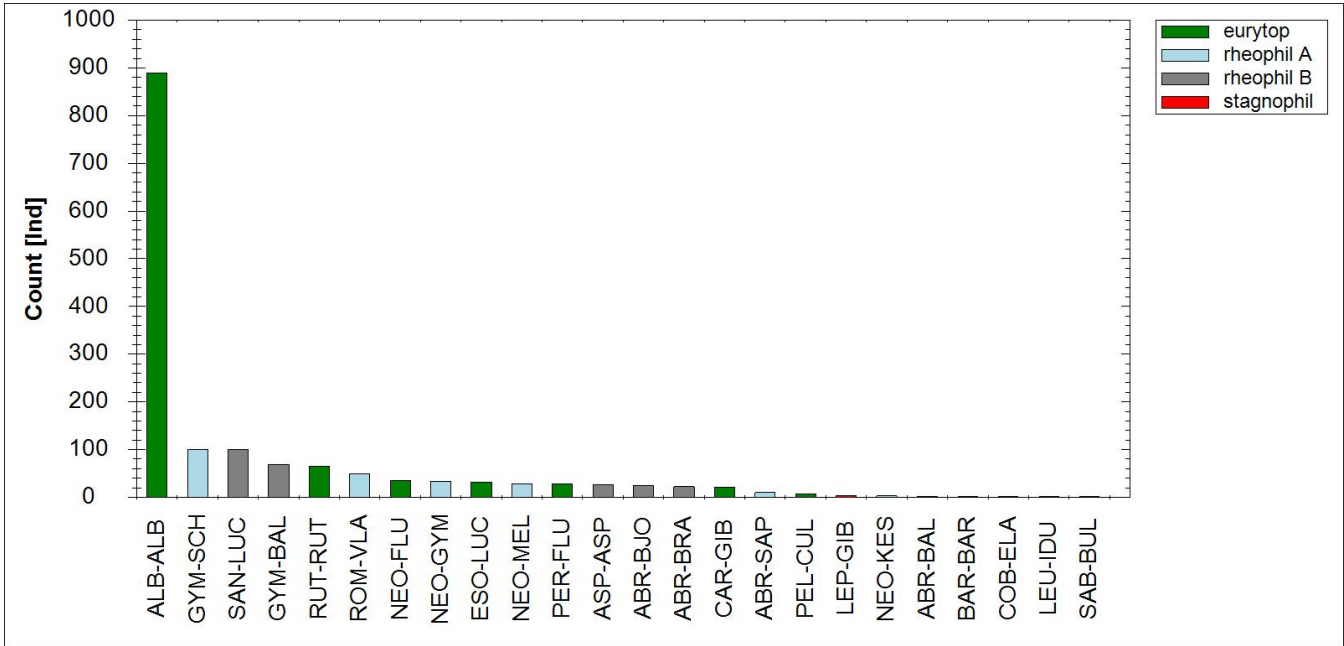
Table 2: Sampling effort at the monitoring site Downstream Sava, RS\_JDS52, September 2013

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	450	2		electric beam trawl
other natural bank	1	1	300	3		E-fishing day boat
other natural bank	2	1	310	3		E-fishing day boat
other natural bank	3	1	310	3		E-fishing day boat
other natural bank	4	1	300	3		E-fishing day boat
other natural bank	5	1	300	3		E-fishing day boat
other natural bank	6	1	290	3		E-fishing day boat
other natural bank	7	1	290	3		E-fishing day boat
other natural bank	8	1	290	3		E-fishing day boat
other natural bank	9	1	250	3		E-fishing day boat
other natural bank	10	1	300	3		E-fishing night
other natural bank	11	1	280	3		E-fishing night
other natural bank	12	1	290	3		E-fishing night
other natural bank	13	1	300	3		E-fishing night
other natural bank	14	1	290	3		E-fishing night
indefinite waterside	1	1	170	3		E-fishing day boat

Table 3: Habitat weighting used at the monitoring site Downstream Sava, RS\_JDS52

Habitat	%
indefinite waterside	5
other natural bank	95
undet. middle of the river	0

Catch result, fish assemblage and threatening status



Pic. 3: Species ranking diagramm of catch resultsDanube, Downstream Sava, RS\_JDS52

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	
Cyprinidae	Asp	<i>Aspius aspius</i>	b	II	EN	DD	26
	Barbel	<i>Barbus barbus</i>	b	V	NT	LC	1
	Bleak	<i>Alburnus alburnus</i>	I	-	LC	LC	890
	Blue bream	<i>Abramis ballerus</i>	I	-	EN		1
	Bream	<i>Abramis brama</i>	b	-	LC		22
	Carp	<i>Cyprinus carpio</i>	b	-	EN	DD	
	Chub	<i>Squalius cephalus</i>	s	-	LC	LC	
	Danubian gudgeon	<i>Romanogobio uranoscopus</i>	s	II	CR	DD	
	Gudgeon	<i>Gobio gobio</i>	b	-	LC	LC	
	Ide	<i>Leuciscus idus</i>	b	-	EN	LC	1
	Kessler's gudgeon	<i>Romanogobio kessleri</i>	b	II	EN	DD	
	Nase	<i>Chondrostoma nasus</i>	b	-	NT	LC	
	Prussian carp	<i>Carassius gibelio</i>	I	-	LC		21
	Roach	<i>Rutilus rutilus</i>	I	-	LC	LC	65
	Tench	<i>Tinca tinca</i>	s	-	VU	LC	
	Vimba bream	<i>Vimba vimba</i>	I	-	VU	LC	
	White bream	<i>Blicca bjoerkna</i>	I	-	LC	LC	24
Esocidae	Pike	<i>Esox lucius</i>	b	-	NT		32
Gadidae	Burbot	<i>Lota lota</i>	b	-	VU		
Percidae	Danube ruffe	<i>Gymnocephalus baloni</i>	b	II; IV	VU	DD	69
	Perch	<i>Perca fluviatilis</i>	b	-	LC	LC	28
	Pikeperch	<i>Sander lucioperca</i>	b	-	NT	LC	100
	Ruffe	<i>Gymnocephalus cernuus</i>	b	-	LC	LC	
	Schraetser	<i>Gymnocephalus schraetser</i>	b	II; V	VU	VU	100
	Volga pikeperch	<i>Sander volgensis</i>	s	-	EN	DD	
	Zingel	<i>Zingel zingel</i>	s	II; V	VU	VU	
Siluridae	Wels catfish	<i>Silurus glanis</i>	b	-	VU	LC	
Gobiidae	Tubenose goby	<i>Proterorhinus semilunaris</i>	I	-	EN	LC	
Cobitidae	Spined loach	<i>Cobitis taenia</i>	b	II	VU	LC	
Balitoridae	Danube bream	<i>Abramis sapa</i>	b	-	EN		10
Acipenseridae	Danube sturgeon	<i>Acipenser gueldenstaedtii</i>	s	V	RE	EN	
	Fringebarbel sturgeon	<i>Acipenser nudiiventris</i>	s	V	RE	EN	
	Sterlet	<i>Acipenser ruthenus</i>	b	V	CR	VU	
Cyprinidae	Sabre carp	<i>Pelecus cultratus</i>		II; V	NT	DD	7
	White-finned gudgeon	<i>Romanogobio vladykovi</i>		II	LC	DD	49
Gobiidae	Bighead goby	<i>Neogobius kessleri</i>		-	NE	DD	3
	Monkey goby	<i>Neogobius fluviatilis</i>		-	NE	DD	35
	Racer goby	<i>Neogobius gymnotrachelus</i>		-	NE	DD	33
	Round goby	<i>Neogobius melanostomus</i>		-	NE	DD	28
Cobitidae	Balkan spined loach	<i>Cobitis elongata</i>		II			1
	Bulgarian golden loach	<i>Sabanejewia bulgarica</i>					1
Centrarchidae	Pumkinseed	<i>Lepomis gibbosus</i>		-	NE		3

Observed:: reference fish assemblage 15Taxa :: 34Taxa

Taxa complete 24

Count species of reference fish assemblage 1,390

Total count 1,550

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

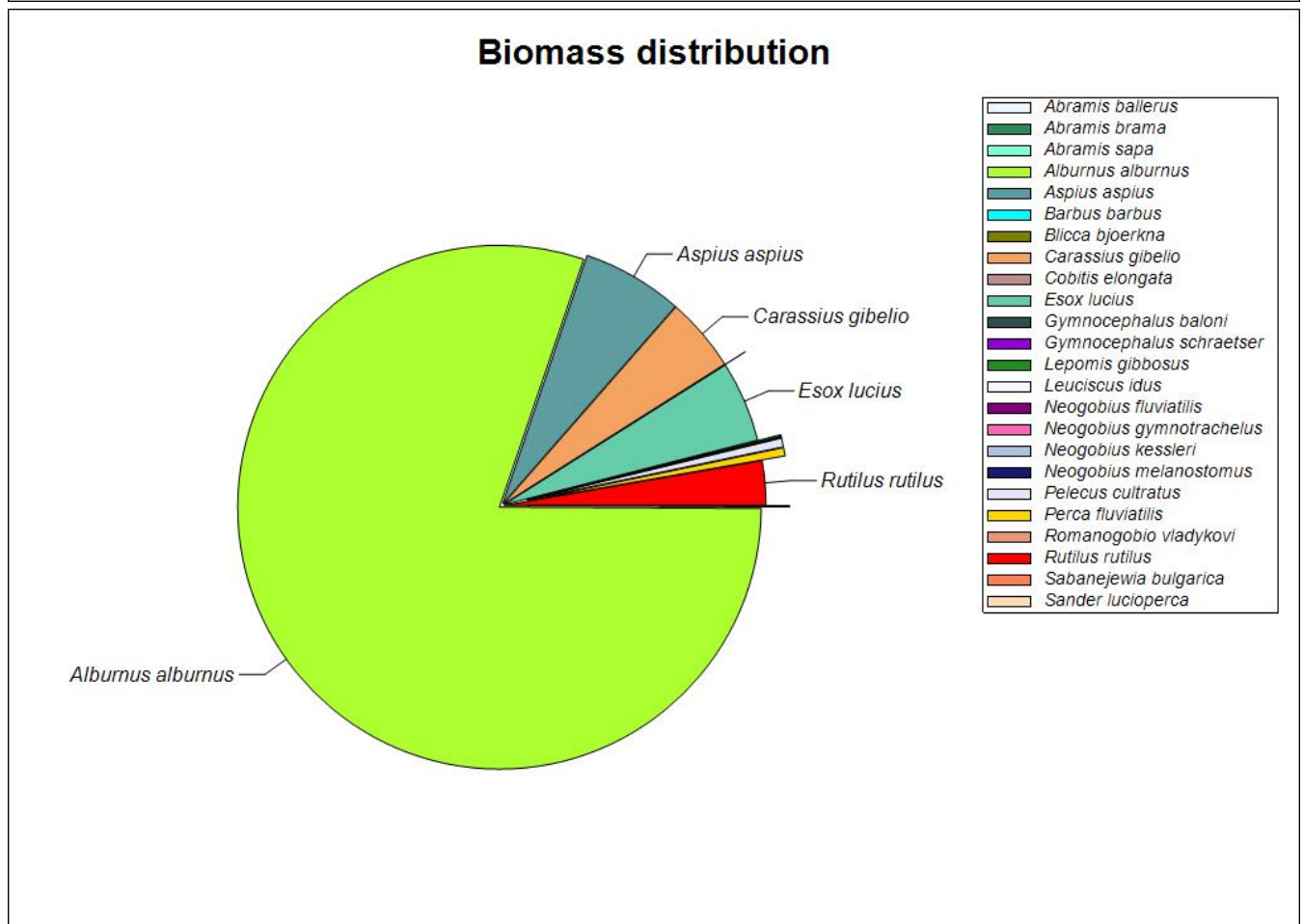
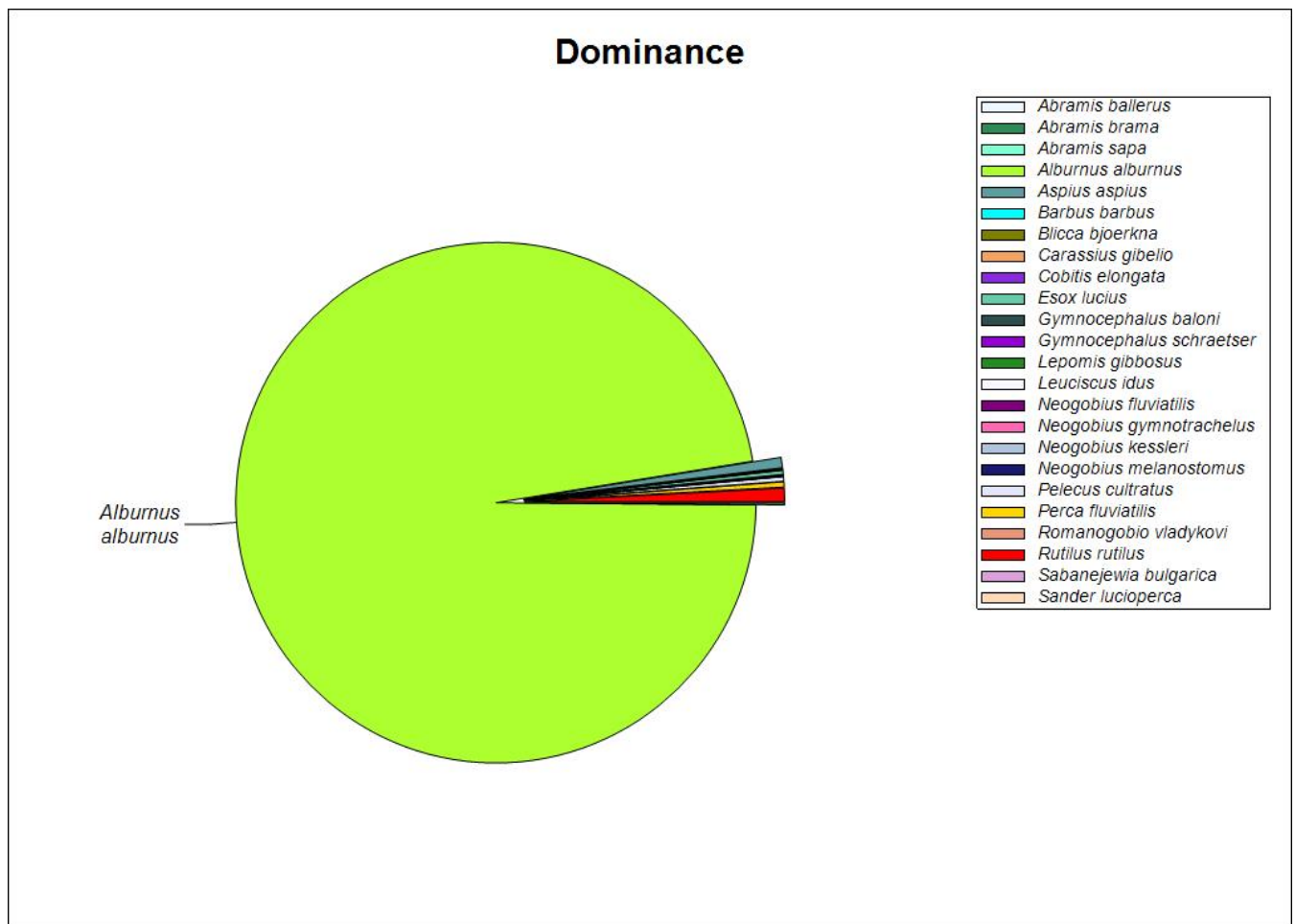
Table 5: abundance and biomass (e-fishings)Danube, Downstream Sava, RS\_JDS52, 9/5/2013

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
Asp	ASP-ASP	26	144.3		11.4		19.6	78.8	3	b
Balkan spined loach	COB-ELA	1	4.9		0.0		10.0	6.6	4	
Barbel	BAR-BAR	1	0.0		0.0	0.0	2.9	0.0	4	b
Bighead goby	NEO-KES	3	1.5		0.1		10.5	43.5	4	
Bleak	ALB-ALB	890	21,907.5		146.3		8.7	6.7	1	I
Blue bream	ABR-BAL	1	0.0		0.0	0.0	7.6	0.0	4	I
Bream	ABR-BRA	22	32.2		0.1		8.7	4.5	3	b
Bulgarian golden loach	SAB-BUL	1	0.0		0.0	0.0	8.0	0.0	4	
Danube bream	ABR-SAP	10	0.0		0.0	0.0	8.2	0.0	3	b
Danube ruffe	GYM-BAL	69	0.0		0.0	0.0	6.7	0.0	1	b
Ide	LEU-IDU	1	4.0		0.0		8.0	5.1	4	b
Monkey goby	NEO-FLU	35	0.0		0.0	0.0	8.7	0.0	1	
Perch	PER-FLU	28	72.5		0.9		9.2	12.8	2	b
Pike	ESO-LUC	32	57.6		9.1		29.3	158.1	2	b
Pikeperch	SAN-LUC	100	0.0		0.0	0.0	16.2	0.0	3	b
Prussian carp	CAR-GIB	21	17.7		8.4		28.2	473.6	2	I
Pumpkinseed	LEP-GIB	3	11.5		0.2		11.0	17.5	3	
Racer goby	NEO-GYM	33	6.4		0.0		6.6	3.8	2	
Roach	RUT-RUT	65	190.6		5.0		10.6	26.3	1	I
Round goby	NEO-MEL	28	0.0		0.0	0.0	3.4	0.0	2	
Sabre carp	PEL-CUL	7	64.0		1.0		13.9	15.5	3	
Schraetser	GYM-SCH	100	0.0		0.0	0.0	10.1	0.0	1	b
White bream	ABR-BJO	24	0.0		0.0	0.0	8.8	0.0	2	I
White-finned gudgeon	ROM-VLA	49	0.0		0.0	0.0	4.8	0.0	2	

15 species of 34

Total 1,550 22,514.7

182.6



Pic. 4: Dominance und Biomass distribution

Shannon-Index: 1.802

Equitability: 0.567

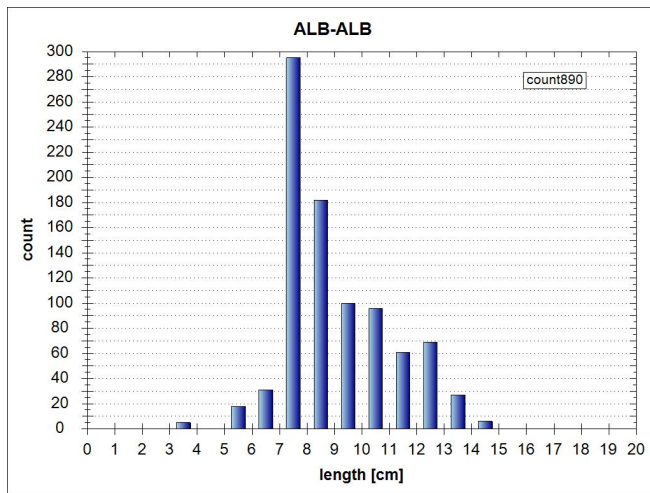
**Biometrics and catch rate**

Table 6: biometrics of each species and catch specific parameters

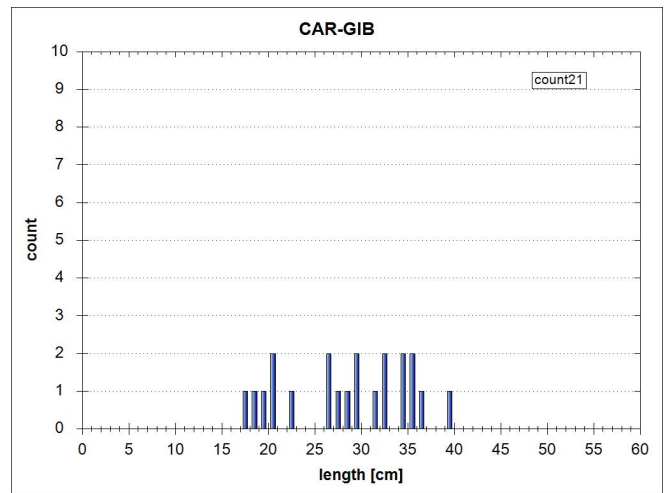
Fish species	Lt [cm]		n	Statist. Method	Catch- Probability [%]	Catch-effectivity		
	Min	Max				Min	MW	Max
Asp	7.5	19.6	37.0	26		0.03	0.43	0.80
Balkan spined loach	10.0	10.0	10.0	1		0.20	0.20	0.20
Barbel	2.9	2.9	2.9	1		0.70	0.70	0.70
Bighead goby	9.0	10.5	13.5	3		0.10	0.43	0.80
Bleak	3.0	8.7	14.0	890		0.02	0.12	0.70
Blue bream	7.6	7.6	7.6	1		0.70	0.70	0.70
Bream	5.0	8.7	19.8	22		0.20	0.56	0.70
Bulgarian golden loach	8.0	8.0	8.0	1		0.70	0.70	0.70
Danube bream	6.0	8.2	9.0	10		0.70	0.70	0.70
Danube ruffe	5.2	6.7	8.5	69		0.30	0.63	0.70
Ide	8.0	8.0	8.0	1		0.30	0.30	0.30
Monkey goby	2.1	8.7	15.0	35		0.10	0.45	0.70
Perch	4.0	9.2	18.0	28		0.03	0.37	0.70
Pike	19.0	29.3	58.0	32		0.20	0.43	0.80
Pikeperch	9.5	16.2	25.0	100		0.30	0.42	0.70
Prussian carp	17.0	28.2	39.5	21		0.20	0.54	1.00
Pumpkinseed	9.5	11.0	13.5	3		0.20	0.37	0.70
Racer goby	1.5	6.6	10.5	33		0.10	0.31	0.80
Roach	5.0	10.6	17.5	65		0.20	0.32	0.80
Round goby	1.5	3.4	8.5	28		0.20	0.62	0.70
Sabre carp	11.6	13.9	15.5	7		0.05	0.29	0.70
Schraetser	6.1	10.1	15.5	100		0.30	0.54	0.70
White bream	4.8	8.8	18.0	24		0.30	0.68	0.70
White-finned gudgeon	1.6	4.8	7.5	49		0.40	0.69	0.70
24 species		Sum	1,550					



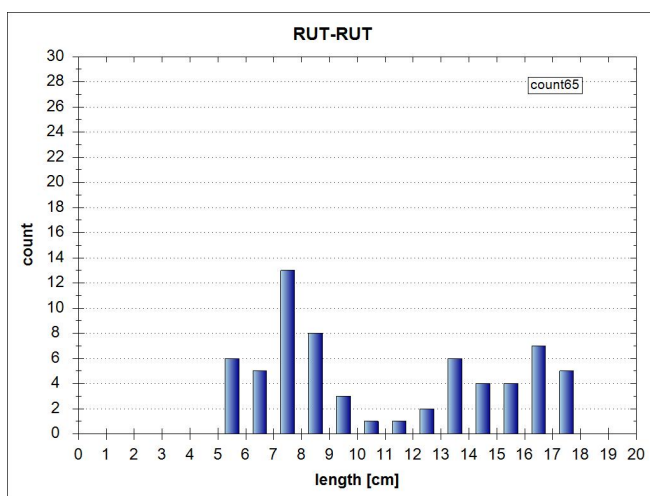
## Population structure of dominant species and subdominant species (total catch)



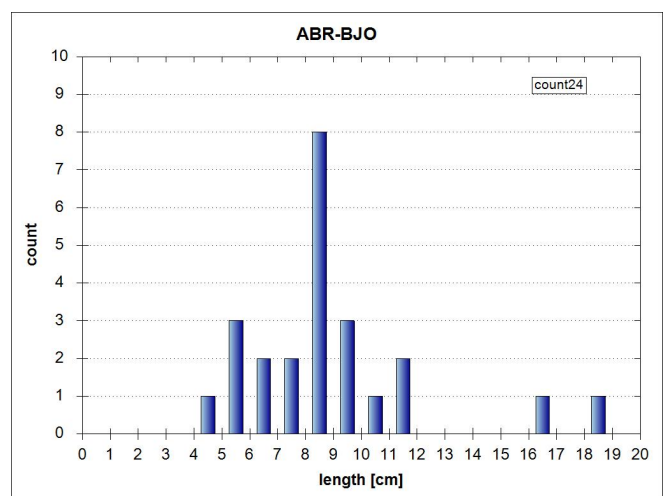
Bleak (*Alburnus alburnus*), 1



Prussian carp (*Carassius gibelio*), 2

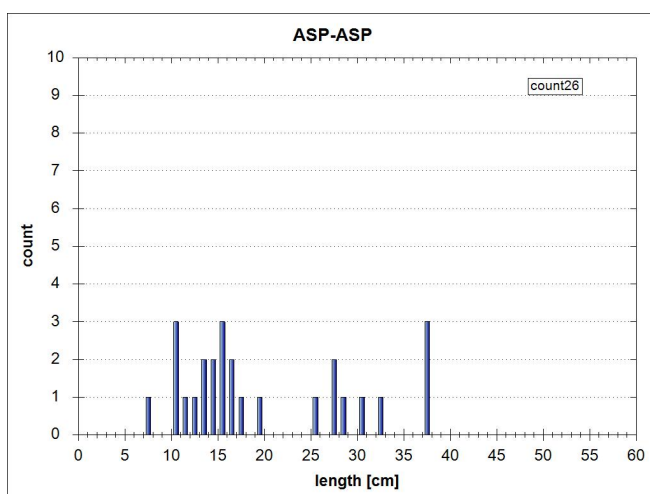


Roach (*Rutilus rutilus*), 1

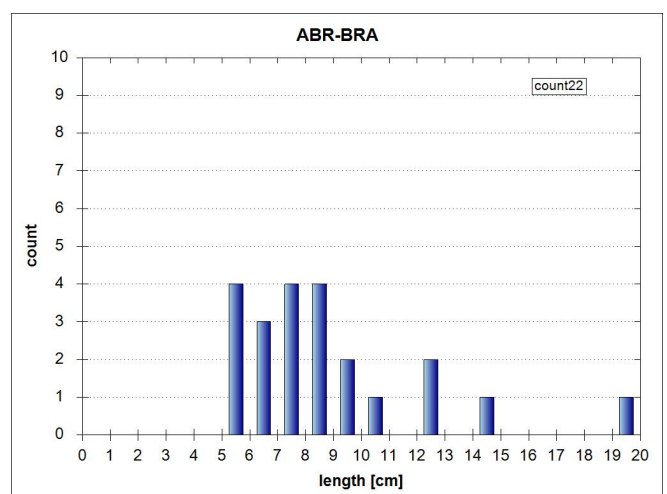


White bream (*Blicca bjoerkna*), 2

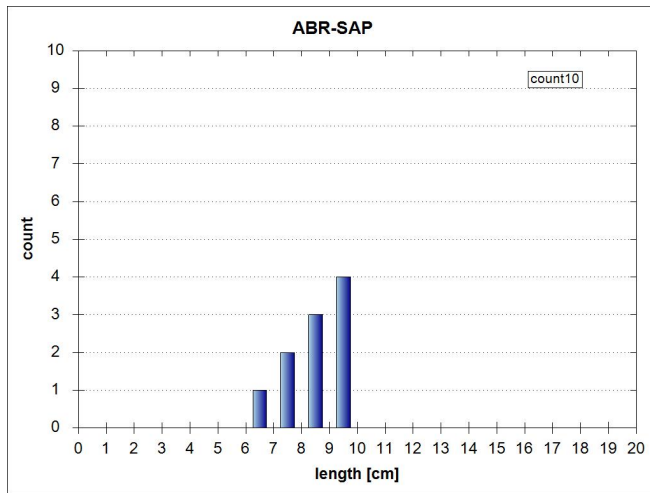
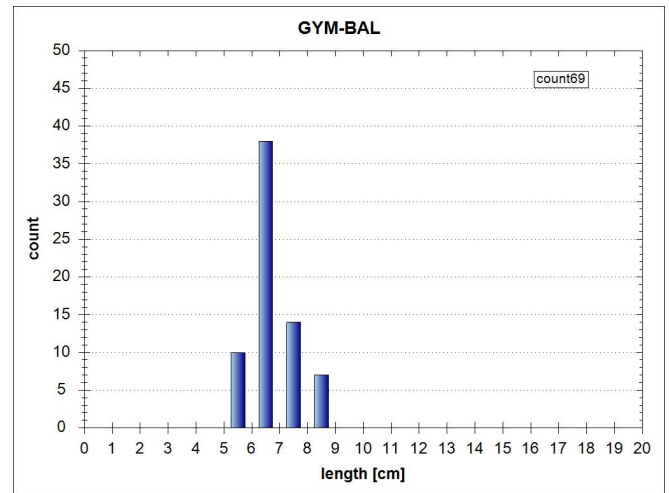
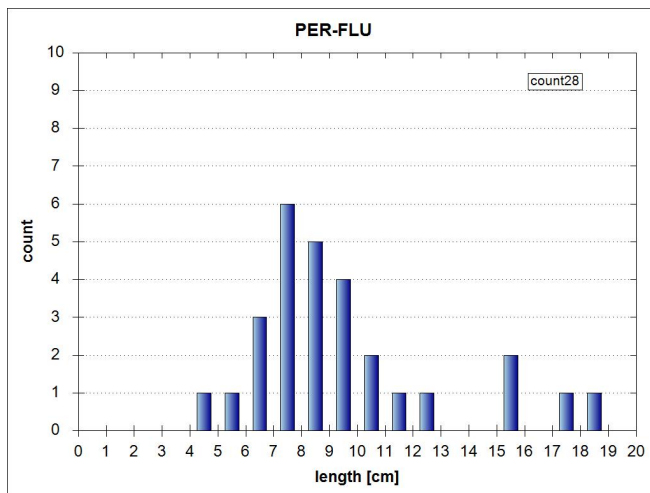
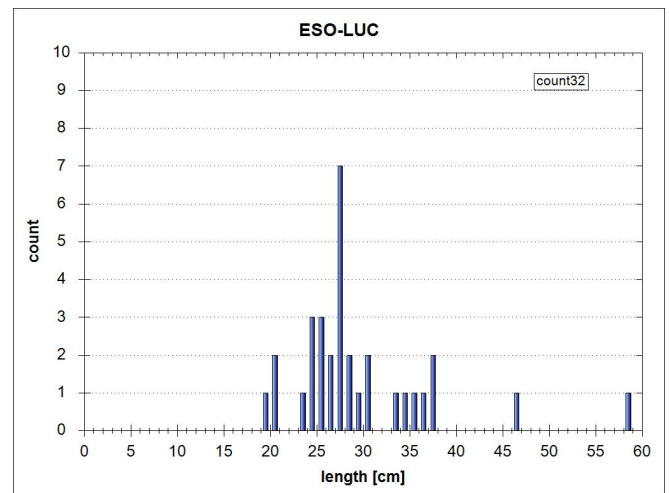
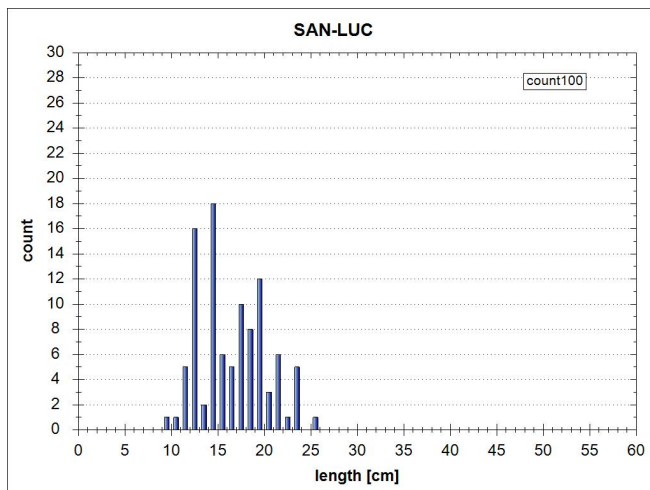
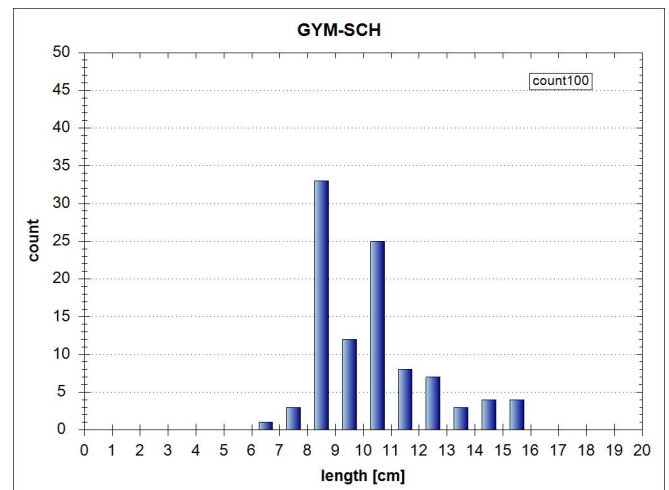
Pic. 5: Length-frequency diagram of dominant species (n>3), Sep. 2013



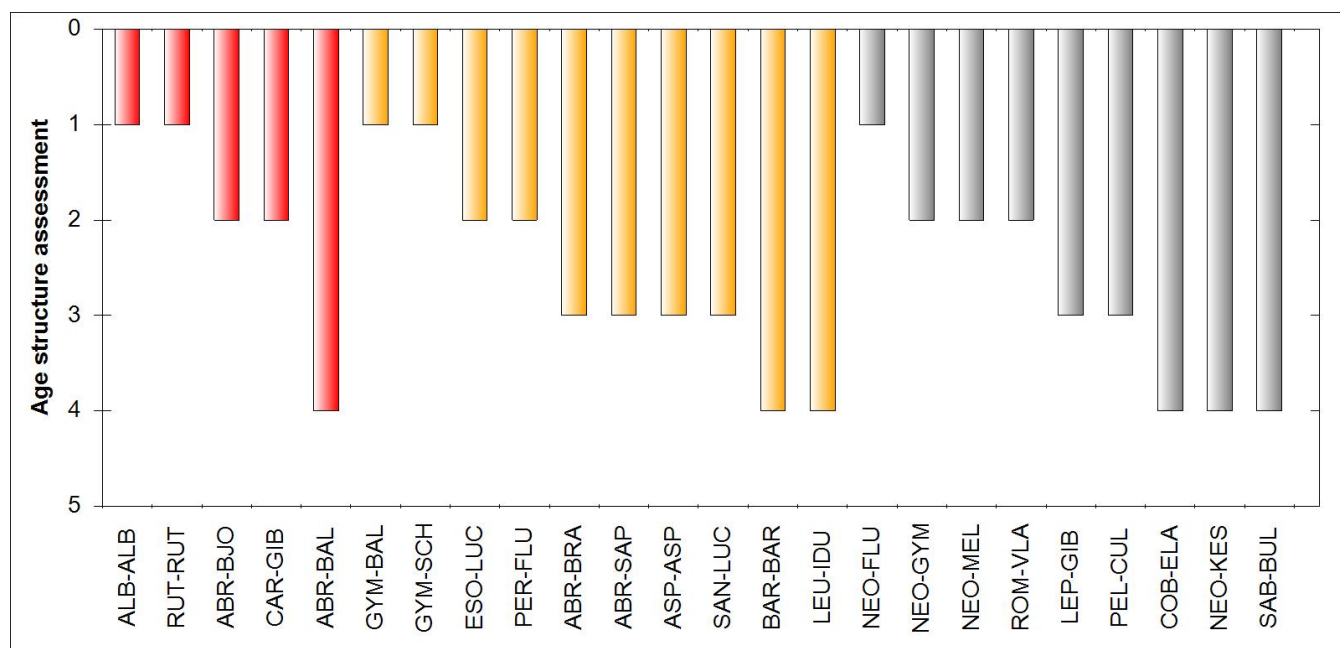
Asp (*Aspius aspius*), 3



Bream (*Abramis brama*), 3

Danube bream (*Abramis sapo*), 3Danube ruffe (*Gymnocephalus baloni*), 1Perch (*Perca fluviatilis*), 2Pike (*Esox lucius*), 2Pikeperch (*Sander lucioperca*), 3Schraetser (*Gymnocephalus schraetser*), 1

Pic. 6: Length-frequency diagram of subdominant species (n&gt;3), Sep. 2013



Pic. 7: Age structure of present species

**Comment on population structure of dominant and subdominant species**

- no comment -

**Fish ecological assessment (FIA, FISH INDEX AUSTRIA)**

Table 7: fish ecologic assessment, Danube, Downstream Sava, RS\_JDS52, 9/5/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	22,426.4	181.3			OK
<b>1. Species</b>	<b>Reference fish assemblage</b>	<b>actual (current)</b>	<b>Ratio/Deviation</b>	<b>Partial rating</b>	
<b>Species</b>					
Dominant species	7	5	71%	3.0	
Subdominant species	19	10	53%	2.0	
Rare species	8	0	0%	5.0	
				3.3	
<b>Ecological guilds</b>					
Flow	5	3	2	3.0	
Reproduction	6	3	3	4.0	
				3.5	
<b>Species diversity &amp; guilds overall</b>					<b>3.1</b>
<b>2. Dominance</b>	<b>Reference fish assemblage</b>	<b>actual (current)</b>	<b>Difference</b>		
<b>Fish region index</b>	6.4		0.0		<b>1.0</b>
<b>3. Population structure</b>	<b>Reference fish assemblage</b>	<b>actual (current)</b>		<b>Partial rating (1-5)</b>	
Dominant species	7	5		2.9	
Subdominant species	19	10		3.7	
					<b>3.2</b>
Fishindex Austria without active ko-criterion					<b>2.78</b>
<b>Biological quality element fish</b>		<b>FIA 2.78</b>	<b>Class 3</b>	<b>Moderate</b>	

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;*