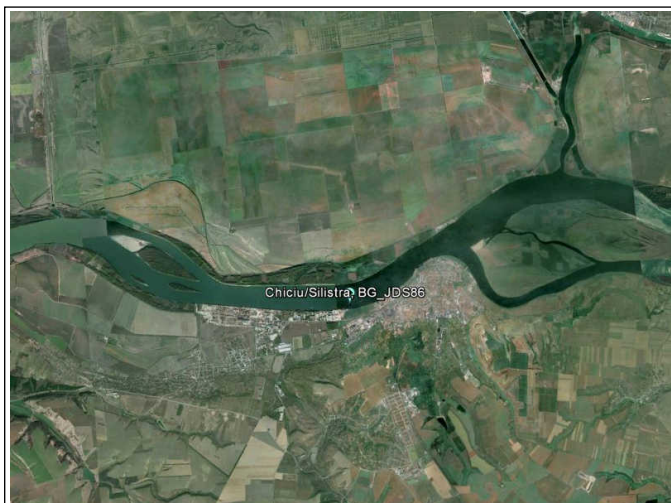


**Danube****Chiciu, Silistra, BG\_JDS86 (BG\_JDS86 ), 23.October 2013**

FDA\_ID 215



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.October 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 Chiciu, Silistra, BG\_JDS86

Watercourse name	<b>Danube</b>	Federal state	<b>not available</b>
Monitoring site	<b>Chiciu, Silistra, BG_JDS86</b>	District	
Monitoring site number	<b>BG_JDS86</b>	Community	
Turnus number		Longitude (WGS 84, decimal) O	<b>27.23412</b>
sampling number		Latitude (WGS 84, decimal) N	<b>44.11587</b>
Survey-ID (FDA)	<b>215</b>	Route-ID	
Date	<b>10/23/2013</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>Western Pomtic Danube (943-375,5) (8)</b>	Huet-zonation	<b>bream zone</b>
Biocenotic Region	<b>Metapotamon</b>	Adapt. Reference	<b>121</b>
River km from	<b>383.0</b>	Altitude [m.a.s]	<b>7</b>
River km to	<b>373.0</b>	Ø catchment basin [km²]	<b>698,600</b>
Section length [m]	<b>10,000</b>	Catchment-class	<b>more than 10.000km²</b>
Ø channel width [m]	<b>670</b>	Slope [‰]	<b>0.03</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>2,467.0</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>670</b>	Flow condition	
pH-value		Visible depth	
SBV		Fishing conditions	
Water temperature [°C] (F117)	<b>19.6</b>	Average annual air temperature [°C]	<b>11.5</b>
Conductance, 25°C [µS/cm] (F118)	<b>377</b>		
Methods used and effort			
<b>Strip-fishing, day</b>		Number of runs	<b>1</b>
Fished length [m]	<b>6,595</b>	E-devices output [kW]	<b>11</b>
Fished area [m²]	<b>16,185</b>	Output voltage	<b>600</b>
		Number of anodes	
		Number of strips/sections	<b>18</b>
and additional methods	<b>Fished area [m²]</b>	additional methods	<b>Effort [UE]</b>
E-Fishing by night	<b>1,000</b>		

### Comments on survey:

coreteam: only daylight sampling

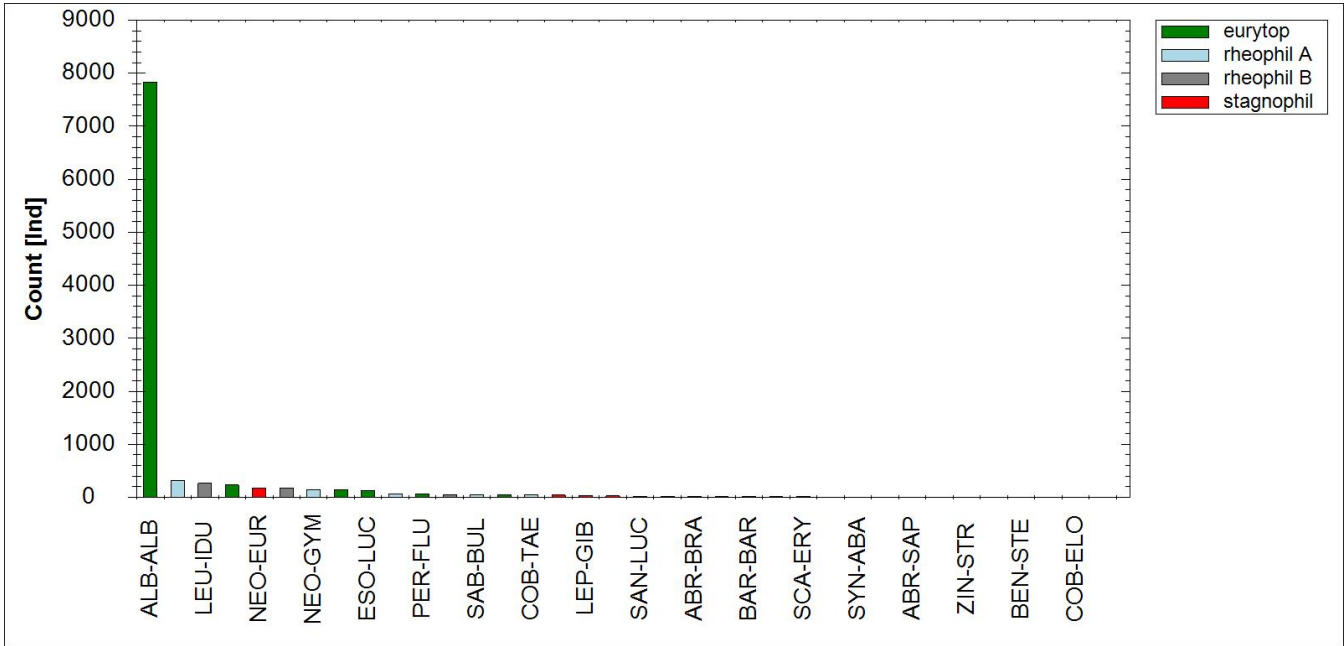
Table 2: Sampling effort at the monitoring site Chiciu, Silistra, BG\_JDS86, October 2013

Habitat	Str. no	DG	Length [m]	Width [m]	UE	Method
rock	19	1	500	2		E-fishing night
undet. middle of the river	11	1	500	2		electric beam trawl
undet. middle of the river	12	1	500	2		electric beam trawl
undet. middle of the river	13	1	500	2		electric beam trawl
undet. middle of the river	14	1	500	2		electric beam trawl
undet. middle of the river	15	1	500	2		electric beam trawl
undet. middle of the river	16	1	280	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
riffle	20	1	500	2		E-fishing day boat
riffle	21	1	300	2		E-fishing day boat
riffle	22	1	500	2		E-fishing day boat
riffle	23	1	600	2		E-fishing day boat
riffle	24	1	700	2		E-fishing day boat
riffle	25	1	300	2		E-fishing day boat
riffle	26	1	400	2		E-fishing day boat
riffle	27	1	300	2		E-fishing day boat
sand/mud bar	4	1	300	3		E-fishing day boat
sand/mud bar	5	1	270	3		E-fishing day boat
indefinite waterside	6	1	280	3		E-fishing day boat
bluff	1	1	410	3		E-fishing day boat
bluff	2	1	300	3		E-fishing day boat
bluff	3	1	310	3		E-fishing day boat
bluff	7	1	300	3		E-fishing day boat
bluff	8	1	290	3		E-fishing day boat
bluff	9	1	255	3		E-fishing day boat
bluff	10	1	280	3		E-fishing day boat

Table 3: Habitat weighting used at the monitoring site Chiciu, Silistra, BG\_JDS86

Habitat	%
bluff	70
indefinite waterside	10
riffle	0
rock	0
sand/mud bar	20
undet. middle of the river	0

Catch result, fish assemblage and threatening status



Pic. 2: Species ranking diagramm of catch resultsDanube, Chiciu, Silistra, BG\_JDS86

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	-			7
Petromyzontidae	Ukrainian lamprey	<i>Eudontomyzon mariae</i>	s	II	VU	DD	14
Cyprinidae	Asp	<i>Aspius aspius</i>	b	II	EN	DD	175
	Barbel	<i>Barbus barbus</i>	b	V	NT	LC	10
	Bitterling	<i>Rhodeus amarus</i>	b	II	VU	LC	40
	Bleak	<i>Alburnus alburnus</i>	I	-	LC	LC	7,830
	Blue bream	<i>Abramis ballerus</i>	b	-	EN		2
	Bream	<i>Abramis brama</i>	I	-	LC		11
	Carp	<i>Cyprinus carpio</i>	b	-	EN	DD	7
	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	
	Danubian gudgeon	<i>Romanogobio uranoscopus</i>	s	II	CR	DD	
	Gudgeon	<i>Gobio gobio</i>	s	-	LC	LC	
	Ide	<i>Leuciscus idus</i>	b	-	EN	LC	263
	Kessler's gudgeon	<i>Romanogobio kesslerii</i>	s	II	EN	DD	
	Nase	<i>Chondrostoma nasus</i>	s	-	NT	LC	2
	Prussian carp	<i>Carassius gibelio</i>	b	-	LC		45
	Roach	<i>Rutilus rutilus</i>	I	-	LC	LC	146
	Rudd	<i>Scardinius erythrophthalmus</i>	s	-	LC	LC	8
	Sabre carp	<i>Pelecus cultratus</i>	b	II; V	NT	DD	11
	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	54
	White-finned gudgeon	<i>Romanogobio vladykovi</i>	I	II	LC	DD	68
Esocidae	Pike	<i>Esox lucius</i>	b	-	NT		122
Gadidae	Burbot	<i>Lota lota</i>	s	-	VU		
Percidae	Danube ruffe	<i>Gymnocephalus baloni</i>	s	II; IV	VU	DD	
	Perch	<i>Perca fluviatilis</i>	b	-	LC	LC	65
	Pikeperch	<i>Sander lucioperca</i>	b	-	NT	LC	18
	Ruffe	<i>Gymnocephalus cernuus</i>	s	-	LC	LC	
	Schraetser	<i>Gymnocephalus schraetser</i>	b	II; V	VU	VU	8
	Streber	<i>Zingel streber</i>	s	II	EN	VU	3
	Volga pikeperch	<i>Sander volgensis</i>	s	-	EN	DD	
	Zingel	<i>Zingel zingel</i>	b	II; V	VU	VU	
Siluridae	Wels catfish	<i>Silurus glanis</i>	b	-	VU	LC	5
Gobiidae	Bighead goby	<i>Neogobius kessleri</i>	s	-	NE	DD	3
	Monkey goby	<i>Neogobius fluviatilis</i>	I	-	NE	DD	230
	Racer goby	<i>Neogobius gymnotrachelus</i>	s	-	NE	DD	147
	Round goby	<i>Neogobius melanostomus</i>	s	-	NE	DD	322
	Tubenose goby	<i>Proterorhinus semilunaris</i>	b	-	EN	LC	2
Cobitidae	Balkan loach	<i>Sabanejewia balcanica</i>	s	II	EN	DD	
	Bulgarian golden loach	<i>Sabanejewia bulgarica</i>	s				54

Family	English name	Scient. name of species	Reference fish assemblage	FHH	Red List	IUCN	Count
	Danubian spined loach	<i>Cobitis elongatoides</i>	b	-			2
	Weatherfish	<i>Misgurnus fossilis</i>	s	II	CR	NT	
Balitoridae	Danube bream	<i>Abramis sapa</i>	I	-	EN		3
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>	s	V	CR	VU	
Clupeidae	Azov shad	<i>Alosa tanaica</i>	s				
	European mud-minnow	<i>Umbra krameri</i>	s	II	CR	VU	
	Pontic shad	<i>Alosa immaculata</i>	s	-			
Gobiidae	Chinese sleeper	<i>Perccottus glenii</i>		-			27
	Mushroom goby	<i>Neogobius eurycephalus</i>		-			181
	Stellate tadpole-goby	<i>Benthophilus stellatus</i>					2
Cobitidae	Spined loach	<i>Cobitis taenia</i>		II	VU	LC	42
Centrarchidae	Pumpkinseed	<i>Lepomis gibbosus</i>		-	NE		38

Observed:: reference fish assemblage 31Taxa :: 56Taxa

Taxa complete 36

Count species of reference fish assemblage 9,677

Total count 9,967

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

- I Dominant species
- b Subdominant species
- s Rare species
- a! Allochthon
- NI 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

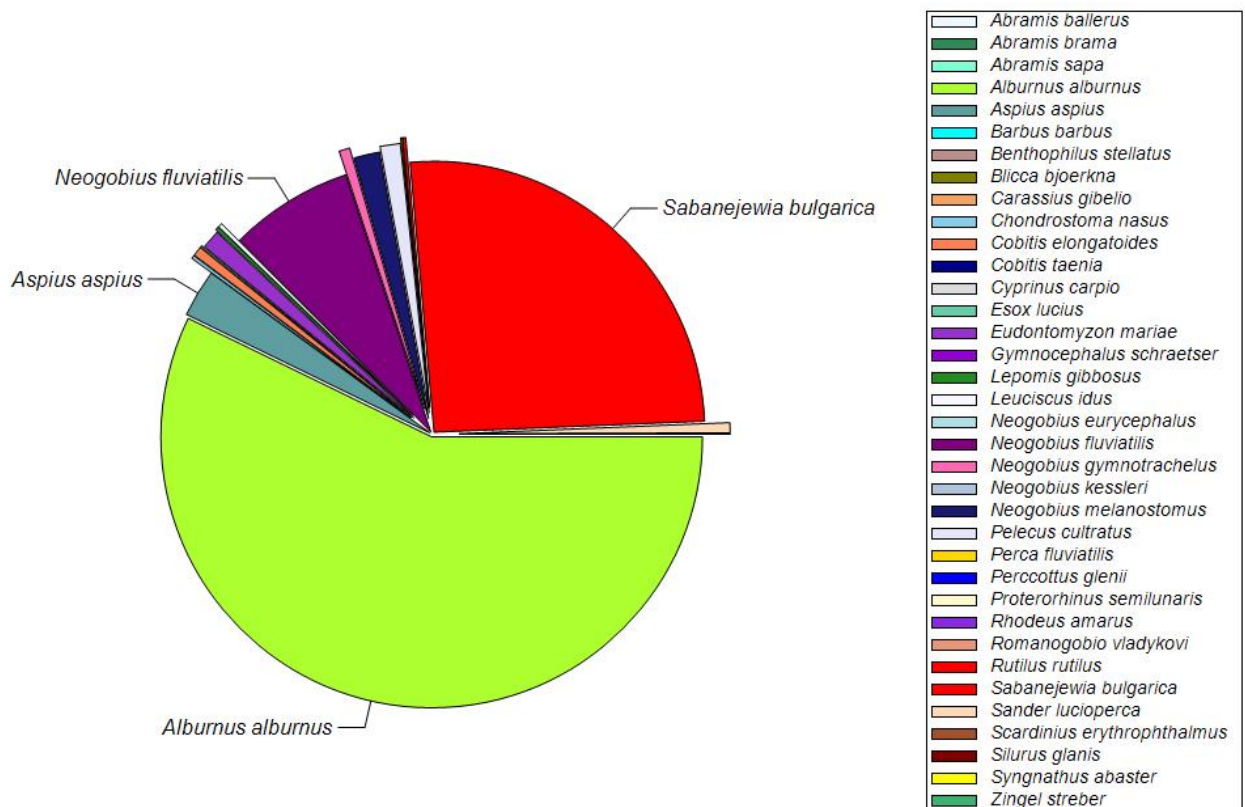
Table 5: abundance and biomass (e-fishings) Danube, Chiciu, Silistra, BG\_JDS86, 10/23/2013

English name	Species Code	Count	Abu [Ind/ha]	95% Konfid.	Biom [kg/ha]	95% Konfid.	Weight [g] median	Mean Weight [g] total	Population structure	Reference fish assemblage
Asp	ASP-ASP	175	58.6		2.2		14.8	37.8	2	b
Barbel	BAR-BAR	10	0.0		0.0	0.0	12.5	0.0	3	b
Bighead goby	NEO-KES	3	0.0		0.0	0.0	8.2	0.0	3	s
Bitterling	RHO-SER	40	0.0		0.0	0.0	4.7	0.0	1	b
Black-striped pipefish	SYN-ABA	7	0.0		0.0	0.0	12.6	0.0	3	s

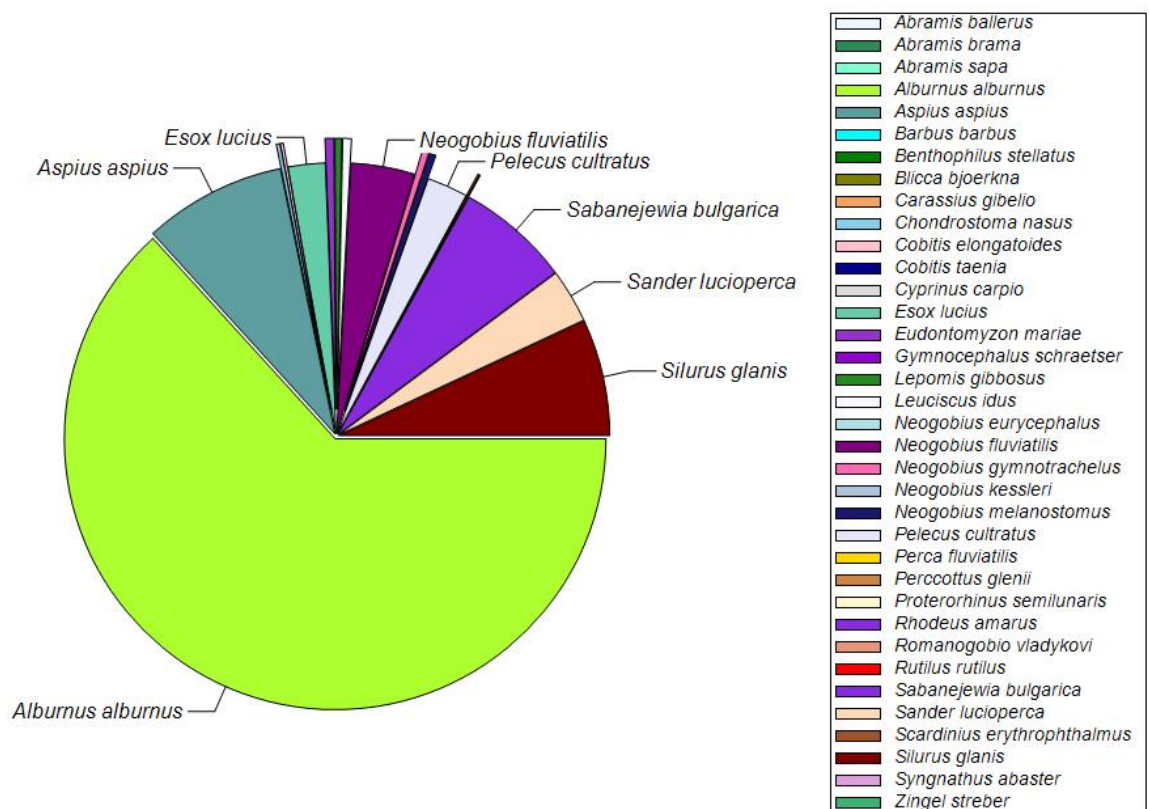
English name	Species Code	Count	Abu [Ind/ha]	95% Konfid.	Biom [kg/ha]	95% Konfid.	Weight [g] median allover	Mean Weight [g] total	Population structure	Reference fish assemblage
Bleak	ALB-ALB	7,830	1,181.6		16.5		8.5	13.9	1	l
Blue bream	ABR-BAL	2	0.0		0.0	0.0	8.8	0.0	4	b
Bream	ABR-BRA	11	0.0		0.0	0.0	9.6	0.0	3	l
Bulgarian golden loach	SAB-BUL	54	532.2		1.8		8.1	3.3	1	s
Carp	CYP-CAR	7	0.0		0.0	0.0	16.7	0.0	3	b
Chinese sleeper	PER-GLE	27	0.0		0.0	0.0	4.6	0.0	2	
Danube bream	ABR-SAP	3	0.0		0.0	0.0	9.5	0.0	4	l
Danubian spined loach	COB-ELO	2	11.7		0.1		8.5	4.1	4	b
Idc	LEU-IDU	263	5.4		0.1		9.9	24.7	3	b
Monkey goby	NEO-FLU	230	152.8		1.0		7.4	6.5	1	l
Mushroom goby	NEO-EUR	181	0.0		0.0	0.0	8.0	0.0	1	
Nase	CHO-NAS	2	4.2		0.1		11.8	13.7	4	s
Perch	PER-FLU	65	2.0		0.0		8.8	11.3	2	b
Pike	ESO-LUC	122	2.2		0.6		28.1	263.9	3	b
Pikeperch	SAN-LUC	18	12.3		0.8		18.6	67.8	3	b
Prussian carp	CAR-GIB	45	0.0		0.0	0.0	14.8	0.0	2	b
Pumpkinseed	LEP-GIB	38	4.4		0.1		11.3	24.9	2	
Racer goby	NEO-GYM	147	13.4		0.1		6.6	8.0	1	s
Roach	RUT-RUT	146	4.0		0.0		11.1	4.0	1	l
Round goby	NEO-MEL	322	31.8		0.1		7.1	3.2	1	s
Rudd	SCA-ERY	8	0.0		0.0	0.0	11.0	0.0	3	s
Sabre carp	PEL-CUL	11	24.9		0.6		17.1	25.4	3	b
Schraetser	GYM-SCH	8	0.0		0.0	0.0	13.5	0.0	3	b
Spined loach	COB-TAE	42	0.0		0.0	0.0	8.8	0.0	1	
Stellate tadpole-goby	BEN-STE	2	0.0		0.0	0.0	4.3	0.0	4	
Streber	ZIN-STR	3	0.0		0.0	0.0	9.7	0.0	4	s
Tubenose goby	PRO-SEM	2	0.0		0.0	0.0	3.3	0.0	3	b
Ukrainian lamprey	EUD-MAR	14	23.3		0.1		14.2	6.0	3	s
Wels catfish	SIL-GLA	5	1.1		1.8		40.3	1,665.5	3	b
White bream	ABR-BJO	54	0.0		0.0	0.0	8.7	0.0	3	l
White-finned gudgeon	ROM-VLA	68	0.0		0.0	0.0	4.4	0.0	1	l
31 species of 56	Total	9,967	2,065.9		26.0					



### Dominance



### Biomass distribution



Pic. 3: Dominance und Biomass distribution



Shannon-Index: 1.119

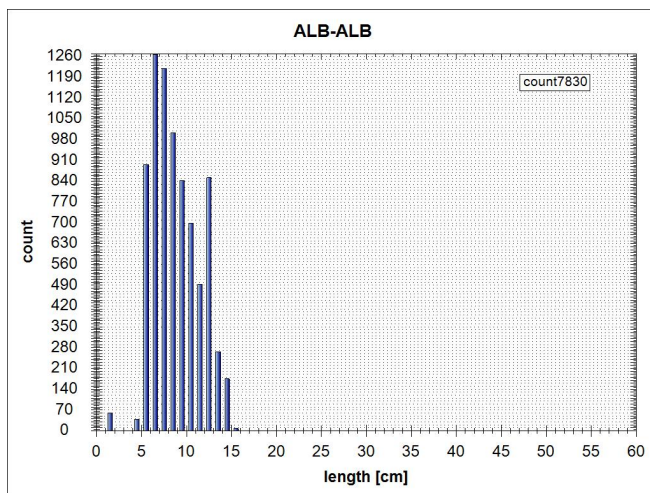
Equitability: 0.312

**Biometrics and catch rate**

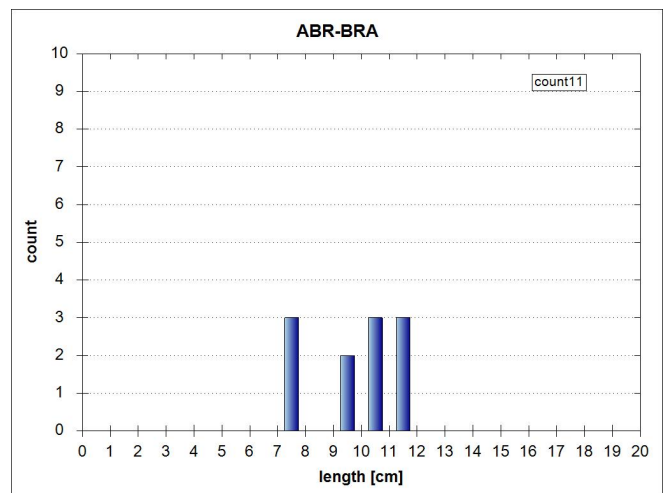
Table 6: biometrics of each species and catch specific parameters

Fish species	Lt [cm]		n	Statist.	Catch-	Catch-effectivity		
	Min	Max		Method	Probability [%]	Min	MW	Max
Asp	8.5	14.8	44.0	175		0.40	0.50	0.70
Barbel	5.0	12.5	23.2	10		0.50	0.54	0.70
Bighead goby	5.0	8.2	12.5	3		0.50	0.50	0.50
Bitterling	4.0	4.7	6.5	40		0.50	0.50	0.50
Black-striped pipefish	11.0	12.6	14.0	7		0.50	0.50	0.50
Bleak	1.2	8.5	21.0	7,830		0.30	0.50	0.65
Blue bream	8.5	8.8	9.0	2		0.50	0.50	0.50
Bream	7.5	9.6	11.0	11		0.50	0.50	0.50
Bulgarian golden loach	5.5	8.1	9.5	54		0.05	0.32	0.70
Carp	7.5	16.7	32.0	7		0.50	0.50	0.50
Chinese sleeper	3.0	4.6	6.5	27		0.50	0.50	0.50
Danube bream	8.5	9.5	11.0	3		0.50	0.63	0.70
Danubian spined loach	8.0	8.5	9.0	2		0.20	0.20	0.20
Ide	7.0	9.9	23.0	263		0.40	0.50	0.50
Monkey goby	3.2	7.4	13.0	230		0.05	0.52	0.70
Mushroom goby	5.5	8.0	12.5	181		0.50	0.50	0.50
Nase	11.0	11.8	12.5	2		0.50	0.55	0.60
Perch	6.0	8.8	16.0	65		0.50	0.50	0.70
Pike	18.5	28.1	56.0	122		0.50	0.50	0.50
Pikeperch	12.5	18.6	33.0	18		0.40	0.52	0.65
Prussian carp	7.5	14.8	28.5	45		0.50	0.50	0.50
Pumkinseed	7.0	11.3	16.0	38		0.50	0.50	0.50
Racer goby	4.5	6.6	11.0	147		0.20	0.50	0.70
Roach	4.0	11.1	20.0	146		0.50	0.50	0.60
Round goby	2.3	7.1	13.0	322		0.05	0.51	0.70
Rudd	7.5	11.0	17.0	8		0.50	0.50	0.50
Sabre carp	15.5	17.1	18.5	11		0.40	0.50	0.65
Schraetser	10.1	13.5	18.0	8		0.70	0.70	0.70
Spined loach	7.0	8.8	11.5	42		0.50	0.50	0.50
Stellate tadpole-goby	4.0	4.3	4.5	2		0.50	0.50	0.50
Streber	5.8	9.7	15.5	3		0.50	0.63	0.70
Tubenose goby	3.2	3.3	3.4	2		0.50	0.50	0.50
Ukrainian lamprey	12.0	14.2	18.0	14		0.20	0.41	0.50
Wels catfish	16.0	40.3	79.0	5		0.50	0.64	1.00
White bream	5.5	8.7	17.5	54		0.50	0.51	0.70
White-finned gudgeon	2.4	4.4	9.6	68		0.70	0.70	0.70
36 species		Sum	9,967					

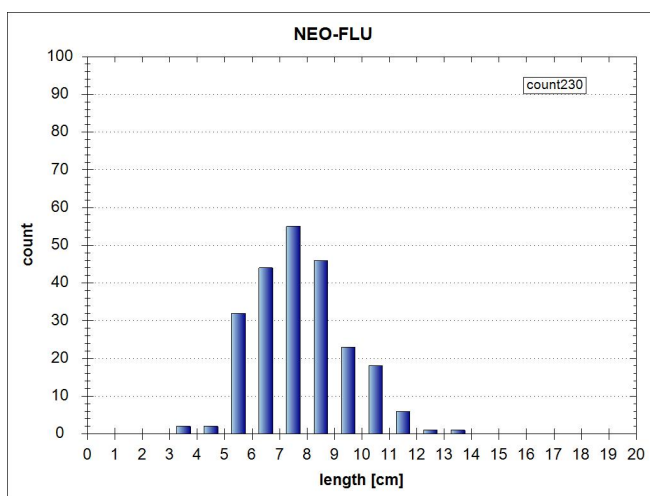
# Population structure of dominant species and subdominant species (total catch)



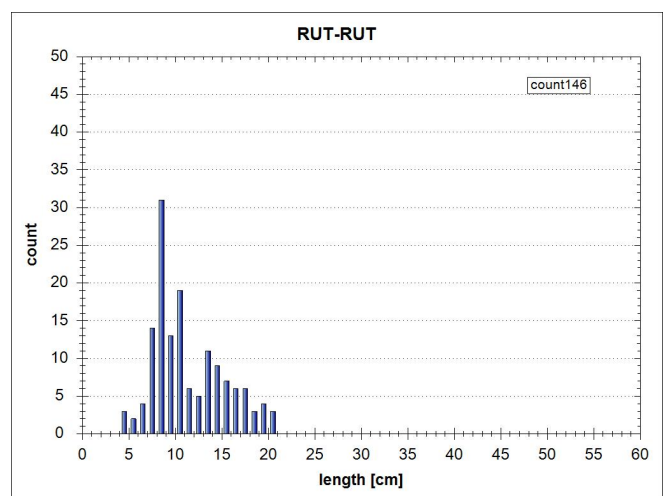
Bleak (*Alburnus alburnus*), 1



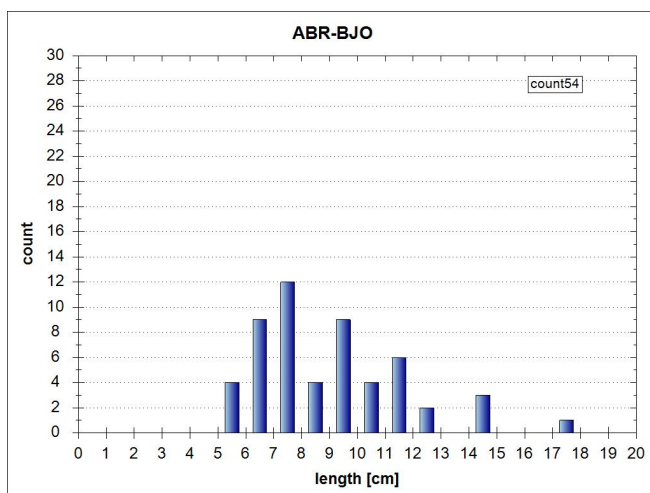
Bream (*Abramis brama*), 3



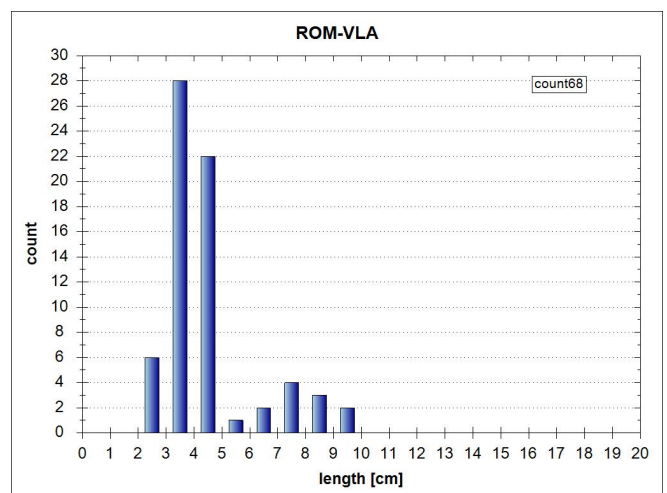
Monkey goby (*Neogobius fluviatilis*), 1



Roach (*Rutilus rutilus*), 1

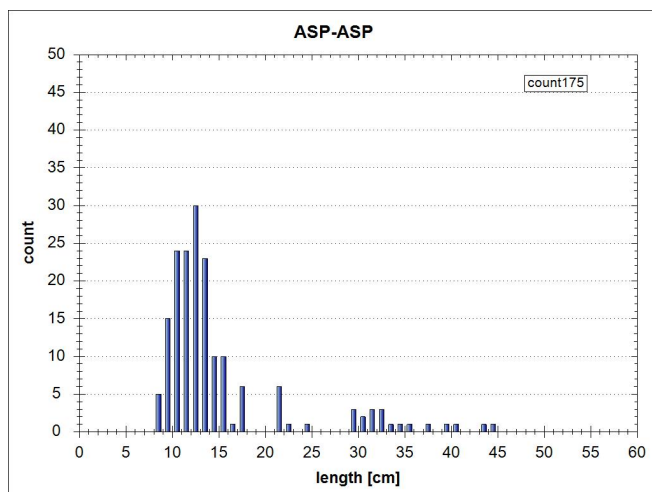
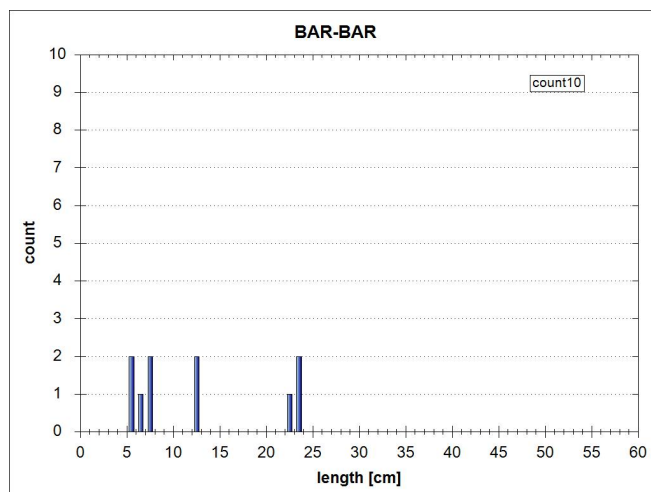
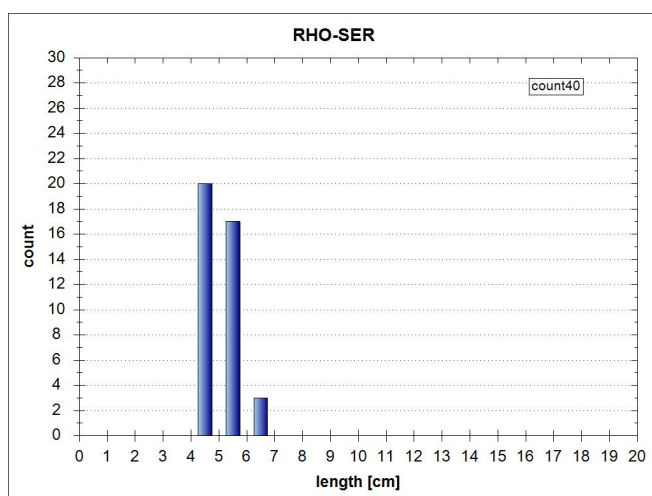
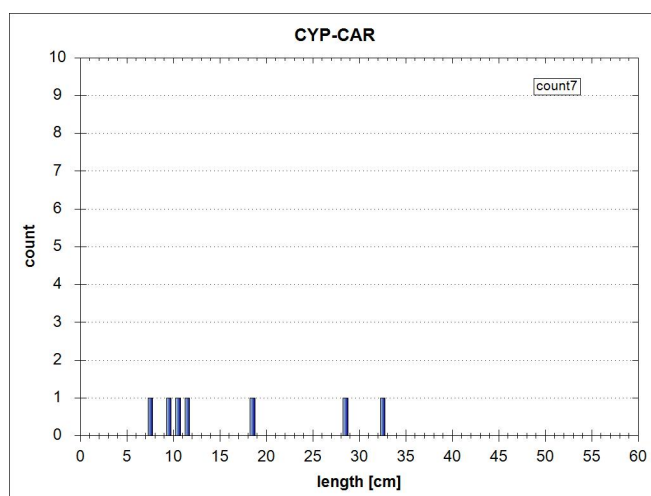
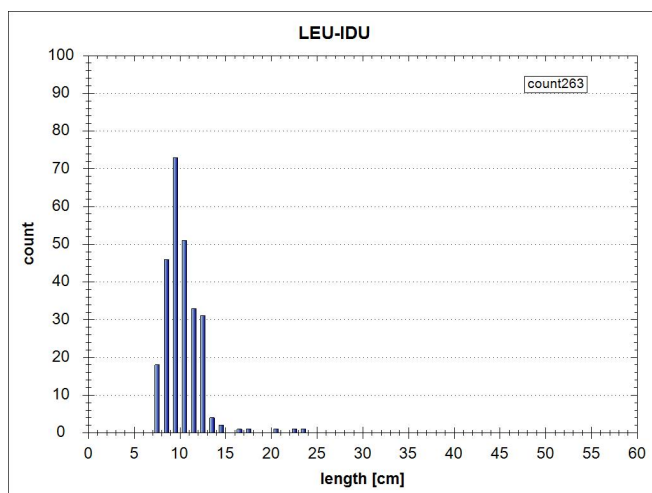
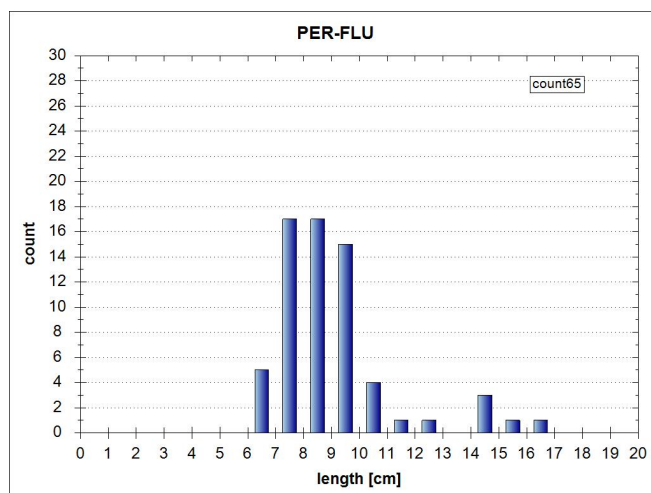


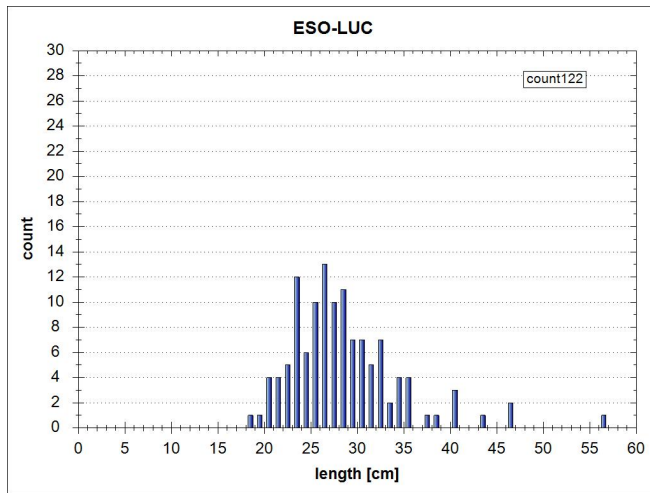
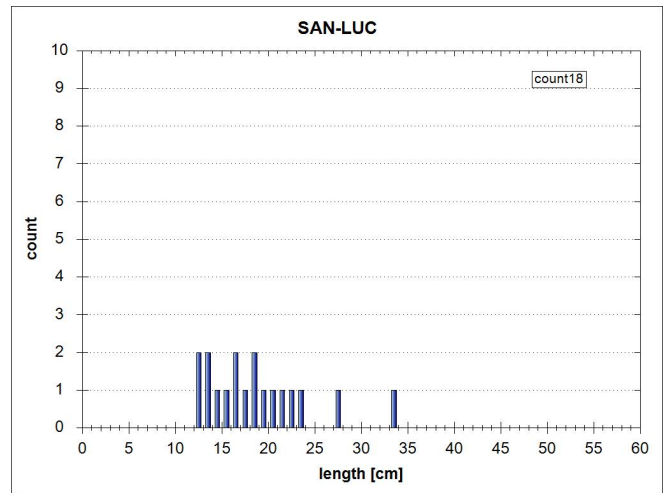
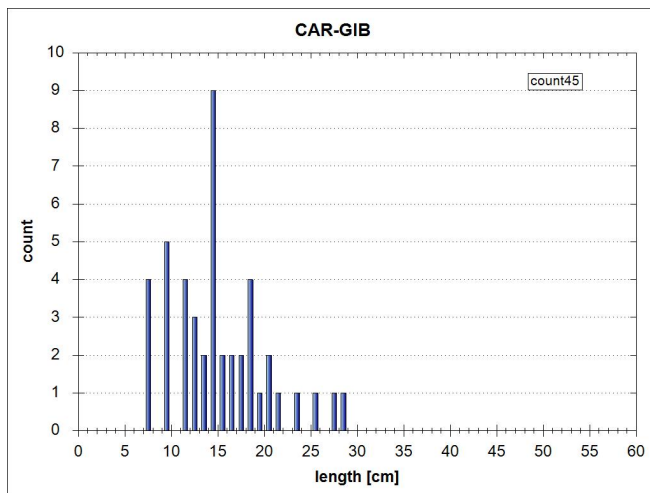
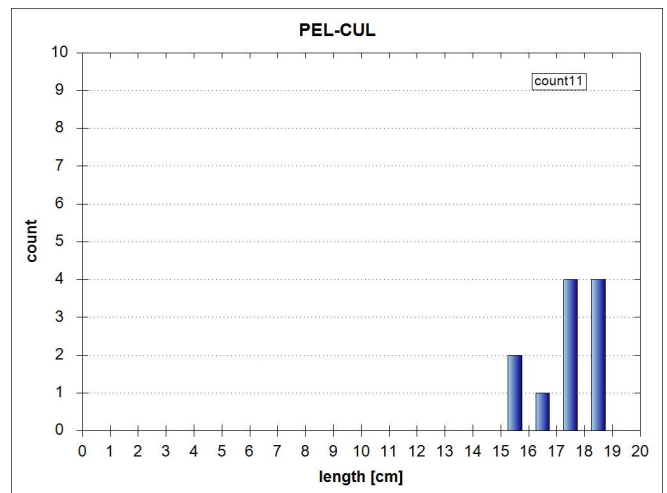
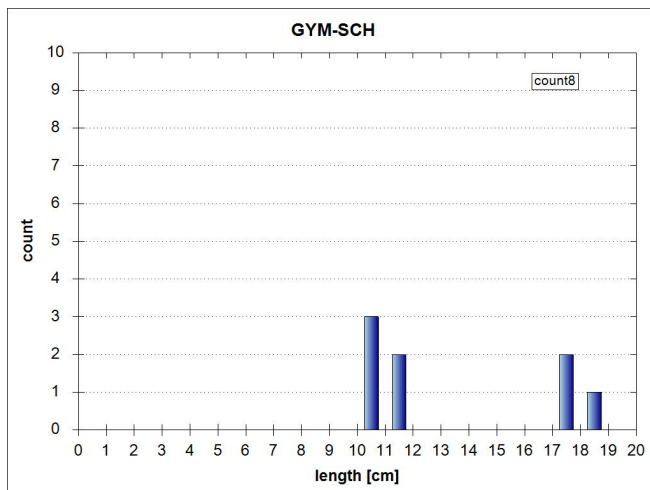
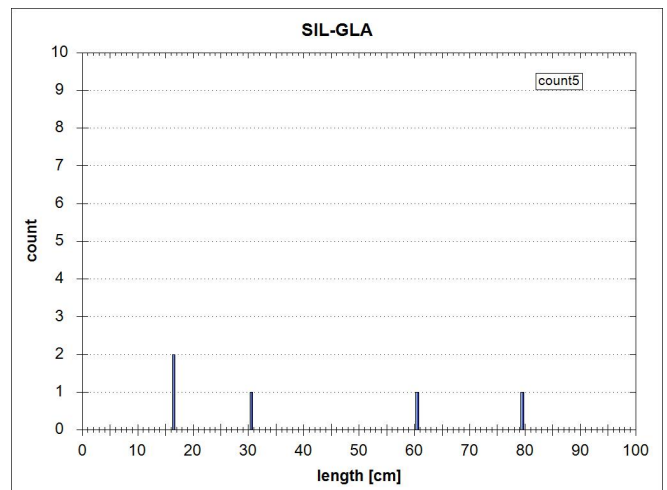
White bream (*Blicca bjoerkna*), 3



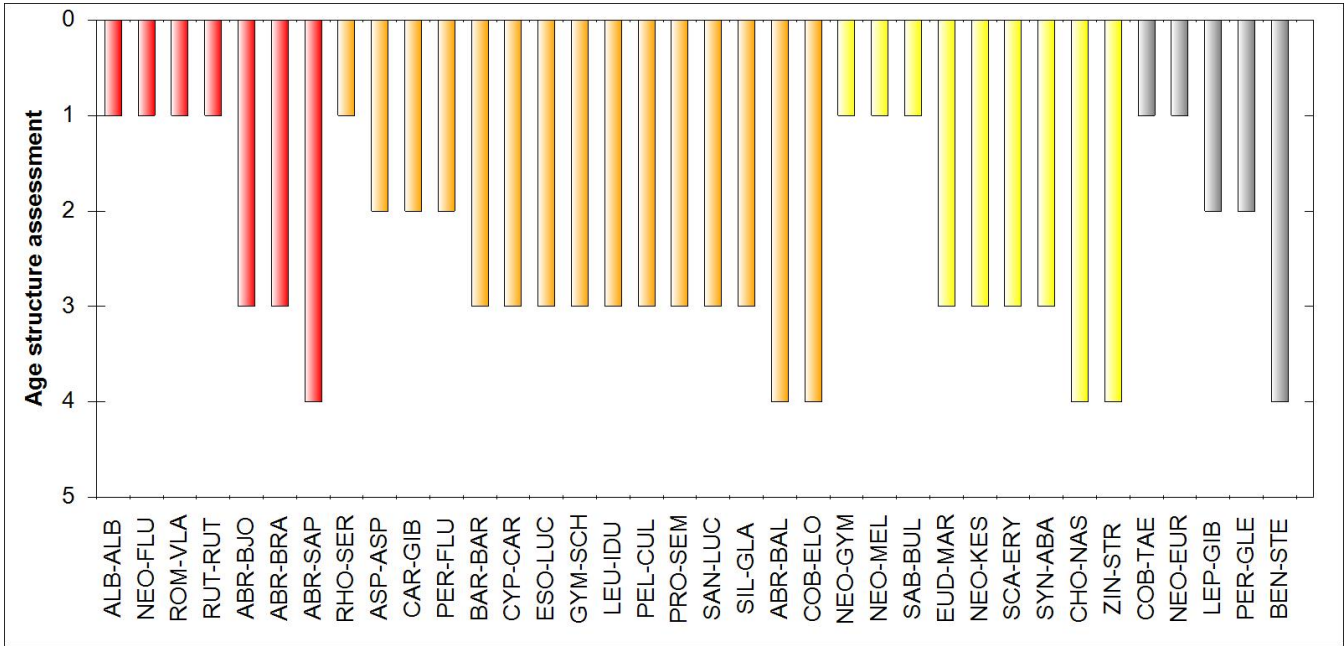
White-finned gudgeon (*Romanogobio vladykovi*), 1

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

Asp (*Aspius aspius*), 2Barbel (*Barbus barbus*), 3Bitterling (*Rhodeus amarus*), 1Carp (*Cyprinus carpio*), 3Ide (*Leuciscus idus*), 3Perch (*Perca fluviatilis*), 2

Pike (*Esox lucius*), 3Pikeperch (*Sander lucioperca*), 3Prussian carp (*Carassius gibelio*), 2Sabre carp (*Pelecus cultratus*), 3Schraetser (*Gymnocephalus schraetser*), 3Wels catfish (*Silurus glanis*), 3

Pic. 5: Length-frequency diagram of subdominant species (n&gt;3), Oct. 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, Chiciu, Silistra, BG\_JDS86, 10/23/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	2,061.3	25.9		ko-crit	4
<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	7	100%	1.0	
Subdominant species	17	15	88%	1.0	
Rare species	32	9	28%	2.0	
				1.3	
<b>Ecological guilds</b>					
Flow	6	4	2	3.0	
Reproduction	8	5	3	4.0	
				3.5	
<b>Species diversity &amp; guilds overall</b>					<b>1.7</b>
<b>2. Dominance</b>	<b>Reference fish assemblage</b>	<b>actual (current)</b>	<b>Difference</b>		
<b>Fish region index</b>	6.5	6.4	0.1		<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	7		2.0	
Subdominant species	17	15		3.1	
					<b>2.4</b>
Fishindex Austria without active ko-criterion					<b>1.90</b>
<b>Biological quality element fish</b>		<b>FIA 4.00</b>	<b>Class 4</b>	<b>Poor</b>	

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;*