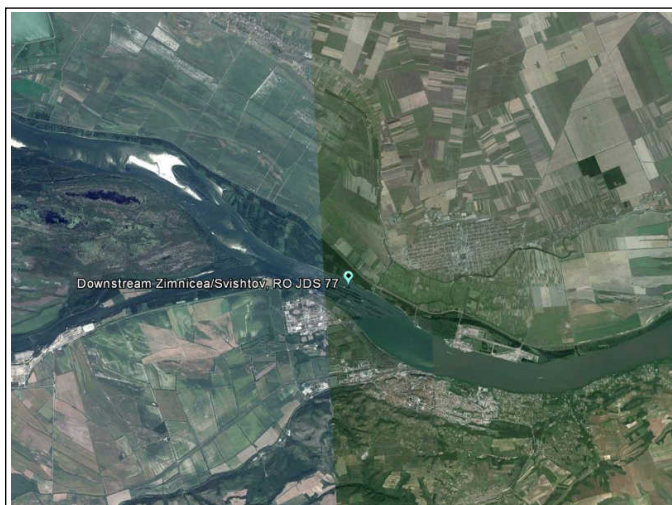


Danube

Downstream Zimnicea, Svishtov, RO JDS 77 (RO JDS 77),
16.September 2013

FDA_ID 213



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, 16.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 Downstream Zimnicea, Svishtov, RO JDS 77

Watercourse name	Danube	Federal state	not available
Monitoring site	Downstream Zimnicea, Svishtov, RO JDS 77	District	
Monitoring site number	RO JDS 77	Community	
Turnus number		Longitude (WGS 84, decimal) O	25.321417
sampling number		Latitude (WGS 84, decimal) N	43.649306
Survey-ID (FDA)	213	Route-ID	
Date	9/16/2013	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	Western Pomtic Danube (943-375,5) (8)	Huet-zonation	bream zone
Biocenotic Region	Metapotamon	Adapt. Reference	121
River km from	557.0	Altitude [m.a.s]	16
River km to	545.0	Ø catchment basin [km²]	660,000
Section length [m]	12,000	Catchment-class	more than 10.000km²
Ø channel width [m]	970	Slope [‰]	0.04
Original stream character	lowland stream -river	Discharge regime	
Actual site character			
Actual impact		Reference watergauge (name, number)	
Flow [semiquant.]		Distance from source [km]	2,292.0
Average water depth [m]	2m - 5m	Lake above	No
Maximum water depth [m]	5m - 10m	Distance lake upstream [km]	
Geology	calcareous	Lake below	
Influence of sediment transport	slightly affected	Distance lake downstream [km]	
Ø wetted width [m]	970	Flow condition	MQ - mean water up to riparian vegetation
pH-value		Visible depth	1.5
SBV		Fishing conditions	good
Water temperature [°C] (F117)	23	Average annual air temperature [°C]	
Conductance, 25°C [µS/cm] (F118)	367		
Methods used and effort			
Strip-fishing, day		Number of runs	1
Fished length [m]	3,745	E-devices output [kW]	11
Fished area [m²]	12,235	Output voltage	600
		Number of anodes	
		Number of strips/sections	13
and additional methods	Fished area [m²]	additional methods	Effort [UE]
E-Fishing by night	7,865		

Comments on survey:

beidseitig Einleitungen von Klärwässern- starker Befischungsdruck: Ufer größtenteils durch Stellnetze abgesperrt, beködete Langleinen, viele Freizeitangler

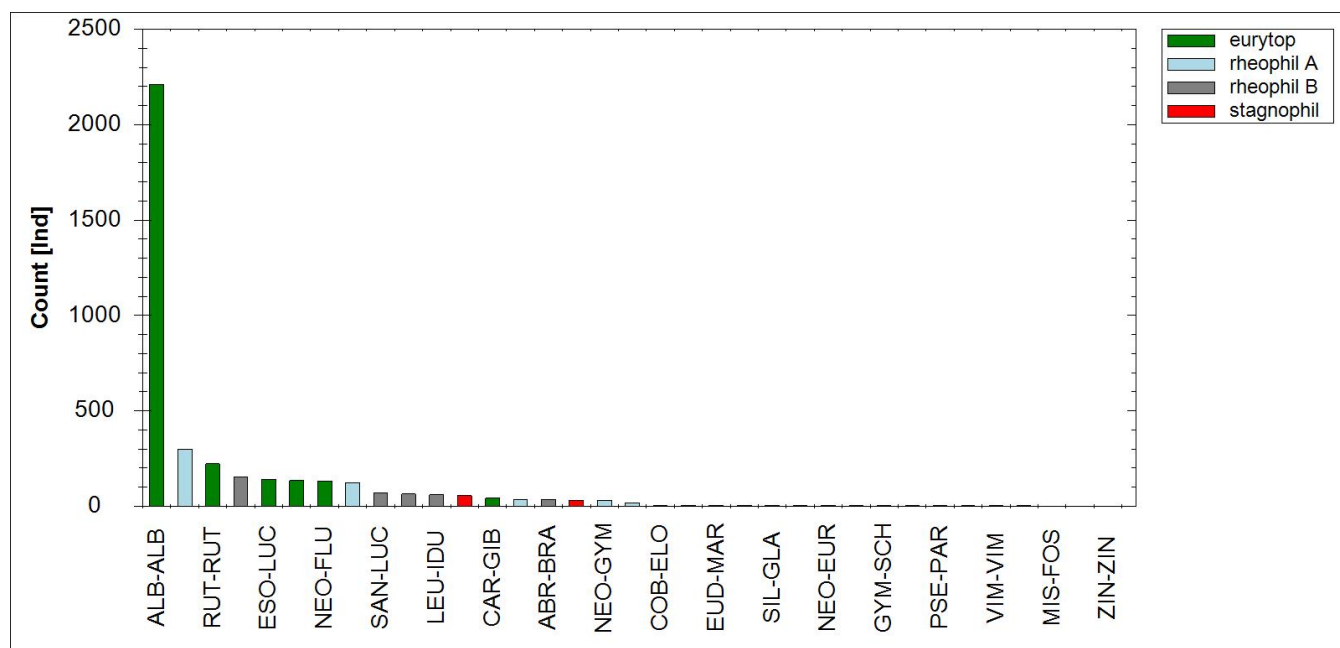
Table 2: Sampling effort at the monitoring site Downstream Zimnicea, Svishtov, RO JDS 77, September 2013

Habitat	Str. no	DG	Length [m]	Width [m]	UE	Method
rock	24	1	500	2		E-fishing night
undet. middle of the river	16	1	200	2		electric beam trawl
undet. middle of the river	17	1	300	2		electric beam trawl
undet. middle of the river	18	1	500	2		electric beam trawl
undet. middle of the river	19	1	250	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
undet. middle of the river	22	1	500	2		electric beam trawl
undet. middle of the river	23	1	500	2		electric beam trawl
pool	25	1	300	4		E-fishing day boat
pool	26	1	400	4		E-fishing day boat
pool	27	1	300	4		E-fishing day boat
pool	28	1	400	4		E-fishing night
pool	29	1	500	3		E-fishing night
sand/mud bar	10	1	250	3		E-fishing day boat
sand/mud bar	11	1	250	3		E-fishing night
other natural bank	4	1	310	3		E-fishing day boat
other natural bank	5	1	300	3		E-fishing day boat
other natural bank	6	1	330	3		E-fishing day boat
other natural bank	7	1	255	3		E-fishing day boat
other natural bank	8	1	250	3		E-fishing day boat
other natural bank	9	1	280	3		E-fishing day boat
other natural bank	13	1	250	3		E-fishing night
other natural bank	14	1	280	3		E-fishing night
other natural bank	15	1	230	3		E-fishing night
joint stones/concrete	1	1	310	3		E-fishing day boat
joint stones/concrete	2	1	260	3		E-fishing day boat
joint stones/concrete	12	1	245	3		E-fishing night
indefinite waterside	3	1	200	3		E-fishing day boat

Table 3: Habitat weighting used at the monitoring site Downstream Zimnicea, Svishtov, RO JDS 77

Habitat	%
indefinite waterside	5
joint stones/concrete	10
other natural bank	75
pool	0
rock	0
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, Downstream Zimnicea, Svishtov, RO JDS 77

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	-			5
Petromyzontidae	Ukrainian lamprey	<i>Eudontomyzon mariae</i>	s	II	VU	DD	6
Cyprinidae	Asp	<i>Aspius aspius</i>	b	II	EN	DD	64
	Barbel	<i>Barbus barbus</i>	b	V	NT	LC	18
	Bitterling	<i>Rhodeus amarus</i>	b	II	VU	LC	55
	Bleak	<i>Alburnus alburnus</i>	I	-	LC	LC	2,212
	Blue bream	<i>Abramis ballerus</i>	b	-	EN		
	Bream	<i>Abramis brama</i>	I	-	LC		36
	Carp	<i>Cyprinus carpio</i>	b	-	EN	DD	5
	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	2
	Ide	<i>Leuciscus idus</i>	b	-	EN	LC	60
	Kessler's gudgeon	<i>Romanogobio kesslerii</i>	s	II	EN	DD	1
	Nase	<i>Chondrostoma nasus</i>	s	-	NT	LC	
	Prussian carp	<i>Carassius gibelio</i>	b	-	LC		42
	Roach	<i>Rutilus rutilus</i>	I	-	LC	LC	222
	Rudd	<i>Scardinius erythrophthalmus</i>	s	-	LC	LC	
	Sabre carp	<i>Pelecus cultratus</i>	b	II; V	NT	DD	
	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	2
	White bream	<i>Blicca bjoerkna</i>	I	-	LC	LC	154
	White-finned gudgeon	<i>Romanogobio vladykovi</i>	I	II	LC	DD	123
Esocidae	Pike	<i>Esox lucius</i>	b	-	NT		141
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	135
	Pikeperch	<i>Sander lucioperca</i>	b	-	NT	LC	71
	Ruffe	<i>Gymnocephalus cernuus</i>	s	-	LC	LC	
	Schraetser	<i>Gymnocephalus schraetser</i>	b	II; V	VU	VU	2
	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	5
Gobiidae	Bighead goby	<i>Neogobius kessleri</i>	s	-	NE	DD	37
	Monkey goby	<i>Neogobius fluviatilis</i>	I	-	NE	DD	132
	Racer goby	<i>Neogobius gymnotrachelus</i>	s	-	NE	DD	31
	Round goby	<i>Neogobius melanostomus</i>	s	-	NE	DD	300
	Tubenose goby	<i>Proterorhinus semilunaris</i>	b	-	EN	LC	
Cobitidae	Balkan loach	<i>Sabanejewia balcanica</i>	s	II	EN	DD	
	Bulgarian golden loach	<i>Sabanejewia bulgarica</i>	s				2

Family	English name	Scient. name of species	Reference fish assemblage	FFH	Red List	IUCN	Count
	Danubian spined loach	<i>Cobitis elongatoides</i>	b	-			6
	Weatherfish	<i>Misgurnus fossilis</i>	s	II	CR	NT	1
Balitoridae	Danube bream	<i>Abramis sapo</i>	I	-	EN		
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	-			
Cyprinidae	Stone moroko	<i>Pseudorasbora parva</i>		-	NE		2
Gobiidae	Chinese sleeper	<i>Perccottus glenii</i>		-			2
	Mushroom goby	<i>Neogobius eurycephalus</i>		-			4
Cobitidae	Spined loach	<i>Cobitis taenia</i>		II	VU	LC	6
Centrarchidae	Pumkinseed	<i>Lepomis gibbosus</i>		-	NE		31

Observed:: reference fish assemblage 30Taxa :: 56Taxa

Taxa complete 35

Count species of reference fish assemblage 3,873

Total count 3,918

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 Zimnicea, Svishtov, RO JDS 77, 9/16/2013

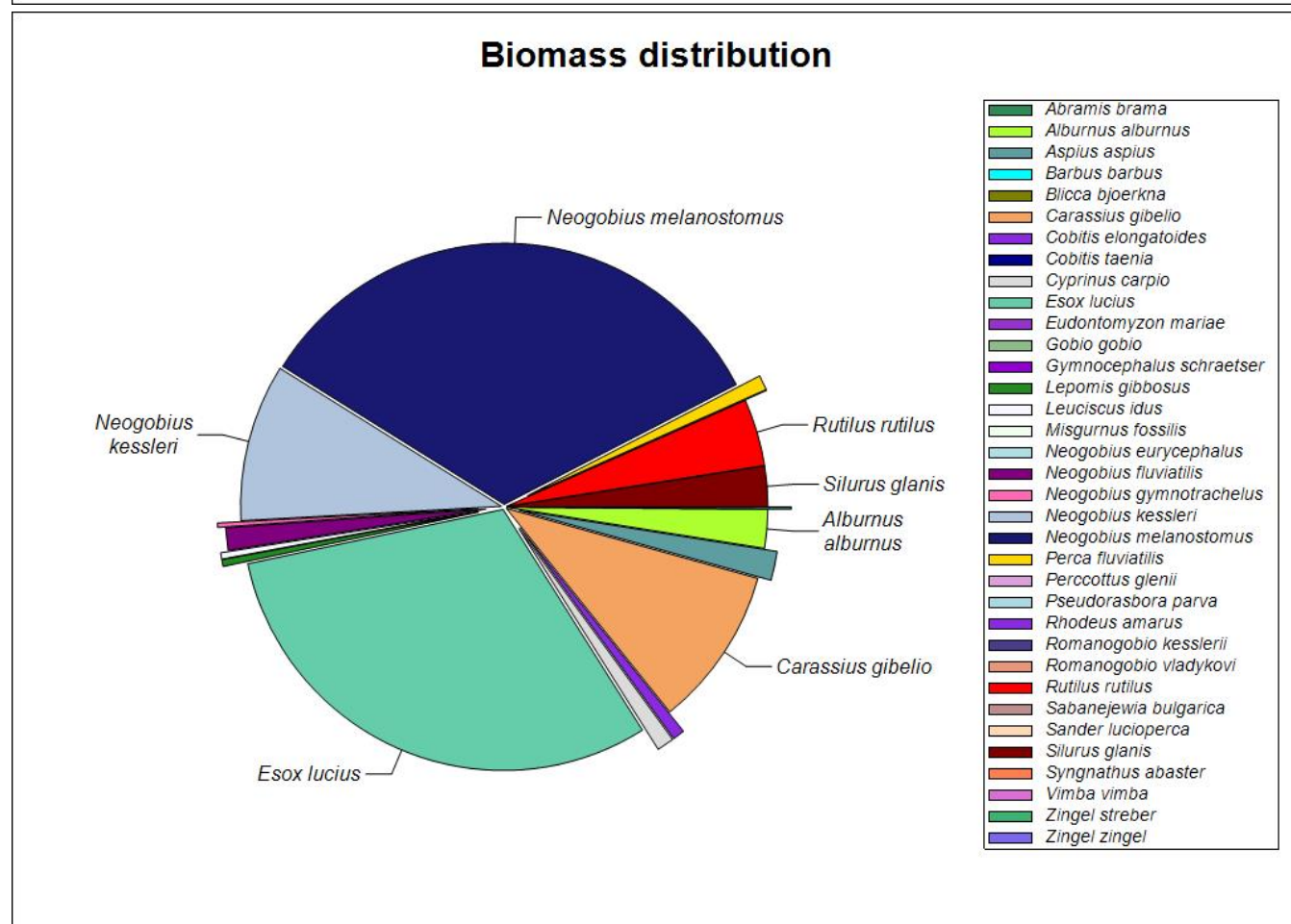
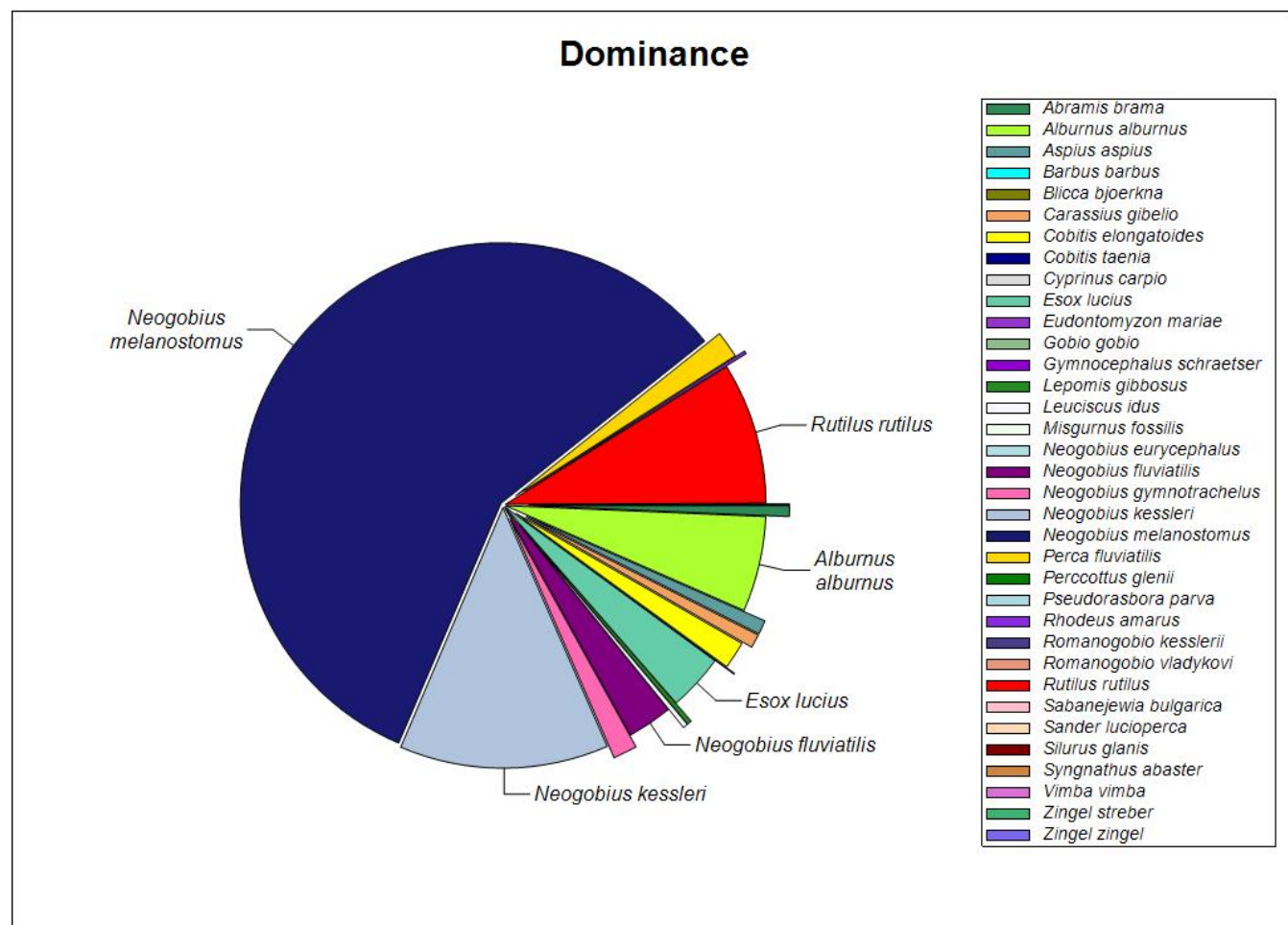
English name	Species Code	Count	Abu [Ind/ha]	95% Konfid.	Biom [kg/ha]	95% Konfid.	Weight [g] median all over	Mean Weight [g] total	Population structure	Reference fish assemblage
Asp	ASP-ASP	64	17.9		0.8		13.3	42.9	3	b
Barbel	BAR-BAR	18	0.0		0.0	0.0	12.3	0.0	3	b
Bighead goby	NEO-KES	37	267.8		4.2		9.6	15.6	3	s
Bitterling	RHO-SER	55	3.9		0.0		4.6	1.5	2	b

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
Black-striped pipefish	SYN-ABA	5	0.0		0.0	0.0	12.4	0.0	3	s
Bleak	ALB-ALB	2,212	122.1		1.0		8.1	8.4	1	l
Bream	ABR-BRA	36	13.9		0.1		9.6	4.0	3	l
Bulgarian golden loach	SAB-BUL	2	0.0		0.0	0.0	6.8	0.0	3	s
Carp	CYP-CAR	5	1.2		0.5		22.9	390.4	3	b
Chinese sleeper	PER-GLE	2	0.0		0.0	0.0	6.0	0.0	3	
Danubian spined loach	COB-ELO	6	35.1		0.3		10.3	9.1	3	b
Gudgeon	GOB-GOB	2	0.0		0.0	0.0	11.0	0.0	4	s
Ide	LEU-IDU	60	6.2		0.2		13.2	26.9	3	b
Kessler's gudgeon	ROM-KES	1	0.0		0.0	0.0	8.0	0.0	4	s
Monkey goby	NEO-FLU	132	57.6		0.6		7.2	10.3	1	l
Mushroom goby	NEO-EUR	4	0.0		0.0	0.0	8.3	0.0	3	
Perch	PER-FLU	135	34.4		0.4		8.6	11.5	1	b
Pike	ESO-LUC	141	72.6		13.1		29.2	180.7	3	b
Pikeperch	SAN-LUC	71	0.0		0.0	0.0	17.2	0.0	3	b
Prussian carp	CAR-GIB	42	17.5		4.3		15.7	242.1	1	b
Pumpkinseed	LEP-GIB	31	5.8		0.2		7.5	30.7	1	
Racer goby	NEO-GYM	31	30.9		0.1		6.9	3.8	2	s
Roach	RUT-RUT	222	181.3		1.8		9.2	9.8	1	l
Round goby	NEO-MEL	300	1,195.2		14.4		7.6	12.0	1	s
Schraetser	GYM-SCH	2	0.0		0.0	0.0	12.8	0.0	4	b
Spined loach	COB-TAE	6	0.0		0.0	0.0	9.7	0.0	3	
Stone moroko	PSE-PAR	2	0.0		0.0	0.0	6.5	0.0	3	
Streber	ZIN-STR	2	0.0		0.0	0.0	13.0	0.0	4	s
Ukrainian lamprey	EUD-MAR	6	0.0		0.0	0.0	15.5	0.0	3	s
Vimba bream	VIM-VIM	2	0.0		0.0	0.0	14.8	0.0	4	b
Weatherfish	MIS-FOS	1	0.0		0.0	0.0	8.5	0.0	4	s
Wels catfish	SIL-GLA	5	1.4		1.1		30.4	738.0	3	b
White bream	ABR-BJO	154	0.0		0.0	0.0	7.5	0.0	2	l
White-finned gudgeon	ROM-VLA	123	0.0		0.0	0.0	4.8	0.0	2	l
Zingel	ZIN-ZIN	1	0.0		0.0	0.0	31.0	0.0	4	b

30 species of 56

Total 3,918 2,064.8

42.9



Pic. 3: Dominance und Biomass distribution

Shannon-Index: 1.865

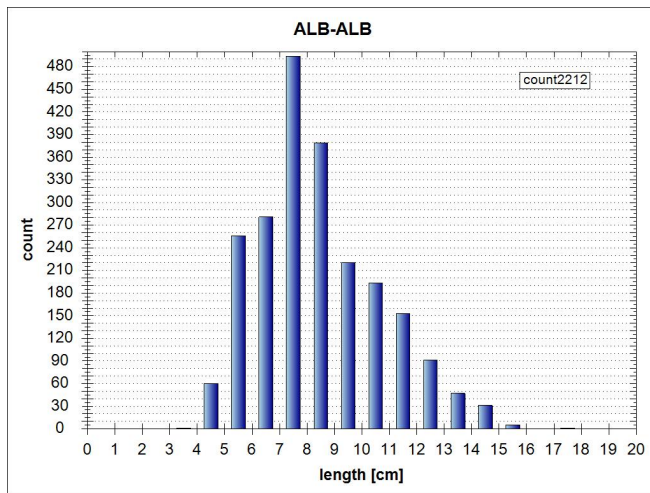
Equitability: 0.524

Biometrics and catch rate

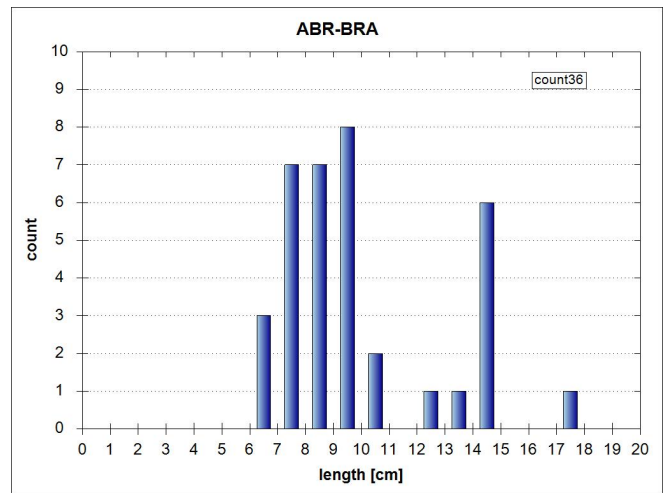
Table 6: biometrics of each species and catch specific parameters

Fish species	Lt [cm]			n	Statist. Method	Catch- Probability [%]	Catch-effectivity		
	Min		Max				Min	MW	Max
Asp	10.0	13.3	32.0	64			0.20	0.46	0.50
Barbel	4.5	12.3	22.0	18			0.50	0.52	0.70
Bighead goby	6.0	9.6	10.0	37			0.10	0.16	0.70
Bitterling	4.0	4.6	5.5	55			0.30	0.49	0.50
Black-striped pipefish	11.0	12.4	14.0	5			0.50	0.62	0.70
Bleak	3.0	8.1	17.0	2,212			0.05	0.49	0.50
Bream	6.0	9.6	17.0	36			0.25	0.42	0.50
Bulgarian golden loach	6.7	6.8	7.0	2			0.70	0.70	0.70
Carp	12.0	22.9	29.0	5			0.50	0.50	0.50
Chinese sleeper	6.0	6.0	6.0	2			0.50	0.50	0.50
Danubian spined loach	9.0	10.3	11.0	6			0.10	0.20	0.30
Gudgeon	11.0	11.0	11.0	2			0.50	0.50	0.50
Ide	7.5	13.2	29.5	60			0.25	0.46	0.70
Kessler's gudgeon	8.0	8.0	8.0	1			0.50	0.50	0.50
Monkey goby	2.4	7.2	13.0	132			0.10	0.49	0.70
Mushroom goby	8.0	8.3	9.0	4			0.50	0.50	0.50
Perch	2.0	8.6	20.0	135			0.20	0.45	0.50
Pike	19.0	29.2	56.2	141			0.25	0.48	0.66
Pikeperch	12.0	17.2	27.0	71			0.25	0.42	0.50
Prussian carp	8.5	15.7	32.5	42			0.25	0.44	0.50
Pumkinseed	3.0	7.5	14.0	31			0.25	0.47	0.50
Racer goby	3.4	6.9	11.0	31			0.10	0.46	0.70
Roach	2.0	9.2	22.0	222			0.10	0.28	0.50
Round goby	1.6	7.6	14.0	300			0.10	0.31	0.70
Schraetser	12.0	12.8	13.5	2			0.50	0.50	0.50
Spined loach	9.0	9.7	11.0	6			0.50	0.50	0.50
Stone moroko	4.5	6.5	8.5	2			0.50	0.50	0.50
Streber	12.1	13.0	13.9	2			0.70	0.70	0.70
Ukrainian lamprey	11.5	15.5	18.0	6			0.50	0.50	0.50
Vimba bream	14.0	14.8	15.5	2			0.25	0.25	0.25
Weatherfish	8.5	8.5	8.5	1			0.50	0.50	0.50
Wels catfish	18.0	30.4	46.0	5			0.50	0.60	1.00
White bream	5.0	7.5	16.5	154			0.25	0.49	0.70
White-finned gudgeon	2.0	4.8	10.1	123			0.25	0.65	0.70
Zingel	31.0	31.0	31.0	1			0.50	0.50	0.50
35 species			Sum	3,918					

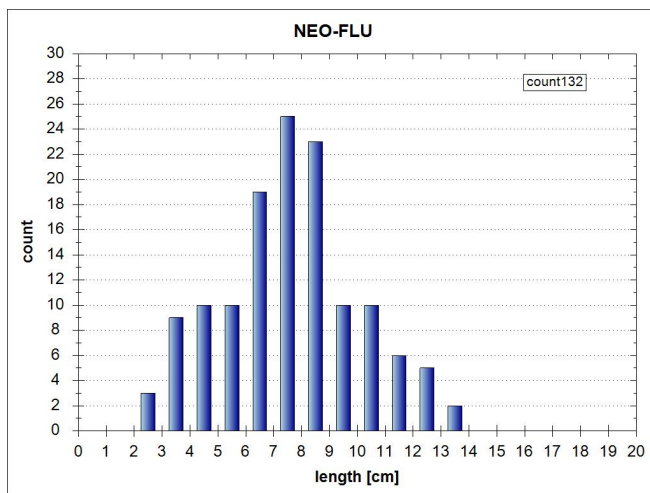
Population structure of dominant species and subdominant species (total catch)



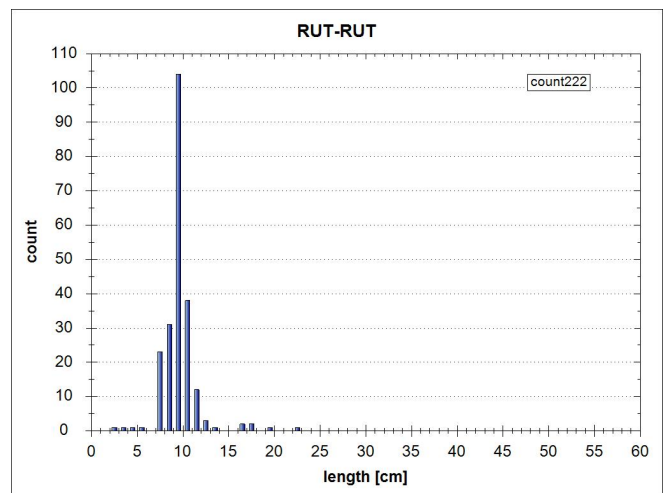
Bleak (*Alburnus alburnus*), 1



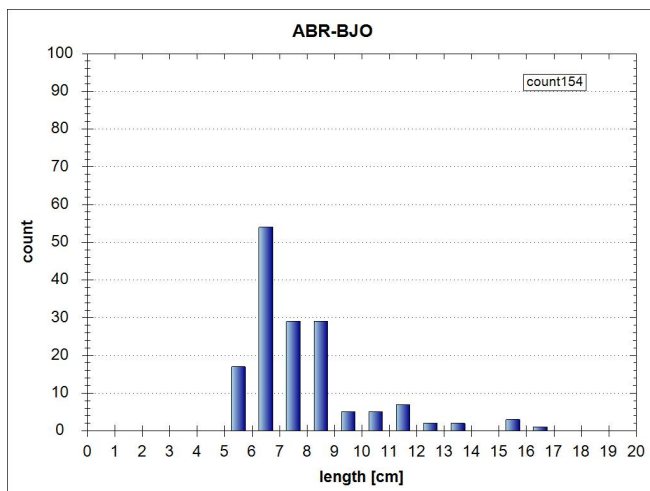
Bream (*Abramis brama*), 3



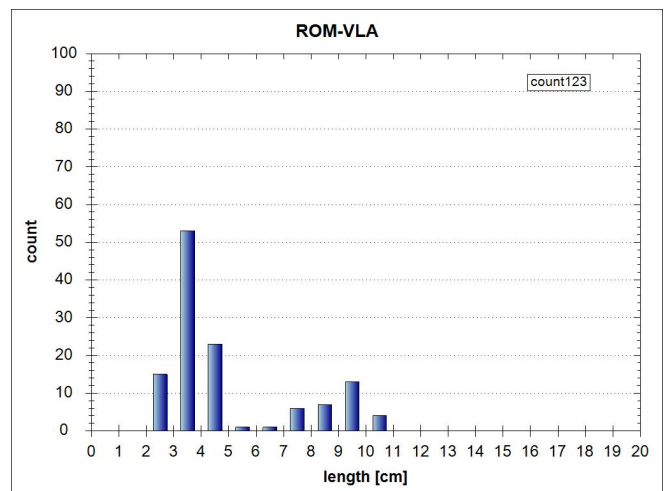
Monkey goby (*Neogobius fluviatilis*), 1



Roach (*Rutilus rutilus*), 1

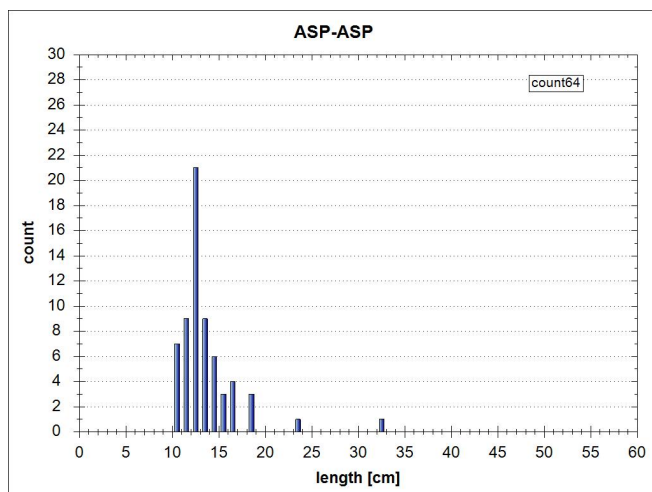
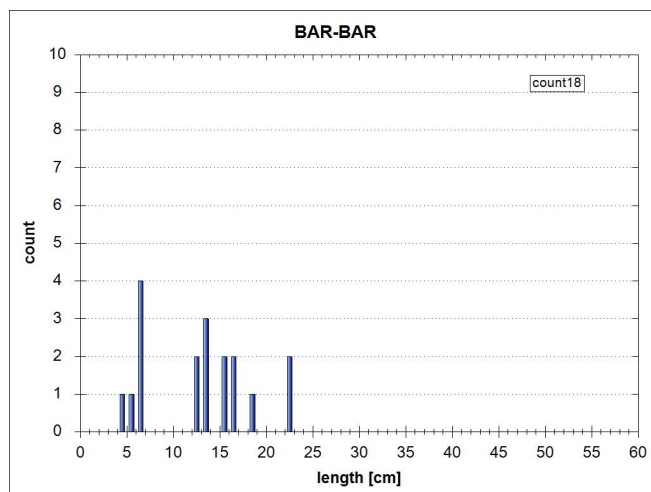
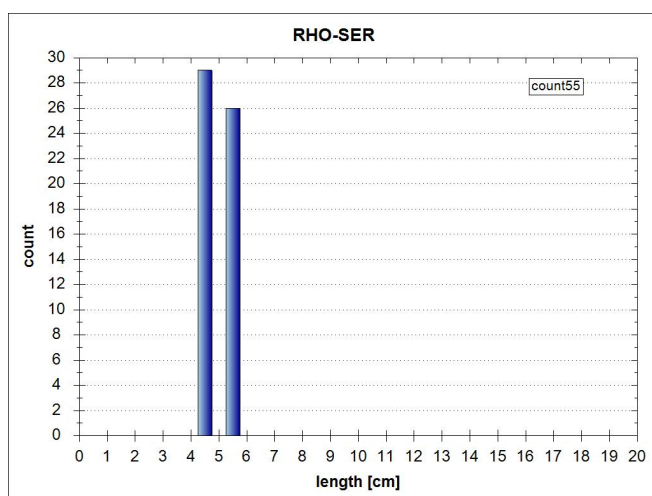
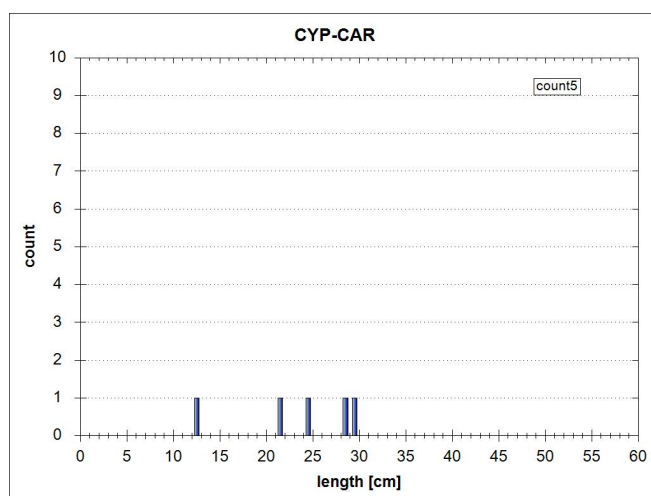
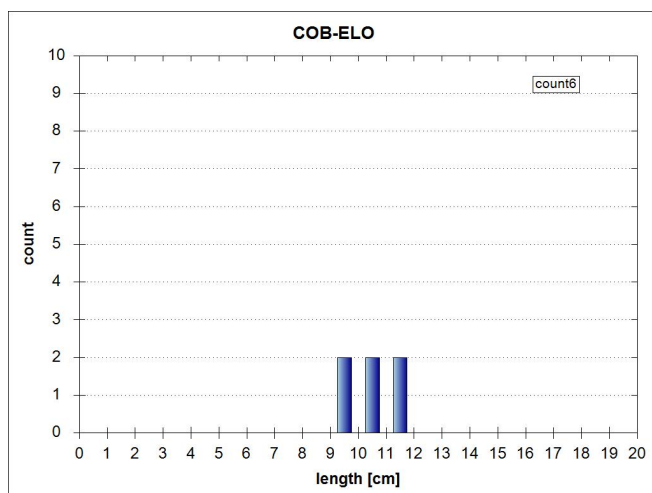
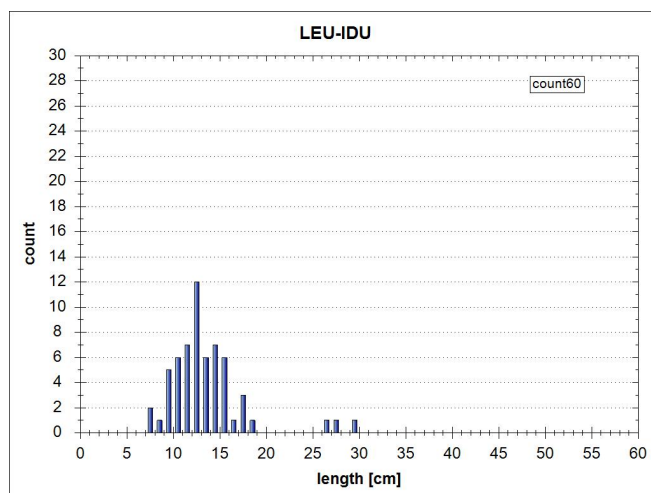


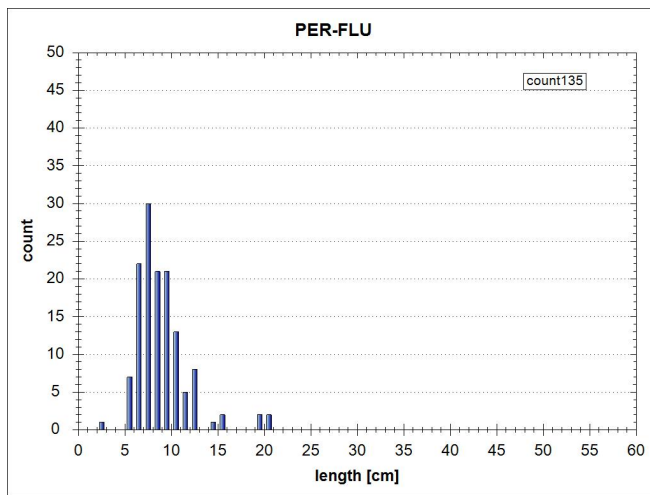
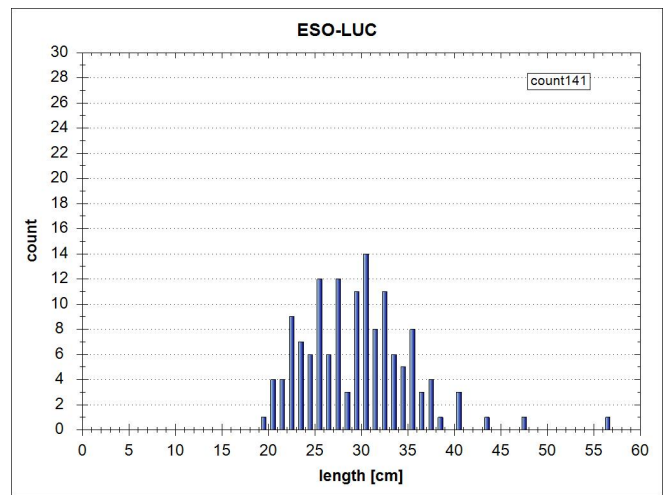
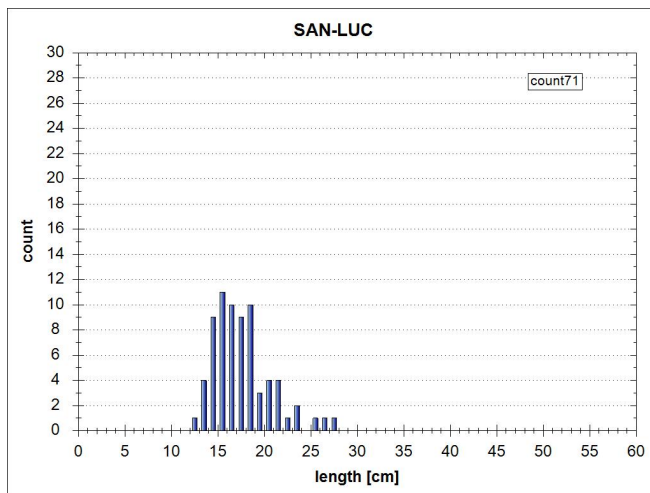
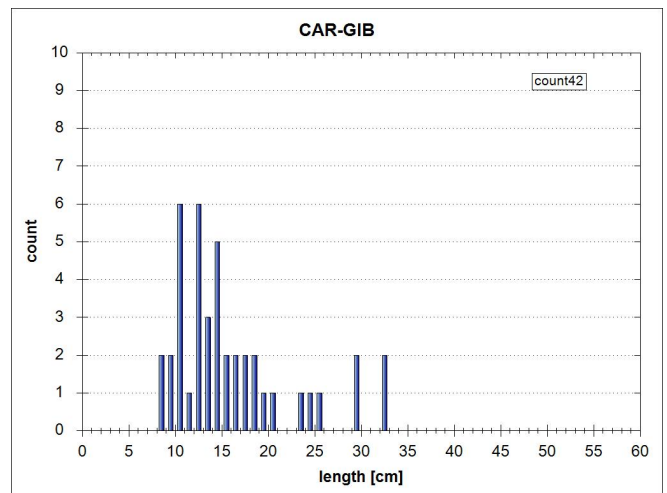
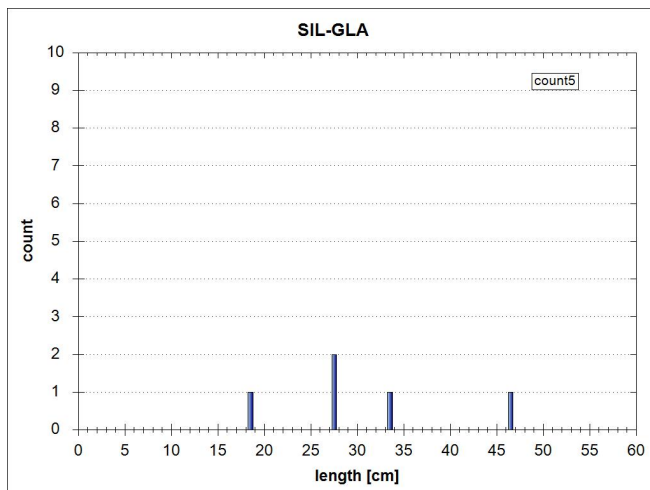
White bream (*Blicca bjoerkna*), 2



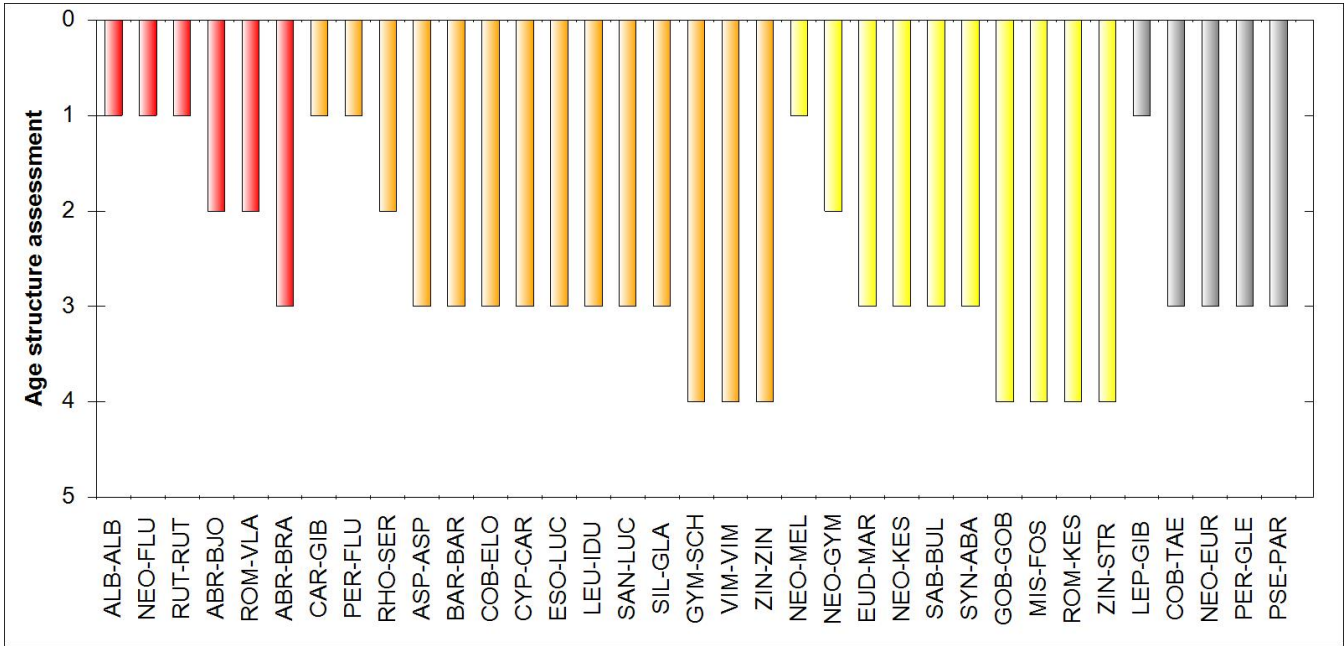
White-finned gudgeon (*Romanogobio vladykovi*), 2

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

Asp (*Aspius aspius*), 3Barbel (*Barbus barbus*), 3Bitterling (*Rhodeus amarus*), 2Carp (*Cyprinus carpio*), 3Danubian spined loach (*Cobitis elongatoides*), 3Ide (*Leuciscus idus*), 3

Perch (*Perca fluviatilis*), 1Pike (*Esox lucius*), 3Pikeperch (*Sander lucioperca*), 3Prussian carp (*Carassius gibelio*), 1Wels catfish (*Silurus glanis*), 3

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, Downstream Zimnicea, Svishtov, RO JDS 77, 9/16/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	2,059.2	42.7		ko-crit	4
1. Species	Reference fish assemblage	actual (current)	Ratio/Deviation	Partial rating	
Species					
Dominant species	8	7	88%	3.0	
Subdominant species	16	13	81%	1.0	
Rare species	32	10	31%	2.0	
				2.0	
Ecological guilds					
Flow	6	4	2	3.0	
Reproduction	7	6	1	2.0	
				2.5	
Species diversity & guilds overall					2.3
2. Dominance	Reference fish assemblage	actual (current)	Difference		
Fish region index	6.5	6.5	0.0		1.0
3. Population structure	Reference fish assemblage	actual (current)		Partial rating (1-5)	
Dominant species	8	7		2.0	
Subdominant species	16	13		3.4	
					2.5
Fishindex Austria without active ko-criterion					2.17
Biological quality element fish		FIA 4.00	Class 4	Poor	

Date of Assessment:3/4/2014

Comment BAW-IGF

- no comment -

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

Recommended improvements with priority ranking if possible;