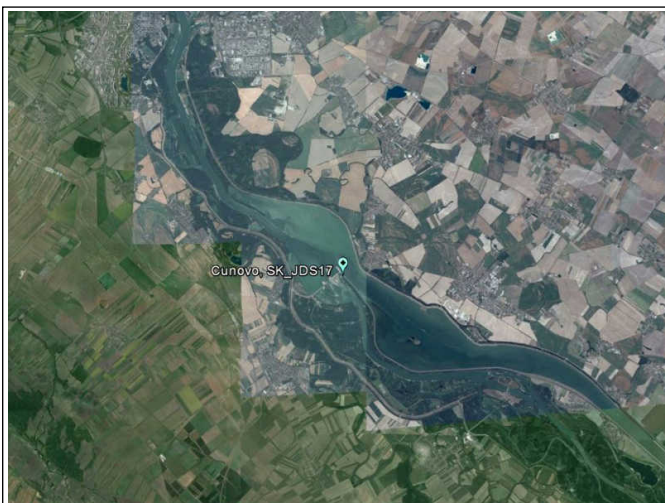


Danube**Cunovo, SK_JDS17 (SK_JDS17), 24.August 2013****FDA_ID 223**

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



Pic. 2: Monitoring site Cunovo, SK_JDS17

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

Biological quality element fish	Action required (3)
---------------------------------	---------------------

Ecological status class, current survey, 24.August 2013

Biological quality element fish	FIA 2.89	Class 3	Moderate
---------------------------------	----------	---------	----------

Former classifications

None				
None				
None				

Information about and sampling conditions and location

Table 1: Key data and information on sampling, monitoring siteCunovo, SK_JDS17

Watercourse name	Danube	Federal state	not available
Monitoring site	Cunovo, SK_JDS17	District	
Monitoring site number	SK_JDS17	Community	
Turnus number		Longitude (WGS 84, decimal) O	17.23445
sampling number		Latitude (WGS 84, decimal) N	48.03577
Survey-ID (FDA)	223	Route-ID	
Date	8/24/2013	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	Lower Alpine Foothills Danube (2001-1789,5) (4)	Huet-zonation	bream zone
Biocenotic Region	Epipotamon large	Adapt. Reference	114
River km mean	1,852.0	Altitude [m.a.s]	128
		Ø catchment basin [km²]	135,500
Section length [m]	12,000	Catchment-class	more than 10.000km²
Ø channel width [m]	1600	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]	999.0
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]	1600	Flow condition	
pH-value		Visible depth	
SBV		Fishing conditions	
Water temperature [°C] (F117)	19.8	Average annual air temperature [°C]	9.8
Conductance, 25°C [µS/cm] (F118)	381		
Methods used and effort			
Strip-fishing, day		Number of runs	1
Fished length [m]	2,540	E-devices output [kW]	11
Fished area [m²]	6,885	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	3,210		

Comments on survey:

- no data -

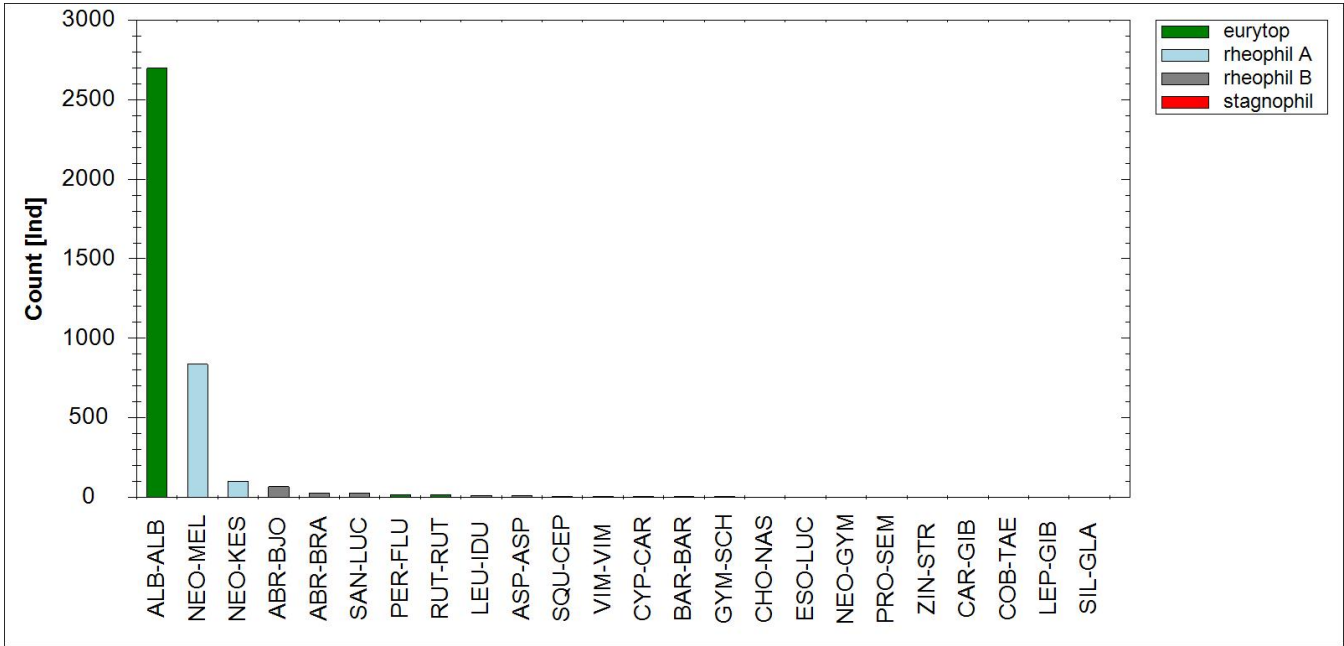
Table 2: Sampling effort at the monitoring site Cunovo, SK_JDS17, August 2013

Habitat	Str. no	DG	Length [m]	Width [m]	UE	Method
rip-rap	2	1	200	1.5		E-fishing day boat
rip-rap	3	1	300	3		E-fishing day boat
rip-rap	8	1	250	3		E-fishing day boat
rip-rap	9	1	150	1.5		E-fishing day boat
rip-rap	10	1	350	3		E-fishing day boat
rip-rap	11	1	140	1.5		E-fishing night
rip-rap	12	1	100	1.5		E-fishing night
rip-rap	13	1	400	3		E-fishing night
rip-rap	15	1	300	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
undet. middle of the river	22	1	500	2		electric beam trawl
undet. middle of the river	23	1	500	2		electric beam trawl
other natural bank	4	1	350	3		E-fishing day boat
other natural bank	5	1	300	3		E-fishing day boat
other natural bank	7	1	250	3		E-fishing day boat
other natural bank	14	1	250	3		E-fishing night
offset waterside	6	1	250	3		E-fishing day boat
bluff	1	1	140	1.5		E-fishing day boat

Table 3: Habitat weighting used at the monitoring site Cunovo, SK_JDS17

Habitat	%
bluff	5
offset waterside	10
other natural bank	15
rip-rap	70
undet. middle of the river	0

Catch result, fish assemblage and threatening status



Pic. 3: Species ranking diagramm of catch resultsDanube, Cunovo, SK_JDS17

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	Brown trout	<i>Salmo trutta fario</i>	s	-	NT		
Thymallidae	Greyling	<i>Thymallus thymallus</i>	s	V	VU	LC	
Cyprinidae	Asp	<i>Aspius aspius</i>	b	II	EN	DD	11
	Barbel	<i>Barbus barbus</i>	b	V	NT	LC	3
	Bitterling	<i>Rhodeus amarus</i>	b	II	VU	LC	
	Bleak	<i>Alburnus alburnus</i>	I	-	LC	LC	2,698
	Blue bream	<i>Abramis ballerus</i>	I	-	EN		
	Bream	<i>Abramis brama</i>	I	-	LC		25
	Carp	<i>Cyprinus carpio</i>	b	-	EN	DD	4
	Chub	<i>Squalius cephalus</i>	I	-	LC	LC	5
	Crucian carp	<i>Carassius carassius</i>	s	-	EN	LC	
	Dace	<i>Leuciscus leuciscus</i>	b	-	NT	LC	
	Danube roach	<i>Rutilus pigus</i>	b	II; V	EN	DD	
	Gudgeon	<i>Gobio gobio</i>	b	-	LC	LC	
	Ide	<i>Leuciscus idus</i>	b	-	EN	LC	13
	Nase	<i>Chondrostoma nasus</i>	b	-	NT	LC	2
	Prussian carp	<i>Carassius gibelio</i>	s	-	LC		1
	Roach	<i>Rutilus rutilus</i>	I	-	LC	LC	15
	Sabre carp	<i>Pelecus cultratus</i>	s	II; V	NT	DD	
	Spirlin	<i>Alburnoides bipunctatus</i>	b	-	LC	LC	
	Tench	<i>Tinca tinca</i>	b	-	VU	LC	
	Vimba bream	<i>Vimba vimba</i>	b	-	VU	LC	5
	White bream	<i>Blicca bjoerkna</i>	I	-	LC	LC	67
	White-finned gudgeon	<i>Romanogobio vladykovi</i>	I	II	LC	DD	
Esocidae	Pike	<i>Esox lucius</i>	b	-	NT		2
Gadidae	Burbot	<i>Lota lota</i>	b	-	VU		
Percidae	Perch	<i>Perca fluviatilis</i>	I	-	LC	LC	18
	Pikeperch	<i>Sander lucioperca</i>	s	-	NT	LC	25
	Ruffe	<i>Gymnocephalus cernuus</i>	b	-	LC	LC	
	Schraetser	<i>Gymnocephalus schraetser</i>	b	II; V	VU	VU	3
	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	
Siluridae	Wels catfish	<i>Silurus glanis</i>	b	-	VU	LC	1
Gobiidae	Tubenose goby	<i>Proterorhinus semilunaris</i>	s	-	EN	LC	2
Gasterosteidae	Threespine stickleback	<i>Gasterosteus aculeatus</i>	s	-	NE	LC	
Cottidae	Bullhead	<i>Cottus gobio</i>	b	II	NT	LC	
Cobitidae	Balkan loach	<i>Sabanejewia balcanica</i>	s	II	EN	DD	
	Danubian spined loach	<i>Cobitis elongatoides</i>	s	-			
	Weatherfish	<i>Misgurnus fossilis</i>	s	II	CR	NT	
Balitoridae	Danube bream	<i>Abramis sapa</i>	b	-	EN		
	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	

Family	English name	Scient. name of species	Reference fish assemblage	FFH	Red List	IUCN	Count
	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	European mud-minnow	<i>Umbra krameri</i>	s	II	CR	VU	
Gobiidae	Bighead goby	<i>Neogobius kessleri</i>		-	NE	DD	102
	Racer goby	<i>Neogobius gymnotrachelus</i>		-	NE	DD	2
	Round goby	<i>Neogobius melanostomus</i>		-	NE	DD	836
Cobitidae	Spined loach	<i>Cobitis taenia</i>		II	VU	LC	1
Centrarchidae	Pumpkinseed	<i>Lepomis gibbosus</i>		-	NE		1

Observed:: reference fish assemblage 19Taxa :: 49Taxa

Taxa complete 24

Count species of reference fish assemblage 2,902

Total count 3,844

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)

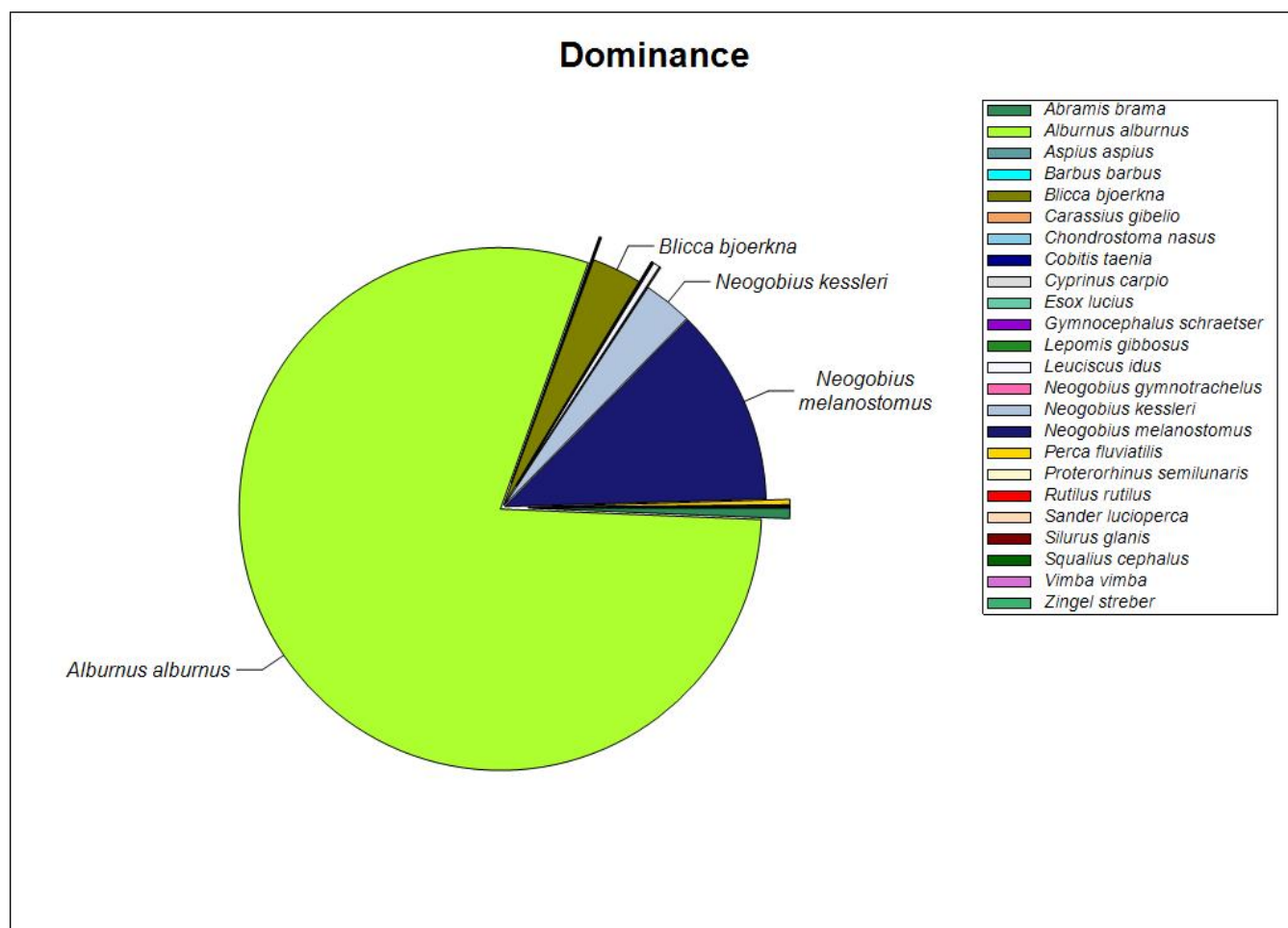
- II Species listed in Annex II of the FFH- Directive (nature reserves have to be set out for this species)
- IV Species listed in Annex IV of the FFH- Directive (strict protection of animals and plants)
- V Species listed in Annex V of the FFH- Directive (species whose collection and use is subject 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

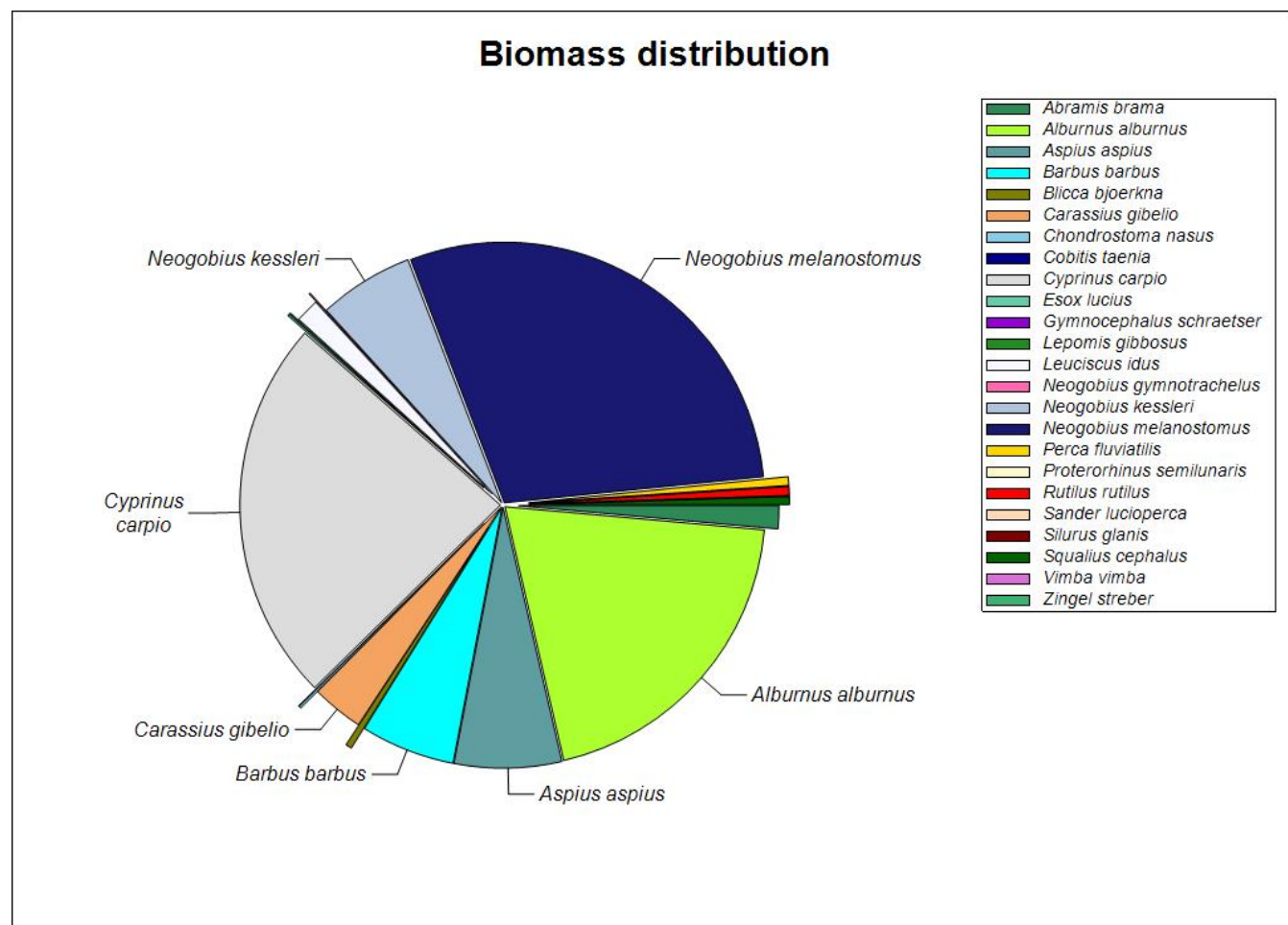
Abundance and biomass

Table 5: abundance and biomass (e-fishings) Danube, Cunovo, SK_JDS17, 8/24/2013

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	11	14.4		5.8		31.8	404.3	3	b
Barbel	BAR-BAR	3	12.2		5.1		28.5	419.3	4	b
Bighead goby	NEO-KES	102	554.3		5.2		8.4	9.3	1	
Bleak	ALB-ALB	2,698	14,586.9		17.5		3.6	1.2	1	I
Bream	ABR-BRA	25	117.8		1.2		10.6	10.5	3	I
Carp	CYP-CAR	4	6.4		20.9		61.8	3,245.0	4	b
Chub	SQU-CEP	5	8.3		0.4		19.6	51.5	3	I
Idc	LEU-IDU	13	74.0		1.3		14.1	17.4	3	b
Nase	CHO-NAS	2	0.6		0.1		22.5	207.3	4	b
Perch	PER-FLU	18	59.9		0.5		12.6	7.9	2	I
Pike	ESO-LUC	2	1.7		0.1		20.3	60.1	4	b
Pikeperch	SAN-LUC	25	0.6		0.0		12.1	17.7	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
Prussian carp	CAR-GIB	1	3.3		2.8		35.0	856.6	4	s
Pumkinseed	LEP-GIB	1	4.8		0.1		10.5	18.7	4	
Racer goby	NEO-GYM	2	14.5		0.1		7.3	4.8	4	
Roach	RUT-RUT	15	10.2		0.5		20.6	47.3	2	l
Round goby	NEO-MEL	836	2,232.2		25.6		8.8	11.5	1	
Schraetser	GYM-SCH	3	0.0		0.0	0.0	10.8	0.0	3	b
Spined loach	COB-TAE	1	7.2		0.0		9.5	5.2	4	
Streber	ZIN-STR	2	0.0		0.0	0.0	4.9	0.0	4	s
Tubenose goby	PRO-SEM	2	7.2		0.0		4.5	1.1	4	s
Vimba bream	VIM-VIM	5	0.0		0.0	0.0	9.4	0.0	3	b
Wels catfish	SIL-GLA	1	0.0		0.0	0.0	83.0	0.0	4	b
White bream	ABR-BJO	67	560.6		0.3		6.1	0.6	2	l
19 species of 49		Total	3,844	18,277.1		87.5				





Pic. 4: Dominance und Biomass distribution

Shannon-Index: 0.959

Equitability: 0.302

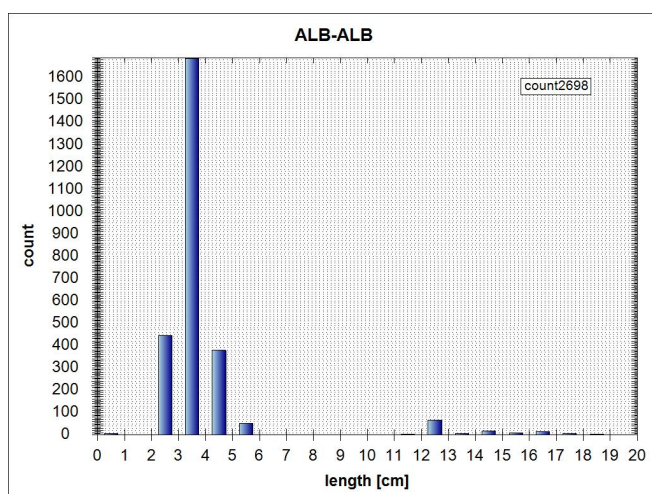
Biometrics and catch rate

Table 6: biometrics of each species and catch specific parameters

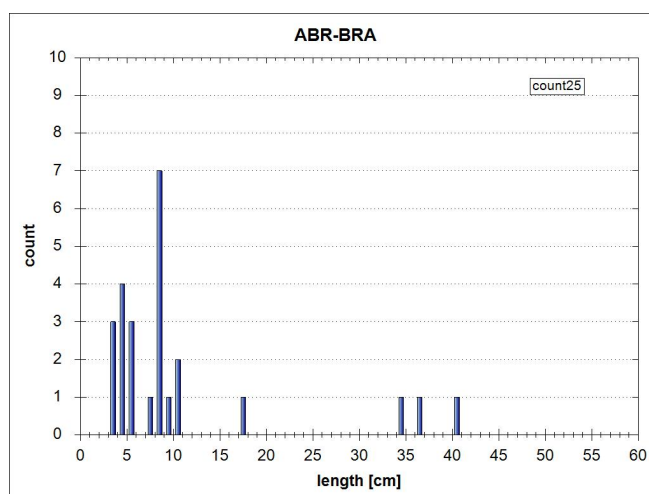
Fish species	Lt [cm]		n	Statist. Method	Catch-Probability [%]	Catch-effectivity		
	Min	Max				Min	MW	Max
Asp	22.0	31.8	56.5	11		0.33	0.61	1.00
Barbel	4.0	28.5	76.0	3		0.20	0.57	1.00
Bighead goby	5.0	8.4	14.5	102		0.10	0.36	0.60
Bleak	0.6	3.6	18.5	2,698		0.01	0.71	1.00
Bream	3.5	10.6	40.0	25		0.20	0.41	1.00
Carp	57.0	61.8	66.0	4		0.50	0.73	0.80
Chub	4.0	19.6	34.0	5		0.30	0.56	1.00
Ide	3.0	14.1	22.0	13		0.20	0.35	0.50
Nase	18.5	22.5	26.5	2		0.25	0.63	1.00
Perch	6.5	12.6	31.0	18		0.20	0.53	1.00
Pike	20.0	20.3	20.5	2		0.66	0.66	0.66
Pikeperch	3.5	12.1	35.0	25		0.50	0.55	1.00
Prussian carp	35.0	35.0	35.0	1		0.66	0.66	0.66
Pumkinseed	10.5	10.5	10.5	1		0.50	0.50	0.50
Racer goby	6.5	7.3	8.0	2		0.30	0.30	0.30
Roach	7.5	20.6	30.0	15		0.50	0.57	1.00

Fish species	Lt [cm]		n	Statist.	Catch-	Catch-effectivity		
	Min	Max		Method	Probability [%]	Min	MW	Max
Round goby	2.2	8.8	15.0	836		0.10	0.52	1.00
Schraetser	8.5	10.8	14.0	3		0.50	0.57	0.70
Spined loach	9.5	9.5	9.5	1		0.30	0.30	0.30
Streber	4.5	4.9	5.4	2		0.70	0.70	0.70
Tubenose goby	4.0	4.5	5.0	2		0.30	0.45	0.60
Vimba bream	3.5	9.4	15.5	5		0.50	0.50	0.50
Wels catfish	83.0	83.0	83.0	1		0.70	0.70	0.70
White bream	3.0	6.1	25.5	67		0.20	0.30	1.00
24 species		Sum	3,844					

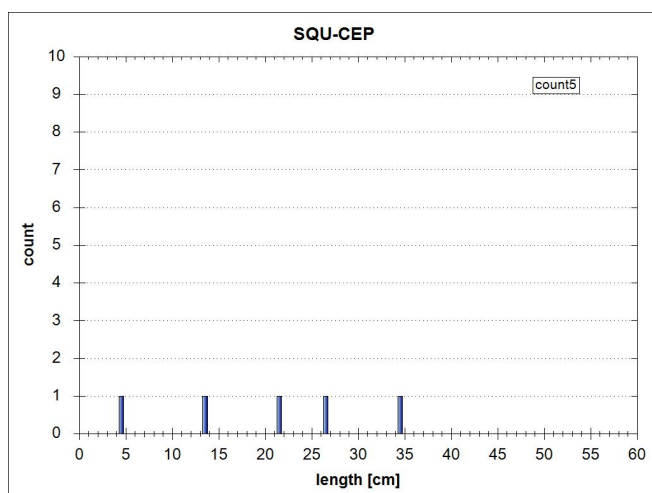
Population structure of dominant species and subdominant species (total catch)



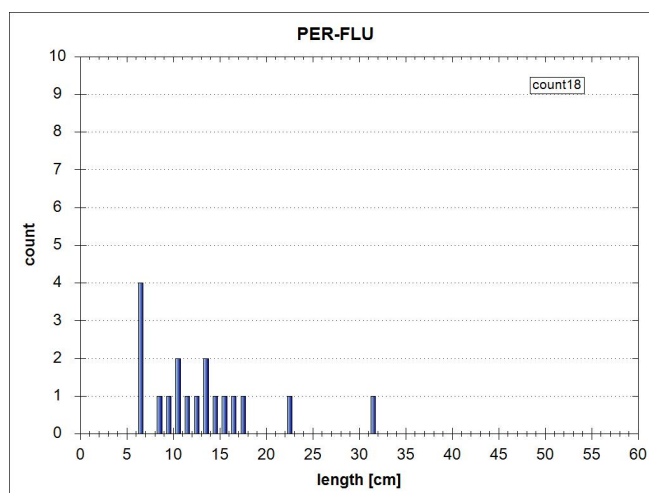
Bleak (*Alburnus alburnus*), 1



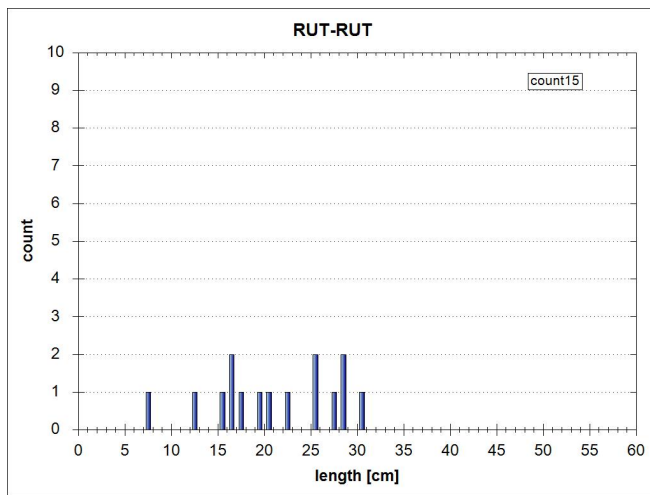
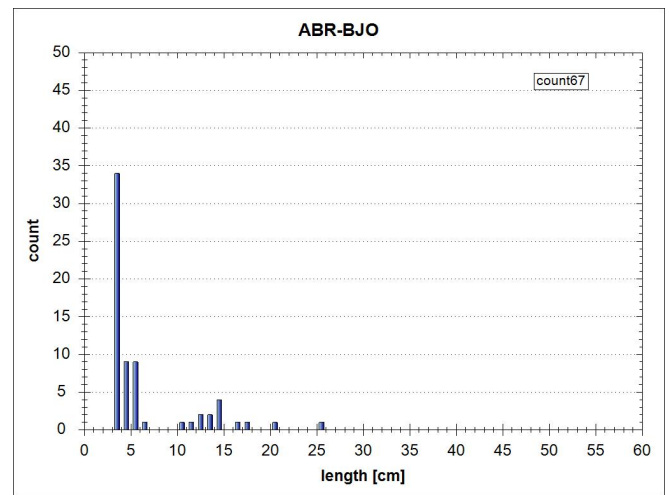
Bream (*Abramis brama*), 3



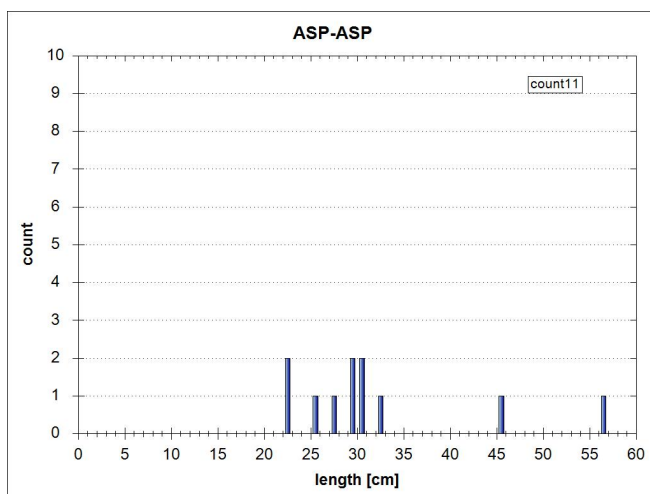
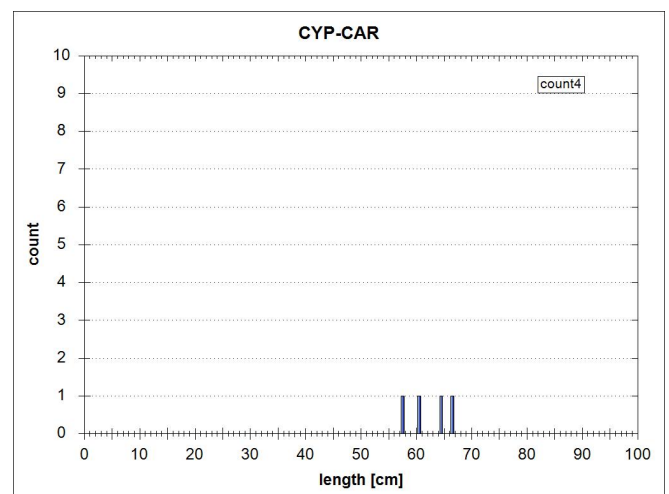
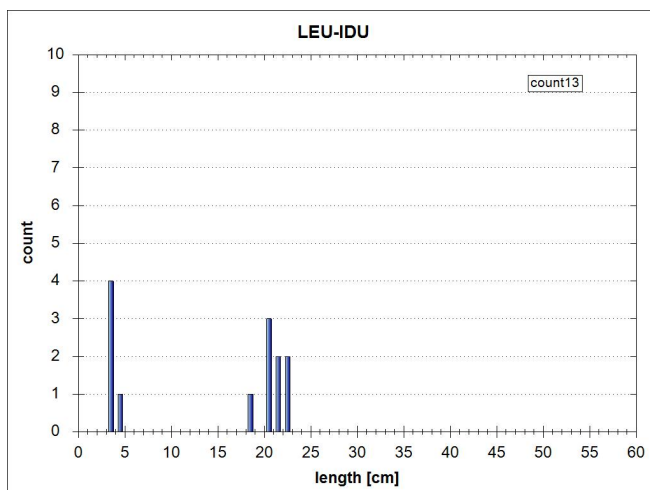
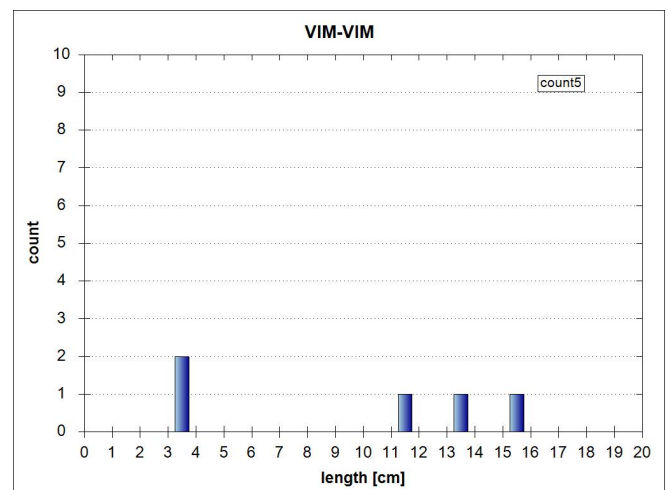
Chub (*Squalius cephalus*), 3



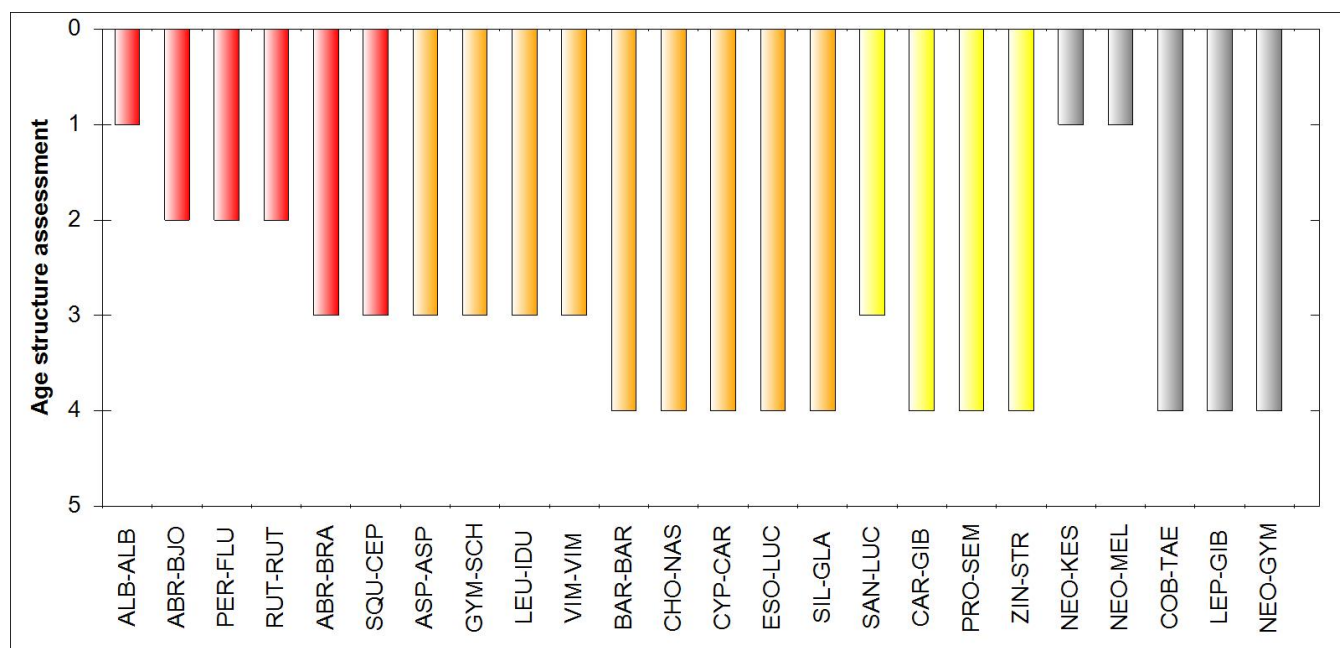
Perch (*Perca fluviatilis*), 2

Roach (*Rutilus rutilus*), 2White bream (*Blicca bjoerkna*), 2

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

Asp (*Aspius aspius*), 3Carp (*Cyprinus carpio*), 4Ide (*Leuciscus idus*), 3Vimba bream (*Vimba vimba*), 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 dominant and subdominant species

- no comment -

Fish ecological assessment (FIA, FISH INDEX AUSTRIA)

Table 7: fish ecologic assessment, Danube, Cunovo, SK_JDS17, 8/24/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	15,464.1	56.5			OK

1. Species	Reference fish assemblage	actual (current)	Ratio/Deviation	Partial rating	
Species					
Dominant species	8	6	75%	3.0	
Subdominant species	20	9	45%	3.0	
Rare species	21	4	19%	3.0	
				3.0	
Ecological guilds					
Flow	5	3	2	3.0	
Reproduction	7	4	3	4.0	
				3.5	
Species diversity & guilds overall					3.1

2. Dominance	Reference fish assemblage	actual (current)	Difference		
Fish region index	6.3	6.4	0.1		1.0

3. Population structure	Reference fish assemblage	actual (current)		Partial rating (1-5)	
Dominant species	8	6		2.9	
Subdominant species	20	9		4.4	
					3.4

Fishindex Austria without active ko-criterion					2.89
---	--	--	--	--	-------------

Biological quality element fish	FIA 2.89	Class 3	Moderate
--	-----------------	----------------	-----------------

Date of Assessment:2/27/2014

Comment BAW-IGF

- no comment -

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

Recommended improvements with priority ranking if possible;