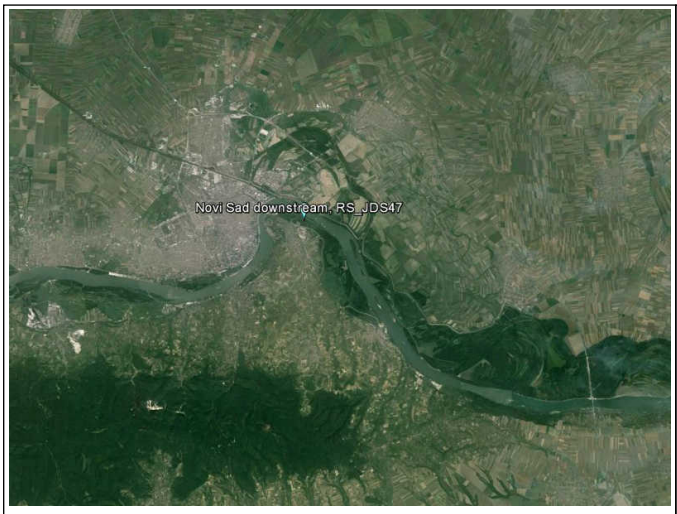
Danube

Novi Sad downstream, RS_JDS47 (RS_JDS47), 02.September 2013 FDA_ID 231



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

Pic. 2: Monitoring site Novi Sad downstream, RS_JDS47

Description of monitoring site

- no data -

Assessment

Estimated assessment of the ecological status class (FÖZ)

Biological quality element fish	None

Ecological status class, current survey, 02.September 2013

Biological quality element fish	FIA 2.67	Class 3	Moderate

Former classifications

None				
None				
None				

Information about and sampling conditions and location

Table 1: Key data and information on sampling, monitoring siteNovi Sad downstream, RS_JDS47

Watercourse name	**Danube**	Federal state	**not availabvle**
Monitoring site	**Novi Sad downstream, RS_JDS47**	District	
Monitoring site number	**RS_JDS47**	Community	
Turnus number		Longitude (WGS 84, decimal) O	**19.88602**
sampling number		Latitude (WGS 84, decimal) N	**45.26037**
Survey-ID (FDA)	**231**	Route-ID	
Date	**9/2/2013**	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	**Pannonian Plain Danube (1497-1075) (6)**	Huet-zonation	**bream zone**
Biocenotic Region	**Metapotamon**	Adapt. Reference	**113**
River km from	**1,252.0**	Altidude [m.a.s]	**74**
River km to	**1,250.0**	Ø catchment basin [km²]	**254,100**
Section length [m]	**2,000**	Catchment-class	**more than 10.000km²**
Ø channel width [m]	**390**	Slope [‰]	**0.03**
Original stream character	**lowland stream -river**	Discharge regime	
Actual site character			
Actual impact		Reference watergauge (name, number)	
Flow [semiquant.]		Distance from source [km]	**1,594.0**
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]	**390**	Flow condition	
pH-value		Visible depth	
SBV		Fishing conditions	
Water temperature [°C] (F117)		Average annual air temperature [°C]	**11.4**
Conductance, 25°C [µS/cm] (F118)			
Methods used and effort			
Strip-fishing, day		Number of runs	**1**
Fished length [m]	**2,750**	E-devices output [kW]	**11**
Fished area [m²]	**7,920**	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	**3,975**		

Comments on survey:

schlechte Sicht, steigender Wasserstand

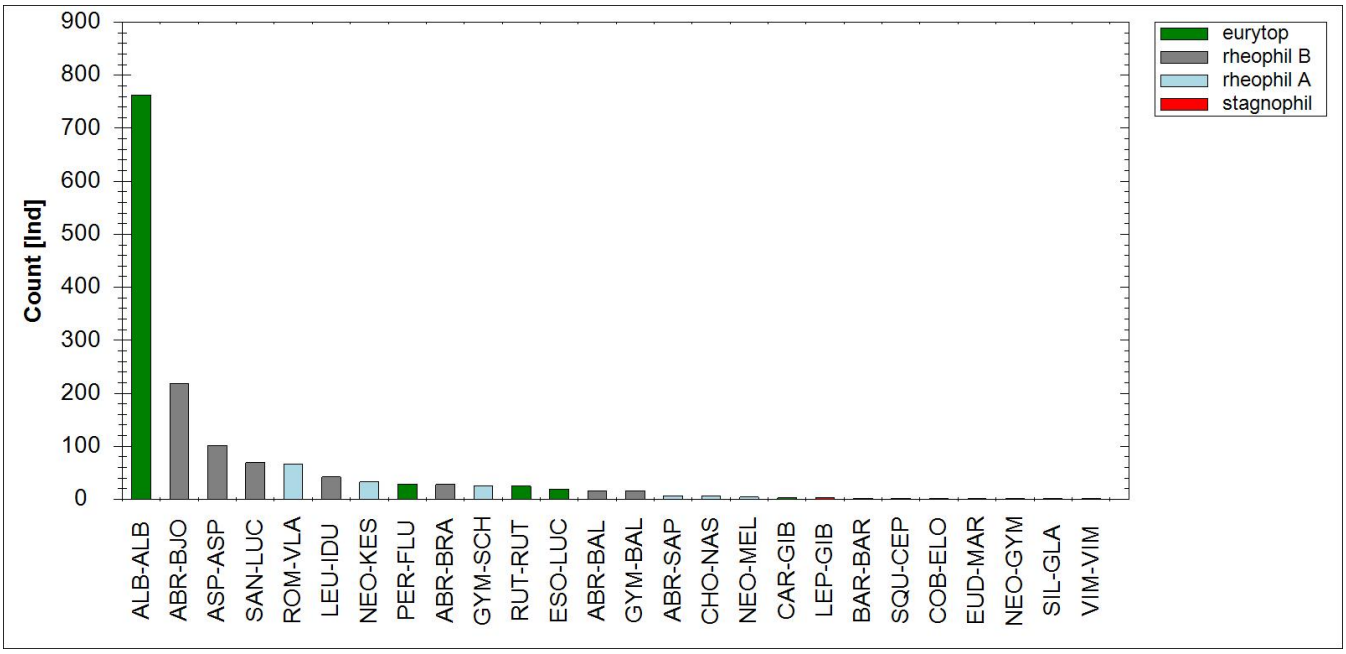
Table 2: Sampling effort at the monitoring site Novi Sad downstream, RS_JDS47, September 2013

Habitat	Str. no	DG.	Length [m]	Width [m]	UE	Method
rip-rap	1	1	110	1.5		E-fishing day boat
rip-rap	2	1	110	1.5		E-fishing day boat
rip-rap	11	1	110	1.5		E-fishing night
groin	5	1	300	3		E-fishing day boat
groin	6	1	300	3		E-fishing day boat
groin	7	1	310	3		E-fishing day boat
groin	12	1	330	3		E-fishing night
groin	13	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	3		electric beam trawl
undet. middle of the river	20	1	500	3		electric beam trawl
undet. middle of the river	21	1	500	3		electric beam trawl
undet. middle of the river	22	1	500	3		electric beam trawl
undet. middle of the river	23	1	420	3		electric beam trawl
undet. middle of the river	24	1	500	3		electric beam trawl
other natural bank	3	1	330	3		E-fishing day boat
other natural bank	4	1	290	3		E-fishing day boat
other natural bank	8	1	310	3		E-fishing day boat
other natural bank	9	1	350	3		E-fishing day boat
other natural bank	10	1	340	3		E-fishing day boat
other natural bank	14	1	330	3		E-fishing night
other natural bank	15	1	310	3		E-fishing night

Table 3: Habitat weighting used at the monitoring site Novi Sad downstream, RS_JDS47

Habitat	%
groin	20
other natural bank	70
rip-rap	10
undet. middle of the river	0

Catch result, fish assemblage and threatening status



Pic. 3: Species ranking diagramm of catch resultsDanube, Novi Sad downstream, RS_JDS47

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	*Eudontomyzon mariae*	s	II	VU	DD	1
Cyprinidae	Asp	*Aspius aspius*	b	II	EN	DD	101
	Barbel	*Barbus barbus*	b	V	NT	LC	2
	Bleak	*Alburnus alburnus*	l	-	LC	LC	763
	Blue bream	*Abramis ballerus*	l	-	EN		16
	Bream	*Abramis brama*	b	-	LC		28
	Carp	*Cyprinus carpio*	b	-	EN	DD	
	Chub	*Squalius cephalus*	s	-	LC	LC	2
	Danubian gudgeon	*Romanogobio uranoscopus*	s	II	CR	DD	
	Gudgeon	*Gobio gobio*	b	-	LC	LC	
	Ide	*Leuciscus idus*	b	-	EN	LC	42
	Kessler's gudgeon	*Romanogobio kesslerii*	b	II	EN	DD	
	Nase	*Chondrostoma nasus*	b	-	NT	LC	6
	Prussian carp	*Carassius gibelio*	l	-	LC		3
	Roach	*Rutilus rutilus*	l	-	LC	LC	25
	Tench	*Tinca tinca*	s	-	VU	LC	
	Vimba bream	*Vimba vimba*	l	-	VU	LC	1
	White bream	*Blicca bjoerkna*	l	-	LC	LC	218
Esocidae	Pike	*Esox lucius*	b	-	NT		19
Gadidae	Burbot	*Lota lota*	b	-	VU		
Percidae	Danube ruffe	*Gymnocephalus baloni*	b	II; IV	VU	DD	16
	Perch	*Perca fluviatilis*	b	-	LC	LC	29
	Pikeperch	*Sander lucioperca*	b	-	NT	LC	69
	Ruffe	*Gymnocephalus cernuus*	b	-	LC	LC	
	Schraetser	*Gymnocephalus schraetser*	b	II; V	VU	VU	26
	Volga pikeperch	*Sander volgensis*	s	-	EN	DD	
	Zingel	*Zingel zingel*	s	II; V	VU	VU	
Siluridae	Wels catfish	*Silurus glanis*	b	-	VU	LC	1
Gobiidae	Tubenose goby	*Proterorhinus semilunaris*	l	-	EN	LC	
Cobitidae	Spined loach	*Cobitis taenia*	b	II	VU	LC	
Balitoridae	Danube bream	*Abramis sapa*	b	-	EN		7
Acipenseridae	Danube sturgeon	*Acipenser gueldenstaedtii*	s	V	RE	EN	
	Fringebarbel sturgeon	*Acipenser nudiventris*	s	V	RE	EN	
	Sterlet	*Acipenser ruthenus*	b	V	CR	VU	
Cyprinidae	White-finned gudgeon	*Romanogobio vladykovi*		II	LC	DD	66
Gobiidae	Bighead goby	*Neogobius kessleri*		-	NE	DD	33
	Racer goby	*Neogobius gymnotrachelus*		-	NE	DD	1
	Round goby	*Neogobius melanostomus*		-	NE	DD	4
Cobitidae	Danubian spined loach	*Cobitis elongatoides*		-			1
Centrarchidae	Pumkinseed	*Lepomis gibbosus*		-	NE		3

Observed:: reference fish assemblage	20Taxa :: 34Taxa	Taxa complete	26
Count species of reference fish assemblage	1,375	Total count	1,483

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

l Dominant species

b Subdominant species

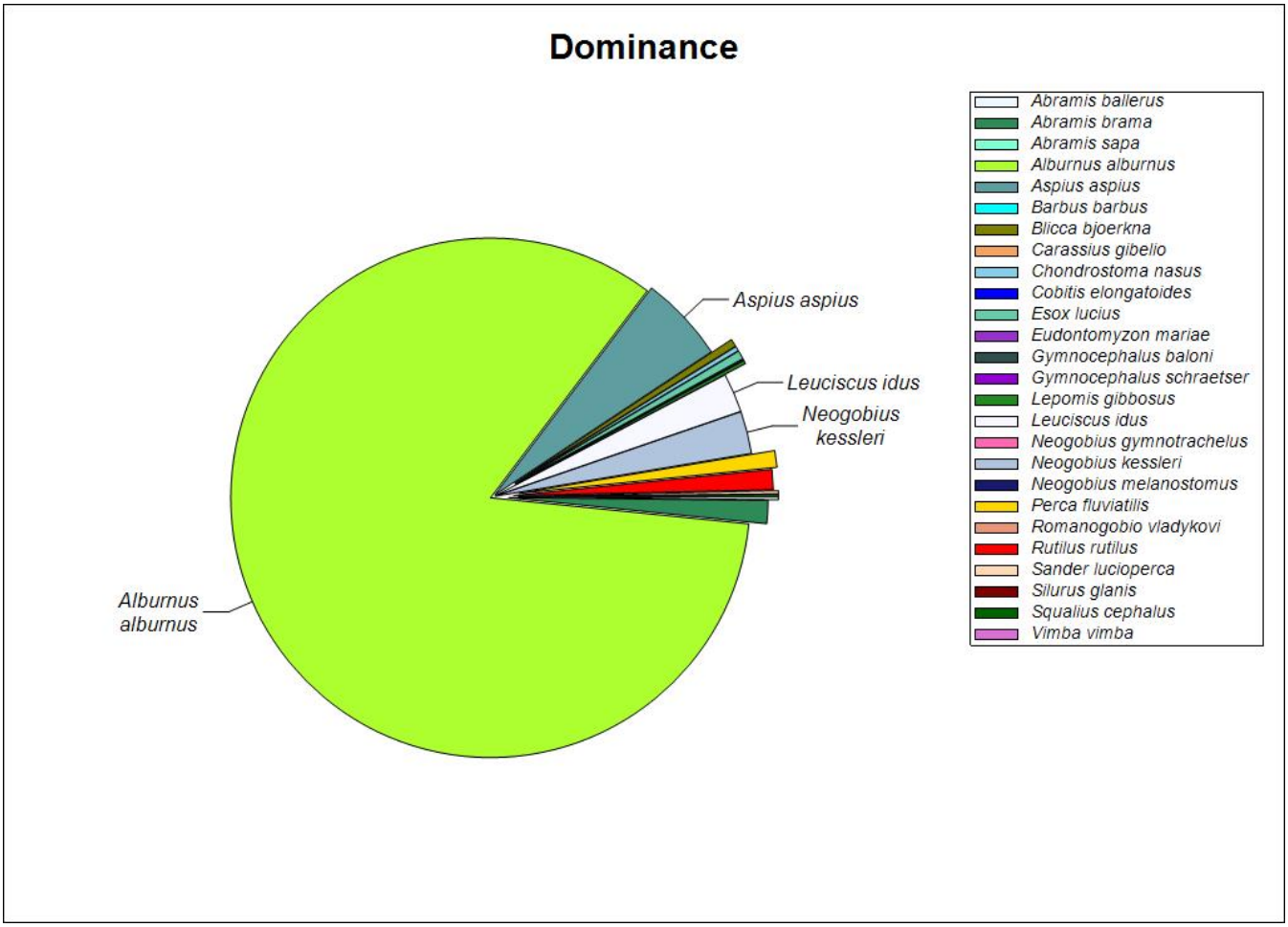
s Rare species

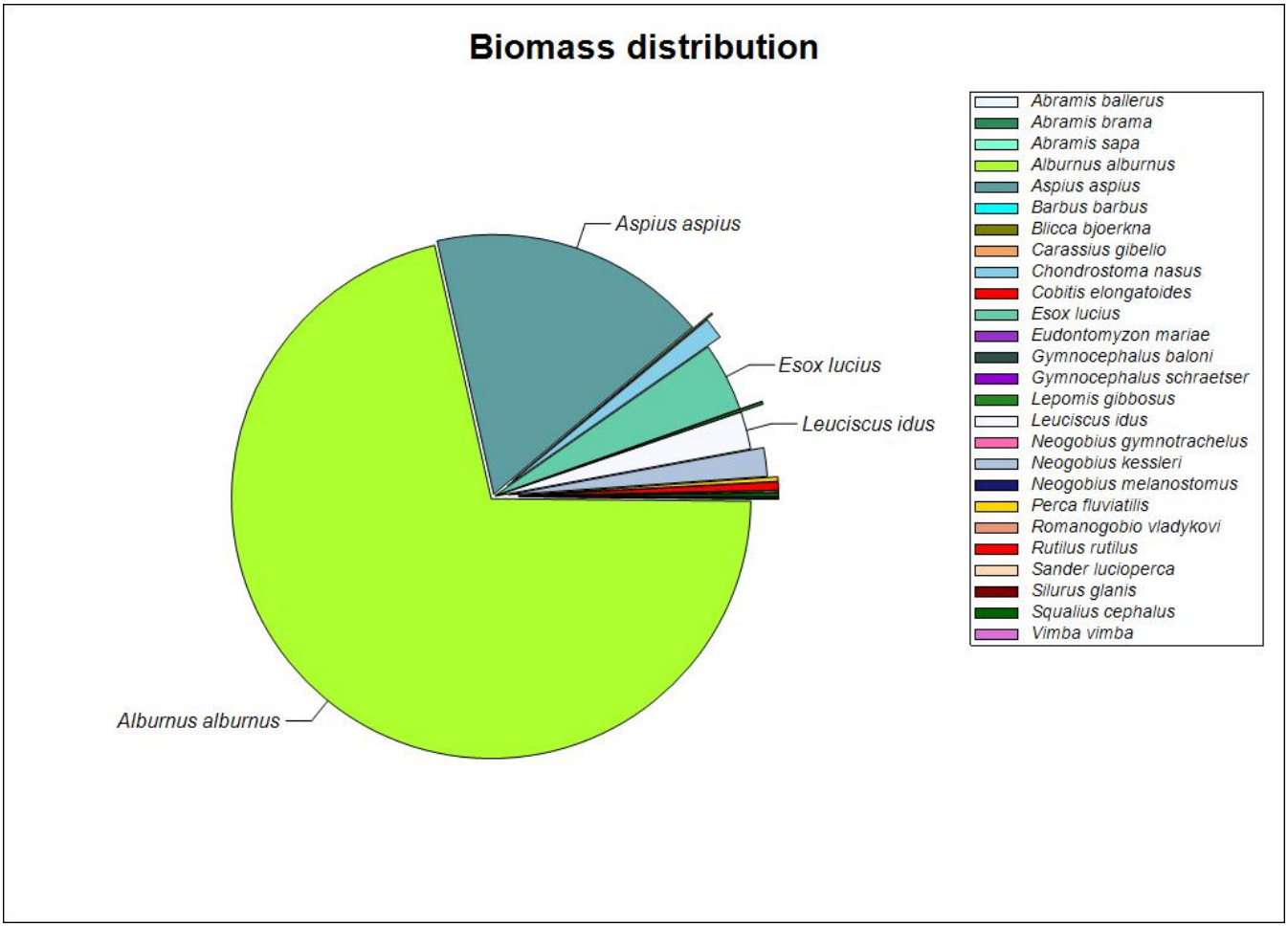
a! Allochthon
N! Neozoa
FFH...Fauna-Flora-Habitat-Directive (Council Directive 92/43/EEC of 21.Mai 1992)
II Species listed in Annex II of the FFH- Directive (nature reserves have to be set out for this species)
IV Species listed in Annex IV of the FFH- Directive (strict protection of animals and plants)
V Species listed in Annex V of the FFH- Directive (species whose collection and use is subject to adminitrativic 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, Novi Sad downstream, RS_JDS47, 9/2/2013

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	101	379.6		32.7		18.9	86.1	1	b
Barbel	BAR-BAR	2	0.0		0.0	0.0	3.5	0.0	4	b
Bighead goby	NEO-KES	33	185.7		3.4		9.8	18.1	2	
Bleak	ALB-ALB	763	5,896.1		134.4		11.4	22.8	1	l
Blue bream	ABR-BAL	16	12.4		0.1		9.4	4.6	3	l
Bream	ABR-BRA	28	100.5		0.2		10.3	2.2	3	b
Chub	SQU-CEP	2	10.9		0.5		16.0	41.3	4	s
Danube bream	ABR-SAP	7	0.0		0.0	0.0	15.5	0.0	3	b
Danube ruffe	GYM-BAL	16	0.0		0.0	0.0	7.4	0.0	2	b
Danubian spined loach	COB-ELO	1	0.0		0.0	0.0	11.0	0.0	4	
Ide	LEU-IDU	42	171.7		4.4		12.2	25.6	2	b
Nase	CHO-NAS	6	20.1		2.5		21.3	124.4	3	b
Perch	PER-FLU	29	72.7		0.5		8.5	7.1	3	b
Pike	ESO-LUC	19	37.0		8.1		35.3	217.9	2	b
Pikeperch	SAN-LUC	69	14.2		0.2		17.6	14.9	2	b
Prussian carp	CAR-GIB	3	0.0		0.0	0.0	20.8	0.0	4	l
Pumkinseed	LEP-GIB	3	15.2		0.3		11.5	21.3	3	
Racer goby	NEO-GYM	1	0.0		0.0	0.0	4.3	0.0	4	
Roach	RUT-RUT	25	87.8		0.9		11.1	10.8	3	l
Round goby	NEO-MEL	4	0.0		0.0	0.0	3.4	0.0	3	
Schraetser	GYM-SCH	26	0.0		0.0	0.0	10.0	0.0	2	b
Ukrainian lamprey	EUD-MAR	1	6.1		0.0		10.5	1.6	4	s
Vimba bream	VIM-VIM	1	0.0		0.0	0.0	10.4	0.0	4	l
Wels catfish	SIL-GLA	1	0.0		0.0	0.0	36.0	0.0	4	b
White bream	ABR-BJO	218	33.6		0.2		10.2	5.8	1	l
White-finned gudgeon	ROM-VLA	66	0.0		0.0	0.0	5.3	0.0	1	
20 species of 34	Total	1,483	7,043.6		188.3					





Pic. 4: Dominance und Biomass distribution

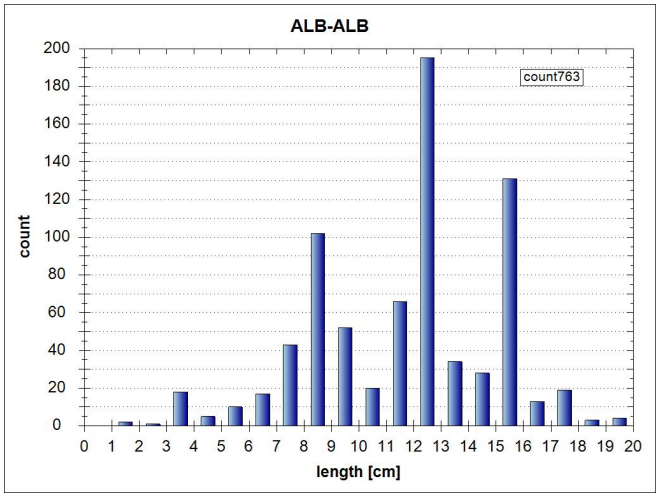
Shannon-Index: 1.850
Equitability: 0.568

Biometrics and catch rate

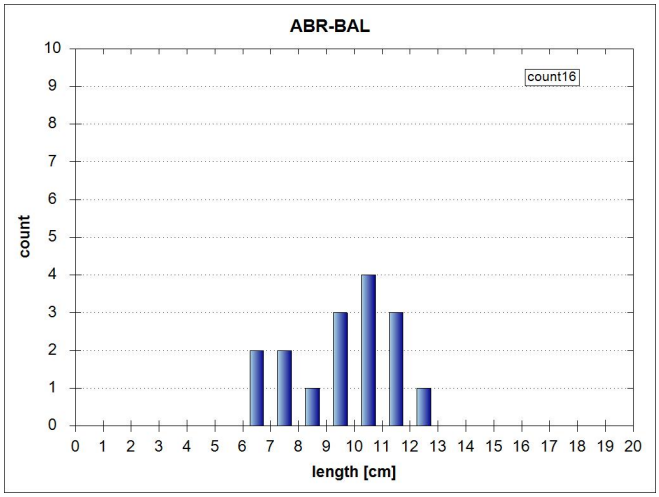
Table 6: biometrics of each species and catch specific parameters

	Lt [cm]				Statist.	Catch-	Catch-effectivity		
Fish species	Min		Max	n	Method	Probability [%]	Min	MW	Max
Asp	7.0	18.9	57.5	101			0.20	0.32	0.50
Barbel	2.5	3.5	4.5	2			0.70	0.70	0.70
Bighead goby	5.0	9.8	14.0	33			0.25	0.37	0.50
Bleak	1.1	11.4	19.5	763			0.05	0.19	0.50
Blue bream	6.5	9.4	12.0	16			0.25	0.33	0.70
Bream	3.0	10.3	29.0	28			0.20	0.43	0.70
Chub	14.5	16.0	17.5	2			0.30	0.40	0.50
Danube bream	6.8	15.5	21.2	7			0.30	0.64	0.70
Danube ruffe	5.1	7.4	13.6	16			0.30	0.43	0.70
Danubian spined loach	11.0	11.0	11.0	1			0.30	0.30	0.30
Ide	5.0	12.2	29.0	42			0.20	0.37	0.50
Nase	4.0	21.3	31.0	6			0.25	0.43	0.70
Perch	7.0	8.5	11.0	29			0.25	0.34	0.50
Pike	19.0	35.3	80.0	19			0.20	0.34	1.00
Pikeperch	9.7	17.6	42.0	69			0.20	0.29	0.70
Prussian carp	11.5	20.8	26.0	3			0.20	0.27	0.30
Pumkinseed	10.5	11.5	12.0	3			0.30	0.37	0.40
Racer goby	4.3	4.3	4.3	1			0.70	0.70	0.70
Roach	2.5	11.1	25.5	25			0.20	0.39	0.50
Round goby	2.5	3.4	4.0	4			0.70	0.70	0.70
Schraetser	6.2	10.0	20.0	26			0.20	0.43	0.70
Ukrainian lamprey	10.5	10.5	10.5	1			0.50	0.50	0.50
Vimba bream	10.4	10.4	10.4	1			0.70	0.70	0.70
Wels catfish	36.0	36.0	36.0	1			0.70	0.70	0.70
White bream	1.3	10.2	23.0	218			0.10	0.23	0.70
White-finned gudgeon	2.0	5.3	11.2	66			0.70	0.70	0.70
26 species			Sum	1,483					

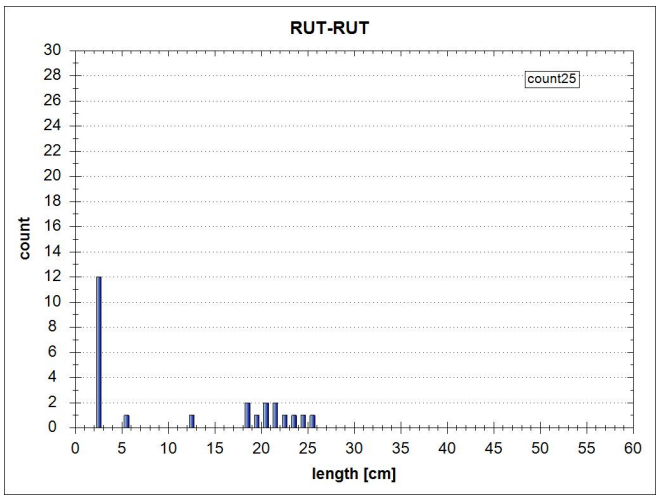
Population structure of dominant species and subdominante species (total catch)



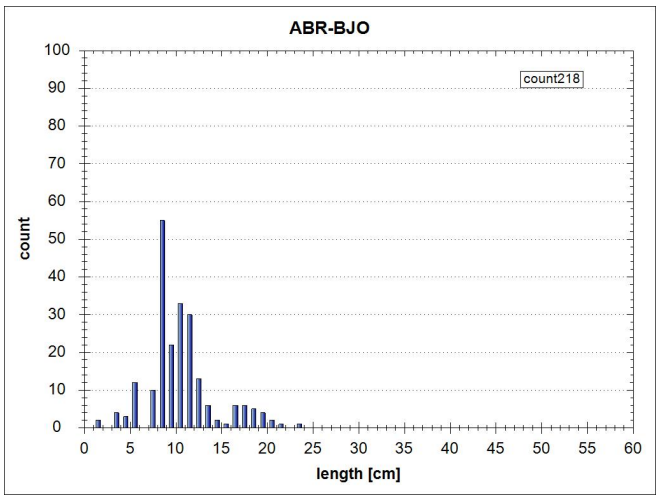
Bleak (*Alburnus alburnus*), **1**



Blue bream (*Abramis ballerus*), **3**

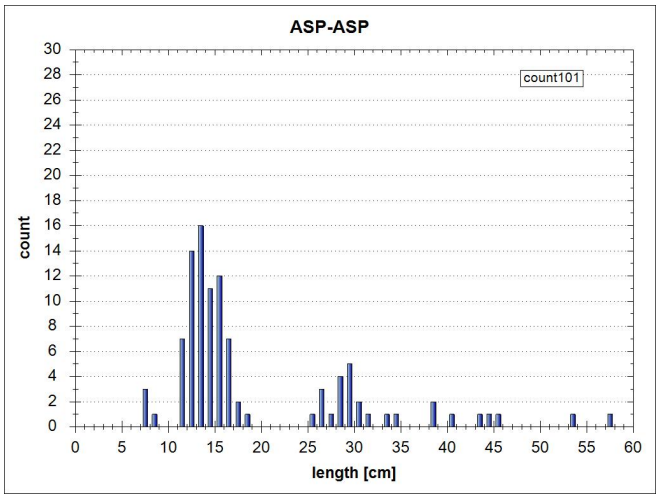


Roach (*Rutilus rutilus*), **3**

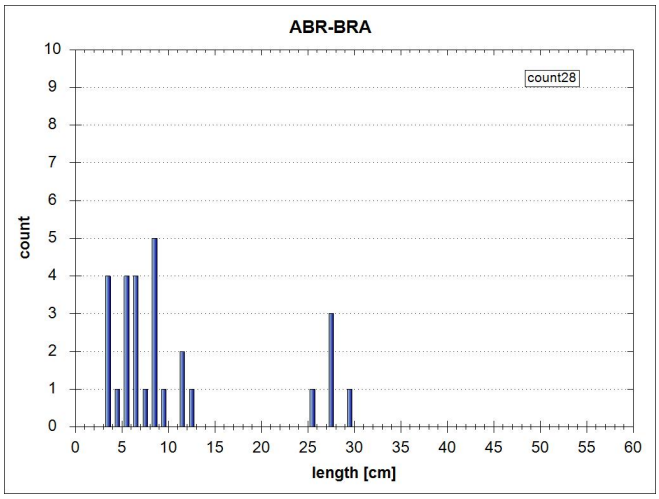


White bream (*Blicca bjoerkna*), **1**

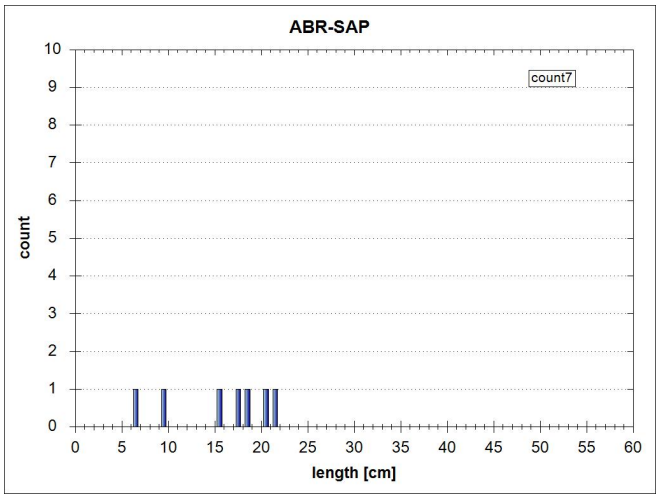
Pic. 5: Length-frequency diagram of dominant species (n>3), Sep. 2013



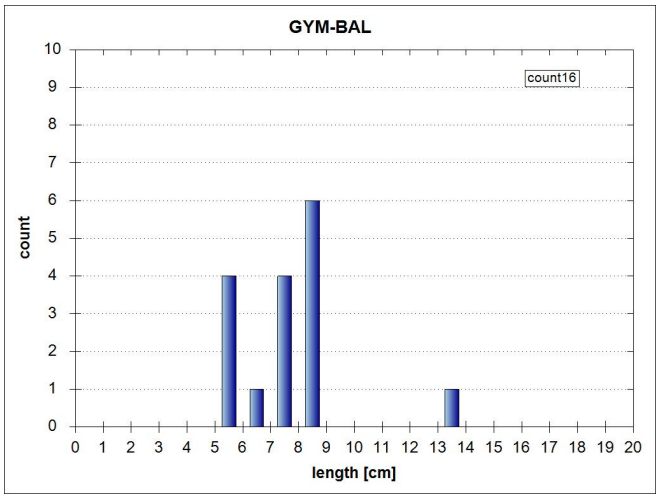
Asp (*Aspius aspius*), **1**



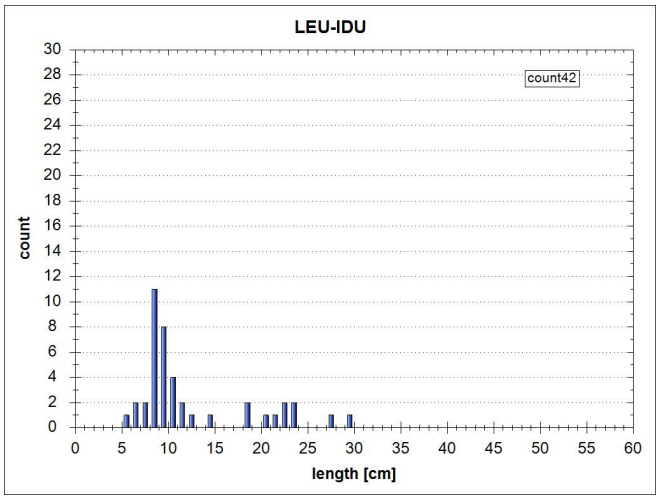
Bream (*Abramis brama*), **3**



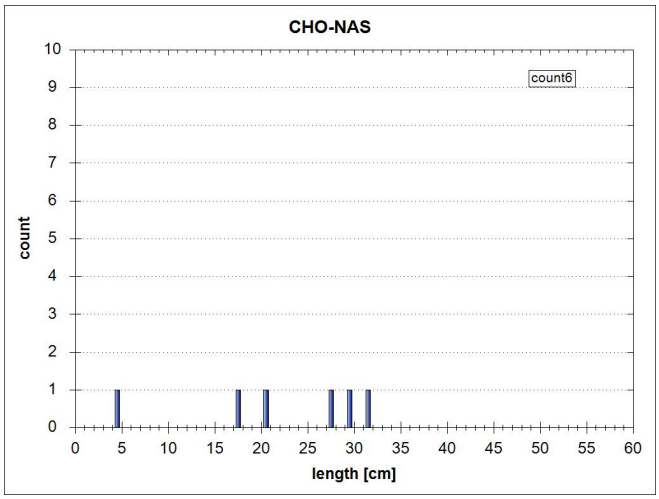
Danube bream (*Abramis sapa*), **3**



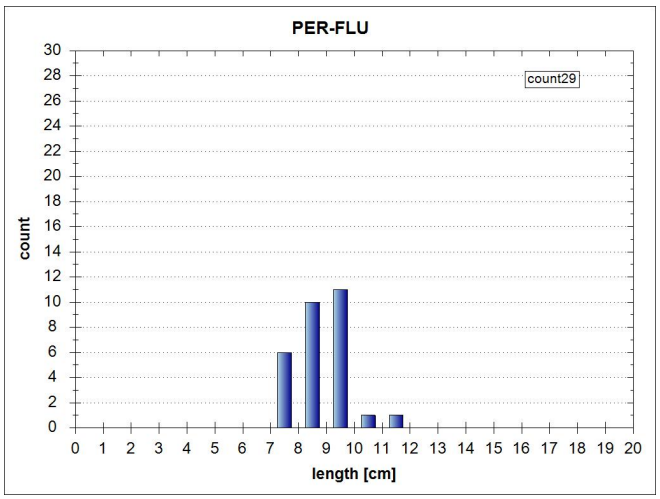
Danube ruffe (*Gymnocephalus baloni*), **2**



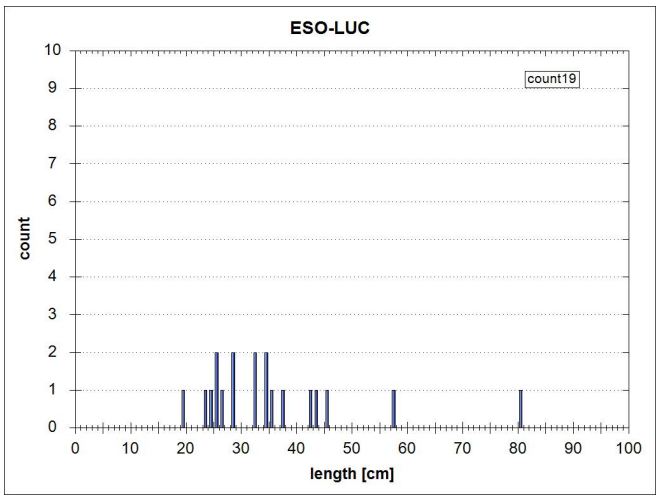
Ide (*Leuciscus idus*), **2**



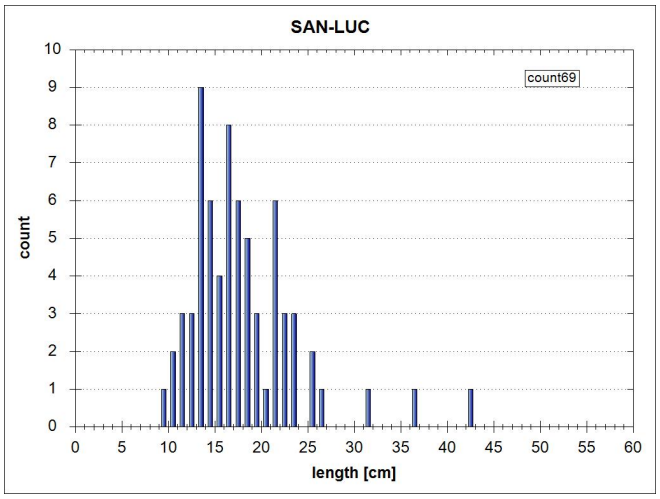
Nase (*Chondrostoma nasus*), **3**



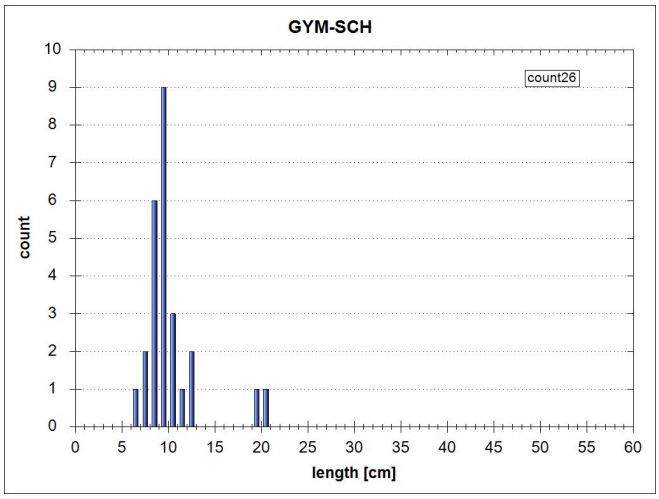
Perch (*Perca fluviatilis*), **3**



Pike (*Esox lucius*), **2**

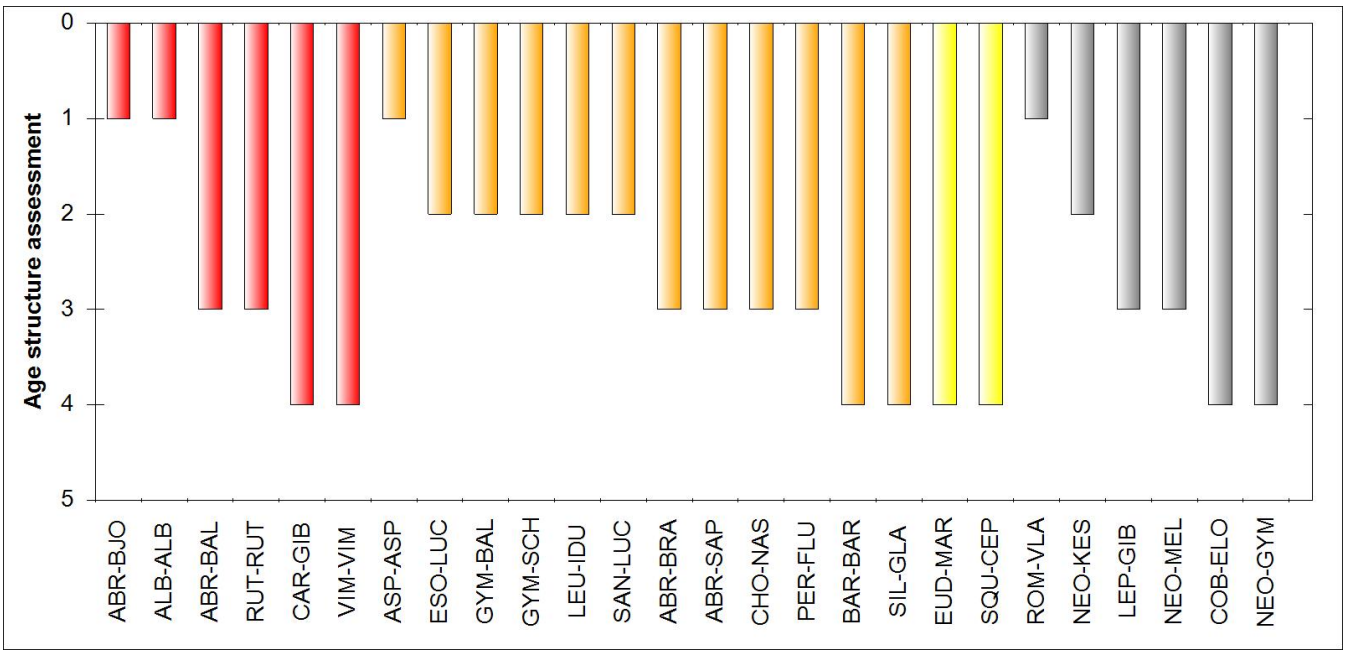


Pikeperch (*Sander lucioperca*), **2**



Schraetser (*Gymnocephalus schraetser*), **2**

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



Pic. 7: 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, Novi Sad downstream, RS_JDS47, 9/2/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	6,842.7	184.6			OK

1. Species	Reference fish assemblage	actual (current)	Ratio/Deviation	Partial rating	
Species					
Dominant species	7	6	86%	3.0	
Subdominant species	19	12	63%	2.0	
Rare species	8	2	25%	2.0	
				2.3	
Ecological guilds					
Flow	5	3	2	3.0	
Reproduction	6	3	3	4.0	
				3.5	
Species diversity & guilds overall					**2.8**

2. Dominance	Reference fish assemblage	actual (current)	Difference		
Fish region index	6.4	6.4	0.0		**1.0**

3. Population structure	Reference fish assemblage	actual (current)		Partial rating (1-5)	
Dominant species	7	6		3.0	
Subdominant species	19	12		3.5	
					3.2

Fishindex Austria without active ko-criterion				2.67

Biological quality element fish	**FIA 2.67**	**Class 3**	**Moderate**

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;

Send