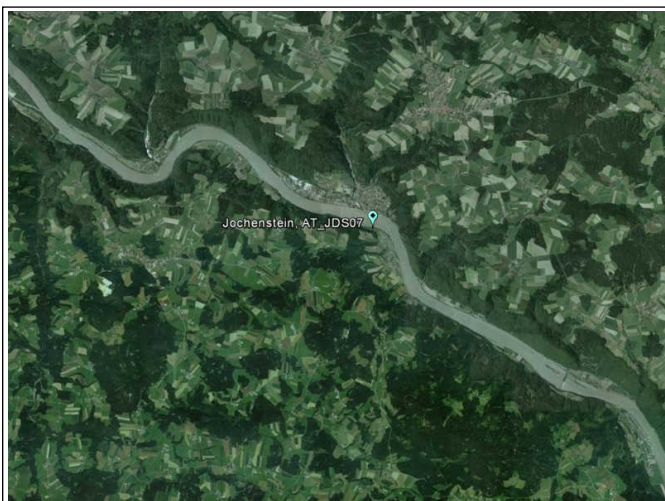


Danube**Jochenstein, AT_JDS07 (FW40607017), 16.August 2013**

FDA_ID 243



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



Pic. 2: Monitoring site Jochenstein, AT_JDS07

Description of monitoring site

Gefälle laut KWD bei MW total 17 cm

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

Biological quality element fish	Action required (4)
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Ecological status class, current survey, 16.August 2013

Biological quality element fish	FIA 5.00	Class 5	Bad
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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 Jochenstein, AT_JDS07

Watercourse name	Danube	Federal state	Upper Austria
Monitoring site	Jochenstein, AT_JDS07	District	Schärding
Monitoring site number	FW40607017	Community	
Turnus number		Longitude (WGS 84, decimal) O	13.6478
sampling number		Latitude (WGS 84, decimal) N	48.55126
Survey-ID (FDA)	243	Route-ID	
Date	8/16/2013	River-km [monitoring site]	
Contracting authority	ICPDR	Number of planing area	
Contractor	BAW-IGF	Detail waterbody	3030700
Project manager	Vinzenz Bammer		
Reason of survey	JDS 3		
Fishing category	D		
Bioregion		Waters ordinal number	09
Fish bioregion	Eastern Alpine Foothills Danube (2225-2001) (3)	Huet-zonation	barbel zone
Biocenotic Region	Epipotamon large	Adapt. Reference	91
River km from	2,215.0	Altitude [m.a.s]	290
River km to	2,204.0	Ø catchment basin [km²]	76,653
Section length [m]	11,000	Catchment-class	more than 10.000km²
Ø channel width [m]	300	Slope [‰]	0.02
Original stream character	foothills stream -river	Discharge regime	
Actual site character	heavily modified		
Actual impact	impoundment basin	Reference watergauge (name, number)	
Flow [semiquant.]		Distance from source [km]	630.0
Average water depth [m]	2m - 5m	Lake above	No
Maximum water depth [m]	>10m	Distance lake upstream [km]	
Geology	calcareous	Lake below	
Influence of sediment transport	slightly affected	Distance lake downstream [km]	
Ø wetted width [m]	300	Flow condition	MNQ - mean low water
pH-value		Visible depth	1
SBV		Fishing conditions	excellent
Water temperature [°C] (F117)	19	Average annual air temperature [°C]	8.2
Conductance, 25°C [µS/cm] (F118)	358		
Methods used and effort			
Strip-fishing, day		Number of runs	1
Fished length [m]	9,261	E-devices output [kW]	11/13
Fished area [m²]	44,784	Output voltage	600
		Number of anodes	
		Number of strips/sections	35
and additional methods	Fished area [m²]	additional methods	Effort [UE]
E-Fishing by night	12,205	longline	10
beam trawl	2,000	gillnet	6

Comments on survey:

- no data -

Table 2: Sampling effort at the monitoring site Jochenstein, AT_JDS07, August 2013

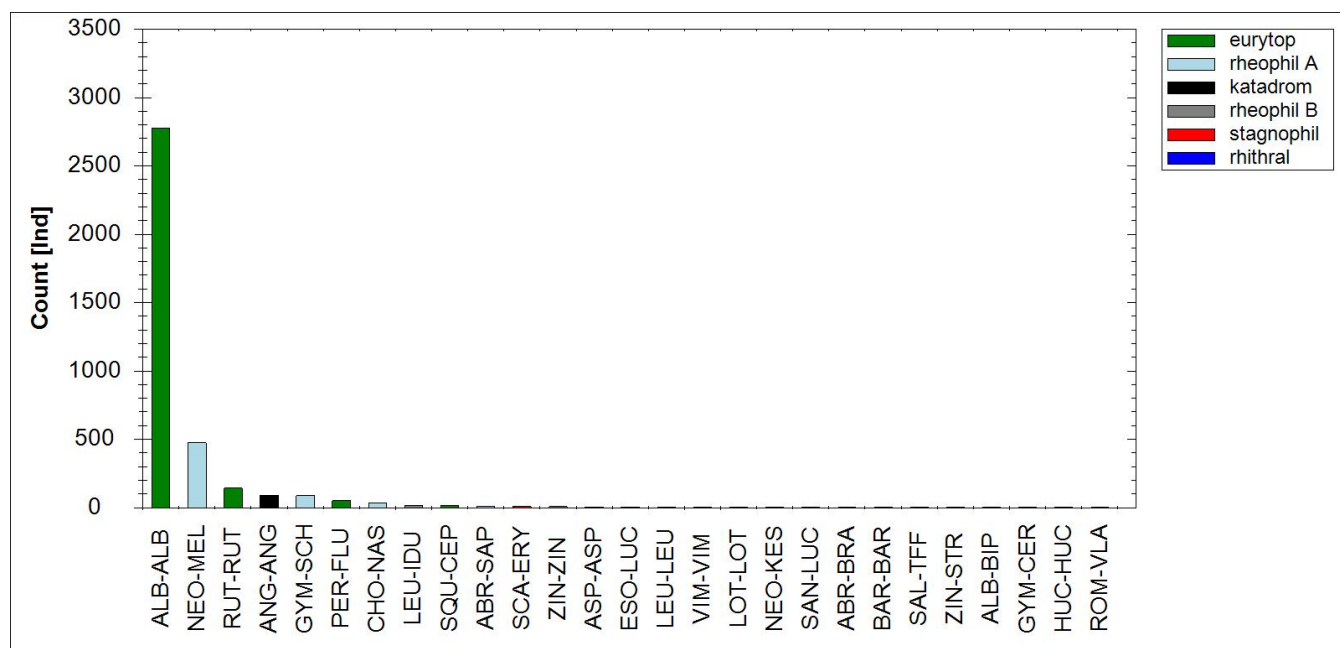
Habitat	Str. no	DG	Length [m]	Width [m]	UE	Method
rip-rap	1	1	180	1.5		E-fishing night
rip-rap	2	1	190	1.5		E-fishing night
rip-rap	3	1	300	3		E-fishing night
rip-rap	4	1	120	1.5		E-fishing day boat
rip-rap	5	1	150	1.5		E-fishing day boat
rip-rap	6	1	220	3		E-fishing day boat
rip-rap	7	1	210	3		E-fishing day boat
rip-rap	8	1	200	3		E-fishing day boat
rip-rap	9	1	200	3		E-fishing day boat
rip-rap	10	1	180	3		E-fishing day boat
rip-rap	11	1	160	3		E-fishing day boat
rip-rap	12	1	280	3		E-fishing day boat
rock	1	1			1.00	longline
rock	1	1	30		0.16	gillnet
rock	1	1	393	6		E-fishing day boat
rock	1	1	500	2		beam trawl
rock	2	1	500	2		beam trawl
rock	2	1	501	6		E-fishing day boat
rock	2	1	30		0.50	gillnet
rock	2	1			1.00	longline
rock	3	1			1.00	longline
rock	3	1	30		0.51	gillnet
rock	3	1	281	6		E-fishing day boat
rock	4	1	350	6		E-fishing day boat
rock	4	1	30		0.53	gillnet
rock	4	1			1.00	longline
rock	5	1			1.00	longline
rock	5	1	30		0.98	gillnet
rock	5	1	505	6		E-fishing day boat
rock	6	1	295	6		E-fishing day boat
rock	6	1	30		0.99	gillnet
rock	6	1			1.00	longline
rock	7	1			1.00	longline
rock	7	1	30		1.00	gillnet
rock	7	1	400	6		E-fishing day boat
rock	8	1	410	6		E-fishing day boat
rock	8	1	30		1.01	gillnet
rock	8	1			1.00	longline
rock	9	1			1.00	longline
rock	9	1	440	6		E-fishing day boat
rock	10	1	443	6		E-fishing day boat
rock	10	1			1.00	longline
rock	11	1	429	6		E-fishing day boat
rock	12	1	391	6		E-fishing day boat
rock	13	1	602	6		E-fishing day boat
rock	14	1	422	6		E-fishing day boat
rock	15	1	401	6		E-fishing day boat
rock	16	1	91	2		E-fishing day boat
rock	17	1	134	2		E-fishing day boat
rock	18	1	94	2		E-fishing day boat
rock	19	1	104	2		E-fishing day boat

Habitat	Str. no	DG	Length [m]	Width [m]	UE	Method
rock	20	1	102	2		E-fishing day boat
rock	21	1	100	2		E-fishing day boat
rock	22	1	110	2		E-fishing day boat
rock	23	1	114	2		E-fishing day boat
rock	24	1	105	2		E-fishing day boat
rock	25	1	114	2		E-fishing day boat
rock	26	1	299	6		E-fishing night
rock	27	1	295	6		E-fishing night
rock	28	1	161	2		E-fishing night
rock	29	1	100	2		E-fishing night
rock	30	1	295	6		E-fishing night
rock	31	1	296	6		E-fishing night
rock	32	1	340	6		E-fishing night
rock	33	1	96	2		E-fishing night
rock	34	1	101	2		E-fishing night
rock	35	1	117	2		E-fishing night
undet. middle of the river	1	1	500	2		electric beam trawl
undet. middle of the river	2	1	500	2		electric beam trawl
undet. middle of the river	3	1	500	2		electric beam trawl
gravel bar	1	1	100	1.5		E-fishing night
gravel bar	2	1	100	3		E-fishing night
gravel bar	3	1	210	1.5		E-fishing day boat

Table 3: Habitat weighting used at the monitoring site Jochenstein, AT_JDS07

Habitat	%
gravel bar	10
rip-rap	90
rock	0
undet. middle of the river	0

Catch result, fish assemblage and threatening status



Pic. 3: Species ranking diagramm of catch results Danube, Jochenstein, AT_JDS07

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		2
	Danube salmon	<i>Hucho hucho</i>	I	II; V	EN	EN	1
Thymallidae	Greyling	<i>Thymallus thymallus</i>	s	V	VU	LC	
Cyprinidae	Asp	<i>Aspius aspius</i>	b	II	EN	DD	4
	Barbel	<i>Barbus barbus</i>	I	V	NT	LC	2
	Bitterling	<i>Rhodeus amarus</i>	s	II	VU	LC	
	Black Sea roach	<i>Rutilus meidingeri</i>	s	II; V	EN	EN	
	Blageon	<i>Leuciscus souffia</i>	s	II	EN	LC	
	Bleak	<i>Alburnus alburnus</i>	I	-	LC	LC	2,777
	Blue bream	<i>Abramis ballerus</i>	s	-	EN		
	Bream	<i>Abramis brama</i>	I	-	LC		2
	Carp	<i>Cyprinus carpio</i>	s	-	EN	DD	
	Chub	<i>Squalius cephalus</i>	b	-	LC	LC	13
	Crucian carp	<i>Carassius carassius</i>	s	-	EN	LC	
	Dace	<i>Leuciscus leuciscus</i>	I	-	NT	LC	4
	Danube bleak	<i>Alburnus mento</i>	s	II	LC	DD	
	Danube roach	<i>Rutilus pigus</i>	s	II; V	EN	DD	
	Danubian gudgeon	<i>Romanogobio uranoscopus</i>	s	II	CR	DD	
	Gudgeon	<i>Gobio gobio</i>	s	-	LC	LC	
	Ide	<i>Leuciscus idus</i>	I	-	EN	LC	13
	Italian barbel	<i>Barbus plebejus</i>	s	II		LC	
	Kessler's gudgeon	<i>Romanogobio kesslerii</i>	s	II	EN	DD	
	Minnow	<i>Phoxinus phoxinus</i>	s	-	NT	LC	
	Nase	<i>Chondrostoma nasus</i>	I	-	NT	LC	32
	Prussian carp	<i>Carassius gibelio</i>	s	-	LC		
	Roach	<i>Rutilus rutilus</i>	b	-	LC	LC	142
	Rudd	<i>Scardinius erythrophthalmus</i>	s	-	LC	LC	9
	Sabre carp	<i>Pelecus cultratus</i>	s	II; V	NT	DD	
	Spirlin	<i>Alburnoides bipunctatus</i>	s	-	LC	LC	1
	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	4
	White bream	<i>Blicca bjoerkna</i>	b	-	LC	LC	
	White-finned gudgeon	<i>Romanogobio vladykovi</i>	b	II	LC	DD	1
Esocidae	Pike	<i>Esox lucius</i>	b	-	NT		4
Gadidae	Burbot	<i>Lota lota</i>	b	-	VU		3
Percidae	Danube ruffe	<i>Gymnocephalus baloni</i>	s	II; IV	VU	DD	
	Perch	<i>Perca fluviatilis</i>	b	-	LC	LC	52
	Pikeperch	<i>Sander lucioperca</i>	b	-	NT	LC	3
	Ruffe	<i>Gymnocephalus cernuus</i>	s	-	LC	LC	1
	Schraetser	<i>Gymnocephalus schraetser</i>	b	II; V	VU	VU	88
	Streber	<i>Zingel streber</i>	b	II	EN	VU	2
	Zingel	<i>Zingel zingel</i>	b	II; V	VU	VU	7
Siluridae	Wels catfish	<i>Silurus glanis</i>	b	-	VU	LC	

Family	English name	Scient. name of species	Reference fish assemblage	FFH	Red List	IUCN	Count
Cottidae	Bullhead	<i>Cottus gobio</i>	s	II	NT	LC	
Cobitidae	Spined loach	<i>Cobitis taenia</i>	s	II	VU	LC	
	Weatherfish	<i>Misgurnus fossilis</i>	s	II	CR	NT	
Balitoridae	Danube bream	<i>Abramis sapa</i>	b	-	EN		12
	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	
	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	
Gobiidae	Bighead goby	<i>Neogobius kessleri</i>		-	NE	DD	3
	Round goby	<i>Neogobius melanostomus</i>		-	NE	DD	473
Anguillidae	Eel	<i>Anguilla anguilla</i>		-	RE		91

Observed:: reference fish assemblage 24Taxa :: 55Taxa

Taxa complete 27

Count species of reference fish assemblage 3,179

Total count 3,746

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)

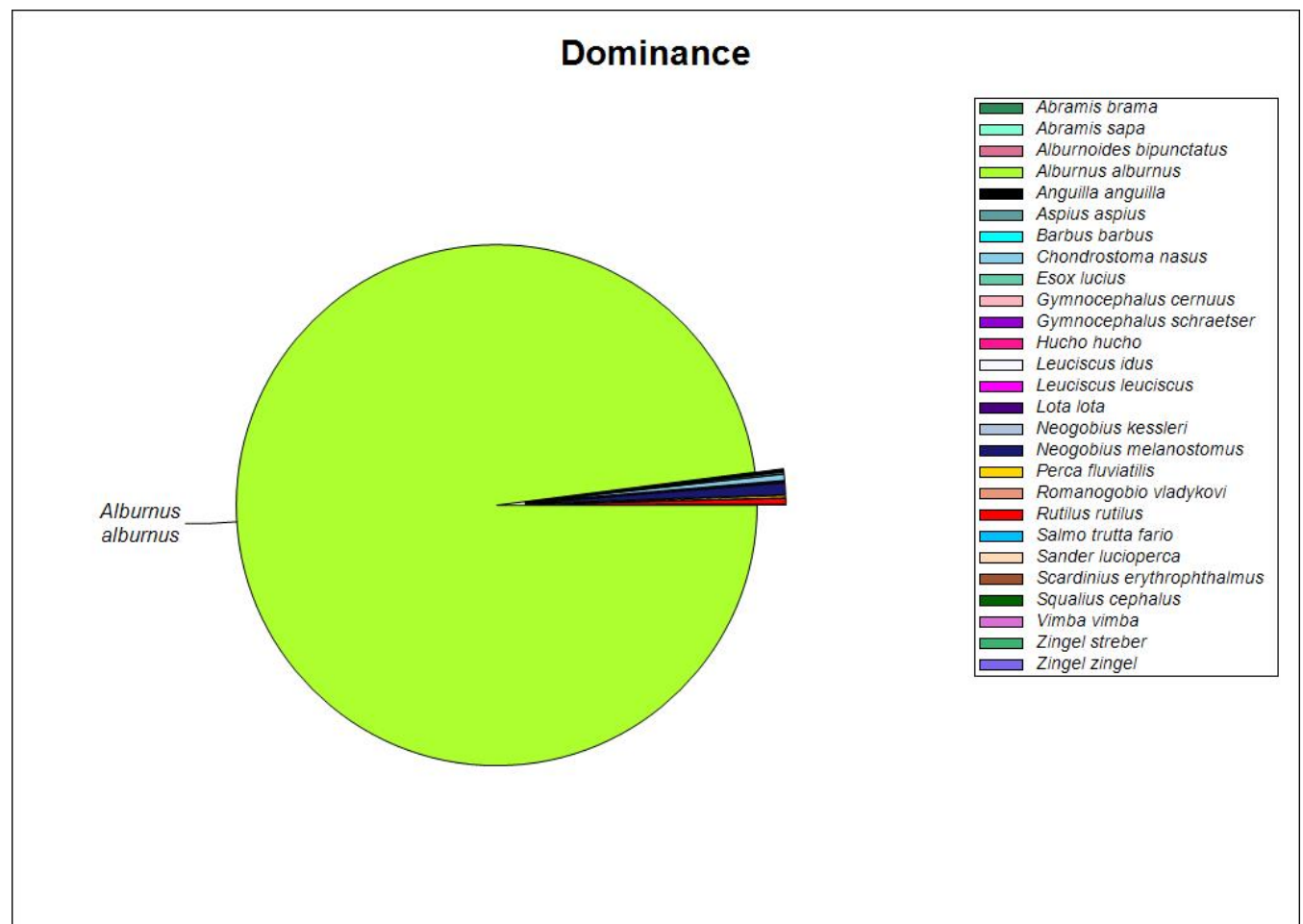
- II Species listed in Annex II of the FFH- Directive (nature reserves have to be set out for this species)
- IV Species listed in Annex IV of the FFH- Directive (strict protection of animals and plants)
- V Species listed in Annex V of the FFH- Directive (species whose collection and use is subject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

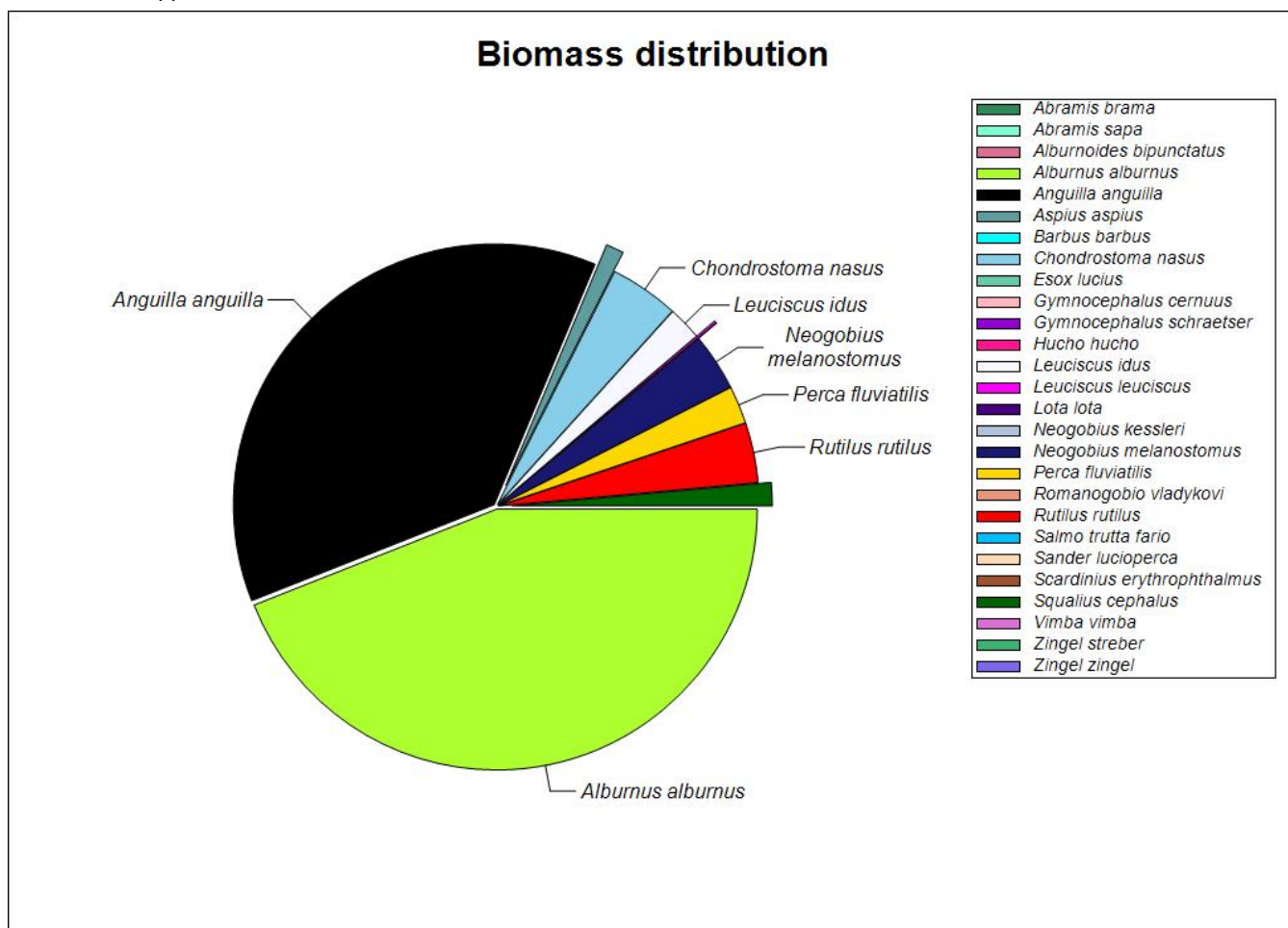
Abundance and biomass

Table 5: abundance and biomass (e-fishings) Danube, Jochenstein, AT_JDS07, 8/16/2013

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	4	16.9		0.3		12.9	16.1	4	b
Barbel	BAR-BAR	2	0.0		0.0	0.0	20.8	0.0	4	I
Bighead goby	NEO-KES	3	2.4		0.0		8.7	4.4	4	
Bleak	ALB-ALB	2,777	13,706.0		10.8		4.6	0.8	1	I
Bream	ABR-BRA	2	0.0		0.0	0.0	35.5	0.0	4	I
Brown trout	SAL-TFF	2	0.0		0.0	0.0	21.0	0.0	4	s
Burbot	LOT-LOT	3	0.0		0.0	0.0	28.5	0.0	4	b
Chub	SQU-CEP	13	3.8		0.4		19.3	93.5	4	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
Dace	LEU-LEU	4	5.3		0.0		5.5	6.4	4	l
Danube bream	ABR-SAP	12	0.0		0.0	0.0	25.3	0.0	3	b
Danube salmon	HUC-HUC	1	0.0		0.0	0.0	20.0	0.0	4	l
Eel	ANG-ANG	91	24.2		9.2		58.8	379.9	4	
Ide	LEU-IDU	13	5.3		0.5		20.3	97.2	3	l
Nase	CHO-NAS	32	52.9		1.1		10.5	19.9	3	l
Perch	PER-FLU	52	21.3		0.6		14.9	27.1	2	b
Pike	ESO-LUC	4	0.0		0.0	0.0	25.0	0.0	3	b
Pikeperch	SAN-LUC	3	0.0		0.0	0.0	26.7	0.0	3	b
Roach	RUT-RUT	142	51.4		0.9		15.7	17.8	2	b
Round goby	NEO-MEL	473	100.3		0.9		8.2	8.7	1	
Rudd	SCA-ERY	9	0.0		0.0	0.0	11.1	0.0	3	s
Ruffe	GYM-CER	1	0.0		0.0	0.0	12.5	0.0	4	s
Schraetser	GYM-SCH	88	0.0		0.0	0.0	14.1	0.0	2	b
Spirlin	ALB-BIP	1	0.0		0.0	0.0	10.5	0.0	4	s
Streber	ZIN-STR	2	0.0		0.0	0.0	14.5	0.0	4	b
Vimba bream	VIM-VIM	4	0.0		0.0	0.0	26.9	0.0	4	b
White-finned gudgeon	ROM-VLA	1	0.0		0.0	0.0	12.0	0.0	4	b
Zingel	ZIN-ZIN	7	0.0		0.0	0.0	24.4	0.0	3	b
24 species of 55		Total	3,746	13,989.8		24.6				





Pic. 4: Dominance und Biomass distribution

Shannon-Index: 1.041

Equitability: 0.316

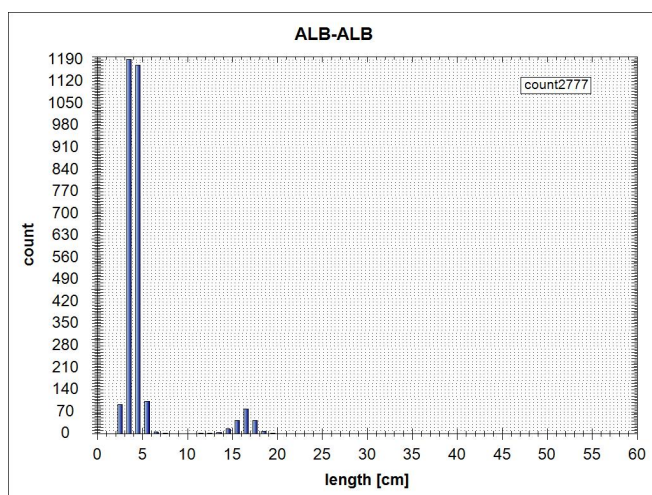
Biometrics and catch rate

Table 6: biometrics of each species and catch specific parameters

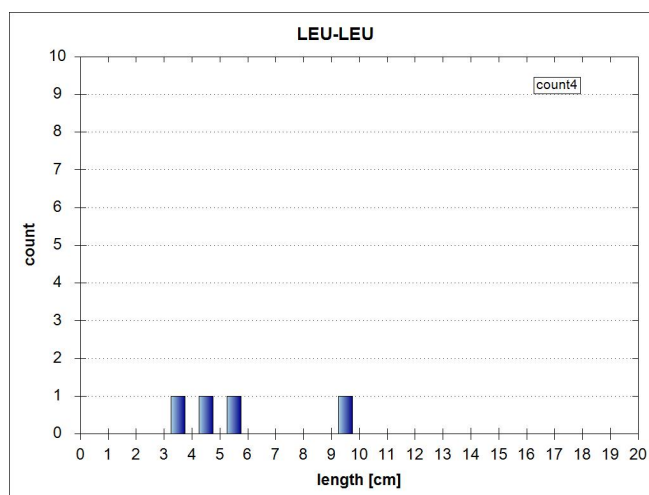
Fish species	Lt [cm]			Statist.	Catch-	Catch-effectivity			
	Min		Max	n	Method	Probability [%]	Min	MW	Max
Asp	10.0	12.9	18.0	4			0.30	0.56	0.75
Barbel	4.0	20.8	37.5	2			0.70	0.70	0.70
Bighead goby	5.5	8.7	13.5	3			0.10	0.53	0.80
Bleak	2.0	4.6	21.0	2,777			0.01	0.23	1.00
Bream	30.0	35.5	41.0	2			0.75	0.75	0.75
Brown trout	17.0	21.0	25.0	2			1.00	1.00	1.00
Burbot	26.5	28.5	31.5	3			0.50	0.83	1.00
Chub	2.5	19.3	27.5	13			0.15	0.38	1.00
Dace	3.0	5.5	9.0	4			0.10	0.28	0.60
Danube bream	17.5	25.3	37.0	12			0.70	0.70	0.70
Danube salmon	20.0	20.0	20.0	1			1.00	1.00	1.00
Eel	24.0	58.8	85.0	91			0.25	0.95	1.00
Ide	15.5	20.3	27.5	13			0.50	0.67	1.00
Nase	4.5	10.5	19.5	32			0.10	0.49	1.00
Perch	7.0	14.9	25.0	52			0.10	0.59	1.00
Pike	16.0	25.0	42.5	4			0.50	0.67	1.00

Fish species	Lt [cm]		n	Statist.	Catch-	Catch-effectivity		
	Min	Max		Method	Probability [%]	Min	MW	Max
Pikeperch	14.0	26.7	37.5	3		0.30	0.50	0.70
Roach	3.5	15.7	30.0	142		0.10	0.61	1.00
Round goby	2.5	8.2	14.5	473		0.10	0.54	0.90
Rudd	9.5	11.1	13.5	9		0.75	0.81	1.00
Ruffe	12.5	12.5	12.5	1		0.60	0.60	0.60
Schraetser	8.0	14.1	22.5	88		0.30	0.69	0.80
Spirlin	10.5	10.5	10.5	1		0.80	0.80	0.80
Streber	13.5	14.5	15.5	2		0.70	0.70	0.70
Vimba bream	23.2	26.9	33.5	4		0.70	0.70	0.70
White-finned gudgeon	12.0	12.0	12.0	1		0.70	0.70	0.70
Zingel	6.0	24.4	32.5	7		0.70	0.70	0.70
27 species		Sum	3,746					

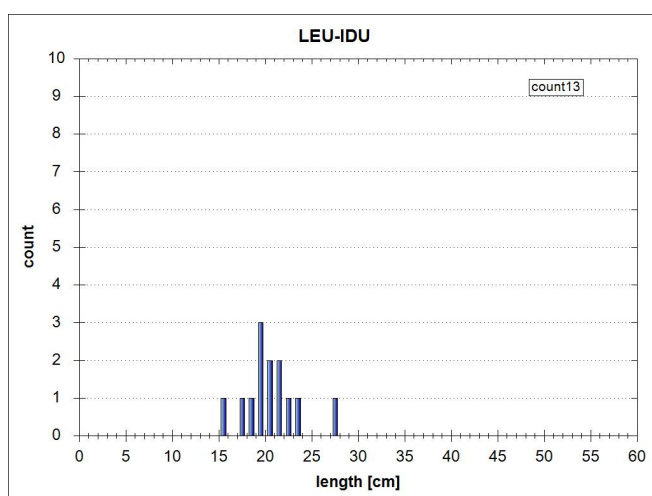
Population structure of dominant species and subdominant species (total catch)



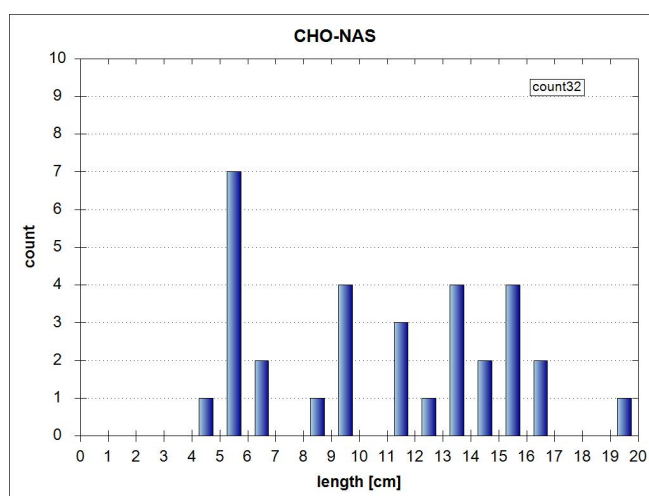
Bleak (*Alburnus alburnus*), 1



Dace (*Leuciscus leuciscus*), 4

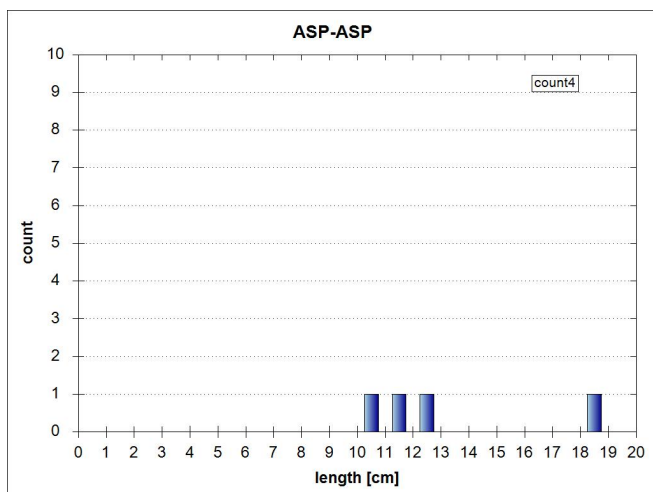
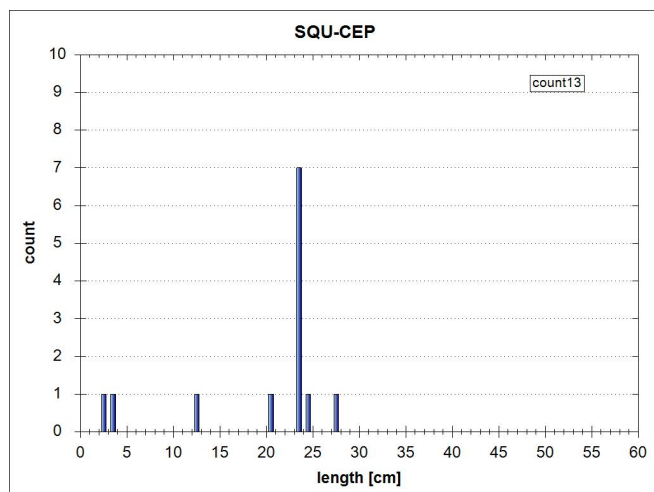
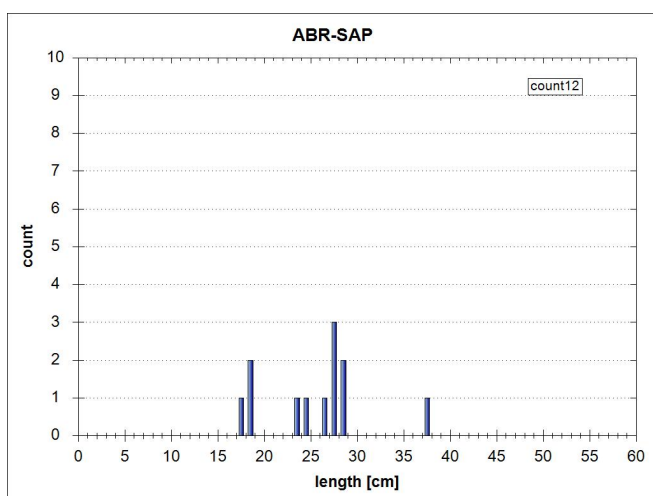
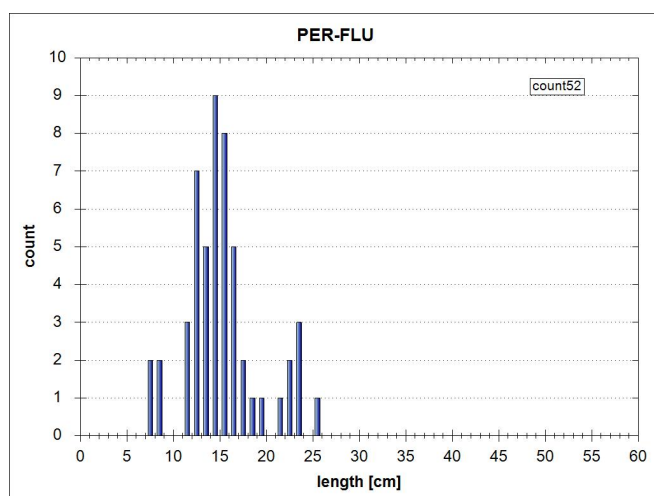
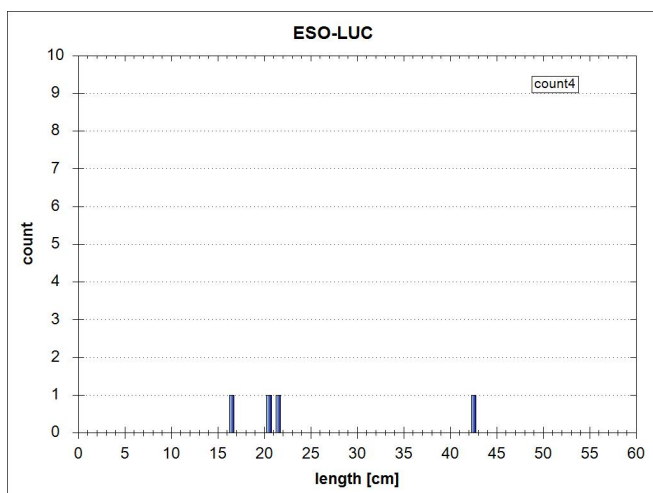
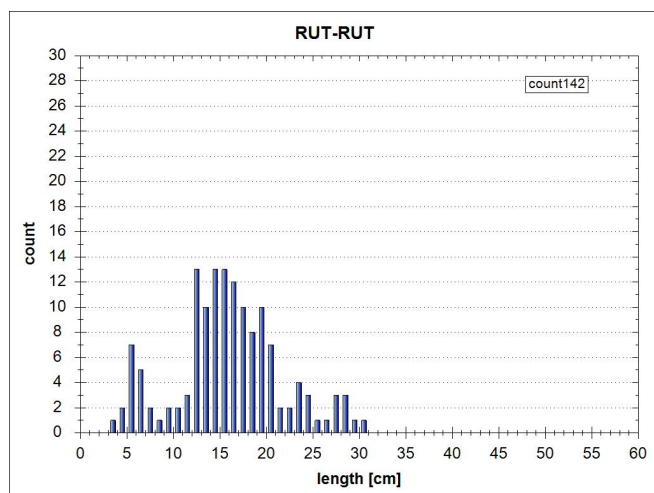


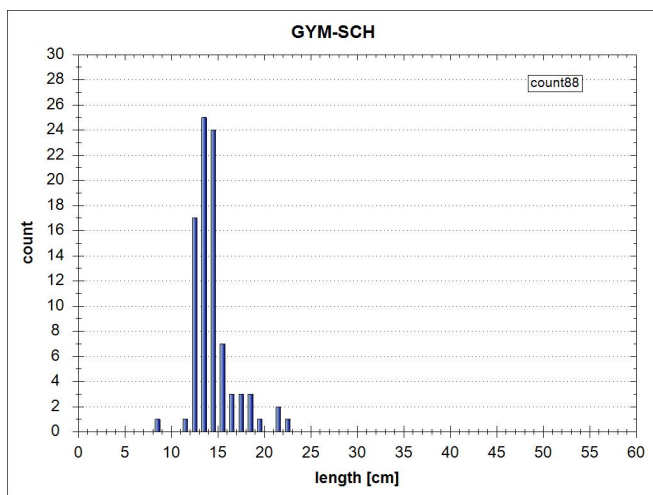
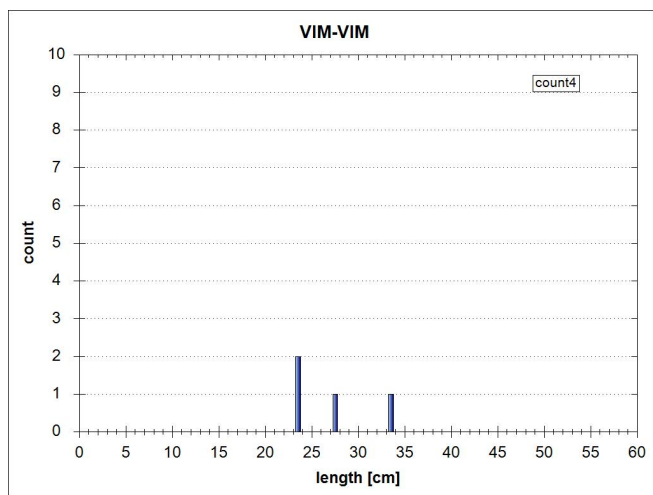
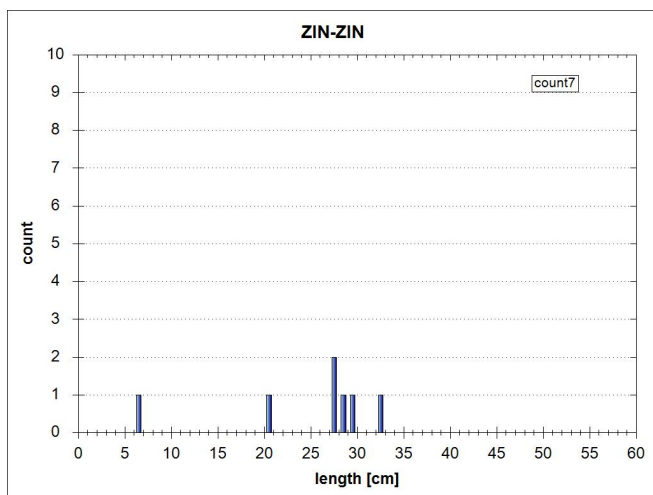
Ide (*Leuciscus idus*), 3



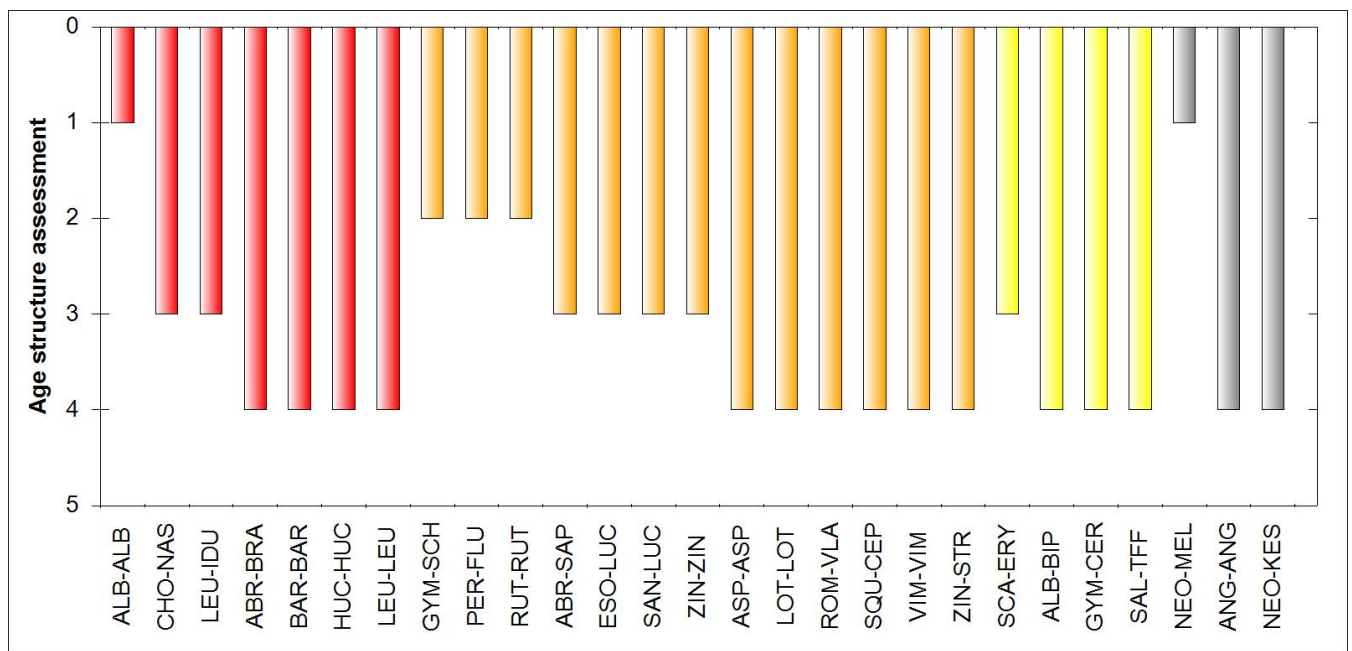
Nase (*Chondrostoma nasus*), 3

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

Asp (*Aspius aspius*), 4Chub (*Squalius cephalus*), 4Danube bream (*Abramis sapo*), 3Perch (*Perca fluviatilis*), 2Pike (*Esox lucius*), 3Roach (*Rutilus rutilus*), 2

Schraetser (*Gymnocephalus schraetser*), 2Vimba bream (*Vimba vimba*), 4Zingel (*Zingel zingel*), 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, Jochenstein, AT_JDS07, 8/16/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	13,862.8	14.6		ko-crit	5
1. Species	Reference fish assemblage	actual (current)	Ratio/Deviation	Partial rating	
Species					
Dominant species	7	7	100%	1.0	
Subdominant species	15	13	87%	1.0	
Rare species	33	4	12%	3.0	
				1.7	
Ecological guilds					
Flow	6	5	1	2.0	
Reproduction	7	4	3	4.0	
				3.0	
Species diversity & guilds overall					1.7
2. Dominance	Reference fish assemblage	actual (current)	Difference		
Fish region index	6.2	6.4	0.2		1.0
3. Population structure	Reference fish assemblage	actual (current)		Partial rating (1-5)	
Dominant species	7	7		3.3	
Subdominant species	15	13		3.5	
					3.3
Fishindex Austria without active ko-criterion					2.40
Biological quality element fish		FIA 5.00	Class 5	Bad	

Date of Assessment:3/19/2014

Comment BAW-IGF

- no comment -

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

Recommended improvements with priority ranking if possible;