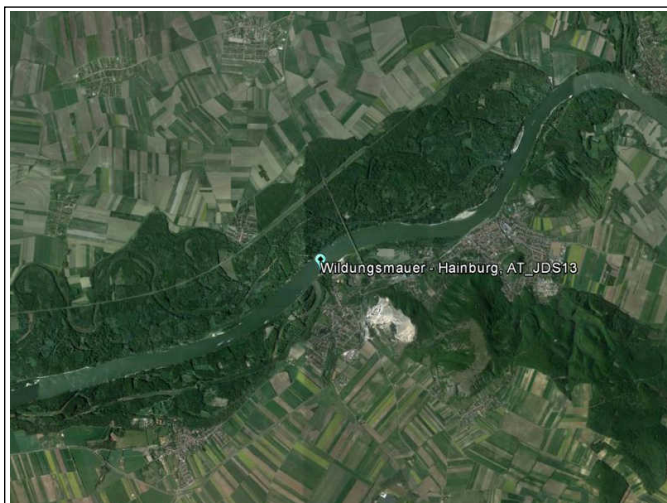


Danube**Wildungsmauer - Hainburg, AT_JDS13 (FW31000377), 22.August 2013**

FDA_ID 187



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



Pic. 2: Monitoring site Wildungsmauer - Hainburg, AT_JDS13

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

Biological quality element fish	No action required (2)
---------------------------------	------------------------

Ecological status class, current survey, 22.August 2013

Biological quality element fish	FIA 3.07	Class 3	Moderate
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Former classifications

Aug. 2007	28	FIA 2.73	Class 3	Moderate
None				
None				

Information about and sampling conditions and location

Table 1: Key data and information on sampling, monitoring site Wildungsmauer - Hainburg, AT_JDS13

Watercourse name	Danube	Federal state	Lower Austria
Monitoring site	Wildungsmauer - Hainburg, AT_JDS13	District	
Monitoring site number	FW31000377	Community	
Turnus number		Longitude (WGS 84, decimal) O	16.90017
sampling number		Latitude (WGS 84, decimal) N	48.14268
Survey-ID (FDA)	187	Route-ID	
Date	8/22/2013	River-km [monitoring site]	
Contracting authority	ICPDR	Number of planing area	
Contractor	BAW-IGF	Detail waterbody	4113400
Project manager	Vinzenz Bammer		
Reason of survey	JDS 3		
Fishing category			
Bioregion	Danube	Waters ordinal number	
Fish bioregion	Lower Alpine Foothills Danube (2001-1789,5) (4)	Huet-zonation	barbel zone
Biocenotic Region	Epipotamon large	Adapt. Reference	99
River km from	1,894.0	Altitude [m.a.s]	139
River km to	1,880.0	Ø catchment basin [km²]	110,000
Section length [m]	14,000	Catchment-class	more than 10.000km²
Ø channel width [m]	350	Slope [‰]	0.5
Original stream character	lowland stream -river	Discharge regime	
Actual site character			
Actual impact		Reference watergauge (name, number)	
Flow [semiquant.]		Distance from source [km]	951.0
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]	300	Flow condition	
pH-value		Visible depth	
SBV		Fishing conditions	
Water temperature [°C] (F117)	19.6	Average annual air temperature [°C]	9.8
Conductance, 25°C [µS/cm] (F118)	380		
Methods used and effort			
Strip-fishing, day		Number of runs	1
Fished length [m]	2,910	E-devices output [kW]	11
Fished area [m²]	8,370	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	4,088		

Comments on survey:

Steigender Wasserstand

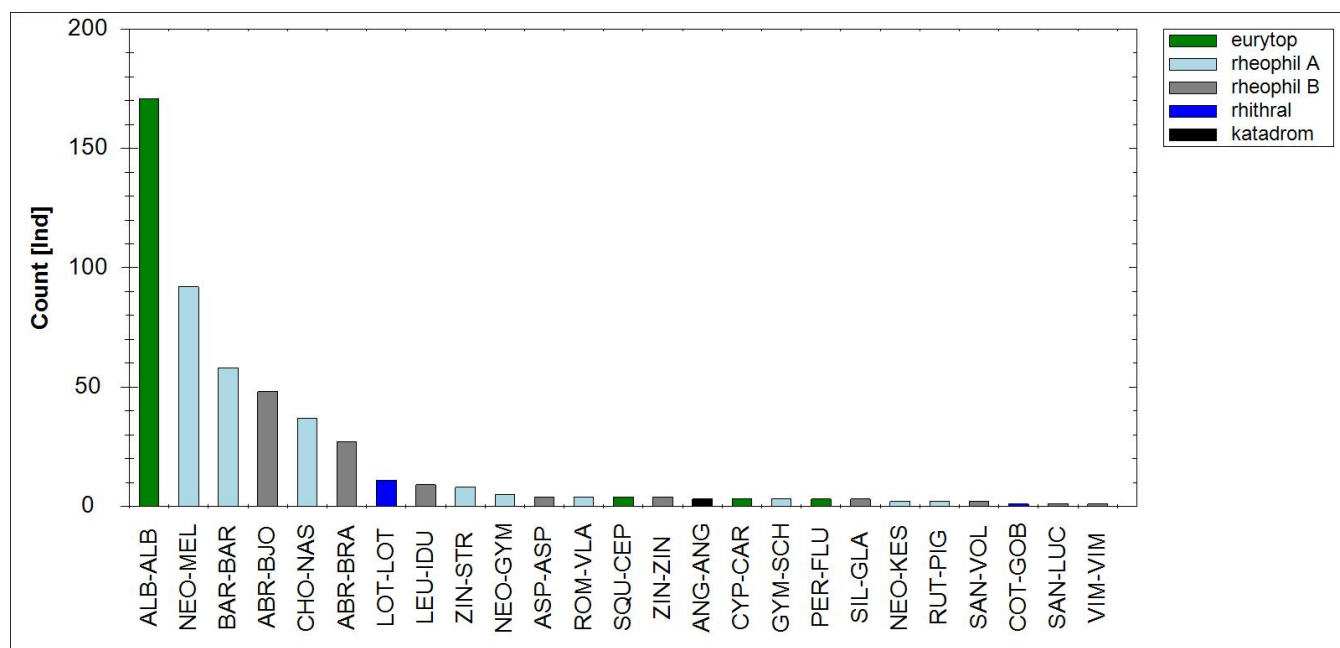
Table 2: Sampling effort at the monitoring site Wildungsmauer - Hainburg, AT_JDS13, August 2013

Habitat	Str. no	DG	Length [m]	Width [m]	UE	Method
rip-rap	4	1	100	1.5		E-fishing day boat
rip-rap	5	1	140	1.5		E-fishing day boat
rip-rap	10	1	400	3		E-fishing day boat
rip-rap	11	1	200	3		E-fishing night
rip-rap	12	1	400	3		E-fishing night
rip-rap	15	1	85	1.5		E-fishing night
groin	1	1	280	3		E-fishing day boat
groin	2	1	200	3		E-fishing day boat
groin	3	1	250	3		E-fishing day boat
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	250	2		electric beam trawl
undet. middle of the river	19	1	500	2		electric beam trawl
undet. middle of the river	20	1	450	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	100	2		electric beam trawl
gravel bar	6	1	240	3		E-fishing day boat
gravel bar	7	1	500	3		E-fishing day boat
gravel bar	8	1	400	3		E-fishing day boat
gravel bar	9	1	400	3		E-fishing day boat
gravel bar	13	1	420	3		E-fishing night
gravel bar	14	1	300	3		E-fishing night

Table 3: Habitat weighting used at the monitoring site Wildungsmauer - Hainburg, AT_JDS13

Habitat	%
gravel bar	25
groin	25
rip-rap	50
undet. middle of the river	0

Catch result, fish assemblage and threatening status



Pic. 3: Species ranking diagram of catch results Danube, Wildungsmauer - Hainburg, AT_JDS13

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		
	Danube salmon	<i>Hucho hucho</i>	I	II; V	EN	EN	
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	58
	Bitterling	<i>Rhodeus amarus</i>	b	II	VU	LC	
	Blageon	<i>Leuciscus souffia</i>	s	II	EN	LC	
	Bleak	<i>Alburnus alburnus</i>	I	-	LC	LC	171
	Blue bream	<i>Abramis ballerus</i>	b	-	EN		
	Bream	<i>Abramis brama</i>	I	-	LC		27
	Carp	<i>Cyprinus carpio</i>	s	-	EN	DD	3
	Chub	<i>Squalius cephalus</i>	b	-	LC	LC	4
	Crucian carp	<i>Carassius carassius</i>	b	-	EN	LC	
	Dace	<i>Leuciscus leuciscus</i>	I	-	NT	LC	
	Danube bleak	<i>Alburnus mento</i>	s	II	LC	DD	
	Danube roach	<i>Rutilus pigus</i>	s	II; V	EN	DD	2
	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	9
	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	37
	Prussian carp	<i>Carassius gibelio</i>	b	-	LC		
	Roach	<i>Rutilus rutilus</i>	b	-	LC	LC	
	Rudd	<i>Scardinius erythrophthalmus</i>	s	-	LC	LC	
	Sabre carp	<i>Pelecus cultratus</i>	s	II; V	NT	DD	
	Spirlin	<i>Alburnoides bipunctatus</i>	s	-	LC	LC	
	Sunbleak	<i>Leucaspisus delineatus</i>	s	-	EN	LC	
	Tench	<i>Tinca tinca</i>	s	-	VU	LC	
	Vimba bream	<i>Vimba vimba</i>	b	-	VU	LC	1
	White bream	<i>Blicca bjoerkna</i>	b	-	LC	LC	48
	White-finned gudgeon	<i>Romanogobio vladkovii</i>	b	II	LC	DD	4
Esocidae	Pike	<i>Esox lucius</i>	I	-	NT		
Gadidae	Burbot	<i>Lota lota</i>	b	-	VU		11
Percidae	Danube ruffe	<i>Gymnocephalus baloni</i>	s	II; IV	VU	DD	
	Perch	<i>Perca fluviatilis</i>	b	-	LC	LC	3
	Pikeperch	<i>Sander lucioperca</i>	b	-	NT	LC	1
	Ruffe	<i>Gymnocephalus cernuus</i>	s	-	LC	LC	
	Schraetser	<i>Gymnocephalus schraetser</i>	b	II; V	VU	VU	3
	Streber	<i>Zingel streber</i>	b	II	EN	VU	8
	Volga pikeperch	<i>Sander volgensis</i>	s	-	EN	DD	2
	Zingel	<i>Zingel zingel</i>	b	II; V	VU	VU	4
Siluridae	Wels catfish	<i>Silurus glanis</i>	b	-	VU	LC	3

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	1
Cobitidae	Balkan loach	<i>Sabanejewia balcanica</i>	s	II	EN	DD	
	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		
	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	
Clupeidae	European mud-minnow	<i>Umbra krameri</i>	s	II	CR	VU	
Gobiidae	Bighead goby	<i>Neogobius kessleri</i>		-	NE	DD	2
	Racer goby	<i>Neogobius gymnotrachelus</i>		-	NE	DD	5
	Round goby	<i>Neogobius melanostomus</i>		-	NE	DD	92
Anguillidae	Eel	<i>Anguilla anguilla</i>		-	RE		3

Observed:: reference fish assemblage 21Taxa :: 57Taxa

Taxa complete 25

Count species of reference fish assemblage 404

Total count 506

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, Wildungsmauer - Hainburg, AT_JDS13, 8/22/2013

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	4	4.4		4.9		54.0	1,118.2	4	b
Barbel	BAR-BAR	58	35.6		11.7		43.8	327.1	3	I
Bighead goby	NEO-KES	2	5.5		0.1		13.3	21.9	4	
Bleak	ALB-ALB	171	529.6		2.5		7.4	4.7	1	I

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
Bream	ABR-BRA	27	32.3		43.3		45.2	1,337.8	3	l
Bullhead	COT-GOB	1	0.0		0.0	0.0	3.7	0.0	4	s
Burbot	LOT-LOT	11	13.7		6.1		37.5	443.4	3	b
Carp	CYP-CAR	3	0.0		0.0	0.0	42.0	0.0	4	s
Chub	SQU-CEP	4	11.8		0.4		11.9	35.3	4	b
Danube roach	RUT-PIG	2	3.9		5.6		49.3	1,418.8	4	s
Eel	ANG-ANG	3	8.2		6.4		74.0	778.0	4	
Idel	LEU-IDU	9	22.1		13.7		37.8	620.7	3	l
Nase	CHO-NAS	37	25.8		21.7		29.2	837.9	3	l
Perch	PER-FLU	3	9.6		0.2		19.2	23.6	4	b
Pikeperch	SAN-LUC	1	0.0		0.0	0.0	5.6	0.0	4	b
Racer goby	NEO-GYM	5	0.0		0.0	0.0	3.8	0.0	4	
Round goby	NEO-MEL	92	432.7		5.5		8.8	12.7	1	
Schraetser	GYM-SCH	3	0.0		0.0	0.0	9.2	0.0	4	b
Streber	ZIN-STR	8	0.0		0.0	0.0	9.6	0.0	3	b
Vimba bream	VIM-VIM	1	0.0		0.0	0.0	11.0	0.0	4	b
Volga pikeperch	SAN-VOL	2	0.0		0.0	0.0	4.3	0.0	4	s
Wels catfish	SIL-GLA	3	8.2		1.4		54.5	167.3	3	b
White bream	ABR-BJO	48	5.5		0.0		11.4	7.3	1	b
White-finned gudgeon	ROM-VLA	4	0.0		0.0	0.0	13.1	0.0	4	b
Zingel	ZIN-ZIN	4	11.0		0.7		18.0	61.3	4	b

21 species of 57

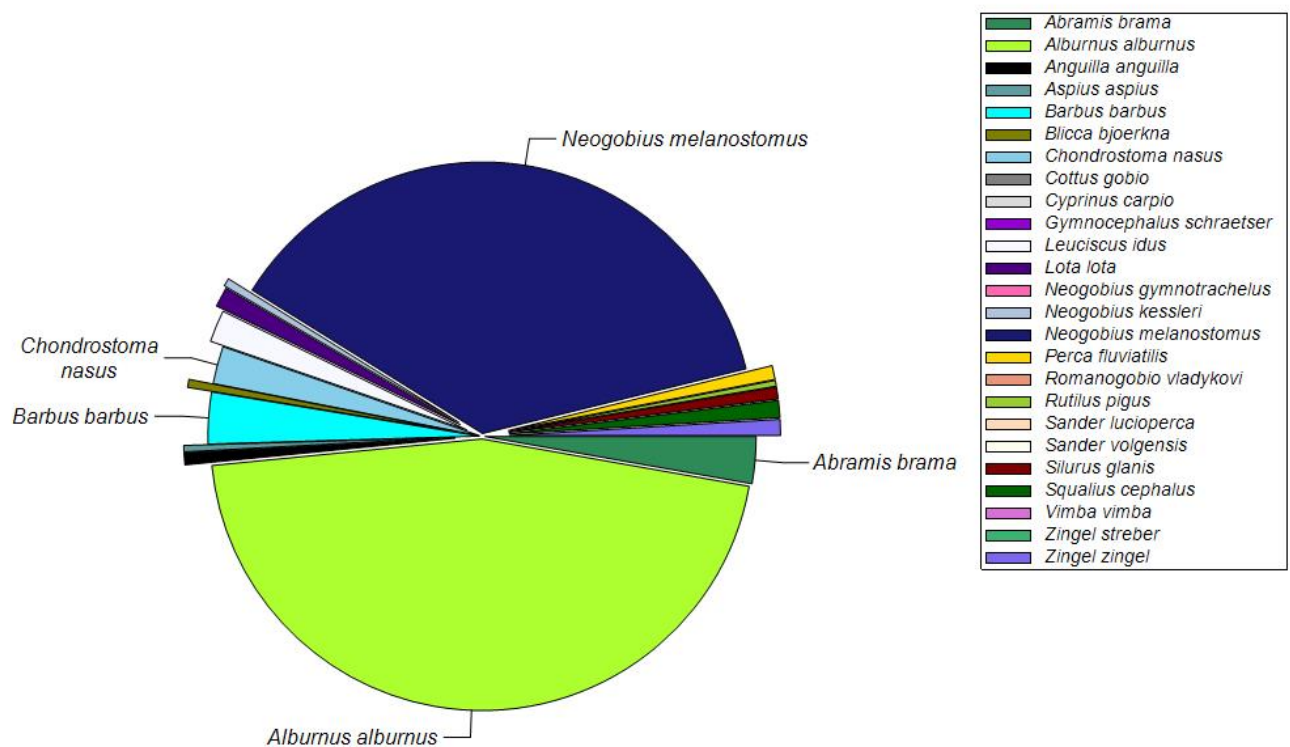
Total

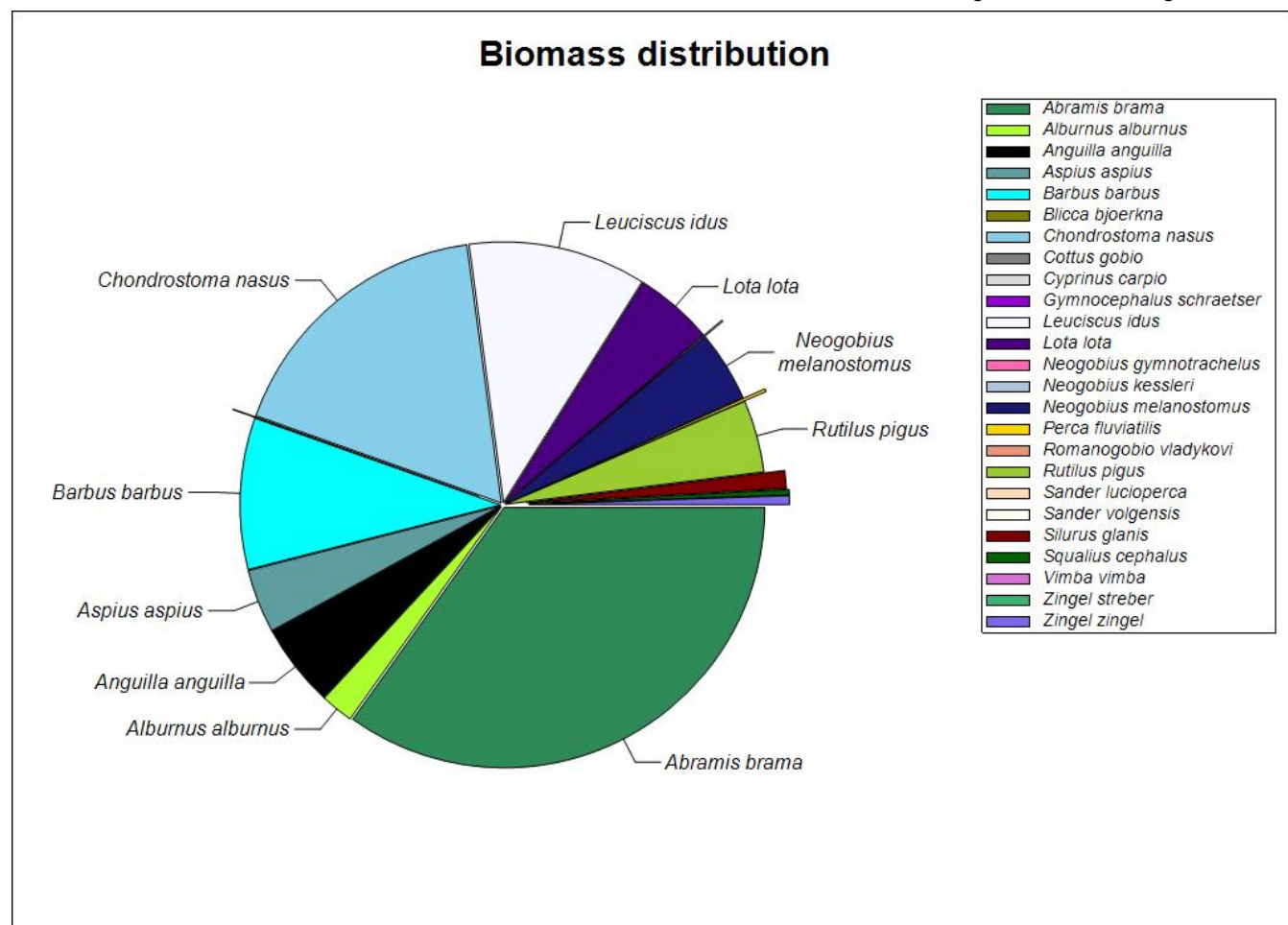
506

1,159.9

124.1

Dominance





Pic. 4: Dominance und Biomass distribution

Shannon-Index: 2.170

Equitability: 0.674

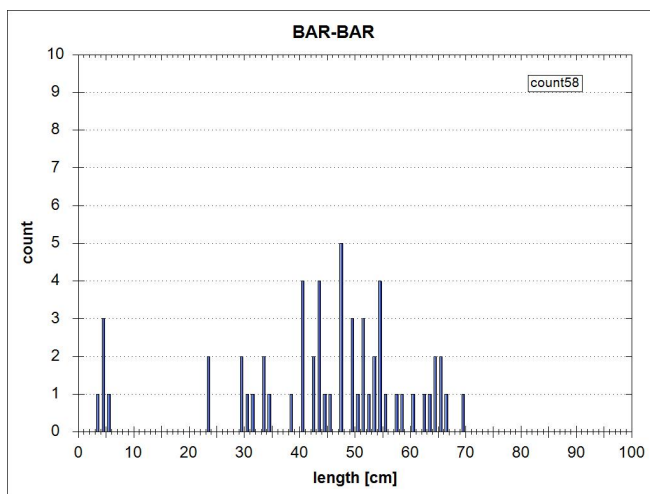
Biometrics and catch rate

Table 6: biometrics of each species and catch specific parameters

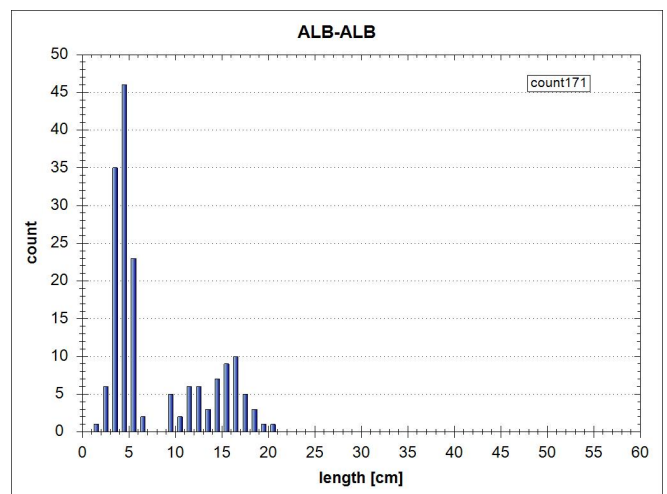
Fish species	Lt [cm]			n	Statist. Method	Catch-Probability [%]	Catch-effectivity		
	Min	Max					Min	MW	Max
Asp	32.5	54.0	63.0	4			0.50	0.75	1.00
Barbel	3.7	43.8	69.0	58			0.20	0.37	0.75
Bighead goby	13.0	13.3	13.5	2			0.40	0.45	0.50
Bleak	1.7	7.4	20.0	171			0.10	0.39	1.00
Bream	27.0	45.2	54.0	27			0.20	0.54	0.70
Bullhead	3.7	3.7	3.7	1			0.70	0.70	0.70
Burbot	30.0	37.5	44.0	11			0.40	0.47	1.00
Carp	13.0	42.0	59.0	3			0.20	0.37	0.70
Chub	4.5	11.9	16.0	4			0.40	0.62	0.70
Danube roach	48.0	49.3	50.5	2			0.50	0.50	0.50
Eel	65.0	74.0	82.0	3			1.00	1.00	1.00
Ide	8.0	37.8	55.0	9			0.20	0.30	0.66
Nase	19.0	29.2	54.0	37			0.30	0.48	0.70
Perch	8.0	19.2	30.5	3			0.30	0.67	1.00
Pikeperch	5.6	5.6	5.6	1			0.70	0.70	0.70
Racer goby	2.3	3.8	7.2	5			0.70	0.70	0.70

Fish species	Lt [cm]			n	Statist.	Catch-	Catch-effectivity		
	Min		Max		Method	Probability [%]	Min	MW	Max
Round goby	1.6	8.8	13.0	92			0.40	0.50	0.70
Schraetser	6.5	9.2	14.0	3			0.40	0.60	0.70
Streber	4.4	9.6	17.3	8			0.70	0.70	0.70
Vimba bream	11.0	11.0	11.0	1			0.20	0.20	0.20
Volga pikeperch	4.0	4.3	4.6	2			0.70	0.70	0.70
Wels catfish	6.5	54.5	116.0	3			0.50	0.83	1.00
White bream	2.9	11.4	20.5	48			0.20	0.42	0.70
White-finned gudgeon	12.0	13.1	14.5	4			0.40	0.48	0.70
Zingel	8.0	18.0	24.0	4			0.40	0.66	0.75
25 species			Sum	506					

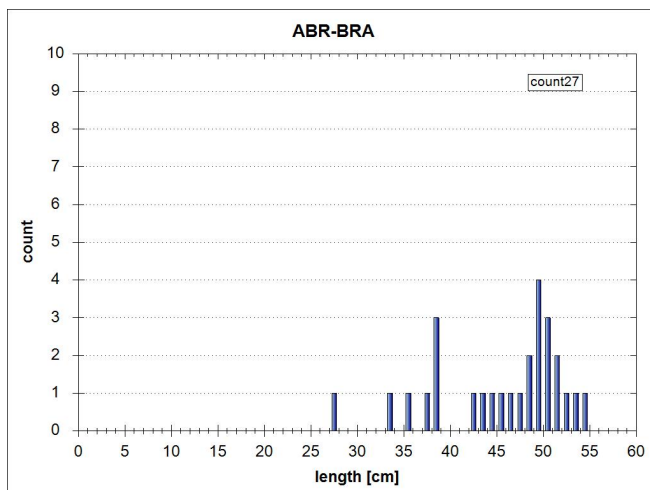
Population structure of dominant species and subdominant species (total catch)



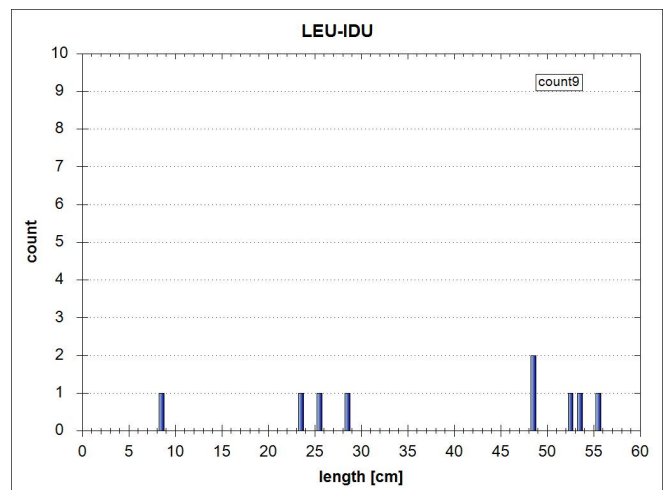
Barbel (*Barbus barbus*), 3



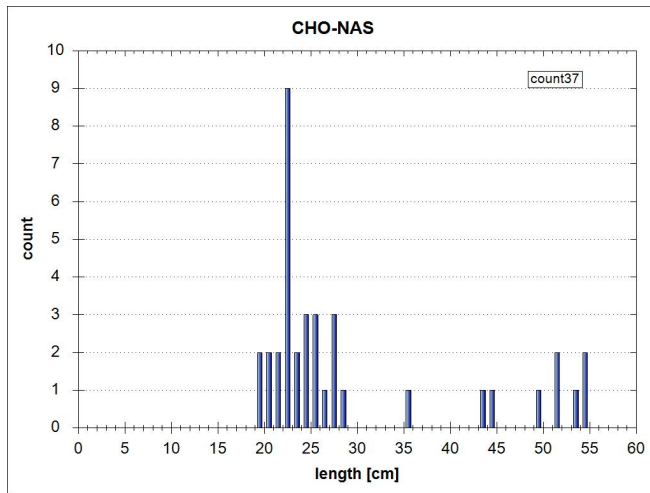
Bleak (*Alburnus alburnus*), 1



Bream (*Abramis brama*), 3

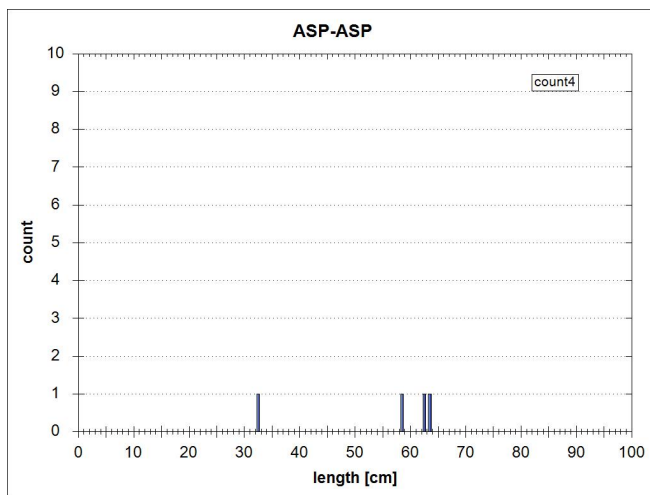


Ide (*Leuciscus idus*), 3

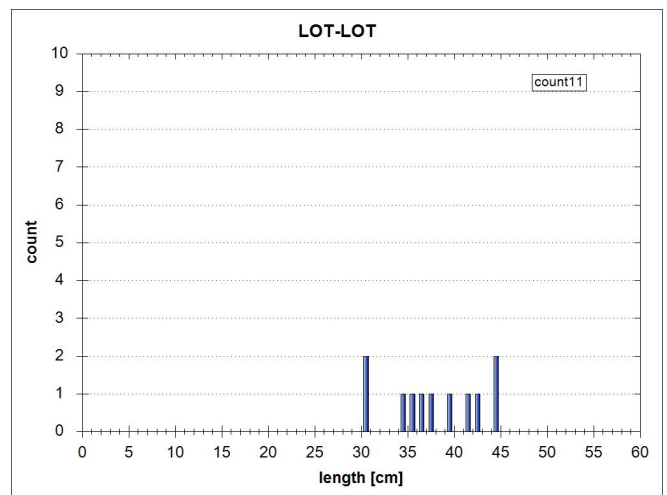


Nase (*Chondrostoma nasus*), 3

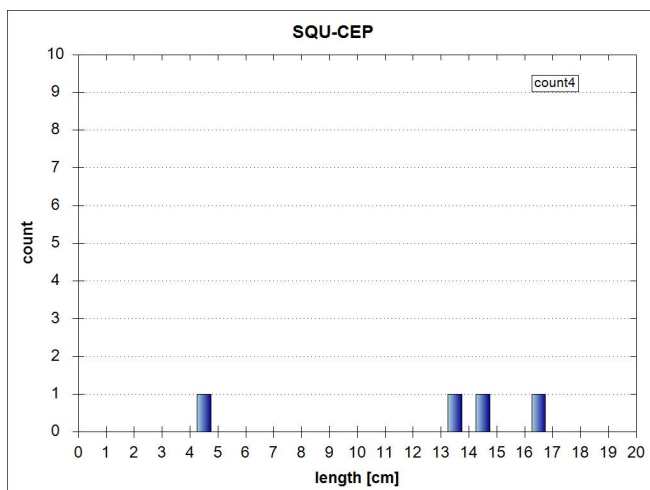
Pic. 5: Length-frequency diagram of dominant species (n>3), Aug. 2013



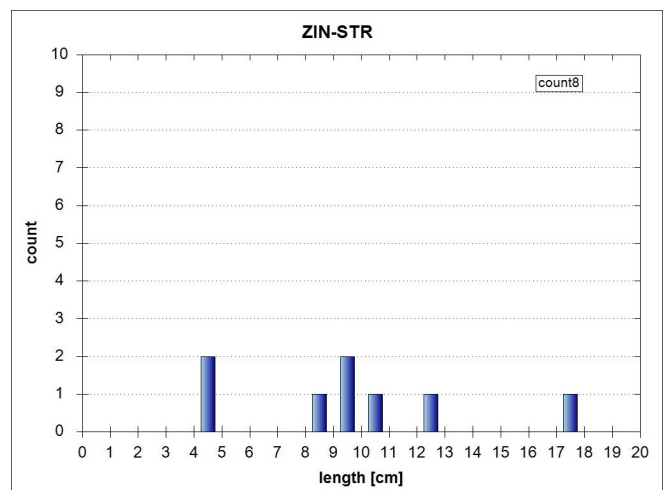
Asp (*Aspius aspius*), 4



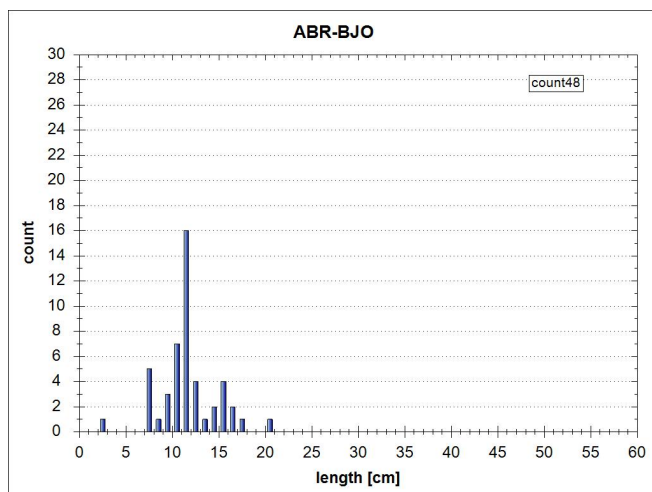
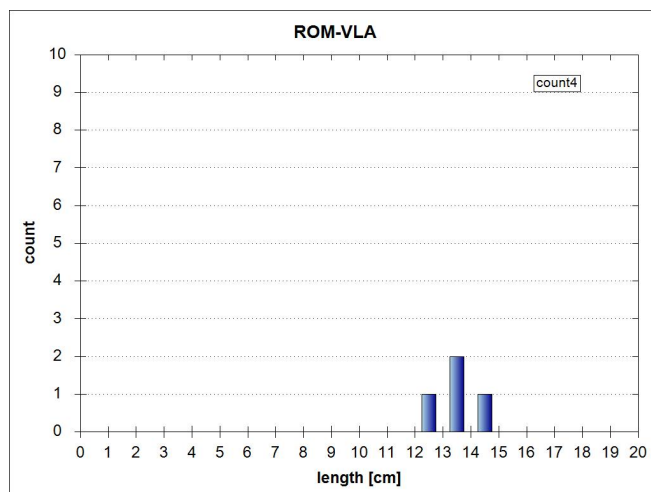
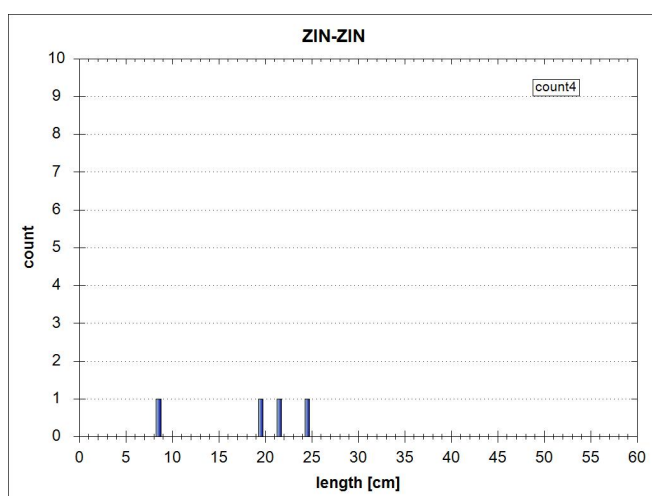
Burbot (*Lota lota*), 3



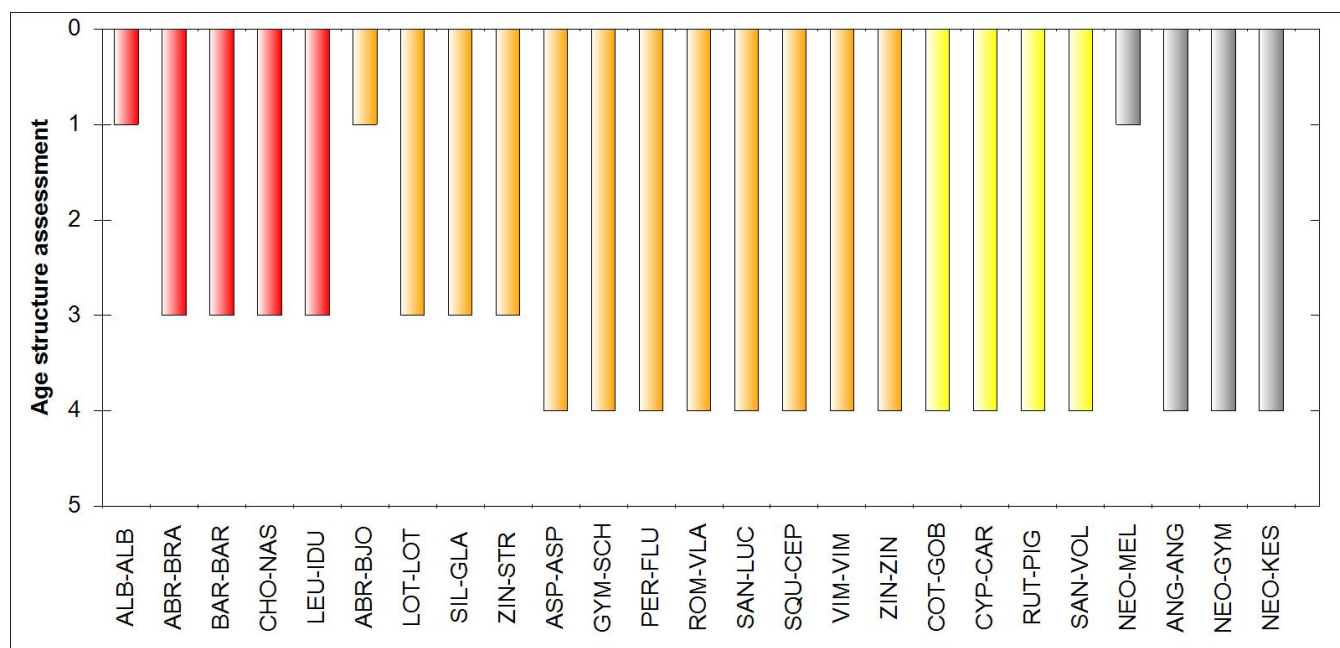
Chub (*Squalius cephalus*), 4



Streber (*Zingel streber*), 3

White bream (*Blicca bjoerkna*), 1White-finned gudgeon (*Romanogobio vladkovi*), 4Zingel (*Zingel zingel*), 4

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, Wildungsmauer - Hainburg, AT_JDS13, 8/22/2013

Rating					
Stock data	Abundance Ind/ha	Biomass kg/ha			ko-criterion biomass
	713.6	112.1			OK

1. Species	Reference fish assemblage	actual (current)	Ratio/Deviation	Partial rating	
Species					
Dominant species	8	5	63%	4.0	
Subdominant species	18	12	67%	2.0	
Rare species	31	4	13%	3.0	
				3.0	
Ecological guilds					
Flow	6	4	2	3.0	
Reproduction	7	5	2	3.0	
				3.0	
Species diversity & guilds overall					3.2

2. Dominance	Reference fish assemblage	actual (current)	Difference		
Fish region index	6.3	6.5	0.2		1.0

3. Population structure	Reference fish assemblage	actual (current)		Partial rating (1-5)	
Dominant species	8	5		3.5	
Subdominant species	18	12		4.0	
					3.7

Fishindex Austria without active ko-criterion					3.07
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Biological quality element fish	FIA 3.07	Class 3	Moderate
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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;