

## Supplementary material S1

### *Sampling methods for littoral environment*

Bottom nets, varying in typology and mesh size were used to sampling the littoral environment. Generally, bottom nets have a rope of varying weight in the lower part which allows the nets to rest against the lake bottom preventing them from moving, while the upper part is free to move. Rings in stainless steel, or other metals, are used at the end of the net, fixed to the lead rope, for increasing stability of the net on the bottom of the lake. Once lowered into the water, its presence is signalled with a bouy tied up at the net. In this study, three kinds of bottom nets were used.

- “*Voltana*” bottom net

Bottom net characterised by small meshes, 28 mm diameter, 0.12 mm yarn and 1.5 m height, design for *P. fluviatilis* fishing. Its use is allowed from 31<sup>st</sup> May to 15<sup>th</sup> December. This net allows catching small fish, between 18 and 30 cm. Specific to *S. glanis*, it is estimated this net is able to catch individuals from 25 cm length. This kind of net has been used 17 times, from 4<sup>th</sup> June till 11<sup>th</sup> November. A total of 5 nets, 84 m length, were set each time, reaching a total length of 420 m. They were lowered at a depth ranging between 3 m and 20 m (Table S1).

- “*Reet de pes bianc*” bottom net

A single layer bottom net characterized by meshes with a diameter greater than 45 mm and a height of maximum 50 meshes. This kind of net is forbidden during *Esox sp.* and *S. lucioperca* spawning season, from 15<sup>th</sup> March until 31<sup>st</sup> May. Four subcategories of this bottom net have been used, varying in diameter and height of the meshes: i) 3.5 m height with 70 mm diameter and 0.20 mm yarn, and ii) 2 m height with 70 mm diameter and 0.20 mm yarn, used together 21 times: a total of 4 nets, 280 m total length iii) 4 m height with 100 mm diameter and 0.25 mm yarn, used 23 times between 5 and 15 m water depth. iv) a 50 mm meshes and 100 m length net, used twice between 5 and 10 m water depth (Table S2).

Nets with 70 mm diameter meshes allow to capture fish from approximately 1.5 kg body weight, whilst nets with 100 mm diameter meshes are effective for fish of at least 4 kg till 15 kg body weight.

- “*Reet de bundela*” bottom net

Bottom nets with meshes of 34 mm and 43 mm diameter, and 75 meshes height, designed for fishing gangfisch (*Coregonus macrophthalmus*, Nüsslin, 1882) and lake char (*Salvelinus umbla*, L. 1758). These nets are mainly used during wintertime at very high depths, specifically used for looking for *Coregonus* sp.. The 34 mm diameter nets have been used 3 times, reaching 80 m depth, whilst the ones with 40 mm diameter were used twice, between 4 and 10 m water depth (Table S3).

#### *Sampling methods for pelagic environment*

Flying nets were used for pelagic sampling; these are suspended nets, free to move with the current. They have a leaded rope in the lower part and a neutral rope in the upper part. Polystyrene floats (20 cm x 10 cm x 5 cm) are tied to the neutral rope about every 20 m. The depth of descent is adjusted based on the length of the rope that joins the floats to the neutral rope. These types of nets are generally 1000 / 2000 meshes long and are tied together to form the so-called “brim”. They are lowered up to hundreds of meters from the coast very deep, and used to capture shad (*Alosa agone*, Scopoli 1786), trout (*Salmo trutta* complex) and gangfisch. Buoys are tied at the two ends with light signals for signalling their presence to navigators during night and for regaining the brim if the retreat of the nets begins before sunrise. In this study on one type of flying net was used.

#### *“Reet de bundela volante” flying net*

Flying net with 34 mm meshes, monofilament with 0.10 - 0.12 mm yarn and 150 mesh height; the use of the kind of net is forbidden during choregonides spawning period. This net is specific for catching gangfisch and whitefish (*Coregonus lavaretus*, L. 1758). Although these nets are conceived as gill nets, thus, given the size of the meshes, they should catch fish from 30-35 cm length, their

effectiveness on *Siluro glanis* (L., 1758) is based on its entanglement ability thanks to the protrusions of the body, such as fins and teeth. The considerable height of this net and the floating state, the fish often rolled up remaining limited in its movements, thus capture. However, since the yarns are thin, fish escape, breaking the net, it is not uncommon. This net was used 47 times between 10 to 40 m water depth (Table S4).

#### *Other captures methods*

In addition to the previously described nets, some *S. glanis* have been caught using amateur fishing gear:

- A 30-60 g power fishing rod with rotating reel and 0.18 mm braided nylon line, in which earth worms were used as bait. This technique was used on the 1<sup>st</sup> June 2019 (two specimens were caught, L3-L4), on the 29<sup>th</sup> July 2019 (specimen L21 caught) and on the 17<sup>th</sup> August 2019 (specimen L29 caught).
- A specific fishing rod for *S. glanis* fishing with a rotating reel and 0.45 mm braided nylon line, a rudd (*Scardinius erythrophthalmus*) of about 400 g was used as bait.
- A 30 cm diameter landing net equipped with a very tight mesh net for catching 0+ individuals. The search and capture of the small *S. glanis* took place at a depth of approximately 1 m on 8 October 2019. A total of 5 specimens were caught (L42-L43-L44-L45-L46).

**Table S1:** Details of littoral sampling through “voltana” nets. date of net lowering (d1) and time (t1), date of net withdrawal (d2) and time (t2), water depth and water temperature (T) are detailed.

d1	t1	d2	t2	Depth (m)	T (°C)	<i>Alosa agone</i>	<i>Esox sp.</i>	<i>Gymnocephalus cernuus</i>	<i>Lepominus gibbosus</i>	<i>Perca fluviatilis</i>	<i>Rutilus rutilus</i>	<i>Sander lucioperca</i>	<i>Scardinius erythrophthalmus</i>	<i>Siluro glanis</i>	
														Specimen	ID
04/06/2019	18:00	05/06/2019	07:30	10-20	17				✓	✓	✓	✓		0	
06/06/2019	19:00	07/06/2019	07:00	4-6	17.9					✓	✓	✓		3	L9-L10-L11
18/06/2019	20:00	19/06/2019	07:30	4-15	18.3	✓		✓	✓	✓	✓	✓		0	
16/07/2019	20:30	17/07/2019	00:30	4-15	22.2					✓	✓	✓		2	L16-L17
25/07/2019	20:30	26/07/2019	07:00	5-10	25					✓	✓	✓		0	
30/07/2019	21:00	31/07/2019	07:00	3-5	25.5					✓	✓	✓		3	L23-L24-L25
13/08/2019	21:00	14/08/2019	01:00	3-5	23.7					✓	✓	✓		1	L26
16/08/2019	21:00	17/08/2019	01:00	3-5	Na					✓	✓	✓		2	L27-L28
19/08/2019	21:00	20/08/2019	01:00	5-10	22.7				✓	✓	✓	✓		2	L30-L31
21/08/2019	21:00	22/08/2019	01:00	5-10	23.2					✓	✓	✓		2	L33-L32
27/08/2019	21:00	28/08/2019	01:00	5-10	22.8		✓			✓	✓	✓		3	L34-L35-L36

29/08/2019	21:00	30/08/2019	01:00	5-10	Na				✓	✓	✓	✓	2	L37-L38
08/09/2019	20:00	09/09/2019	01:00	5-10	22.5				✓	✓	✓	✓	1	L39
13/09/2019	19:00	14/09/2019	06:30	5-10	22.5	✓	✓		✓	✓	✓		0	
23/10/2019	17:00	24/10/2019	07:00	5-15	18	✓	✓		✓	✓	✓		2	L49-L50
06/11/2019	17:00	07/11/2019	08:00	15-20	13.2		✓	✓	✓	✓	✓		0	
11/11/2019	16:00	12/11/2019	08:00	15-20	13				✓	✓	✓		0	



04/10/2019	18:00	05/10/2019	07:00	4-10	19			0	
08/10/2019	18:00	09/10/2019	07:15	4-10	18.7		✓	0	
17/10/2019	17:30	18/10/2019	07:15	4-10	18.5	✓		2	L47-L48
29/10/2019	17:00	30/10/2019	06:30	4-10	16			0	
06/11/2019	17:00	07/11/2019	08:00	4-10	13.2	✓	✓	0	

*Third subcategory of net (100 mm diameter)*

d1	t1	d2	t2	Depth (m)	T (°C)					
05/02/2019	17:00	06/02/2019	12:00	8-15	7.3		✓	0		
05/03/2019	16:30	06/03/2019	12:00	8-15	8.3			0		
14/03/2019	16:00	15/03/2019	10:00	8-15	8.1			0		
04/06/2019	18:00	05/06/2019	07:30	6-8	17			0		
18/06/2019	20:00	19/06/2019	07:30	6-8	18.3			0		
27/06/2019	20:30	28/06/2019	07:00	5-8	19.8			3	L12-L13-L14	
01/07/2019	20:30	02/07/2019	07:00	6-8	19.6		✓	1	L15	
10/07/2019	20:30	11/07/2019	07:00	5-10	Na			0		
19/07/2019	21:00	20/07/2019	06:30	5-10	23.4			0		
30/07/2019	21:00	31/07/2019	07:00	5-7	25.5			✓	1	L22
13/08/2019	21:00	14/08/2019	01:00	5-10	23.7			0		
16/08/2019	21:00	17/08/2019	01:00	5-10	Na			0		
19/08/2019	21:00	20/08/2019	01:00	5-10	22.7			0		
27/08/2019	21:00	28/08/2019	01:00	5-10	22.8			0		
29/08/2019	21:00	30/08/2019	01:00	5-10	Na			0		
08/09/2019	20:00	09/09/2019	01:00	5-10	22.5			0		
13/09/2019	19:00	14/09/2019	06:30	5-10	22			0		
26/09/2019	19:00	27/09/2019	07:00	5-10	21.5			0		

04/10/2019	18:00	05/10/2019	07:00	5-10	19		0
08/10/2019	18:00	09/10/2019	07:15	5-10	18.7		0
17/10/2019	17:30	18/10/2019	07:15	5-10	18.5		0
29/10/2019	17:00	30/10/2019	06:30	5-10	16		0
06/11/2019	17:00	07/11/2019	08:00	5-10	13.2	✓	0

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*Fourth subcategory of net (50 mm diameter)*

d1	t1	d2	t2	Depth (m)	T (°C)		
04/10/2019	18:00	05/10/2019	07:00	5-10	19	✓	0
17/10/2019	17:30	18/10/2019	07:15	5-10	18.5	✓	0

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**Table S3:** Details of littoral sampling through “Reet de bundela” nets. Date of net lowering (d1) and time (t1), date of net withdrawal (d2) and time (t2), water depth and water temperature (T) are detailed.

d1	t1	d2	t2	Depth (m)	T (°C)	<i>Coregonus</i> sp.	<i>Esox</i> sp.	<i>Lota lota</i>	<i>Perca fluviatilis</i>	<i>Rutilus rutilus</i>	<i>Sander lucioperca</i>	<i>Siluro glanis</i>	
												Specimen	ID
30/01/2019	17:00	01/02/2019	12:00	30-80	7.2	✓		✓				0	
20/02/2019	18:00	21/02/2019	18:00	25-70	8.7	✓		✓	✓			1	L2
05/03/2019	16:30	06/03/2019	12:00	20-30	8.3		✓		✓	✓	✓	0	
19/07/2019	21:00	20/07/2019	06:30	4-7	23.4					✓		1	L20
26/09/2019	19:00	27/09/2019	07:00	5-10	21.5				✓	✓	✓	1	L40

**Table S4:** Details of pelagic sampling through “Reet de bundela volante” nets. Date of net lowering (d1) and time (t1), date of net withdrawal (d2) and time (t2), water depth and water temperature (T) are detailed.

d1	t1	d2	t2	Depth (m)	T (°C)	<i>Alosa agone</i>	<i>Coregonus</i> sp.	<i>Salmo trutta</i> complex	<i>Sander</i>	<i>Lucioperca</i>	<i>Rutilus rutilus</i>	<i>Siluro glanis</i>	
												Specimen	ID
12/03/2019	17:00	13/03/2019	06:00	25-35	Na	✓	✓					0	
14/03/2019	17:00	15/03/2019	06:00	25-35	8.1	✓	✓					4	P1-P2-P3-P4
18/03/2019	17:00	19/03/2019	06:00	25-35	9	✓	✓					0	
20/03/2019	17:00	21/03/2019	06:00	22-32	9	✓	✓					6	P5-P6-P7-P8-P9-P10
22/03/2019	17:00	23/03/2019	06:00	22-32	9.1	✓	✓					4	P11-P12-P13-P14
29/03/2019	17:00	30/03/2019	06:00	22-32	9.6	✓	✓					1	P15
05/04/2019	18:00	06/04/2019	07:00	22-32	9.8		✓					0	
08/04/2019	18:00	09/04/2019	07:00	22-32	10.2		✓		✓		✓	0	
11/04/2019	18:00	12/04/2019	07:00	22-32	11.9	✓	✓					0	
12/04/2019	18:00	13/04/2019	07:00	22-32	12		✓				✓	0	
17/04/2019	18:00	18/04/2019	07:00	12_22	12.2		✓	✓				1(2*)	P16
18/04/2019	18:00	19/04/2019	07:00	30-40	12.2	✓	✓					0	
26/04/2019	18:00	27/04/2019	07:00	30-40	10.9		✓					0	
30/04/2019	18:00	01/05/2019	07:00	25-35	13.7		✓					0	
06/05/2019	18:00	07/05/2019	07:00	25-35	14.8	✓	✓					1	P17
08/05/2019	18:00	09/05/2019	07:00	25-35	15.2	✓	✓					0	
14/05/2019	18:00	15/05/2019	07:00	15-25	15.7	✓	✓					1	P18

16/05/2019	18:00	17/05/2019	07:00	15-25	15.7	✓	✓			0
22/05/2019	18:00	23/05/2019	07:00	15-25	16.1	✓	✓			0
23/05/2019	18:00	24/05/2019	07:00	15-25	16.2	✓	✓	✓		0
28/05/2019	18:00	29/05/2019	07:00	25-35	Na		✓			0
07/06/2019	18:00	08/06/2020	05:30	15-25	17.9	✓	✓			0
13/06/2019	18:00	14/06/2019	05:30	15-25	18.1	✓	✓			0
18/06/2019	18:00	19/06/2019	05:30	8-18	18.3	✓	✓	✓	✓	0
27/06/2019	18:00	28/06/2019	05:30	10-20	19.8	✓	✓		✓	0
01/07/2019	18:00	02/07/2019	05:30	10-20	19.6	✓	✓			0
10/07/2019	18:00	11/07/2019	05:30	10-20	Na	✓	✓			1
16/07/2019	18:00	17/07/2019	05:30	10-20	22.2	✓	✓			0
17/07/2019	18:00	18/07/2019	05:30	10-20	23		✓			0
19/07/2019	18:00	20/07/2019	05:30	10-20	23.4		✓			0
25/07/2019	18:00	26/07/2019	05:30	10-20	25	✓	✓	✓		0
30/07/2019	18:00	31/07/2019	05:30	10-20	25.5		✓			0
13/08/2019	18:00	14/08/2019	05:30	10-20	23.7		✓			0
16/08/2019	19:00	17/08/2019	05:30	10-20	Na	✓	✓			0
21/08/2019	19:00	22/08/2019	05:30	15-25	23.2	✓	✓			0
27/08/2019	19:00	28/08/2019	05:30	15-25	22.8	✓	✓			0
29/08/2019	19:00	30/08/2019	05:30	15-25	Na		✓			0
13/09/2019	19:00	14/09/2019	05:30	15-25	22		✓			0
26/09/2019	18:00	27/09/2019	05:30	15-25	21.5		✓			0
04/10/2019	18:00	05/10/2019	05:30	15-25	19	✓	✓		✓	0
08/10/2019	17:30	09/10/2019	06:00	15-25	18.7		✓			0

P19

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17/10/2019	17:00	18/10/2019	06:30	18-28	18.5	✓		0	
23/10/2019	17:00	24/10/2019	06:30	18-28	18	✓		0	
29/10/2019	17:00	30/10/2019	06:30	18-28	16	✓	✓	1	P20
04/11/2019	16:00	05/11/2019	06:30	18-28	Na	✓		2	P21-P22
06/11/2019	16:00	07/11/2019	06:30	18-28	13.2	✓		0	
11/11/2019	16:00	12/11/2019	07:00	18-28	13	✓	✓	1	P23

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