

## Supplementary material

Suppl. material 1 – Number of spraints collected each sample sites and relative distance from the river mouth.

River	Sector	Site	Distance from the mouth	N. spraints per site	N. spraints per sector	N. spraints per river
Bussento	Upper Course	BUSS14	29.7 km	10	48	188
		BUSS13	28.5 km	11		
		BUSS12	27.8 km	11		
		BUSS11	27 km	16		
	Middle Course	BUSS1	17.7 km	5	18	
		BUSS4	15.5 km	5		
		BUSS2	11 km	8		
	Lower Course	BUSS6	3.6 km	61	122	
		BUSS3	600 m	37		
BUSS10		200 m	24			
Mingardo	Middle Course	MIN3	8.7 km	4	94	123
		MIN2	7.84 km	58		
		MIN4	7.25 km	32		
	Lower Course	MIN5	5 km	24	24	
Lambro	Middle Course	LAM1	10.6 km	42	89	105
		LAM2	9.55 km	47		
	Lower Course	LAM3	2.7 km	16	16	

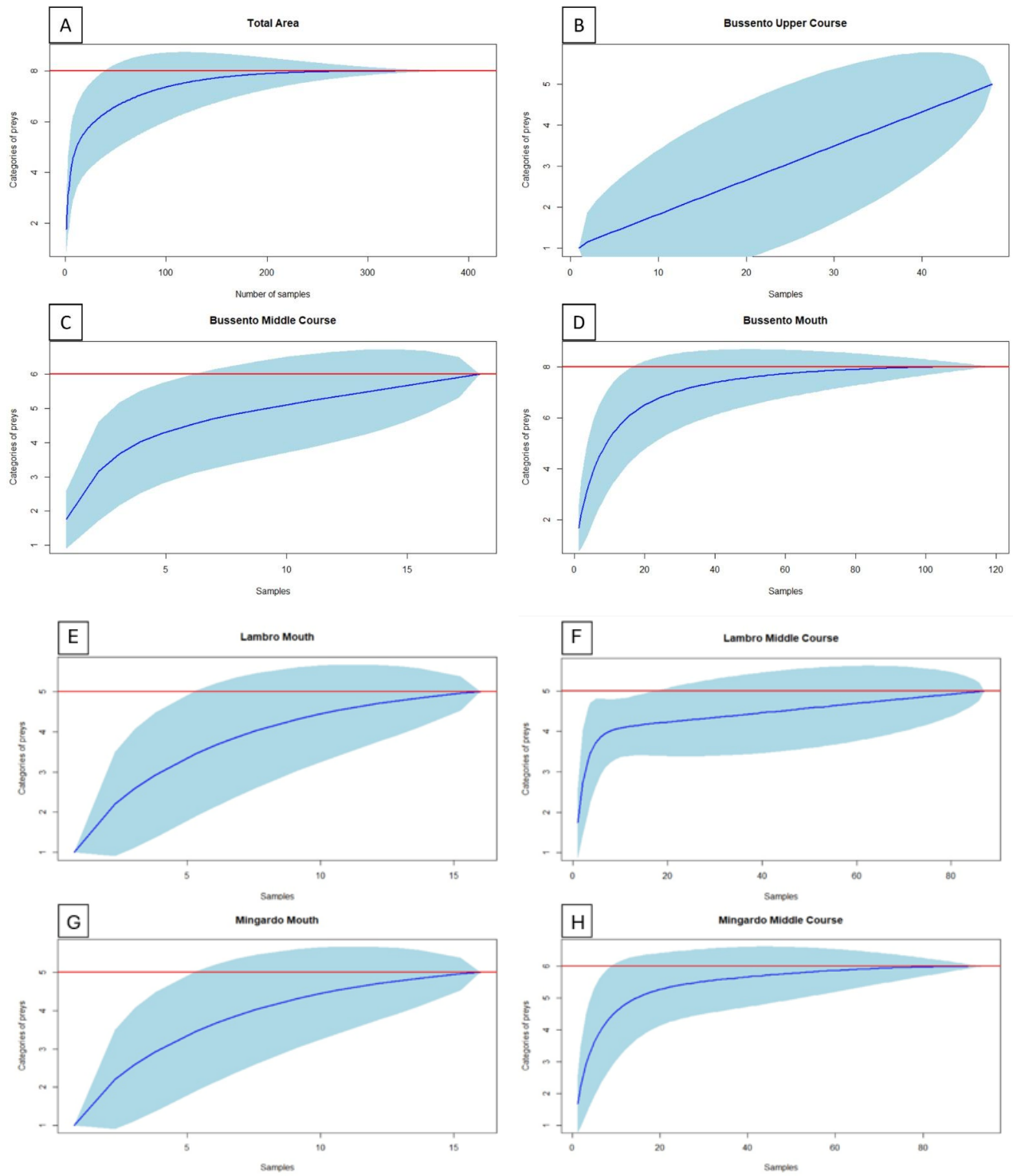
Suppl. material 2 – Occurrences of prey categories in the study area, sorted also by river, river sector, and individual river sector.

	fish	amphibians	crustaceans	reptiles	insects	birds	mammals	molluscs	samples analysed
Overall sample	260	104	158	34	92	5	4	10	415
Bussento	13	13	5	1	8	0	0	1	18
Mingardo	94	15	37	12	14	0	2	0	94
Lambro	44	44	27	0	46	0	0	1	88
Middle course	88	19	26	13	16	5	2	7	122
Lower course	21	6	11	5	0	0	0	1	24
Bussento upper course	11	3	6	1	4	2	0	0	16
Bussento middle course	1	1	47	1	1	0	0	0	48
Bussento lower course	134	72	69	13	68	0	2	2	200
Mingardo middle course	119	28	38	20	20	5	2	8	162
Mingardo lower course	108	33	78	15	25	5	2	8	188
Lambro middle course	98	21	48	17	14	0	2	1	118
Lambro lower course	55	47	28	2	50	0	0	1	104

Suppl. material 3 - Matrix with the first four observations of each category provided as example of the source file to perform Model 1 (M1) of the analysis. In the last column are reported presence (1) or absence (0) for each category in each sample analysed.

ID	SITE	River	Sector	Variable	Absence/presence
BUSS1_10	BUSS1	Bussento	Middle_course	Amphibians	1
BUSS1_13	BUSS1	Bussento	Middle_course	Amphibians	1
BUSS1_21	BUSS1	Bussento	Middle_course	Amphibians	0
BUSS1_24	BUSS1	Bussento	Middle_course	Amphibians	1
					[...]
BUSS1_10	BUSS1	Bussento	Middle_course	Crustaceans	1
BUSS1_13	BUSS1	Bussento	Middle_course	Crustaceans	1
BUSS1_21	BUSS1	Bussento	Middle_course	Crustaceans	0
BUSS1_24	BUSS1	Bussento	Middle_course	Crustaceans	0
					[...]
BUSS1_10	BUSS1	Bussento	Middle_course	Fish	1
BUSS1_13	BUSS1	Bussento	Middle_course	Fish	0
BUSS1_21	BUSS1	Bussento	Middle_course	Fish	1
BUSS1_24	BUSS1	Bussento	Middle_course	Fish	0
					[...]
BUSS1_10	BUSS1	Bussento	Middle_course	Reptiles	0
BUSS1_13	BUSS1	Bussento	Middle_course	Reptiles	0
BUSS1_21	BUSS1	Bussento	Middle_course	Reptiles	0
BUSS1_24	BUSS1	Bussento	Middle_course	Reptiles	1
					[...]
BUSS1_10	BUSS1	Bussento	Middle_course	Insects	0
BUSS1_13	BUSS1	Bussento	Middle_course	Insects	1
BUSS1_21	BUSS1	Bussento	Middle_course	Insects	1
BUSS1_24	BUSS1	Bussento	Middle_course	Insects	0
					[...]

Suppl. material 4 – Accumulation curves for the whole study area (A), and for each individual river sector (B-H).



Suppl. material 5 – Significant pairwise comparisons for the whole sample of 415 sprints (model M1).

contrast	estimate	SE	df	z.ratio	p.value	stars
Fish - Amphibians	1,67	0,16	inf	10,76	4,5E-14	***
Fish - Crustaceans	1,04	0,15	inf	7,13	9,8E-12	***
Fish - Reptiles	3,01	0,21	inf	14,45	0,0E+00	***
Fish - Insects	1,83	0,16	inf	11,54	0,0E+00	***
Amphibians - Crustaceans	-0,63	0,15	inf	-4,07	4,6E-04	***
Amphibians - Reptiles	1,34	0,21	inf	6,29	3,1E-09	***
Crustaceans - Reptiles	1,97	0,21	inf	9,49	4,2E-14	***
Crustaceans - Insects	0,79	0,16	inf	5,01	5,3E-06	***
Reptiles - Insects	-1,18	0,22	inf	-5,46	4,9E-07	***

Suppl. material 6 - Significant pairwise comparisons of prey categories in middle and lower course of the three rivers (model M2).

contrast	estimate	SE	df	z.ratio	p.value	stars
Fish Upper_course - Crustaceans Upper_course	-5,55	0,87	inf	-6,39	1,8E-08	***
Fish Upper_course - Fish Middle_course	-2,92	0,52	inf	-5,66	1,6E-06	***
Fish Upper_course - Fish Lower_course	-3,68	0,53	inf	-6,88	6,4E-10	***
Amphibians Upper_course - Crustaceans Upper_course	-5,80	0,90	inf	-6,46	1,1E-08	***
Amphibians Upper_course - Fish Middle_course	-3,18	0,56	inf	-5,63	1,8E-06	***
Amphibians Upper_course - Amphibians Middle_course	-1,99	0,56	inf	-3,53	3,2E-02	*
Amphibians Upper_course - Crustaceans Middle_course	-1,92	0,56	inf	-3,41	4,7E-02	*
Amphibians Upper_course - Fish Lower_course	-3,93	0,58	inf	-6,77	1,3E-09	***
Crustaceans Upper_course - Reptiles Upper_course	7,24	1,25	inf	5,82	6,2E-07	***
Crustaceans Upper_course - Insects Upper_course	5,80	0,90	inf	6,46	1,1E-08	***
Crustaceans Upper_course - Fish Middle_course	2,63	0,75	inf	3,48	3,7E-02	*
Crustaceans Upper_course - Amphibians Middle_course	3,82	0,76	inf	5,06	4,4E-05	***
Crustaceans Upper_course - Crustaceans Middle_course	3,88	0,76	inf	5,14	2,8E-05	***
Crustaceans Upper_course - Reptiles Middle_course	5,92	0,80	inf	7,45	9,9E-12	***
Crustaceans Upper_course - Insects Middle_course	3,91	0,76	inf	5,17	2,4E-05	***
Crustaceans Upper_course - Amphibians Lower_course	4,85	0,78	inf	6,21	5,7E-08	***
Crustaceans Upper_course - Crustaceans Lower_course	4,46	0,78	inf	5,75	9,1E-07	***
Crustaceans Upper_course - Reptiles Lower_course	5,25	0,79	inf	6,64	3,3E-09	***
Crustaceans Upper_course - Insects Lower_course	5,25	0,79	inf	6,64	3,3E-09	***
Reptiles Upper_course - Fish Middle_course	-4,62	1,03	inf	-4,48	7,1E-04	***
Reptiles Upper_course - Fish Lower_course	-5,37	1,04	inf	-5,17	2,4E-05	***
Insects Upper_course - Fish Middle_course	-3,18	0,56	inf	-5,63	1,8E-06	***
Insects Upper_course - Amphibians Middle_course	-1,99	0,56	inf	-3,53	3,2E-02	*
Insects Upper_course - Crustaceans Middle_course	-1,92	0,56	inf	-3,41	4,7E-02	*
Insects Upper_course - Fish Lower_course	-3,93	0,58	inf	-6,77	1,3E-09	***
Fish Middle_course - Amphibians Middle_course	1,19	0,21	inf	5,65	1,7E-06	***
Fish Middle_course - Crustaceans Middle_course	1,26	0,21	inf	5,94	3,0E-07	***
Fish Middle_course - Reptiles Middle_course	3,30	0,32	inf	10,16	1,4E-13	***
Fish Middle_course - Insects Middle_course	1,28	0,21	inf	6,04	1,7E-07	***
Fish Middle_course - Amphibians Lower_course	2,22	0,31	inf	7,21	5,7E-11	***

Fish Middle_course - Crustaceans Lower_course	1,83	0,29	inf	6,26	4,1E-08	***
Fish Middle_course - Reptiles Lower_course	2,62	0,33	inf	7,94	4,2E-13	***
Fish Middle_course - Insects Lower_course	2,62	0,33	inf	7,94	4,2E-13	***
Amphibians Middle_course - Reptiles Middle_course	2,11	0,32	inf	6,51	7,8E-09	***
Amphibians Middle_course - Fish Lower_course	-1,94	0,30	inf	-6,56	5,7E-09	***
Amphibians Middle_course - Reptiles Lower_course	1,43	0,33	inf	4,38	1,1E-03	**
Amphibians Middle_course - Insects Lower_course	1,43	0,33	inf	4,38	1,1E-03	**
Crustaceans Middle_course - Reptiles Middle_course	2,04	0,32	inf	6,29	3,3E-08	***
Crustaceans Middle_course - Fish Lower_course	-2,01	0,30	inf	-6,77	1,4E-09	***
Crustaceans Middle_course - Reptiles Lower_course	1,36	0,33	inf	4,17	2,8E-03	**
Crustaceans Middle_course - Insects Lower_course	1,36	0,33	inf	4,17	2,9E-03	**
Reptiles Middle_course - Insects Middle_course	-2,02	0,32	inf	-6,22	5,2E-08	***
Reptiles Middle_course - Fish Lower_course	-4,05	0,38	inf	-10,56	1,4E-13	***
Reptiles Middle_course - Crustaceans Lower_course	-1,46	0,38	inf	-3,88	9,1E-03	**
Insects Middle_course - Fish Lower_course	-2,03	0,30	inf	-6,84	8,3E-10	***
Insects Middle_course - Reptiles Lower_course	1,34	0,33	inf	4,10	3,8E-03	**
Insects Middle_course - Insects Lower_course	1,34	0,33	inf	4,10	3,8E-03	**
Fish Lower_course - Amphibians Lower_course	2,97	0,29	inf	10,16	1,4E-13	***
Fish Lower_course - Crustaceans Lower_course	2,59	0,28	inf	9,32	1,5E-13	***
Fish Lower_course - Reptiles Lower_course	3,37	0,32	inf	10,69	1,4E-13	***
Fish Lower_course - Insects Lower_course	3,37	0,32	inf	10,69	1,5E-13	***

Suppl. material 7 – Pairwise comparisons between categories from different sectors of the Bussento river (model M3).

contrast	estimate	SE	df	z.ratio	p.value	stars
Fish Middle_course - Amphibians Middle_course	1,18	0,21	inf	5,64	7,6E-07	***
Fish Middle_course - Crustaceans Middle_course	1,25	0,21	inf	5,93	1,4E-07	***
Fish Middle_course - Reptiles Middle_course	3,28	0,32	inf	10,14	9,9E-14	***
Fish Middle_course - Insects Middle_course	1,27	0,21	inf	6,02	7,8E-08	***
Fish Middle_course - Amphibians Lower_course	2,16	0,27	inf	8,03	1,8E-13	***
Fish Middle_course - Crustaceans Lower_course	1,77	0,25	inf	7,03	9,4E-11	***
Fish Middle_course - Reptiles Lower_course	2,56	0,29	inf	8,71	8,3E-14	***
Fish Middle_course - Insects Lower_course	2,56	0,29	inf	8,71	8,2E-14	***
Amphibians Middle_course - Reptiles Middle_course	2,10	0,32	inf	6,50	3,7E-09	***
Amphibians Middle_course - Fish Lower_course	-1,98	0,26	inf	-7,55	2,1E-12	***
Amphibians Middle_course - Amphibians Lower_course	0,98	0,27	inf	3,65	9,7E-03	**
Amphibians Middle_course - Reptiles Lower_course	1,38	0,29	inf	4,70	1,1E-04	***
Amphibians Middle_course - Insects Lower_course	1,38	0,29	inf	4,70	1,1E-04	***
Crustaceans Middle_course - Reptiles Middle_course	2,03	0,32	inf	6,28	1,5E-08	***
Crustaceans Middle_course - Fish Lower_course	-2,05	0,26	inf	-7,78	4,0E-13	***
Crustaceans Middle_course - Amphibians Lower_course	0,91	0,27	inf	3,40	2,4E-02	*
Crustaceans Middle_course - Reptiles Lower_course	1,31	0,29	inf	4,47	3,4E-04	***

Crustaceans Middle_course - Insects Lower_course	1,31	0,29	inf	4,47	3,4E-04	***
Reptiles Middle_course - Insects Middle_course	-2,01	0,32	inf	-6,20	2,5E-08	***
Reptiles Middle_course - Fish Lower_course	-4,08	0,36	inf	-11,35	0,0E+00	***
Reptiles Middle_course - Crustaceans Lower_course	-1,51	0,35	inf	-4,29	7,5E-04	***
Insects Middle_course - Fish Lower_course	-2,07	0,26	inf	-7,85	3,3E-13	***
Insects Middle_course - Amphibians Lower_course	0,89	0,27	inf	3,31	3,1E-02	*
Insects Middle_course - Reptiles Lower_course	1,29	0,29	inf	4,39	4,8E-04	***
Insects Middle_course - Insects Lower_course	1,29	0,29	inf	4,39	4,8E-04	***
Fish Lower_course - Amphibians Lower_course	2,96	0,29	inf	10,15	9,5E-14	***
Fish Lower_course - Crustaceans Lower_course	2,57	0,28	inf	9,32	1,0E-13	***
Fish Lower_course - Reptiles Lower_course	3,36	0,31	inf	10,68	9,9E-14	***
Fish Lower_course - Insects Lower_course	3,36	0,31	inf	10,68	9,8E-14	***

Suppl. material 8 - Significant pairwise comparisons of prey categories in the three rivers, obtained by comparing the middle and lower course only (model M4). Pairs marked with <sup>a</sup> refer to the same prey category resulted significantly different in PO between different rivers.

contrast	estimate	SE	df	z.ratio	p.value	stars
Fish Bussento - Amphibians Bussento	2,55	0,30	inf	8,59	1,3E-13	***
Fish Bussento - Crustaceans Bussento	2,59	0,30	inf	8,69	1,3E-13	***
Fish Bussento - Reptiles Bussento	3,55	0,36	inf	9,94	1,3E-13	***
Fish Bussento - Insects Bussento	2,92	0,31	inf	9,32	1,5E-13	***
Fish Bussento - Fish Lambro <sup>a</sup>	1,48	0,35	inf	4,20	2,5E-03	**
Fish Bussento - Amphibians Lambro	1,79	0,35	inf	5,07	4,0E-05	***
Fish Bussento - Crustaceans Lambro	2,61	0,37	inf	7,06	1,7E-10	***
Fish Bussento - Reptiles Lambro	5,55	0,77	inf	7,17	7,7E-11	***
Fish Bussento - Insects Lambro	1,67	0,35	inf	4,75	2,0E-04	***
Fish Bussento - Amphibians Mingardo	3,09	0,37	inf	8,46	1,5E-13	***
Fish Bussento - Crustaceans Mingardo	1,94	0,33	inf	5,83	5,8E-07	***
Fish Bussento - Reptiles Mingardo	3,35	0,38	inf	8,80	1,1E-13	***
Fish Bussento - Insects Mingardo	3,57	0,40	inf	9,01	9,8E-14	***
Amphibians Bussento - Reptiles Lambro	3,00	0,77	inf	3,91	8,0E-03	**
Amphibians Bussento - Fish Mingardo	-2,31	0,34	inf	-6,78	1,3E-09	***
Crustaceans Bussento - Reptiles Lambro	2,96	0,77	inf	3,85	1,0E-02	**
Crustaceans Bussento - Fish Mingardo	-2,36	0,34	inf	-6,88	6,4E-10	***
Reptiles Bussento - Fish Lambro	-2,07	0,39	inf	-5,32	1,0E-05	***
Reptiles Bussento - Amphibians Lambro	-1,75	0,39	inf	-4,51	6,4E-04	***
Reptiles Bussento - Insects Lambro	-1,87	0,39	inf	-4,82	1,5E-04	***
Reptiles Bussento - Fish Mingardo	-3,31	0,39	inf	-8,42	1,5E-13	***
Reptiles Bussento - Crustaceans Mingardo	-1,61	0,37	inf	-4,31	1,5E-03	**
Insects Bussento - Fish Lambro	-1,44	0,35	inf	-4,11	3,6E-03	**
Insects Bussento - Reptiles Lambro	2,63	0,77	inf	3,41	4,7E-02	*
Insects Bussento - Insects Lambro <sup>a</sup>	-1,24	0,35	inf	-3,55	3,0E-02	*
Insects Bussento - Fish Mingardo	-2,68	0,35	inf	-7,55	4,5E-12	***
Fish Lambro - Crustaceans Lambro	1,13	0,30	inf	3,79	1,3E-02	*
Fish Lambro - Reptiles Lambro	4,07	0,74	inf	5,49	4,1E-06	***
Fish Lambro - Fish Mingardo <sup>a</sup>	-1,24	0,32	inf	-3,82	1,1E-02	*
Fish Lambro - Amphibians Mingardo	1,61	0,33	inf	4,83	1,3E-04	***
Fish Lambro - Reptiles Mingardo	1,87	0,35	inf	5,34	9,6E-06	***
Fish Lambro - Insects Mingardo	2,09	0,37	inf	5,70	1,2E-06	***
Amphibians Lambro - Reptiles Lambro	3,76	0,74	inf	5,07	4,0E-05	***
Amphibians Lambro - Fish Mingardo	-1,55	0,33	inf	-4,78	1,8E-04	***
Amphibians Lambro - Amphibians Mingardo <sup>a</sup>	1,30	0,33	inf	3,89	8,7E-03	**
Amphibians Lambro - Reptiles Mingardo	1,55	0,35	inf	4,44	8,8E-04	***
Amphibians Lambro - Insects Mingardo	1,78	0,37	inf	4,84	1,3E-04	***
Crustaceans Lambro - Reptiles Lambro	2,94	0,75	inf	3,94	7,2E-03	**
Crustaceans Lambro - Fish Mingardo	-2,37	0,34	inf	-6,94	4,1E-10	***
Reptiles Lambro - Insects Lambro	-3,88	0,74	inf	-5,23	1,7E-05	***
Reptiles Lambro - Fish Mingardo	-5,31	0,76	inf	-6,99	2,9E-10	***
Reptiles Lambro - Crustaceans Mingardo	-3,61	0,75	inf	-4,82	1,4E-04	***
Insects Lambro - Fish Mingardo	-1,44	0,32	inf	-4,42	9,4E-04	***
Insects Lambro - Amphibians Mingardo	1,42	0,33	inf	4,25	2,0E-03	**

Insects Lambro - Reptiles Mingardo	1,67	0,35	inf	4,78	1,8E-04	***
Insects Lambro - Insects Mingardo <sup>a</sup>	1,90	0,37	inf	5,17	2,4E-05	***
Fish Mingardo - Amphibians Mingardo	2,86	0,33	inf	8,64	1,3E-13	***
Fish Mingardo - Crustaceans Mingardo	1,70	0,29	inf	5,78	7,7E-07	***
Fish Mingardo - Reptiles Mingardo	3,11	0,35	inf	8,97	1,0E-13	***
Fish Mingardo - Insects Mingardo	3,33	0,36	inf	9,16	1,8E-13	***
Amphibians Mingardo - Crustaceans Mingardo	-1,16	0,31	inf	-3,79	1,3E-02	*
Crustaceans Mingardo - Reptiles Mingardo	1,41	0,32	inf	4,37	1,2E-03	**
Crustaceans Mingardo - Insects Mingardo	1,63	0,34	inf	4,79	1,7E-04	***