

Movements of three large coastal predatory fishes in the northeast Atlantic: a preliminary telemetry study

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Supplementary material



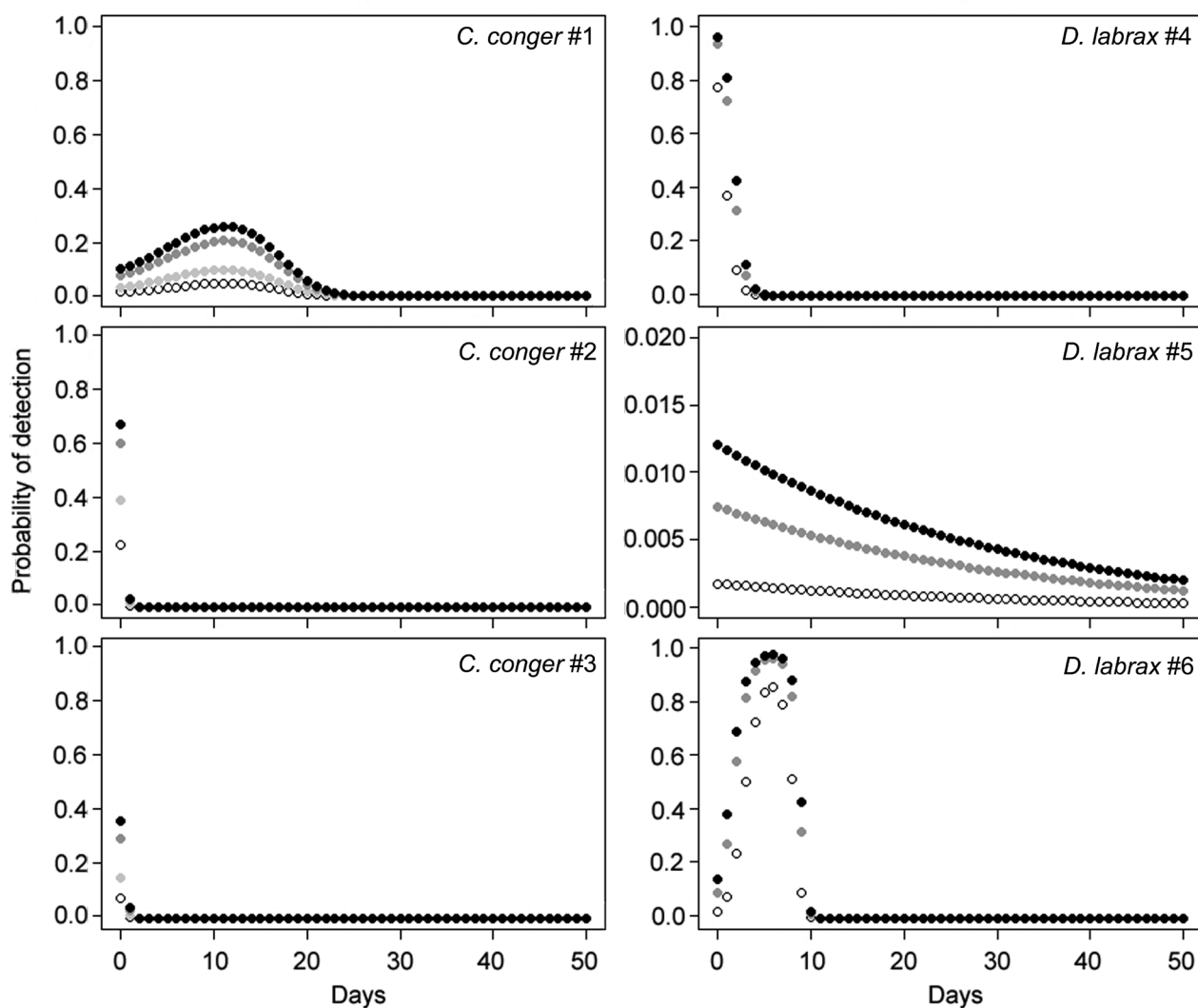
APPENDIX 1. – Image of 1 telemetry transmitter showing the T-tags glued by epoxy resin, ready for being inserted to a fish. Transmitters for *L. bergylta* and *D. labrax* had a third anchor point (see the text in materials and methods section for further details).

APPENDIX 2. – Output of the GAMs used to assess the behaviour of the fishes in captivity, to estimate the site fidelity of the fishes and to calculate the accuracy in the positioning of the telemetry transmitters. The parametric coefficients, their standard error (SE) and associated *P* value are indicated. The reference value used in the comparisons between levels is not included. The number of observations or the range used, the degrees of freedom (df) and the *P* value of the smooth terms are indicated. The interaction is denoted with '*'

Model	N	Parametric coefficients				Smooth terms		<i>P</i>
		Estimate	SE	<i>P</i>		Range	df	
Feeding of <i>L. bergylta</i>								
Intercept	12	-2.3979	0.8263	0.0037	Time (min)	3005-8765	<0.0001	1.0000
Activity of <i>L. bergylta</i>								
Intercept	55	-232.3000	309.7000	0.4530	Time (min)	10-9125	1.7230	0.7810
Activity of <i>C. conger</i>								
Intercept	146	-3.7235	0.5494	<0.0001	Time (min) * Tagged	0-30030	3.5610	0.0003
Tagged	73	1.2905	2.1226	0.5430	Time (min) * Untagged	0-30030	1.6830	0.0083
Equilibrium of <i>C. conger</i>								
Intercept	146	4.2070	0.3299	<0.0001	Time (min) * Tagged	0-30030	<0.0001	1.0000
Tagged	73	132.8000	2479000.0000	1.0000	Time (min) * Untagged	0-30030	0.7353	<0.0001
Flotation of <i>C. conger</i>								
Intercept	146	-2.6101	0.3108	<0.0001	Time (min) * Tagged	0-30030	0.9386	<0.0001
Tagged	73	2.5301	0.4894	<0.0001	Time (min) * Untagged	0-30030	<0.0001	1.0000
Site fidelity of <i>C. conger</i>								
Intercept	3612	-184.6729	43.0724	<0.0001	Time (days) * <i>C. conger</i> # 1	0-300	1.7640	0.0059
<i>C. conger</i> # 2	1204	-44.7657	56.0872	0.4248	Time (days) * <i>C. conger</i> # 2	0-300	1.7220	<0.0001
<i>C. conger</i> # 3	1204	39.0230	50.1882	0.4368	Time (days) * <i>C. conger</i> # 3	0-300	1.6380	<0.0001
Day	903	-0.8531	0.1253	<0.0001				
Dusk	903	-1.6350	0.1570	<0.0001				
Nighth	903	0.2988	0.1016	0.0033				
Site fidelity of <i>D. labrax</i>								
Intercept	3613	-97.9246	6.8590	<0.0001	Time (days) * <i>D. labrax</i> # 1	0-300	1.8080	<0.0001
<i>D. labrax</i> # 5	1204	89.2603	6.8615	<0.0001	Time (days) * <i>D. labrax</i> # 2	0-300	1.1850	<0.0001
<i>D. labrax</i> # 6	1204	-9456.6866	720.8635	<0.0001	Time (days) * <i>D. labrax</i> # 3	0-300	1.6760	<0.0001
Day	903	0.4833	0.1100	<0.0001				
Dusk	903	-1.4726	0.1147	<0.0001				
Nighth	904	0.4833	0.1108	<0.0001				
Accuracy of tags (m)								
Intercept	2550	3.8770	0.0228	<0.0001	Signal (dB) * Gain 0 dB	61-97	7.3100	<0.0001
Gain 6 dB	475	-0.0431	0.0314	0.1690	Signal (dB) * Gain 6 dB	59-100	8.1060	<0.0001
Gain 12 dB	448	0.0194	0.0348	0.5770	Signal (dB) * Gain 12 dB	69-99	7.715	<0.0001
Gain 18 dB	430	0.0014	0.0326	0.9660	Signal (dB) * Gain 18 dB	70-97	4.329	<0.0001
Gain 24 dB	426	-7.2520	1.7530	<0.0001	Signal (dB) * Gain 24 dB	70-91	7.981	<0.0001
Gain 30 dB	371	-380.2000	236.2000	0.1080	Signal (dB) * Gain 30 dB	70-91	7.909	<0.0001

APPENDIX 3. – Predictions made with GAMs to calculate the detection error (DE) in function of the reception strength (dB) and gain of the receiver (dB). The values outside the range obtained in the accuracy test of the VR 100 receiver (VEMCO Ltd.) are not included.

Strength (dB)	Gain (dB)			6			12			18			24			30		
	Predict	SE	DE	Predict	SE	DE	Predict	SE	DE	Predict	SE	DE	Predict	SE	DE	Predict	SE	DE
100	-	-	-	2.61	1.48	4.09	-	-	-	-	-	-	-	-	-	-	-	-
95	19.98	1.07	21.05	17.26	1.07	18.33	16.90	1.07	17.98	17.44	1.06	18.50	-	-	-	-	-	-
90	41.10	1.05	42.16	45.13	1.05	46.18	44.26	1.06	45.32	40.99	1.05	42.05	42.44	1.07	43.52	-	-	-
85	61.83	1.04	62.87	61.45	1.04	62.49	67.53	1.05	68.57	68.85	1.04	69.89	61.48	1.06	62.53	26.52	1.04	27.55
80	85.99	1.04	87.03	81.13	1.04	82.17	85.29	1.04	86.32	86.17	1.03	87.20	84.82	1.04	85.86	84.53	1.06	85.59
75	94.94	1.07	96.01	93.03	1.05	94.08	92.08	1.06	93.14	97.42	1.06	98.48	83.32	1.10	84.42	90.71	1.24	91.95
70	100.89	1.07	101.96	98.06	1.08	99.15	92.04	1.18	93.21	100.66	1.21	101.87	85.69	1.35	87.04	60.09	1.45	61.54
65	99.83	1.10	100.93	101.11	1.15	102.27	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	-	100.29	1.17	101.47	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX 4. – Partial effect of the time elapsed since the fish was released (until day 50) by time of day (white = dawn, light grey = day, dark grey = dusk, black = night) on the probability of detection of the fishes. Points represent the predictions made with GAMs. Note the different scales on the y axes.