The following supplements accompany the article

Feeding ecology and trophic position of three sympatric demersal chondrichthyans in the northwestern Mediterranean

Marta Albo-Puigserver*, Joan Navarro, Marta Coll, Jacopo Aguzzi, Luis Cardona, Raquel Sáez-Liante

*Corresponding author: albo@icm.csic.es

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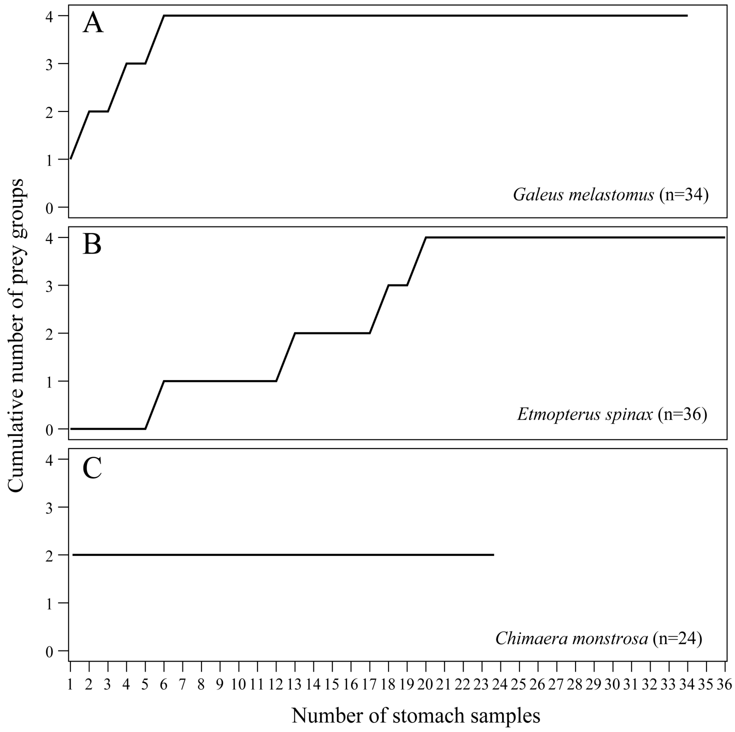
Supplement 1. Fig. S1 indicating the cumulative prey curve for each new prey group in relation to the number of stomachs analysed.

Supplement 2. Table S1 reporting a summary of estimated contributions (mean ± SD in %) of each prey group in the diet of *Galeus melastomus*, *Etmopterus spinax* and *Chimaera monstrosa* from the different mixing models applied with an incremental ^{15}N diet-tissue discrimination factors and three different Δ^{13}C.

Supplement 3. Description (methods, results, references, Table S2 and Fig. S2) of the daily activity rhythms of *Galeus melastomus*, *Etmopterus spinax* and *Chimaera monstrosa* in the Western Mediterranean.

Supplement 1

Fig. S1. Cumulative prey curve for each new prey group in relation to the number of stomachs analysed of (A) *Galeus melastomus*, (B) *Etmopterus spinax* and (C) *Chimaera monstrosa* individuals.



Supplement 2

Table S1. Summary of estimated contributions (mean ± SD in %) of each prey group (Fish, Shrimp, Crab, Cephalopod and Ophiura) in the diet of *Galeus melastomus*, *Etmopterus spinax* and *Chimaera monstrosa* from the different mixing models applied with an incremental ^{15}N diet-tissue discrimination factors (DTDF: Δ^{15}N) and three different Δ^{13}C taken from the literature (Hussey et al. 2010b, Kim et al. 2012)

Species	Δ^{15}N	Δ^{13}C	Fish	Shrimp	Crab	Cephalopod	Ophiura
G. melastomus	1.5	0.49±0.32	5.09±3.84	23.29±8.58	33.39±4.74	38.23±8.01	-
G. melastomus	1.6	0.49±0.32	3.73±3.10	19.67±8.44	32.68±4.82	43.92±8.30	-
G. melastomus	1.7	0.49±0.32	3.06±2.64	14.78±7.93	31.40±5.07	50.76±8.51	-
G. melastomus	1.8	0.49±0.32	2.66±2.32	10.34±6.67	29.77±5.18	57.22±8.14	-
G. melastomus	1.9	0.49±0.32	2.28±2.05	8.45±6.48	28.40±5.24	60.87±8.53	-
G. melastomus	2.0	0.49±0.32	2.11±1.99	6.74±5.83	26.92±5.60	64.23±8.89	-
G. melastomus	2.1	0.49±0.32	2.29±2.21	7.75±7.08	27.18±6.02	62.78±10.83	-
G. melastomus	2.2	0.49±0.32	2.51±2.43	8.53±7.40	27.64±6.22	61.31±11.35	-
G. melastomus	2.3	0.49±0.32	2.91±2.91	9.87±8.35	28.35±6.02	58.88±12.11	-
G. melastomus	2.4	0.49±0.32	3.20±3.17	10.70±8.69	28.57±6.14	57.52±12.43	-
G. melastomus	2.5	0.49±0.32	3.60±3.48	11.60±9.11	29.32±5.74	55.47±12.60	-
G. melastomus	2.6	0.49±0.32	3.80±3.68	12.07±9.34	29.51±5.90	54.61±12.92	-
G. melastomus	2.7	0.49±0.32	4.05±3.87	12.24±9.31	29.81±5.83	53.90±12.93	-
G. melastomus	2.8	0.49±0.32	4.28±4.11	12.93±9.54	29.97±5.69	52.82±12.89	-
G. melastomus	2.9	0.49±0.32	4.55±4.26	13.30±9.58	30.08±5.65	52.07±12.89	-
G. melastomus	3.0	0.49±0.32	4.96±4.66	14.10±9.84	30.60±5.58	50.34±13.19	-
G. melastomus	3.1	0.49±0.32	5.30±5.00	14.70±10.09	30.76±5.67	49.24±13.43	-
G. melastomus	3.2	0.49±0.32	5.50±5.08	15.06±10.23	30.98±5.54	48.45±13.39	-
G. melastomus	3.3	0.49±0.32	5.67±5.27	14.96±10.09	31.06±5.57	48.30±13.22	-
G. melastomus	3.4	0.49±0.32	6.05±5.57	15.81±10.29	31.22±5.53	46.92±13.28	-
G. melastomus	3.5	0.49±0.32	6.27±5.62	15.40±10.11	31.24±5.37	47.09±13.29	-
G. melastomus	1.5	0.90±0.33	5.85±4.23	33.29±8.70	20.34±5.46	40.52±8.17	-
G. melastomus	1.6	0.90±0.33	4.24±3.46	30.70±9.40	19.02±5.70	46.05±9.16	-
G. melastomus	1.7	0.90±0.33	3.41±2.95	26.21±9.57	17.08±5.63	53.30±9.57	-
G. melastomus	1.8	0.90±0.33	3.14±2.79	20.76±9.53	15.08±5.75	61.02±10.17	-
G. melastomus	1.9	0.90±0.33	2.96±2.64	15.73±8.98	13.10±5.69	68.21±10.10	-
G. melastomus	2.0	0.90±0.33	2.80±2.49	12.88±8.48	11.54±5.58	72.79±9.96	-
G. melastomus	2.1	0.90±0.33	2.74±2.49	11.53±8.88	10.68±5.69	75.05±11.39	-
G. melastomus	2.2	0.90±0.33	2.83±2.68	11.33±9.38	10.66±6.05	75.17±12.79	-
G. melastomus	2.3	0.90±0.33	3.16±3.07	13.05±10.48	10.92±6.19	72.87±14.26	-
G. melastomus	2.4	0.90±0.33	3.47±3.34	14.38±11.31	11.76±6.36	70.38±15.24	-
G. melastomus	2.5	0.90±0.33	4.00±3.98	17.23±11.98	12.80±6.58	65.97±16.11	-
G. melastomus	2.6	0.90±0.33	4.31±4.29	17.89±12.06	13.02±6.61	64.78±16.32	-
G. melastomus	2.7	0.90±0.33	5.00±4.96	19.36±12.50	13.88±6.82	61.76±17.09	-
G. melastomus	2.8	0.90±0.33	5.49±5.45	20.75±12.58	13.98±6.77	59.78±17.42	-
G. melastomus	2.9	0.90±0.33	5.72±5.51	21.45±12.59	14.81±6.65	58.02±16.87	-
G. melastomus	3.0	0.90±0.33	6.15±5.88	21.03±12.98	14.68±6.76	58.13±17.82	-
G. melastomus	3.1	0.90±0.33	6.76±6.43	21.89±12.79	15.18±6.75	56.17±17.65	-
G. melastomus	3.2	0.90±0.33	7.11±6.73	22.84±12.72	15.38±6.69	54.66±17.42	-
G. melastomus	3.3	0.90±0.33	7.86±7.22	23.70±12.79	15.99±6.81	52.45±17.38	-
G. melastomus	3.4	0.90±0.33	8.22±7.54	24.37±12.48	16.40±6.65	51.01±16.96	-
G. melastomus	3.5	0.90±0.33	8.48±7.60	23.80±12.60	16.19±6.84	51.54±17.51	-
G. melastomus	1.5	1.70±0.50	7.32±4.96	54.94±10.54	2.83±2.64	34.91±9.47	-
G. melastomus	1.6	1.70±0.50	4.81±3.84	53.57±10.84	2.68±2.52	38.93±10.04	-
G. melastomus	1.7	1.70±0.50	3.68±3.21	50.07±11.94	2.43±2.31	43.81±11.36	-
G. melastomus	1.8	1.70±0.50	3.25±3.17	46.03±14.01	2.27±2.14	48.45±13.46	-

G. melastomus	1.9	1.70±0.50	3.27±3.18	40.63±16.24	2.19±2.07	53.92±15.93	-
G. melastomus	2.0	1.70±0.50	3.55±3.40	39.70±18.61	2.18±2.06	54.58±18.71	-
G. melastomus	2.1	1.70±0.50	3.97±4.04	41.19±20.13	2.24±2.15	52.60±20.69	-
G. melastomus	2.2	1.70±0.50	4.78±4.97	44.02±19.62	2.23±2.13	48.97±20.51	-
G. melastomus	2.3	1.70±0.50	5.61±5.94	46.87±19.86	2.28±2.21	45.25±21.04	-
G. melastomus	2.4	1.70±0.50	6.67±7.07	50.04±18.00	2.25±2.16	41.04±18.88	-
G. melastomus	2.5	1.70±0.50	8.06±8.18	50.71±16.89	2.28±2.17	38.95±17.86	-
G. melastomus	2.6	1.70±0.50	9.26±9.29	54.27±15.93	2.38±2.20	34.09±16.37	-
G. melastomus	2.7	1.70±0.50	10.25±10.03	54.38±15.18	2.36±2.23	33.02±15.62	-
G. melastomus	2.8	1.70±0.50	11.45±10.57	54.37±14.61	2.39±2.24	31.78±14.65	-
G. melastomus	2.9	1.70±0.50	12.79±11.65	53.53±15.07	2.32±2.16	31.35±15.54	-
G. melastomus	3.0	1.70±0.50	14.72±12.48	53.76±14.79	2.40±2.27	29.11±14.64	-
G. melastomus	3.1	1.70±0.50	16.00±13.35	53.64±15.64	2.39±2.19	27.97±15.03	-
G. melastomus	3.2	1.70±0.50	17.96±13.79	53.57±15.10	2.43±2.29	26.03±14.48	-
G. melastomus	3.3	1.70±0.50	19.15±14.52	53.24±15.38	2.37±2.21	25.24±14.33	-
G. melastomus	3.4	1.70±0.50	20.52±14.45	52.89±14.65	2.38±2.17	24.20±13.81	-
G. melastomus	3.5	1.70±0.50	22.34±15.21	51.19±15.10	2.43±2.26	24.03±14.15	-
E. spinax	1.5	0.49±0.32	5.18±5.28	37.87±19.56	3.67±3.42	53.28±20.30	-
E. spinax	1.6	0.49±0.32	5.64±5.72	39.02±20.12	3.74±3.45	51.60±20.94	-
E. spinax	1.7	0.49±0.32	5.84±5.89	41.06±19.90	3.73±3.40	49.36±20.56	-
E. spinax	1.8	0.49±0.32	6.31±6.26	41.29±19.09	3.78±3.44	48.62±19.77	-
E. spinax	1.9	0.49±0.32	7.19±7.18	43.04±18.77	3.97±3.61	45.80±19.39	-
E. spinax	2.0	0.49±0.32	7.24±7.19	44.33±19.60	3.87±3.53	44.56±20.01	-
E. spinax	2.1	0.49±0.32	8.43±8.18	43.79±18.98	4.00±3.65	43.78±19.35	-
E. spinax	2.2	0.49±0.32	8.94±8.70	45.55±18.20	4.07±3.70	41.44±18.41	-
E. spinax	2.3	0.49±0.32	9.34±9.08	46.93±19.10	4.11±3.72	39.62±18.98	-
E. spinax	2.4	0.49±0.32	10.18±9.64	45.37±18.16	4.06±3.72	40.39±18.31	-
E. spinax	2.5	0.49±0.32	10.72±9.91	47.90±18.65	4.19±3.76	37.19±18.08	-
E. spinax	2.6	0.49±0.32	11.27±10.25	46.26±18.10	4.20±3.78	38.26±17.83	-
E. spinax	2.7	0.49±0.32	11.98±10.81	46.43±18.53	4.34±3.90	37.24±17.88	-
E. spinax	2.8	0.49±0.32	12.18±10.96	48.22±18.54	4.23±3.78	35.38±17.40	-
E. spinax	2.9	0.49±0.32	12.94±11.23	47.28±18.27	4.34±3.93	35.45±17.49	-
E. spinax	3.0	0.49±0.32	13.55±11.63	48.76±18.39	4.27±3.80	33.41±16.75	-
E. spinax	3.1	0.49±0.32	14.31±11.87	47.78±18.80	4.33±3.85	33.58±17.78	-
E. spinax	3.2	0.49±0.32	14.08±11.88	48.14±18.18	4.34±3.81	33.44±16.56	-
E. spinax	3.3	0.49±0.32	14.78±12.09	49.08±18.78	4.35±3.83	31.79±16.88	-
E. spinax	3.4	0.49±0.32	15.42±12.63	48.60±18.70	4.41±3.91	31.57±16.50	-
E. spinax	3.5	0.49±0.32	15.95±12.63	47.87±18.11	4.28±3.77	31.90±16.37	-
E. spinax	1.5	0.90±0.33	5.96±6.13	46.54±21.97	2.79±.66	44.71±22.15	-
E. spinax	1.6	0.90±0.33	6.53±6.58	49.49±22.16	2.95±2.89	41.03±22.18	-
E. spinax	1.7	0.90±0.33	7.36±7.35	51.89±21.48	2.89±2.73	37.86±21.47	-
E. spinax	1.8	0.90±0.33	7.79±7.93	54.97±21.84	2.83±2.77	34.41±21.17	-
E. spinax	1.9	0.90±0.33	8.66±8.62	54.90±21.44	2.81±2.66	33.63±20.76	-
E. spinax	2.0	0.90±0.33	9.04±8.96	57.27±21.65	2.80±2.73	30.88±20.39	-
E. spinax	2.1	0.90±0.33	10.18±9.74	55.03±20.65	2.88±2.78	31.91±19.74	-
E. spinax	2.2	0.90±0.33	11.11±10.53	57.53±20.33	2.81±2.64	28.55±18.61	-
E. spinax	2.3	0.90±0.33	11.94±11.07	56.34±19.88	2.89±2.80	28.83±17.90	-
E. spinax	2.4	0.90±0.33	11.84±11.05	59.34±20.16	2.87±2.71	25.95±17.75	-
E. spinax	2.5	0.90±0.33	13.52±11.94	57.69±20.23	2.87±2.78	25.92±17.87	-
E. spinax	2.6	0.90±0.33	13.64±12.06	57.95±20.17	2.86±2.69	25.55±17.50	-
E. spinax	2.7	0.90±0.33	14.98±12.95	57.26±20.05	2.84±2.78	24.92±16.81	-
E. spinax	2.8	0.90±0.33	14.77±12.70	59.55±20.89	2.78±2.64	22.90±16.87	-
E. spinax	2.9	0.90±0.33	15.25±13.40	58.72±20.97	2.79±2.66	23.24±16.96	-
E. spinax	3.0	0.90±0.33	16.94±14.12	56.34±20.59	2.78±2.66	23.95±17.08	-

E. spinax	3.1	0.90±0.33	17.31±14.19	57.52±20.27	2.80±2.73	22.37±15.96	-
E. spinax	3.2	0.90±0.33	18.61±14.73	56.70±20.32	2.76±2.64	21.92±15.81	-
E. spinax	3.3	0.90±0.33	19.37±15.48	57.12±20.99	2.78±2.63	20.74±15.30	-
E. spinax	3.4	0.90±0.33	19.75±14.96	55.42±20.17	2.84±2.70	21.99±15.96	-
E. spinax	3.5	0.90±0.33	20.82±15.64	55.22±20.02	2.85±2.72	21.11±15.25	-
E. spinax	1.5	1.70±0.50	5.76±5.87	40.25±20.20	3.62±3.65	50.37±20.65	-
E. spinax	1.6	1.70±0.50	6.13±6.31	40.11±20.21	3.64±3.67	50.12±20.95	-
E. spinax	1.7	1.70±0.50	6.42±6.57	44.42±21.83	3.70±3.75	45.46±21.96	-
E. spinax	1.8	1.70±0.50	7.33±7.59	43.73±21.12	3.67±3.68	45.27±21.59	-
E. spinax	1.9	1.70±0.50	8.05±8.35	44.28±20.50	3.70±3.70	43.97±21.02	-
E. spinax	2.0	1.70±0.50	8.64±8.61	46.58±19.96	3.61±3.58	41.17±19.90	-
E. spinax	2.1	1.70±0.50	9.44±9.22	47.74±20.58	3.63±3.61	39.19±20.21	-
E. spinax	2.2	1.70±0.50	10.31±9.94	47.75±19.32	3.65±3.66	38.29±19.06	-
E. spinax	2.3	1.70±0.50	10.62±10.24	48.45±19.69	3.55±3.52	37.38±19.36	-
E. spinax	2.4	1.70±0.50	12.21±10.94	48.89±19.25	3.69±3.73	35.22±18.35	-
E. spinax	2.5	1.70±0.50	12.65±11.49	48.80±18.69	3.61±3.57	34.95±18.12	-
E. spinax	2.6	1.70±0.50	13.08±11.77	51.83±20.11	3.56±3.55	31.54±18.35	-
E. spinax	2.7	1.70±0.50	14.15±12.25	49.82±19.66	3.65±3.74	32.38±18.48	-
E. spinax	2.8	1.70±0.50	15.42±12.90	49.63±19.57	3.58±3.58	31.37±17.99	-
E. spinax	2.9	1.70±0.50	15.27±13.00	50.10±18.99	3.49±3.47	31.13±17.32	-
E. spinax	3.0	1.70±0.50	16.69±13.40	50.13±18.88	3.57±3.52	29.60±16.90	-
E. spinax	3.1	1.70±0.50	17.21±13.93	50.16±19.28	3.57±3.54	29.06±16.92	-
E. spinax	3.2	1.70±0.50	17.70±14.01	49.62±19.68	3.52±3.57	29.16±17.60	-
E. spinax	3.3	1.70±0.50	19.06±14.32	49.04±19.23	3.57±3.62	28.33±16.91	-
E. spinax	3.4	1.70±0.50	19.91±14.72	49.55±19.74	3.55±3.57	26.99±16.89	-
E. spinax	3.5	1.70±0.50	19.34±14.65	50.45±19.58	3.51±3.47	26.70±16.99	-
C. monstrosa	1.5	0.49±0.32	10.35±8.31	6.55±5.81	66.10±9.80	7.34±6.47	9.36±7.63
C. monstrosa	1.6	0.49±0.32	11.00±8.31	6.41±5.75	65.81±9.92	7.41±6.42	9.37±7.77
C. monstrosa	1.7	0.49±0.32	11.47±8.73	6.35±5.59	66.12±9.91	6.98±6.12	9.07±7.37
C. monstrosa	1.8	0.49±0.32	12.16±9.66	6.37±5.58	65.13±11.01	6.86±6.00	9.48±7.70
C. monstrosa	1.9	0.49±0.32	12.06±9.23	6.22±5.48	65.59±10.43	6.92±5.99	9.21±7.40
C. monstrosa	2.0	0.49±0.32	13.76±10.90	6.29±5.61	63.94±11.69	6.69±5.92	9.32±7.79
C. monstrosa	2.1	0.49±0.32	14.23±11.37	6.39±5.55	63.94±12.29	6.53±5.75	8.91±7.43
C. monstrosa	2.2	0.49±0.32	14.11±10.72	6.24±5.60	64.14±11.88	6.41±5.72	9.09±7.48
C. monstrosa	2.3	0.49±0.32	16.30±12.64	6.14±5.54	62.35±12.96	6.23±5.63	8.98±7.46
C. monstrosa	2.4	0.49±0.32	16.62±12.29	6.15±5.64	61.70±13.28	6.18±5.60	9.35±7.73
C. monstrosa	2.5	0.49±0.32	16.33±11.72	6.00±5.53	62.69±12.54	6.25±5.78	8.73±7.58
C. monstrosa	2.6	0.49±0.32	17.06±11.47	6.10±5.57	62.17±12.57	5.90±5.38	8.78±7.30
C. monstrosa	2.7	0.49±0.32	15.76±10.52	6.10±5.53	63.54±11.30	5.85±5.20	8.75±7.55
C. monstrosa	2.8	0.49±0.32	15.16±9.88	6.21±5.58	63.70±11.07	6.12±5.43	8.81±7.57
C. monstrosa	2.9	0.49±0.32	13.06±8.52	6.26±5.55	65.96±9.71	6.13±5.46	8.58±7.08
C. monstrosa	3.0	0.49±0.32	11.28±7.65	6.25±5.48	66.74±9.29	6.85±5.98	8.89±7.23
C. monstrosa	3.1	0.49±0.32	8.90±6.41	6.40±5.42	68.17±8.35	7.44±6.13	9.10±7.33
C. monstrosa	3.2	0.49±0.32	7.42±5.58	6.45±5.57	68.56±8.47	8.00±6.77	9.56±7.48
C. monstrosa	3.3	0.49±0.32	6.12±4.87	6.66±5.66	69.80±7.97	8.51±6.72	8.92±7.02
C. monstrosa	3.4	0.49±0.32	4.95±4.12	6.33±5.37	69.95±7.92	9.71±7.54	9.06±7.10
C. monstrosa	3.5	0.49±0.32	4.22±3.72	6.23±5.39	70.02±8.34	10.85±7.86	8.68±6.92
C. monstrosa	1.5	0.90±0.33	13.72±9.31	7.52±6.33	57.61±7.66	8.92±7.35	12.23±8.99
C. monstrosa	1.6	0.90±0.33	14.19±9.63	7.26±6.34	57.59±7.75	8.92±7.59	12.05±9.20
C. monstrosa	1.7	0.90±0.33	14.69±9.73	7.40±6.37	57.54±7.88	8.55±7.37	11.83±9.01
C. monstrosa	1.8	0.90±0.33	15.13±9.90	7.45±6.43	57.48±7.85	8.08±6.98	11.86±9.08
C. monstrosa	1.9	0.90±0.33	15.64±10.24	7.30±6.36	56.77±8.29	7.94±6.87	12.34±9.47
C. monstrosa	2.0	0.90±0.33	16.13±10.36	7.24±6.28	56.43±8.33	7.89±6.83	12.31±9.19
C. monstrosa	2.1	0.90±0.33	17.49±10.45	6.84±5.95	56.93±8.01	7.66±6.87	11.08±8.62

C. monstrosa	2.2	0.90±0.33	17.53±11.22	6.75±5.84	56.47±8.60	7.46±6.53	11.79±9.13
C. monstrosa	2.3	0.90±0.33	18.89±11.32	6.69±5.88	56.21±8.69	7.17±6.36	11.05±8.81
C. monstrosa	2.4	0.90±0.33	19.37±10.98	6.43±5.68	56.15±8.41	7.07±6.41	10.99±8.66
C. monstrosa	2.5	0.90±0.33	20.25±10.86	6.69±5.94	56.04±8.11	6.79±6.04	10.23±8.29
C. monstrosa	2.6	0.90±0.33	20.26±10.81	6.58±6.08	55.55±8.55	6.89±6.43	10.72±8.69
C. monstrosa	2.7	0.90±0.33	19.72±10.47	6.62±5.79	56.46±8.05	6.75±6.09	10.46±8.32
C. monstrosa	2.8	0.90±0.33	18.34±9.91	6.58±5.72	57.04±7.54	7.13±6.24	10.91±8.73
C. monstrosa	2.9	0.90±0.33	16.00±9.41	7.20±6.30	57.49±7.67	7.80±6.60	11.50±9.21
C. monstrosa	3.0	0.90±0.33	14.13±8.62	7.39±6.30	58.40±7.27	8.15±6.65	11.93±8.98
C. monstrosa	3.1	0.90±0.33	11.79±7.65	7.91±6.57	59.08±7.16	9.06±7.28	12.16±8.98
C. monstrosa	3.2	0.90±0.33	9.00±6.48	7.97±6.73	58.82±7.58	10.97±8.21	13.24±9.56
C. monstrosa	3.3	0.90±0.33	7.20±5.53	8.19±6.73	59.66±7.28	11.79±8.65	13.16±9.27
C. monstrosa	3.4	0.90±0.33	5.75±4.75	8.16±6.73	59.60±7.49	13.97±9.71	12.53±8.99
C. monstrosa	3.5	0.90±0.33	4.86±4.27	8.00±6.61	59.41±7.55	16.07±10.17	11.65±8.87
C. monstrosa	1.5	1.70±0.50	22.75±11.94	10.31±8.17	35.23±5.41	12.82±9.55	18.89±11.24
C. monstrosa	1.6	1.70±0.50	22.97±11.95	10.47±8.29	35.13±5.36	12.30±9.40	19.14±11.62
C. monstrosa	1.7	1.70±0.50	24.16±12.00	10.30±8.30	35.08±5.56	12.01±9.48	18.45±11.29
C. monstrosa	1.8	1.70±0.50	25.07±12.33	10.08±8.07	35.17±5.51	11.52±9.09	18.16±11.27
C. monstrosa	1.9	1.70±0.50	25.75±12.18	9.99±8.05	35.29±5.34	11.07±8.75	17.90±11.44
C. monstrosa	2.0	1.70±0.50	27.01±12.56	9.48±7.75	35.18±5.55	10.67±8.67	17.65±11.32
C. monstrosa	2.1	1.70±0.50	28.14±12.82	9.41±7.86	35.05±5.55	10.27±8.48	17.13±11.33
C. monstrosa	2.2	1.70±0.50	29.78±12.58	9.13±7.55	35.04±5.59	9.90±8.30	16.15±10.74
C. monstrosa	2.3	1.70±0.50	30.42±12.86	8.93±7.60	35.10±5.48	9.56±8.06	16.00±10.90
C. monstrosa	2.4	1.70±0.50	30.40±12.31	8.86±7.49	35.07±5.69	9.50±7.94	16.16±10.94
C. monstrosa	2.5	1.70±0.50	31.17±12.15	8.86±7.45	35.01±5.61	9.26±7.90	15.70±10.66
C. monstrosa	2.6	1.70±0.50	30.13±11.95	8.94±7.49	35.18±5.44	9.31±7.82	16.44±11.13
C. monstrosa	2.7	1.70±0.50	28.80±11.58	9.30±7.79	35.28±5.58	9.99±8.13	16.64±10.95
C. monstrosa	2.8	1.70±0.50	26.70±11.00	9.78±7.94	35.34±5.52	10.60±8.32	17.58±11.15
C. monstrosa	2.9	1.70±0.50	23.35±10.48	10.44±8.29	35.27±5.42	12.12±8.87	18.82±11.61
C. monstrosa	3.0	1.70±0.50	19.71±9.75	11.01±8.49	35.37±5.42	13.79±9.39	20.13±11.72
C. monstrosa	3.1	1.70±0.50	16.04±9.16	11.59±8.89	35.11±5.44	16.15±10.17	21.12±11.83
C. monstrosa	3.2	1.70±0.50	12.48±8.17	11.99±8.96	35.17±5.34	18.42±10.75	21.93±11.93
C. monstrosa	3.3	1.70±0.50	9.69±7.14	12.34±9.21	35.15±5.47	21.31±11.37	21.51±12.14
C. monstrosa	3.4	1.70±0.50	7.77±6.13	12.03±9.02	35.07±5.54	24.40±11.69	20.73±11.85
C. monstrosa	3.5	1.70±0.50	6.18±5.28	11.73±8.91	34.92±5.63	27.48±12.43	19.69±11.52

Supplement 3

Daily activity rhythms of *Galeus melastomus*, *Etmopterus spinax* and *Chimaera monstrosa* in the western Mediterranean

Fluctuations in the quantity of hauled animals were used as a proxy of behavioural rhythms when considering these as the product of their movement in and out of the seabed sampling window (reviewed by Aguzzi & Company 2010, Aguzzi et al. 2011, Aguzzi et al. 2015). A temporally scheduled hauling was conducted at the upper continental slope (approx. 400 m depth; see Figure 1) during June 2000 (June 2000; daylight 04:19 to 19:27 GMT) off Tarragona (41° 01' N, 1° 37' E; 40° 55' N, 1° 31' E). Thirty-one trawl hauls lasting one hour were carried out along parallel transects continuously over four days, onboard the research vessel "García del Cid" (38 m length; 1200 HP). That vessel was equipped with an otter-trawl Maireta system having a stretch mesh size at the cod-end of 40 mm and an outer cover of 12 mm (OTMS; Sardà et al. 1998). The global positioning system (GPS) recorded the ship velocity and the initial and final position (latitude and longitude) for all hauls, while an echo-sounder provided depth measures. SCANMAR telemetric sensors connected to the net mouth recorded wing openings (m) and depths (m). Data were stored on a computer onboard. Setting and retrieving time of each haul were considered as the exact moment of the net landing and rising from the seabed.

For each haul, all individuals of the three species were counted. A surface density value was then extracted for each species at each catch by dividing the number of animals by unit of swept surface (km^2), as estimated by SCANMAR and GPS measures.

Waveform analysis was conducted on time series of surface density estimates in order to assess the phase of activity rhythms (i.e. the timing of peaks) in relation to the day-night cycle. A standard period of 24-h was subdivided into 2-h time intervals (Aguzzi et al. 2003, 2009). All density values computed from samplings whose timing took place within each 2-h time interval were averaged to obtain the 24-h consensus waveform. The phase of time series in surface density estimates was identified in each waveform plot by computing a daily mean as a threshold. This threshold was obtained by re-averaging all mean waveform values together (adapted from Hammond & Naylor 1977). The resulting threshold value was represented as a horizontal line in the plot.

Surface density estimates above that threshold indicated the presence of a significant increase in catches. Waveform output plots were represented in relation to the time of sunset and sunrise at the latitude of the study area (local time: 21:28 and 06:18 on the 22 June).

Periodicity in the time series of density data was screened between 600 min (El Temps software, A. Díez-Noguera, Univ. of Barcelona, Spain). The periodogram analysis requires a series of data obtained at a constant time interval (see for details on the procedure Hammond & Naylor 1977). This condition is difficult to satisfy in trawl-based sampling studies. Gaps in the time series were therefore replaced by the values obtained from waveforms at the corresponding 2-h time intervals (Aguzzi et al. 2003). In periodograms, the highest significant ($p < 0.001$) peak represented the maximum percentage of total data variance fitted by the corresponding periodicity. The peak value was chosen for period attribution of the analysed time series.

RESULTS

The three species showed slight differences in their temporal presence at our trawl-surveyed area. Waveform analysis outputs on time series of catches carried out off the Tarragona slope (Fig. 1) revealed rhythmic variations in surface densities for all three species. These patterns appeared to be similarly bimodal, with two major peaks (i.e. values above the daily mean) toward sunset and sunrise, with a different level of clearness. *E. spinax* presented the strongest bimodal fluctuation, with peaks in 2-h time intervals encompassing sunset and sunrise. That bimodality was also followed by *C. monstrosa*, which also presented a major sunrise peak and a weaker, dispersal corpuscular increase. *G. melastomus* similarly presented the sunrise peak, with another increase occurring in anticipation during the afternoon in comparison with the crepuscular peak of the other two species.

Periodogram analysis (Table 1 Appendix 1) confirmed the occurrence of diel (i.e. 24-h based) rhythmicity in the time series of catches. A significant (p<0.05) 12-h periodicity, as indicative of crepuscular peaking, was found along with a lower frequency periodicity, at approximately 24-h.

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Table S2. Outputs of periodogram analysis conducted on time series of catches for the three species as recorded over four days at 400 m (22 June – 3 July, 2000). Periodogram units (%V) refer to the percentage of variance explained by the fitting to the data set of modelled harmonics of increasing periodicity

	24-h		12-h	
Species	P (min)	%V	P (min)	%V
Chimaera monstrosa	1430	89.22	720	58.87
Etmopterus spinax	1430	80.96	720	46.95
Galeus melastomus	1430	86.84	720	37.84

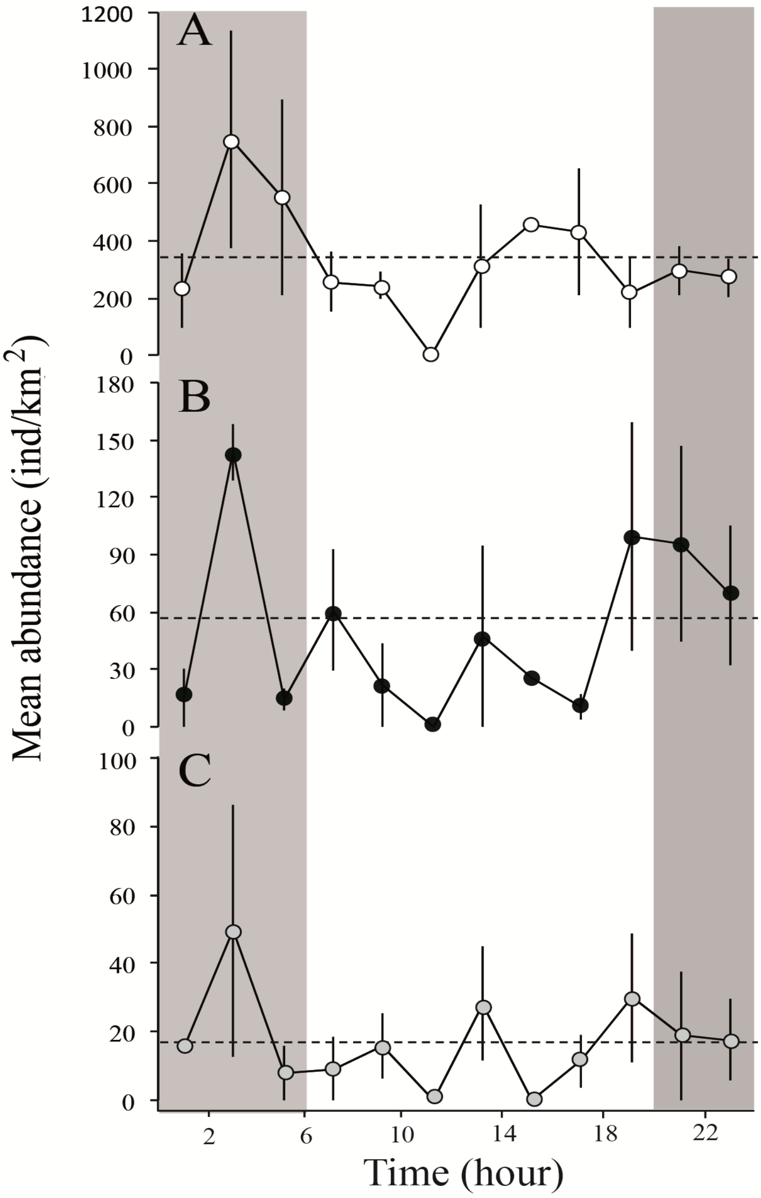

Fig. S2. Waveform analysis outputs on time series of catches depicting mean estimates in abundance (n·km^2) of (A) *Galeus melastomus*, (B) *Etmopterus spinax,* and (C) *Chimaera monstrosa*, as recorded during 4 days at 100-110 m at the summer solstice in the Tarragona area (22 June – 3 July, 2000). The vertical shaded rectangle with the black bar on top indicates the night duration. Daily means (horizontal dashed lines as computed by averaging all waveform values; n·km^{-2}) are: 17.1 for *Chimaera monstrosa*, 50.3 for *Etmopterus spinax*, 335.3 for *Galeus melastomus*. The grey rectangle indicates the night duration, as approximated to the 2-h time interval.