Supplementary Material for:
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Appendix A. Supplementary tables and figures for:

Assessing discard consumption dynamic in shallow coastal environment using underwater video

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Table A.1: Summary statistics of the multiple linear model testing for the effects of environmental and experimental variables on taxonomic richness of discard consumers. Models with delta AICc < 2 were selected and averaged. These models only retained four variables upon ten included: Video length, contact of the discard with the seafloor, presence of algae and fixation system. SE and Adj SE = Standard Error and adjusted Standard Error of the estimated effect, *z* = *z* statistics.

	Estimate	SE	Adj SE	*z*	p-value
Video length	0.01	0.00	0.00	2 841	0.005
Seafloor contact	0.84	0.49	0.51	1 624	0.104
Algae presence	-0.90	0.57	0.60	1 510	0.131
Fixation system	-0.76	0.57	0.59	1 281	0.200

Table A.2: Consumer taxa occurrences in each of the 31 video sequences.

Consumer taxa	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21	V22	V23	V24	V25	V26	V27	V28	V29	V30	V31
Actinopterygii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
Asterias rubens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Brachyura	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Callionymus sp.	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	1	0	0	1	1	0	1	0	0	0	0	0
Cancer pagurus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Carcinus maenas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Caridea	0	0	0	1	0	0	1	1	1	1	0	0	1	0	0	0	0	1	1	1	0	0	1	1	0	0	0	0	1	1	0
Conger conger	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0
Gobiidae	0	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Labridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Macropodia sp.	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maja brachydactyla	0	0	1	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0
Nassarius reticulatus	1	1	1	1	1	0	1	1	1	1	0	0	1	0	0	0	0	1	1	1	1	0	1	1	0	0	1	0	1	1	0
Necora puber	0	1	0	0	0	1	0	1	0	1	1	1	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Pagurus sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sparidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Spondyliosoma cantharus	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Trisopterus luscus	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.3: *post hoc* pairwise PERMANOVA tests of detection time among discard consumers. df = degrees of freedom, *t* = *t* statistics.

Pairwise tests	**df**	***t***	**p-value**
Gastropod vs. Non-piscivorous teleost fish	43	2.39	0.021
Gastropod vs. Shrimps	30	3.17	0.004
Gastropod vs. Crabs	47	2.82	0.007
Gastropod vs. Piscivorous teleost fish	22	6.45	< 0.001
Crabs vs. Non-piscivorous teleost fish	54	0.51	0.619
Crabs vs. Shrimps	41	0.71	0.481
Crabs vs. Piscivorous teleost fish	33	2.35	0.023
Piscivorous teleost fish vs. Non-piscivorous teleost fish	29	2.70	0.013
Piscivorous teleost fish vs. Shrimps	16	3.37	0.004
Non-piscivorous teleost fish vs. Shrimps	37	0.28	0.782

Table A.4: **Discard consumers' co-occurrence analysis.** T1 nb and T2 nb = number of video sequences including taxon 1 and taxon 2, respectively. p LTE = Probability of co-occurrence at a frequency lower than the observed frequency (negative association). p GTE = Probability of co-occurrence at a frequency greater than the observed frequency (positive association). These two statistics can be interpreted as p-values.

Taxon 1	Taxon 2	T1 nb	T2 nb	p LTE	p GTE
Teleostei	*Nassarius reticulatus*	2	19	0.142	1.000
Brachyura	*Callionymus sp.*	6	8	0.974	0.161
Brachyura	Caridea	6	13	0.176	0.975
Brachyura	Gobiidae	6	6	0.673	0.759
Brachyura	*Maja brachydactyla*	6	8	0.503	0.863
Brachyura	*Nassarius reticulatus*	6	19	0.137	0.978
Brachyura	*Necora puber*	6	11	0.987	0.098
Callionymus sp.	Caridea	8	13	0.830	0.448
Callionymus sp.	*Conger conger*	8	4	0.732	0.719
Callionymus sp.	Gobiidae	8	6	0.839	0.497
Callionymus sp.	*Maja brachydactyla*	8	8	0.311	0.938
Callionymus sp.	*Nassarius reticulatus*	8	19	0.362	0.881
Callionymus sp.	*Necora puber*	8	11	0.921	0.281
Callionymus sp.	*Trisopterus luscus*	8	5	0.990	0.093
Caridea	*Conger conger*	13	4	0.097	1.000
Caridea	Gobiidae	13	6	0.501	0.824
Caridea	*Maja brachydactyla*	13	8	0.242	0.942
Caridea	*Nassarius reticulatus*	13	19	1.000	0.000
Caridea	*Necora puber*	13	11	0.200	0.948
Caridea	*Trisopterus luscus*	13	5	0.050	1.000
Conger conger	*Maja brachydactyla*	4	8	0.998	0.043
Conger conger	*Nassarius reticulatus*	4	19	0.507	0.851
Conger conger	*Necora puber*	4	11	0.553	0.846
Gobiidae	*Maja brachydactyla*	6	8	0.503	0.863
Gobiidae	*Nassarius reticulatus*	6	19	0.774	0.574
Gobiidae	*Necora puber*	6	11	0.987	0.098
Labridae	*Nassarius reticulatus*	2	19	0.632	0.858
Macropodia sp.	*Nassarius reticulatus*	2	19	0.632	0.858
Maja brachydactyla	*Nassarius reticulatus*	8	19	0.687	0.638
Maja brachydactyla	*Necora puber*	8	11	0.124	0.984
Maja brachydactyla	*Trisopterus luscus*	8	5	0.615	0.802
Nassarius reticulatus	*Necora puber*	19	11	0.042	0.994
Nassarius reticulatus	Sparidae	19	2	0.632	0.858
Nassarius reticulatus	*Spondyliosoma cantharus*	19	2	0.632	0.858
Nassarius reticulatus	*Trisopterus luscus*	19	5	0.060	0.995
Necora puber	*Trisopterus luscus*	11	5	0.958	0.226

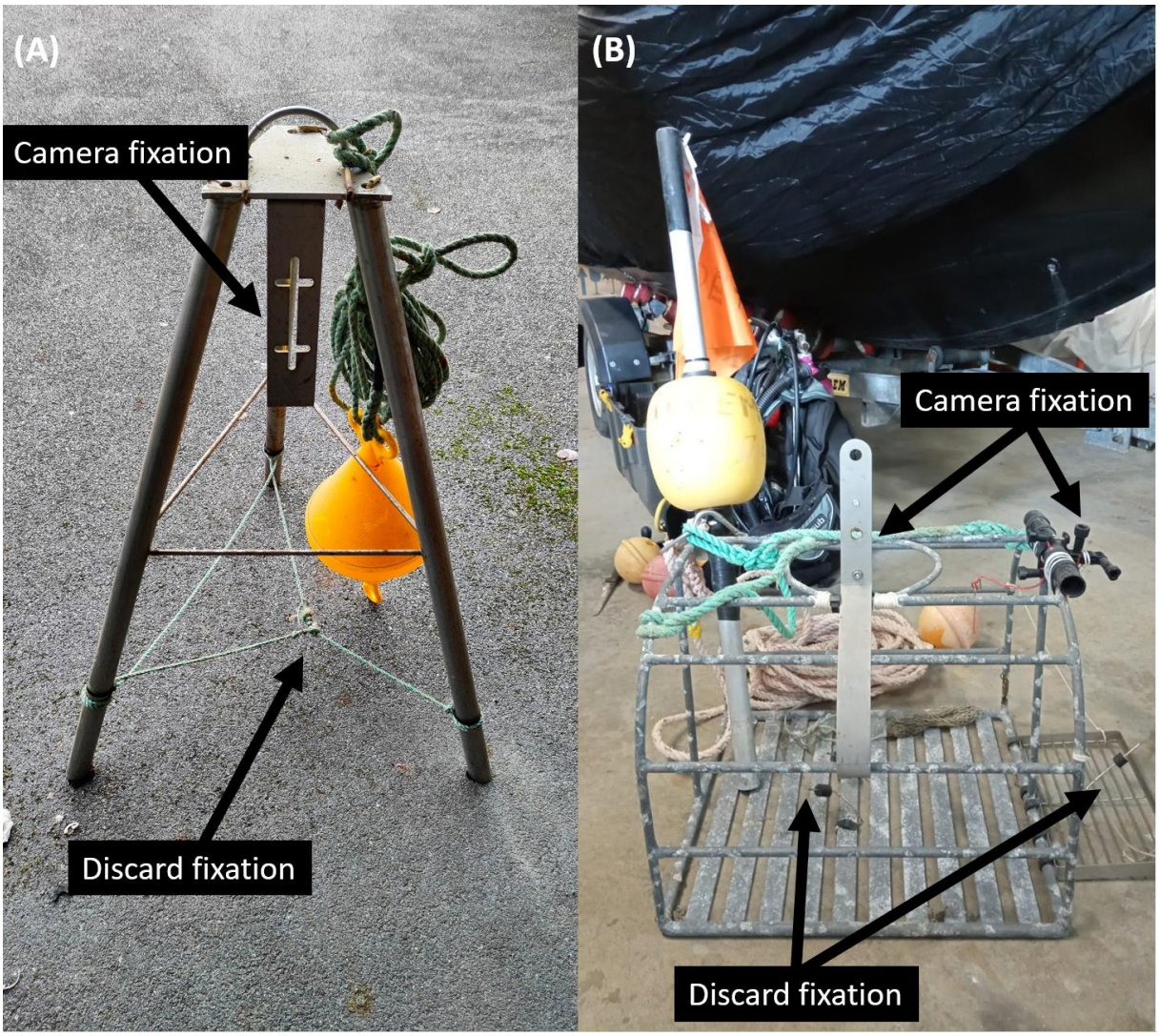

Figure A.1: (A) Tripod and (B) cage systems used for baited remote underwater videos. Arrows indicate points of camera fixation and discard fixation.

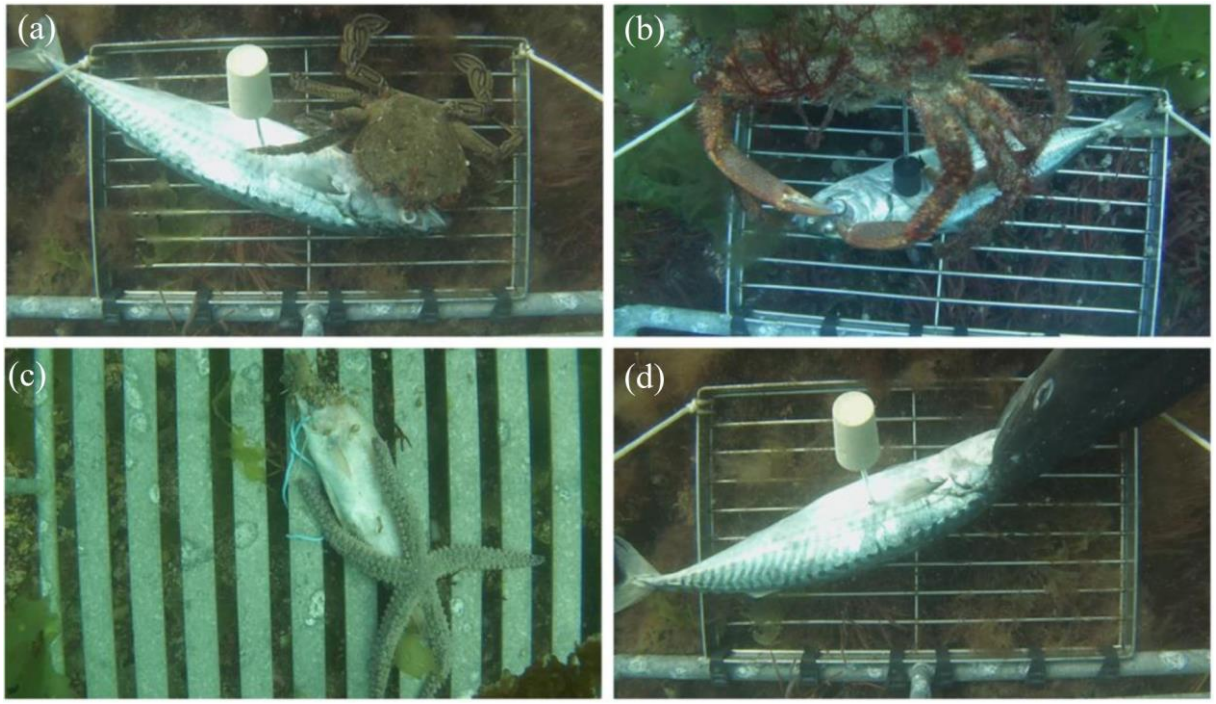

Figure A.2: Camera footages of some of the different discard consumers. (a) Necora puber, (b) Maja brachydactyla, (c) Asterias rubens and (d) Conger conger.

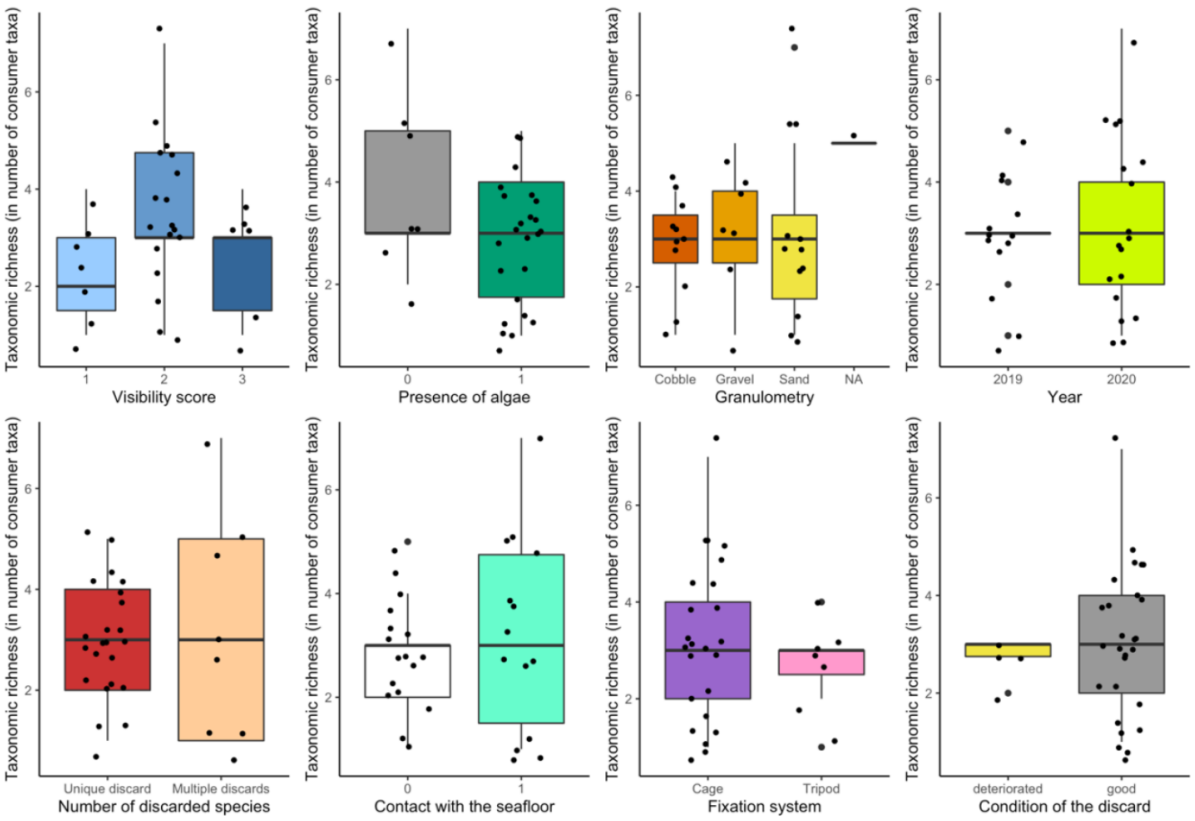

Figure A.3: Influence of environmental and experimental parameters on the taxonomic richness of discard consumers. Visibility score (1 = correct, 2 = medium and 3 = low); presence of algae (0 = absent, 1 = present), granulometry (Cobble, Gravel or Sand and NA when granulometry could not be precisely defined because of low visibility or vegetation cover); year (2019 or 2020); number of discarded species (unique or multiple); contact of the fixation system with the seafloor (0 = no contact and 1 = contact), and the type of fixation system (cage or tripod), condition of the discard at the beginning of the videos (deteriorated or good).

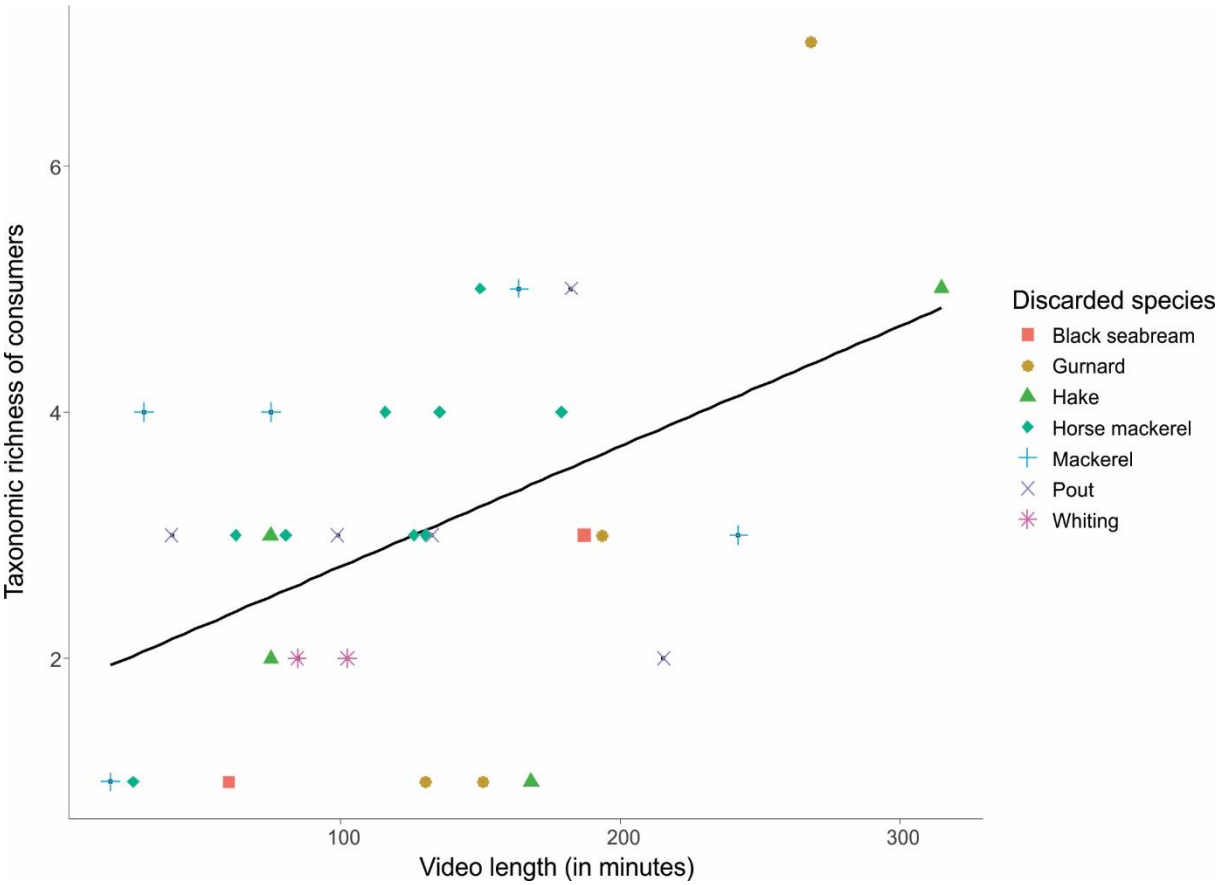

Figure A.4: Relation between video length (in minutes) and taxonomic richness of consumers. Symbols differ according to discarded species used in each video. See summary statistics of the averaged (delta AICc < 2) multiple linear model in Table A.2.

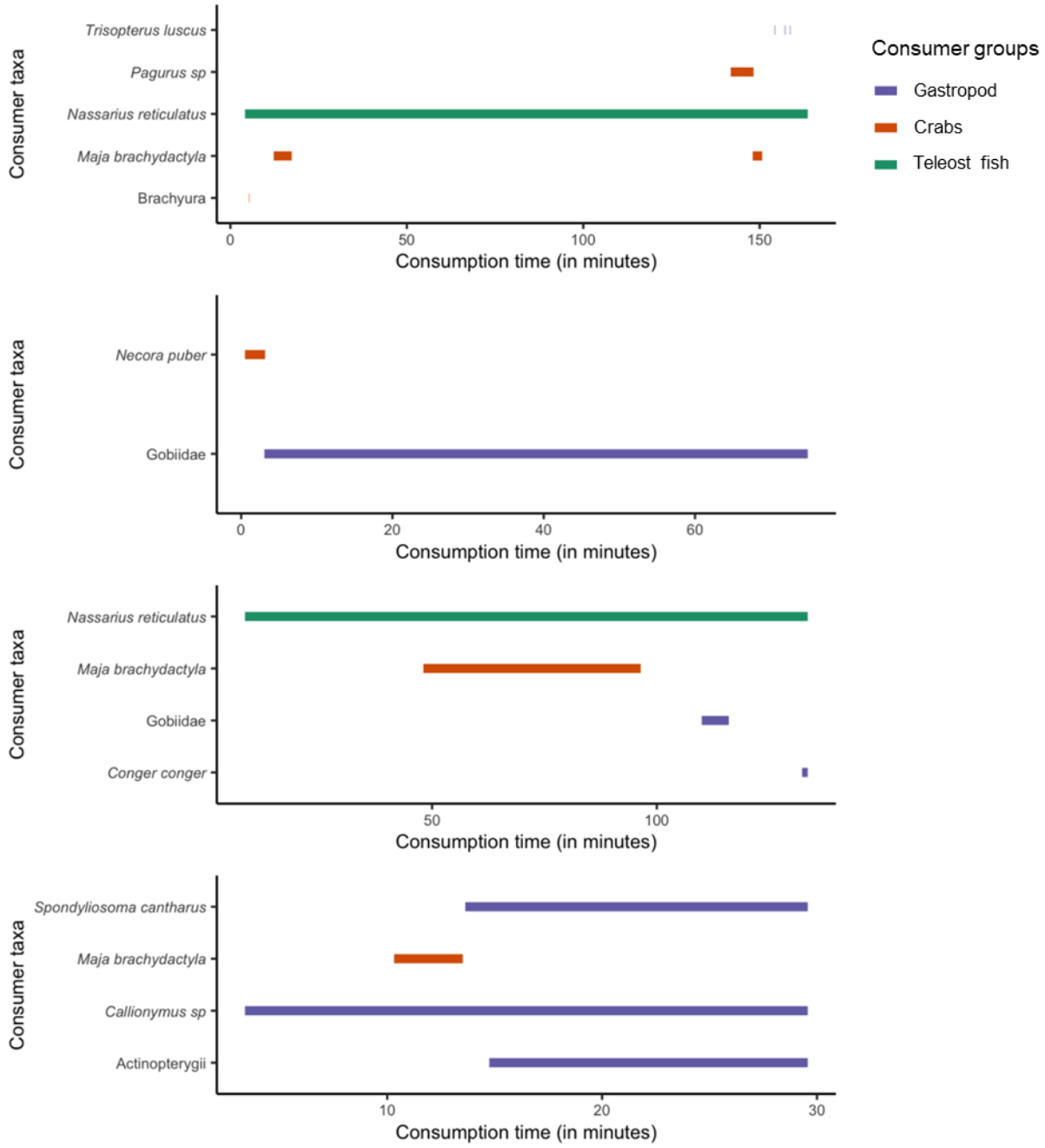

Figure A.5: Co-occurrence of consumer taxa across time revealing five succession events in four videos.

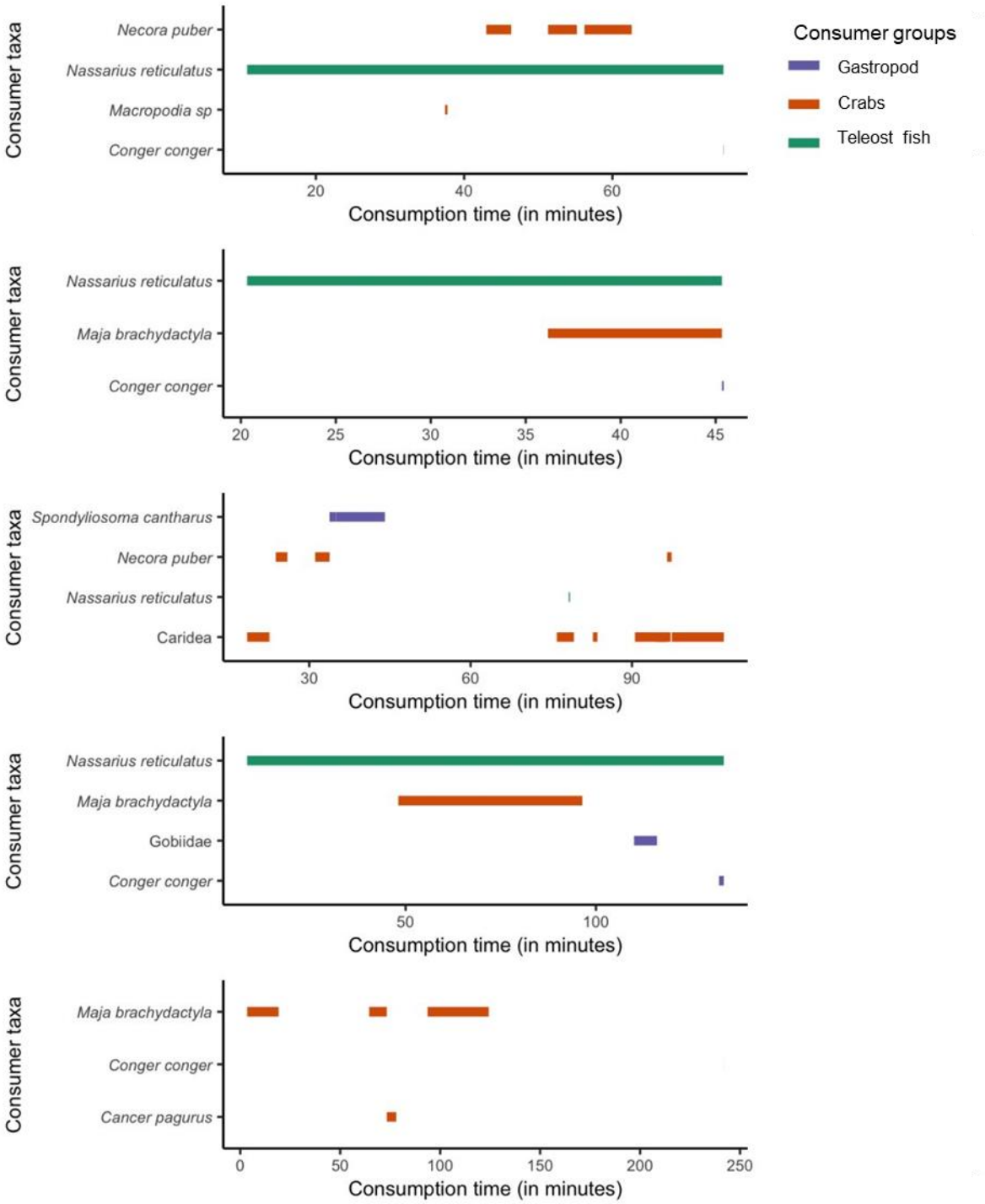

Figure A.6: Co-occurrence of consumer taxa across time revealing interspecific repulsions in five videos.

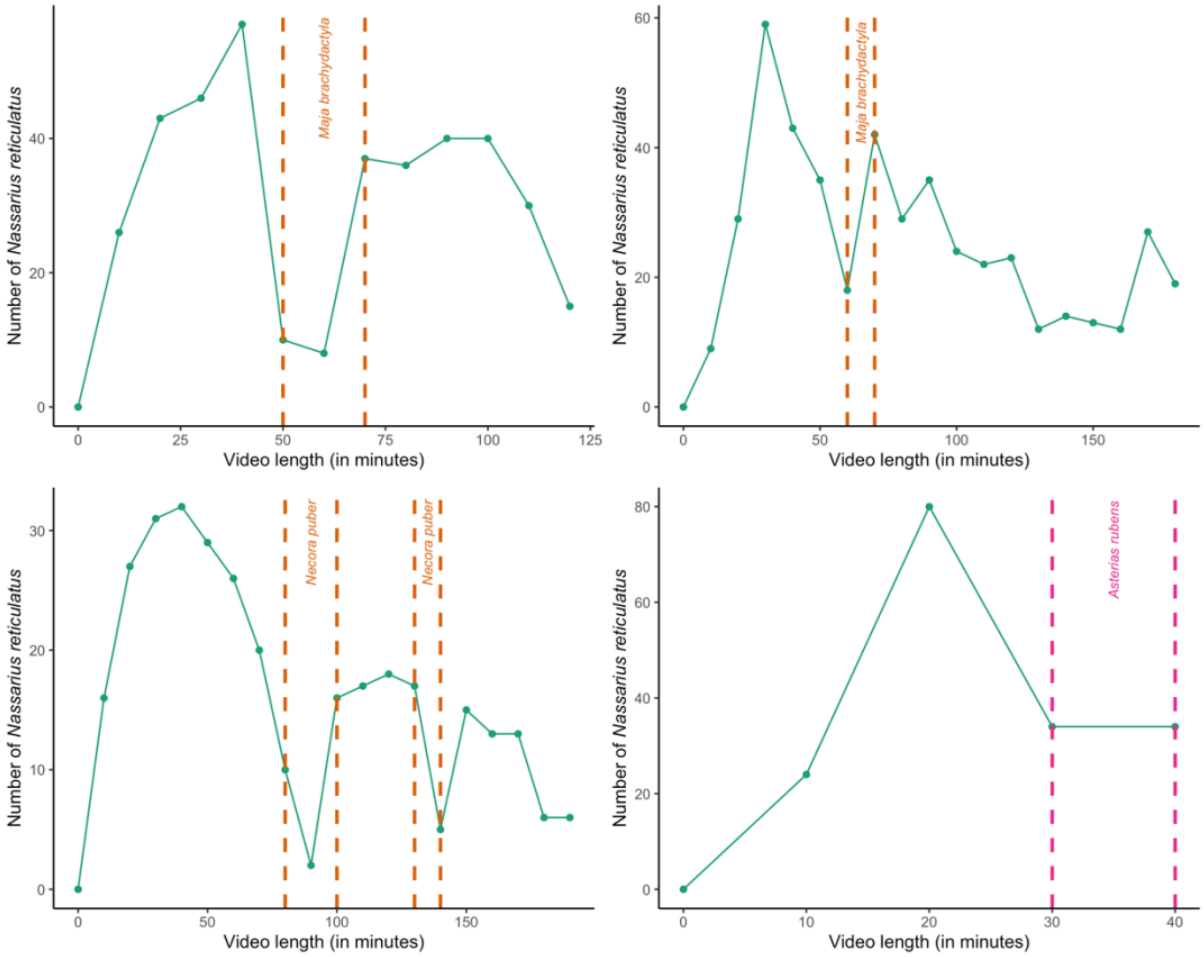

Figure A.7: Variations of *N. reticulatus* abundance in the presence of repulsive taxa in video sequences where *N. reticulatus* abundance was judged sufficient to observe significant variation.