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Damage assessment on the discarded macro-benthic fauna in the Italian striped venus clam (*Chamelea gallina*) fisheries

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Table S1. Details of the catch for each haul. NSV: not-sieved, COM: commercial, DIS: discard, USZ: undersized, DR: discard ratio.

ID_haul	Weight (g)				Weight (g/min haul)				Percentage (%)				DR
	NSV	COM	DIS	USZ	NSV	COM	DIS	USZ	COM	DIS	USZ	COM+USZ	
3min_01	31,655.00	13,500.00	3,555.00	14,600.00	10,551.67	4,500.00	1,185.00	4,866.67	42.65	11.23	46.12	88.77	0.57
3min_02	87,498.00	30,000.00	2,598.00	54,900.00	29,166.00	10,000.00	866.00	18,300.00	34.29	2.97	62.74	97.03	0.66
3min_03	92,943.00	29,000.00	3,043.00	60,900.00	30,981.00	9,666.67	1,014.33	20,300.00	31.20	3.27	65.52	96.73	0.69
Mean	70,698.67	24,166.67	3,065.33	43,466.67	23,566.22	8,055.56	1,021.78	14,488.89	36.05	5.82	58.13	94.18	0.64
6min_01	96,010.00	21,000.00	6,210.00	68,800.00	16,001.67	3,500.00	1,035.00	11,466.67	21.87	6.47	71.66	93.53	0.78
6min_02	134,343.00	27,500.00	4,343.00	102,500.00	22,390.50	4,583.33	723.83	17,083.33	20.47	3.23	76.30	96.77	0.80
6min_03	61,318.00	34,000.00	3,818.00	23,500.00	10,219.67	5,666.67	636.33	3,916.67	55.45	6.23	38.32	93.77	0.45
Mean	97,223.67	27,500.00	4,790.33	64,933.33	16,203.94	4,583.33	798.39	10,822.22	32.60	5.31	62.09	94.69	0.67
9min_01	170,388.00	30,000.00	5,388.00	135,000.00	18,932.00	3,333.33	598.67	15,000.00	17.61	3.16	79.23	96.84	0.82
9min_02	184,328.00	36,000.00	3,828.00	144,500.00	20,480.89	4,000.00	425.33	16,055.56	19.53	2.08	78.39	97.92	0.80
9min_03	265,221.00	31,500.00	2,621.00	231,100.00	29,469.00	3,500.00	291.22	25,677.78	11.88	0.99	87.13	99.01	0.88
Mean	206,645.67	32,500.00	3,945.67	170,200.00	22,960.63	3,611.11	438.41	18,911.11	16.34	2.08	81.59	97.92	0.84
Total mean (3,6, 9 min)	124,856.00 ± 71,913.00	28,055.00 ± 6,899.00	3,933.00 ± 1,221.00	92,866.00 ± 68,577.00	20,910.00 ± 7,864.00	5,416.00 ± 2,606.00	753.00 ± 297.00	14,740.00 ± 7,034.00	28.33 ± 14.00	4.40 ± 3.0	67.27 ± 16.00	95.60 ± 3.00	0.72 ± 0.14

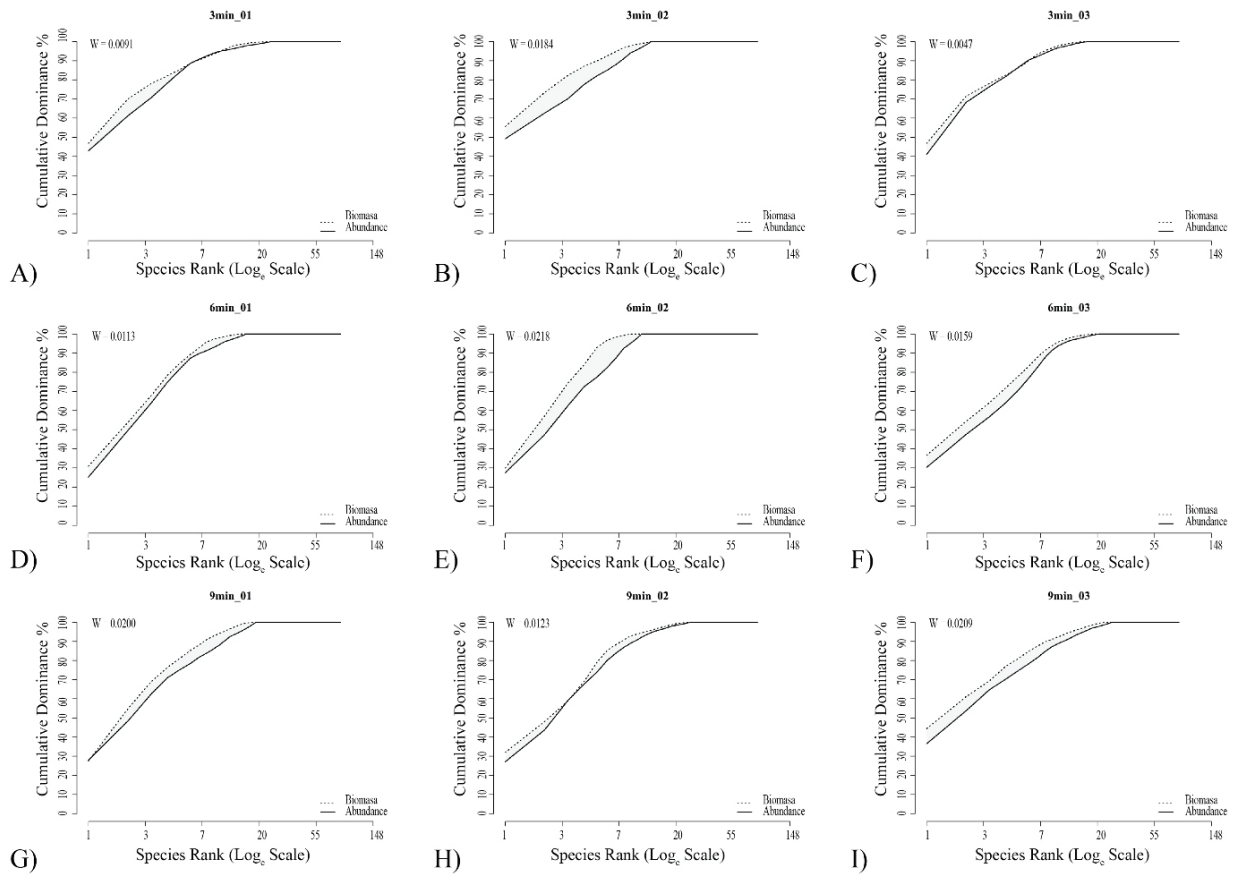


Fig. S1: ABC plots generated from the combination of abundance (continue lines) and biomass (dotted lines) data for each haul.

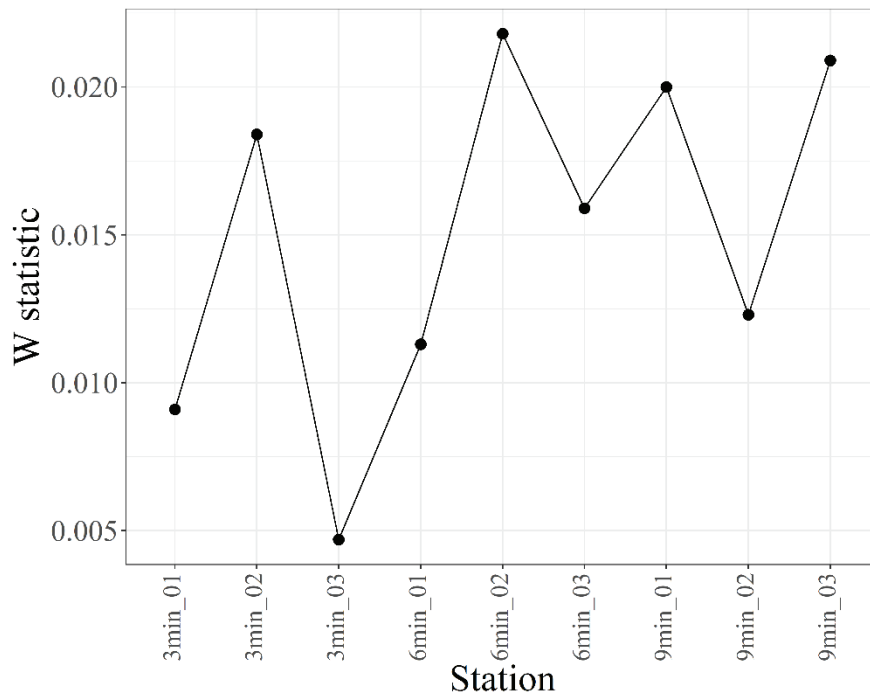


Fig. S2: W plot of the hauls. The index is never negative and does not differ much from zero, confirming the indications by the ABC plots of a moderate disturbance.

Table S2. Table of proportions (with 95% CIs) and p-value showing differences in damage rate between haul durations stratified at taxon level. NA: not available (the software could not calculate the p-value); “-“: 0/0.

Damage class	Taxa	3 min	6 min	9 min	p-value
D ₀	Asteroidea	0.642	0.764	0.621	0.251
	Bivalvia	0.601 (0.525, 0.673)	0.792 (0.724, 0.846)	0.785 (0.718, 0.840)	< .001
	Echinoidea	0.000	0.026	0.057	0.519
	Elasmobranchii	1.000	-	-	NA
	Gastropoda	0.857	0.800	0.917	0.791
	Malacostraca	0.634	0.603	0.606	0.578
	Palaeonemertea	-	-	1.000	NA
D ₁	Asteroidea	0.321	0.182	0.207	0.152
	Bivalvia	0.074	0.030	0.041	0.151
	Echinoidea	0.000	0.000	0.000	NA
	Elasmobranchii	0.000	-	-	NA
	Gastropoda	0.143	0.200	0.083	0.791
	Malacostraca	0.316	0.317	0.318	0.997
	Palaeonemertea	-	-	0.000	NA
D ₂	Asteroidea	0.012	0.000	0.069	0.068
	Bivalvia	0.043	0.006	0.035	0.097
	Echinoidea	0.000	0.091	0.121	0.614
	Elasmobranchii	0.000	-	-	NA
	Gastropoda	0.000	0.000	0.000	NA
	Malacostraca	0.020	0.021	0.036	0.253
	Palaeonemertea	-	-	0.000	NA
D ₃	Asteroidea	0.025	0.055	0.103	0.230
	Bivalvia	0.282 (0.219, 0.356)	0.173 (0.123, 0.237)	0.140 (0.096, 0.199)	0.003
	Echinoidea	1.000	0.883	0.821	0.334
	Elasmobranchii	0.000	-	-	NA
	Gastropoda	0.000	0.000	0.000	NA
	Malacostraca	0.030	0.059	0.039	0.126
	Palaeonemertea	-	-	0.000	NA

Table S3. Table of proportions (with 95% CIs) and p-value showing differences in damage rate between haul durations stratified at species level. NA: not available (the software could not calculate the p-value); “-“: 0/0.

Taxon	Species	Damage class															
		D ₀				D ₁				D ₂				D ₃			
		3 min	6 min	9 min	p-value	3 min	6 min	9 min	p-value	3 min	6 min	9 min	p-value	3 min	6 min	9 min	p-value
Asteroidea	<i>A. irregularis</i>	0.642	0.764	0.621	0.250	0.321	0.182	0.207	0.152	0.012	0.000	0.069	0.068	0.025	0.055	0.103	0.230
Bivalvia	<i>A. kagoshimensis</i>	1.000	1.000	1.000	NA	0.000	0.000	0.000	NA	0.000	0.000	0.000	NA	0.000	0.000	0.000	NA
	<i>A. tuberculata</i>	0.800	1.000	0.884	0.054	0.050	0.000	0.000	0.158	0.050	0.000	0.047	0.477	0.100	0.000	0.070	0.251
	<i>D. lupinus</i>	-	1.000	1.000	NA	-	0.000	0.000	NA	-	0.000	0.000	NA	-	0.000	0.000	NA
	<i>D. semistriatus</i>	1.000	1.000	1.000	NA	0.000	0.000	0.000	NA	0.000	0.000	0.000	NA	0.000	0.000	0.000	NA
	<i>M. stultorum</i>	0.542	0.545	0.613	0.576	0.084	0.065	0.067	0.844	0.046	0.013	0.053	0.374	0.328	0.377	0.267	0.349
	<i>O. edulis</i>	-	-	0.500	NA	-	-	0.500	NA	-	-	0.000	NA	-	-	0.000	NA
	<i>P. aureus</i>	0.750	1.000	0.333	0.196	0.000	0.000	0.333	0.274	0.000	0.000	0.000	NA	0.250	0.000	0.333	0.564
	<i>P. planata</i>	-	1.000	-	NA	-	0.000	-	NA	-	0.000	-	NA	-	0.000	-	NA
Echinoidea	<i>E. cordatum</i>	0.000	0.026	0.057	0.519	0.000	0.000	0.000	NA	0.000	0.091	0.121	0.614	1.000	0.883	0.821	0.334
Elasmobranchii	<i>Raja</i> sp.	1.000	-	-	NA	0.000	-	-	NA	0.000	-	-	NA	0.000	-	-	NA
Gastropoda	<i>B. brandaris</i>	0.500	1.000	0.500	0.659	0.500	0.000	0.500	0.659	0.000	0.000	0.000	NA	0.000	0.000	0.000	NA
	<i>N. josephinia</i>	1.000	0.750	1.000	0.382	0.000	0.250	0.000	0.382	0.000	0.000	0.000	NA	0.000	0.000	0.000	NA
	<i>N. stercusmuscarum</i>	1.000	-	1.000	NA	0.000	-	0.000	NA	0.000	-	0.000	NA	0.000	-	0.000	NA
	<i>P. aperta</i>	-	-	1.000	NA	-	-	0.000	NA	-	-	0.000	NA	-	-	0.000	NA
	<i>T. mutabilis</i>	1.000	-	-	NA	0.000	-	-	NA	0.000	-	-	NA	0.000	-	-	NA
Malacostraca	<i>D. pugilator</i>	0.875	1.000	0.857	0.855	0.125	0.000	0.143	0.855	0.000	0.000	0.000	NA	0.000	0.000	0.000	NA
	<i>I. nucleus</i>	0.000	-	-	NA	0.000	-	-	NA	1.000	-	-	NA	0.000	-	-	NA
	<i>L. vernalis</i>	0.632	0.600	0.601	0.550	0.319	0.319	0.322	0.996	0.018	0.021	0.037	0.184	0.031	0.060	0.040	0.134
Palaeonemertea	Palaeonemertea	-	-	1.000	NA	-	-	0.000	NA	-	-	0.000	NA	-	-	0.000	NA

Table S4. Overall standardized percentages in terms of number and weight of each non-target discarded taxon and species collected in the striped venus clam fishery in relation to damage level (D₀-D₃).

Taxon	Species	Abundance				Biomass			
		D ₀	D ₁	D ₂	D ₃	D ₀	D ₁	D ₂	D ₃
Asteroidea	<i>A. irregularis</i>	7.3	9.3	2.2	2.5	2.5	3.1	0.8	2.1
Bivalvia	<i>A. kagoshimensis</i>	6.3	< 0.1	< 0.1	< 0.1	5.4	< 0.1	< 0.1	< 0.1
	<i>A. tuberculata</i>	5.9	0.2	2.2	1.2	12.2	0.3	3.3	2.0
	<i>D. lupinus</i>	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	<i>D. semistriatus</i>	3.5	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
	<i>M. stultorum</i>	12.0	3.6	10.2	25.4	10.5	3.1	5.6	19.0
	<i>O. edulis</i>	< 0.1	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
	<i>P. aureus</i>	0.6	0.1	< 0.1	0.4	0.1	< 0.1	< 0.1	0.2
	<i>P. planata</i>	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
<i>Total</i>	-	29.5	4.0	12.4	26.1	28.4	3.6	8.9	21.2
Echinoidea	<i>E. cordatum</i>	0.9	< 0.1	43.3	61.7	1.7	< 0.1	49.9	65.6
Elasmobranchii	<i>Raja</i> sp.	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Gastropoda	<i>B. brandaris</i>	0.1	0.3	< 0.1	< 0.1	0.3	0.4	< 0.1	< 0.1
	<i>N. josephinia</i>	0.9	0.7	< 0.1	< 0.1	0.7	0.4	< 0.1	< 0.1
	<i>N. stercusmuscarum</i>	0.8	< 0.1	< 0.1	< 0.1	0.7	< 0.1	< 0.1	< 0.1
	<i>P. aperta</i>	0.2	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
	<i>T. mutabilis</i>	0.4	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
<i>Total</i>	-	2.4	1.0	< 0.1	< 0.1	1.8	0.8	< 0.1	< 0.1
Malacostraca	<i>D. pugilator</i>	2.2	0.3	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
	<i>I. nucleus</i>	< 0.1	< 0.1	5.3	< 0.1	< 0.1	< 0.1	1.4	< 0.1
	<i>L. vernalis</i>	57.7	85.4	36.9	9.8	64.7	92.4	39.0	11.1
<i>Total</i>	-	59.8	85.7	42.2	9.8	65.5	92.5	40.4	11.1
Palaeonemertea	Palaeonemertea	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1