

Figure S1. Boats counted by photo-sampling at the four sampling locations during the sampling period in 2019 (A), 2020 (B) and 2021(C). Colors of the four lines representing the four sampling locations refer the NI gradient, from the lowest level of noise (blue/green lines) to the highest (red line). In spite of a non-negligible variability in time (especially among sampling dates), a consistent pattern across years emerges, with Marinières being the location with the highest NI value, and Eze-sur-Mer and Cap Ferrat being the locations with the lowest NI values.

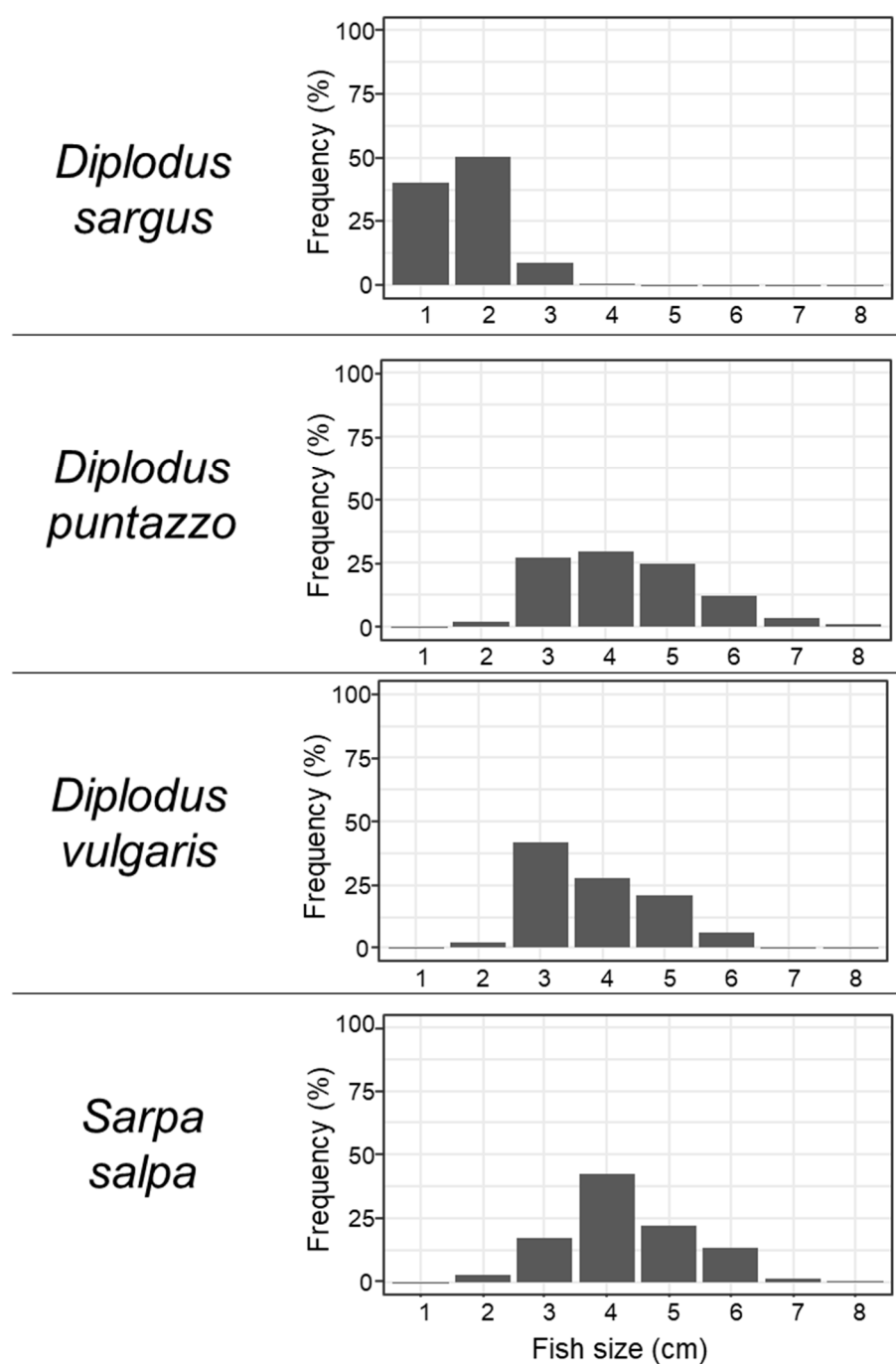


Figure S2. Size-frequency distributions of juveniles of *Diplodus sargus*, *D. puntazzo*, *D. vulgaris* and *Sarpa salpa* at the two first sampling dates (data were pooled for 2019, 2020 and 2021, the general patterns being similar) showing that, initially, *D. sargus* were early settlers (smaller in size: modal class=2 cm, max=3 cm standard length, SL), while the other species (*D. puntazzo*, *D. vulgaris* and *Sarpa salpa*) were late post-settlers (bigger in size: modal classes= 3–5 cm; max=7–8 cm SL).

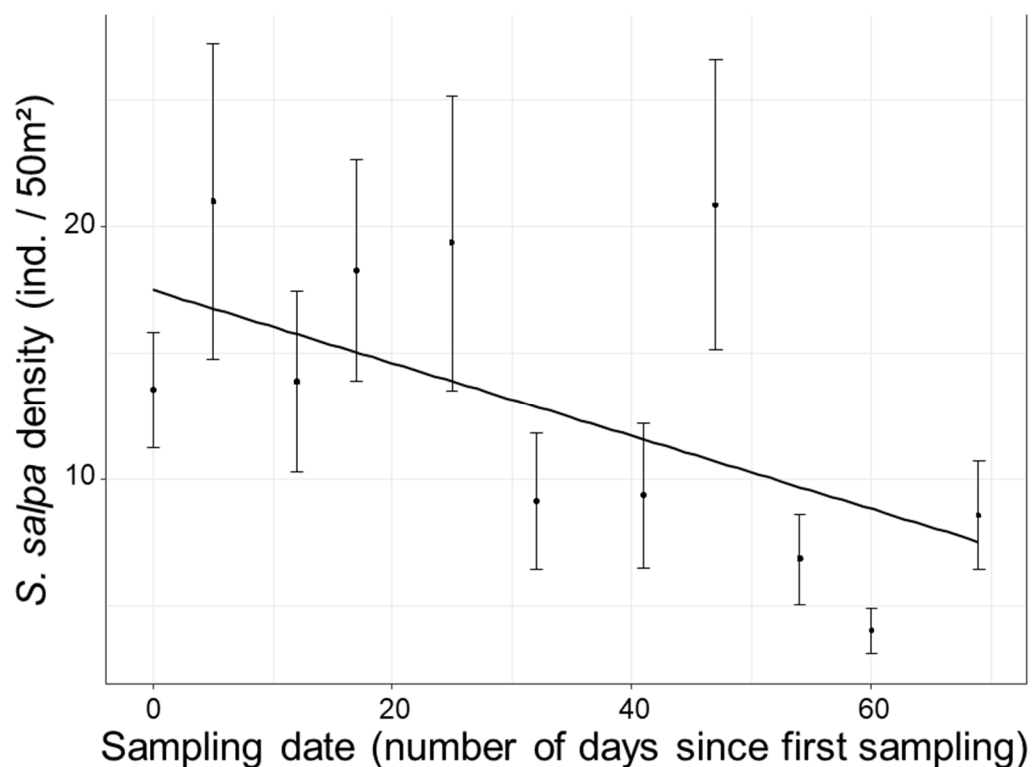


Figure S3. Mean (\pm SE) values of density of juveniles of *S. salpa* across sampling dates in 2020. Each point represents the mean density for each level of sampling date investigated. The line represents the linear relation between density of juveniles of *S. salpa* across sampling dates.

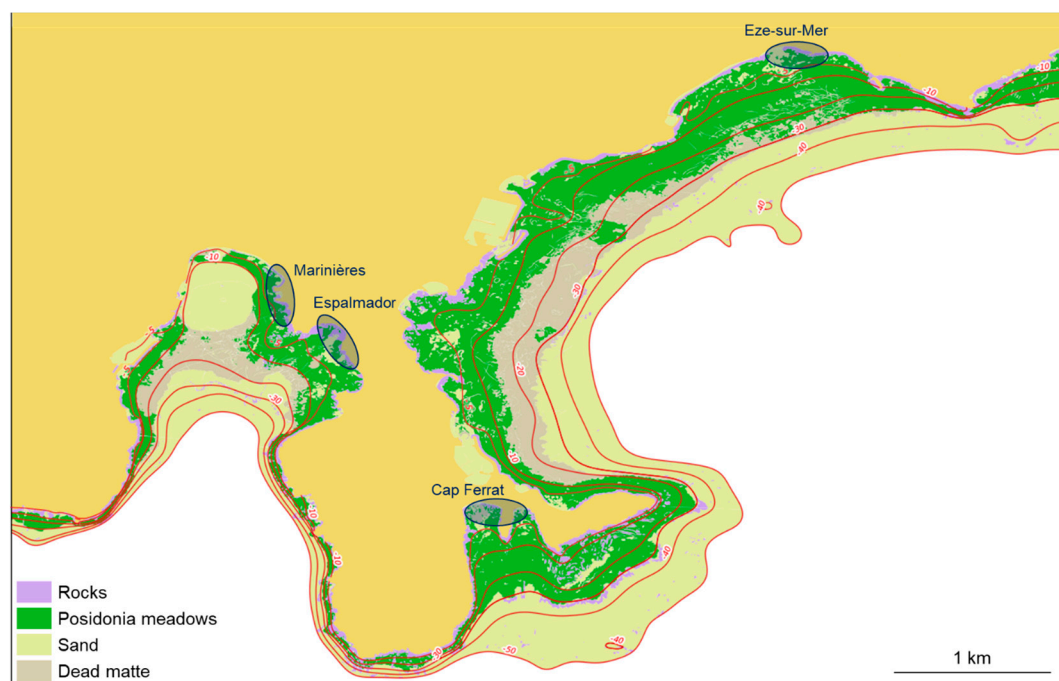


Figure S4. Bathymetry (from -5 to -40 m; red lines) and biocenoses of the study area. Blue ovals represent the 4 study locations (DONIA: Habitat cartography - Data consulted 10/2021 on the MEDTRIX surveillance platform) (<https://plateforme.medtrix.fr>).

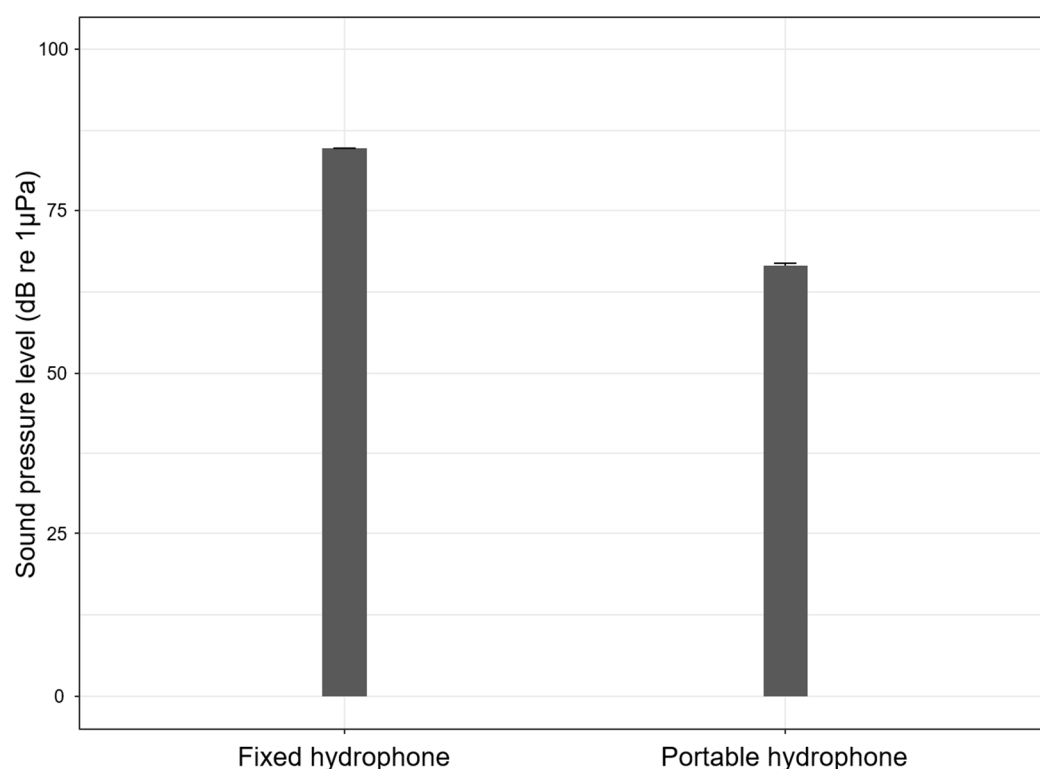


Figure S5. Mean values (\pm SE) of sound pressure level in the third octave band centered around 250 Hz (where most of the anthropogenic continuous noise is produced) recorded within contemporaneous temporal windows by hydrophones located at 10 m (fixed) and 1 m depth (portable; the microhabitat for settlement of most sparid fishes), at the four sampling locations.

Table S1. Outputs of the ANOVA computed on the ManyGLM for the three sampling years.

<i>Year/Source</i>	<i>Res.Df</i>	<i>Df diff</i>	<i>Dev</i>	<i>Pr(>Dev)</i>
2019				
(Intercept)	385			
Sampling Date	384	1	180.67	< 2e-16 ***
NI	383	1	92.77	< 2e-16 ***
Sampling Date * NI	382	1	24.07	0.001 ***
Site (NI)	372	11	225.36	< 2e-16 ***
2020				
(Intercept)	443			
Sampling Date	442	1	121.94	< 2e-16 ***
Location	439	3	95.15	< 2e-16 ***
Sampling Date * Location	436	3	47.64	0.001 ***
Site (Location)	428	11	148.17	0.001 ***
2021				
(Intercept)	453			
Sampling Date	452	1	133.38	< 2e-16 ***
Location	449	3	131.24	< 2e-16 ***

Sampling Date * Location	446	3	11.01	0.783
Site (Location)	438	11	127.35	< 2e-16 ***

Table S2. Outputs of the post-hoc analyses performed the ManyGLM for 2020 and 2021.

<i>Year/Pairwise comparison result</i>	<i>Observed statistic</i>	<i>Free stepdown adjusted P-value</i>
2020		
Eze-sur-mer vs. Marinières	60.14	< 2e-16 ***
Cap Ferrat vs. Marinières	41.66	< 2e-16 ***
Espalmador vs. Eze-sur-Mer	34.35	< 2e-16 ***
Cap Ferrat vs. Espalmador	24.02	0.002 ***
Cap Ferrat vs. Eze-sur-mer	16.07	0.023 *
Espalmador vs. Marinières	5.88	0.368
2021		
Eze-sur-mer vs. Marinières	70.33	< 2e-16 ***
Cap Ferrat vs. Marinières	57.35	< 2e-16 ***
Espalmador vs. Eze-sur-Mer	46.64	< 2e-16 ***
Cap Ferrat vs. Espalmador	35.65	< 2e-16 ***
Cap Ferrat vs. Eze-sur-mer	23.63	0.001 ***
Espalmador vs. Marinières	19.41	0.002 ***

Table S3. Results of the univariate test from the output of the ANOVA computed on the ManyGLM for the three sampling years.

Species	D. puntazzo		D. sargus		D. vulgaris		O. melanura		S. salpa	
2019										
	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)
Sampling Date	116.784	< 2e-16 ***	10.311	0.003 **	18.55	< 2e-16 ***	33.864	< 2e-16 ***	1.164	0.262
NI	4.167	0.150	29.531	< 2e-16 ***	50.434	< 2e-16 ***	2.659	0.199	5.979	0.082
Sampling Date * NI	7.589	0.049 *	0.353	0.846	14.43	0.002***	0.013	0.921	1.685	0.559
Site (NI)	32.707	0.002 ***	48.303	< 2e-16 ***	34.587	0.001 ***	79.118	< 2e-16 ***	30.642	0.002 ***
2020										
	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)
Sampling Date	21.423	< 2e-16 ***	20.997	< 2e-16 ***	62.272	< 2e-16 ***	5.814	0.009 *	11.435	0.002 ***
Location	14.759	0.032 *	17.809	0.014 *	40.312	< 2e-16 ***	2.731	0.662	19.536	0.009 ***
Sampling Date * Location	11.959	0.087	14.795	0.046*	12.896	0.069	1.708	0.824	6.285	0.388

Site (Location)	27.955	0.022*	22.174	0.107	33.432	0.005 **	15.729	0.325	48.882	0.001 ***
2021										
	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)	Dev	Pr(>Dev)
Sampling Date	47.097	< 2e-16 ***	13.528	0.003 **	6.564	0.015 *	44.866	< 2e-16 ***	21.322	< 2e-16 ***
Location	32.499	< 2e-16 ***	34.129	< 2e-16 ***	57.964	< 2e-16 ***	0.349	0.950	6.296	0.164
Sampling Date * Location	3.618	0.820	2.413	0.876	3.895	0.820	0.393	0.983	0.69	0.983
Site (Location)	31.191	0.00. **	26.027	0.012 *	45.631	< 2e-16 ***	219.807	0.063	4.691	0.738

Table S4. Outputs of the ANOVA computed on the *D. sargus* glmmTMB model for the three sampling years.

Source	χ^2	Df	Pr(>Dev)
2019			
Sampling Date	7.2846	1	0.0069548 **
NI	11.2043	1	0.0008161 ***
Sampling Date * NI	0.1811	1	0.6704658
2020			
Sampling Date	62.8164	1	2.269e-15 ***
Location	11.7199	3	0.008407 **
Sampling Date * Location	9.0611	3	0.028489 *
2021			
Sampling Date	6.3110	1	0.01200 *
Location	7.8382	3	0.04948 *
Sampling Date * Location	1.9627	3	0.58019

Table S5. Post-hocs analyses of the ANOVA computed on the *D. sargus* glmmTMB model for the factor location in 2021.

Pairwise comparison	Estimate	SE	df	t.ratio	P-value
Cap Ferrat vs. Espalmador	1.066	0.641	371	1.664	0.3442
Cap Ferrat vs. Eze-sur-Mer	-0.609	0.617	371	1.778	0.7569
Cap Ferrat vs. Marinieres	0.523	0.626	371	0.836	0.8373
Espalmador vs. Eze-sur-Mer	-1.676	0.626	371	-2.675	0.0389*

Espalmador vs. Marinieres	-0.543	0.636	371	-0.854	0.8284
Eze-sur-Mer vs. Marinieres	1.133	0.611	371	1.855	0.2494

Table S6. Outputs of the ANOVA computed on the *D. puntazzo* glmmTMB model for the three sampling years.

Source	χ^2	Df	Pr(>Dev)
2019			
Sampling Date	75.4172	1	<2e-16 ***
NI	1.7093	1	0.1911
Sampling Date * NI	6.1026	1	0.0135 *
2020			
Sampling Date	15.9603	1	6.469e-05 ***
Location	6.2388	3	0.100551
Sampling Date * Location	11.4717	3	0.009431 **
2021			
Sampling Date	44.8196	1	2.16e-11 ***
Location	11.4456	3	0.009545 **
Sampling Date * Location	3.2466	3	0.355146

Table S7. Post-hocs analyses of the ANOVA computed on the *D. puntazzo* glmmTMB model for the factor location in 2021.

Pairwise comparison	Estimate	SE	df	t.ratio	P-value
Cap Ferrat vs. Espalmador	-1.219	0.491	443	-2.483	0.0640
Cap Ferrat vs. Eze -sur-Mer	-0.679	0.508	443	-1.337	0.5400
Cap Ferrat vs. Marinieres	-1.392	0.490	443	-2.842	0.0242*
Espalmador vs. Eze-sur-Mer	0.541	0.422	443	1.281	0.5757
Espalmador vs. Marinieres	-0.172	0.399	443	-0.432	0.9729
Eze-sur-Mer vs. Marinieres	-0.713	0.421	443	-1.695	0.3274

Table S8. Outputs of the ANOVA computed on the *D. vulgaris* glmmTMB model for the three sampling years.

Source	χ^2	Df	Pr(>Dev)
2019			
Sampling Date	13.6133	1	0.0002246 ***
NI	8.6836	1	0.0032108 **
Sampling Date * NI	7.6929	1	0.0055437 **
2020			
Sampling Date	43.752	1	3.728e-11 ***
Location	22.853	3	4.333e-05 ***
Sampling Date * Location	7.887	3	0.04841 *
2021			
Sampling Date	2.8099	1	0.093687
Location	13.8355	3	0.003138 **
Sampling Date * Location	2.3496	3	0.503084

Table S9. Post-hocs analyses of the ANOVA computed on the *D. vulgaris* glmmTMB model for the factor location in 2021.

Pairwise comparison	Estimate	SE	df	t.ratio	P-value
Cap Ferrat vs. Espalmador	-0.169	0.501	443	-0.338	0.9867
Cap Ferrat vs. Eze -sur-Mer	1.437	0.567	443	2.537	0.0558
Cap Ferrat vs. Marinieres	-0.639	0.498	443	-1.282	0.5750
Espalmador vs. Eze-sur-Mer	1.607	0.548	443	2.934	0.0184 *
Espalmador vs. Marinieres	-0.469	0.475	443	-0.989	0.7556
Eze-sur-Mer vs. Marinieres	-2.076	0.543	443	-3.822	0.0009 ***

Table S10. Output of the ANOVA computed on the *S. salpa* glmmTMB model for 2020.

Source	χ^2	Df	Pr(>Dev)
Sampling Date	19.4455	1	1.035e-05 ***
Location	1.2447	3	0.7423
Sampling Date * Location	3.1778	3	0.3650