

Mediterranean Marine Science

Vol 18, No 2 (2017)



Where not to fish – reviewing and mapping fisheries restricted areas in the Aegean Sea

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doi: [10.12681/mms.2081](https://doi.org/10.12681/mms.2081)

To cite this article:

PETZA, D., MAINA, I., KOUKOUROUVLI, N., DIMARCHOPOULOU, D., AKRIVOS, D., KAVADAS, S., TSIKLIRAS, A., KARACHLE, P. K., & KATSANEVAKIS, S. (2017). Where not to fish – reviewing and mapping fisheries restricted areas in the Aegean Sea. *Mediterranean Marine Science*, 18(2), 310–323. <https://doi.org/10.12681/mms.2081>

Supplementary Material to

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Mediterranean Marine Science, 2017, 18 (2)

Table S1: Description of the FRAs database fields.

No	FIELD NAME	FIELD DESCRIPTION
1.	FRA TYPE	The FRA type according to the type of legislation by which the FRA is established, i.e., by national Fisheries (n_r FRA), Environmental (n_e FRA), Archaeological (n_a FRA), Maritime (n_m FRA) legislation, national legislation for the regulation of fishing activities in international waters (n_{if} FRA), European Union's legislation (euFRA) or International Fisheries Organizations' Decisions (intFRA)
2.	FRA CODE	The unique code attributed to each spatio-temporal restriction imposed for a specific fishing gear. It is the identity code of each FRA
3.	DUPLICATE CODE	The common code attributed to all FRAs concerning spatio-temporal restrictions for different fishing gears in the same area
4.	GEOGRAPHICAL SUB AREA	The General Fisheries Commission for the Mediterranean (GFCM) geographical sub-area code
5.	PORT AUTHORITY NAME	The name of the competent port authority
6.	PORT AUTHORITY CODE	The code of the competent port authority
7.	NATIONAL STATISTICAL SERVICE OF GREECE MARINE AREA	The name of the marine area where the FRA is found, according to the National Statistical Service of Greece (NSSG) classification
8.	NATIONAL STATISTICAL SERVICE OF GREECE MARINE AREA CODE	The name of the marine area where the FRA is found, according to the National Statistical Service of Greece (NSSG) classification
9.	NUTS GEOGRAPHIC REGION	The name of the geographic region, according to the Nomenclature of Territorial Units (NUTS) for Statistics of Greece used by Eurostat, where the FRA is found
10.	NUTS GEOGRAPHIC REGION CODE	The code of the geographic region, according to the Nomenclature of Territorial Units (NUTS) for Statistics of Greece used by Eurostat, where the FRA is found
11.	GEOGRAPHIC SUB-REGION	The name of the geographic sub-region where the FRA is located
12.	AREA DESCRIPTION	The description of the area where the spatio-temporal restriction is imposed, according to the relevant legislative act
13.	AREA SURFACE	The description of the area surface, where the spatio-temporal restriction is imposed, according to the relevant legislative act
14.	REFERENCE	The reference document (e.g. descriptive maps, coordinates etc.) used for the mapping of the FRA
15.	PURPOSE	The purpose for the establishment of the FRA (e.g. stock protection, artificial reef, <i>Posidonia oceanica</i> seabed, MPAs-Nature Reserve Area, archaeological sites, beaches, cables-pipes, channels, military facilities, ports, waste effluents)
16.	CLOSURE TYPE	The type of closure (i.e., permanent or seasonal)
17.	START DAY	The closure period start day
18.	START MONTH	The closure period start month

(continued)

Supp. Table S1 (continued)

19.	END DAY	The closure period end day
20.	END MONTH	The closure period end month
21.	RESTRICTED GEAR TYPE	The restricted fishing gear type for the specific FRA (i.e., towed, mobile, static or their combinations)
22.	RESTRICTED GEAR	The restricted fishing gear for the specific FRA
23.	RESTRICTED GEAR DETAILS 1	The restricted fishing gear for the specific FRA more detailed (i.e., the specific gear/s prohibited)
24.	RESTRICTED GEAR DETAILS 2	The restricted fishing gear for the specific FRA even more detailed (i.e., the specific gear/s sub-category or species prohibited)
25.	YEAR OF ISSUE	The year of issue of the FRA's legal framework
26.	LEGAL FRAMEWORK	The number and year of issue of the legislative act by which the FRA was established (and the number and year of government gazette issue)
27.	LEGAL FRAMEWORK DETAILS	The number of article and/ or paragraph of the legislative act by which the FRA was established
28.	AMENDMENT LEGAL FRAMEWORK	The number and year of issue of the amendment of the legislative act by which the FRA was established and the number and year of government gazette issue
29.	AMENDMENT LEGAL FRAMEWORK DETAILS	The number of article and/ or paragraph of the amendment of the legislative act by which the FRA was established
30.	PARTNER	The partner responsible for the information inserted in the database e.g. University of the Aegean (UAegean), Hellenic Center for Marine Research (HCMR), University of Thessaloniki (AUTH), Directorate for Fisheries Control (DFC)
31.	AREA	The area in square meters of the FRA polygon

Table S2: Presentation of the fishing gear categories used to classify FRAs. The categorization is according to the provisions of EU Commission Regulation (EC) No1799/2006, amending Regulation (EC) No 26/2004 on the Community fishing fleet register (EU Commission, 2006).

GEAR CATEGORY	GEAR NAME	GEAR CODE	GEAR TYPE	
TRAWLS	otter bottom trawls	OTB	towed	
PURSE SEINES	purse seines	PS	mobile	
	beach seines	SB	towed	
	boat dredges	DRB	towed	
	DREDGES	hand dredges used on board a vessel	DRH	towed
		set (anchored) gill nets	GNS	static
	GILLNETS AND ENTANGLING NETS	encircling gill nets	GNC	static
		trammel nets	GTR	static
		combined trammel nets	GTN	static
SMALL SCALE GEARS	TRAPS	pots (traps)	FPO	static
		hand lines and pole lines (hand operated)	LHP	static
	HOOKS AND LINES	hand lines and pole lines (mechanized)	LHM	static
		set longlines	LLS	static
		longlines (drifting)	LLD	static
		troll lines	LTL	mobile

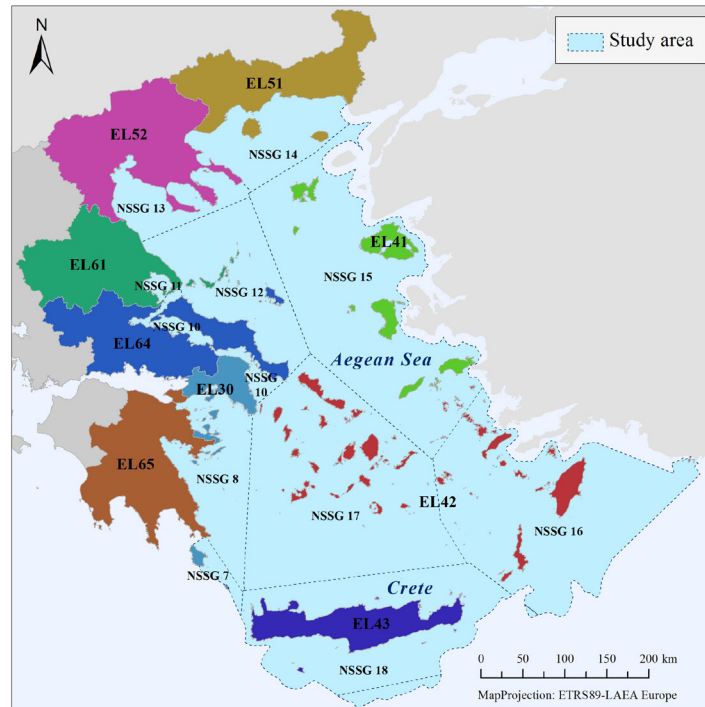


Fig. S1: Map of the marine areas identified in the study area (Aegean Sea-GSA22 and Crete-GSA 23), according to the National Statistical Service of Greece (NSSG) i.e., 7- Gulf of Lakonia, 8- Gulf of Argolida and Saronikos Gulf, 10- Gulf of South and North Evia - Gulf of Lamia, 11- Pagassitikos Gulf, 12- Eastern coasts of Evia and Sporades Islands, 13- Thermaikos Gulf and Gulf of Chalkidiki, 14- Strimonikos, Kavala, Thassos, Thracian Sea, 15- Islands of Lesbos, Chios, Samos and Ikaria, 16- Dodekanissos, 17- Kyklades and 18-Kriti and of the adjacent to the study area terrestrial geographic regions, according to the official European Commission Nomenclature of Territorial Units (NUTS) for Statistics of Greece i.e., EL30-Attica, EL41-North Aegean, EL42-South Aegean, EL43-Crete, EL51-Eastern Macedonia and Thrace, EL52-Central Macedonia, EL61-Thessaly, EL64-Central Greece and EL65- Peloponnese.

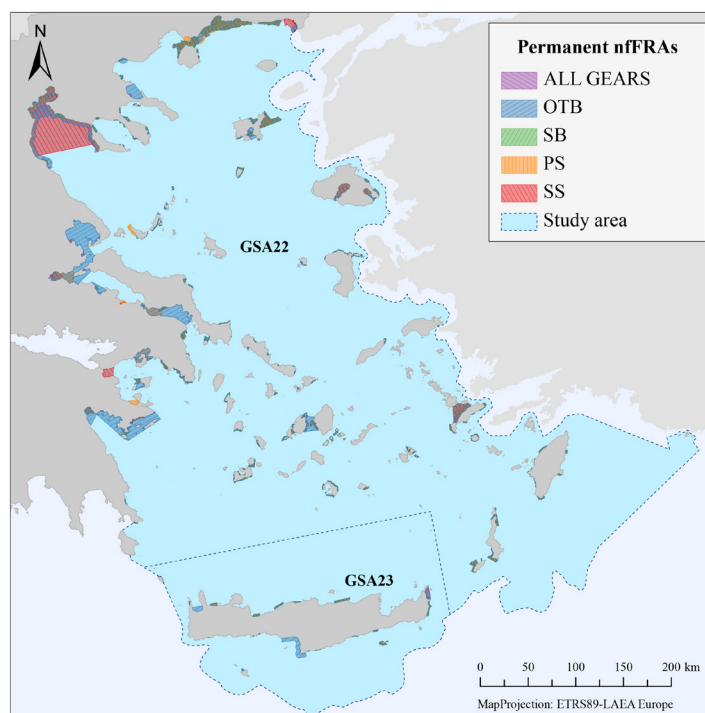


Fig. S2: Map of the 208 permanent Fisheries Restricted Areas established by the national fisheries legislation in territorial waters (n_i FRAs), which were identified and mapped in the study area (Aegean Sea-GSA22 and Crete-GSA23) per restricted gear (OTB, otter bottom trawl; SB, boat seine; PS, purse seine; SS, small scale fishing gear). The FRAs for small scale fishing gears do not necessarily refer to all the gears included in this category. Hence, the SS FRAs depicted in this map should not be seen as closed areas for all small-scale fisheries.

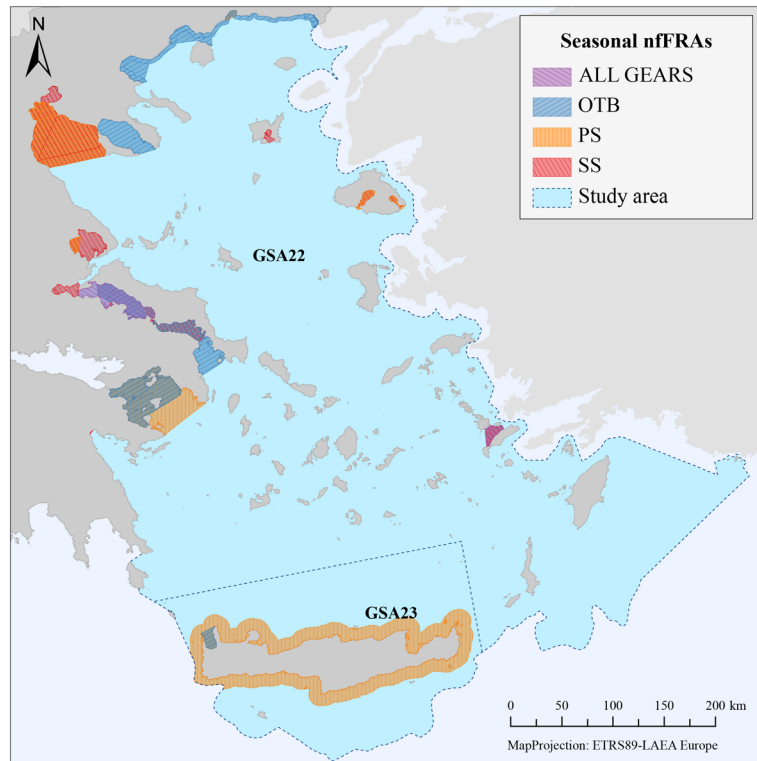


Fig. S3: Map of the 40 seasonal Fisheries Restricted Areas established by the national fisheries legislation in territorial waters (n_{fr} FRAs), which were identified and mapped in the study area (Aegean Sea-GSA22 and Crete-GSA23) per restricted gear (OTB, otter bottom trawl; PS, purse seine; SS, small scale gear). The FRAs for small scale fishing gears do not necessarily refer to all the gears included in this category. Hence, the SS FRAs depicted in this map should not be seen as closed areas for all small scale fisheries.

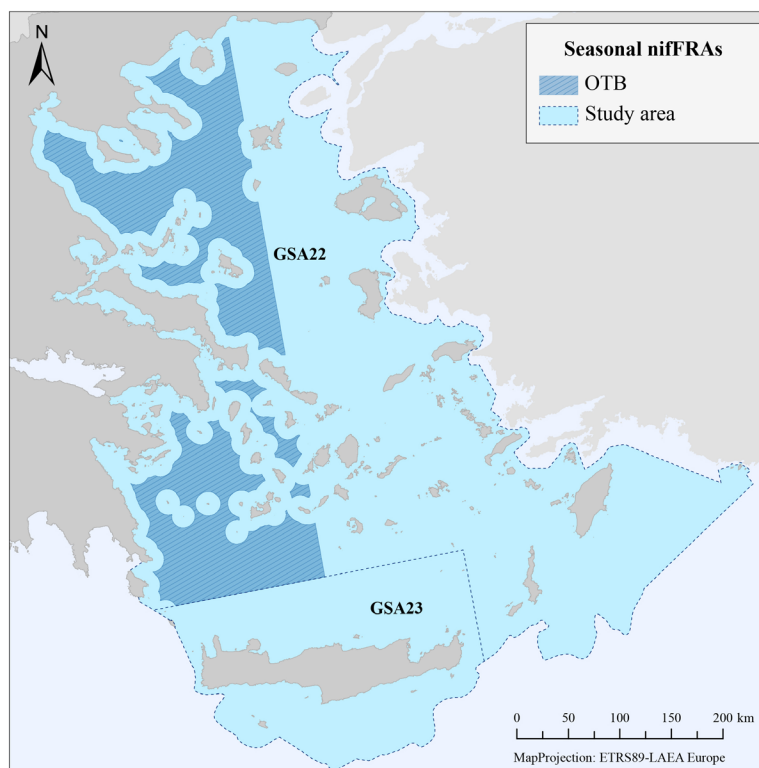


Fig. S4: Map of the seasonal Fisheries Restricted Area established by the national fisheries legislation in international waters (n_{fr} FRA), which was identified and mapped in the study area (Aegean Sea-GSA22 and Crete-GSA23) for the fishing gear otter bottom trawl (OTB).

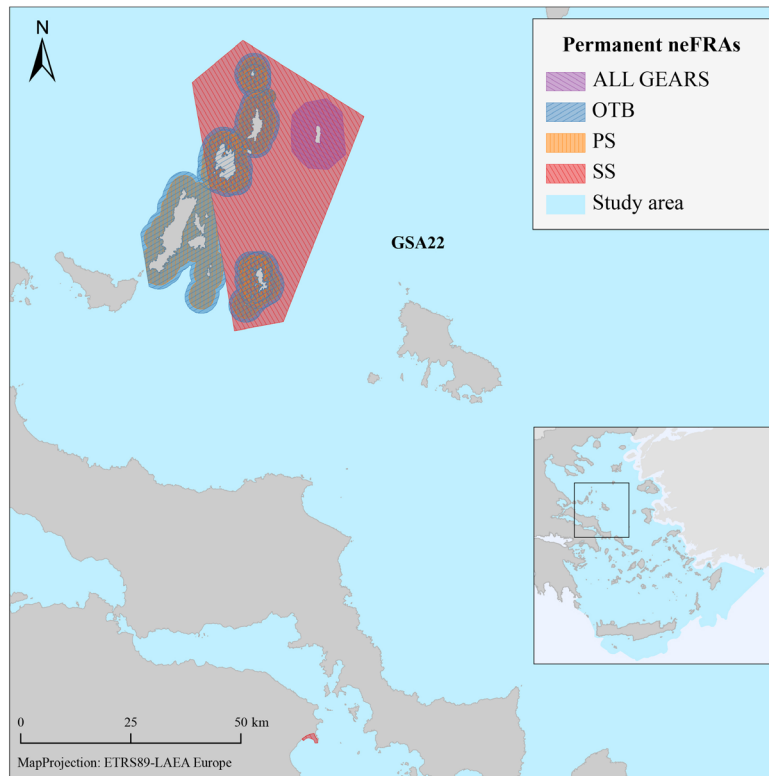


Fig. S5: Map of the 20 permanent Fisheries Restricted Areas established by the national environmental legislation (n_e FRAs), which were identified and mapped in the study area (Aegean Sea-GSA22 and Crete-GSA23) per restricted gear (OTB, otter bottom trawl; PS, purse seine; SS, small scale fishing gear). The FRAs for small scale fishing gears do not necessarily refer to all the gears included in this category. Hence, the SS FRAs depicted in this map should not be seen as closed areas for all small scale fisheries.

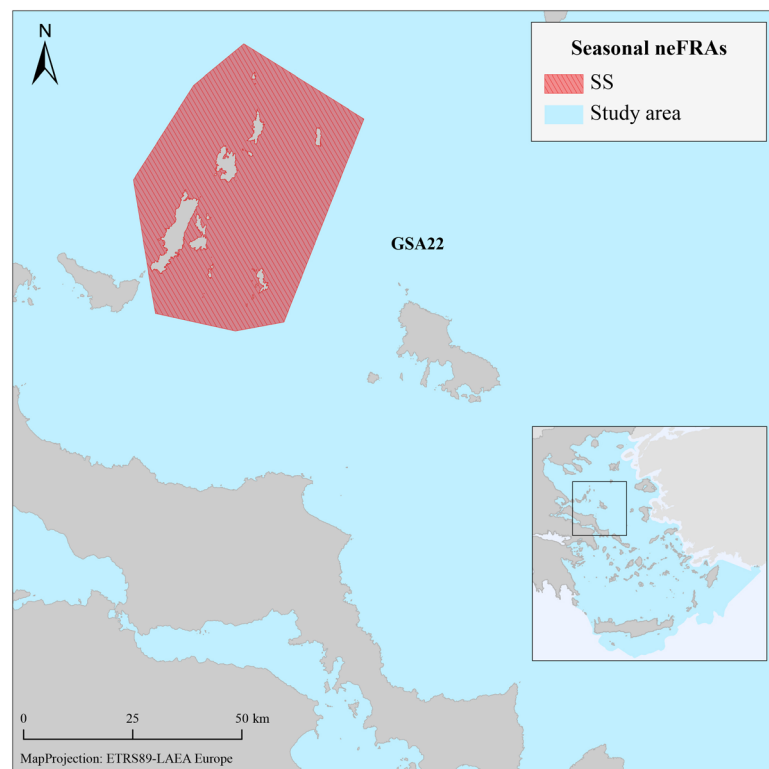


Fig. S6: Map of the seasonal Fisheries Restricted Area established by the national environmental legislation (n_e FRAs), which was identified and mapped in the study area (Aegean Sea-GSA22 and Crete-GSA23) for small scale fishing gears (SS). The FRA for small scale fishing gears do not necessarily refer to all the gears included in this category. Hence, the SS FRA depicted in this map should not be seen as closed area for all small scale fisheries.

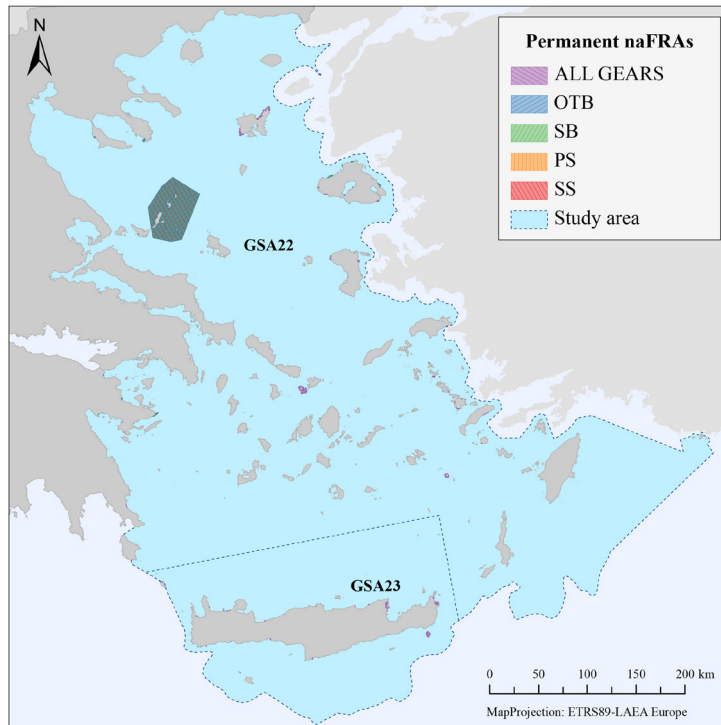


Fig. S7: Map of the 85 permanent Fisheries Restricted Areas established by the national legislation for the protection of the underwater archaeological heritage (naFRAs), which were identified and mapped in the study area (Aegean Sea-GSA22 and Crete-GSA23) per restricted gear (OTB, otter bottom trawl; SB, boat seine; PS, purse seine; SS, small scale fishing gear). The FRAs for small scale fishing gears do not necessarily refer to all the gears included in this category. Hence, the SS FRAs depicted in this map should not be seen as closed areas for all small scale fisheries.

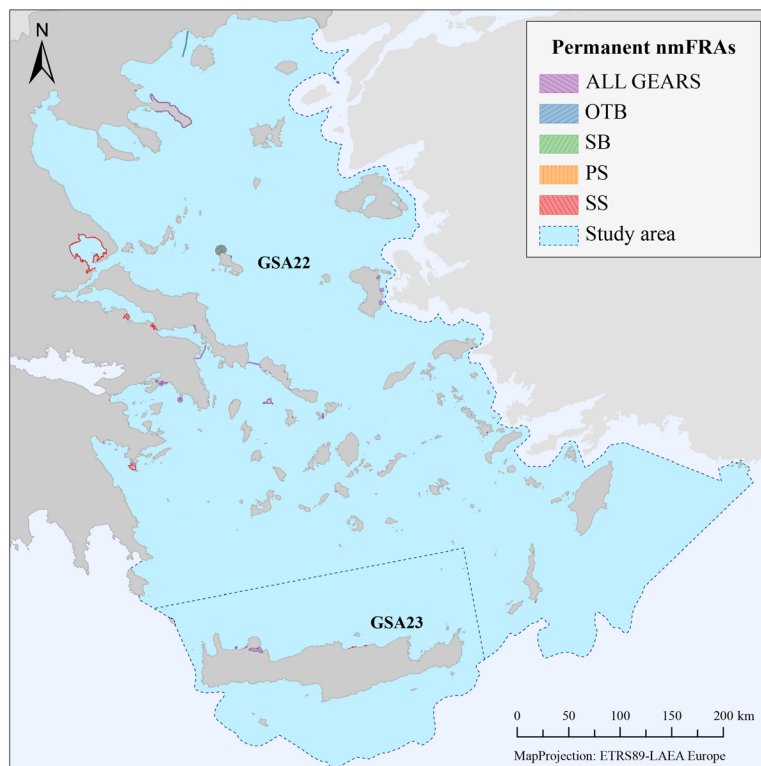


Fig. S8: Map of the 117 permanent Fisheries Restricted Areas established by the national maritime legislation (nmFRAs), which were identified and mapped in the study area (Aegean Sea-GSA22 and Crete-GSA23) per restricted gear (OTB, otter bottom trawl; SB, boat seine; PS, purse seine; SS, small scale fishing gear). The FRAs for small scale fishing gears do not necessarily refer to all the gears included in this category. Hence, the SS FRAs depicted in this map should not be seen as closed areas for all small scale fisheries.

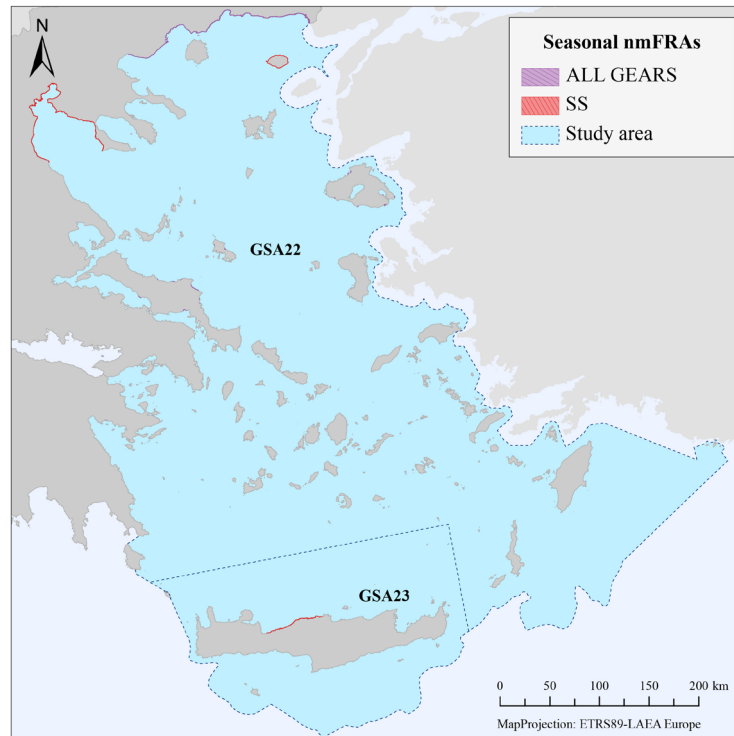


Fig. S9: Map of the 34 seasonal Fisheries Restricted Areas established by the national maritime legislation (n_m FRAs), which were identified and mapped in the study area (Aegean Sea-GSA22 and Crete-GSA23) per restricted gear (SS, small scale fishing gear). The FRAs for small scale fishing gears do not necessarily refer to all the gears included in this category. Hence, the SS FRAs depicted in this map should not be seen as closed areas for all small scale fisheries.

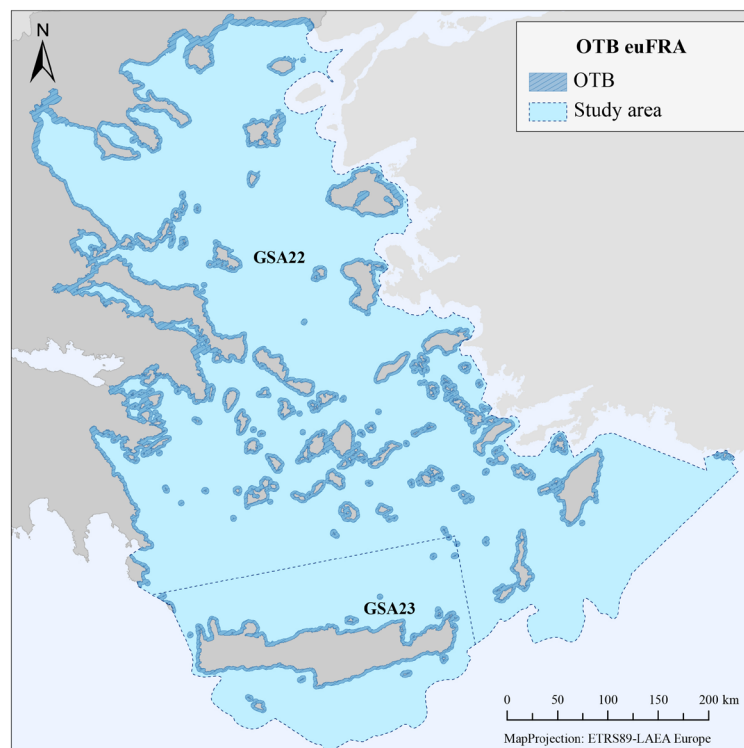


Fig. S10: Map of the 2 permanent Fisheries Restricted Areas for the fishing gear otter bottom trawl (OTB) in the study area (Aegean Sea-GSA22 and Crete-GSA23), according to the European Union's legal framework (euFRAs) i.e. Council Regulation (EC) 1967/2006, concerning the prohibition of the use of trawl nets within 3 nautical miles of the coast or within the 50 m isobath where that depth is reached at a shorter distance from the coast and the prohibition of the use of trawl nets within 1.5 nautical miles of the coast.

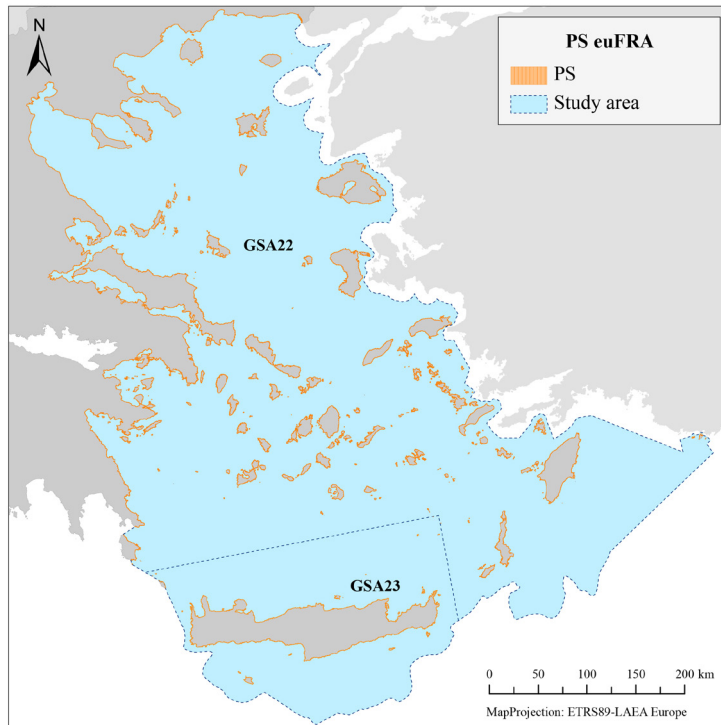


Fig. S11: Map of the 2 permanent Fisheries Restricted Areas for the fishing gear purse seine (PS) in the study area (Aegean Sea-GSA22 and Crete-GSA23), according to the European Union’s legal framework (euFRAs) i.e. Council Regulation (EC) 1967/2006, concerning the prohibition of the use of purse seines within 300m of the coast or within the 50 meters isobath, where that depth is reached at a shorter distance from the coast.

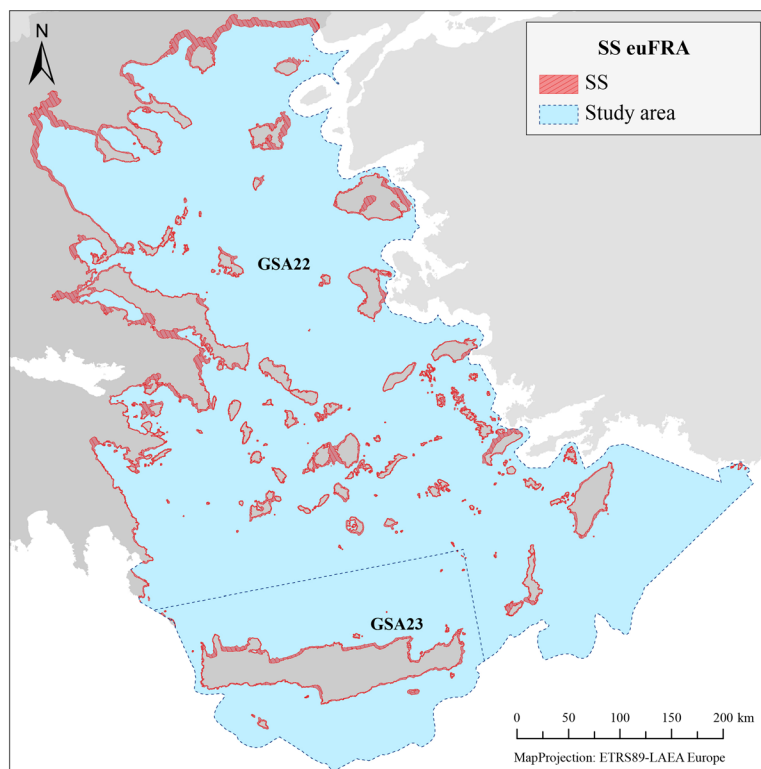


Fig. S12: Map of the 2 permanent Fisheries Restricted Areas for small scale gears (SS) in the study area (Aegean Sea-GSA22 and Crete-GSA23), according to the European Union’s legal framework (euFRAs) i.e. Council Regulation (EC) 1967/2006, concerning the prohibition of the use of dredges (DRH, DRB) within 3 nautical miles of the coast or within the 50 m isobath where that depth is reached at a shorter distance from the coast and the prohibition of the use of dredges within 0.3 nautical miles of the coast.

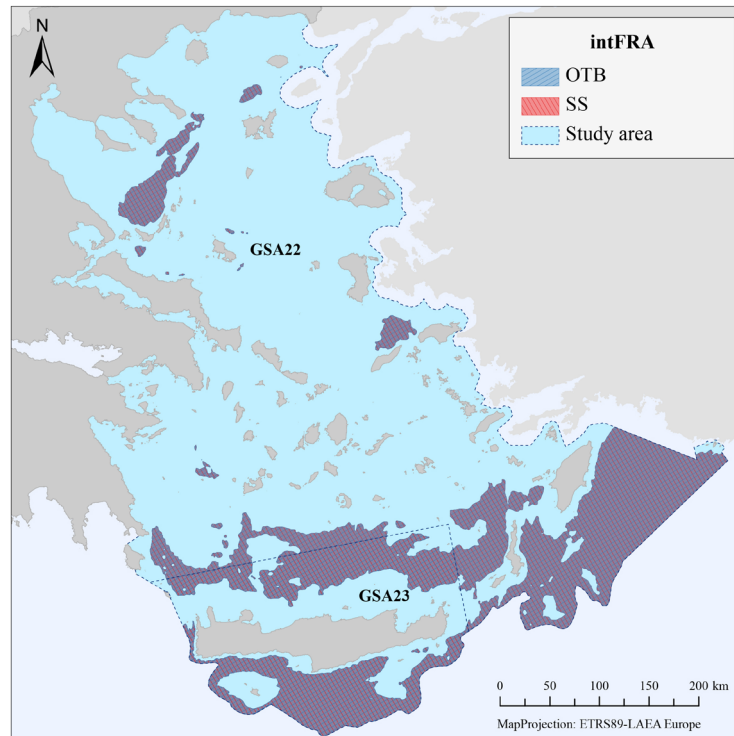


Fig. S13: Map of the 4 permanent Fisheries Restricted Areas for otter bottom trawls (OTB) and small scale gears (SS) in the study area (Aegean Sea-GSA22 and Crete-GSA23), according to the provisions of the General Fisheries Commission for the Mediterranean (GFCM) Recommendation CM-GFCM/29/2005/1, concerning the prohibition of the use of dredges (DRH, DRB) and trawl net fisheries at depths beyond 1,000 m.