Report on the main results of the surveillance under Article 17 for Annex I habitat types (Annex D)

NATIONAL LEVEL

1. General information

1.1 Member State	**GR**
1.2 Habitat code	**1170 - Reefs**

2. Maps

2.1 Year or period	2015
2.3 Distribution map	Yes
2.3 Distribution map Method used	Based mainly on extrapolation from a limited amount of data
2.4 Additional maps	Yes

BIOGEOGRAPHICAL LEVEL

3. Biogeographical and marine regions

3.1 Biogeographical or marine region where the habitat occurs	**Marine Mediterranean (MMED)**
3.2 Sources of information	• HCMR, 2014. Monitoring of coastal and transitional waters in Greece under the article 8 of the Water Framework Directive (WFD 2000/60/EC), Simboura N & P Panagiotidis (eds). HCMR Annual Report 2013, 145pp (in Greek). • Dafis, S., E. Papastergiadou, E. Lazaridou and M. Tsiafouli. 2001. Technical guide for the identification description and mapping of habitat types in Greece. Greek Biotope/Wetland Centre (EKBY). 393 p. (in Greek). • HCMR, 2013. Monitoring of coastal and transitional waters in Greece under the article 8 of the Water Framework Directive (WFD 2000/60/EC), Simboura N & P Panagiotidis (eds). HCMR Annual Report 2012, 123pp (in Greek). • HCMR Technical Reports (2007-2014). • HCMR unpubl data (2007-2014). • MARTIN CS, GIANNOULAKI M, DE LEO F, SCARDI M, SALOMIDI M, KNITWEISS L, PACE ML, GAROFALO G, GRISTINA M, BALLESTEROS E, BAVESTRELLO G, BELLUSCIO A, CEBRIAN E, GERAKARIS V, PERGENT G, PERGENT-MARTINI C, SCHEMBRI PJ, TERRIBILE K, RIZZO L, BEN SOUISSI J, BONACORSI M, GUARNIERI G, KRZELJ M, MACIC V, PUNZO E, VALAVANIS V, FRASCHETTI S, 2014. Coralligenous and maërl habitats: predictive modelling to identify their spatial distributions across the Mediterranean Sea. Scientific Reports, 5073, doi:10.1038/srep05073. • Orfanidis S, Panayotidis P, Stamatis, N (2001) Ecological evaluation of transitional and coastal waters: a marine benthic macrophytes based model. Mediterranean Marine Science 2(2): 45–65. • Orfanidis S, Panayotidis P, Ugland KI (2011) Ecological Evaluation Index continuous formula (EEI-c) application: a step forward for functional groups, the formula and reference condition values. Mediterranean Marine Science 12(1): 199–231. • SALOMIDI M., KATSANEVAKIS S., ISSARIS Y., TSIAMIS K, KATSIARAS N., 2013. Anthropogenic disturbance of coastal habitats promotes the spread of the introduced scleractinian coral Oculina patagonica in the Mediterranean Sea. Biological Invasions, 15(9): 1961-1971. • TSIAMIS K., PANAYOTIDIS P., SALOMIDI M., PAVLIDOU A., KLEINTEICH J., BALANIKA K. & KÜPPER FC., 2013. Macroalgal community response to re-oligotrophication in Saronikos Gulf. Mar Ecol Prog Ser 472: 73–85. • Salomidi M, Smith C, Katsanevakis S, Panayotidis S, Papathanassiou V, 2009. Some Observations on the structure and distribution of several Gorgonian

Assemblages in the Eastern Mediterranean Sea. 1st Mediterranean symposium oncoralligenous conservation and other calcareous bio-concretions of the Mediterranean Sea. Tabarka, Tunisia, 15-16 January 2009.
•Salomidi M, Giakoumi S, Gerakaris V, Issaris Y, Sini M, Tsiamis K, 2016. Setting an ecological baseline prior to the bottom-up establishment of a Marine Protected Area in Santorini Island, Aegean Sea. Mediterranean Marine Science, 17(3):720-737
•Sini M, Katsanevakis S, Koukourouvli N, Gerovasileiou V, Dailianis T, Buhl-Mortensen L, Damalas D, Dendrinos P, Dimas X, Frantzis A, Gerakaris V, Giakoumi S, Gonzalez-Mirelis G, Hasiotis T, Issaris Y, Kavadas S, Koutsogiannopoulos D, Koutsoubas D, Manoutsoglou E, Markantonatou V, Mazaris A, Poursanidis D, Papatheodorou G, Salomidi M, Topouzelis K, Trygonis V, Vassilopoulou V, Zotou M, 2017. Assembling Ecological Pieces to Reconstruct the Conservation Puzzle of the Aegean Sea. Frontiers in Marine Science 4: 347.
•Tsiamis K, Salomidi M, Issaris Y, Gerakaris V, 2016. On two new records of rare Cystoseira taxa (Fucales, Phaeophyceae) from Greece (Eastern Mediterranean), Botanica Marina, 59(1), 73–77, DOI: 10.1515/bot-2015-0084
•Baggini C, Issaris Y, Salomidi M, Hall-Spencer J, 2015. Herbivore diversity improves benthic community resilience to ocean acidification, Journal of Experimental Marine Biology & Ecology, 469 (2015), pp. 98–104

4. Range

4.1 Surface area	71231,91
4.2 Short-term trend Period	2007-2018
4.3 Short-term trend Direction	Stable (0)
4.4 Short-term trend Magnitude	a) Minimum b) Maximum
4.5 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data
4.6 Long-term trend Period	
4.7 Long-term trend Direction	
4.8 Long-term trend Magnitude	a) MInimum b) Maximum
4.9 Long-term trend Method used	Based mainly on extrapolation from a limited amount of data
4.10 Favourable reference range	a) Area (km²) b) Operator: Approximately equal to (≈) c) Unknown: Yes d) Method: Range calculated for this habitat type is based on a modelling approach that takes into account the occurrence of rocky substrata along the greek coastline [from relevant geological maps of the Greek Institute of Geology & Mineral Exploration (IGME), field samplings and available satellite imagery], coastal bathymetry and expert judgement. Granted that the original habitat type's definition is based on geological rather than biological features, its range cannot have changed since the Directives'adoption and thus FRR is considered to be equal to current range.
4.11 Change and reason for change in surface area of range	Improved knowledge/more accurate data The change is mainly due to: Improved knowledge/more accurate data
4.12 Additional information	

5. Area covered by habitat

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5.1 Year or period	2015-015-		
5.2 Surface area (in km²)	a) Minimum 1100	b) Maximum 1500	c) Best single value
5.3 Type of estimate	Best estimate		
5.4 Surface area Method used	Based mainly on extrapolation from a limited amount of data		
5.5 Short-term trend Period	2007-2018		
5.6 Short-term trend Direction	Stable (0)		
5.7 Short-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.8 Short-term trend Method used	Complete survey or a statistically robust estimate		
5.9 Long-term trend Period			
5.10 Long-term trend Direction			
5.11 Long-term trend Magnitude	a) Minimum	b) Maximum	c) Confidence interval
5.12 Long-term trend Method used			
5.13 Favourable reference area	a) Area (km²)		
	b) Operator	Approximately equal to (≈)	
	c) Unknown	Yes	
	d) Method	Area calculated for this habitat type is based on a modelling approach that takes into account the occurrence of rocky substrata along the greek coastline [from relevant geological maps of the Greek Institute of Geology & Mineral Exploration (IGME), field samplings and available satellite imagery], coastal bathymetry and expert judgement. Granted that the original habitat type's definition is based on geological rather than biological features, its surface area cannot have changed since the Directives'adoption and thus FRA is considered to be equal to current surface area.	
5.14 Change and reason for change in surface area of range	Improved knowledge/more accurate data		
	The change is mainly due to:	Improved knowledge/more accurate data	
5.15 Additional information			

6. Structure and functions

6.1 Condition of habitat	a) Area in good condition (km²)	Minimum 22	Maximum 30
	b) Area in not-good condition (km²)	Minimum 858	Maximum 1170
	c) Area where condition is not known (km²)	Minimum 220	Maximum 300
6.2 Condition of habitat Method used	Based mainly on extrapolation from a limited amount of data		
6.3 Short-term trend of habitat area in good condition Period	20072018		
6.4 Short-term trend of habitat area in good condition Direction	Unknown (x)		
6.5 Short-term trend of habitat area in good condition Method used	Insufficient or no data available		
6.6 Typical species	Has the list of typical species changed in comparison to the previous reporting period?	No	

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6.7 Typical species Method used

The list of typical species presented in the previous report follows the phytosociological criteria set by Dafis et al. 2001, upgraded by recent field samplings and relevant studies to include other engineering and endemic species. To assess the ecological status of shallow rocky reefs however, a multi-specific approach has been applied based on the EEI-c biotic index which takes into account the wider composition, relative abundance and functional groups of phytobenthic communities (Orfanidis et al. 2001).

6.8 Additional information

7. Main pressures and threats

7.1 Characterisation of pressures/threats

Pressure	Ranking
Other invasive alien species (other then species of Union concern) (I02)	H
Problematic native species (I04)	H
Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (G03)	H
Change of habitat location, size, and / or quality due to climate change (N05)	H
Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change (N07)	H
Mixed source marine water pollution (marine and coastal) (J02)	M
Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions) (F01)	M
Illegal shooting/killing (G10)	M
Illegal harvesting, collecting and taking (G11)	M
Other human intrusions and disturbance not mentioned above (H08)	M

Threat	Ranking
Temperature changes (e.g. rise of temperature & extremes) due to climate change (N01)	H
Other human intrusions and disturbance not mentioned above (H08)	H
Mixed source marine water pollution (marine and coastal) (J02)	M
Change of habitat location, size, and / or quality due to climate change (N05)	H
Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions) (F01)	M
Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (G03)	H

Shipping lanes and ferry lanes transport operations (E02)	M
Sea-level and wave exposure changes due to climate change (N04)	M

7.2 Sources of information	PRESSURES: Based exclusively or to a larger extent on real data from sites/occurrences or other data sources. THREATS: Based on expert opinion.
7.3 Additional information	IAS: Siganus luridus and Siganus rivulatus.

8. Conservation measures

8.1 Status of measures	a) Are measures needed?	Yes
	b) Indicate the status of measures	Measures identified, but none yet taken
8.2 Main purpose of the measures taken		
8.3 Location of the measures taken		
8.4 Response to the measures		
8.5 List of main conservation measures		

Management of problematic native species (CI05)

Management, control or eradication of other invasive alien species (CI03)

Manage other native species (CS04)

Management of professional/commercial fishing (including shellfish and seaweed harvesting) (CG01)

Management of hunting, recreational fishing and recreational or commercial harvesting or collection of plants (CG02)

Implement climate change adaptation measures (CN02)

Reduce impact of mixed source pollution (CJ01)

Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructure, operations and activities (CF02)

Reduce impact of other specific human actions (CH03)

Adopt climate change mitigation measures (CN01)

8.6 Additional information	

9. Future prospects

9.1 Future prospects of parameters	a) Range	Good
	b) Area	Good
	c) Structure and functions	Poor
9.2 Additional information		

10. Conclusions

10.1. Range	Favourable (FV)
10.2. Area	Favourable (FV)
10.3. Specific structure and functions (incl. typical species)	Unfavourable - Bad (U2)

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10.4. Future prospects	Unfavourable - Bad (U2)
10.5 Overall assessment of Conservation Status	Unfavourable - Bad (U2)
10.6 Overall trend in Conservation Status	Stable (=)
10.7 Change and reasons for change in conservation status and conservation status trend	a) Overall assessment of conservation status No change The change is mainly due to: b) Overall trend in conservation status Use of different method The change is mainly due to: Use of different method
10.8 Additional information	

11. Natura 2000 (pSCIs, SCIs, SACs) coverage for Annex I habitat types

11.1 Surface area of the habitat type inside the pSCIs, SCIs and SACs network (in km² in biogeographical/ marine region)	a) Minimum 80 b) Maximum 120 c) Best single value
11.2 Type of estimate	Minimum
11.3 Surface area of the habitat type inside the network Method used	Based mainly on extrapolation from a limited amount of data
11.4 Short-term trend of habitat area in good condition within the network Direction	Stable (0)
11.5 Short-term trend of habitat area in good condition within network Method used	Based mainly on extrapolation from a limited amount of data
11.6 Additional information	Habitat type for which either new Natura sites have been designated or former ones have been expanded to cover a bigger part of their surface area.

12. Complementary information

12.1 Justification of % thresholds for trends	
12.2 Other relevant information	A severe decline of the large brown algae canopy forests, which are a critical biotic component of Habitat Type 1170, has been recorded since the last reporting period, the reason being two-fold: sea-urchin overgrazing for north Aegean and Ionian Seas, and invasive fish species Siganus luridus and S. rivulatus' overgrazing for southernmost areas. This degradation is a rapidly progressing phenomenon, strongly related to overfishing and the consequent destruction of coastal food web structures coupled with increasing climate change pressures. Mediterranean coralligenous communities, an important deeper component/subtype of 1170, and largely unrepresented within the Greek NATURA 2000 network, also present widespread signs of degradation throughout the Greek seas.

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