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

CODE: 1170

NAME: Reefs

1. National Level

1.1 Maps

1.1.1 Distribution Map	Yes
1.1.2 Distribution Method	Estimate based on partial data with some extrapolation and/or modelling (2)
1.1.3 Year or period	2007-2012
1.1.4 Additional map	No
1.1.5 Range Map	Yes

2. Biogeographical Or Marine Level

2.1 Biogeographical Region

Marine Mediterranean (MMED)

2.2 Published

• 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.

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2.3 Range of the habitat type in the biogeographical region or marine region

2.3.1 Surface area - Range (km²)	66073,84	
2.3.2 Range method used	Estimate based on partial data with some extrapolation and/or modelling (2)	
2.3.3 Short-term trend period	2001-2012	
2.3.4 Short-term trend direction	stable (0)	
2.3.5 Short-term trend magnitude	min	max
2.3.6 Long-term trend period		
2.3.7 Long-term trend direction	N/A	
2.3.8 Long-term trend magnitude	min	max
2.3.9 Favourable reference range	area (km²)	
	operator	approximately equal to (≈)
	unkown	No
	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.
2.3.10 Reason for change	Improved knowledge/more accurate data	

2.4 Area covered by Habitat

2.4.1 Surface area (km²)	1340	
2.4.2 Year or period	2012-	
2.4.3 Method used	Estimate based on partial data with some extrapolation and/or modelling (2)	
2.4.4 Short-term trend period	2001-2012	
2.4.5 Short-term trend direction	stable (0)	
2.4.6 Short-term trend magnitude	min	max
2.4.7 Short term trend method used	Complete survey/Complete survey or a statistically robust estimate (3)	
2.4.8 Long-term trend period		
2.4.9 Long-term trend direction	N/A	
2.4.10 Long-term trend magnitude	min	max
2.4.11 Long term trend method used	N/A	
2.4.12 Favourable reference area	area (km)	
	operator	approximately equal to (≈)
	unknown	No
	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.
2.4.13 Reason for change	Improved knowledge/more accurate data	

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2.5 Main Pressures

Pressure	ranking	pollution qualifier(s)
invasive non-native species (I01)	high importance (H)	N/A
problematic native species (I02)	high importance (H)	N/A
Marine water pollution (H03)	medium importance (M)	N/A
Fishing and harvesting aquatic resources (F02)	high importance (H)	N/A
Urbanised areas, human habitation (E01)	medium importance (M)	N/A
dynamite (F05.01)	medium importance (M)	N/A
date mussel-fishing (F05.02)	medium importance (M)	N/A
habitat shifting and alteration (M02.01)	high importance (H)	N/A
decline or extinction of species (M02.03)	high importance (H)	N/A
disposal of household / recreational facility waste (E03.01)	medium importance (M)	Mixed pollutants (X)
Pollution to surface waters (limnic & terrestrial, marine & brackish) (H01)	medium importance (M)	Mixed pollutants (X)
shallow surface abrasion/ mechanical damage to seabed surface (G05.02)	medium importance (M)	N/A

2.5.1 Method used – pressures: based exclusively or to a larger extent on real data from sites/occurrences or othe

2.6 Main Threats

Threat	ranking	pollution qualifier(s)
Changes in abiotic conditions (M01)	high importance (H)	N/A
Other ecosystem modifications (J03)	high importance (H)	N/A
Pollution to surface waters (limnic & terrestrial, marine & brackish) (H01)	medium importance (M)	Mixed pollutants (X)
Changes in biotic conditions (M02)	high importance (H)	N/A
missing or wrongly directed conservation measures (G05.07)	high importance (H)	N/A
Urbanised areas, human habitation (E01)	medium importance (M)	N/A
intensive fish farming, intensification (F01.01)	low importance (L)	N/A
Fishing and harvesting aquatic resources (F02)	high importance (H)	N/A

2.6.1 Method used – threats: expert opinion (1)

2.7 Complementary Information

2.7.1 Species

Cystoseira spp. C. Agardh, 1820
Sargassum spp. C. Agardh, 1820
Titanoderma trochanter (Bory de Saint-Vincent) Benhissoune, Boudouresque, Perret-Boudouresque & Verlaque, 2002
Tenarea tortuosa (Esper) M.Lemoine, 1910
Lithophyllum spp. Philippi, 1837
Ptilophora mediterranea (H.Huvé) R.E.Norris, 1987

2.7.2 Species method used: The list of typical species presented here 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; 2011)
2.7.3 Justification of % - thresholds for trends	
2.7.4 Structure and functions - methods used	Estimate based on partial data with some extrapolation and/or modelling (2)
2.7.5 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.

2.8 Conclusions (assessment of conservation status at end of reporting period)

2.8.1 Range	assessment	Favourable (FV)
	qualifiers	N/A
2.8.2 Area	assessment	Favourable (FV)
	qualifiers	N/A
2.8.3 Specific structures and functions (incl Species)	assessment	Inadequate (U1)
	qualifiers	declining (-)
2.8.4 Future prospects	assessment	Bad (U2)
	qualifiers	declining (-)
2.8.5 Overall assessment of Conservation Status	Bad (U2)	
2.8.5 Overall trend in Conservation Status	declining (-)	

3. Natura 2000 coverage _conservation measures - Annex I habitat types on biogeographical level

3.1 Area covered by habitat

3.1.1 Surface area (km²)	min	80	max	120
3.1.2 Method used	Estimate based on partial data with some extrapolation and/or modelling (2)			
3.1.3. Trend of surface area	stable (0)			

3.2 Conversation Measures

3.2.1 Measure	3.2.2 Type	3.2.3 Ranking	3.2.4 Location	3.2.5 Broad Evaluation
Measures needed, but not implemented (1.2)	Legal Administrative Contractual Recurrent One-off	high importance (H)	Both	Enhance

Regulation/ Management of fishery in marine and brackish systems (7.3)	Legal	low importance (L)	Both	Unknown
Establish protected areas/sites (6.1)	Legal Administrative One-off	medium importance (M)	Both	Enhance Long term Unknown