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ENVIRONMENT PROGRAMME
MEDITERRANEAN ACTION PLAN

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19th Ordinary Meeting of the Contracting Parties to the
Convention for the Protection of the Marine Environment
and the Coastal Region of the Mediterranean and its Protocols

Athens, Greece, 9-12 February 2016

Agenda item 3: Thematic Decisions

Draft Decision: Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria

This corrigendum is issued for the following reasons

- In paragraph 40: Last sentence “The application...is key here” was deleted as it is not described in the annex.
- In paragraph 60: Text was added to clarify that table 2 is found under appendix 2.
- In Appendix 2, page 3, table 5(a), column 3, line 1: The font format of the footnote mark (a) was changed to superscript.
- In Appendix 2, page 3, table 5(b), column 4, line regarding the contaminant Lindane: A footnote (b) was inserted.
- In Appendix 1, page 6: The last table was separated into 4 pages so that the font size is legible (to be considered as one table).
- In paragraph 95: The reference number to the Appendix 2 has been changed from Latin format to Arabic.

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UNEP/MAP
Athens, 2016

Minimum list		Main pressures (binary-securing or not; to be prioritized (ranked) for each specific representatives species or										Feasibility									
Predominant habitat or "Functional" group of species	Specific habitat type or species to be monitored	Physical loss of habitat (construction ports, marinas)	Physical damage to habitat	Nutrient enrichment	Contaminants	Removal by fishing (target, non-target)	Hydrological changes (thermal, salinity regime)	Other disturbances to species (e.g. litter, visual disturbance)	UW	NIS	Vessel	Lab facilities, equipment, consumables	Taxonomic expertise (technicians, scientists)	Monitoring techniques developed	Aerial	Land-based	In-water	Indicators established	Existing observatory stations / long term monitoring programmes	Satellite / Remote Sensing / aerial platforms	Oceanographic platforms
Seabed - mediolittoral-infralittoral rock	Communities in the mediolittoral and infralittoral that are based on bio-construction										No	Yes	Low	Diving, ROV, drop camera, quadrats, photo quadrats, Side scan sonar, Multibeam bathymetry							No
Seabed - infralittoral rock	Hard beds (bottoms, substrates, reefs) associated with communities of photophilic algae										No	Yes	High	Diving, ROV, drop camera, quadrats, photo quadrats etc.			WFD	WFD monitoring network			No
Seabed - mediolittoral-infralittoral sediment	Seagrass meadows				?						Yes	Yes	Moderate	Diving, ROV, drop camera, quadrats, photo quadrats, Side scan sonar, Multibeam bathymetry			WFD	WFD monitoring network			No
Seabed - mediolittoral-infralittoral sediment	Infralittoral sands or muddy sands			?	?	?					Yes	Yes	High	Grabs, cores, dredges			WFD	WFD monitoring network			
Seabed - circalittoral rock	Hard bottom habitats associated with coralligenous communities, sclerophyllic algae and semi dark caves, deep reefs (dominated by sponges and other filter feeders)				?	?					Yes	Yes	Moderate	Diving, ROV, drop camera, quadrats, photo quadrats, Side scan sonar, Multibeam bathymetry			For coralligenous indicators under development (e.g. CIGESMED)	?			
Seabed - circalittoral sediment	Communities of the coastal detritic bottom				?						Yes	Yes	High	Grabs, cores, dredges, / ROVs, drop camera, quadrats, photo quadrats, Side scan sonar, Multibeam bathymetry			For the soft bottom communities WFD indicators / For coralligenous indicators under development (e.g. CIGESMED)	partly covered by WFD monitoring network for soft bottom comm			
Seabed - circalittoral sediment	Maerl communities				?						Yes	Yes	High	Grabs, cores, dredges, / ROVs, drop camera, quadrats, photo quadrats, Side scan sonar, Multibeam bathymetry			For the soft bottom communities WFD indicators / For coralligenous indicators under development (e.g. CIGESMED)				
Seabed - circalittoral sediment	Bioconsensus of coastal terrigenous muds			?	?	?					Yes	Yes	High	Grabs, cores, dredges			WFD?	partly covered by WFD monitoring network ?			
Seabed - circalittoral sediment	Communities of shelf-edge detritic bottoms				?						Yes	Yes	High	Grabs, cores, ROV, Side scan sonar, Multibeam bathymetry			No				
Seabed - bathyal-abyssal	Communities of deep-sea corals				?						Yes	Yes	High	ROV, Side scan sonar, Multibeam bathymetry			No				
Seabed - bathyal-abyssal	Sepsis and communities associated with bathyal muds				?						Yes	Yes	High	ROV, cores, Side scan sonar, Multibeam bathymetry			No				
Seabed - bathyal-abyssal	Communities associated with seamounts				?						Yes	Yes	High	ROV, cores, Side scan sonar, Multibeam bathymetry							
Water column - coastal waters	Coastal waters phytoplankton communities										Yes	Yes	High to low (depends of the laboratory where are analysed the samples)	Niskin bottles			yes chl-a	yes (to check for each country. Yes for FR,SP)	sea surface temperature, chlorophyll etc.		Buoys
Water column - coastal waters	Coastal waters zooplankton communities				?						Yes	Yes	High to low (depends of the laboratory where are analysed the samples)	Plankton nets, LOPC, UVP, PCR, CUFES, pump, trawling net (for jellyfishes), ZooCam and zooscan (for analyse)			No	yes (to check for each country. Yes for FR,SP)	No		Buoys
Water column - shelf and oceanic waters	Shelf and oceanic waters phytoplankton communities				?						Yes	depends of the ship	High to low (depends of the laboratory where are analysed the samples)	Niskin bottles			yes chl-a	yes (to check for each country. Yes for FR,SP)	sea surface temperature, chlorophyll etc.		Buoys, gliders, argo floats
Water column - shelf and oceanic waters	Shelf and Oceanic waters zooplankton communities										Yes	depends of the ship	High to low (depends of the laboratory where are analysed the samples)	Plankton nets, LOPC, UVP, PCR, CUFES, pump, trawling net (for jellyfishes), ZooCam and zooscan (for analyse)			No	yes (to check for each country. Yes for FR,SP)	No		Buoys, gliders, argo floats
Seabirds - coastal top predators											No	No		Bandwatching, breeding areas				Yes	Teledetection Tracking ?		No
Seabirds - intertidal benthic feeders											No	No		Bandwatching, breeding areas				Yes	Teledetection Tracking ?		No
Seabirds - inshore benthic feeders	<i>Phalacrocorax aristotelis</i> (Linnaeus, 1761)											No	Moderate	Shipboard or breeding areas							Teledetection Tracking
Seabirds - offshore surface feeders	<i>Larus audouinii</i> (Paysonneau, 1826)											No	Moderate	Shipboard or breeding areas							Teledetection Tracking
Seabirds - inshore surface feeders	<i>Sterna</i> spp.											No	Moderate	Shipboard or breeding areas							Teledetection Tracking
Seabirds - offshore (surface or pelagic ?) feeder	<i>Puffinus</i> spp.											No	Moderate	Shipboard or breeding areas							Teledetection Tracking
Mammals - seals	<i>Monachus monachus</i> (Hermmann, 1779)										Yes	Yes	Moderate	Quadrat sampling of colonies			Yes	Yes			Teledetection Tracking
Mammals - baleen whales	<i>Balaenoptera physalus</i> (Linnaeus 1758)										Yes	Yes	Moderate	Shipboard, acoustic or aerial strip transects			Yes	Yes			Teledetection Tracking
Mammals - toothed whales (deep feeder)	<i>Physeter macrocephalus</i> (Linnaeus, 1758)										Yes	Yes	Moderate	Shipboard surveys, Acoustic surveys, Aerial surveys (but not optimum due to long dives)			Yes	Yes			Teledetection Tracking
Mammals - toothed whales (deep feeder)	<i>Ziphius cavirostris</i> (Cuvier G., 1832)										Yes	Yes	Moderate	Shipboard surveys, Acoustic surveys (but not easy to detect), Aerial surveys (but not optimum due to long dives)			Yes	Yes			Teledetection Tracking
Mammals - toothed whales (epipelagic feeder)	<i>Delphinus delphis</i> (Linnaeus, 1758)										Yes	Yes	Moderate	Shipboard or aerial strip transects			Yes	Yes			Teledetection Tracking

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Predominant habitat or "Functional" group of species	Specific habitat type or species to be monitored	Physical loss of habitat (construction ports, marinas)	Physical damage to habitat	Nutrient enrichment	Contaminants	Removal by fishing (target, non-target)	Hydrological changes (thermal, salinity regime)	Other disturbances to species (e.g. litter, visual disturbance)	TW	NIS	Vessel	Lab facilities, equipment, consumables	Taxonomic expertise (technicians, scientists)	Monitoring techniques developed	Aerial	Land-based	In-water	Indicators established	Existing observatory stations / long term monitoring programmes	Satellite / Remote Sensing / aerial platforms	Oceanographic platforms
Mammals - toothed whales (epipelagic feeder)	<i>Tursiops truncatus</i> (Montagu, 1821)										Yes	Yes	Moderate	Shipboard, acoustic or aerial strip transects				Yes	Yes	Telemetry Tracking	
Mammals - toothed whales (epipelagic feeder)	<i>Stenella coeruleoalba</i> (Meyen, 1833)										Yes	Yes	Moderate	Shipboard or aerial strip transects				Yes	Yes	Telemetry Tracking	
Mammals - toothed whales (epipelagic feeder)	<i>Globicephala melas</i> (Tail, 1899)										Yes	Yes	Moderate	Shipboard, acoustic or aerial strip transects				Yes	Yes	Telemetry Tracking	
Mammals - toothed whales (epipelagic feeder)	<i>Grampus griseus</i> (Cuvier G., 1812)										Yes	Yes	Moderate	Shipboard, acoustic or aerial strip transects				Yes	Yes	Telemetry Tracking	
Reptiles - turtles	<i>Caretta caretta</i> (Linnaeus, 1758)										Yes, transects (monitoring CI 3&4 in marine areas)	Yes	Moderate	Other monitoring techniques developed: bycatch studies (CI 3-5); during nesting, in-water, bycatch surveys: mark-recapture (CI 3-5); specimen biometrics, aging, sexing, tissue analysis, fecundity & mortality rates (CI 5)	Yes, transects (monitoring CI 3&4 in marine areas)	Yes, nesting monitoring (breeding areas) and stranding monitoring (coastal areas) (CI 3-5)	Yes, diving/snorkeling transects, capture-mark-recapture (CI 3-5 in marine areas)			Yes, during nesting/in-water/bycatch surveys (CI 3-5 in marine & breeding areas)	No
Reptiles - turtles	<i>Chelonia mydas</i> (Linnaeus, 1758)										Yes, transects (monitoring CI 3&4 in marine areas)	Yes	Moderate	Other monitoring techniques developed: bycatch studies (CI 3-5); during nesting, in-water, bycatch surveys: mark-recapture (CI 3-5); specimen biometrics, aging, sexing, tissue analysis, fecundity & mortality rates (CI 5)	Yes, transects (monitoring CI 3&4 in marine areas)	Yes, nesting monitoring (breeding areas) and stranding monitoring (coastal areas) (CI 3-5)	Yes, diving/snorkeling transects, capture-mark-recapture (CI 3-5 in marine areas)			Yes, during nesting/in-water/bycatch surveys (CI 3-5 in marine & breeding areas)	No
Fish - Diadromous/born fish	<i>Solea solea</i>										Yes	Yes	Moderate								
Fish - Demersal coastal	<i>Mullus barbatus</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - Demersal coastal	<i>Pagellus bogaraveo</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - marine/benthopelagic	<i>Pagellus erythrinus</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - marine, rocky bottoms, reef associated	<i>Epinephelus marginatus</i>																				
Fish - Demersal coastal elasmobranch											Yes	Yes	High								
Fish - Pelagic oceanic	<i>Spicara smaris</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - pelagic-neritic	<i>Engraulis encrasicolus</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - pelagic-neritic	<i>Sardina pilchardus</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - demersal /benthopelagic	<i>Boops boops</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - marine/demersal	<i>Merluccius merluccius</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - Pelagic coastal elasmobranch											Yes	Yes	High								
Fish - Pelagic offshore elasmobranch											Yes	Yes	High								
Fish - marine/demersal	<i>Mullus surmuletus</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Fish - Demersal offshore elasmobranch											Yes	Yes	High								
Crustacean (shellfish)	<i>Aristaeomorpha foliacea</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Crustacean (shellfish)	<i>Aristeus antennatus</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Crustacean (shellfish)	<i>Nephrops norvegicus</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		
Crustacean (shellfish)	<i>Parapenaeus longirostris</i>										Yes	Yes	High	Surveys at sea, data collection programmes, stock assessment models				yes	yes		

epinephelus marginatus