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First Meeting of the Barcelona Convention Offshore Oil and Gas Group (OFOG)
Sub-Group on Environmental Impact of Offshore Monitoring Programmes

Greece, 3-4 April 2017

Agenda item 3: Offshore Monitoring Programme

Minimum requirements for the establishment of a National Offshore Monitoring Inspection Programme

Minimum requirements for the establishment of a National Offshore Monitoring Inspection Programme

Objective

The objective of the present document, in the context of the development of a Mediterranean Monitoring Procedures and Programmes is to define a check list with minimum requirements to enable Competent Authorities to establish a National Monitoring Inspection Programme aimed at inspecting the regular monitoring by Operators of the installations and the impact of the activities on the environment

Check list for Competent Authorities

In line with the proposed list of parameters (UNEP(DEPI)/MED WG.434/4), it is recommended that the proposed National Monitoring Inspection Programme should encompass the inspection and determination of the impact of offshore Operators on the environment. This will be accomplished through the assessment of the impact of their activities on each of the twenty-seven (27) Common Indicators as these are specified for the Ecological Objectives (EO) of the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP).

The proposed checklist with the minimum requirements for the Indicators, is provided in the table that follows.

Ecological Objective (EO) and Common Indicators (CI)	**Minimum Human Resources needed for effective Offshore Inspection**	**Minimum Materials and Equipment**
EO1: Biodiversity CI3: Species Distributional Range (Marine Mammals)	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Marine Mammal Expert (with underwater noise expertise) 3. GIS expert	1. Specially equipped vessel 2. Sonar equipment 3. Marine Litter measurement equipment 4. Automatic infrared camera 5. Telemetry: Satellite tracking, GPS/GSM tracking, radio tracking, data loggers 6. Hydrophones 7. Tags (capture – mark – recapture artificial tags)
EO1: Biodiversity CI3: Species Distributional Range (Reptiles)	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Turtle/reptile expert (with underwater noise expertise) 3. GIS expert	1. Specially equipped vessel 2. Planes 3. Drones 4. Satellite tracking 5. GPS/GSM tracking 6. Radio tracking 7. Loggers 8. Diving/snorkeling 9. Capture – mark – recapture equipment 10. ArcGIS/QGIS 11. R platform 12. Statistical Testing software 13. GAM 14. Machine learning models
EO1: Biodiversity CI3: Species Distributional Range (Seabirds)	1. Standard 4-member team (Marine Biologist;	1. Drones 2. Acoustic recording equipment (microphones)

	Chemist; Oceanographer; Petroleum Engineer) 2. Ornithologist 3. GIS expert	3. Binoculars 4. Automatic infrared camera 5. Marine Litter measurement equipment 6. Tags (capture – mark – recapture artificial tags) 7. Telemetry: Satellite tracking, GPS/GSM tracking, radio tracking, data loggers
EO1: Biodiversity CI4: Species Population Abundance (Marine Mammals)	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Marine Mammal expert 3. GIS expert	1. Line transect surveys (aerial and ship-based) 2. Acoustic surveys 3. Mark-recapture methodologies 4. Visual surveys (for cetaceans) 5. Passive acoustic monitoring equipment (hydrophones) for deep-diving species (sperm whales) 6. Automatic infrared cameras 7. Aerial Surveys (airplanes/ drones) 8. Ship Surveys (vessels)
EO1: Biodiversity CI4: Species Population Abundance (Reptiles)	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Turtle/reptile expert 3. GIS expert	1. Vessels (boat surveys/line transects) 2. Artificial external flipper tagging (metal and plastic on flippers) 3. Camera for Photo-identification 4. PIT tagging of flippers 5. Telemetry (satellite, GPS/GSM, radio telemetry) and loggers 6. Capture-mark-recapture studies 7. Diver-based video 8. Aerial survey (including drones) 9. Swimming/snorkeling surveys with photo-id and GPS in densely populated areas 10. Clicker for nest counts 11. Time-Depth-Recorder tags 12. Beach strandings
EO1: Biodiversity CI4: Species Population Abundance (Seabirds)	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Ornithologist 3. GIS expert	1. BirdSTATs software 2. Drones 3. Acoustic recording equipment (microphones) 4. Binoculars 5. Automatic infrared camera 6. Tags (capture – mark – recapture artificial tags) 7. Telemetry: Satellite tracking, GPS/GSM tracking, radio tracking, data loggers
EO1: Biodiversity	1. Standard 4-member team (Marine Biologist;	1. Photo-identification (Mark-recapture models)

CI5:Population demographic characteristics (Marine Mammals)	Chemist; Oceanographer; Petroleum Engineer) 2. Marine Mammal expert	2. Ship Surveys 3. Automatic infrared cameras 4. Beach monitoring equipment (stranded/beached animals)
EO1: Biodiversity CI5:Population demographic characteristics (Reptiles)	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Turtle/reptile expert	1. Vessels (boat surveys/line transects) 2. Artificial external flipper tagging (metal and plastic on flippers) 3. Camera for Photo-identification 4. PIT tagging of flippers 5. Telemetry (satellite, GPS/GSM, radio telemetry) and loggers 6. Capture – mark – recapture studies 7. Diver-based video 8. Aerial survey (including drones) 9. Swimming/snorkeling surveys with photo-id and GPS in densely populated areas 10. Clicker for nest counts 11. Time-Depth-Recorder tags 12. Beach strandings
EO1: Biodiversity CI5:Population demographic characteristics (Seabirds)	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Ornithologist	1. MARK software 2. Drones 3. Acoustic recording equipment (microphones) 4. Binoculars 5. Automatic infrared camera 6. Tags (capture – mark – recapture artificial tags) 7. Telemetry: Satellite tracking, GPS/GSM tracking, radio tracking, data loggers
EO2: Non-indigenous species (NIS) CI6: Trends in abundance, temporal occurrence, and spatial distribution of NIS	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Ichthyologist 3. Macrophyte expert 4. Polychaete expert 5. Crustacean expert 6. Mollusk expert	1. Diving/snorkeling equipment 2. Underwater camera 3. Quadrat 4. Microscope/Stereoscope 5. Taxonomic keys
EO8: Coastal ecosystems and landscapes CI16: Length of coastline subject to physical disturbance due to influence of manmade structures	1. Standard 4-member team (Marine Biologist; Chemist; Oceanographer; Petroleum Engineer) 2. Civil/coastal Engineer	1. Space and airborne earth observation systems (very high resolution – VHR satellite imagery, aerial photographs, laser scanners, etc.). 2. Identification techniques and procedures used through GIS tools

Actions requested by the Meeting

The Meeting is invited to:

.1 **take note** of the information provided in the present document; and

.2 **review and comment** upon the proposed minimum requirements for the establishment of a National Offshore Monitoring Inspection Programme.