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Second Report of the informal online working group on biodiversity and non-indigenous species

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Second Report of the Informal Online Working Group on Biodiversity and Non-Indigenous Species

Introduction

The Informal Online Working Group on Biodiversity and Non-Indigenous Species (the **Working Group**), in line with the recommendations of the Integrated Correspondence Group on Monitoring Meeting (**Integrated CORMON**, 30 March-1 April 2015), focused its work on developing a basis for a proposal on a minimum list of species and habitats to be monitored in the Initial Phase of the Integrated Monitoring and Assessment Programme, for discussion at the SPA Focal Points Meeting of 25-29 May 2015.

Although the Integrated CORMON has agreed that there is already a scientifically valid list for biodiversity and NIS monitoring and assessment in the Mediterranean, this list would need to be reduced, noting that in the Initial Phase of the Integrated Monitoring and Assessment Programme implementation, a *de minimis* approach should be applied prioritising the monitoring to address the most significant risks and enable a cost-effective implementation all over the Mediterranean basin.

The following analysis "Pressures and Feasibility Analysis of potential list of habitats and species to monitor in the Initial Phase of the Integrated Monitoring and Assessment Programme" (the **Analysis**) aims to lay down the foundations for this minimum list and as such is the main outcome of the Working Group's April-May 2015 discussions.

Rationale to the Analysis

The Working Group, while aiming to develop a minimum list of species and habitats for the Initial Phase of the Integrated Monitoring and Assessment Programme, also took into account the specific recommendation of the Integrated CORMON to undertake and assesssment of the most important pressures and monitoring and assessment feasibility.

In a major review work, Coll et al., 2012 assessed overall spatial and temporal patterns of species diversity and identified major changes and threats of biodiversity in Mediterranean Sea. Habitat loss and degradation, followed by fishing impacts, pollution, climate change, eutrophication, and the establishment of alien species were shown as the most important threats, they affect the greatest number of taxonomic groups.

The Analysis, building on the above, is aiming to identify a priority pressures list for each functional group and predominant habitat type, and thus to provide a mean to confirm which specific species and habitats to monitor within these broader groups which can best 'represent' both the broader group and the pressure.

The method took into account and highlighted the pressures which had the greatest overall impact on each of the habitat types and species. This was based on the expert judgement of the relative importance of each pressure for the individual broad scale habitat types and species. The results then contributed to prioritise the assessment of a minimum list of biodiversity elements along a gradient of risk.

On this basis, the indicator assessment would focus on a specific habitat/pressure or specific species/pressure interaction, in order to assess the scale of impact (spatial extent and intensity). This in turn should lead to the identification of the most appropriate monitoring technique in each case. Climate change pressures were not considered, and further work is needed to revise the climate change categories (e.g. temperature changes, pH changes etc)

The feasibility of monitoring for each element was also investigated, in order to further assist the development of a cost effective monitoring programme. The table in Annex I summarises monitoring requirements, approaches and techniques, existing indicators and availability of long term data sets.

Key topics of discussion

The Working Group laid down the basis of the minimum list addressed the following key questions:

1. Where there are several pressures per species/habitat (e.g. Seagrass meadows, Sterna spp.), would the SPA Focal Points advise having assessments against each pressure (possibly using different monitoring techniques/data needs to assess the different impacts) or are some more important than others? Are the proposed monitoring elements sufficient to guide progress towards the achievement of the EOs ?
2. Can the pressures to be assessed be further refined on one or two example habitats (e.g. one for seabed, one for water column)? Similarly for fishing.
3. Does the bottom fishing (removal by fishing) pressure lead to physical damage to the seabed and should be removed from the assessment for benthic habitats and addressed by physical damage category?
4. Can this prioritisation lead to a more specific monitoring technique to be used?
5. Seabirds – do the four species proposed represent different functional groups of birds (e.g. inshore and offshore feeders)?
6. Fish input from colleagues of the General Fisheries Commission for the Mediterranean, but in the view of the SPA Focal Points, noting that the previous list had examples for diadromous and coastal fish, is representation of these functional groups still needed (different pressures and part of ecosystem)?
7. Is this list feasible to prioritise for monitoring?

Annex I: Pressures and Feasibility Analysis of potential list of habitats and species to monitor in the Initial Phase of the Integrated Monitoring and Assessment Programme (see attached Excel file)

Annex II: Proposed Minimum List of habitats and species to monitor in the Initial Phase of the Integrated Monitoring and Assessment Programme

Annex II : Proposed Minimum List of habitats and species to monitor in the Initial Phase of the Integrated Monitoring and Assessment Programme

Functional group or predominant habitat	Specific habitat or species to be monitored
Seabed - mediolittoral - infralittoral rock	Communities in the mediolittoral and infralittoral that are based on bio-construction
Seabed - infralittoral rock	Hard beds (bottoms, substrates, reefs) associated with communities of photophilic algae
Seabed - infralittoral sediment	Seagrass meadows (*Posidonia oceanica, Cymodocea nodosa, Zostera* sp)
Seabed - infralittoral sediment	Infrallitoral sands or muddy sands
Seabed - circalittoral rock	Hard bottom habitats associated with coralligenous communities and semi dark caves, deep reefs (dominated by sponges and other filter feeders)
Seabed - circalittoral sediment	Communities of shelf-edge detritic bottoms (facies with *Leptometra phalangium*)
Seabed - bathyal	Communities of deep-sea corals
	Seeps and communities associated with bathyal muds (facies with *Isidella elongata*)
	Communities associated with seamounts
Water column	Coastal
	Shelf
	Oceanic
Seabirds	*Larus audouinii* (Payraudeau, 1826)
	Phalacrocorax aristotelis (Linnaeus, 1761)
	Puffinus spp.
	Sterna spp.
Mammals - seals	*Monachus monachus* (Hermann, 1779)
Mammals - cetaceans	*Balaenoptera physalus* (Linnaeus 1758)
	Delphinus delphis (Linnaeus, 1758)
	Physeter macrocephalus (Linnaeus, 1758)
	Tursiops truncatus (Montagu, 1821)
	Stenella coeruleoalba (Meyen, 1833)
	Globicephala melas (Trail, 1809)
	Grampus griseus (Cuvier G., 1812)
	Ziphius cavirostris (Cuvier G., 1832)
Reptiles - turtles	*Caretta caretta* (Linnaeus, 1758)
	Chelonia mydas (Linnaeus, 1758)
Fish	*Engraulis encrasicolus*
	Sardina pilchardus
	Boops boops
	Merluccius merluccius
	Mullus barbatus
	Mullus surmuletus
	Pagellus bogaraveo
	Pagellus erytrinus
	Saurida undosquamis
	Solea solea
	Spicara smaris
	Aristeomorpha foliacea
	Aristeus antennatus
	Nephrops norvegicus
	Parapenaeus longirostris