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**INCLUSION OF MARINE MAMMALS IN THE MPA MANAGEMENT PLANS:
REGIONAL STUDY, TOOLS AND RECOMMENDATIONS FOR AN IMPROVED
CONSIDERATION**

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REPORT SUMMARY



UNION EUROPÉENNE

CARI'MAM



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ACRONYMS

ACP-MEAs III	Enforcing Environmental Treaties in African, Caribbean and Pacific Countries
CaMPAM	Caribbean Marine Protected Area Management Network and Forum
CARI'MAM	Caribbean Marine Mammals Preservation Network
MPA	Marine Protected Area
RAC	Regional Activity Center
SPAW	Specially Protected Areas and Wildlife
WCR	Wider Caribbean Region

INCLUSION OF MARINE MAMMALS IN THE WIDER CARIBBEAN REGION MPA MANAGEMENT PLANS: TOOLS AND RECOMMENDATIONS FOR AN IMPROVED CONSIDERATION

REPORT SUMMARY

This work was conducted in the framework of the “Caribbean Marine Mammals Preservation Network” (CARI’MAM) project work package N°6: « Management plan for MPA with marine mammal responsibility ». The original report can be found on the SPAW RAC Website (in French) : <https://car-spaw-rac.org/IMG/pdf/rapport-stagem2-bonnin.pdf>

1. INTRODUCTION

1. This study was conducted by SPAW RAC in the framework of the “Caribbean Marine Mammals Preservation Network” (CARI’MAM) project work package N°6: « Management plans for MPA with marine mammal responsibility ». The purpose of this study was twofold:

i- Assess the consideration of marine mammals in the management plans of the Wider Caribbean Region (WCR) MPAs,

ii- Value and increase skills of MPA managers by disseminating a tool that aims at strengthening the consideration of marine mammals in each key components of the management plans process.

2. In order to do so, a tool, dedicated to MPA managers which have a marine mammals responsibility, called “*the Marine Mammals Tracking Tool*” was used. It was developed by North Atlantic and Caribbean MPA managers and the SPAW RAC in the framework of the European project: “Towards a transatlantic partnership of Marine Protected Areas”. The managers of the WCR protected areas with a potential responsibility for marine mammal protection were contacted and asked if they were willing to use the tool and send us their outputs. These outputs were then analysed in order to identify the main factors that influence the inclusion of marine mammals into the management plans and make recommendations.

2. METHODOLOGY

2.1. Identify and contact the managers of protected areas that have a potential responsibility in marine mammal protection in the Wider Caribbean Region

3. First of all, we used the *The Caribbean Protected Area Management Network and Forum (CaMPAM)* database to inventory the protected areas with a potential responsibility in marine mammal protection. A protected area with a potential marine mammal responsibility was defined as a protected area with the presence of one or more marine mammal species inside its limits or in its immediate vicinity. In the present study, all the Marine Protected Areas (MPAs) as well as the protected areas with a maritime domain were considered to have a potential responsibility in marine mammal protection.

4. Once the protected areas with a potential responsibility in marine mammal protection were identified, we built up a database gathering, for all these protected areas, all the factors that can influence the inclusion of marine mammals in the management plans.

5. In the framework of that study, the *Marine Mammals Tracking Tool* was used to assess the level of inclusion of marine mammals in the management plans of the selected protected areas and the factors affecting it. We shared the *Tracking tool* and its user manual with more than 400 MPA managers or

government representatives in the Wider Caribbean Region. The tool was also shared on the CaMPAM network and the Teamwork platform of the CARI'MAM project.

6. We received completed *Marine Mammals Tracking Tool* forms from 13 protected areas with a marine mammal responsibility. In addition, 17 management plans were analysed in order to have a significant sample size for our analyses. At the end, 30 WCR protected areas with a marine mammal responsibility participated directly or indirectly in this regional analysis effort (Figure 1).

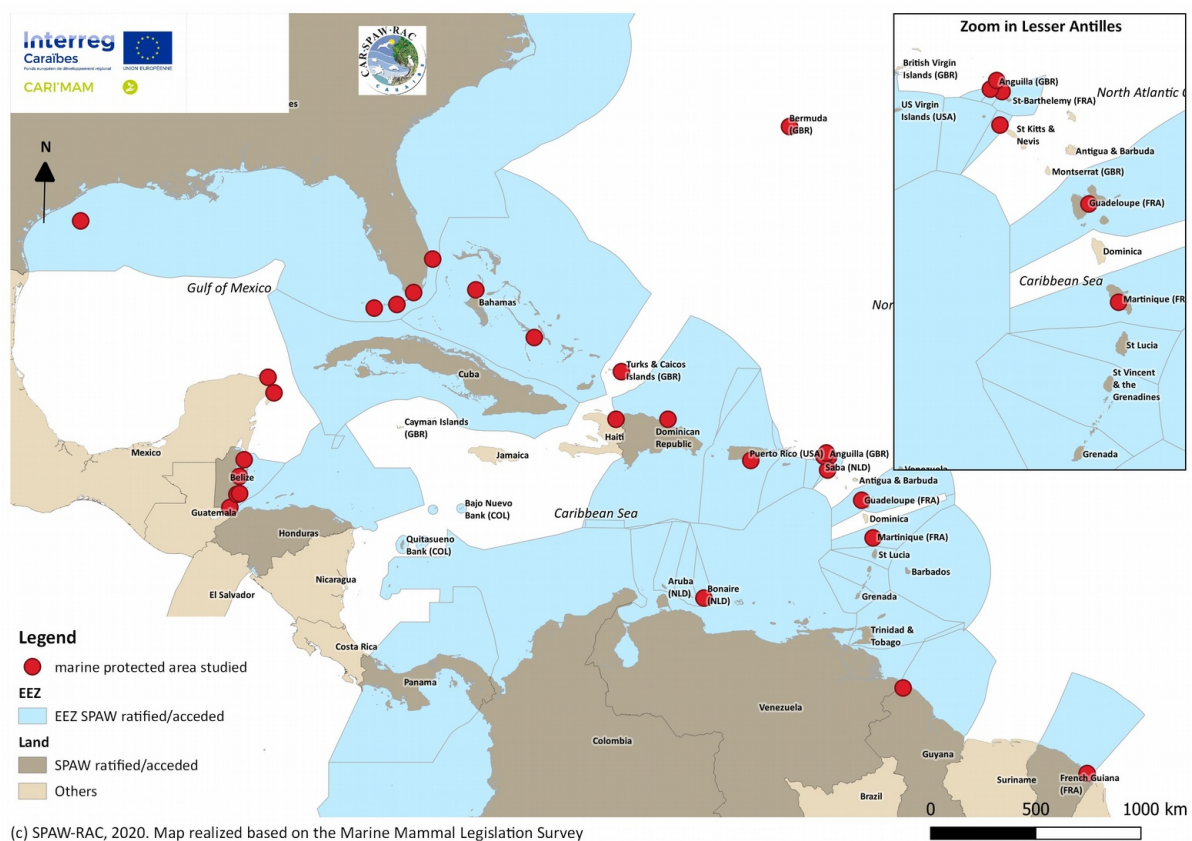


Figure 1 Map of the protected areas with marine mammal responsibility that were included in this study

2.2 The tracking tool

2.2.1 Tool presentation

7. The *Marine Mammals Tracking Tool* is a succinct self-assessment tool developed by the project: “Towards a transatlantic partnership of Marine Protected Areas” and the SPAW RAC. It was designed to support protected area managers, or any other stakeholders, in defining guidelines to improve and develop actions to strengthen the inclusion of marine mammals in the protected area management plans. In the long term, the tool can be used to monitor the evolution of management documents.

8. The *tracking tool* is an excel table composed of 3 sheets. The first one contains the descriptive information of the protected area (location, surface, governance...). The second one, the « Scorecard », contains the technical information to evaluate the consideration of marine mammals in the MPA management plan. The « scorecard » is organized according to 5 main categories of topics that should be taken into account for a significant inclusion of marine mammals in management documents (Table 1).

Table 1: The 5 main categories of topics that should be taken into account for a significant inclusion of marine mammals in management documents

<i>A) Management framework</i>	Regulations and management methods related to marine mammals in the protected area and beyond.
<i>B) Threats</i>	Quantification of threats to marine mammals. Means used to address threats within the protected area (regulation, guidelines, awareness...)
<i>C) Research and monitoring</i>	Knowledge available on the species found in the protected area; ecosystems and physico-chemical parameters of the protected area. Ecological and socio-economic monitoring methods.
<i>D) Outreach and engagement</i>	Collaboration, awareness and political decisions
<i>E) Management effectiveness</i>	Material, financial and human resources to ensure the effective management of marine mammals

9. The manager must complete all the elements on the first two sheets. A score is then calculated for each of the 5 categories of topics. The final result is presented on the third sheet in the form of a radar graph (Figure 2).

Following the present study, a phase of revision and improvement of the tool was performed by the Ocean governance project in 2020 and the Web version of the tool will be posted online in 2021.

2.2.2 Tool limits

10. The tracking tool cannot replace more rigorous assessments and adaptative management methods. It has been developed to provide a quick overview of the preliminary state of management efforts and their progress.

11. The concept of a “scoring” system induces many potential risks of assessment errors. A more accurate scoring and adaptable to specific regional characteristics and to the various types of protected areas should be considered.

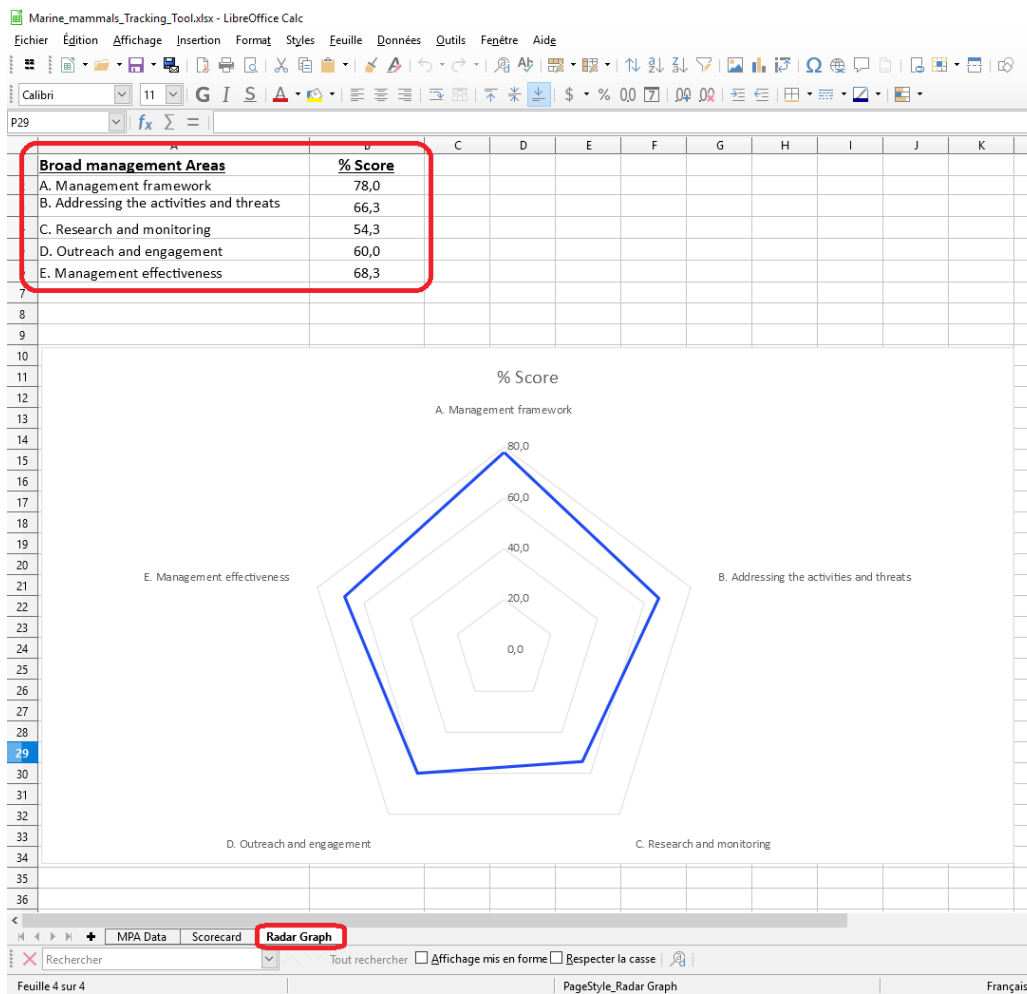


Figure 2: The radar graph: in the red rectangle on the top left corner is found the score obtained for each of the 5 major categories of topics of interest for a significant inclusion of marine mammals in a protected area management plan.

2.3 Statistical analyses

12. In total, 30 WCR protected areas with a marine mammal responsibility participated directly or indirectly in this regional analysis effort. This sample is quite small compared to the number of protected areas that were contacted (N=400), but it allowed to perform descriptive multifactorial statistical analyses to identify the main factors explaining the level of inclusion of marine mammals in the protected area management plans. The explained variables were:

- (i) marine mammal species considered "key", (ii) the main management objectives integrating marine mammals. These variables are found in the first sheet of the tool, related to the protected area general characteristics.
- Efficiency scores found in the last tracking tool sheet regarding the 5 major categories of topics of interest (Table 1).

The explanatory variables were, for example: the protected area surface area, date of creation, nationality, threats, governance...

3. RESULTS OF THE REGIONAL ANALYSIS

13. The protected areas included in the analysis were established between 1934 and 2014. Most of them (80%) belong to States or Territories that have ratified the SPAW Protocol (Annex XIII).

14. The factors influencing the consideration of marine mammals in the management plans are mainly related to the reasons for designating the area as a protected area and thus to the initial conservation objectives. Indeed, marine mammals are considered as key species and are well included in the main management objectives of the Sanctuaries of the region: Agoa (France), Bancos de la Plata y la Navidad (Dominican Republic), Stellwagen Bank and Florida Keys (US) but they are not management objective in more than 73 % of the protected area management plans. Indeed, smaller protected areas (that account for most protected areas) are mainly coastal and have been established for the protection of coral reefs, mangroves, marine Magnoliophyte meadows and their associated fauna, particularly ichthyological. As a result, these small protected areas integrate less or not all marine mammals in their management objectives. Except for manatees, marine mammals are highly mobile species, which explains the management logic of the smallest protected areas and the need to create marine sanctuaries. However, on a regional scale, and in the context of climate change, all the MPAs have an important role for the conservation of marine mammals. The multiplicity of MPAs represents an ecological network that allows species, particularly coastal species (sotalia, manatees, bottlenose..) to feed, reproduce and move across the WCR through areas protected from human impacts (Gormley et al., 2012, Crespo et al., 2010 ; Giusepper et al ; 2016).

15. Another highly variable that has a significant impact on the inclusion of marine mammals in protected area management plans is "research and monitoring". Indeed, knowledge is essential to understand the interactions between ecosystems and their components and develop an effective protected area management document. The results also highlight the importance of education and awareness. Finally, the financial and human resources available for research and monitoring ensure effective management of the MPA (Bailey and Thompson, 2009; Hoyt, 2018).

16. The results also suggested that the completeness of management documents impacts the effectiveness of marine mammal management. A detailed management document seems then to be an important tool to achieve the objectives aimed at protecting marine mammals.

17. The protected area nationality also significantly explained the level of inclusion of marine mammals in the management plans. This is related to territory disparities regarding legislation and regulatory framework, but also regarding the resources allocated to research and MPAs operations, and thus to the effectiveness of marine mammals management.

18. Dedicated to marine mammals conservation, the sanctuaries have an important role to strengthen the coordination of marine mammals MPAs at the national level.

19. At the regional scale, this study highlights the need to set up a sustainable network of MPAs as initiated by CARI'MAM project. This network could allow the transfer of knowledge and skills between managers, the identification of ecological corridors between different MPAs. It could also be a tool to alert on significant changes in marine mammals populations or to identify any other emerging threats.

20. Finally, a revised marine mammal action plan could serve as a framework document for regional and national policies and managers.

HIGHLIGHTS

While sanctuaries do take marine mammals into account in their management documents, 74% of the surveyed protected areas integrate them little or not at all into their management objectives.

To strengthen the inclusion of marine mammals in management plans, the following recommendations suggested were :

- have sufficient financial and technical resources,
- have a complete and detailed management plan,
- have a strong knowledge of the ecosystems and species characteristics and conservation status,
- rely on an active and sustainable regional network of protected areas (such as CARI'MAM) for knowledge and skills transfer, identification of ecological corridors but also emerging threats,
- rely on a regional framework document (such as the Action Plan for the Conservation of Marine Mammals in the WCR).
- greater and more direct collaboration with the ACP-MEAs III project

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