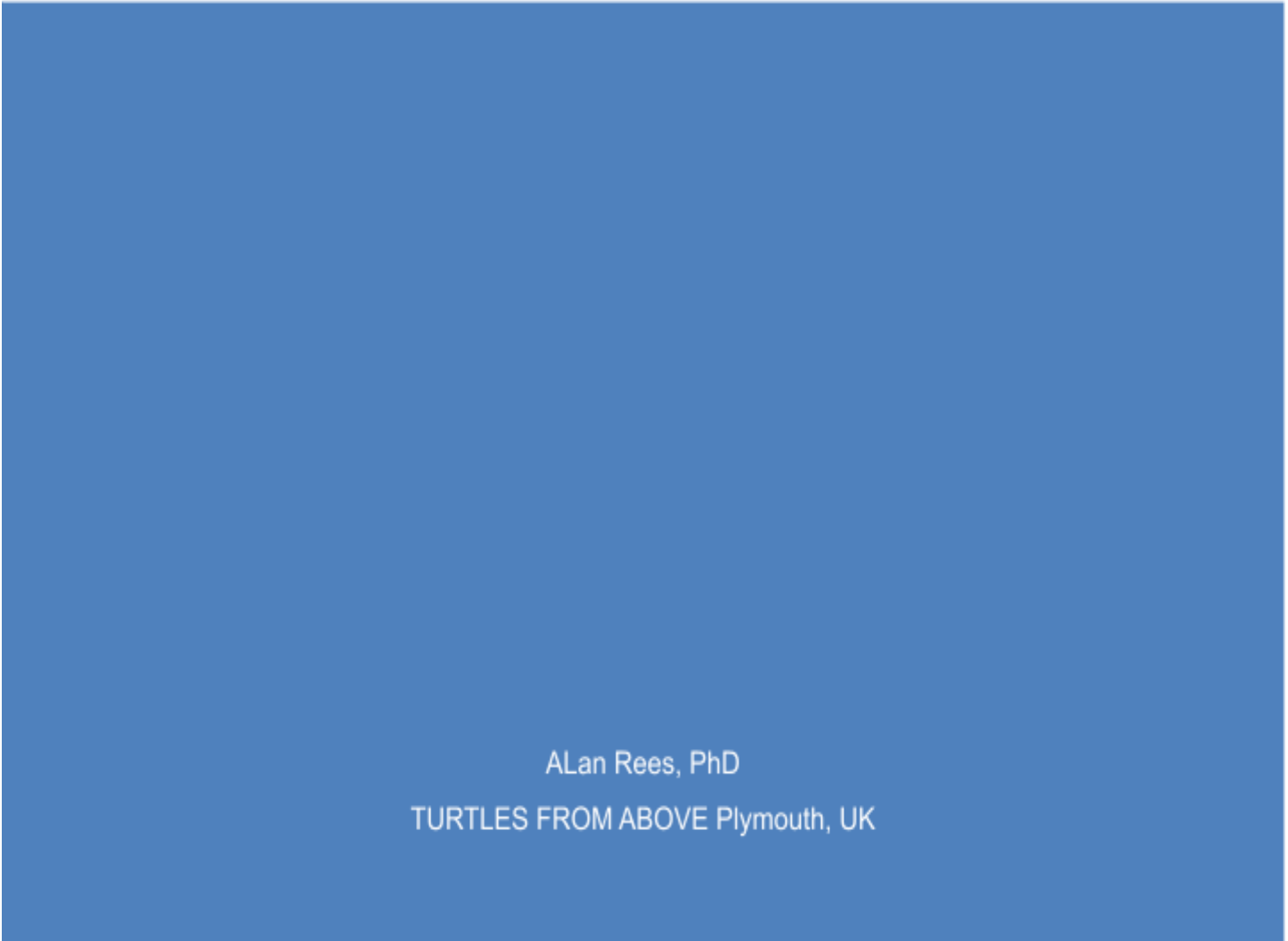


FRAMEWORK OF COOPERATION FOR THE MONITORING AND DATA SHARING FOR THE CONSERVATION OF MOBILE SPECIES – CODE OF CONDUCT



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Introduction

A Framework of Cooperation between the MPA authority and a third party, be it another MPA authority, an NGO or an Academic institution etc., needs to be built on the requirements of the MPA to meet its goals to protect mobile species. Being mobile species, their effective protection will require cooperation and collaboration between organisations working in locations that are potentially separated by thousands of kilometres. The MPA authority needs to have a clear idea about what monitoring information it requires to be able to assess the various threats and stressors to habitats and mobile species within its jurisdiction and to assess the trends in target species' populations within the context of the particular life stage or seasonality of the species present. Collaboration with other parties may be initiated at any stage of MPA development as the established third party may have expertise in the topics that require scrutiny. These topics for monitoring should be assessed as to the level of requirement, i.e., are the data collected essential, helpful or a "bonus" for the good operation of the MPA and do they require long-term monitoring programs to detect nuanced trends that may take decades to confirm or are they one-off/intermittent research projects whose data will be applicable for multiple years. These topics then require prioritisation in terms of short- and long-term goals and necessary ongoing monitoring. This list of topics should be reviewed periodically, both internally and across the species range, to ensure the management body at all involved MPAs are achieving their goals and adapting to an evolving threatscape.

At the next stage, the MPA authority needs to critically assess and review the prioritised list of actions and determine those, if any, that can be completed adequately using internal resources and those that require third-party collaboration. As for the determination of actions required, this review of capacity is not a fixed condition as over time the MPA authority may build up expertise and resources to manage more of its own scientific work, but never lose sight of its main purpose, which is a management for effective conservation. Third parties can again contribute to this part of the process, especially where they already have established research and monitoring projects within and near the MPA.

Once the active topics for research and monitoring have been decided, detailed collaborative agreements between the MPA authority and third parties, within a framework of cooperation embedded in a regionally integrated context, need to be drawn up and accepted. This should be carried out in an inclusive way so that all party's contributions to the conservation of mobile species are acknowledged within the absolute requirements stipulated by each MPA authority. It is essential that these agreements include the themes of data ownership, use and sharing. The monitoring data acquired at each location should not be limited in use solely by the local MPA authority or third party, they need to be made available to the wider MPA and scientific community; to maximise the benefits that can be gained from the effort and resources that went into gathering them. This can be achieved by establishing collaborative networks or submitting the monitoring data to online repositories that provide DOIs and traceable ownership.

This document (D3) elaborates on the ideal components of a Framework of Cooperation to be considered when establishing working collaboration between MPA authorities, third-party scientific contributors and other MPA authorities across the region. It emphasises data collection, the importance of clarifying data ownership and the imperative need for data sharing to ensure adequate knowledge transfer and effective conservation.

The framework of Cooperation

Identify the overall purpose of the framework

It should be clearly stipulated in the framework document that data gathering from monitoring and research is primarily and foremost for the purpose of improving the management and conservation status of mobile species in the MPA and across all its range. The work carried out is not primarily for individual or institutional gain, status, or recognition, which may lead to competition and hinder cooperation.

Identify partners and their roles

The role of each party involved in the framework needs to be made clear from the outset. For example, MPA authorities will be responsible for management actions based on the monitoring data gathered in their area. Third parties might be responsible for monitoring data collection and reporting a lack of compliance with MPA rules or the emergence of threats wherever the species are found. Other scientific institutions may also be incorporated within the framework, for example, to carry out additional data analyses, potentially compiling standardised data from across species ranges, that lead to specific recommendations for improved management. All parties may be involved in the evaluation of existing measures leading to adaptive management options for improved effectiveness. It should be noted that in certain circumstances, parties carrying out monitoring may have been doing so prior to the MPA being established – it may be their data that was used to support the establishment of the MPA – in which cases the monitoring party should be afforded an important role in determining priority data collection for and within an MPA.

The importance of information/data

At the core of all scientific collaborations within an MPA setting and across species' distribution range is the correct acquisition and treatment of information/data, which is the foundation for justifiable management practices. There are five interdependent pillars on which successful collaboration rest. These are quality, communication, ownership, use and sharing.

Quality

The collected data need to be relevant to the subject and of a quality that is fit for purpose, which is to support or inform adaptive management practices and to alert managers to acute issues. Good quality data in the context of monitoring mobile species within MPAs

need to achieve certain levels in different data dimensions¹. These are that the data should be sufficient: *complete* having all the records it should; *unique* with no duplication of observations, *consistent* so that there are no internal contradictory entries, *timely* so that they reflect the period they represent and the values are up to date, *valid* where the values present lie within the possible and expected range and format, and *accurate* thus representing reality without bias, which could affect the decision making process.

Communication

Those working in the field need to be aware of the importance the scientific data carry over different temporal and spatial scales and hence the necessity for timely communication between all relevant stakeholders across the species' range. The required level and frequency of communication ranges, depending on the subject matter and its potential management implications. Within an individual setting, for standard monitoring data that assess long-term trends in populations, the on-time delivery of long-term, pre-planned reporting of monitoring data should be scheduled at least at the completion of every season/year, whichever is most relevant biologically and from a management perspective. This information should be shared with all stakeholders. However effective, responsive, and timely communication is required when an acute critical event, such as incidences of live or dead stranded animals, or indications of emerging negative impacts such as pollution events or other anthropogenic disturbances, are observed. Lack of timely responses, across multiple scales, in these situations, may lead to ineffective management responses to emerging threats resulting in avoidable harm or death of individual animals, destruction of their habitats and negative relations between the various stakeholders. In all cases, communication should utilise situation-dependent, pre-determined channels for the effective exchange of information between the relevant parties. It is only through being equipped with the necessary data that an MPA authority can assess whether nearby MPA authorities and other stakeholders should be contacted for advice for management measures or to alert them to be attentive to the possibility of a wider conservation issue.

Ownership (IP)

Recognition and respect for data ownership are important for trouble-free cooperation between and among MPA authorities and third-party collaborators. Scientific data are important intellectual property (IP), that is hard-won, and the rights of all involved in their collection need to be acknowledged and agreed upon in advance of the data being collected and shared, especially as raw or minimally processed data. Primarily, the monitoring work is being carried out for and under the permission of the MPA management agency, hence they need a level of ownership to analyse, interpret and promote the findings in a way that benefits conservation and management. However, the monitoring organisations will have devoted many hours of work and often significant resources recruiting personnel to gather

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<https://www.gov.uk/government/publications/the-government-data-quality-framework/the-government-data-quality-framework#Data-quality-dimensions>

the monitoring data and hence they can rightly consider that they hold similar rights over the IP. Furthermore, during its work, and under permission, the monitoring organisation may collect data in addition to the predetermined parameters agreed upon with the MPA authority, which remain its IP.

Because of this perceived split ownership an agreement between the MPA and a third-party needs to explicitly state how the IP ownership works in practice. The agreement will need to cover precisely which *predetermined parameters* will be collected for the MPA, how the parties may use and share the data and how recognition of the cooperating party will be made within the documentation that presents the data. For example, it should be agreed upon in advance if written acknowledgement or co-authorship of documents is acceptable and where co-authorship is agreed all named parties need to contribute to and agree on the final output.

Use

For the MPA authority it is paramount that it has the right to raw data of *predetermined parameters* for it to carry out its own analysis and assessment of the situation present. The adaptive management strategies that MPA management aims towards should be evidence-based and this raw monitoring data comprises the evidence to support necessary adaptation. The MPA authority will also want to produce documentation to support its decision-making process that will necessarily be based on raw data and contain *summaries* of important monitoring elements. These will comprise a combination of both internal analysis and reporting documents and publicly accessible reports and brochures etc. The third party carrying out the scientific monitoring will also want to use data for its own purposes. These may be for peer-reviewed publications, conference presentations, lobbying, conservation awareness-raising materials and materials representing the third party's work such as annual reports. In certain cases, either the MPA authority or the scientific monitoring third party may wish to bring in a further entity to perform additional analyses using data collected for the MPA. In these situations, it is vital to communicate this intention between the relevant parties to maintain positive relations. All of the above are legitimate uses, to be accepted by all parties, that are to be covered within the framework of cooperation and explicitly dealt with in the context of agreed recognition of data ownership. The goal of effective monitoring and conservation of mobile species should always be at the forefront of decision-making in terms of using data effectively to relate to species-level geographic scales.

Sharing

of data between parties within a framework of Cooperation is expected and necessary to achieve the stated goals of understanding and managing the conservation status of mobile species within and between MPAs. This data sharing extends to all stakeholders that may be included, under the agreement, to undertake to monitor and perform additional analyses that provide added value to the monitoring data. Sharing data from a single MPA with other

MPAs, government bodies, intergovernmental conventions and research organisations are of critical use for evaluating populations, trends and habitat conditions over larger scales. For example, sharing data between nearby MPA authorities might identify the spread of novel threats and issues facing mobile species or alert MPA authorities to potential issues that might arise. Sharing data across the MPA network can play a region-wide similar role.

To ensure data ownership is publicly registered for data that is to be shared, online platforms such as <https://www.emodnet-ingestion.eu/> or <https://datadryad.org/> can be used. These platforms supply a DOI that permanently links back to the site and hence the data owner and they stipulate the conditions under which the stored data can be accessed and used.

Many Mediterranean nations are member states of the European Union that require reporting on protected species and habitats under several instruments (Habitats Directive (HD), Marine Strategy Framework Directive (MSFD) and for the Natura 2000 protected area network) and every riparian nation is a contracting party to the Barcelona Convention that is implementing an Integrated Monitoring Assessment Program (IMAP) following an Ecological Approach (EcAp) for listed species and habitats. The valuable, hard-earned, standardised monitoring data accumulated for MPA authorities should align with those required under the aforementioned monitoring frameworks and hence be of critical use during the region-wide assessments and reporting. It can be argued that the acquisition and supply of adequate data to these international initiatives is an intrinsic imperative of any MPA authority or scientific data-collecting body, and hence should be a prerequisite in any framework of cooperation.

Code of Conduct

Acknowledging the above-mentioned formalities in which a framework of cooperation is agreed upon, the following conditions should be accepted by all parties within a general code of conduct.

Data quality

Scientific monitoring requirements will be mutually determined according to the needs of the MPA, in the context of managing mobile marine species and international reporting requirements.

The specific data parameters stipulated as required by the MPA will be acquired by the monitoring organisation ensuring the six dimensions of quality: completeness, uniqueness, consistency, timeliness, validity and accuracy are maintained. These data, collected in a standardised way, will be of critical importance for effective analyses and holistic interpretation of the status of different mobile species populations.

Data communication

Within a specific location, data shall be reported to the MPA authority in a time-appropriate manner. E.g., pre-scheduled seasonal monitoring reports and databases should be delivered

on time and time-sensitive data, such as that of animal strandings and acute threats should be shared immediately.

Communication channels should be predetermined and adhered to. Ideally with a single named point of contact (with backups) per party. For example, scheduled reports to be emailed to a single email account and urgent communications to take place using specified mobile phone numbers.

Any justified out-of-the-ordinary request for data communication should be complied with in a timeframe determined by the urgency of the need. Unessential requests for data communication will be handled professionally and responded to within a mutually agreed time frame.

Across the species' distributions, scheduled seasonal communication of monitoring data summaries should be supplemented with *ad hoc* communication for time-sensitive issues where situations are likely to impact the species under the scope of more than one stakeholder's work or where expertise from the stakeholder group is being sought.

Data Ownership

Specific data parameters collected for use by the MPA authority will remain the IP of the monitoring party with the rights of each party detailed in the sections on Data use and Data sharing. This changes to co-ownership of the specific data should the MPA authority substantially contribute, financially or through field effort, to the data acquisition process. Irrespective of ownership, it should be acknowledged by all parties that the data are gathered for the purpose of effective management of mobile species and should be available for this purpose.

Data use

Within specific locations, all parties can use the data specified as collected for the MPA authority in their own *internal* data exploration and analyses.

Data owners can publish reports, articles and peer-reviewed papers etc. acknowledging the other parties involved. For example, the scientific monitoring party can publish the data acknowledging that they were collected in agreement with the specific MPA authority.

Where data ownership is shared between the scientific monitoring party and the MPA authority, both parties need to contribute to the output and be credited with co-authorship.

MPA authorities wishing to publish data owned by the scientific monitoring party need to receive permission to do so and seek input and co-authorship from the third party. When the publication involves only approximate summaries and no actual data or related statistics, as might be expected in public education materials, only named acknowledgement of the data owner as the source of the data is required.

MPA authorities wishing to recruit additional third parties for specific analyses and reporting need to do so with the agreement of the (co)data owner and outputs must be seen by, commented on, accepted and co-authored by all parties.

Again, the fundamental assumption here is that the information gathered in any one location is made available to improve the conservation status for mobile species not only in that location but across the species' range.

Data sharing

Sharing summarised data to contribute to national initiatives and international monitoring frameworks (such as for the MSFD and IMAP) should be a given and data ownership indicated in the metadata for the submitted dataset.

Data are not to be shared with third parties without the agreement of all data owners, this includes sharing with a third party to complete analysis and reporting that will only be used by the parties integral to the framework of cooperation.

Data should be available to share with relevant MPA authorities and stakeholders where there is good cause to do so. The data owner should be informed of the intent to share, and they should accept this unless they can present strong arguments to the contrary. Examples for data sharing might be: 1) the MPA is experiencing a spate of animal strandings with known or unknown cause, the MPA authority might legitimately want to share this information with other MPA authorities to better understand the severity of the threat and determine the most appropriate form of management response, or 2) The Mediterranean MPA network wishes to assess its effectiveness at dealing with a certain threat or, or identify the prevalence of different threats across the region in order to highlight issues and strengthen conservation measures, hence the MPA authority should be able to share specific data that contribute to these analyses.

The data owner(s) should strongly consider uploading monitoring datasets to an online repository for archival, clarifying ownership and simplifying access rights for the hard-earned data.

No single MPA can solve the issues facing wide-ranging mobile species by itself. Collaborating with other MPA authorities and relevant stakeholders creates a network of conservation actions where the whole is greater than the sum of the parts.