



1. Requirement overview:

Requirements	To agree and operationalise nationally standardised methods for description and assessment of human pressures on the environment.
Requirement detail	<p>Human use of the marine environment exerts a range of pressures on marine species. Depending on the pressure type, pressure intensity, and sensitivity of the species to that pressure, significant negative impacts may occur.</p> <p>To ensure robust, transparent and integrated decision making, the MMO seeks to identify and agree standardised methods applicable across scales that describe and define; the types of pressures generated by marine activities, pressure intensity and distribution in space and time, sensitivity of habitats and species to pressures in space and time and ranges and thresholds at which pressures impact species ultimately to support decision making.</p>
MMO use	<p>Marine Planning:</p> <p>To write more specific marine plan policies to protect the marine environment from detrimental activities and cumulative impacts. To facilitate description of current pressure baselines and monitor change through time.</p> <p>Marine Conservation:</p> <p>To complement the pressure-impact matrix for fisheries gear which is used to manage fishing activity within marine protected areas.</p> <p>Licensing:</p> <p>This will improve the transparency and standardisation of pressure and sensitivity information for making licence decisions and to provide developers with agreed methods (or data) on which to undertake environmental impact assessments.</p>
External interest	Natural England, Joint Nature Conservation Committee, Environment Agency, Centre for Environment, Fisheries and Aquaculture Science,
Delivery target	This is an ongoing evidence need for all teams

2. Aims and objectives

Aim:

To develop and operationalise use of nationally agreed standardised methods to describe and assess human pressures on the marine environment that can be used in marine management decision making.

Objectives:

Objectives to deliver this requirement include to

- ensure robust methods underpin the production of data layers used in pressure assessments and promote standardisation in their application.
- operationalise use of nationally agreed methodologies for assessing pressures which can be used for decision making relating to marine protected area management, licensing decisions, fisheries management and marine planning
- contribute to a community of practice that can strengthen and augment use of pressure assessments in decision making and marine management
- support ongoing UK Marine Monitoring and Assessment Strategy and supporting evidence sub-groups.

3. Existing evidence

MMO	MMO has steered and contributed to the evidence produced by the UK Marine Monitoring and Assessment Strategy sub-group on spatial data collation on human activities and pressures as well as the Department for Environment Food and Rural Affairs (Defra) Impacts Evidence Group. In partnership with Impacts Evidence Group members MMO commissioned MMO1108 , a report which assessed the feasibility of using a spatial footprint method in appropriate assessments to determine pressure from inshore fishing activities, modifying existing footprint approaches to better relate to fishing activity.
Academic	Jo Foden's PhD thesis (2011) examined pressure from human activity on the UK seabed and concluded that a limited number of activities were the predominant cause of long recovery times in benthic fauna. These activities are regulated as part of marine management using both national and international legislation. Natale et al (2016) describe approaches to map fishing effort of >15m trawlers vessels at high spatial resolution using Automatic Identification System (AIS) as an alternative to Vessel Monitoring System (VMS). The method was validated using detailed logbook data of sufficiently accurate and computationally efficient to identify fishing grounds. Further work would be required including to compare pressure description to VMS methods and for fishing activity in the case of vessels other than trawlers.

Other	<p>The UK Marine Monitoring and Assessment Strategy sub-group on spatial data collation on human activities and pressures of which the MMO is a member has produced a series of outputs that are progressing toward fulfilment of this evidence requirement. These are described and linked to on JNCC's website on behalf of the group.</p> <p>Natural England provide Conservation Advice Packages for certain marine protected areas that contain standard guidance and methods for identifying pressures pathways and significance and assessing impact of pressures</p> <p>Cefas and JNCC have also explored methodologies for assessing pressures within UK seas for example Jenkins et al (2015) that highlight the importance of considering the most appropriate scale for the end user when aggregating VMS as different scales may risk over or underestimating fishing pressure spatially, depending on the scale of the grid selected.</p> <p>The UK Marine Monitoring and Assessment Strategy Productive Seas Evidence Group and Healthy Biodiverse Seas Evidence Group produce assessments for reporting on status of UK seas and incorporate pressure mapping into these assessments.</p>
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4. Current activity

Currently the MMO is an active member of the UK Marine Monitoring and Assessment Strategy sub-group on spatial data collation on human activities and pressures associated with the Productive Seas Evidence Group and Healthy Biodiverse Seas Evidence Group where national work is coordinated and carried out. MMO is also a member of the Defra Impacts Evidence Group where specific impacts to designated habitats and species are examined and assessed.

5. Associated evidence requirements

Ref	Title
R045	Pressures of different fishing gear
R106	Nationally agreed thresholds to define likely significant environmental, social and economic impacts

More information on these evidence requirements is available [here](#)

6. Potential delivery route

The MMO will look to partner with organisations of relevance to widen the potential impact of any work undertaken in this area. The MMO will also explore opportunities to influence the research of others to gather evidence that can be applied within a marine management context. Knowledge exchange is required throughout the duration of this requirement and not limited to when delivery is complete.

Partnering

The MMO will continue to work with the UK Marine Monitoring and Assessment Strategy sub-group on spatial data collation on human activities and pressures and the Defra Impacts Evidence Group. We will also contribute to development of standardised and agreed pressure information that is directly applicable to marine management decision making.

Influencing the research of others

In the course of interactions with academics and Defra group organisations we will discuss and outline the requirement for pressures information to make marine management decisions so that awareness is high among researchers and practitioners. Working with the sub-group will influence research councils to support relevant and priority research relating to human pressures on the marine environment.

See table 1 for timescales.

7. Contact

For more information or to add further research to the existing evidence list please email evidence@marinemanagement.org.uk

Table 1: Delivery timescales 2017 to 2020

Delivery Route	2017				2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Partnering																
Influencing the research of others																

Key

	No activity
	Actively undertaking
	Outside of delivery target