

# North Devon Marine Protected Areas Cost Evaluation:

## Final Report

WWF - UK

November 2018

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### Acknowledgements

The project has been funded through; a partnership between WWF and Sky Ocean Rescue and has also received a funding contribution from Defra.

The study team would like to thank; WWF project staff; Jenny Oates, Penny Wilson & Sarah Young; Rob Wadsworth (S4W consulting) for his facilitation of the focus group workshop and general input to the project. and the participants who attended the stakeholder focus group; Keith Hiscock, Robert Irving, Ed Parr-Ferris, Sue Wells and Chrissie Ingle. In addition, the team would also like to thank the numerous people who contributed information to the project's request for spending data.

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### Document evolution

Report 1	03/08/2018	Ece Ozdemiroglu
Draft report	12/10/18	Ian Dickie
Final Report	1/11/18	Ian Dickie
Revised Final Report	15/11/18	Ian Dickie



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# Summary

This is the final report that presents the work done on behalf of WWF into assessing the costs of MPAs and the wider marine environment in the North Devon marine area.

## Background

The objectives of this study were to:

- Evaluate the total costs of management of the MPAs in the North Devon Marine Pioneer area under a 'Business as usual' scenario (based on current spending);
- Evaluate total spending on the marine environment in the North Devon Marine Pioneer area by all government bodies, private companies and NGOs, and
- Develop the scope of a 'well-managed' scenario to provide an estimate of what this would cost for the North Devon MPAs.

The project team has worked closely with WWF, and addressed the objectives through the following tasks:

- Sending out a request for spend information to selected organisations, collating spend data and supplementing this with other sources as necessary to fill cost information gaps.
- Using the above data to map spend in the North Devon area spatially, at individual MPA, marine and terrestrial spatial levels.
- Jointly running a Focus group in May 2018 to gather feedback from local conservation experts on what a well-managed scenario may look like.
- Jointly (with WWF project team) using the COMPASS Card to illustrate the key activities that would define a well-managed plan for an MPA.
- Used the above work to estimate the costs of a generic well-managed MPA and developed some examples of specific measures which were costed to illustrate the type and level of funding required to manage MPAs well.

This report describes the methods used (Section 2). The results produced, in line with the original request to tender, are reported in 4 outputs:

- Report 1 – the total costs associated with management of the MPAs under a 'business as usual' scenario (covered in Section 3);
- Report 2 – the total costs associated with marine management in North Devon including a spatial analysis of the targeted spend within the North Devon area, covering both marine and relevant terrestrial activities (Section 4);
- Report 3 – a definition and plan for a 'Well-managed' scenario (Section 5), and
- Report 4 – The final report estimating costs of well-managed MPAs (also section 5).

## Findings

Major findings are summarised below (see Section 6 for more details):

- Most organisations struggled to extract cost information either at MPA level or at the North Devon marine area level. Public sector organisations' accounting systems are not structured to enable costs to be identified by MPA, by geographical location, or by type of management measure/ activity.

- Most MPAs in this pilot area do not have formal management plans (Lundy being the exception). Most do not have resources for ongoing monitoring and hence are not able to assess to what extent their objectives as MPAs are being achieved.
- Over £11m of annual marine and coastal spend has been identified as benefiting the North Devon marine pioneer area:
  - Most of this spend (84%) is targeted at activities and investments within the 5km coastal fringe of land, mainly driven by farm stewardship payments, water treatment costs and other spend on land and habitat maintenance or enhancement.
  - 15% (£1.6m) is associated with directly managing the North Devon marine area, dominated by spend from the MMO, IFCAs and EA.
  - Spend within the MPAs is relatively small (less than 2% of the total) and this is dominated by spend on Lundy.
  - Overall the split of spend between the public and private sector (including NGOs) is 45% to 55%, however within the marine environment (excluding coastal land) the share of public spend is 90% (largely driven by spend on MMO, IFCAs and activities within the Environment Agency)
- Estimating the costs of a well-managed MPA depends on the criteria through which that management is defined. Activities can be distinguished between the generic (that are applicable to all well-managed MPAs), and specific measures which are selected for the unique features and socio-economic conditions of that MPA.
- The COMPASS Card tool can be used to assess the generic management activities required for any MPA, and the possible range of resources and expenditure that these activities may require.
- In terms of generic management, a typical MPA may require:
  - Between £400k and £900k as one-off costs to establish an MPA. This estimate excludes any research costs that are above and beyond the baseline survey.
  - Recurring resource of up to 4 FTE and running costs of up to £200k per year. This assessment does not include the costs of any MPA specific measures, nor does it include area wide enforcement (e.g. by MMO and IFCAs).
  - These indicative costs compare with the current average spend of £44k across all six MPAs within the North Devon marine area.

## Recommendations

The study's main recommendations are (see Section 6 for details):

- **Statutory environmental bodies should monitor resources used to manage MPAs and the wider marine environment at the MPA level.** This should include both their own resources and those of other organisations whose activities contribute towards the conservation of MPAs and marine resources. Monitoring resources at the MPA level will help to improve the allocation of resources. The findings of this study demonstrate that no organisation is currently collecting this information.
- **'Moving towards 'well-managed' status.** The COMPASS card method supports a useful approach to the definition of a 'well-managed' system of MPA management. The findings from this review show that all MPAs in the North Devon area fall short of this level of management to varying degrees. Specific recommendations for improvement to the management of MPAs and marine management resources across the North Devon area include:
  - **The production of management plans** suited for each MPA, and the establishment of an ongoing process of adaptive management including; agreeing objectives and measures, and monitoring effectiveness to improve the iteration of subsequent management plans.

- **Increasing local stakeholder participation in the MPA management process**, including involvement in agreeing objectives and measures, monitoring outcomes and promoting the benefits of MPAs to the local community.
  - **Improve the level of monitoring within MPAs** to address key knowledge gaps in the condition of important features and to enable the assessment of status.
  - **Establish appropriate governance bodies to execute the above**, involving local stakeholders and relevant authorities, ensuring adequate long-term funding, resources and management systems.
  - Improve **understanding of potential interactions between fisheries and MPA management** measures, to help support a sustainable sector.
- Not all MPAs require the same level of management and resources, as there are varying degrees of risk to ecosystems and costs to activities. Therefore, it is not possible to express a standard cost to a 'well-managed' MPA. Furthermore, there are opportunities to improve the cost effectiveness of MPA management resources by considering the following:
    - **Planning and allocating resources across MPAs within a region** (like North Devon) may be an opportunity to achieve greater cohesion in planning and to achieve synergies in resources and expenditure.
    - **Leveraging third party resources** (e.g. Lundy Company funding), or co-funding certain activities may be a cost-effective way for the public sector to achieve conservation objectives (e.g. monitoring).
    - **Better monitoring of spending**, and a more cohesive and collaborative approach to management and resources may help to improve the prospects for external or non-conventional funding.

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## Glossary

AoNB	Area of Outstanding Natural Beauty
BRMWG	Biosphere Reserve Marine Working Group
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
DEFRA	Department for Environment, Food and Rural Affairs
DMF	Devon Maritime Forum
D&S IFCA	Devon & Severn IFCA
EA	Environment Agency
FTE	Full Time Equivalent
IFCA	Inshore Fisheries & Conservation Authorities
JNCC	Joint Nature Conservation Committee
MCZ	Marine Conservation Zone
MMO	Marine Management Organisation
MPA	Marine Protection Area
NE	Natural England
NRW	Natural Resources Wales
NTZ	No Take Zone
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest
TTEF	Taw Torridge Estuary Forum
WWF	World Wildlife Fund



# 1. Introduction

## 1.1 Background to the Project

This project fits within the context of a wider UK Seas Programme, which is a five-year programme of work (April 2017 – April 2023), led by WWF and focusing on two case study areas: North Devon and the Outer Hebrides. This project also fits with the Defra Marine Pioneer programme, aiming to further improve the approach to the management of marine areas. Although designation of the UK MPA network is due to be complemented by the end of 2018, many challenges exist that need to be addressed in order to move from designation to effective management, such as better coordination of decision-making towards long-term goals. To protect the marine environment, the UK Seas Programme aims to:

- Achieve a better understanding of our seas and oceans and what they do for beneficiaries;
- Involve the marine community in shaping and delivering management, and
- Identify new funding opportunities for planning and delivering the management of UK seas.

The specific objectives of this wider programme are:

- Develop and demonstrate approaches that support effective regional management of MPAs in two case study areas in UK seas;
- Identify and trial two innovative and sustainable financing mechanisms which integrate ecosystem services derived from natural capital into MPA management;
- Enable local communities in North Devon/the Outer Hebrides to develop a sense of stewardship for their local MPAs, and
- Share and advocate successful approaches widely to lead to more effective management of MPAs in the UK and beyond.

This study addresses the first and second objectives above, aiming to:

- Evaluate the total costs of management of the MPAs in the North Devon Marine Pioneer area under a 'Business as usual' scenario (based on current spending);
- Evaluate total spending on the marine environment in the North Devon Marine Pioneer area by all government bodies, private companies and NGOs, and
- Develop the scope of a 'well-managed' scenario to provide an estimate of what this would cost for the North Devon MPAs.

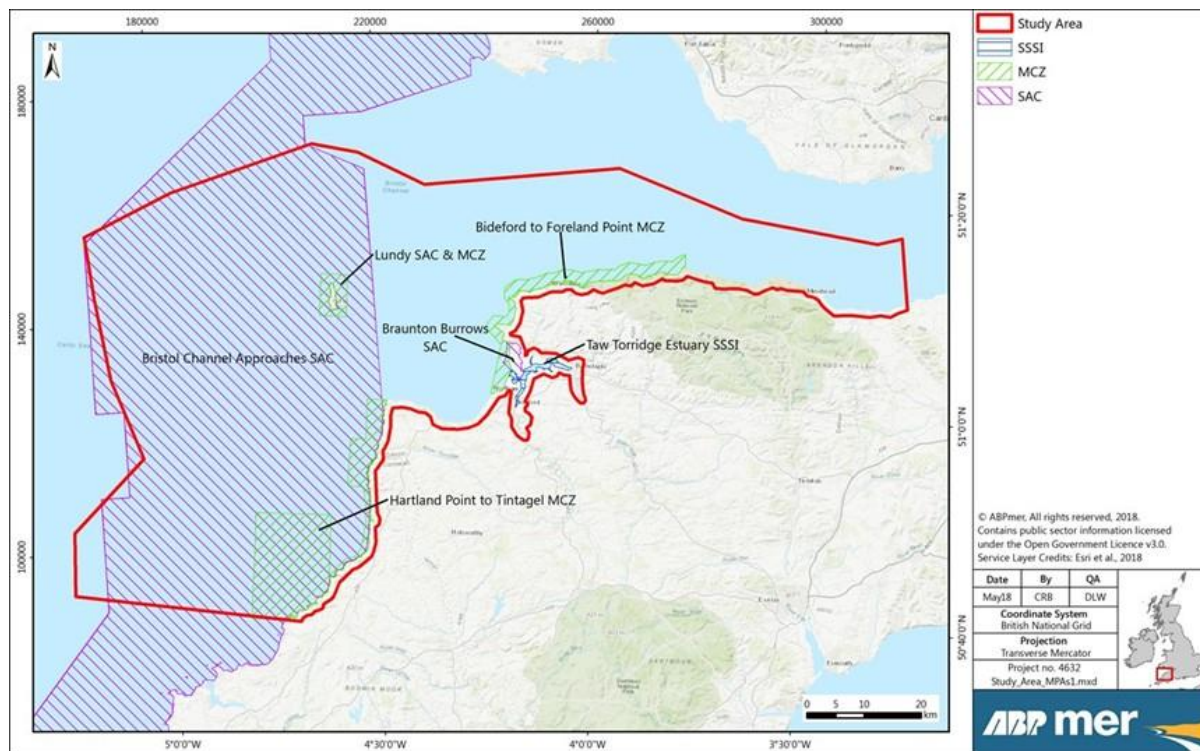
These study objectives will be achieved through the delivery of four outputs:

- Report 1 – the total costs associated with management of the MPAs under a 'business as usual' scenario.
- Report 2 – the total costs associated with marine management in North Devon, including a spatial analysis of the targeted spend within the North Devon area, covering both marine and relevant terrestrial activities.
- Report 3 – developing a process for defining a 'Well-managed' scenario, presenting examples of well-managed activities and providing estimates of the costs of these activities. These examples may be used to illustrate the type of activity and scale of expenditure that is currently lacking within the management of MPAs in the UK.
- Report 4 – The final report which draws out the key findings and recommendations of this study.

## 1.2 The North Devon Marine Pilot Area

The North Devon Marine area is shown in Figure 1.1, and it currently contains the following four MPAs and two coastal protected areas (hereafter referred to as the MPAs, although strictly speaking, Braunton Burrows and Taw Torridge SSSI are coastal protected areas). Dates of designation are in brackets:

1. Lundy, Special Area of Conservation (SAC, 2005) and Marine Conservation Zone (MCZ, 2013)
2. Braunton Burrows SAC (2005)
3. Bideford to Foreland MCZ (2016)
4. Hartland to Tintagel MCZ (2016)
5. Bristol Channel Approaches cSAC (cleared for approval 2017)
6. Taw Torridge Site of Special Scientific Interest (SSSI, 1981)



**Figure 1.1:** Map of North Devon Study Area

There are three proposed MCZs that are under consideration for the third round of marine designation, (Morte Platform, North West Lundy, and South West Approaches to Bristol Channel). These proposed sites have not been included within this study.

### Box 1.1 Definitions of Designated Areas

**Marine Protected Areas (MPAs)** are a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.

**Marine Conservation Zones (MCZs)** can be established to protect nationally important marine wildlife, habitats, geology and geomorphology and can be designated anywhere in English and Welsh inshore and UK offshore waters. They are established under the Marine and Coastal Access Act (2009).

**Special Areas of Conservation (SACs)** are designated under the EC Habitats Directive. The Directive applies to the UK and the overseas territory of Gibraltar. SACs are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive.

**The Sites of Special Scientific Interest (SSSI)** has developed since 1949 as the suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. These sites are also used to underpin other national and international nature conservation designations. Most SSSIs are privately-owned or managed; others are owned or managed by public bodies or non-government organisations.

Definitions from: <http://jncc.defra.gov.uk/page-1527>

## 1.3 Structure of this report

- **Section 2** explains the methodology used in the various phases of the project.
- **Section 3** (Report 1) details the results of the business as usual spend analysis for the current MPAs
- **Section 4** (Report 2) provides an overview of the current spend, including a spatial map of this spend, within the North Devon Marine Pioneer area.
- **Section 5** (Report 3) describes a process for establishing and defining a well-managed scenario for a generic MPA; presents examples of potential activities within the North Devon area that support a well-managed MPA and provides illustrative ranges of cost for these activities.
- **Section 6** (Report 4) discusses the findings and recommendations of this study.

## 2. Methodology

This section describes the methods used to establish costs for the three key components of this study:

- An assessment of current spend within the six North Devon MPAs
- An overview of current marine spend across the entire North Devon Marine Area (including relevant terrestrial expenditure)
- Establishing indicative costs for a 'well-managed' MPA

### 2.1 Overview

The principal aim of this project was to highlight the costs of activities and measures employed to protect MPAs. Whilst many of these activities are directly targeted at specific sites, these areas also benefit from measures taken at a local and at a national level. These local and national level activities can target the North Devon Marine Area (such as local IFCA activity in the North Devon marine area) or can be applied to the terrestrial environment (such as efforts to reduce diffuse pollution from farms). A secondary aim of this project is to understand the mapping of spend across the whole area and highlight the relationship between land and sea spend across the North Devon pioneer area. Taking this area-based approach enables greater appreciation of spatial impacts and helps to improve the potential effectiveness of expenditure.

Consequently, costs have been categorised at three levels based on the intended spatial scale of that activity or marine management measure:

- Terrestrial activity, which is of benefit to the marine area;
- North Devon marine pioneer area, which encompasses the MPAs, and
- Specific MPAs, covering activities and measures applied to a specific MPA.

At the MPA level, it was recognised that there are generic management activities that are common to all MPAs, (such as stakeholder engagement, monitoring effectiveness and reporting), whilst some measures are unique to the bio-physical characteristics of the site and may vary overtime in response to changing threats and pressures, (such as the establishment of no-take zones, monitoring specific species or features, etc.).

Whilst generic activities are common to all MPAs, the approach to addressing them, and hence the resources used, may vary across sites. For example, one MPA may require significant stakeholder engagement and another very little. A key aspect of this project is to highlight what a 'well managed' MPA looks like. WWF have identified the COMPASS scorecard<sup>1</sup> as a means of reviewing the level of management enacted at a site, and this was used as a tool for illustrating a future 'well managed' state. This method is detailed in Annex 3.

The COMPASS tool may be used to compare the generic features of management across MPAs. It is useful to distinguish general management as a category of costs from site-specific management measures. The latter are usually subject to site-level decision making, to identify the most effective means for achieving objectives that are compatible with the views of local stakeholders.

### 2.2 Spend Assessment

Cost information (covering all scales) has been collected by sending out a spend data request to selected organisations (see Annex 1 for list of organisations – and response log). Relevant organisations and the most useful contacts within them were selected through consultation between the project team, WWF and key stakeholders in the North Devon Biosphere area.

<sup>1</sup> French Global Environment Facility (2017) Marine Protected Areas – [Review of FGEF's cofinanced project experiences](#). Final Report | November 2018

The spend data request was in the form of a data template which was adapted from a form used for spend analysis in the terrestrial part of the North Devon Pioneer area for terrestrial activities. Through discussion between WWF and the project team, the following aspects of spend were agreed as important to capture wherever possible:

- A suggested list of **activity types** (see Annex 2) such as planning, monitoring, but previous experience suggested that many spend items may be difficult to attribute to one particular type;
- Whether the expenditure was **ongoing or one-off**;
- Whether the activity was a legal requirement or discretionary;
- The **spatial area** to which the expenditure was targeted. This could be a specific MPA, a particular location or the general North Devon marine area;
- **Resources** to include Full Time Equivalent (FTE) headcount as well as cost wherever relevant and possible, and
- Whether the spend was in collaboration with other organisations, and if so with whom to capture the funding source for the activity.

The last two items also serve the purpose of checking to avoid any double counting of funding.

The expectation set out in the request was for resources (costs and headcount) to be the latest available annual spend, and to be representative of the current level of resourcing that is consistent with a 'business as usual' scenario. However, where resources were one-off or subject to change over time, provision was made for a separate sheet for yearly data to be provided.

The spend request template was Excel based and contained instructions for completion, along with an example to illustrate how to complete the request. The spend request template is shown in Figure 2.1.

### North Devon MPA Spend Assessment Data Request

Spend/cost description	Q1. Activity Type	Q2. Spend type (ongoing or one off)?	Q3. Legal or Discretionary ?	Q4. Is the spend linked to a specific site? (give name)	Q4A. Link to GIS file (if available)
TEXT	TEXT	DROPDOWN	DROPDOWN	TEXT	TEXT
Example item - assessing lobster habitat	Condition assessment	Ongoing	Discretionary	Lundy MCZ	No
Q5. Resource Spend Profile			Q6. Collaborative spending		Q7. Funding source and any other comments?
Q5A. Does profile of resource vary	Q5B. Annual Spend/Cost £k	Q5C. Resource in FTE (if applicable)	Q6A. Collaborative spend?	Q6B. If yes, which organisation(s).	
(use next sheet)/	NUMBER	NUMBER	Y/N	TEXT	TEXT
N	£5k	0.2	N	N/a	100% Funded by JNCC

**Figure 2.1: Example of Spend Assessment Request for an Individual Organisation**

In the cases where organisations did not provide spend data, publicly available data was used to estimate levels of spend (see results Sections 3 and 4).

### Confidentiality

It was recognised that many organisations would not want commercially sensitive or confidential data to be made publicly available. Consequently, the approach to confidentiality was to assure all participating organisations that their spend information would be treated as confidential, unless otherwise agreed. The effect of this assurance is that individual spend, or quantification of resources by which individual spend could be reasonably estimated, by organisation is not disclosed in this report (unless agreed otherwise), and that spend is only reported at an aggregate level to protect commercial sensitivities. The general exception to this is government spend, which is already in the public domain, and of course those organisations which have agreed to share their spend data publicly.

## 2.3 Marine Area Spend Mapping

The next phase of the study was to spatially map spend across the North Devon Marine Area, and this is described in Section 4. This exercise aimed to map spend at three distinct spatial levels:

- At individual MPA level;
- Across the marine pioneer area, and,
- Terrestrial spend which had beneficial impacts upon the marine environment.

Typically, organisational spend is recorded at larger spatial scales which do not allow the identification of costs at specific MPA level. During the data collection process it soon became apparent that the data returns were not identifying costs at the MPA level.

Consequently, a different approach was used to identify and estimate costs at MPA level. This involved scrutinising each MPA management plan (or similar document if no formal plan existed) and assessing the level of management and the specific measures required by the plan. The team contacted plan owners to assess the actual level of activity and measures currently in force.

There were similar difficulties in estimating spend at the North Devon marine area level. For example, several government bodies collected costs at higher geographic levels (e.g. the MMO monitored some costs at South West regional level, or some costs at a national level only). In these cases, reasonable assumptions were utilised to estimate costs for the North Devon marine area (see section 4 for details).

## 2.4 Establishing a Well-Managed Scenario & Costs

The final stage of the study analysis was to establish a process for illustrating a well-managed scenario. This is described in Section 5.

### 3. Report 1: Current MPA Spend

This report presents the results of the 'business as usual' spend data analysis for the six MPAs. This section is solely focused on activities within specific MPAs, the wider marine and terrestrial costs are covered in Section 4.

#### 3.1 Overview of MPAs and Current Management Plans

The MPAs that are considered to be a component part of the North Devon MPA Network are listed in Table 3.1 below. Current management measures that are employed at these sites have been identified via two key mechanisms: (i) through consultation with those authorities that have specific site management responsibilities; and (ii) a review of publicly available information sources.

It was evident from this review that not all of the MPAs have specific management plans in place, however, measures could be broadly identified from related information sources such as accompanying factsheets or advice on operations (see Table 3.1).

**Table 3.1: MPA Management Plans**

MPA	Type of Plan	Date
Lundy SAC and MCZ	Management Plan	2017
Braunton Burrows SAC	Site Improvement Plan (Natural England)	2014
Bideford to Foreland Point MCZ	Site Factsheet	2016
Hartland Point to Tintagel MCZ	Site Factsheet	2016
Taw Torridge SSSI	Estuary Management Plan	2010-15
Harbour Porpoise proposed SAC (pSAC) – Bristol Channel Approaches	Draft Conservation Objectives and Advice on Activities	2016

The site-specific measures that are currently being implemented have been summarised for each MPA (see Table 3.2). There are a number of measures that have been assumed to be applicable to all of the MPAs because as a minimum there will be initial site establishment, ongoing management activities and statutory reporting requirements (including monitoring). Similarly, there will also be a requirement to provide advice on operations and costs associated with undertaking regulatory (advisory and licensing decisions) functions.

The only site management plan in place that remains current incorporates the Lundy SAC and MCZ. This identifies specific measures that have been developed and implemented through time to protect and enhance the features within the site(s). Lundy is also the only location for which a dedicated warden is known to be employed, however the majority of the warden's time is directed towards land-based activity rather than marine protection. There is a specific MPA management group that meets twice a year, which covers both terrestrial and marine conservation.

The over-arching estuary management plan for the Taw-Torridge is now outdated. However, the Taw Torridge Estuary Forum do still meet approximately twice a year. It is not known to what extent the management measures detailed within the previous plan (2010-2015) were implemented or whether they remain aspirational. Similarly, the Braunton Burrows Site Improvement Plan details a number of potential improvement measures, but the funding for such measures was not identified when the plan was written.

Specific management measures that have been employed at Lundy include: promotion of public understanding / stakeholder engagement through an education centre on the island, and the implementation of a zoning scheme and no take zone. There was a Wildlife Safari Operators Accreditation Scheme (across the North Devon Biosphere), but is



winding down due to changes in personnel. Compliance and enforcement is undertaken by the Warden and his Conservation Team in the first instance (observing & reporting), with actual enforcement undertaken by Devon and Severn IFCA as and when required. Since 2011, all byelaws relating to the MPA have been established by Devon and Severn IFCA, apart from those dealing with Protected Wrecks (which are dealt with by Historic England).

Further examples of management measures employed within the MPAs include codes of conduct for mooring and saltmarsh/samphire harvesting as well as a recreational zoning scheme within the Taw Torridge Estuary. Stakeholder engagement is achieved through websites, social media and guided walks (including beach cleans) which are run by volunteers. Monitoring and research is also undertaken by volunteers and through university studies at a number of sites. For example, the Lundy Field Society is a voluntary group that promotes the study of Lundy, including its natural history and archaeology, and offers modest grants to study the island.

The overall position is that site plans (except for Lundy) are essentially a form of guidance and do not have dedicated resources or any effective means of monitoring or enforcement. The objectives for these MPAs and the advice on operations may inform the local IFCA's (and to a lesser extent the Marine Management Organisation for the small offshore area), however this is managed on an area basis, and rather than specifically for individual MPAs.



**Table 3.2: Current Management Activities by MPA**

Activity	Lundy	Braunton Burrows	Bideford to Foreland Point MCZ	Hartland Point to Tintagel MCZ	Bristol Channel Approaches SAC	Taw/Torridge SSSI
Over-arching management	Warden plus team of 3 in place	None, but NE stewardship scheme in place for part of site	No permanent resource	No permanent resource	No permanent resource	Performed in part by Biosphere team.
Preparation of schemes & advice	Plans and schemes updated by NE	This activity is resourced by staff from NE, MMO and the IFCAs as required.				Resourced by NE and Biosphere team as needed.
Stakeholder management groups	Management forum, plus Advisory group (10 organisations) (Also covered by BRMWG)	None. Looking to re-establish forum with owner. (Also covered by BRMWG)	Over-arching forum – Biosphere Reserve Marine Working Group (BRMWG – 3 times per year)			Taw Torridge Estuary Forum (twice a year) (Also covered by BRMWG)
Prep of statutory instruments	Resourced as required by D&S IFCA	Resourced as required by D&S IFCA	Resourced as required by D&S IFCA	Resourced as required by D&S IFCA	Resourced as required by IFCAs/MMO	Resourced as required by D&S IFCA
Specific non-statutory measures	None	None	None	None	None	Mooring & samphire harvesting schemes
Compliance and enforcement	Observation by Warden, enforcement by D&S IFCA	Enforcement by D&S IFCA as required				
Site monitoring	Very low compared to historic regime-minimum for legal reporting req. Research projects with universities.	Minimum legal reporting requirements	Minimum legal reporting requirements. Volunteer divers (twice year)	Minimum legal reporting requirements. Volunteer divers (twice year)	Minimum legal reporting requirements. Cornwall WT cetacean surveys.	Minimum for legal reporting requirements. Shellfish/bass monitoring. Research projects with university.
Zoning	Zoning scheme in operation	N/a	None	None	None	Recreational craft zoning scheme.
Input to licensing decisions	None in MPA (yet)	Input from many organisations as required (NE/IFCAs/EA)				
Promotion of public understanding	Interpretive & education centre funded by Landmark Trust. Warden runs events too.	Website, communications, guided walks	None	None	None	Website, communications, leaflets, information boards.
Other	Lundy ran a Safari Operators accreditation scheme across the whole region, however this is winding down due to staff changes and shortages of resources.					

### 3.3 MPA Spend Analysis

Table 3.3 provides details of the Current Resources allocated to the North Devon MPAs, which are now in their established phase (post set-up).

**Table 3.3: North Devon MPA Specific Resources and Spend**

MPA	Management of MPAs			Activities & Measures	Recurring	One-off
	Outline of current management activity	Resources*				
		FTE	£k			
Lundy	Over-arching site management, stakeholder engagement and monitoring. Meetings of management groups.	█	█	MCZ surveying & reporting		121
				No take and refuge zones	-	
				Surveys and research	10	
Braunton Burrows	Ongoing management negligible	█	█	Management of dunes under NE stewardship agreement	35	
Bideford to Foreland Point MCZ	Ongoing management negligible	█	█	MCZ Baseline survey		35
Hartland Point to Tintagel MCZ	Ongoing management negligible	█	█	Subtidal survey of habitat and FOCI species	2	
				MCZ Baseline survey		55
Bristol Channel Approaches SAC	Ongoing management negligible	█	█	Cetacean stranding surveys	12	
Taw/Torridge SSSI	Ongoing management negligible	█	█	Volunteer activity (various)	20	
TOTAL MPA(s)		█	170		78	237

\* Resources by MPA anonymised due to commercial sensitivity.

### 3.3 Costs of MPA Specific Activities and Measures

MPA unique activities and measures may be recurring (i.e. occurring every year), or one-off in nature (i.e. occur less frequently, or vary over time). The most significant one-off item of spend identified has been the costs of surveying to support the identification and establishment of designated areas. Examples of one-off costs identified have been:

- £121k for MCZ monitoring and reporting for Lundy (by CEFAS) in 2017/18
- £55k for MCZ baseline surveys (Environment Agency - EA) for Hartland to Tintagel MCZ
- £35k for MCZ baseline surveys (EA) for Bideford-Foreland MCZ

In addition to baseline surveys, monitoring is required for designated sites to support periodic updates of status in line with statutory requirements. For example, SACs require monitoring and reporting on a six-yearly cycle. The costs of these surveys will vary with each site but estimates for Lundy are around £50-80k (required every six years) and this provides a guide for other sites.

Other one-off or less frequent expenditures may be incurred for the following:

- Updating management plans (which may be every ten years or so),

- Preparing new measures or bylaws, and
- Undertaking research

Examples of recurring activities/measures include:

- Regular monitoring – for example there is Wildlife Trust funding for inter-tidal surveys and cetacean stranding monitoring in Hartland/Tintagel MCZ and Bristol Approaches SAC.
- Annual land management measures for dunes at North Burrows.

Specific measures at Lundy, include a No Take Zone (NTZ) and restrictions on lobster potting, however the opportunity costs of these measures are assessed as negligible. This assessment is made as there are extensive commercial fishing opportunities elsewhere in the marine area, and the net effect of these closures has been to boost stocks such that there is a spill-over effect that supports catches in adjacent areas.

## 4. Report 2: Map of Spend within the North Devon Marine Area

This report describes the method used and the results of the spend mapping exercise for the North Devon marine area.

### 4.1 Method

Spend data from the data request was used as the basis of this analysis (see Section 2.2), and this was supplemented by spend information from other available sources as needed (e.g. annual reports and Government expenditure tool ESPRESSO<sup>2</sup>). Some data was taken from the previous terrestrial mapping exercise performed in the North Devon Biosphere (in 2017), where that spend information was considered relevant and topical.

Expenditure was categorised into three distinct spatial levels:

- **MPA level**, capturing spend made directly on each MPA
- **Marine area**, comprising spend that is targeted to the North Devon marine area (defined as the maritime zone up to the Mean High Water (MHW) mark)
- **Terrestrial area**, including spend within a 5km coastal fringe of the MHW mark that could be beneficial to the North Devon marine area. This included; environmental stewardship payments to coastal farms, NGO and private investment in, farms, habitats, coastal paths, treating waste water, and government expenditure on coastal protection.

The data was also spatially mapped, using 1km grid squares. The method of allocation of costs to area is described by line item in the next section (Table 4.1).

### 4.2 Spend Mapping Results

The allocation of costs to the three distinct spatial levels is presented in Table 4.1. For confidentiality reasons, private and NGO spend is reported in aggregate terms to prevent any individual organisation's expenditure being disclosed.

The MPA spend is as presented in the previous Section. 3. For other items of spend, the following assumptions were made:

- **MMO** - North Devon area spend was assumed to be a quarter of the MMO South West Regional expenditure, plus a twelfth of the total MMO expenditure on the national MPA management team (circa 14 staff) and the national surveillance budget (c. £1.8m).
- **IFCAs** - Overall expenditure for each IFCA (Cornwall and Devon & Severn) was available from annual accounts, and rough allocations to the North Devon marine zone were made on; approximate split of effort (50% for Devon & Severn IFCA), and share of overlapping area (approx. 15% of Cornwall IFCA).
- **Marine spend for EA, NE and North Devon Biosphere** - was provided by these organisations.
- **NE stewardship costs** were obtained from the Natural England data download site.
- **Coastal Protection** – spend was obtained from the government spend tool ESPRESSO.

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<sup>2</sup> Available at: <https://www.local.gov.uk/topics/devolution/building-evidence-base>  
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**Table 4.1: North Devon Marine Area Spend by area**

Area/level	Cost	Method of Spatial Allocation
MPA level:	(£k)	
Lundy SAC and MCZ	190	Lundy combined SAC and MCZ area
Braunton Burrows SAC	35	SAC area
Bideford to Foreland Point MCZ	4	MCZ area
Hartland Point to Tintagel MCZ	7	MCZ area
Taw Torridge SSSI	20	SSSI area
Bristol Channel Approaches p(SAC)	7	SAC area within the North Devon marine area (£12k for all SAC) <sup>3</sup>
<b>Sub-total MPA level</b>	<b>263</b>	
<b>North Devon Marine Area:</b>		
MMO	448	North Devon marine area
IFCAs	549	IFCA areas within the marine zone
EA (marine activity)	593	North Devon marine area
NE (marine related)	21	North Devon marine area
Biosphere & Devon Maritime Forum	24	North Devon marine area
<b>Sub-total marine area level</b>	<b>1,635</b>	
<b>Terrestrial Area:</b>		
NE – Stewardship payments	2,547	Payments to farms within 5km coastal fringe, spread across each site area.
EA – Habitat spend	108	Spend on sites within 5km coastal fringe
Private & NGO spend	5,515	Spend on sites within 5km coastal fringe
Private & NGO (coastal paths)	348	By length of path managed, passing through 5km coastal fringe
Coastal protection (EA and local govt).	657	By length of coastline under each local authority responsibility.
<b>Sub-total marine area level</b>	<b>9,175</b>	
<b>Total</b>	<b>11,073</b>	

Above all, it should be noted that this analysis attributes spend to the location that is the spatial focus for that spend. The benefits of this expenditure can be realised much further afield, (e.g. waste water treatment costs at one plant can have beneficial impacts downstream and far into the marine area). Furthermore, an item of expenditure can have multiple benefits, for example environmental stewardship interventions on coastal farms can provide benefits to wildlife and water quality, both to the marine and terrestrial environments. Apportioning costs based on the distribution of benefits is an abstract task, hence the approach has been to map spend based on the spatial focus of the spend activity, rather than to spread spend over the area that benefits from that spend.

Key points to note from these results are:

- Overall the split of marine and coastal spend between the public and private sector (including NGOs) is 45% to 55%. However only within the marine environment the share of public spend is 90% (largely driven by spend on MMO, IFCAs and activities within the Environment Agency)
- There is a progressive increase in the order of magnitude of spend as the analysis progresses from MPA level, to the North Devon marine area, to the terrestrial fringe. The terrestrial spend is dominated by; stewardship activities on farms, waste water treatment costs and NGO/private expenditure on land and habitats. These activities have multiple benefits that are distributed over a wide area, and the marine area is a significant beneficiary.
- Whilst some of the marine area costs have been roughly apportioned, the overall figure is considered to be of the correct order of magnitude.

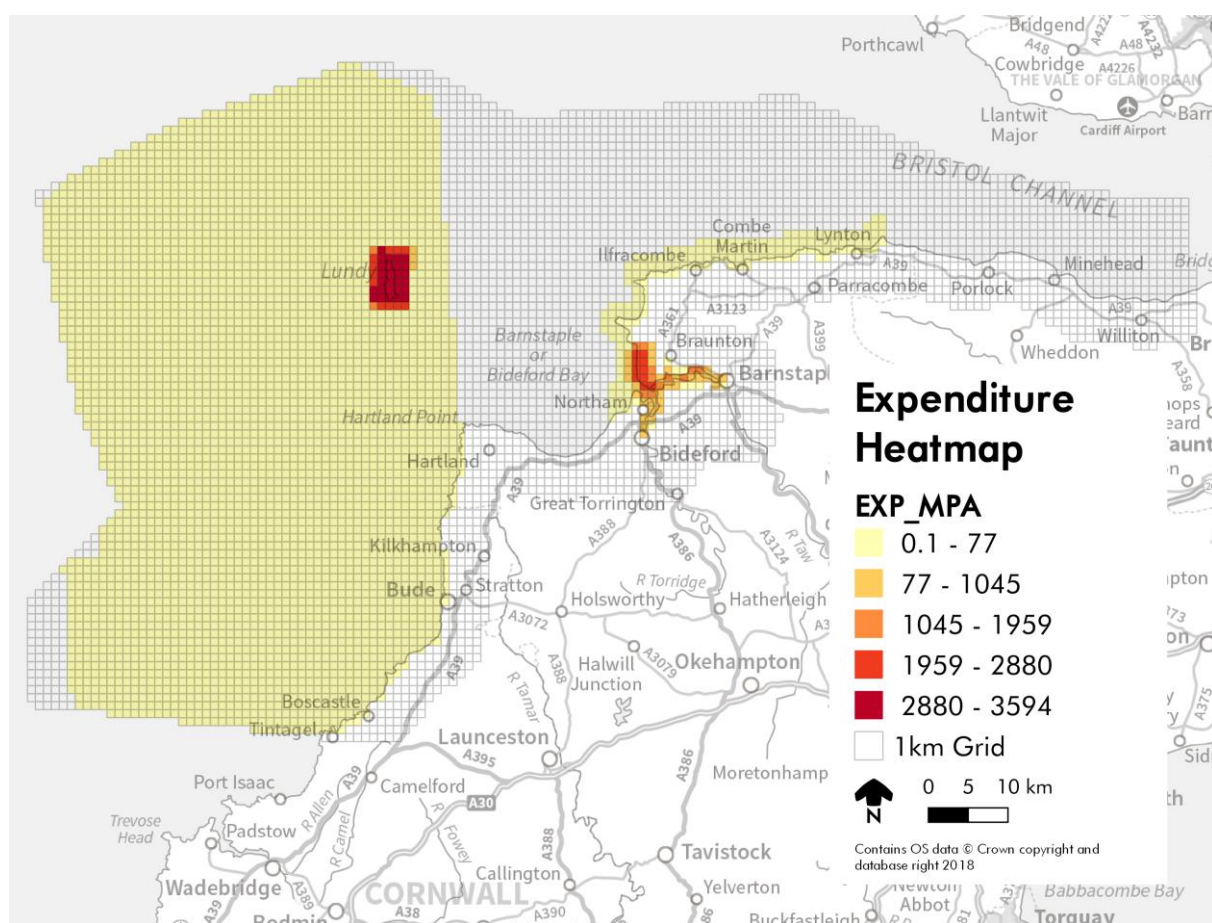
<sup>3</sup> Total spend on this SAC was £12k (Table 3.3), and approx.. 50% of the SAC is within the North Devon area.  
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- At the MPA level, there is a much lower level of spend per unit area, with considerable variation between sites. Lundy and the coastal sites have much higher levels of expenditure, which reflects the trend to invest in land-based interventions.

### 4.3 Spatial Mapping

Using the spatial mapping allocation methods described in Table 4.1, the following maps were produced. All figures are in £ per km<sup>2</sup>.

At MPA level the spend is focused mainly on Lundy and the Taw/Torridge and Braunton Burrows sites (Figure 4.1). Spend has been allocated evenly within each MPA, as it has not been possible in this study to attribute spend to specific features (e.g. reefs).

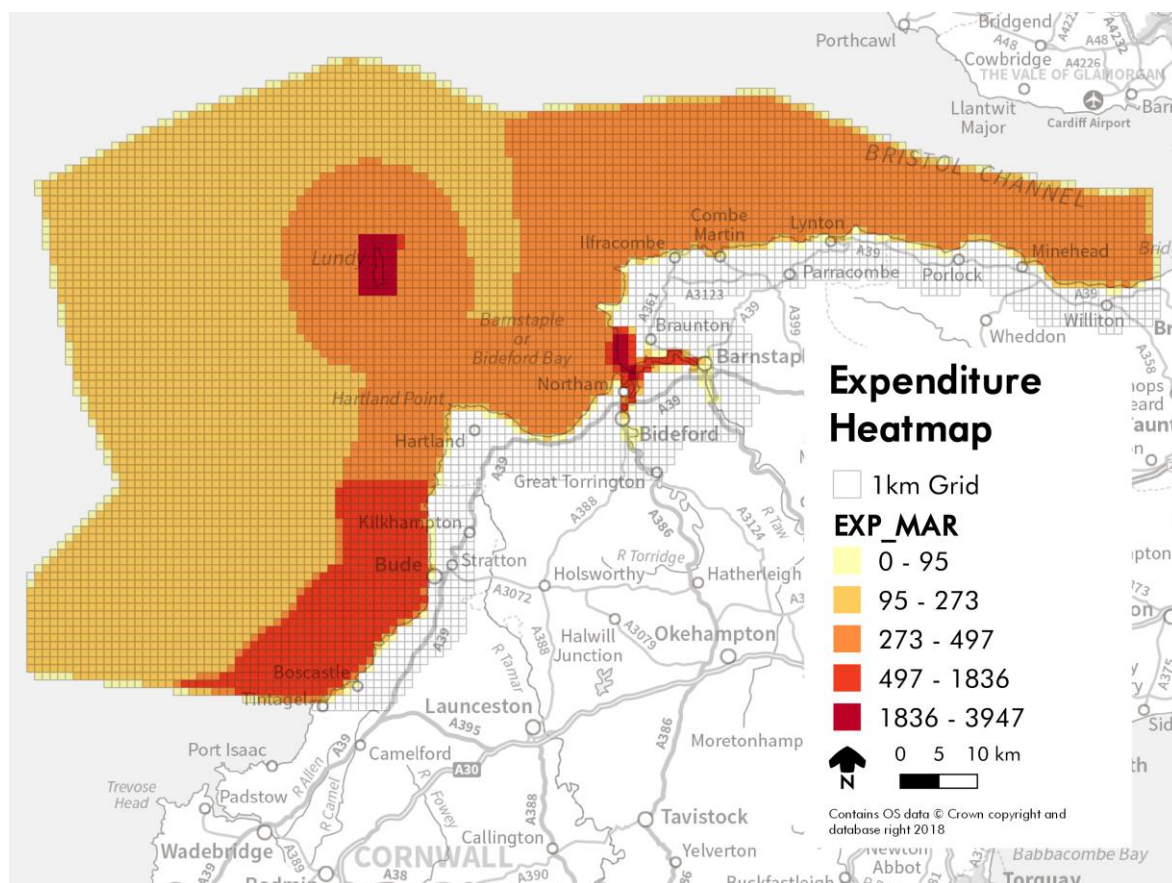


**Figure 4.1: Map of MPA level spend £ per square kilometre**

The map highlights the higher level of spend on the Lundy MPA, the Taw/Torridge SSSI, and Braunton Burrows SAC. Not only is the level of spend several times greater than the other MCZs, but these areas are considerably smaller so that the heat map effect is more pronounced. Overall it must be remembered that levels of expenditure at the MPA specific level are relatively low.

Overall, additional amounts of marine spend were recorded for the broader marine area. The map of marine area expenditure is shown in Figure 4.2. This includes MPA level spend and the marine area focused spend (mainly from MMO, the IFCAs and EA/NE).





**Figure 4.2: Map of Marine Area spend £ per square kilometre**

This map demonstrates that the higher levels of MPA spend on Lundy and Braunton Burrows/ Taw/Torridge estuary persist at this level of analysis. In addition, it reveals the differential expenditure on the IFCAs. The higher spend per unit area in the Cornish zone reflects the higher level of resources available to the Cornwall IFCa (nearly double that of the Devon & Severn IFCa). The MMO and EA spend has been spread evenly throughout the North Devon marine area.

The map of overall expenditure (terrestrial and marine combined) is shown in Figure 4.3. It highlights the spend on particular sites, such as farms, waste water treatment works and other sites managed by NGOs and private land owners. At this level of analysis, the resolution on marine spend is lost due to the higher and much more spatially concentrated spend on terrestrial sites. Particular concentrations of spend are on waste water treatment works and farms/sites with high levels of spend on habitat and environmental stewardship programmes.

Major items of terrestrial spend are:

- **Waste Water Treatment Works (WWTW) costs.** WWTW spend is geared towards improving water quality in both the terrestrial and marine environments. For simplicity only spend that was associated with operational sites within the 5km coastal buffer has been included within the mapping analysis. Furthermore, as this data was extracted from the previous pioneer mapping exercise, it was only available for the North Devon coast, and it was not possible to obtain spatial location data for WWTW along the Cornish and Somerset portions of the coastline. Clearly, other works further inland do contribute to improving water quality downstream and at sea, however their impact is more limited, and is moderated by other influences such as diffuse pollution. This is a high expenditure item that is widely distributed along the coast.
- **Environmental Stewardship** is next highest spend. This expenditure is on a wide range of tasks (with a broad range of benefits) from habitat enhancement to measures to reduce diffuse pollution. It is not possible within the scope of this study to analyse these activities in any greater level of detail. It is

important to consider that some of these activities will have high levels of benefit for the marine environment (e.g. reducing diffuse pollution), whilst others will have lower impacts (e.g. planting hedgerows for bird habitat).

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**Figure 4.3: Map of Total level spend (terrestrial and marine combined)**

### Gaps

The following gaps in data are important to bear in mind and may be addressed in future work:

- Mapping of spend to specific features (e.g. reefs) has not been possible in the study timescales. This may become more important to map if management attention becomes more focused on the health of specific features.
- Additional costs borne by the fishing industry for specific measures applied to the MPAs (e.g. adjusting gear types). Within project timescales it was not possible to obtain robust information from the fishing industry, and there are significant methodological issues around attributing spend on fishing gear to specific marine areas.
- Spend data is more comprehensive for the Devon coast, as some items are missing from the Cornish and Somerset fringes of coastline (e.g. waste water costs, and some major land owners costs). Spend data which was used from the previous terrestrial mapping exercise was comprehensive for the North Devon area, but outside this area it was not as complete.
- Water treatment expenditure data and some habitat management data were only available for the part of the area within the terrestrial zone of the North Devon Pioneer.

## 4.4 Discussion of Results

Some key observations include:

- MPA level spend at £263k represents about £0.78/ha (78 pence per MPA hectare) per year. This compares with an England & Wales average figure of £85/ha spent on SSSIs from a study in 2011<sup>4</sup>. In part this difference arises from the relative sizes of MPAs compared to land-based SSSIs. SSSIs vary considerably in size, but the average land-based SSSI (at around 250ha) compared to the average size of MPAs in the North Devon marine area (57,000ha) illustrates how much larger MPAs tend to be. Consequently, area based comparisons are of limited use. The average terrestrial spend per SSSI is £27.5k, which is comparable to the average spend on MPAs in North Devon at £44k. However, it should be noted that this MPA average is raised by the high level of spend on Lundy, and contains two land-based coastal protection areas (Taw Torridge

<sup>4</sup> GHK Consultants (2011) Benefits of Sites of Special Scientific Interest Report to Defra. This assessed the level of public spend on SSSIs as £110m p.a.  
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SSSI, and Braunton Burrows SAC). The average spend on the three other North Devon MPAs (which are not land related) is only around £8k. Taking this more purely marine based perspective, does reflect the relatively lower level of activity within the marine environment.

- The process of mapping spend at the MPA and general marine level illustrates the level of resources that are used at the North Devon region level (mainly MMO, IFCA and EA resources) to support MPA management. The marine pioneer area spend is over six times that at specific MPA level.
- Marine level spend at £1.9m p.a. is around one-fifth of the level of coastal terrestrial spend. This represents £3.42/ha per year for the North Devon marine area.
- Although the level of spend in the marine area is low, the benefits of the ecosystem services produced by the North Devon marine area is significantly higher. For example, the benefits of the (predominantly coastal) tourism sector in the Biosphere reserve is include an estimated the 6 million annual visits to North Devon and Torridge which generate a total of £464 million total visitor spend per year<sup>5</sup>.

This is first extension of spend mapping to marine environment. Marine patterns are at a far larger scale and less refined than terrestrial (especially away from the coastal zone). However, the mapping provides a useful overview of the pattern of spend to inform current management. Furthermore, this process works to knit terrestrial and marine spend patterns. This is useful for considering management inside a boundary like the Biosphere Reserve and particularly for considering impacts on the coastal zone, which has sensitive environmental features and is influenced by both marine and terrestrial activities.

## 5. Report 3: Developing and Costing a Well-Managed Scenario

The aim of this section of the study was to develop an approach for establishing the costs of a well-managed scenario, and to provide indicative costs of what a well-managed MPA might be. Note that costs provided in this section are indicative, as the study was geared towards illustrating the process for constructing estimates for a well-managed scenario, rather than developing detailed estimates for activities which have yet to be properly established in a well-managed plan.

### 5.1 Approach

The fundamental basis for establishing a well-managed scenario is to decide upon an appropriate set of activities and outcomes that define well-managed. Through discussions with the Steering Group, it was agreed that the COMPASS Card<sup>6</sup> approach would be used to determine the criteria for a well-managed scenario. This report illustrates how this approach can be used to specify what activities, resources, and hence expenditure, may be required to manage an MPA well. This is by necessity a guide and not a definitive specification as the natural features, stakeholders, uses, pressures and threats can vary considerably between each MPA. Furthermore, the level of any particular outcome (e.g. extent of community participation, or scale of visitor economy) may be subject to local preferences and circumstances. These local factors need to be properly considered in the process of designing the most suitable management scheme for any given MPA.

Although based on the COMPASS card, this approach may be supplemented with other guidance as appropriate, because particular features and specialist knowledge may be required to determine how some aspects of an MPA are most suitably managed.

In developing this approach, it became apparent that there are two types of activity:

- **Generic management activity**, which represents good practice in managing any MPA, (e.g. stakeholder engagement, effective monitoring and review of activities, etc.)
- **Specific activities and measures**, which are particular to each MPA and involve changes in human activities where these are incompatible with the MPA objectives. These may include, no-take zones, restrictions on or changes to human activities that affect MPAs (e.g. fishing, marine development, land-based activities etc), recreational codes of conduct, and creation of unique habitat.

Generic management activity was developed using the COMPASS Card to assess an indicative range of resources and spend which may be required to manage any MPA. Specific activities and measures need to be determined through a deliberative planning process. Therefore, in this study it was only possible to select and cost some example measures that provide an indication of the type of activity and expenditure that may be required to deliver the effective management of MPAs. These two threads of the project work are described below.

### 5.2 Generic Management Activities & Costs

For ease of estimating resources, the COMPASS card activities were grouped into five main categories, as detailed in Table 5.1:

- Understand & define MPA.
- Stakeholder engagement
- Governance.
- Operations & planning.

<sup>6</sup> The COMPASS Card approach is described in Annex 3.  
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- Monitoring & review.

Activities were also segregated between one-off activities (in the preliminary and pioneer phases), and recurring activities (in the self-sufficient phase). This was to enable a separation of spend between one-off and recurring expenditure.

**Table 5.1: Compass Card Activities by Major Phase and Management Activity Grouping**

	Activity Grouping				
<b>MPA Phase:</b>	<b>Understand &amp; Define MPA</b>	<b>Stakeholder Engagement</b>	<b>Governance</b>	<b>Operations &amp; Planning</b>	<b>Monitoring &amp; Review</b>
Preliminary	<ul style="list-style-type: none"> <li>Identification of zones of ecological interest</li> <li>Natural resources baseline report</li> <li>Identification of the protected area perimeter</li> </ul>	<ul style="list-style-type: none"> <li>Identification of stakeholders affected by the MPA</li> <li>Stakeholder participation process</li> <li>Socio-economic baseline report</li> <li>Ownership of the project by beneficiaries</li> <li>Identification of alternative livelihoods projects (optional)</li> <li>Identification of benefit-sharing rules</li> </ul>	<ul style="list-style-type: none"> <li>Ownership of the project by the authorities</li> <li>Creation of the management body</li> <li>Creation of the management committee</li> <li>Official declaration of MPA creation</li> </ul>	<ul style="list-style-type: none"> <li>Identification of zoning (if applicable)</li> <li>Identification of management rules per zone</li> </ul>	
Pioneer (set up)	<ul style="list-style-type: none"> <li>Delimitation of MPA boundaries</li> </ul>	<ul style="list-style-type: none"> <li>Continuation of information and awareness-raising programme</li> <li>Start of alternative Livelihoods project (if applicable)</li> </ul>	<ul style="list-style-type: none"> <li>Communication on the MPA's creation</li> <li>Finalisation and approval of the management plan</li> <li>Routine management committee work</li> </ul>	<ul style="list-style-type: none"> <li>Start of management operations and surveillance</li> <li>Preparation of a business plan</li> <li>Capacity building within the MPA</li> <li>Accounting system established</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring begins (biological, socio-eco and management efficiency)</li> <li>Monitoring of management activities begins (compass card)</li> </ul>
Self-sufficient (on-going)		<ul style="list-style-type: none"> <li>Community involvement efforts continue</li> <li>Checks on equitable benefit-sharing</li> <li>Alternative livelihoods project (if applicable) established on a professional basis</li> </ul>	<ul style="list-style-type: none"> <li>Routine management committee work</li> </ul>	<ul style="list-style-type: none"> <li>Capacity building effort maintained within the MPA</li> <li>Long-term financing secured and reserves created for investments</li> </ul>	<ul style="list-style-type: none"> <li>Effective implementation of the management plan</li> <li>Monitoring continues – project log (compass card)</li> <li>Demonstration of beneficial ecological effects</li> <li>Demonstration of beneficial socio-economic effects</li> <li>Review of the management plan and adaptive management</li> </ul>

Each of these five activity groups were assessed for the likely level of resources required to perform the tasks to the level required by the COMPASS card criteria. These assessments are presented in Annex 4. Table 5.2 summarised the range of resources and costs that have been assessed through this desktop estimation exercise.

**Table 5.2: Indicative Generic MPA Management Resources and Costs by Activity Grouping**

Indicative Range of Resources & Costs by Activity Grouping						Indicative Range of Resources
MPA Phase:	Understand & Define MPA	Stakeholder Engagement	Governance	Operations & Planning	Monitoring & Review	
Preliminary	<ul style="list-style-type: none"> <li>Baseline survey (£50-100k)</li> <li>Management time (10-20 days, £2-4k)</li> <li>Research – MPA specific, not possible to assess here.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder participation process (£50-100k).</li> <li>Socio-economic baseline report (£20-100k)</li> <li>Management time (£25-50k)</li> <li>Assume no alternative livelihoods project.</li> </ul>	<ul style="list-style-type: none"> <li>Creation of the management body and set up costs (2-4 FTE spread over 1-3 years, £100-200k)</li> </ul>	<ul style="list-style-type: none"> <li>Developing management plan (1-3 FTE, £50-150k)</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>	<p>£300k - £700k spread over 1-3 years but may take longer.</p> <p>Excludes research costs which depend upon MPA ecology.</p>
Pioneer (set up)	<ul style="list-style-type: none"> <li>Minimal resource.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder engagement tasks (1 FTE £50k)</li> <li>Assume no alternative livelihoods project.</li> </ul>	<ul style="list-style-type: none"> <li>Approve plans and set up governance structures (1 FTE £50k)</li> <li>Routine management committee work (£15k time and expenses)</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of a business plan and set-up systems (0.5-1 FTE over 1 year £25-50k).</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring of management activities (1 FTE £50k)</li> <li>Ecological monitoring is highly variable (£0-100k ++)</li> </ul>	<p>(3 to 4 FTE) £190k-£215k.</p> <p>Costs of ecological monitoring. unknown.</p>
Self-sufficient (on-going)	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>On-going community &amp; stakeholder engagement tasks (1 FTE £50k)</li> <li>Assume no alternative livelihoods project.</li> </ul>	<ul style="list-style-type: none"> <li>Routine management committee work (£15k time and expenses)</li> </ul>	<ul style="list-style-type: none"> <li>Development, training and resourcing of core team (1-2 FTE, £50-100k).</li> </ul>	<ul style="list-style-type: none"> <li>Ecological monitoring is highly variable (£0-100k ++).</li> <li>Management systems monitoring, up to 1 FTE/year (£50k)</li> </ul>	<p>(3 to 4 FTE), £165 - £200k+ per year.</p> <p>Costs of ecological monitoring. unknown.</p>

**Note:** Staff time has been estimated at £50k/year per FTE, to allow for some level of corporate overhead. (This is higher than the estimate used in Table 3.3. as the Lundy team required little overhead)

This analysis assesses the one-off costs of establishing an MPA (Preliminary & Pioneer phases) in the range c£400k - £900k+ over a 2 to 4 year period, although there may be cases where this process may take longer. This range excludes research costs which can cover wide areas of search for relevant features for designation, and/or be highly MPA specific. The steady state phase is estimated in the region of £165K to £200K+ and does not include the costs of any MPA specific measures.

This analysis is for a stand-alone MPA and does not account for opportunities to exploit cost synergies across MPAs. Within the North Devon marine area, there is considerable scope to manage resources across MPAs and thereby make significant resource savings.

## 5.3 Examples of MPA Specific Activities & Measures

The assessment of resource above considered general management activity only and excluded any MPA specific measures or activities. In consultation with the project team, a list of potential measures and activities which supported a well-managed MPA were developed. The list of activities is shown in Table 5.3, with indicative costs.

**Table 5.3: Examples of Well-Managed Activities/measures**

	Activity/measure	Spatial Scale	Indicative Range of Costs
1	Endorsements/accreditation schemes for commercial organisations who adhere to good practice inside MPAs. Focused initially at marine tour operators but can be extended to other users.	Across all North Devon Marine Pioneer	£7k per year
2	Creation of new saltmarsh habitat in the Taw/Torridge estuary by managed realignment, covering an area of between 50 and 80 ha.	Taw Torridge SSSI.	Capital costs £1.8-2.8m, Annual costs in region £14-22k.
3	Create videos for engaging the public with the marine environment on social and other media. Aim to increase the local community's understanding of marine protected areas (MPAs) and the benefits they provide.	Can be single MPA or may be produced for the entire North Devon Marine area.	£10-20k, depending upon number of videos and their duration.
4	Information boards about MPAs (Education about the natural environment and the benefits it provides).	Developed for a single MPA, but can be deployed across all MPAs in the pioneer area.	Range £3-13k as one-off costs. Review effectiveness on 3-5 yearly basis.
5	Provide Rigid Inflatable Boat (RIB) for Lundy, to enable monitoring of features and enforcement of measures.	Based on Lundy, but vessel could be shared with other MPAs.	Purchase costs, £20-100k, depending on size and type of RIB. Annual operating costs c£15-14k depending upon the number of days at sea.
6	Install acoustic devices (pingers) on nets for all commercial fishing within the Bristol Channel Approaches SAC to reduce bycatch of the Harbour Porpoise and other cetaceans.	Across all of the Bristol Approaches SAC.	Up to £34.5k per year (based on an estimate of 178 vessels in the area requiring devices).
7	Eliminate bottom trawling within coastal MCZs. Coastal MCZs contain some of the most important seabed habitat within the North Devon Marine area, and a prohibition on bottom trawling in these zones would prevent disturbance.	Bideford to Foreland Point MCZ, and Hartland Point to Tintagel MCZ.	£10k installation costs for remaining vessels without VMS in the North Devon Marine area (10 vessels below 7m)
8	Monitor and publicise social and economic impacts of MPAs, (e.g. employment. Involvement, benefits, etc.) with the aim of demonstrating benefits to the local community	Developed for a single MPA, but can be deployed across multiple MPAs in the pioneer area, and provide opportunities to share costs.	Typical survey cost c.£15-30k.

These examples and the basis of estimates are described in more detail below.

1. **Accreditation Scheme.** About three years ago, an accreditation scheme operated from Lundy, which trained local skippers who offered wildlife trips in the area, mainly focused on cetacean and seal spotting. For tour operators, the intended benefit was greater security of business, and for the MPA the potential benefit was more sympathetic wildlife watching. In addition to training and accreditation, the intention of the scheme was to sustain interest and topicality by providing a support network consisting of; information leaflets, an information hub, and regular events to bring guides together to exchange knowledge and experience. Due to changes of personnel and funding cuts, the support element of the scheme fell away, and the three-year accreditation period for operators is starting to expire. The management activity is to re-launch the scheme for the entire North Devon marine area and to properly resource the support network element. Overall costs have been estimated at £7k per year based on the following cost assumptions:
  - About a dozen skippers to attend a one-day course to earn accreditation, costing around £3k per day (assume £2k training and staff costs and £1k boat costs). This works out at £250 per attendee, with half funded by the attendees and the other half by the MPAs. Assume one training event per year.
  - On-going support to cost around £4k per year, allowing two days per month for staff support (£2.5k, 25 days at £100 per day), plus expenses of around £1.5k for; leaflets, an annual event and on-line information hub.
  - Based on previous experience, around half the tour operators in the area are likely to sign up to the scheme (private communication from Biosphere Manager). If take up were higher, further courses could be run.
  - **Annual costs c.£7k/year**
2. **Creation of Saltmarsh.** By managed realignment, there is potential to create around 50 to 80ha of new saltmarsh on the Taw/Torridge estuary<sup>7</sup>. Based on detailed cost estimates for two possible projects on the site (£680k capital costs for 19.7ha. in total), an average capital cost of around £35k/ha seems reasonable as a basis for estimates on this site. This compares with indicative guidance of £50k/ha from the evidence provided by (eftec 2015). The Economic Case for Investment in Natural Capital in England: report to the Natural Capital Committee. In addition, to capital costs, the local estimates assume £271/ha. for annual land management costs. Using these assumptions for estimates gives the following range of costs based on 50-80ha. of saltmarsh creation:
  - **Capital costs of £1.75m - £2.8m**
  - **Annual costs £14k - £22k/year.**
3. **Educational Videos.** This proposal involves the production and circulation of informative videos which raise awareness of local MPAs and highlight the benefits that they bring. These videos can be shared through multiple channels including social media. The rationale behind this approach is that by initiating a level of understanding of the natural environment then a virtuous cycle of valuing, caring for and enjoying the natural environment is created. In other words; BY UNDERSTANDING the environment people value it, BY VALUING the environment they will want to care for it, BY CARING for it they will help people to enjoy it, and FROM ENJOYING the environment comes a thirst to understand more. The cost of this activity is chiefly determined by the number and length/duration of the videos produced. The level of spend may also be determined by the topicality and likely level of refresh of this material, (if it is to be repeated/refreshed every 2-3 years then less may be spent compared to material that has

<sup>7</sup> Source: North Devon Biosphere Manager (private communication).

longer topicality duration). Finally, the level of spend may be determined by affordability factors and the production effort fixed accordingly. Assuming the material is topical for 5 years then a level of expenditure in the region of £10-20k seems reasonable.

- **One-off costs £10k - £20k. (To be reviewed and refreshed as necessary).**

4. **Information Boards.** The aim of this activity is to provide information about the natural environment and the benefits it provides to those visiting MPA sites. This expenditure clearly reinforces item 3) above and will be determined by the layout of the site and suitability of locations for the presentation of boards. The content, size and number of boards will also influence cost. The following assumptions can provide an indication of cost:

- Planning and preparation of materials may take 5 days of MPA staff time (say £1k, rated at £200 per day), plus £1-2k of publisher's time.
- Boards can cost in the region of £200-2,000 each, depending upon the design and materials used. Assume up to 5 boards then a range of £1k to £10k is realistic.
- **Overall one-off costs £3k - £13k. (To be reviewed and refreshed as necessary).**

5. **RIB for Lundy.** A RIB was used at Lundy for monitoring at sea, enforcement and ranger tours, however it is now damaged and inoperable. Purchase of another RIB, (or repair of the old RIB if economically viable), would enable these activities to resume. Assuming the old RIB is beyond economic repair, then the costs of acquisition and operation of another RIB will depend upon; whether a used craft is purchased (its age and condition), its size and level of equipment required. There is considerable variation in the cost of buying a used RIB, from £20k for a small craft to £100k for a 10m boat, with a high-level specification. The following are assumed costs:

- **Acquisition cost £20k -100k, (depending on size and specification).**
- **Operation costs, range £15k-40k per year.** Assume RIB maintenance costs in the region £5-20k/year, and operating costs of around £10-20k per year based on the range of 50-100 days at sea based on an assumed cost of £200 per day for staff and training.

6. **Install pingers on nets for commercial fishing within the Bristol Channel Approaches SAC,** The Harbour Porpoise is the featured species of the designation of this SAC, and mortality through bycatch or entanglement through commercial fisheries (predominantly static nets) has been assessed as one of the high impacts to the species<sup>8</sup>. One solution is to install acoustic devices (pingers) on nets as a deterrent to cetaceans. Vessels above 12m are required to use pingers under European legislation, and this additional measure would be install devices on nets for all vessels below 12m in length. The costs of this measure were estimated as part of the socio-economic impact assessment during the consultation phase of the designation process<sup>9</sup>. The estimate for the impact assessment was based on the FishTek Banana pinger device, and it was assumed that these should be placed every 100m along nets deployed. It was assumed that batteries are replaced each year, and a pinger has a five-year lifespan, giving an annual average cost of £8.70 per 100m of net (or £43.48 over 5 years). Based on these assumptions an estimate of £34.5k per year was derived for an estimated 178 vessels (below 12m) that are local to the SAC. This estimate covers the entire SAC, which extends beyond the scope of the North Devon Marine area, hence it is likely to be an overestimate as not all vessels would fish within the North Devon zone.

- **Annual costs of up to £35k**

<sup>8</sup> JNCC/Natural England/Natural Resources Wales (January 2016), Bristol Channel Approaches/Dynesfeydd Môr Hafren - Draft Conservation Objectives and Advice on Activities Available at: <http://jncc.defra.gov.uk/pdf/BristolChannelApproachesConservationObjectivesAndAdviceOnActivities.pdf>

<sup>9</sup> JNCC (2015), at: <http://jncc.defra.gov.uk/default.aspx?page=7059>, based on: ABPmer and etec, 2015. Developing the Evidence Base for Impact Assessments for Recommended dSACs and dSPAs. Report prepared for the Joint Nature Conservation Committee. Report 2462. August 2015



7. **Eliminate bottom trawling within the coastal MCZs.** The combined total area of the two coastal MCZs (Hartland Point to Tintagel and Bideford to Foreland Point) is 480km<sup>2</sup> (or 7% of the total marine area). Eliminating bottom trawling would protect the most important seabed habitat from disturbance (note Lundy MCZ is largely protected by way of the no-take and refuge zones that form the majority of this MPA). The potential costs of this measure are challenging to evaluate due to the broad and complex range of responses to this measure. A general response would be for the fishing industry to switch gear types and/or fishing grounds. The costs of this would relate to the cost of switching to other fishing gear and/or additional steaming costs to access different fishing grounds. There would also be an opportunity cost of reduced fish catches. Assessing this impact is beyond the scope of the costs considered, but estimating the net reduction would need to take into account possible use of alternative gears (i.e. static gear such as pots) in the areas where bottom trawling is eliminated. It is considered unlikely that fishers would change gear type if they were excluded from a relatively small area (7% of North Devon Marine area), as it would not be economical to do so. It is more likely that fishing activity would be displaced which would have knock on effects for the environment and other fishers elsewhere. A more tangible effect is the cost of enforcing such a measure. This is most effectively managed through the mandatory installation of Vessel Monitoring Systems (VMS). Recently (in 2018) Devon & Severn IFCA have required all vessels over 7 metres to have VMS installed (see by-law<sup>10</sup>), consequently the additional costs of this measure would be to install this on all vessels below 7 metres. This is in line with the current Defra consultation on the introduction of iVMS across all under-12m vessels by 2021<sup>11</sup>.

- **One-off costs £10k.** An estimate of £10k one-off installation costs for acoustic devices was calculated based on ten vessels (<7m) in the North Devon area<sup>12</sup> and an assumed acquisition cost of £1k per vessel (previous work on costing VMS by ABPmer in 2011). In addition, this measure would require costs of monitoring VMS data, however given that existing vessels over 7m are monitored, it can be assumed that this extra workload could be absorbed at negligible extra cost.

8. **Monitor and publicise social and economic impacts of MPAs.** This activity is linked to 3) and 4) above, by providing the information and evidence needed to support those engagement activities. A baseline socio-economic survey is a core criterion in the COMPASS card, however this measure entails the periodic monitoring and publicising of the social and economic impacts of the MPA. This can be done in various ways, ranging from on-going monitoring of important factors (such as visitor numbers) to major surveys conducted every 5 years or so. Assuming major surveys every five years, a typical survey may review economic impacts (e.g. income and employment from fishing, tourism, research and educational activities), and social impacts and interactions (e.g. visits to coastal educational assets, volunteer opportunities, maritime and cultural heritage preservation, and local attitudinal surveys). The cost of a survey is shaped by the number of impacts assessed, however this is likely to be determined by affordability considerations. Typical surveys of this type are often conducted for around £15-30k.

- **One-off costs £15k - £30k. To be repeated every 5 years or so.**

This selection of examples illustrates the variety of activities that can be undertaken to manage an MPA, from relatively low-cost activities such as accreditation schemes and educational videos (costing up to £20k), to major investments such as saltmarsh creation (costing over £1m). The selection appropriate activities will entail a consideration of likely effectiveness in protecting the MPA and the cost of the activity itself.

## 5.4 Concluding Remarks & Observations

Establishing the costs of achieving a well-managed MPA, entails the consideration of:

<sup>10</sup> Devon & Severn IFCA, available here: <https://www.devonandsevernifca.gov.uk/Latest-news/D-S-IFCA-Introduces-Requirements-for-I-VMS-Systems>

<sup>11</sup> See: <https://consult.defra.gov.uk/marine-management/introduction-of-inshore-vessel-monitoring-systems/>

<sup>12</sup> From Defra register of fishing vessels (October 2018), based in ports of Boscastle, Bude, Clovelly, Ilfracombe and Minehead.

- Generic management activities, which can be informed by best practice guidance, (using tools such as the COMPASS Card), and
- MPA Specific measures, which address important aspects of the MPA that require management intervention to sustain or improve the condition of those features.

It is not possible to provide a ready-made answer to this question, because each MPA is different and faces diverse ecological threats and socio-economic pressures. However, a structured approach to assessing the management activities necessary, and their role in achieving effective outcomes to preserve MPA features is key to planning the resources and spend needed.

This study used the COMPASS Card tool to assess the generic management activities required for any MPA, and the possible range of resources and expenditure that these activities may require. By considering component activities (such as stakeholder engagement, management monitoring and review) it is possible to build up reasonable estimates of the resources needed to perform these tasks. From this study's assessment, a typical MPA may require:

- Between £400k and £900k as one-off costs over 2-4 years to establish a single MPA. This estimate excludes any research costs that are above and beyond the baseline survey.
- Recurring resource of up to 4 FTE and running costs of up to £200k per year. This assessment does not include the costs of any MPA specific measures (such as, monitoring of specific features, habitat creation, or restrictions on fishing effort).

**Over a ten-year period of operation this would give an annual average range of £240 - 290k**, (based on set up costs averaged over ten years, plus £200k recurring costs per annum).

This evaluation does not account for opportunities to exploit cost synergies across MPAs. Within the North Devon marine area, there is considerable scope to manage resources across MPAs and thereby make significant resource savings.

The examples of MPA specific activities/measures was drawn from local experience in the North Devon marine area and illustrates the range of activities that could be necessary to meet MPA management objectives in the North Devon area. The selection and planning of definitive activities will need to be done within the context of the MPAs themselves, however these examples can serve to advocate for more resources to be allocated to important activities, such as, stakeholder engagement, monitoring and habitat creation.

Finally, comparison between the well-managed appraisal of resource (up to £200k per year per MPA excluding specific measures) and the current level of spend within MPAs (an average of £35k per year across all six designated sites), demonstrates the scale of the current funding gap. Furthermore, feedback from the focus group session highlighted the following deficiencies:

- A lack of effective management plans, with focus on legal compliance as a minimum. In the main, current practice is to describe important features, offer guidance on what aspects may require protection, and then rely on the recognised marine management authorities to utilise that guidance in formulating local measures and granting planning consents. What is missing is regular monitoring, review of management effectiveness and engagement with stakeholders.
- A general lack of monitoring, particularly on the condition of important ecological features,
- Inadequate resources for enforcement.
- A shortage of funding for research.

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- Limited/little effort on local engagement. The support of local people and ownership of the management plan is vital for success. This is an important facet to enable the possibility of attracting more financing and human capital support.
- A lack of cohesion between MPAs.
- Narrow focus on designated features and objectives rather than the overall health of the ecosystem, and maximising social and economic benefits.

The current work to estimate the expenditure required to achieve well-managed status could be extended to follow a similar spatial approach to the mapping of existing expenditure. This would help managers to target areas with particular funding deficit, and also highlight potential co-benefits that could arise alongside the primary focus of particular expenditure.

## 6. Report 4: Findings and Recommendations

### Findings

The headline summary findings are as follows:

#### Current Spend on MPAs

- Most MPAs in this pilot area do not have formal management plans (Lundy being the exception). Most do not have resources for ongoing monitoring and hence are not able to assess to what extent their objectives as MPAs are being achieved;
- The level of spend on MPAs is moderate on Lundy (although much of this is geared towards assisting the island's visitors), but low elsewhere.
- Specific expenditure on MPA level monitoring is low/negligible;
- Spend on MPA specific measures is low (other than for one-off activities such as surveys for designation/creation and statutory monitoring). The general approach to management is for the MMO and IFCAs to apply area wide measures and by-laws that take into account the advice on operations provided by guidance from MPA designations. The onus for monitoring and enforcement largely falls on these organisations;
- Funding (in particular public-sector funding) has been declining in recent years, and this trend may continue, at least in the short term; and
- Lundy has the most comprehensive approach to management, in large part due to; the unique way in which this MPA has evolved over many decades, its offshore location, funding from the Landmark Trust and from the knowledgeable and enthusiastic character of the voluntary organisations that have nurtured it.

The North Devon Mapping identifies over £11m of annual marine and coastal spend benefiting the North Devon marine pioneer area. Of this:

- The split between the public sector and the private /NGO spend is 45:55.
- 84% is targeted at activities and investments within the 5km coastal fringe, mainly driven by farm stewardship payments, water treatment costs and other spend on land and habitat maintenance or enhancement.
- 15% (£1.6m) is made within the marine area, dominated by spend from the public sector (90%); mainly via the MMO, IFCAs and EA.
- Spend within the MPAs is relatively small (less than 2% of the total) and this is dominated by spend on Lundy.
- This analysis attributes spend to the location that is the spatial focus for that spend. The diverse benefits of this expenditure can be realised much further afield, both to the marine and terrestrial environments. Apportioning costs based on the distribution of benefits is an abstract task, hence the approach has been to map spend based on the spatial focus of the spend activity, rather than to spread spend over the area that benefits from that spend.
- Public sector organisations' accounting systems are not structured to enable costs to be identified by MPA, by geographical location, or by type of management measure/activity. Based on conversations with suppliers of cost information, this is the case for the Environment Agency, Natural England, the MMO and the IFCAs, and is probably the case for JNCC and Defra too.

#### Well Managed assessment:

- Well-managed depends crucially on the criteria for the definition of 'well-managed'.
- Activities can be distinguished between generic activities (that are applicable to all well-managed MPAs), and MPA specific activities or measures which are selected for the unique features and socio-economic conditions of that MPA.
- The COMPASS Card tool can be used to assess the generic management activities required for any MPA, and the possible range of resources and expenditure that these activities may require.
- In terms of generic management, a typical MPA may require;

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- Between £400k and £900k as one-off costs to establish an MPA. This estimate excludes any research costs that are above and beyond the baseline survey.
- Recurring resource of up to 4 FTE and running costs of up to £200k per year. This assessment does not include the costs of any MPA specific measures, not does it include area wide enforcement (e.g. by MMO and IFCAs).
- This evaluation does not account for opportunities to exploit cost synergies across MPAs. Within the North Devon marine area, there is considerable scope to manage resources across MPAs and thereby make significant resource savings.
- Examples of MPA specific activities/measures were drawn from local conservation experience in the North Devon marine area and illustrates the range of activities that could be necessary to meet MPA management objectives in the North Devon area.
- However a well-managed scenario is assessed, it is clear that there is a significant gap between current levels of spend and that required to achieve a well-managed state. Key gaps being:
  - A lack of effective management plans and process, with focus on legal compliance as a minimum.
  - A general lack of monitoring, particularly on the condition of important ecological features,
  - Inadequate resources for enforcement.
  - A shortage of funding for research.
  - Limited/little effort on local engagement. The support of local people and ownership of the management plan is vital for success. This is an important facet to enable the possibility of attracting more financing and human capital support.
  - A lack of cohesion between MPAs.
  - Narrow focus on designated features and objectives rather than the overall health of the ecosystem, and maximising social and economic benefits.

## Recommendations

In terms of improving the management of marine resources, the following recommendations are made:

1. **Statutory environmental bodies should monitor resources used to manage MPAs and the wider marine environment at the MPA level.** This should include both their own resources and those of other organisations whose activities contribute towards the conservation of MPAs and marine resources. Monitoring resources at the MPA level will improve the allocation of resources. The findings of this study demonstrate that no organisation is currently collecting this information. Specifically, these organisations should consider:
  - making appropriate changes in the organisation's financial budgeting and accounting systems to enable costs to be planned, geospatially tagged and monitored at the MPA level and be capable of aggregation to a regional level (e.g. North Devon marine area).
  - recording the resources and costs of other organisations that contribute towards meeting MPA objectives and support to the wider marine environment (e.g. the Lundy Company), this could include recording and valuing volunteer time<sup>13</sup>, as it is an important part of the resources used in management, both for general (e.g. beach clean) and for specialists (e.g. biodiversity survey volunteers, divers etc.) activities.
2. **'Moving towards 'well-managed' status.** The COMPASS card method supports a useful approach to the definition of a 'well-managed' system of MPA management. The findings from this review show that all MPAs in the North Devon area fall short of this level of management to varying degrees. Specific recommendations for improvement to the management of MPAs and marine management resources across the North Devon area include:
  - **The production of management plans** suited for each MPA, and the establishment of an ongoing process of adaptive management including; agreeing objectives and measures, and monitoring effectiveness to improve the iteration of subsequent management plans.
  - **Increasing local stakeholder participation in the MPA management process**, including involvement in agreeing objectives and measures, monitoring outcomes and promoting the benefits of MPAs to the local community.

<sup>13</sup> This time can be valued in monetary terms, for example based on average wages for various grades of labour type (e.g. unskilled, specialist, etc.).

- **Improve the level of monitoring within MPAs** to address key knowledge gaps in the condition of important features and to enable the assessment of status.
  - **Establish appropriate governance bodies to execute the above**, involving local stakeholders and relevant authorities, ensuring adequate long-term funding, resources and management systems.
  - Improve **understanding of potential interactions between fisheries and MPA management** measures, to help support a sustainable sector.
  -
3. Not all MPAs require the same level of management and resources, as there are varying degrees of risk to ecosystems and costs to activities. Therefore, it is not possible to express a standard cost to a 'well-managed' MPA. Furthermore, there are opportunities to improve the cost effectiveness of MPA management resources by considering the following:
- **Planning and allocating resources across MPAs within a region** (like North Devon) may be an opportunity to achieve greater cohesion in planning and to achieve synergies in resources and expenditure.
  - **Leveraging third party resources** (e.g. Lundy Company funding), or co-funding certain activities may be a cost-effective way for the public sector to achieve conservation objectives (e.g. monitoring).
  - **Better monitoring of spending**, and a more cohesive and collaborative approach to management and resources may help to improve the prospects for external or non-conventional funding.

Finally, in terms of advocacy, the evidence gathered in this study may be used to:

- Underline the importance of securing new and sustainable forms of finance to help meet the costs of managing MPAs.
- Promote the case for more monitoring and research into important features of MPAs.
- Build the case for greater stakeholder engagement, to secure greater local support for MPAs and to encourage access to a wider base of funding and human capital input.
- Improve the management planning processes, with particular focus on monitoring the effectiveness of measures in meeting objectives and securing benefits.
- Advocate more holistic plans for MPAs which aim to maximise socio-economic benefits, rather than address minimum legal requirements.
- Develop the idea of managing multiple MPAs on a local/regional level, both to improve the cohesiveness/effectiveness of planning and to save/share resources.

# Annex 1 – List of Organisations

Organisation	Response
Defra family:	
Defra	High level discussion on activities performed but no spend estimates
Natural Resources Wales	Approached but considered out of study area, so no response submitted
Environment Agency	Spend data provided
Natural England	Local spend data provided
JNCC	High level discussion on activities performed but no spend estimates
MMO	Regional spend provided
Devon & Severn IFCA	Details of activity provided but no estimates of spend
Cornwall IFCA	No response received
Local Government:	
North Devon Biosphere	Costs of Biosphere provided
Devon County Council	Local spend provided
Somerset County Council	No response received
Local authorities (x2)	No response received
Exmoor National Park	Local spend provided
North Devon AoNB	Response but no new data
Quantocks AoNB	Response but no data
Harbourmasters	No response received
Private Sector:	
South West Water	Positive response, used data from previous Pioneer project
National Federation of Fisherman's Organisations	Discussion on activity but no spend data received
Chamber of Commerce	No response received
North Devon Marketing Bureau	No response received
Recreational business	No response received
NGOs:	
WWF	Project spend provided
Cornwall Wildlife Trust	Local spend data provided
Somerset Wildlife Trust	Local spend data provided
Devon Wildlife Trust	Response – no spend in marine environment
National Trust	Local spend data provided
Lundy Field Society	Local spend data provided

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Lundy company	No response received
Devon Maritime Forum	No response received
Marine Conservation society	Response but no spend data received
Coastwise	No response received
Coastal partnership network	No response received
RYA	Response but no spend data received



## Annex 2 – Spend Template Request

The basic template is illustrated below.

### North Devon MPA Spend Assessment Data Request

Spend/cost description	Q1. Activity Type	Q2. Spend type (ongoing or one off)?	Q3. Legal or Discretionary ?	Q4. Is the spend linked to a specific site? (give name)	Q4A. Link to GIS file (if available)
TEXT	TEXT	DROPDOWN	DROPDOWN	TEXT	TEXT
Example item - assessing lobster habitat	Condition assessment	Ongoing	Discretionary	Lundy MCZ	No
Q5. Resource Spend Profile			Q6. Collaborative spending		Q7. Funding source and any other comments?
Q5A. Does profile of resource vary	Q5B. Annual Send/Cost £k	Q5C. Resource in FTE (if applicable)	Q6A. Collaborative spend?	Q6B. If yes, which organisation(s).	
(use next sheet)/	NUMBER	NUMBER	Y/N	TEXT	TEXT
N	£5k	0.2	N	N/a	100% Funded by JNCC

The guidance for response by column was as follows:

**Spend/cost description** - Describe activity or nature of resource spend/cost in your organisation's own terminology

**Q1 Activity Type** - Suggested Activity Categories (but use own description if none apply):

Spend on activities to manage the marine environment:

- Research
- Management planning
- Statutory management measures
- Voluntary measures
- Monitoring
- Condition assessment
- Conservation advice
- Compliance -enforcement
- Promotion of public understanding
- Costs of licensing decisions

Costs to Operations that have impact on the marine environment

- Increase in operating costs
- Reductions in output
- Reduced investment

Question	Guidance
Q2 Send Type	select - Ongoing or One-off
Q3 Legal or Discretionary?	select - Legal or Discretionary

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Q4 Is the spend linked to a specific site?	Name of site(s)
Q4A. Link to GIS file (if available)	Link to GIS shapefile. Alternatively, please provide the contact details of your GIS expert user if this is easier than sending files.
Q5A. Does profile of resource vary overtime?	If the spend varies over time copy the description to the following sheet and input the profile of spend/resource.
Q5B Annual Spend/Cost £k	Value of spend
Q5C Resource in FTE (if applicable)	Input Full Time Equivalent (FTE) resource headcount (if applicable)
Q6A. Collaborative spend?	If spend is in collaboration with other organisations mark as 'Y' and include only your organisation's spend. Detail other organisations contributions (if known) in Column Q7.
Q6B. If yes, which organisation(s)	List other organisations that collaborate in the activity.
Q7. Funding source and any other comments?	Provide details of funding sources and details of other organisations spend/contributions if known. Include any other comments as appropriate.

If the answer to Q5A was 'yes' the following sheet was available for respondents to provide resource information by year.

Use this template only if spend/resources vary over time

Item	Units (£ or FTE)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Add columns if needed
	£/FTE	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	

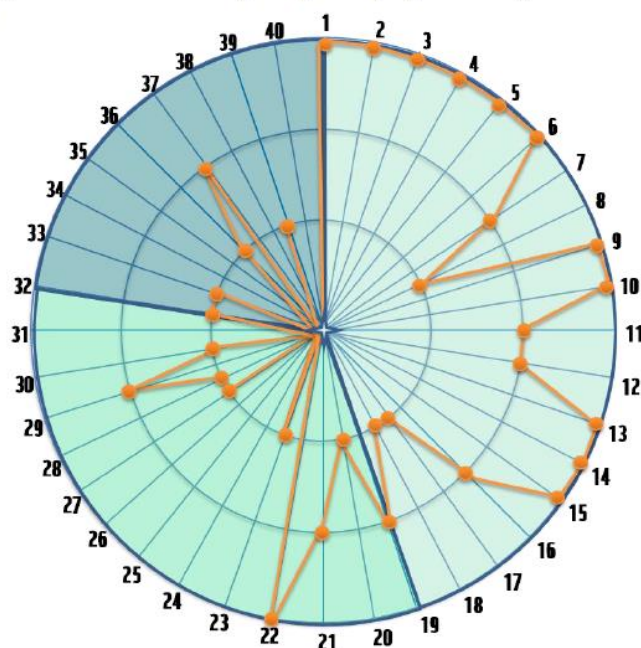
# Annex 3 - COMPASS Card Approach

WWF's UK SEAS project is all about trying to improve how marine protected areas (MPAs) in the UK are managed. We hope to do this by testing new approaches to management in our case study areas in North Devon (with the North Devon Marine Pioneer) and in the Outer Hebrides. The first step in that journey is to understand how they are being managed at the moment, to gather baseline information on where we are doing really well, and where we could focus energy on improving. The Compass Card survey forms part of that baseline assessment. It's a pretty neat technique.

The **Compass Card** divides the process of establishing an MPA into three stages:

1. The "Creation phase": In the UK we would call that the 'designation process'. This involves gathering all the data needed and working with stakeholders to develop management rules.
2. The "Pioneer phase": The pioneer phase is when management becomes operational and the management team starts monitoring and building programmes to support delivery of the objectives.
3. The "Self-sufficiency phase": By this point the MPA is well on the way to technical, organisational and financial self-sufficiency and the environmental and social benefits of the MPA are being felt.

Progress is measured using **40 criteria** that cover a range of management issues including things like setting objectives, collecting information, creating plans, involving stakeholders and monitoring etc. Each criteria is scored out of 3, from 0 = it is not being done, to 3 = it is being done really well. The criteria are arranged around the outside of the compass. The stages and criteria may vary somewhat from one MPA to the next, however to achieve **effective MPA management** all of them need to be considered at some point. A quick look at the results will tell you what stage the MPA is at (creation, pioneer or self-sufficiency) and what the MPA is doing well on and what it needs to improve. The tool can be used to track the course of MPA development over time and help managers with day-to-day organisation of their MPA by filling in the progress made year after year.



- 1 Identify important areas for species & habitats
- 2 Identify stakeholders & their interests
- 3 Set up stakeholder participation process
- 4 Assess condition of important areas for species & habitats
- 5 Create socio-economic baseline
- 6 Identify pressures impacting species & habitats
- 7 Identify threats likely to impact species & habitats
- 8 Set MPA boundary based on areas of ecological importance
- 9 Establish zoning for activities
- 10 Establish management rules for zoned areas
- 11 Create a management body to set and monitor strategy
- 12 Create a management committee to implement the strategy
- 13 Establish environmental MPA objectives
- 14 Established socio-economic MPA objectives
- 15 Identify benefit sharing rules
- 16 Develop alternatives for displaced activities
- 17 Create clear lines of responsibility for governance
- 18 Build a sense of responsibility for the MPA by stakeholders
- 19 Ensure the MPA has legal status
- 20 Publicly communicate about the MPA
- 21 Support an active & inclusive stakeholder engagement process
- 22 Enforce management rules
- 23 Ensure adequate MPA staff
- 24 Ensure adequate infrastructures and equipment
- 25 Create a business plan fund long-term MPA management
- 26 Develop a management plan
- 27 Capacity build skills needed to run the MPA
- 28 Create education programme linked to MPA objectives
- 29 Monitor biological, social and economic factors
- 30 Monitor management activities against performance
- 31 Demonstrate the authorities take responsibility for the MPA
- 32 Effectively implement the management plan
- 33 Sustain & build on community involvement
- 34 Demonstrate that MPA is achieving objectives
- 35 Demonstrate that MPA is improving ecological condition
- 36 Demonstrate that MPA is providing socio-economic benefits
- 37 Review the benefit sharing rules
- 38 Report progress to the community
- 39 Update management plan/rules based on monitoring data
- 40 Create sustainable income stream to cover management costs

## Annex 4 – Assessment of Generic Management Resources and Costs

**Table A4.1: Understand & Define MPA - Factors Influencing Resource**

	Understand & Define MPA (Activities & Criteria)		Factors Influencing Resource	Indicative Resource
Phase:	Compass Criteria	Supplementary Criteria/tasks (UK Sea definitions & Other)		
Preliminary	Identification of zones of ecological interest Natural resources baseline report	Identification of important areas for species and habitats The condition of important areas for species and habitats has been established The pressures impacting important areas for species and habitats have been identified The threats likely to impact on important areas for species and habitats have been identified	This will be chiefly fulfilled by means of a baseline survey. The criteria specify the important factors that need to be covered in the survey to enable an evidenced based decision to be made on the boundary of the MPA and its objectives. The scale of the survey will depend upon the number of important ecological features and the complexity of pressures and threats extant.	Previous surveys have cost in the region of £50-100k. Management time to consider and determine features of interest and boundaries (10-20 days, or £2-4k)
	Identification of the protected area perimeter	Is the MPA boundary based on important areas of ecological interest?	Management decision which is informed by the baseline survey.	Management time covered above
		Research into habitats and species.	Largely conducted by universities and research establishments. This will depend upon the ecosystems and species of concern/interest. Too broad to generalise.	Too variable to estimate in general terms.
Pioneer	Delimitation of MPA boundaries		Small task and determined in the preliminary phase above.	Management time covered above
Self-sufficient	None	None		

**Table A4.2: Stakeholder Engagement - Factors Influencing Resource**

	Stakeholder Engagement (Criteria & Tasks)		Factors Influencing Resource	Indicative Resource
Phase:	Compass Criteria	Supplementary Criteria/tasks (UK Sea definitions & Other)		
Preliminary	Identification of stakeholders affected by the MPA Stakeholder participation process Ownership of the project by beneficiaries	Stakeholders and their interests have been identified Stakeholder participation process up until the designation of MPA Deliberate, active and inclusive means for people outside the management body and committee to be involved in management activities.	Extent of stakeholder engagement process will be determined by the number of stakeholder groups and the complexity of their interests. The length of the process will be influenced by existing attitudes to the proposed MPA. Likely to require a dedicated role (for consistency) plus consultancy help in engagement process and design of consultative structures.	Consultation process may need 3-6 meetings per year, plus one to one engagements with specific groups. The overall process may take 1 to 3 years depending upon stakeholder attitudes and levels of potential conflict. Range of consultancy/specialist assistance in engagement process £50-100k, plus 0.5-1.0 FTE (£25-50k) to manage the overall activity.
	Socio-economic baseline report	Socio-economic baseline report	Scale of report will depend upon the number of stakeholder groups and the complexity of socio-economic activity.	Typical socio-economic surveys in the range £20-100k.
	Identification of alternative livelihoods projects (optional) Identification of benefit-sharing rules	The development of alternative activities to provide compensation which can compensate for displacement of damaging activities in the MPA The benefits generated from the MPA are shared equitably within the community	Alternative livelihood and formal benefit sharing schemes are unusual in a UK context. Therefore, not assessed further here.	Not assessed.
Pioneer	Continuation of information and awareness-raising programme	Is there a planned education programme linked to the objectives and needs?	Design of the programme will be influenced by the characteristics of the local population and stakeholder groups. Likely to require up to 1 FTE p.a. plus resources for outreach, social media and ongoing consultation.	One FTE (range £30-50k p.a.) plus small budget for communications and consultations.
	Start of alternative Livelihoods project (if applicable)		Not assessed further here (see above).	Not assessed.
Self-sufficient	Community involvement efforts continue Checks on equitable benefit-sharing	Community involvement efforts continue Has the MPA generated any socio-economic benefits? Are the benefits of the MPA reported to the community	Ongoing education, involvement and feedback of results is an important ongoing activity. Ideally resourced with at least 1 FTE, with resources for outreach, social media and ongoing consultation.	One FTE (range £30-50k p.a.) plus small budget for communications and consultations.
	Alternative livelihoods project (if applicable) established on a professional basis	Benefit sharing rules are actually working i.e. benefits are being equitably shared	Not assessed further here (see above).	Not assessed.

**Table A4.3: Governance - Factors Influencing Resource**

	Governance (Criteria & Tasks)	Factors Influencing Resource	Indicative Resource
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## North Devon Marine Protected Areas Cost Evaluation

Phase:	Compass Criteria	Supplementary Criteria/tasks (UK Sea definitions & Other)		
Preliminary	Ownership of the project by the authorities Creation of the management body Creation of the management committee	Does a management body exist that is empowered to set the MPA's strategy, objectives and overall direction, and which oversees and monitors management decision-making? Does a management committee exist?	The number of, board appointees, stakeholder groups and complexity of the MPA will regulate the governance structures. As a minimum this will need to specify the management committee and the structure of the operational team needed to manage the MPA. Roles and responsibilities being clearly defined.	May need 2-4 person years effort (£100-200k) plus legal expenses spread over 1-3 years.
	Official declaration of MPA creation	Does the protected area have legal status?	Legal processes cleared.	Small legal budget required, main tasks covered off in task above.
Pioneer	Communication on the MPA's creation Finalisation and approval of the management plan	Has the creation of the MPA been communicated? Does the protected area have a management plan and/or clear management of human activities	These criteria specify the quality of the approved plan. Work should have been carried out in the previous phase.	Cost covered in preliminary phase above.
	Routine management committee work	Does an effective management committee exist that carries out management actions?	Will typically involve 4 meetings per year (up to 12 members time plus expenses)	Up to £10k in members' time plus travel expenses (say £5k) per year, plus 1FTE set-up committee and governance structure (£50k). Total £65k/year)
Self-sufficient	Routine management committee work	Does an effective management committee exist that carries out management actions?	Will typically involve 4 meetings per year (up to 12 members time plus expenses)	Up to £10k in members' time plus travel expenses (say £5k) per year. Total £15k/year)



**Table A4.4: Operations and Planning - Factors Influencing Resource**

	Operations and Planning (Criteria & Tasks)		Factors Influencing Resource	Indicative Resource
Phase:	Compass Criteria	Supplementary Criteria/tasks (UK Sea definitions & Other)		
Preliminary	Identification of zoning (if applicable) Identification of management rules per zone	Does the protected area have well-defined spatial units that direct the type, location and/or time of allowable human activities? Does the protected area have management in place for each zone as appropriate to meet the site's conservation objectives as a whole?	Depends upon whether zoning is employed. As a minimum, the plan should outline the likely measures to be taken even if zoning is not utilised.	May take 1-3 person year's of effort (cost £50-150k)
Pioneer	Start of management operations and surveillance Preparation of a business plan Capacity building within the MPA Accounting system established	Does the MPA have a business plan describing how income can be generated to finance management and operating costs in the long term? Does the protected area have a management plan and/or clear management of human activities? Are there enough people employed to manage the MPA? Accounting system established	Complexity of the management plan and business plan will vary with the scale and number of interest groups considered with the MPA. Business plan will need to include: <ul style="list-style-type: none"> <li>• Financing (inc. fundraising)</li> <li>• Staff development</li> <li>• Reporting</li> </ul>	Set up of plans, systems and recruitment may be 0.5-1.0 FTE effort over 1 year (£25-50k)
Self-sufficient	Capacity building effort maintained within the MPA Long-term financing secured and reserves created for investments	Is there enough training for MPA staff? There is long term financing for the full cost of the MPA and its management and operating costs?	Ongoing staff and financial management tasks will be a function of team size.	Financial management and training of team 1-2 FTE per year (£50-100k).

**Table A4.5: Monitoring & Review - Factors Influencing Resource**

	Monitoring & Review (Criteria & Tasks)		Factors Influencing Resource	Indicative Resource
Phase:	Compass Criteria	Supplementary Criteria/tasks (UK Sea definitions & Other)		
Preliminary	None	None	None	None
Pioneer	Monitoring begins (biological, socio-eco and management efficiency) Monitoring of management activities begins (compass card)	Is the MPA monitored regularly and scientifically such that human pressures are reduced? Are biological, social and economic factors monitored? Are management activities monitored against performance?	Scale of monitoring will be determined by the number of biological and socio-economic variables to be assessed. Management activities will be set by the business plan. Costs will also depend upon the type of enforcement required (e.g. patrol boats, monitoring devices etc.)	Set up ecological monitoring is highly variable (£0-100k ++). Management systems monitoring, up to 1 FTE/year (£50k).
Self-sufficient	Effective implementation of the management plan Monitoring continues – project log (compass card) Demonstration of beneficial ecological effects Demonstration of beneficial socio-economic effects Review of the management plan and adaptive management	Is the protected area [meeting its conservation objectives/in good condition] thanks to the implementation of the management plan? Monitoring continues – project log (compass card) Has the management plan/rules for the protected area been updated based on monitoring of the plan's progress?	System needs to collect appropriate data and report results to management committee for consideration and adaptive action.	Ecological monitoring is highly variable (£0-100k ++). Management systems monitoring, up to 1 FTE/year (£50k).





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