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# Data from: A Marine Natural Capital Asset and Risk Register Towards securing the benefits from marine systems and linked ecosystem services.

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## Supplementary Material 2:

### Policy targets and justification for risk register scoring

We set out here the policy targets (Table 1) and the assessment against these relating to the 136 asset benefit relationships, where there is a moderate to high link between the extent, condition or spatial configuration of the habitat or species assets and the flow of benefits (Table 3). The Extent, Condition or Spatial Configuration status and trend of the habitat or species assets are assessed in relation to a defined policy target (Table 1).

Table 2 below explains how the following asset and risk register can be read, following Mace et al., (2015). Using the evidence from Supplementary Material 1 the status and trend in data were assessed. The R (Red), Amber (A), Green (G) score is based on assessment (led by MA and verified by the wider team and project Steering Group) of the asset status in relation to the policy target and the trend over time. Each RAG rating was assessed for the strength of evidence and agreement between data input sources on a scale of 1-4 for both status and trend. The overall confidence score is the sum of confidence scores for status and trend. Mace *et al.* (2015) presented total scores <4 as high confidence (low uncertainty), and scores of >5 as low confidence in the evidence, and so high uncertainty. In this study we have applied a precautionary approach and clarified this scoring with total scores of between 1 to 3 regarded as high confidence in the RAG rating (low uncertainty) and total scores of  $\geq 4$  regarded as low confidence in the RAG rating (high uncertainty).

Table 1 Policy Targets for natural assets within MPAs and outside MPAs, across national and international policies. Interpretation of Good Environmental Status for the Marine Strategy Framework Directive Descriptor 1 is based on Cefas (2012) “Proposed UK Targets for achieving GES and Cost-Benefit Analysis for the MSFD. Final Report”

Assets	Asset Status	Indicator	Policy	Policy	Target
Habitat	Quantity (Extent)	Area of habitat (km <sup>2</sup> )	Convention on Biological Diversity Aichi Target 11, Sustainable Development Goal 14.	To conserve at least 10 per cent of coastal and marine areas.	10% of habitats within MPA (CBD 2010)
			MSFD Descriptor 1	GES is reached when ‘The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.’ (MSFD, 2008/56/EC)	<p><i>Target for rock/reef habitats and saltmarsh</i></p> <p><b>Inside MPAs:</b> extent is stable or increasing (&gt;95% of extent has conservation objective ‘maintain’) (Natural England 2017)</p> <p><b>Outside MPAs:</b> 95% extent of assessed habitat to be unimpacted by anthropogenic activities (in LRC &gt;3).</p> <p><i>Target for all soft substratum habitats (where extent of the habitat is less than 50% of the assessed region)</i></p> <p><b>Inside MPAs:</b> extent is stable or increasing (&gt;95% conservation objective ‘maintain’)</p> <p><b>Outside MPAs:</b> area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC 3 or below) ≤ 10% for entire assessed area.</p> <p><i>Target for all soft substratum habitats (where extent of the habitat is above 50% of all assessed area)</i></p> <p><b>Inside MPAs:</b> extent is stable or increasing (&gt;95% conservation objective ‘maintain’).</p> <p><b>Outside MPAs:</b> area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC 3 or below) ≤ 15% for entire assessed area.</p>
	Quality (Condition)	Area of each habitat within MPAs with conservation objective to be maintain or recover	MSFD Descriptor 6	GES is achieved when ‘Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected’. (MSFD, 2008/56/EC)	<p><b>Inside MPAs:</b> ≥95% of extent to be in favourable condition.</p> <p>i) presence and spatial distribution of biological communities representative of the feature are maintained. ii) presence and abundance of key structural and influential species are maintained (≥95% of extent to have conservation objective ‘maintain’).</p>

Assets	Asset Status	Indicator	Policy	Policy	Target
		Area of each habitat outside MPAs with a modelled LRC of $3 \geq$	MSFD Descriptor 6		<b>Outside MPAs:</b> as for 'extent'.
	Spatial Configuration				<b>Inside MPAs and Outside MPAs</b> were assessed as for 'extent'
Species	Quantity	Proportion of fish stocks within biologically sustainable limits	MSFD Descriptor 3	GES is achieved when "Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock." (MSFD, 2008/56/EC)	The trend in biomass/abundance (CPUE per km <sup>2</sup> ) of adult fish has been used as a proxy for SSB and abundance of older/larger fish. Age and size structure of fish stocks and reproductive capacity (spawning stock biomass) provide a key indicator of healthy stocks. However, these criteria are not sufficiently developed and no threshold for GES is known.
	Quality	1. Age and size structure of species stocks, 2. Spawning stock biomass	MSFD Descriptor 3	GES is achieved when "Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock." (MSFD, 2008/56/EC)	Scientific advice on recommended TAC provides the closest proxy for the health (and thereby condition or quality) of a stock (in relation to the fishing effort it can support). TAC recommendations are calculated from data on spawning stock biomass, recruitment and fishing pressure. Spatial scale is, however, much greater for TAC assessments (ICES areas) than NDMP extent.
	Spatial Configuration				Not assessed as stocks move over larger spatial scales than areas assessed

Assets	Asset Status	Indicator	Policy	Policy	Target
Migratory Species  <i>(Salmo salar)</i>	Quantity	CPUE of adult salmon	NASCO	Maintain all stocks above their conservation limits	Maintain all stocks above their conservation limits
	Quality	Conservation Limit in relation to egg deposition estimates	NASCO	Maintain all stocks above their conservation limits	Conservation Limit met or exceeded in at least 4 years out of 5
	Spatial Configuration	Quantity and Quality assessment in NDMP rivers	NASCO	Maintain all stocks above their conservation limits	Stocks meet CLs in at least 4 out of 5 years in all NDMP rivers.
The Water Column	Quantity	1. Extent area of water bodies (km <sup>2</sup> )  2. Number of designated bathing waters	1. WFD (see quality below) 2. New Bathing Water Directive	1. WFD (see quality below)  2. New Bathing Water Directive	1. WFD (extent thresholds not assessed, see quality below)  2. Number of designated bathing waters maintained or increased.
	Quality	Proportion of water bodies or bathing waters within assessed region	1. WFD Article 4  2. New Bathing Water Directive	1. To achieve, good status or potential of all waters. Surface waters: Good chemical and Good ecological status / potential.  2. All bathing waters are at least 'sufficient.'	All coastal and estuarine water bodies to achieve 'good' or 'high' status. All designated bathing waters to be assessed as 'sufficient' or above.
	Quality	Shellfish water status	WFD (shellfish waters)	Pollution reduction targets within River Basin Management Plans.	Monitoring of harmful plankton and reported toxin levels to be below action level.
	Spatial Configuration	Not assessed	Not assessed	Not assessed	Not assessed

Table and Keys 2. The R (Red), Amber (A), Green (G) score is shown in the RAG key table (below). Evidence for each assessment is shown in the Table and an Uncertainty score for each Status and Trend measurement is estimated (1 to 4).

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG (A-C)
		<ul style="list-style-type: none"> <li>• <b>Bold text = med to significant contribution.</b></li> <li>• Light text = low contribution</li> </ul>	Characteristic of the asset being assessed: Extent, Condition or Spatial Configuration.  Condition sets out production functions, within underlying natural capital assets. Where available indicators were assessed that can be influenced and are important to provision of ES benefits.	What is the status of the relationship relative to a defined target?  RAG rating for trend  Uncertainty of Trend		What is the trend in the relationship?  RAG rating for Status  Uncertainty of Status	<b>RAG</b> (Overall RAG based on status and trend)  Total Uncertainty  (Summation of Uncertainty)

		Status		
		Above, at or just below target	Below target	Substantially below target
Trend in Status	Positive or not discernible	A	B	B
	Negative	B	B*	C
	Strongly negative	C	C	C

		Status		
		Above, at or just below target	Below target	Substantially below target
Trend in Status	Positive or not discernible	Low	Medium	Medium
	Negative	Medium	Medium*	High
	Strongly negative	High	High	High

		Agreement	
		High	Low
Robustness	Significant evidence	1	3
	Limited evidence	2	4

Table 3. RAG assessment for the NDMP area.

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG		
Coastal Margin	Saltmarsh	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> <li>• Clean water and sediments.</li> </ul>	Quantity/Extent	Saltmarsh extent in NDMP is 2.8km <sup>2</sup> , area within an MPA is 2.01km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 0.62km <sup>2</sup> . Saltmarsh habitats in NDMP support nursery areas for at least 6 commercially targeted fish species (Report 1, Table 4). Saltmarsh extent had increased in most recent assessment - 2012 but 30% of the total area of the Taw Torridge Estuary SSSI saltmarsh units were in unfavourable - recovering condition in 2012. (below target)	Extent to be stable or increasing and ≥95% SSSI favourable / recovering (GES). This target is also recognised as needing to be reached by 2020 in Biodiversity Strategy 2020.	A small increase in extent was observed in condition assessments in 2012 (Natural England, 2012).	<b>B (8)</b>		
						B (unknown) - last assessment 2012		A	
						(4)		(4)	
	Saltmarsh	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> <li>• Clean water and sediments.</li> </ul>	Quality/Condition	One Taw Torridge Estuary SSSI saltmarsh unit (0.61km <sup>2</sup> ) assessed as in unfavourable condition due to grazing pressure in 2012 condition assessment (Natural England, 2012). This is 30% of the total area of the Taw Torridge Estuary SSSI saltmarsh units (substantially below target for managing ES Food).	≥95% SSSI favourable/recovering (GES). This target is also recognised as needing to be reached by 2020 in Biodiversity Strategy 2020.	Unknown (historical condition assessments not available). Overgrazing in 1 unit. UK wide Coastal Margin habitats have declined by an estimated 16% since 1945 due to development and coastal squeeze (UK NEA, 2011).	<b>C (8)</b>		
								B – last assessment >6 years ago	B
								(4)	(4)
	Saltmarsh	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> <li>• Clean water and sediments.</li> </ul>	Spatial configuration	A small increase in saltmarsh extent was observed in condition assessments in 2012 (Natural England, 2012). Assessment of spatial habitat use by juvenile fish species has not been assessed. At the time of writing there are studies of use of Taw Torridge saltmarsh habits by juvenile fish (multiple species) and adult bass that will provide evidence of spatial use of habitat (Project ibass, Thomas Stamp, personal communication, University of Plymouth, August 2018).	Extent and distribution of saltmarsh to be stable or increasing.	Unknown	<b>B* (8)</b>		
								B	B
								(4)	(4)

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
	Littoral rock	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Healthy Climate.</li> <li>• Tourism/nature watching.</li> </ul>	Quantity/Extent	Littoral rock (low, moderate and high energy) extent in NDMP is 11.31km <sup>2</sup> , area within an MPA is 10.42km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 1.02km <sup>2</sup> . Fish and crustacean species, including those supporting recreational and commercial fisheries find food resources amongst littoral rock fauna and flora communities (Report 1, Table 4). Extent is stable or increasing in MPAs.	MSFD, GES: <b>Extent: (Inside MPAs):</b> extent is stable or increasing (>95% conservation objective 'maintain'). <b>Extent: (outside MPAs)</b> area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MPAs only designated in 2016).	B (6)
				A	B		
				(2)	(4)		
	Littoral rock	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Healthy Climate.</li> <li>• Tourism/nature watching.</li> </ul>	Quality/Condition	Littoral rock features in designated MPAs are assessed to be in 'favourable' condition. There is limited information on condition of littoral rock habitats outside designated MPAs.	MSFD, GES: Condition <b>(Inside MPAs):</b> >95% of extent in MPAs in favourable condition (maintain) Condition: <b>(outside MPAs)</b> Area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	B (6)
				A	B		
				(2)	(4)		
	Littoral rock	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Healthy Climate.</li> <li>• Tourism/nature watching.</li> </ul>	Spatial configuration	Extent of habit feature unlikely to have changed. Changes in spatial distribution of communities are unknown. Low energy intertidal rock is dominated by furoid communities, moderate energy by barnacles and furoid communities and high energy by barnacles, periwinkle and mussel communities (Natural England, 2018)	MSFD, GES: extent is stable or increasing.	Unknown (2 MCZs were only designated in 2016).	B (6)
				A	B		
				(2)	(4)		
	Littoral coarse sediment	<ul style="list-style-type: none"> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> <li>• Food (Wild Food - fish and shellfish).</li> </ul>	Quantity/Extent	Littoral coarse sediment extent in NDMP is 0.76km <sup>2</sup> , area within an MPA is 0.61km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 0km <sup>2</sup> (Report 1, Table 3). Extent assessed as stable or increasing and conservation objective is maintain.	MSFD, GES: <b>Extent: (Inside MPAs):</b> extent is stable or increasing (>95% conservation objective 'maintain') <b>Extent: (outside MPAs)</b> area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	B (6)



Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
				A		B	
				(2)		(4)	
	Littoral coarse sediment	<ul style="list-style-type: none"> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> <li>• Food (Wild Food - fish and shellfish).</li> </ul>	Quality/Condition	Littoral coarse sediment features in designated MPAs are assessed to be in 'favourable' condition.' There is limited information on condition of littoral mud habitats outside designated MPAs.	MSFD, GES: Condition <b>(Inside MPAs)</b> : >95% of extent in MPAs in favourable condition (maintain)Condition: <b>(outside MPAs)</b> Area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	<b>B (6)</b>
				A		B	
				(2)		(4)	
	Littoral coarse sediment	<ul style="list-style-type: none"> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> <li>• Food (Wild Food - fish and shellfish).</li> </ul>	Spatial configuration	Extent is stable or increasing. The intertidal coarse sediment patches in Hartland Point to Tintagel MCZ were identified as A2.11 "shingle (pebble) and gravel shores" (Natural England, 2018). There was limited evidence for sites overall.	Current extent and condition in MPAs: stable or increasing (80% of all NDMP extent is contained in MPAs)	Unknown (2 MCZs were only designated in 2016).	<b>B (6)</b>
				A		B	
				(2)		(4)	
	Littoral sand and muddy sand	<ul style="list-style-type: none"> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> <li>• Heathy Climate</li> </ul>	Quantity/Extent	Extent in MPAs is stable or increasing. Littoral sand and muddy sand extent in NDMP is 14.99km <sup>2</sup> , area within an MPA is 14.56km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 4.21km <sup>2</sup> .	MSFD, GES: <b>Extent: (Inside MPAs)</b> : extent is stable or increasing (>95% conservation objective 'maintain') <b>Extent: (outside MPAs)</b> area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	<b>B (6)</b>
				A		B	
				(2)		(4)	
	Littoral sand and muddy sand	<ul style="list-style-type: none"> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> <li>• Heathy Climate</li> </ul>	Quality/Condition	Littoral sand and muddy sand features in designated MPAs were assessed to be in 'favourable' condition. There is limited information on condition of littoral mud habitats outside designated MPAs.	MSFD, GES: Condition <b>(Inside MPAs)</b> : >95% of extent in MPAs in favourable condition (maintain) Condition: <b>(outside MPAs)</b> Area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	<b>B (6)</b>
			A		B		
			(2)		(4)		

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
	Littoral sand and muddy sand	<ul style="list-style-type: none"> <li>• <b>Sea defence. (natural hazard regulation).</b></li> <li>• <b>Tourism/nature watching.</b></li> <li>• <b>Heathy Climate</b></li> </ul>	Spatial configuration	Extent stable or increasing. Two species communities identified in surveys of MCZs. A2.223 "Amphipods and [Scolepis] spp. in littoral medium-fine sand" on the mid to low shore, and, A2.2221 "Oligochaetes in full salinity littoral mobile sand" (Natural England, 2018). Limited evidence on distribution of all communities.	Current extent and condition in MPAs: favourable (stable or increasing) (97% of all NDMP extent is contained in MPAs)	Unknown (2 MCZs were only designated in 2016).	<b>B (6)</b>
				A		B	
				(2)		(4)	
	Littoral mud	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Healthy climate (carbon sequestration).</b></li> <li>• <b>Clean water and sediments.</b></li> <li>• <b>Sea Defence</b></li> <li>• <b>Tourism/nature watching</b></li> </ul>	Quantity/Extent	Extent in MPAs stable or increasing. Trend in extent outside MPAs unknown (precautionary below target assessment as only moderate 43% in MPAs). Extent of littoral mud in NDMP is 9.98km <sup>2</sup> , extent within an MPA is 4.27km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 4.27km <sup>2</sup> .	MSFD, GES: <b>Extent (Inside MPAs):</b> extent is stable or increasing (>95% conservation objective 'maintain'). <b>Extent (outside MPAs)</b> area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	<b>B* (6)</b>
				B		B	
				(2)		(4)	
	Littoral mud	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Healthy climate (carbon sequestration).</b></li> <li>• <b>Clean water and sediments.</b></li> <li>• <b>Sea Defence</b></li> <li>• <b>Tourism/nature watching</b></li> </ul>	Quality/Condition	Littoral mud features in designated MPAs were assessed to be in 'favourable' condition. There is limited information on condition of littoral mud habitats outside designated MPAs. Likely relative condition in relation to exposure to demersal (bottom towed fishing) was ≤3 for only a small extent 0.32km <sup>2</sup> . Other activities/pressures are more likely to have a greater impact on LRC for intertidal habitats (e.g. bait digging). LRC in relation to these activities is unknown.	MSFD, GES: <b>Condition (Inside MPAs):</b> >95% of extent in MPAs in favourable condition (maintain) <b>Condition: (outside MPAs)</b> Area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	<b>B* (6)</b>
				B		B	
				(2)		(4)	
	Littoral mud	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Healthy climate (carbon sequestration).</b></li> <li>• <b>Clean water and sediments.</b></li> <li>• <b>Sea Defence.</b></li> </ul>	Spatial configuration	Spatial distribution of species communities associated with NDMP littoral mud habitats are unknown.	Current extent and condition in MPAs: stable and condition favourable (43% of all NDMP extent is contained in MPAs)	Unknown (2 MCZs were only designated in 2016).	<b>B* (8)</b>

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
		<ul style="list-style-type: none"> <li>• Tourism/nature watching.</li> </ul>					
				B		B	
				(4)		(4)	
	Littoral mixed sediments	<ul style="list-style-type: none"> <li>• <b>Sea defence. (natural hazard regulation).</b></li> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• Healthy Climate.</li> </ul>	Quantity/Extent	Extent of littoral mixed sediments in NDMP is 0.45km <sup>2</sup> , extent within an MPA is 0.33km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 0.03km <sup>2</sup> . Current extent in MPAs: stable or increasing (2 MPAs were only recently designated (2016).	MSFD, GES: <b>Extent: (Inside MPAs):</b> extent is stable or increasing (>95% conservation objective 'maintain') <b>Extent: (outside MPAs)</b> area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	<b>B (6)</b>
				A		B	
				(2)		(4)	
	Littoral mixed sediments	<ul style="list-style-type: none"> <li>• <b>Sea defence. (natural hazard regulation).</b></li> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• Healthy Climate.</li> </ul>	Quality/Condition	Littoral mixed features in designated MPAs were assessed to be in 'favourable' condition. There is limited information on condition of littoral mixed habitats outside designated MPAs.	MSFD, GES: <b>Condition (Inside MPAs):</b> >95% of extent in MPAs in favourable condition (maintain) <b>Condition: (outside MPAs)</b> Area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016).	<b>B (6)</b>
				A		B	
				(2)		(4)	
	Littoral mixed sediments	<ul style="list-style-type: none"> <li>• <b>Sea defence. (natural hazard regulation).</b></li> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• Healthy Climate.</li> </ul>	Spatial configuration	Spatial distribution of species communities associated with NDMP littoral mixed habitats are unknown.	Current extent and condition in MPAs: stable and condition favourable (73% of all NDMP extent is contained in MPAs)	Unknown (2 MCZs were only designated in 2016).	<b>B* (8)</b>
				B		B	
				(4)		(4)	

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
	Littoral biogenic reefs	<ul style="list-style-type: none"> <li>• Sea defence. (natural hazard regulation).</li> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Clean water and sediments.</li> <li>• Tourism/ nature watching.</li> </ul>	Quantity/Extent	Extent of littoral biogenic reef in NDMP is 0.01km <sup>2</sup> , extent within an MPA is 0.01km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 0km <sup>2</sup> .	MSFD, GES: <b>Extent: (Inside MPAs):</b> extent is stable or increasing (>95% conservation objective 'maintain') <b>Extent: (outside MPAs)</b> For 95% extent in NDMP assessed to be un-impacted by anthropogenic activities (in LRC >3).	Unknown (2 MCZs were only designated in 2016).	B (6)
				A	B		
				(2)	(4)		
	Littoral biogenic reefs	<ul style="list-style-type: none"> <li>• Sea defence. (natural hazard regulation).</li> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Clean water and sediments.</li> <li>• Tourism/ nature watching.</li> </ul>	Quality/Condition	Littoral biogenic reef features in designated MPAs are assessed to be in 'favourable' condition. There is limited information on condition of littoral biogenic reef habitats outside designated MPAs.	MSFD, GES: <b>Condition: (Inside MPAs):</b> favourable/maintain (>95% conservation objective 'maintain') <b>Condition: (outside MPAs)</b> For 95% extent in NDMP assessed to be un-impacted by anthropogenic activities/pressure habitat is sensitive to (in LRC >3).	Unknown (2 MCZs were only designated in 2016).	B (6)
				A	B		
				(2)	(4)		
Littoral biogenic reefs	<ul style="list-style-type: none"> <li>• Sea defence. (natural hazard regulation).</li> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Clean water and sediments.</li> <li>• Tourism/ nature watching.</li> </ul>	Spatial configuration	Extent is stable. Limited evidence was available on spatial distribution of species communities associated with NDMP littoral biogenic reef habitats. <i>Sabellaria alveolata</i> reefs in Hartland Point to Tintagel MCZ, were found to support species such as <i>Eulalia viridis</i> , <i>Acanthochitona crinita</i> , <i>Actinia equina</i> and <i>Onchidella celtica</i> . Other species such as <i>Cancer pagurus</i> and <i>Lipophrys pholis</i> were recorded using the reefs as shelter (McLaverly et al., 2014).	Current extent and condition in MPAs: stable and condition favourable (100% of all NDMP extent is contained in MPAs)	Unknown (2 MCZs were only designated in 2016).	B* (8)	
			B	B			
			(4)	(4)			

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG		
	Infralittoral rock	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> </ul>	Quantity/Extent	Extent of infralittoral rock in NDMP is 17.27km <sup>2</sup> , extent within an MPA is 12.51km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 4.91km <sup>2</sup> . (Report 1, Table 3). Extent in MPAs is stable or increasing. Of the extent across all NDMP, LRC, was assessed to be impacted by low condition (LRC 3 or below) for 0.9km <sup>2</sup> (5.2% of total extent).	MSFD, GES: <b>Extent: (Inside MPAs):</b> extent is stable or increasing (>95% conservation objective 'maintain') <b>Extent: (outside MPAs)</b> For 95% extent in NDMP assessed to be un-impacted by anthropogenic activities (in LRC >3).	Unknown (2 MCZs were only designated in 2016).	B* (6)		
								B	B
								(2)	(4)
	Infralittoral rock	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> </ul>	Quality/Condition	Infralittoral rock features in designated MPAs are assessed to be in 'favourable' condition. There is limited information on condition of littoral mud habitats outside designated MPAs. Of the extent across all NDMP, LRC was allocated a below level 4-5 (good) for 0.9km <sup>2</sup> (5.2% of total extent).	MSFD, GES: <b>Condition: (Inside MPAs):</b> favourable/maintain (>95% conservation objective 'maintain'). <b>Condition: (outside MPAs)</b> For 95% extent in NDMP assessed to be un-impacted by anthropogenic activities/pressure habitat is sensitive to (in LRC >3).	Unknown (2 MCZs were only designated in 2016).	B* (6)		
								B	B
								(2)	(4)
	Infralittoral rock	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Healthy climate (carbon sequestration).</li> <li>• Sea defence. (natural hazard regulation).</li> <li>• Tourism/nature watching.</li> </ul>	Spatial configuration	Extent stable. Low energy infralittoral rock habitats in Hartland Point to Tintagel MCZ were dominated by algae although at some sites a kelp forest was absent (Natural England, 2018). Lundy SAC infralittoral reef habitats were dominated by red algae and kelp communities (Natural England, 2018).	Current extent and condition in MPAs: stable and condition favourable (72% of all NDMP extent is contained in MPAs)	Unknown (2 MCZs were only designated in 2016).	B (6)		
								A	B
								(2)	(4)

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
	Circolittoral rock	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Tourism/nature watching.</b></li> <li>• Sea Defence.</li> </ul>	Quantity/Extent	Extent of circolittoral rock in NDMP is 875.90km <sup>2</sup> , extent within an MPA is 180.76km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 9.17km <sup>2</sup> . (Report 1, Table 3). (21% of extent in MPAs) (confidence is low in assessment of km <sup>2</sup> extent outside MPAs). Extent unlikely to decrease but large proportion of that extent is in impacted condition (substantially greater than 5%).	MSFD, GES: <b>Extent: (Inside MPAs):</b> extent is stable or increasing (>95% conservation objective 'maintain'). <b>Extent: (outside MPAs)</b> For 95% extent in NDMP assessed to be unimpacted by anthropogenic activities (in LRC >3).	Unknown (2 MCZs were only designated in 2016). As a precautionary measure, until trend is known the trend is assessed as negative (with low confidence)	C (6)
				C		B	
				(2)		(4)	
	Circolittoral rock	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Tourism/nature watching.</b></li> <li>• Sea Defence.</li> </ul>	Quality/Condition	Assessed as 'substantially below target'. 147.5 km <sup>2</sup> of circolittoral reef features in designated MPAs in NDMP were assessed to be in 'recover' condition. There is limited information on condition of circolittoral reef features outside MPAs. Some areas inside and outside MPAs are likely to have previously interacted with bottom towed fishing activity / or anchoring of commercial or recreational vessels. (Natural England, 2018). 47.7% of the NDMP extent was assigned an LRC below levels '4-5'.	MSFD, GES: <b>Condition: (Inside MPAs):</b> favourable/maintain (>95% conservation objective 'maintain') <b>Condition: (outside MPAs)</b> For 95% extent in NDMP assessed to be unimpacted by anthropogenic activities/pressure habitat is sensitive to (in LRC >3).	Unknown (2 MCZs were only designated in 2016). As a precautionary measure, until trend is known the trend is assessed as negative (with low confidence)	C (6)
				B		B	
				(2)		(4)	
	Circolittoral rock	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Tourism/nature watching.</b></li> <li>• Sea Defence.</li> </ul>	Spatial configuration	Extent stable but habitat communities likely to be impacted. Lundy SAC circolittoral reef habitats contained tide-swept wave-exposed circolittoral rock communities (Natural England, 2018). There is currently no evidence of species communities associated with circolittoral rock habitats within other MPAs or areas of NDMP.	Current extent and condition in MPAs: stable and condition favourable (21% of all NDMP extent is contained in MPAs).	Unknown (2 MCZs were only designated in 2016). No evidence outside of Lundy SAC.	B* (4)
				B		B	
				(2)		(2)	
	Sublittoral coarse sediment	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Clean water and sediments.</b></li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Quantity/Extent	Sublittoral coarse sediment extent in NDMP is 2,845.22 km <sup>2</sup> , area within an MPA is 175.73km <sup>2</sup> (only 6.17% of the total extent) and area intersecting a management measure (for benthic activity) is 8.56km <sup>2</sup> . (Report 1, Table 3). 70% of the extent within an MPA has a conservation objective of recover. Of the entire extent within NDMP 26% were assessed to have a LRC below good levels (below 4-5).	MSFD, GES: <b>Extent: (Inside MPAs):</b> extent is stable or increasing (>95% conservation objective 'maintain') <b>Extent: (outside MPAs)</b> area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC below 3) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016). As a precaution trend is assessed as 'negative'	C (4)

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG	
				B		B		
				(2)		(2)		
	Sublittoral coarse sediment	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Clean water and sediments.</li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Quality/Condition	122.98km <sup>2</sup> (70% of circalittoral coarse sediment within designated MPAs) in NDMP have a conservation objective of 'recover to favourable condition'. There is limited information on condition of features outside MPAs. LRC across the entire NDMP is identified below 'good' levels (4-5) for 742.12 km <sup>2</sup> (26%) of entire extent in NDMP. RAG assessment = C (high risk).	MSFD, GES: Condition ( <b>Inside MPAs</b> ): >95% of extent in MPAs in favourable condition (maintain)Condition: ( <b>outside MPAs</b> ) Area of habitat lost + area of habitat below GES (in condition recover or impacted by unacceptable impact (LRC 3 or below) ≤ 10% for entire NDMP.	Unknown (2 MCZs were only designated in 2016). As a precaution trend is assessed as 'negative'	C (4)	
				B		B		
				(2)		(2)		
	Sublittoral coarse sediment	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Clean water and sediments.</li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Spatial configuration	Currently there is no site-specific evidence on the presence and spatial distribution of the biological communities (Natural England, 2018).	Current extent and condition in MPAs: stable and condition favourable (% of all NDMP extent is contained in MPAs)			B* (4)
				B		B		
				(2)		(2)		
	Sublittoral sand	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Clean water and sediments.</li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Quantity/Extent	Sublittoral sand extent in NDMP is 1,690.03 km <sup>2</sup> , area within an MPA is 52.81km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 4.5km <sup>2</sup> . (Report 1, Table 3). Only 3% of extent is within an MPA (all has conservation objective 'recover'). Assessment B (substantially below target). 77% of entire NDMP extent likely to be impacted by anthropogenic activities (below LRC category 3).	Marine Strategy Framework Directive (2008) - achieve Good Environmental Status(GES) in all UK marine waters by 2020. Current extent in MPAs: stable or increasing (2 MPAs were only recently designated (2016).	Unknown (2 MCZs were only designated in 2016). As a precaution trend is assessed as 'negative'	C (4)	
				B		B		
				(2)		(2)		
	Sublittoral sand	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Clean water and sediments.</li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Quality/Condition	52.81km <sup>2</sup> of sublittoral sand within designated MPAs in NDMP has a conservation objective of 'recover to favourable condition'. LRC across the entire NDMP is identified to be below 'good' levels (4-5) for 77% of entire NDMP extent as many areas outside MPAs that interact with activities such as bottom towed fishing activity and anchoring. RAG assessment = B (Substantially below target)	Good Environmental Status (GES) in all UK marine waters by 2020. Current extent and condition in NDMP MPAs: >95% of extent in MPAs to be in favourable condition, <10% of extent in NDMP impacted by anthropogenic activities.	Unknown (2 MCZs were only designated in 2016). As a precaution trend is assessed as 'negative'	C (4)	
			B		B			

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG	
				(2)		(2)		
	Sublittoral sand	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Clean water and sediments.</li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Spatial configuration	Currently there is no site-specific evidence on the presence and spatial distribution of the biological communities (Natural England, 2018).			B* (4)	
				B		B		
				(2)		(2)		
	Sublittoral mud	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Clean water and sediments.</li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Quantity/Extent	Sublittoral mud extent in NDMP is 10.85km <sup>2</sup> , area within an MPA is 0.21km <sup>2</sup> and area intersecting a management measure (for benthic activity) is 0km <sup>2</sup> . (Report 1, Table 3). Very low % (2%) of NDMP extent is within an MPA, but does not appear as a designated feature. 64% of the extent of sublittoral mud in NDMP was assessed to be likely to be impacted by anthropogenic activities.	Marine Strategy Framework Directive (2008) - achieve Good Environmental Status (GES) in all UK marine waters by 2020. <10% of extent in NDMP impacted by anthropogenic activities.	Unknown. As a precaution trend is assessed as 'negative'	C (4)	
				B		B		
				(2)		(2)		
	Sublittoral mud	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Clean water and sediments.</li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Quality/Condition	Unknown. There is limited information on condition of habitats outside MPAs. Some areas are likely to have previously interacted with bottom towed fishing activity / or anchoring of commercial or recreational vessels and thereby be in unfavourable condition. (Natural England, 2018). The LRC inferred from sensitivity/pressure information allocated 7km <sup>2</sup> of sublittoral mud as below good (LRC 4-5) LRC (64% of the NDMP extent). (B = substantially below target)	Good Environmental Status (GES) in all UK marine waters by 2020. Current quality in NDMP: Although not a named designated feature, habitat maps show 0.21km <sup>2</sup> of subtidal mud intersects with MPAs: Condition unknown.	Unknown. As a precaution trend is assessed as 'negative'	C (4)	
				B		B		
				(2)		(2)		
	Sublittoral mud	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Clean water and sediments.</li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Spatial configuration	Currently there is no site-specific evidence on the presence and spatial distribution of the biological communities (Natural England, 2018).				B* (4)
				B		B		



Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG	
				(2)		(2)		
	Sublittoral mixed sediments	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Clean water and sediments.</b></li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Quantity/Extent	Sublittoral mixed sediment extent in NDMP is 48.56km <sup>2</sup> , area within an MPA is 2.04km <sup>2</sup> (4.2% of total extent) and area intersecting a management measure (for benthic activity) is 0km <sup>2</sup> . (Report 1, Table 3). Limited evidence is available of confidence in extent outside MPAs. The LRC of 35.62km <sup>2</sup> (73%) of the entire extent within NDMP has an LRC below 'good' (<level 3). Status is substantially below target (B).	Marine Strategy Framework Directive (2008) - achieve Good Environmental Status(GES) in all UK marine waters by 2020. >10% of extent in NDMP un-impacted by anthropogenic activities.	Unknown. As a precaution trend is assessed as 'negative'	C (4)	
				B		B		
				(2)		(2)		
	Sublittoral mixed sediments	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Clean water and sediments.</b></li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Quality/Condition	Unknown. There is limited information on condition of habitats outside MPAs. Some areas are likely to have previously interacted with bottom towed fishing activity / or anchoring of commercial or recreational vessels and thereby be in unfavourable condition. (Natural England, 2018). LRC of 35.62km <sup>2</sup> (73%) of the entire extent within NDMP has an LRC below 'good' (4-5 levels). Status is substantially below target (B).	Good Environmental Status (GES) in all UK marine waters by 2020. Current quality in NDMP: Although not a named designated feature, habitat maps show 2.04km <sup>2</sup> of sublittoral mixed sediments intersects with MPAs: Condition unknown. Target of less than 10% of habitat extent in NDMP to be impacted by anthropogenic activities.	Unknown. As a precaution trend is assessed as 'negative'	C (4)	
				B		B		
				(2)		(2)		
	Sublittoral mixed sediments	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Clean water and sediments.</b></li> <li>• Healthy Climate.</li> <li>• Sea Defence.</li> </ul>	Spatial configuration	Currently there is no site-specific evidence on the presence and spatial distribution of the biological communities (Natural England, 2018).				B* (4)
				B		B		
				(2)		(2)		
Water bodies	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Tourism/nature watching.</b></li> <li>(• Healthy climate (carbon sequestration).</li> <li>• Sea defence. (natural hazard</li> </ul>	Quality/Condition	Water quality (water body status and bathing water quality) is monitored for 1611.57km <sup>2</sup> of water bodies that intersect with NDMP (7 monitored estuarine and coastal water bodies, including small portion of Bridgwater Bay). 3 of 7 waterbodies intersecting with NDMP failed to receive 'good' overall status in 2015	Water Framework Directive: All estuarine and coastal waterbodies to reach good status (or above):	Classifications current at time of writing (the 2015 classifications) were unchanged from the previous waterbody classifications	B (2)		

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG	
		regulation). • Clean water and sediments).				(those in the previous 'River Basin Management Plan: South West River Basin District' in 2009) (Environment Agency, 2009).		
				B		A		
				(1)		(1)		
	Water Bodies: Bathing waters	<ul style="list-style-type: none"> <li>• <b>Tourism/nature watching.</b></li> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• Clean water and sediments.</li> </ul>	Quantity/Extent	Within NDMP there are 21 designated bathing waters (beaches)	Under the Bathing Waters Directive: all designated bathing waters to be classified as 'sufficient' or above: Total number of designated beaches has not changed, however, 4 are classified as bathing waters 'poor' (below target) in 2017/18	Only identified 2014/15-2017/18: Prior to 2012 different analytical methods were used to assess bathing water classification. Assessment requires 3 years data to provide a classification. 2 bathing waters classification decreased from 'good' to 'poor' and 1 decreased from 'excellent' to 'good' between 2015-2018	<b>B* (3)</b>	
					B		B	
					(1)		(2)	

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
	Water Bodies: Bathing waters	<ul style="list-style-type: none"> <li>• <b>Tourism/nature watching.</b></li> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• Clean water and sediments.</li> </ul>	Quality/Condition	Within NDMP there are 21 designated bathing water beaches, 4 bathing waters were assessed as 'poor' (below target) in 2017/18	Under the Bathing Waters Directive: all designated bathing waters to be classified as 'sufficient' or above:	Only identified 2014/15-2017/18: Prior to 2012 different analytical methods were used to assess bathing water classification. Assessment requires 3 years data to provide a classification. 2 bathing waters classification decreased from 'good' to 'poor' and 1 decreased from 'excellent' to 'good' between 2015-2018	B* (3)
				B	B		
				(1)	(2)		
	Shellfish waters	<ul style="list-style-type: none"> <li>• <b>Tourism/nature watching.</b></li> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• Clean water and sediments.</li> </ul>	Quantity/Extent	Within NDMP there are classified shellfish waters within Taw/Torridge estuary and classified bivalve mollusc harvesting areas in Taw Torridge (7) and at Porlock (1).	Shellfish waters are considered 'Shellfish Water Protected Areas' under the Water Framework Directive. Quantity target: Unknown	Unknown	Not assessed
		<ul style="list-style-type: none"> <li>• <b>Tourism/nature watching.</b></li> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• Clean water and sediments.</li> </ul>	Quality/Condition	In 2018 there were 6 incidences of phytoplankton concentrations occurring above action levels at Spratt Ridge East (Taw Torridge estuary) and 6 incidences of toxin being detected in flesh samples but concentrations were below action levels. All Taw Torridge sites classed as 'B' or below. Class 'A' required to meet target. To achieve Class 'A' sampling results must show: Molluscs must contain 80% of results ≤ 230 E.coli per 100 grams of flesh, no results exceeding 700 E.coli per 100g flesh.	Shellfish waters or 'Shellfish Water Protected Areas' under the Water Framework Directive. Quality target (2013-2018): <i>reduce pollution in designated shellfish water</i> . Current target in SW River Basin Management Plan (2015) <300 E.coli/100ml in the shellfish flesh and intravalvular fluid: 0 bivalve harvesting areas of 7 in Taw Torridge, 1 of 1 in Porlock met the target.	Not assessed	B (1)
				B	Not assessed		
			(1)				

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
	Fish species (Quota species)	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Tourism/nature watching.</b></li> </ul>	Quantity/Extent	<p>The UK Irish Sea and Bristol Channel Beam Trawl Survey provided indices of abundance which are independent of commercial fisheries for all age. The survey targets sole and plaice but records all species caught, for the ICES Celtic Seas Ecoregion Working group. Calculations are provided for CPUE per km<sup>2</sup> per sample site, for sample sites that are within ICES rectangles that intersect with NDMP. Of 7 Quota fish species assessed: There was a decline in CPUE per km<sup>2</sup> per sample stations, over time for all species, apart from blonde ray, comparing 3 year averages between 2012-2014 and 2015-17.</p>	<p>Increase over time in CPUE per km<sup>2</sup> of adult fish (reproductive biomass). (The MSFD requires 'Good Environmental Status' by 2020 (EC, 2008) for fish stocks (Descriptor 3). Three criteria apply to determine if a fish or shellfish stock achieves GES (fishing mortality, reproductive biomass, healthy age and size structure). Spawning Stock Biomass (abundance of reproductive age fish) to be above Maximum Sustainable Yield B Trigger. In this study trend in CPUE per km<sup>2</sup> per sample stations inside or adjacent to NDMP has been used as a proxy, as published ICES assessments are undertaken over entire ICES areas, and so MSY triggers are calculated over greater spatial scales.</p>	<p>Positive trends in CPUE per km<sup>2</sup> per sample stations 2010-2017 (kendall's tau-b correlation) were only identified for Thornback ray and herring. No identifiable trend, or small negative trends in CPUE occurred (2010-2017) for 4 species (plaice, sole, small eyed ray, blonde ray), a significant negative trend occurred for CPUE of cod. There was a decline in CPUE over time for all species, apart from blonde ray, comparing 3 year averages between 2012-2014 and 2015-17.</p>	<b>B*</b> <b>(4)</b>
				B		B	
					(2)		

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
	Fish species (Quota species)	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Tourism/nature watching.</li> </ul>	Quality/Condition	Comparison of recommended TAC 3 year averages between 2012-2014 and 2015-17 showed an increase for Thornback ray. Plaice showed no discernible change. All other species (sole, smalleyed ray, blonde ray, cod and herring) showed a decline.	Healthy age and size structure is a recognised criteria for assessing GES of fish stocks. Under the Common Fisheries Policy species targets are for fishing to be at or under maximum sustainable yield (recommended TAC is the scientific advice on catch limits to achieve MSY). A decrease in TAC between years suggests a decline in the stock (in relation to the fishing effort it can support).	Recommended TAC for Area VII <sup>f</sup> has displayed a negative trend over time (2010-2017) (Kendall's tau-b) for all species with significant negative trends occurring for small eyed ray and blonde ray. Herring were only assessed in ICES Area VII <sub>g</sub> , but recommended TAC showed a small positive trend.	B* (4)
				B		B	
				(2)		(2)	
	Fish species (Quota species)	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Tourism/nature watching.</li> </ul>	Spatial configuration	Not assessed as stocks move over greater distances than NDMP. Habitat use as nursery areas by juveniles not assessed. Current projects are underway at the time of writing (2018) and assessment of condition of nursery and adult habitat and population structure and habitat association of species will be important to consider in the future.	Abundance, age and size structure (recruitment (yr1), SSB), in relation to NDMP habitats to inform GES.	Not assessed	Not assessed
	Fish species (Non-Quota species)	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Tourism/nature watching.</li> </ul>	Quantity/Extent	As lobster and crab are not limited by quotas, landings per unit effort provides an indicator to assess changes in biomass or abundance. Landings data for vessels fishing from ports within NDMP showed a small decline in 3 year averages (2012-2014) and 2015-2017) for both lobster and crab landings live weight. Effort data were unavailable to confidently assess this indicator.	Not assessed. Stable or increasing CPUE.	Between 2010-2017 lobster landings (live weight) displayed a weak positive trend (Kendall's tau-b correlation 0.483, $p=0.29$ ). Crab landings displayed a significant negative trend (Kendall's tau-b correlation -0.57, $p=0.048$ ).	B* (8)

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
				B		B	
				(4)		(4)	
	Fish species (Non-Quota species)	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Tourism/nature watching.</li> </ul>	Quality/Condition	Crab and lobster stock assessments (published by Cefas), indicate crab ( <i>C. pagurus</i> ) stocks in the South West UK, are likely to be sustainable and support the current level of harvesting (which is moderate: between minimum reference point and MSY). Harvesting of Lobster ( <i>H. gammarus</i> ) stocks was assessed to be moderate, but above rates consistent with MSY (although below maximum reference point limit).	Fishing mortality at or below MSY	no change in assessment between 2010-2017	Lobster B (6) crab A (6)
				crab +/- (A), Lobster (-) (B)		A	
				(2)		(4)	
	Fish species (migratory fish)	<ul style="list-style-type: none"> <li>• Food (Wild Food - fish and shellfish).</li> <li>• Tourism/nature watching.</li> </ul>	Quantity/Extent	CPUE, number caught per license day (commercial net), number per license day (rod and line recreational catch). Comparison of 2 year averages (2013-2014, and 2015-2016) showed an increase in rod CPUE for 2 out of 3 rivers (all rivers apart from the Lyn). Net CPUE was only available for Taw and Torridge, there was an increase in comparison of 2 year averages (2013-2014, and 2015-2016).	Better Sea Trout and Salmon Fisheries – Our Strategy for 2008-2021, “more sea trout and more salmon in more rivers bringing more benefit” (Environment Agency, 2008).	Salmon rod CPUE displayed a weak positive trend in the Taw, but a weak negative trend in the Torridge and a stronger negative trend in the Lyn (2012-2016). Sea trout rod CPUE showed a weak positive trend (2012-2016) in the Taw and Torridge, there was a weak negative trend in the Lyn.	B* (6)
				B		B	
				(2)		(4)	

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
	Fish species (migratory fish)	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Tourism/nature watching.</b></li> </ul>	Quality/Condition	Fish population supported by river/estuary measured by estimated egg deposition (performance against conservation limit). In 2017 all rivers were at 100% or above in relation to conservation limits. However all rivers are classified as 'probably at risk' in relation to meeting management objectives.	<p>Management objectives linked to fish population thresholds (Conservation Limits (CL)). North Atlantic Salmon Conservation Organization target: All salmon populations to be maintained above their conservation limits.</p> <ol style="list-style-type: none"> <li>1. For NDMP rivers, each river/estuary to meet CL in 4 out of 5 years.</li> <li>2. Rivers to be not at risk of meeting management objectives.</li> </ol>	Trend of ' <i>% of the CL attained</i> ' for each year 2010-2017 was below 100% 1 year out of 9 in Taw, 6 years out of 9 in Torridge and 3 years out of 9 in Lyn. No significant positive or negative trends were identified, although the Taw showed a very weak positive trend, Torridge showed a weak positive trend and Lyn showed a weak negative trend.	<b>B (6)</b>
				B	A		
				(2)	(4)		
	Fish species (migratory fish)	<ul style="list-style-type: none"> <li>• <b>Food (Wild Food - fish and shellfish).</b></li> <li>• <b>Tourism/nature watching.</b></li> </ul>	Spatial configuration	CPUE and egg deposition per river/estuary in NDMP. Lyn has shown greater CPUE (rod fishing) than Taw and Torridge 2012-2016. All rivers are classified as 'probably at risk' in relation to meeting management objectives. Lyn was the only river displaying a negative trend (weak) in % of conservation limit attained, suggesting recruitment may be declining.	Better Sea Trout and Salmon Fisheries – Our Strategy for 2008-2021, “more sea trout and more salmon in more rivers bringing more benefit” (Environment Agency, 2008).	<b>% of CL attained (2010-2017):</b> Positive trends in Taw and Torridge, Negative in Lyn. <b>Net CPUE (Taw) (2012-2016)</b> weak negative trends. <b>Rod CPUE (2012-2016)</b> showed a positive trend for salmon in Taw, but a negative trend in Torridge and Lyn. Sea trout rod CPUE showed a positive trend in the Taw and Torridge and a	<b>B* (4)</b>

Broad Habitat type	Habitat / Species Asset	Benefit	Characteristic	Current Status	Target	Trend	RAG
						negative trend. in the Lyn.	
				B		B	
				(2)		(2)	