

Valuing the MCZs

Network Scenarios

Scenario	% of OSPAR Species and Habitats included	% of UK Marine Landscapes included	Network size (1000 km ²)	Additional Criteria
A	20%	10%	125.7	None
G	60%	10%	156	Commercial fishery species spawning and nursery areas preferred to protect areas essential to life history stages
J	60%	10%	147.2	Locked out sites licensed for aggregate extraction, dredging and dredge disposal activities.

Method

- (a) selection of three MCZ network scenarios from work carried out by Richardson *et al.*, 200615;
- (b) identification of the types of and extent of marine habitats contained in each of the selected MCZ network scenarios;
- (c) application of expert judgement analysis to determine what was known about the current status of each of these habitat types and what would happen were there to be no MCZ designation;
- (d) consideration of the effects of two management regimes (HR-MCZ and MCS-MCZ) on each of the habitat types and use this to estimate, by summation, the consequences of management schemes if applied to these networks;
- (e) defining the different categories of on-site benefits that each marine habitat might provide;
- (f) evaluating the extent to which the levels of benefit in each category would change under the proposed protection measures;
- (g) reviewing the literature to find estimates for the economic value of such changes;
- (h) aggregating these values and apply sensitivity analysis;
- (i) providing a synopsis to be used in an Impact Assessment

Management Regimes

	Conservation Objective	
	Highly Restricted (HR-MCZ)	Maintenance of Conservation Status (MCS-MCZ)
Management Regime Restrictions	<ul style="list-style-type: none"> • General presumption against fishing of all kinds, all constructive, destructive and disturbing activities • Recovery measures appropriate to the local situation (enhanced restoration/aftercare measures on expiry of operating licences) 	<ul style="list-style-type: none"> • New development activities permitted where in the public interest (on social or economic grounds) • Existing activities to continue if do not cause site condition to deteriorate • Restriction of bottom fishing gears either spatially or temporally and technical conservation measures • Recovery measures appropriate to the local situation (enhanced restoration/aftercare measures on expiry of operating licences)

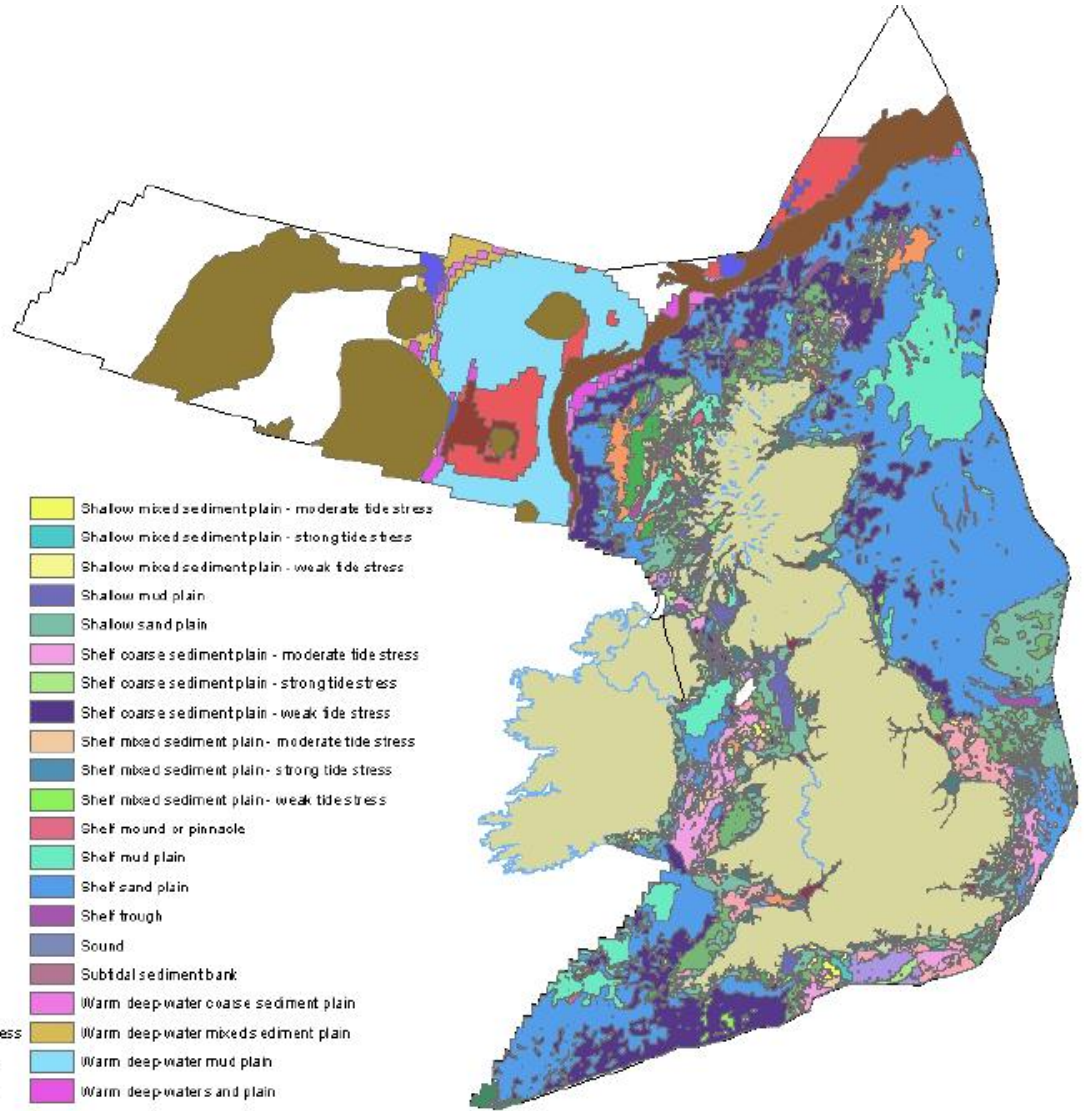
Good/Service	Defra CRO 380		
	Monetary Value	Valuation method	Subjective Reliability
Food provision	£884.9 million	Market data	MEDIUM: value added factor simplification
Raw materials	£116.5 million	Market data	MEDIUM: some data unavailable
Leisure and recreation	£1.4-£3.4 billion	Market data	LOW: based on market data but wide variability
Resilience and resistance	N/A	N/A	N/A
Nutrient cycling	£ 1.3 billion	Market, WTP	MEDIUM: used 'open seas' estimates
Gas and climate regulation	£8.2 billion	Avoidance cost approach	HIGH: social cost of carbon used
Bioremediation of waste	N/A	N/A	N/A
Biologically mediated habitat	N/A	N/A	N/A
Disturbance prevention and alleviation	0.44 billion	Avoidance cost approach	MEDIUM: based on extrapolated
Cultural heritage and identity	N/A	N/A	N/A
Cognitive values	£453.3 million	Market data	HIGH: based on reliable survey data

UK Sea Map

Seabed landscape

-  Aphotic rock
-  Barrier beach
-  Bay
-  Canyon
-  Cold deep-water coarse sediment
-  Cold deep-water mixed sediment
-  Cold deep-water mud plain
-  Cold deep-water sand plain
-  Continental slope
-  Deep ocean rise
-  Deep-water mound
-  Embayment
-  Estuary
-  Lagoon
-  Photic rock
-  Ria
-  Sealoch
-  Shallow coarse sediment plain - moderate tide stress
-  Shallow coarse sediment plain - strong tide stress
-  Shallow coarse sediment plain - weak tide stress

-  Shallow mixed sediment plain - moderate tide stress
-  Shallow mixed sediment plain - strong tide stress
-  Shallow mixed sediment plain - weak tide stress
-  Shallow mud plain
-  Shallow sand plain
-  Shelf coarse sediment plain - moderate tide stress
-  Shelf coarse sediment plain - strong tide stress
-  Shelf coarse sediment plain - weak tide stress
-  Shelf mixed sediment plain - moderate tide stress
-  Shelf mixed sediment plain - strong tide stress
-  Shelf mixed sediment plain - weak tide stress
-  Shelf mound or pinnacle
-  Shelf mud plain
-  Shelf sand plain
-  Shelf trough
-  Sound
-  Subtidal sediment bank
-  Warm deep-water coarse sediment plain
-  Warm deep-water mixed sediment plain
-  Warm deep-water mud plain
-  Warm deep-water sand plain



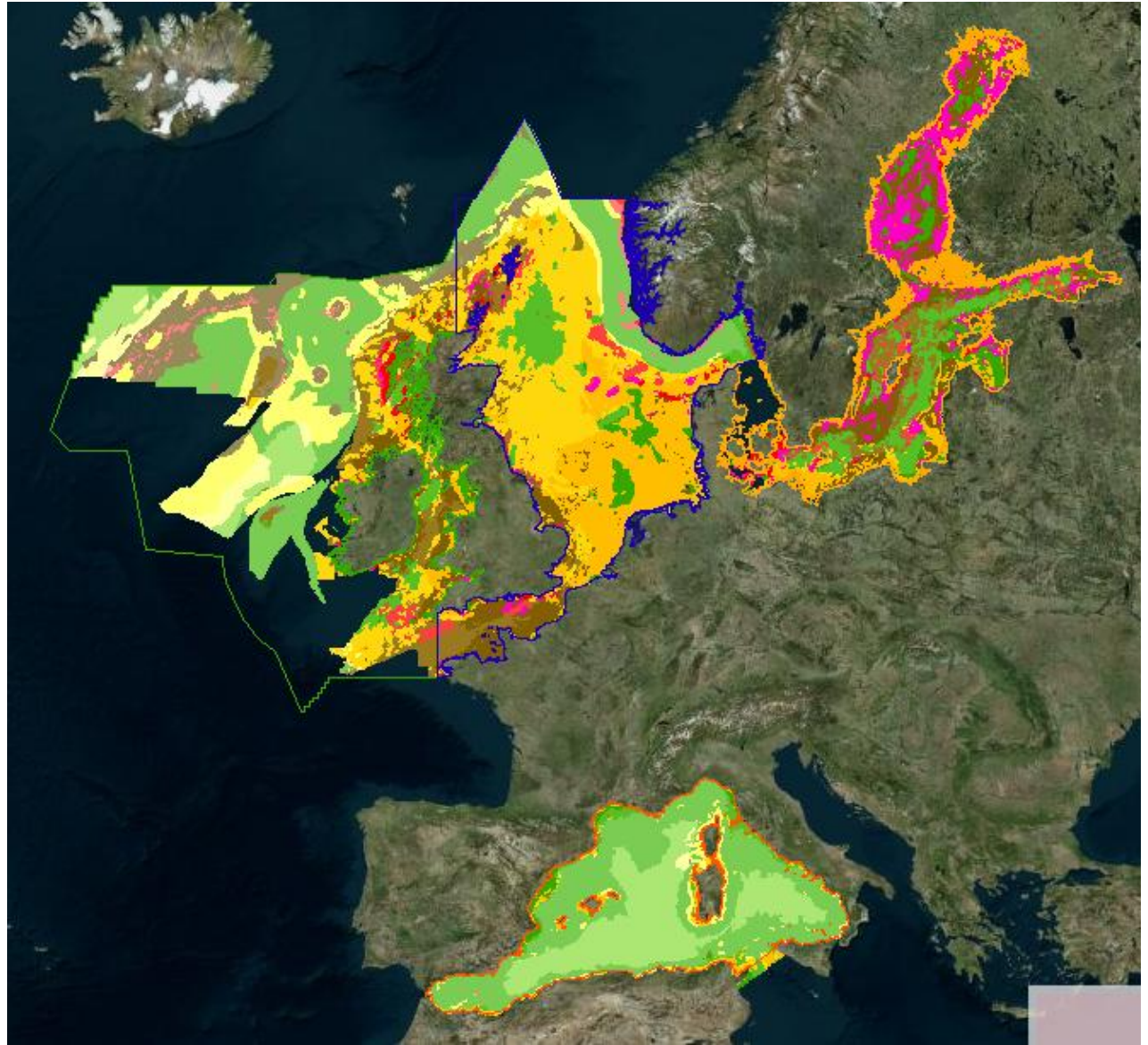
Expert Judgement

<i>Coding</i>	<i>Percentage range</i>	<i>Mid-point</i>	<i>High value</i>	<i>Low value</i>
VH (very high)	90-100%	95%	100%	90%
H (high)	50-89%	70%	89%	50%
M (medium)	10-49%	30%	49%	10%
L (low)	1-9%	5%	9%	1%
VL (very low)	<1%	0.5%	1%	0%

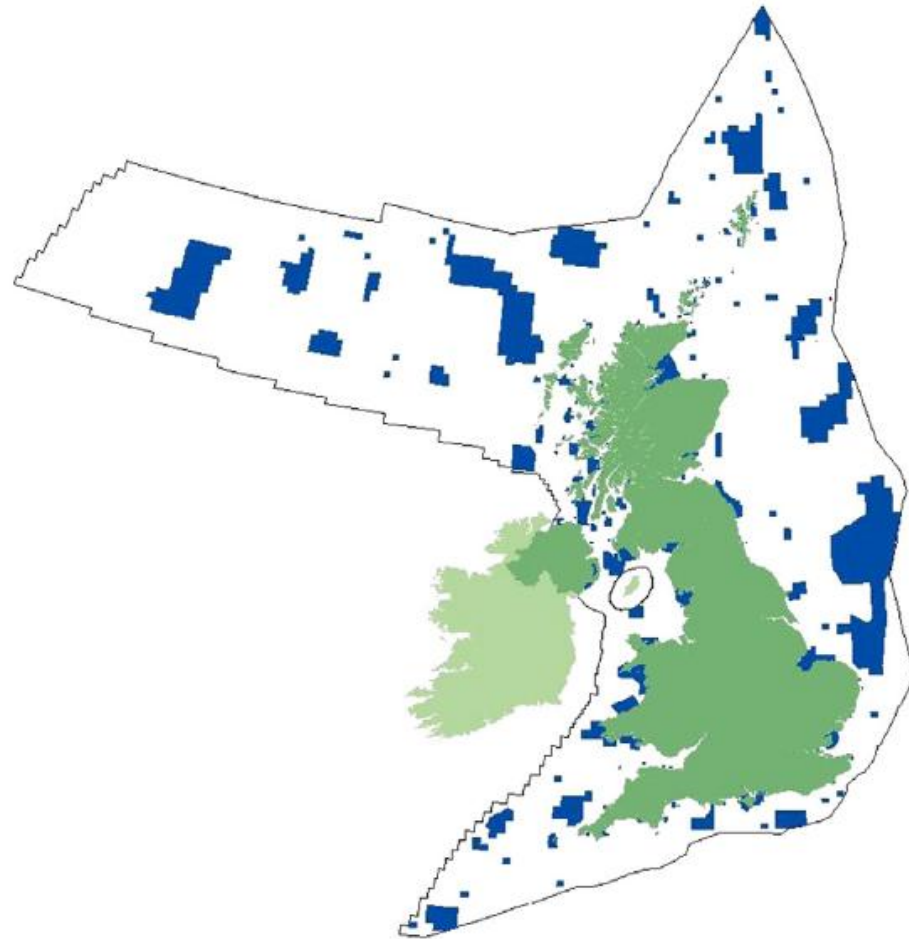
Overall Result




The estimated benefit range is **£10.3 billion to £22.7 billion (at least seven times estimated costs)**

EU Seamap Benefits Transfer



Stated Preference Valuation



-  United Kingdom
-  Potential New Marine Conservation Zones
-  UK Continental Shelf limits - the boundary of where Marine Conservation Zones can be sited

“The total aggregate value for a policy that achieves a halt in the loss of biodiversity through the introduction of the UK wide MCZ network is **£1714 million per annum.....**

An increase on the current level of biodiversity has an aggregate value of **£1659 million per annum.”**