Marine Conservation Zone Assessment

Copeland Local Plan Preferred Options

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Summary

Site	Copeland Borough Council Local Plan draft Preferred Options
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It has been possible to conclude that the policies and emerging deliverable and developable sites included within Copeland Borough Council's Local Plan draft Preferred Options document will not lead to likely significant effects on any Marine Conservation Zones (MCZs) either alone or in combination with other plans and projects.

It was considered that the following policies could potentially lead to likely significant effects on West of Walney, Allonby Bay or Cumbria Coast MCZs:

- DS3PO (Settlement Boundaries)
- H2PO (Housing Requirement)
- H3PO (Housing Delivery)
- E1PO (Economic Growth)
- CC4PO (Supporting Development of the Nuclear Sector)

However, policies DS1PO (Presumption in Favour of Sustainable Development), N1PO (Conserving and Enhancing Biodiversity and Geodiversity) and DS5PO (Development Principles) provide positive, protective measures that would seek to ensure protection of biodiversity, including MCZs.

Further strengthening of mitigation is suggested for policy CC4PO, and within polices H4PO (Distribution of Housing) and H5PO (Housing Allocations) to provide enhanced protection relating to the policies with potential to lead to likely significant effects listed above. This has now been taken into account in producing the consultation draft of the Local Plan Preferred Options.

Ultimately, any proposed development would be subject to conditions issued during planning / marine licensing, which is sufficient to conclude that none of the policies will have a likely significant effect on the MCZs.

Contents

1 Introduction

1.1 Background

1.1.1 David Archer Associates was commissioned by Copeland Borough Council (BC) to compile a report to inform a Marine Conservation Zone Assessment (MCZA) in relation to their emerging Local Plan. This will include three key aspects: strategic policies, emerging deliverable and developable sites and development management policies.

1.1.2 In 2013, Copeland BC adopted their Core Strategy and Development Management Policies Development Plan Document (DPD), which was subject to a HRA (Copeland Borough Council, 2012)[1]. This DPD will be superceded by the new emerging Local Plan. The Council has produced an Issues and Options document that was subject to public consultation between November 2019 and January 2020. The outcomes of this have been taken into account in producing the draft Preferred Options document that is the subject of this report.

1.2 The MCZA Process

1.2.1 The objective of this report is to:

- Identify any aspects of the Local Plan that would cause an adverse effect on the integrity of Marine Conservation Zones; and
- To advise on appropriate mechanisms for delivering mitigation through policy or modifications to land allocations where such effects are identified.

1.2.2 MCZs protect a range of nationally important marine wildlife, habitats, geology and geomorphology, and are designated under section 116(1) of the Marine and Coastal Access Act 2009 (MCAA). Each MCZ has a defined area, protected features within the area and conservation objective(s). The aim is for all protected features to be maintained in or restored to a favourable condition.

1.2.3 Where a process such as the making and adoption of a Local Plan has the potential to impact on the protected features of an MCZ, or its supporting processes on which the protected features are dependent, it is a requirement under Section 125 of the MCAA that the authority must "*exercise its functions in the manner which the authority considers best furthers the conservation objectives stated for the MCZ*". Where this is not possible, the authority must "*exercise them in the manner which the authority considers least hinders the achievement of those objectives*." Under Section 126 of the MCAA, it is stated how these principles should be applied by public authorities regarding licensing decisions.

1.2.4 The principles should be applied through the process of marine licencing, a responsibility of the Marine Management Organisation (MMO). The MMO is introducing a new MCZ assessment process that will be integrated into existing marine licence decision making procedures[2]. This will apply to all new marine licence applications with immediate effect and is relevant to MCZs proposed by Defra (together with their proposed features and proposed conservation objectives) until the point of designation. From the point of designation it is the

[1] Copeland Borough Council, 2012. Habitats Regulations Assessment Screening Report.
[2] Marine Conservation Zones and Marine Licencing (2013). Marine Management Organisation.

designated MCZs (together with features and conservation objectives) which will be relevant. If there is the potential for significant impacts on an MCZ, planning documents may undergo a MCZA to ensure compliance with the above obligations.

1.2.5 An initial screen of the likely impacts upon a MCZ of a project or a plan is undertaken, and this determines whether these impacts are likely to be significant. If no adverse impact is determined, the project or plan can proceed. If a likely significant adverse impact cannot be ruled out, it must be considered whether there are any means of proceeding with the activity which would create a substantially lower risk. e.g. through the identification of suitable avoidance/mitigation or alternative options. This stage is known as Stage 1. At this stage, consultation with Natural England will occur and the MMO will give due regard to their opinion. Should this stage also fail to rule out likely significant adverse effects then Stage 2 must be undertaken at which 'imperative reason of overriding public interest' (IROPI) for the implementation of the project or plan must be demonstrated and compensatory measures put in place.

1.2.6 The MCAA does not provide any legislative requirement for explicit consideration of in combination assessment to be undertaken when assessing the impacts of licensable activities upon an MCZ. However, the MMO considers that in order to fully discharge its duties under section 69 (1) of the MCAA, in combination and cumulative effects must be considered.

1.3 Objective

1.3.1 The objective of this report is to provide information for screening and where necessary Stage 1 MCZA in relation to potential impacts of the proposed Plan on relevant MCZs.

2 Methodology

2.1 MCZ Scoping

2.1.1 The MCZs to be included within the scope of the report to inform a MCZA have been determined by assessment of whether 'pathways of impact' exist between the MCZs in question and the policies and emerging deliverable and developable sites being developed within Copeland Borough.

2.2 Pathways of Impact

2.2.1 The following 'pathways of impact' have been included within the assessment process.

Aggregate Extraction

2.2.2 The processes that are assessed here are aggregate extraction and beach sand extraction. Marine sand and gravel may be dredged from the seabed to support construction and civil engineering projects or the aggregate may be used for beach replenishment or for inland infill projects. The process alters the seabed susbtrate, affects the water column (e.g. turbidity) and may also directly affect species composition.

Aquaculture

2.2.3 Aquaculture involves the farming of finfish (in the UK mainly salmon and trout) or shellfish (mainly mussels) with marine algae also harvested. In the UK, 96% of the aquaculture industry operates in Scotland[3]. As well as the potential for introduction and spread of pathogens and non-native species, there are also potential impacts from changes to water flows, nutrient and oxygen levels.

Beach Management

2.2.4 The factors considered within beach management are the application of herbicides or other methods of vegetation removal, the clearance of the strandline and the raking of sand.

Cables

2.2.5 The operations relevant to MCZs include the laying of power and telecommunications cables, and also their ongoing maintenance and decommissioning. Horizontal Direct Drilling is included within the pathway of impact, being the mechanism often used to connect marine and terrestrial elements of the cabling.

Coastal Development and Flood and Erosion Risk Management (construction)

2.2.6 This category encompasses schemes associated with management of defences at the land/sea interface, for example creation of hard or soft defences, realignment, managed retreat, or advancement of the existing line. Such schemes potentially involve disturbing

[3] Scottish Association for Marine Science: https://www.sams.ac.uk/science/blue-economy/farming-aquaculture/

activities such as piling operations as well as risks associated with pollution and sedimentation/ erosion changes. Structures within the marine environment, such as wave barriers or breakwaters are also considered.

Coastal Development and Flood and Erosion Risk Management (maintenance)

2.2.7 This includes the maintenance of both soft and hard defences.

Coastal Development and Flood and Erosion Risk Management (operation)

2.2.8 The operation of coastal defence strategies can lead to alteration of sedimentation, scouring and erosion patterns, and changes to marine flows and energies.

Coastal Infrastructure

2.2.9 The main considerations here are the creation, maintenance and operation of man made structures entering the marine environment, including slipways and also outfall and intake structures that can extend some distance into the marine environment and which may also have effects through the volumes and types of materials carried.

Commercial Shipping

2.2.10 This involves the number and size of vessels on the move, including vehicles such as hovercrafts, that may have a greater effect on water column and seabed disturbance. It also includes effects of anchorage, moorings, emissions and discharges. The effect of navigational aids, such as lights, also requires assessment.

Electricity from Renewable Energy Sources

2.2.11 The following technologies are included during construction, operation and decommissioning: offshore wind; tidal stream; wave power; tidal lagoons; and tidal barriers.

Fishing

2.2.12 Fishing encompasses a range of activities and locations. Included are shore fishing, pelagic fishing, fishing with anchored nets / lines, demersal (near the seabed) nets, electrofishing, diving, use of traps, and hydraulic dredging.

Oil, Gas and Carbon Capture Storage

2.2.13 The effects of this pathway extend from initial exploration, through to production and decommissioning and include the provision of pipielines in addition to infrastructure actually at the site of production.

Ports and Harbours (construction)

2.2.14 The most obvious aspect of this pathway is the construction impacts of new or expanded port and harbour facilities, which may include operations such as dredging and piling.

Dredged materials must also be disposed of and the creation of port and harbour areas is likely to lead to altered habitats and possibly land take from the marine environment.

Ports and Harbours (maintenance)

2.2.15 During operation, regular dredging and disposal of dredged material is likely to be necessary.

Ports and Harbours (operation)

2.2.16 There will be a concentration of vessel movements, emissions, anchorages and moorings in the locality. There are also risks to the marine environment posed by vessel maintenance and repair, interchange of cargo between sea and land transport and the presence of shoreside industry and commerce.

Recreation

2.2.17 A range of offshore activities can lead to effects on the marine environment. The operation of powered boats may cause disturbance through sound and vibration, affect sediment patterns, cause direct physical damage to flora and fauna and increase pollution risk. Non-motorised craft such as sailing boats or windsurfing may also cause disturbance as may swimming. Onshore activities such as horse riding and dog walking can lead to affects on coomponents of MCZs, as can wildfowling.

2.3 MCZs Scoped Into Assessment

2.3.1 The following MCZs have been included within the screening stage of the report to inform a MCZA, and the location of these is shown in **Appendix 1**:

- Cumbria Coast (adjacent to Copeland to the west);
- West of Walney (6.5km west of Copeland); and
- Allonby Bay (15km north of Copeland).

2.4 In Combination Assessment

2.4.1 The plans and projects that have been included in an in combination assessment whilst undertaking this report to inform a MCZA are as follows:

- Lake District National Park Local Plan 2020-2035 (submitted 2019) and MCZA;
- Lake district National Park Core Strategy 2010-2025 (adopted 2010);
- Allerdale Local Plan Part 1 2014-2029 (adopted 2014);
- Barrow-in-Furness Local Plan 2016-2031 (adopted 2019);
- Great Ormes Head to Scotland Shoreline Management Plan;
- Cumbria Coastal Strategy;
- Draft North West Inshore and Offshore Marine Plan;
- Barrow Port Area Action Plan;
- Barrow Waterfront Business Park;
- Morecambe Bay Gas Terminals projects;
- Transport for the North;
- Cumbria Minerals and Waste Local Plan 2015-2030.

3 Screening

3.1.1 The policies within the Copeland Local Plan Preferred Options document are screened against the features and activities listed for relevant MCZs (**Appendix 2**) to determine if it is possible to conclude no likely significant effect on the relevant MCZ, either alone or in combination with other plans and projects. Emerging deliverable and developable sites are not screened as no pathways of impact exist linking land-based site allocations to operations posing a medium-high risk on the MCZs.

3.1.2 The following table screens Copeland's Local Plan draft Preferred Options policies against operations posing a medium-high risk to the MCZs included within this assessment.

Table 4.1: Copeland Local Plan policies and potential for Likely Significant Effects on Marine Conservation Zones

Policy number and title	**Screening summary**
DS1PO (Presumption in Favour of Sustainable Development) DS5PO (Development Principles (ST1)) DS6PO (Planning Obligations) DS7PO (Design Standards) DS8PO (Reducing Flood Risk) DS9PO (Sustainable Drainage) DS10PO (Landscaping) DS11PO (Soils and contamination) H1PO (Improving the Housing Offer) H6PO (New Housing Development) H7PO (Housing Density and Mix) H8PO (Affordable Housing) H9PO (Gypsies, Travellers and travelling showpeople Windfall Sites) H10PO (Community-led, Self-build and Custom Build Housing) H11PO (Residential Establishments, Including Specialist, Older Persons Housing and Purpose Built Student and Key-worker Accommodation) H12PO (Conversion and Sub-division of Buildings to Residential Uses Including Large HMO's) H13PO (Domestic Extensions and Alterations) H14PO (Rural Exception Sites) H15PO (Essential Dwellings for Rural Workers) H16PO (Conversion of Rural Buildings to Residential Use) H17PO (Replacement Dwellings Outside Settlement Boundaries) H18PO (Beach Bungalows) H19PO (Removal of Occupancy Conditions) H20PO (Residential Caravans) H22PO (Playing Pitches) H23PO (Community Facilities) H24PO (Advertisements) CO2PO (Priorities for improving connectivity within Copeland) CO3PO (Priorities for improving transport links to and from the Borough) CO4PO (Sustainable Travel) CO5PO (Transport Hierarchy) CO6PO (Countryside Access) CO7PO (Parking Standards)	No activities leading to likely significant adverse effects on MCZs from these policies.

N1PO (Conserving and enhancing biodiversity and geodiversity) N2PO (Biodiversity Net Gain) N3PO (Local Nature Recovery Networks) N5PO (Landscape Protection) N7PO (Green Wedges) N8PO (Protected Green Spaces) N9PO (Local Green Spaces) N10PO (Woodlands and Trees) E3PO (West Lakes Science and Technology Park) E4PO (Employment Sites and Allocations) E5PO (Town Centre Opportunity and Regeneration Areas) E6PO (Safeguarding of Employment Sites) E7PO (Home Working) RE1PO (Agricultural Buildings) RE2PO (Equestrian Related Development) RE3PO (Conversion of Rural Buildings to Commercial or Community Use) BE1PO (Heritage Assets) BE2PO (Designated Heritage Assets) BE3PO (Archaeology) BE4PO (Non-designated Heritage Assets) CC1PO (Reducing the impacts of development on climate change) CC5PO (Maximising Opportunities from Nuclear Decommisioning and Transformation) R1PO (Vitality and Viability of Town Centres and other Identified Villages Within the Hierarchy) R2PO (Hierarchy of Town Centres) R3PO (Sequential Test) R4PO (Retail and Leisure Impact Assessments) R5PO (Whitehaven Town Centre) R6PO (Whitehaven Town Centre Primary Shopping Area) R7PO (The Key Service Centres) R7aPO (Cleator Moor Town Centre) R7bPO (Egremont Town Centre) R7cPO (Millom Town Centre) R8PO (Local Service Centres, Sustainable and Other Rural Villages) R9PO (Open Countryside (Rest of the Borough)) R10PO (Non-Retail Development in Town Centres) R11PO (Shopfronts) R12PO (Hot Food Takeaways) R13PO (Loss of Village Shops, Post Offices and Public Houses) T4PO (Caravans and Camping Sites for Short Term Letting) All emerging deliverable and developable sites	
DS2PO (Settlement Hierarchy)	This policy defines the preferred locations for new development including leisure based. Although there is a possibility that leisure activities could result in adverse effects on MCZs, the only potential pathways would be through fishing and recreational activity. Although some MCZ components are vulnerable to removal of non-target and target species through fishing, this is unlikely to be significant as a result of growth within a Local Plan, except if supported at a commercial level, and therefore no locational

	specific development is likely to have an adverse effect, even in combination with other plans and projects. This also applies to recreational activities, with the specific location of onshore leisure facilities not likely to be relevant to off-shore recreational volumes within MCZs. Onshore leisure facilities (or other development) are also unlikely to affect razorbills within the Cumbria Coast MCZ as these are cliff-nesting species.
DS3PO (Settlement Boundaries)	**This policy does allow for nuclear, renewable and supporting infrastructure outside of defined settlement boundaries. MCZs are vulnerable to effects arising from electricity from renewable energy sources and from cables, and therefore there is, prior to further assessment, potential for adverse effects on Cumbria Coast MCZ, West of Walney MCZ and Allonby Bay MCZ.**
DS4PO (Strategic Development Priority Projects)	This policy does express support for nuclear and energy related development, however, it specifically focusses on on-shore developments.
H2PO (Housing Requirement) H3PO (Housing Delivery)	**Although both of these policies define an increase in number of houses across the Borough, which could in theory lead to adverse effects on MCZs through increase in off-shore recreational activity, the policy does not directly promote off-shore leisure. Nonetheless, in combination with other plans and projects, prior to further assessment, potential for adverse effects on Cumbria Coast MCZ, West of Walney MCZ and Allonby Bay MCZ remains.**
H4PO (Distribution of Housing) H5PO (Housing Allocations)	This policy defines the preferred locations for new housing. Although there is a possibility that recreational pressure could result in adverse effects on MCZs, the specific location of housing is not likely to be relevant to off-shore recreational volumes within MCZs. Onshore leisure facilities (or other development) are also unlikely to affect razorbills within the Cumbria Coast MCZ as these are cliff-nesting species.
H21 (Sporting, Leisure and Cultural Facilities (excluding playing pitches)	Although there is a possibility that recreational pressure could result in adverse effects on MCZs, the policy is clearly aimed at onshore leisure, and is not likely to be relevant to off-shore recreational volumes within MCZs. Onshore leisure facilities (or other development) are also unlikely to affect razorbills within the Cumbria Coast MCZ as these are cliff-nesting species.
CO1PO: Telecommunications and Digital Connectivity	MCZs are vulnerable to cabling where it is installed off-shore, however the policy commits to safeguarding of sites of biodiversity value.
N4PO: Marine Planning	The HRA of Marine Plans, including for the North West concluded that: 'the mitigation hierarchy must be followed (avoid, then mitigate) and *scheme proponents should engage at a suitably early stage with the Marine Management Organisation and other stakeholders* such as Natural England to ensure that the deliverability of their scheme is examined at an early stage.' Therefore, as the policy indicates that consideration will be given to the North West Marine Plan, 'unless material considerations

	indicate otherwise' it is concluded that this policy, whilst not providing explicit protection for MCZs, will not lead to likely significant effects on MCZs as in order for proposed developments to comply with the policy, consultation with the MMO would be required.
N6PO: The Undeveloped Coast	The policy states that the Council will support energy generating developments that require a coastal location along the undeveloped coast, provided that the potential impacts on biodiversity, landscape and heritage assets are carefully assessed against the benefits. Where negative impacts are likely these must be mitigated against and compensated for. Assessment of effects on MCZs will form part of any assessment of potential impacts on biodiversity and therefore no likely significant effects should arise.
E1PO (Economic Growth)	**There is support for a range of economic development including for nuclear and renewable energy. MCZs are vulnerable to effects arising from electricity from renewable energy sources and from cables, and therefore there is, prior to further assessment, potential for adverse effects on Cumbria Coast MCZ, West of Walney MCZ and Allonby Bay MCZ.**
E2PO (Location of Employment)	This policy could have likely significant effects on MCZs through effects arising from location of development and intensification of existing uses, however the policy does state that such development will only be allowed where impacts on biodiversity are deemed acceptable. Such impacts would need to be assessed at a project-specific level and would need to include assessment of effects on MCZs where appropriate.
CC2PO (Large Scale Renewable Energy Developments, Geothermal, Low-carbon and Decarbonisation, Hydrogen to Electricity Plants, and other Large Scale Technologies (excluding nuclear and wind energy developments))	Large scale energy projects could lead to impacts on MCZs, however the policy does commit to only supporting proposals whereby they would not: "*individually or cumulatively have a significant effect as a result of their scale, siting or design on …biodiversity….*" 'Design' is taken to include the type of technology involved. The policy does state that: "*Where significant adverse effects remain, proposals will only be accepted where this is outweighed by the wider environmental, economic, social and community benefits*." The level of protection afforded to MCZs would ensure that due consideration through formal processes would be required to demonstrate this.
CC3PO (Wind Energy Developments)	Wind energy projects could lead to impacts on MCZs, however the policy does commit to only supporting proposals whereby they would not: "*individually or cumulatively have a significant effect as a result of their scale, siting or design on …biodiversity….*" 'Design' is taken to include the type of technology involved. The policy does state that: "*Where significant adverse effects remain, proposals will only be accepted where this is outweighed by the wider environmental, economic, social and community benefits*."

	The level of protection afforded to MCZs would ensure that due consideration through formal processes would be required to demonstrate this.
CC4PO (Supporting Development of the Nuclear Sector)	**Nuclear development has the potential to impact MCZs through offshore components of development for example constrcution of pipes and effects through volume, flow and temperature of any water intake or outflows. Therefore there is, prior to further assessment, potential for adverse effects on Cumbria Coast MCZ, West of Walney MCZ and Allonby Bay MCZ.**
CC6PO (Supporting Energy Sector Development and Infrastructure)	This policy is focussed on onshore supporting industry and infrastructure for the energy sector. As such there are no mechanisms likely to arise directly from this policy that would lead to adverse impacts on MCZs.
CC7PO (Nuclear Sector Development at Sellafield)	This policy is focussed on onshore development. As such there are no mechanisms likely to arise directly from this policy that would lead to adverse impacts on MCZs.
CC8PO (Nuclear Demolition)	This policy will not allow demolition that harms ecological assets, unless mitigation or compensation is provided. The level of protection afforded to MCZs would ensure that due consideration through formal processes would be required to demonstrate this.
T1PO (Strengthening the Tourism Offer)	Although this policy advocates tourism that without mitigation could encourage an increase in offshore recreation, it is effectively mitigated by policy T2PO.
T2PO (Tourism Development)	Unmitigated, increased tourism can lead to increased recreational pressure, including on MCZs. However the policy is clear that any proposal must ensure that it: "*does not result in unacceptable harm to environmental assets*." Adverse effects on MCZs would be unacceptable harm to environmental assets.
T3PO (Coastal Development Outside of the Undeveloped Coast)	Unmitigated, increased tourism can lead to increased recreational pressure, including on MCZs. However the policy is clear that any proposal must ensure that it: "*does not result in unacceptable harm to environmental assets*." Adverse effects on MCZs would be unacceptable harm to environmental assets.

3.2 Mitigation

3.2.1 There are policies within the Local Plan that provide protective measures to assist in avoiding or mitigating potential for likely significant effects on MCZs.

3.2.2 As an overarching protection, policy DS1PO (Presumption in Favour of Sustainable Development) will need to be compliant with the NPPF, and the policy indicates that applications will be approved without delay "*unless material considerations indicate otherwise*." Material considerations relating to the presumption in favour of sustainable development are laid out in the NPPF that indicates that '*the presumption in favour of*

sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site'. Therefore for individual applications, a protective umbrella of requiring the plan or project to ensure no likely significant effects will be in place.

3.2.3 Emerging deliverable and developable sites are however, dependent on the deliverability of policies within the Local Plan, and therefore the Local Plan itself needs to demonstrate no likely significant effects. Policy N1PO (Conserving and Enhancing Biodiversity and Geodiversity) seeks to ensure that '*potential harmful impacts of any development upon biodiversity and geodiversity should be identified and considered at the earliest stage. Proposals must demonstrate, to the satisfaction of the Council, that the following sequential steps have been undertaken:*

Avoidance *– Biodiversity and geodiversity must be considered when drafting up proposals and any potential harmful effects on biodiversity and geodiversity must be identified along with appropriate measures that will be taken to avoid these effects.*

Mitigation – *Where harmful effects cannot be avoided, they must be appropriately mitigated in order to overcome or reduce negative impacts.*

Compensation – *Where mitigation is not possible or viable or in cases where residual harm would remain following mitigation, harmful effects should be compensated for. Where this is in the form of compensatory habitat of an area of equivalent or greater biodiversity value should be provided. Compensation is a last resort and will only be accepted in exceptional circumstances.*

Where harm remains [to a Natura 2000 site], development will only be approved where it can be demonstrated that there are imperative reasons of overriding public interest. In such cases, compensatory measures must ensure the overall coherence of the network of European sites as a whole is protected.'

This policy provides explicit protection to biodiversity, including MCZs, in line with the ethos of policy DS1PO.

3.2.4 Policy DS5PO states that all new development must, where possible, protect and enhance areas, sites, species and features of biodiversity or geodiversity value.

3.2.5 Policy CC4PO (Supporting Development of the Nuclear Sector), could explicitly state conditions for such growth include compliance with Policy N1PO, and might reasonably add that for large scale renewable energy projects or related economic schemes, then it is highly likely that project-specific assessments will be necessary.

3.2.6 The HRA of the draft Preferred Options Local Plan has stated that in order to further strengthen the protection of Natura 2000 sites, policies H4PO and H5PO could specifically cross-reference the need for delivery of housing numbers at specified locations and individual allocations to be compliant with other Plan policies, including N1PO, where development must result in no likely significant effects, both alone and in combination with

other plans and projects. Policy E2PO (Location of Employment) effectively mitigates policy E4PO (Employment Sites and Allocations) through stating that "*Where the following impacts occur, and have been deemed to be acceptable by the Council, mitigation measures must be sought….biodiversity*" and this protection could usefully be added into policy to mitigate policies H4PO and H5PO in terms of housing delivery. It is therefore possible to conclude that as a result of the mitigation included within employment policy, and that proposed for housing policy, then MCZs would also be protected. Though the protective text is targeted at housing and employment locations, it would apply to all new development and therefore would be applicable to overall quantum of development within Copeland. Thus it would provide additional protective text relating to policies DS3PO, H2PO, H3PO and E1PO.

3.2.7 Any proposed development would be subject to conditions issued during planning / marine licensing, which is enough to conclude that none of the policies will have a likely significant effect on the MCZs.

4 Conclusion

4.1.1 It has been possible to conclude that the policies and emerging deliverable and developable sites included within Copeland Borough Council's Local Plan draft Preferred Options document will not lead to likely significant effects on any MCZs either alone or in combination with other plans and projects.

Appendix 1 - Marine Conservation Zones Map

Source: Joint Nature Conservation Committee (JNCC), 2020.

Appendix 2 - Marine Conservation Zone Designated Features, Vulnerabilities and Threats

Table A2.1 considers the MCZs that have been scoped into this report to inform a MCZA. For each, the relevant qualifying features are presented, together with activities that Natural England consider pose a risk to the favourable conservation status of the MCZ.

Table A2.1: MCZ designated features, vulnerabilities and threats

Cumbria Coast		
Designated Features	**Cause of Adverse Effect**	**Operations Posing a Medium-High Risk to the MCZ**
High Energy Intertidal Rock	Changes in suspended solids (water clarity)	Aggregate extraction Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (heavy)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Smothering and siltation rate changes (light)	Aggregate extraction Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Water flow (tidal current) changes, including sediment transport considerations	Aggregate extraction Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Electricity from renewable energy sources

		Ports and harbours (construction)
	Wave exposure changes	Aggregate extraction Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Electricity from renewable energy sources Ports and harbours (construction)
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture Ports and harbours (maintenance)
	Abrasion/disturbance of the substrate on the surface of the seabed	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Genetic modification & translocation of indigenous species	Aquaculture
	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Habitat structure changes: removal of substratum (extraction)	Cables Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage

	Introduction of other substances (solid, liquid or gas)	Cables Oil, gas and carbon capture storage
	Emergence regime changes, including tidal level change considerations	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Electricity from renewable energy sources Ports and harbours (construction)
	Physical change (to another seabed type)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction)
	Physical change (to another sediment type)	Oil, gas and carbon capture storage
	Physical loss (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources
	Introduction of light	Commercial shipping (operation) Ports and harbours (construction) Ports and harbours (maintenance)
	Deoxygenation	Electricity from renewable energy sources
	Salinity decrease	Electricity from renewable energy sources
	Salinity increase	Electricity from renewable energy sources
	Temperature decrease	Electricity from renewable energy sources
	Temperature increase	Electricity from renewable energy sources
	Removal of non-target species	Fishing Ports and harbours (construction)

	Removal of target species	Fishing
	Hydrocarbon & PAH contamination	Oil, gas and carbon capture storage
	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)	Oil, gas and carbon capture storage
	Transition elements & organo-metal (e.g. TBT) contamination	Oil, gas and carbon capture storage
Honeycomb worm (*Sabellaria alveolata*) reefs	Changes in suspended solids (Water clarity)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Abrasion/disturbance of the substrate on the surface of the seabed	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture Ports and harbours (maintenance)

	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Introduction of microbial pathogens	Aquaculture
	Removal of non-target species	Aquaculture Fishing Ports and harbours (construction)
	Barriers to species movement	Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction) Ports and harbours (maintenance)
	Habitat structure changes: removal of substratum (extraction)	Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Introduction of other substances (solid, liquid or gas)	Cables Oil, gas and carbon capture storage
	Emergence regime changes, including tidal level change considerations	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Electricity from renewable energy sources

		Ports and harbours (construction)
	Physical change (to another seabed type)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Physical change (to another sediment type)	Oil, gas and carbon capture storage
	Smothering and siltation rate changes (heavy)	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate hanges (light)	Oil and gas decommissioning
	Physical loss (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Salinity decrease	Coastal development and flood and erosion risk management schemes (construction) Electricity from renewable energy sources
	Introduction of light	Commercial shipping (operation) Ports and harbours (construction)
	Deoxygenation	Electricity from renewable energy sources
	Temperature decrease	Electricity from renewable energy sources
	Electromagnetic changes	Fishing
	Hydrocarbon & PAH contamination	Oil, gas and carbon capture storage
	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)	Oil, gas and carbon capture storage
	Transition elements & organo-metal (e.g. TBT) contamination	Oil, gas and carbon capture storage

Intertidal biogenic reefs	Changes in suspended solids (water clarity)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (heavy)	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (light)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Water flow (tidal current) changes, including sediment transport considerations	Aggregate extraction Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Wave exposure changes	Aggregate Extraction Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)

	Abrasion/disturbance of the substrate on the surface of the seabed	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture Ports and harbours (maintenance)
	Genetic modification & translocation of indigenous species	Aquaculture
	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Introduction of microbial pathogens	Aquaculture
	Removal of non-target species	Aquaculture Fishing Ports and harbours (construction)
	Removal of target species	Aquaculture Fishing
	Barriers to species movement	Cables

		Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction) Ports and harbours (maintenance)
	Habitat structure changes: removal of substratum (extraction)	Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Introduction of other substances (solid, liquid or gas)	Cables Oil, gas and carbon capture storage
	Emergence regime changes, including tidal level change considerations	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Electricity from renewable energy sources Ports and harbours (construction)
	Physical change (to another seabed type)	Oil, gas and carbon capture storage
	Physical change (to another sediment type)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Salinity decrease	Coastal development and flood and erosion risk management schemes (construction) Electricity from renewable energy sources
	Physical loss (to land or freshwater habitat)	Construction of coastal flood and erosion risk management schemes Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)

	Introduction of light	Commercial shipping (operation)
	Deoxygenation	Electricity from renewable energy sources
	Temperature decrease	Electricity from renewable energy sources
	Electromagnetic changes	Fishing
	Hydrocarbon & PAH contamination	Oil, gas and carbon capture storage
	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)	Oil, gas and carbon capture storage
	Transition elements & organo-metal (e.g. TBT) contamination	Oil, gas and carbon capture storage
Intertidal sand and muddy sand	Changes in suspended solids (water clarity)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (heavy)	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (light)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction)

		Ports and harbours (maintenance)
	Water flow (tidal current) changes, including sediment transport considerations	Aggregate Eetraction Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Wave exposure changes	Aggregate extraction Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Abrasion/disturbance of the substrate on the surface of the seabed	Aggregate dredging Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Habitat structure changes - removal of substratum (extraction)	Aggregate extraction Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)

	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture Ports and harbours (maintenance)
	Introduction of microbial pathogens	Aquaculture
	Removal of non-target species	Aquaculture Fishing Ports and harbours (construction)
	Removal of target species	Fishing
	Introduction of other substances (solid, liquid or gas)	Cables Oil, gas and carbon capture storage
	Emergence regime changes, including tidal level change considerations	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Electricity from renewable energy sources Ports and harbours (construction)
	Physical change (to another seabed type)	Oil, gas and carbon capture storage
	Physical change (to another sediment type)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources

		Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Physical loss (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Salinity decrease	Coastal development and flood and erosion risk management schemes (construction) Electricity from renewable energy sources
	Salinity increase	Coastal development and flood and erosion risk management schemes (construction) Electricity from renewable energy sources
	Introduction of light	Commercial shipping (operation) Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation)
	Deoxygenation	Electricity from renewable energy sources
	Temperature decrease	Electricity from renewable energy sources
	Temperature increase	Electricity from renewable energy sources
	Electromagnetic changes	Fishing
	Hydrocarbon & PAH contamination	Oil, gas and carbon capture storage
	Synhetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)	Oil, gas and carbon capture storage

	Transition elements & organo-metal (e.g. TBT) contamination	Oil, gas and carbon capture storage
Intertidal under boulder communities	Changes in suspended solids (water clarity)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (heavy)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Ports and harbours (construction)
	Smothering and siltation rate changes (light)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Abrasion/disturbance of the substrate on the surface of the seabed	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Recreation
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture Ports and harbours (maintenance)

	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Recreation
	Removal of non-target species	Aquaculture Fishing Ports and harbours (construction)
	Removal of target species	Fishing
	Habitat structure changes: removal of substratum (extraction)	Cables Coastal infrastructure Fishing Oil, gas and carbon capture storage Ports and harbours (construction)
	Introduction of other substances (solid, liquid or gas)	Cables Oil, gas and carbon capture storage
	Emergence regime changes, including tidal level change considerations	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Ports and harbours (construction)
	Physical change (to another seabed type)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Oil, gas and carbon capture storage Ports and harbours (construction) Recreation
	Physical change (to another sediment type)	Oil, gas and carbon capture storage
	Physical loss (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Ports and harbours (construction)
	Introduction of light	Commercial shipping (operation) Ports and harbours (construction) Ports and harbours (maintenance)

	Hydrocarbon & PAH contamination	Oil, gas and carbon capture storage
	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)	Oil, gas and carbon capture storage
	Tranistion elements & organo-metal (e.g. TBT) contamination	Oil, gas and carbon capture storage
Moderate energy infralittoral rock	Changes in suspended solids (water clarity)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (heavy)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Smothering and siltation rate changes (light)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Abrasion/disturbance of the substrate on the surface of the seabed	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure

		Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Recreation
	Genetic modification & translocation of indigenous species	Aquaculture
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture Ports and harbours (maintenance)
	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Recreation
	Introduction of microbial pathogens	Aquaculture
	Removal of non-target species	Aquaculture Fishing Ports and harbours (construction)
	Removal of target species	Aquaculture Fishing
	Habitat structure changes: removal of substratum (extraction)	Cables Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction)
	Introduction of other substances (solid, liquid or gas)	Cables Oil, gas and carbon capture storage

	Emergence regime changes, including tidal level change considerations	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Electricity from renewable energy sources Ports and harbours (construction)
	Physical change (to another seabed type)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Recreation
	Physical change (to another sediment type)	Oil and gas exploration and installation Oil and gas production
	Physical loss (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Introduction of light	Commercial shipping (operation) Ports and harbours (construction) Ports and harbours (maintenance)
	Deoxygenation	Electricity from renewable energy sources
	Salinity decrease	Electricity from renewable energy sources
	Salinity increase	Electricity from renewable energy sources
	Temperature increase	Electricity from renewable energy sources
	Hydrocarbon & PAH contamination	Oil, gas and carbon capture storage
	Synthetic compound contamination (incl. pesticdies, antifoulants, pharmaceuticals)	Oil, gas and carbon capture storage

	Transition elements & organo-metal (e.g. TBT) contamination	Oil, gas and carbon capture storage
Peat and clay exposures	Smothering and siltation rate changes (heavy)	Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Smothering and siltation rate changes (light)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Abrasion/disturbance of the substrate on the surface of the seabed	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Recreation
	Genetic modification & translocation of indigenous species	Aquaculture
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture Ports and harbours (maintenance)
	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance)

		Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Recreation
	Introduction of microbial pathogens	Aquaculture
	Removal of non-target species	Aquaculture Fishing Ports and harbours (construction)
	Removal of target species	Fishing
	Habitat structure changes: removal of substratum (extraction)	Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction)
	Introduction of other substances (solid, liquid or gas)	Cables Oil, gas and carbon capture storage
	Physical change (to another seabed type)	Electricity from renewable energy sources Oil, gas and carbon capture storage
	Physical change (to another sediment type)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Recreation
	Physical loss (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Salinity increase	Coastal development and flood and erosion risk management schemes (construction) Electricity from renewable energy sources
	Introduction of light	Commercial shipping (operation)

	Temperature increase	Electricity from renewable energy sources
	Electromagnetic changes	Fishing
	Hydrocarbon & PAH contamination	Oil, gas and carbon capture storage
	Synthetic compound contamination (incl. pesticides, antifoulants, pharmaceuticals)	Oil, gas and carbon capture storage
	Transition elements & organo-metl (e.g. TBT) contamination	Oil, gas and carbon capture storage
Razorbill (*Alca torda*)	Not determined	Not determined
West of Walney MCZ		
Designated Features	Cause of adverse effect	Operations posing a medium-high risk to the MCZ
Subtidal mud	Abrasion/disturbance of the substrate on the surface of the seabed	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Changes in suspended solids (water clarity)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction)

		Ports and harbours (maintenance)
	Deoxygenation	Aquaculture Electricity from renewable energy sources
	Introduction of microbial pathogens	Aquaculture
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture
	Organic enrichment	Aquaculture
	Habitat structure changes – removal of substratum (extraction)	Cables Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Smothering and siltation rate changes (heavy)	Aquaculture Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (light)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure

		Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Water flow (tidal current) changes, including sediment transport considerations	Aggregate extraction Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Removal of non-target species	Aquaculture Fishing Ports and harbours (construction)
	Removal of target species	Fishing
	Physical change (to another seabed type)	Oil, gas and carbon capture storage
	Physical change (to another sediment type)	Cables Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Physical loss (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Salinity decrease	Electricity from renewable energy sources
	Salinity increase	Electricity from renewable energy sources
	Temperature decrease	Electricity from renewable energy sources
	Temperature increase	Electricity from renewable energy sources
	Electromagnetic changes	Fishing
Subtidal sand	Abrasion/disturbance of the substrate on the surface of the seabed	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction)

		Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Changes in suspended solids (water clarity)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Deoxygenation	Aquaculture Electricity from renewable energy sources
	Genetic modification & translocation of indigenous species	Aquaculture
	Introduction of microbial pathogens	Aquaculture
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture
	Organic enrichment	Aquaculture
	Habitat structure changes – removal of substratum (extraction)	Aggregate extraction Cables Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)

	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Removal of non-target species	Aggregate extraction Fishing Ports and harbours (construction)
	Removal of target species	Aquaculture Fishing
	Smothering and siltation rate changes (heavy)	Aquaculture Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction) Ports and harbours (maintenance)
	Smothering and siltation rate changes (light)	Aggregate extraction Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (maintenance) Coastal infrastructure Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Water flow (tidal current) changes, including sediment transport considerations	Aggregate extraction Coastal development and flood and erosion risk management schemes (construction) Coastal development and flood and erosion risk management schemes (operation) Coastal infrastructure

		Electricity from renewable energy sources Ports and harbours (construction)
	Wave exposure changes	Aggregate extraction
	Removal of non-target species	Aquaculture
	Physical change (to another seabed type)	Cables Electricity from renewable energy sources Oil, gas and carbon capture storage
	Physical change (to another sediment type)	Aggregate extraction Cables Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Physical loss (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Introduction of light	Commercial shipping (operation) Ports and harbours (construction) Ports and harbours (operation)
	Salinity decrease	Electricity from renewable energy sources
	Salinity increase	Electricity from renewable energy sources
	Temperature decrease	Electricity from renewable energy sources
	Temperature increase	Electricity from renewable energy sources
	Electromagnetic changes	Fishing
Sea pens and burrowing megafauna	Abrasion/disturbance of the substrate on the surface of the seabed	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)

		Ports and harbours (operation) Recreation
	Deoxygenation	Aquaculture Electricity from renewable energy sources
	Genetic modification & translocation of indigenous species	Aquaculture
	Introduction of microbial pathogens	Aquaculture
	Introduction or spread of invasive non-indigenous species (INIS)	Aquaculture
	Organic enrichment	Aquaculture
	Habitat structure changes – removal of substratum (extraction)	Cables Coastal infrastructure Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance)
	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Aquaculture Cables Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Fishing Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Water flow (tidal current) changes, including sediment transport considerations	Aggregate extraction Coastal development and flood and erosion risk management schemes (construction) Electricity from renewable energy sources Ports and harbours (construction)
	Removal of non-target species	Aquaculture Fishing Ports and harbours (construction)
	Removal of target species	Fishing

	Physical change (to another seabed type)	Oil, gas and carbon capture storage
	Physical change (to another sediment type)	Cables Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Commercial shipping (operation) Electricity from renewable energy sources Oil, gas and carbon capture storage Ports and harbours (construction) Ports and harbours (maintenance) Ports and harbours (operation) Recreation
	Physical change (to land or freshwater habitat)	Coastal development and flood and erosion risk management schemes (construction) Coastal infrastructure Electricity from renewable energy sources Ports and harbours (construction)
	Salinity decrease	Electricity from renewable energy sources
	Salinity increase	Electricity from renewable energy sources
	Temperature decrease	Electricity from renewable energy sources
	Temperature increase	Electricity from renewable energy sources
	Electromagnetic changes	Fishing

There is currently no Conservation Advice publication relating to Allonby Bay MCZ. This MCZ is designated for its:

- Blue mussel (*Mytilus edulis*) beds
- High energy intertidal rock
- Honeycomb worm (*Sabellaria alveolata*) reefs
- Intertidal biogenic reefs
- Intertidal coarse sediment
- Intertidal sand and muddy sand
- Low energy intertidal rock
- Moderate energy infralittoral rock
- Moderate energy intertidal rock
- Peat and clay exposures

- Subtidal biogenic reefs
- Subtidal coarse sediment
- Subtidal mixed sediments
- Subtidal sand

In the absence of detailed conservation advice on this MCZ, it is assumed that the designated habitats and species that are present also at Cumbria Coast and/or West of Walney will be vulnerable to the same threats. Where similar habitats are present then it is assumed that similar vulnerabilities and impacts would be likely. A study of blue mussel beds has identified that this species (not found at Cumbria Coast or West of Walney MCZs) is particularly at risk from introduction or spread of non-indigenous species (NIS), habitat structure changes - removal of substratum (extraction), and physical loss (to land or freshwater habitat)[4].

[4] Mainwaring, K., Tillin, H. & Tyler-Walters, H., 2014. Assessing the sensitivity of blue mussels (*Mytilus edulis*) to pressures associated with human activities. JNCC Report No. 506.