



Marine Scotland

North East Lewis possible Marine Protected Area Partial Business and Regulatory Impact Assessment

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Partial Business and Regulatory Impact Assessment

Title of Proposal

Scottish Nature Conservation Marine Protected Area (MPA) Project, Socio-Economic Analysis, North-east Lewis possible MPA

Background

The Scottish Government is committed to a clean, healthy, safe, productive and biologically diverse marine and coastal environment that meets the long term needs of people and nature. In order to meet this commitment our seas must be managed in a sustainable manner that balances the competing demands on marine resources. Biological and geological diversity must be protected to ensure our future marine ecosystem continues to provide sustainable economic, environmental and social benefits.

The introduction of the Marine (Scotland) Act 2010 and the Marine and Coastal Access Act 2009 means the Scottish Government now has the authority to introduce statutory marine planning for Scotland's seas. The Marine (Scotland) Act provides powers to designate MPAs out to 12 nautical miles (NM), and the Marine and Coastal Access Act provides powers to designate site in the rest of Scottish waters. There are currently 31 MPAs in Scottish Waters designated under these provisions. Four additional search locations were still being assessed at the time of consultation and these are now ready for Ministerial consideration.

Proposal and conservation objectives

The Scottish Government proposes to designate the North-east Lewis as an MPA to further its conservation objectives.

North-east Lewis pMPA encompasses two biodiversity features: Risso's dolphin and sandeels. The protected features also include Quaternary of Scotland interests (represented by glaciated channels/troughs, landscape of areal glacial scour and megascale glacial lineations) and Marine Geomorphology of the Scottish Shelf Seabed interests (represented by the longitudinal bedform field).

Summary of Features and Conservation Objective - North-east Lewis pMPA	
Proposed protected feature	Conservation Objective
Biodiversity: Risso's dolphin; sandeels	Conserve
Geodiversity: marine geomorphology of the Scottish shelf; Quaternary of Scotland	Conserve

Objective

The purpose of MPAs is to safeguard nationally important species, habitats and geology across Scotland's marine environment. MPAs have been designed to complement existing site-based measures. The intention is to manage MPAs under the sustainable use principle. Correctly identifying critical areas for mobile species is more challenging than for low mobility or static features. Following the designation of 31 MPAs since 2014, Scottish Natural Heritage

(SNH) have undertaken additional surveys and research to provide advice on four additional locations. By adding more MPAs to the Scottish MPA network, we can improve the status of the marine environment by protecting a wider range of features. It also enable greater compliance with a range of national and international commitments as stipulated by:

- the Marine (Scotland) Act 2010
- the Marine and Coastal Access Act 2009
- the Convention on Biological Diversity
- The Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention)
- the EU Marine Strategy Framework, and Wild Birds and Habitats Directives

The North-east Lewis site has been identified for designation as an MPA due to the confirmed presence of biodiversity features detailed above.

Evidence in this BRIA is drawn from the work of statutory nature conservation body SNH and consultants ABPmer and eftec. It brings together the science-led arguments for management and the projected potential social and economic consequences of such action.

This BRIA examines the socio-economic effects of designating the North-east Lewis site as an MPA. The socio-economic effects of introducing specific management measures in North-east Lewis are not considered here; once finalised, the introduction of any specific management measures will be accompanied by their own assessment.

The appraisal period for assessing the socioeconomic impacts covers the 20 year period from 2019 to 2038, although benefits will be delivered for longer if effective management measures remain in place. As with any socio-economic assessment related to environmental designations, the findings should be considered as estimates, and in cases where greater uncertainty exists, such as for fisheries, are deliberately presented as worst-case scenarios to build in necessary caution into each scenario.

In addition a range of scenarios are presented to account for the inherent uncertainty associated with such proposals. Lower, intermediate and upper scenarios have been developed to reflect the requirements for management measures, the spatial extent of features and the extent to which features are already afforded protection. The intermediate scenario is viewed as the most representative estimate. The estimated impacts across the three scenarios commonly vary quite significantly.

Rationale for Government intervention

Scotland's marine environment provides: food; energy sources (wind, wave and tidal power, minerals and fossil fuels); harbours and shipping routes; tourism and recreational opportunities; and sites of cultural and historical interest. Scotland's seas contain important distinctive habitats and support a diverse range of species that require protection in order to be conserved or for recovery to be facilitated. There are a number of market failures evident in the ways in which the marine environment is utilised. These relate to:

- *Public goods*: A number of the benefits of the marine environment, such as the non-use value of biological diversity, have 'public good' characteristics; they are non-

excludable (no-one can be excluded from enjoying the benefits) and non-rivalrous (enjoyment of the benefits they provide by one person does not diminish the benefits that are available to others). These characteristics of the benefits from the marine environment mean that private individuals do not have an incentive to voluntarily ensure the continued flow of these goods, which can lead to their under-provision.

- *Negative and positive externalities:* externalities occur when actions of marine users affect other parties positively or negatively, and this is not reflected in market prices. In many cases, the market does not account fully for the value of benefits and costs of the activities of marine users. In the case of negative externalities (positive externalities) this can lead to more environmental damage (fewer benefits) occurring from economic activity than would occur if the full cost (benefits) of economic activity was accounted for. For example, for marine harvestable goods that are traded, such as wild fish, market prices often do not reflect the potential damage caused to the environment by that exploitation.

Due to the competing demands placed upon Scotland's marine resources, market failures related to public goods provision and externalities will lead to insufficient protection of the marine environment if left to the market. This provides rationale for government to intervene to protect the marine environment.

Consultation

Within Government

Consultation has been undertaken with policy colleagues within Marine Scotland, including aquaculture, nature conservation, marine renewables, fisheries and fresh water fisheries.

Public Consultation

A stakeholder workshop took place during the development of the underpinning Sustainability Appraisal. This section will be completed following the public consultation.

Options

Option 1 - Do nothing

Option 1 is the 'Do nothing' option; this is the baseline scenario. Under this option, there is no designation and no change to management measures at the North-east Lewis pMPA.

Option 2: Designate site as a Nature Conservation Marine Protected Area

Option 2 involves the formal designation of North-east Lewis. Designation would provide recognition and protection to the natural features of the site while also contributing to the national and international MPA networks.

Sectors and groups affected

The following activities have been identified as present (or possibly present in the future) within the proposed North-east Lewis MPA site and potentially interact with one or more of the features:

- Finfish Aquaculture

- Shellfish Aquaculture
- Coastal Protection
- Commercial Fisheries
- Ports and Harbours
- Power Interconnectors
- Telecommunication Cables

Affected sectors may be impacted to a greater or lesser degree by designation depending on which scenario is pursued and which management option is preferred. While the above sectors are all potentially operational within the site, not all will necessarily be impacted by designation and management measures.

Benefits

Option 1: Do nothing

No additional benefits are expected to arise from this policy option.

Option 2: Designate site as a Marine Protected Area

Designation will help to conserve the range of biodiversity in Scottish waters. It will complement other types of designation and provide an essential contribution to establishing an ecologically coherent network of MPAs. This would also safeguard the ecosystem services and benefits provided by the marine environment

Appropriate management will reduce the risk that the extent, population, structure, natural environmental quality and processes of features protected will decrease or degrade over time.

Contribution to an Ecologically Coherent MPA network

Scotland's seas support a huge diversity of marine life and habitats, with around 6,500 species of plants and animals, with plenty more to be found in the undiscovered depths of the north and west of Scotland. Our seas account for 61% of UK waters and remain at the forefront of our food and energy needs, through fishing, aquaculture, oil and gas, and new industries such as renewables, as well as recreation activities and ecotourism. It is likely that an MPA network will demonstrate beneficial effects greater than the sum of the benefits from the individual areas.

MPA designation will help to conserve the range of biodiversity in North-east Lewis and for Scotland as a whole, and will contribute to establishing an ecologically coherent network of marine protected areas.

Ecosystem services benefits

Ecosystems are very complex, and it is thought that the more complex an ecosystem is the more resilient it is to change. Therefore, if it is damaged or if a species or habitat is removed from that ecosystem, the chances of survival for those services reduce as the ecosystem becomes weaker. However, by conserving or allowing the species and habitats that make up that ecosystem to recover, we can be more confident of the continuation of the long-term benefits the marine environment provides.

Non-use value of the natural environment is the benefit people get simply from being aware of a diverse and sustainable marine environment even if they do not themselves 'use it'. We take for granted many of the things we read about or watch, such as bright colourful fish, reefs and strange shaped deep sea curiosities, to lose them would be a loss to future generations that will not be able to experience them. Due to the scientific uncertainty involved it is challenging to put a true value on this, but the high quality experience and increasing knowledge of Scotland's seas can be better preserved through measures such as MPAs. It is expected that non-use value will be attained as a result of designation both from the knowledge that the features are receiving adequate protection along with the wider conservation objectives that designation supports.

In the case of North-east Lewis, it is estimated that effective management of protected features may provide wider benefits over and above these non-use values society places on a healthy and productive marine environment.

Annex A summarises the ecosystem benefits that can be derived from designation of North-east Lewis.

Summary of Benefits

While it may not be possible with current levels of research to monetise benefits with a satisfactory degree of rigour, it is clear that many of the benefits relate to aspects of our lives that we take for granted and for which it is good practice and common sense to maintain through protection measures. These benefits include use values, such as recreational use of the marine environment, as well as non-use values, such as the value that people place on simply knowing that something exists, even if they will never see it or use it.

Kenter et al. examined the value of creating a network of marine protected areas in the UK. From the study it is estimated that, in 2019 prices, the total economic valuation of the North-east Lewis site designation is £5.29 million, rising to £6.04 million when designation is accompanied by management measures¹.

Treating marine protected areas as a collection of individual and separate features providing separate ecosystem services potentially ignores any network effects that could occur from a set of MPAs. A number of adjacent marine reserves may demonstrate network effects, i.e. the benefit from the networks may be greater (or less) than the sum of the benefits from the individual MPAs. Kenter et al estimated total value of non-use benefits of designating all four sites as £28 million in 2019 prices.

Costs

Option 1: Do nothing

This option is not predicted to create any additional costs to the sectors and groups outlined above. However, it should be noted that the societal cost of not designating could be both large and irreversible relative to the current condition of the marine environment. The absence of management measures to conserve the identified features may produce future economic

¹ Kenter, J.O., Bryce, R., Davies, A., Jobstvogt, N., Watson, V., Ranger, S., Solandt, J.L., Duncan, C., Christie, M., Crump, H., Irvine, K.N., Pinard, M. & Reed, M.S., (2013). The value of potential marine protected areas in the UK to divers and sea anglers. UNEP-WCMC, Cambridge, UK.

and social costs² in terms of increased marine habitat and biodiversity degradation. The option to not designate holds the potential to undermine the overall ecological coherence of the Scottish MPA Network.

Option 2: Designate site as a Marine Protected Area

Costs have been evaluated based on the implementation of potential management measures. Where feasible costs have been quantified, where this has not been possible costs are stated qualitatively. All quantified costs have been discounted in line with HM Treasury guidance using a discount rate of 3.5% to reflect preference for current consumption over future consumption.

Finfish aquaculture

There are currently no finfish aquaculture sites within the North-east Lewis pMPA, with a single finfish aquaculture site located within a 1 km buffer around the site. It is expected that the finfish aquaculture in the North-east Lewis pMPA will expand over the assessment period, and an assumption has been used below that there will be 1 application for new or expanding sites every 10 years in North-east Lewis. It is assumed that the site in the site currently uses acoustic deterrent devices (ADDs), intended to reduce predation by seals.

It is possible that there may be costs incurred as a result of potential future development in the area, with associated impacts on project delays, on consenting and on wider investment opportunities. Possible social impacts may flow from these economic costs; there may be reduced future employment opportunities if additional costs are significant and render development projects economically unviable or if delays arising from designation impact on potential investment opportunities. However, at this stage it is not possible to quantify these potential future impacts.

Economic Costs on the Activity of Designation of the Site as an MPA			
	Lower Estimate	Intermediate Estimate	Upper Estimate
Assumptions for cost impacts	<ul style="list-style-type: none"> ▪ It is assumed there will be 1 application every 10 years in NEL. ▪ Additional assessment to support new applications will cost £5,600 per assessment. ▪ Development of and compliance with vessel management plan will cost £1,000 per new application. 	<ul style="list-style-type: none"> ▪ It is assumed there will be 1 application every 10 years in NEL. ▪ Additional assessment to support new applications will cost £5,600 per assessment. ▪ The additional cost of installing 50% cetacean-friendly ADDs is £11,500 per site, every 6 years. ▪ Development of and compliance with vessel management plan will 	<ul style="list-style-type: none"> ▪ It is assumed there will be 1 application every 10 years in NEL. ▪ Additional assessment to support new applications will cost £5,600 per assessment. ▪ The additional cost of installing antipredator nets is £48,000 per site. ▪ It is assumed that the cost associated with antipredator nets will be phased in associated

² This potentially large and irreversible societal cost avoided is presented within the benefits section of the 'do designate' scenario (option 2) to avoid double counting the same impact.

Economic Costs on the Activity of Designation of the Site as an MPA			
	Lower Estimate	Intermediate Estimate	Upper Estimate
		cost £1,000 per new application.	with the replacement of end-of-life ADDs, and required for all new applications. <ul style="list-style-type: none"> Development of and compliance with vessel management plan will cost £1,000 per new application.
Description of one-off costs	<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new fishfarms on MPA features to support planning applications. Total cost = £11k Development of and compliance with vessel management plan. Total cost = £2k 	<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new fishfarms on MPA features to support planning applications. Total cost =£11k Development of and compliance with vessel management plan. Total cost =£2k Replacement of 50% of end of life ADDs with cetacean appropriate devices. Total cost = £92k 	<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new fishfarms on MPA features to support planning applications. Total cost =£11k Development of and compliance with vessel management plan. Total cost = £2k Replacement of ADDs with antipredator nets. Total cost = £144k
Description of recurring costs	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
Description of non-quantified costs	<ul style="list-style-type: none"> Cost of uncertainty and delays in planning applications. Potential displacement of new aquaculture sites to areas outwith the pMPA 	<ul style="list-style-type: none"> Cost of uncertainty and delays in planning applications. Potential displacement of new aquaculture sites to areas outwith the pMPA 	<ul style="list-style-type: none"> Cost of uncertainty and delays in planning applications; and Micro-siting of installations to avoid sensitive features. Potential displacement of new aquaculture sites to areas outwith the pMPA
Quantified Costs on the Activity of Designation of the Site as an MPA (in £000s)			
Total costs (2019–2038)	13	105	157
Average annual costs	1	5	8
Present value of total costs (2019–2038)	9	71	107
<p>Total costs = Sum of one-off costs and recurring costs for the site summed over the 20 year period. Average annual costs = Total costs divided by the total number of years under analysis (i.e. 20). Present value of total costs = Total costs discounted to their current value, using a discount rate of 3.5%.</p>			

Shellfish aquaculture

There are currently no shellfish aquaculture sites within the North-east Lewis pMPA, and no shellfish aquaculture sites within a 1 km buffer around the site. However, there are a number of sites in close proximity (albeit greater than 1 km from the site) and therefore, with the growth of the industry there is potential for shellfish aquaculture in the North-east Lewis pMPA to develop over the assessment period, and an assumption has been used below that there will be 1 application for a new site (or expansion of existing site) every 10 years in North-east Lewis.

Economic Costs on the Activity of Designation of the Site as an MPA				
	Lower Estimate		Intermediate Estimate	Upper Estimate
Assumptions for impacts	<ul style="list-style-type: none"> It has been assumed that there will be 1 new application in NEL every 10 years. Additional assessment of the impact on MPA features from new sites will cost £5,600 per application. Development of a vessel management plan associated with new applications will cost £1,000 per application. 		<ul style="list-style-type: none"> It has been assumed that there will be 1 new application in NEL every 10 years. Additional assessment of the impact on MPA features from new sites will cost £5,600 per application. Development of a vessel management plan associated with new applications will cost £1,000 per application. 	<ul style="list-style-type: none"> It has been assumed that there will be 1 new application in NEL every 10 years. Additional assessment of the impact on MPA features from new sites will cost £5,600 per application. Development of a vessel management plan associated with new applications will cost £1,000 per application.
Description of quantified one-off impacts - (on-site)	<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new shellfish aquacultures sites on MPA features to support planning applications. Total cost = £11,200 Development of and compliance with vessel management plan. Total cost = £2,000 		<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new shellfish aquacultures sites on MPA features to support planning applications. Total cost = £11,200 Development of and compliance with vessel management plan. Total cost = £2,000 	<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new shellfish aquacultures sites on MPA features to support planning applications. Total cost = £11,200 Development of and compliance with vessel management plan. Total cost = £2,000
Description of quantified recurring impacts	N/A		N/A	N/A
Description of non-quantified impacts	On-site	Cost of uncertainty and delays	Cost of uncertainty and delays	Cost of uncertainty and delays
	Off-site	N/A	N/A	N/A
Quantified Costs on the Activity of Designation of the Site as an MPA (in £000s)				
Total costs (2019 to 2038)	13		13	13
Average annual costs	1		1	1

Present value of total costs (2019 to 2038)	9	9	9
Definitions of cost and economic impacts: Total costs = Sum of one-off costs and recurring costs for the site summed over the 20 year period. Average annual costs = Total costs divided by the total number of years under analysis (i.e. 20). Present value of total costs = Total costs discounted to their current value, using a discount rate of 3.5%.			

Coastal protection

The data currently available through the EuroSION database currently identifies no coastal protection assets within the site. However, it is thought that there are some areas of hard defence which are likely to require maintenance, and therefore assumptions made as summarised below.

Economic Costs on the Activity of Designation of the Site as an MPA (2019-20138)					
		Lower Estimate	Intermediate Estimate	Upper Estimate	
Assumptions for impacts		<ul style="list-style-type: none"> It has been assumed that there is one application every 5 years in NEL for maintenance of a coastal protection asset Additional assessment of the impact on MPA features from new sites will cost £5,600 per application. 	<ul style="list-style-type: none"> It has been assumed that there is one application every 5 years in NEL for maintenance of a coastal protection asset Additional assessment of the impact on MPA features from new sites will cost £5,600 per application. 	<ul style="list-style-type: none"> It has been assumed that there is one application every 5 years in NEL for maintenance of a coastal protection asset Additional assessment of the impact on MPA features from new sites will cost £5,600 per application. 	
Description of quantified one-off impacts - (on-site)		<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new coastal protection projects on MPA features to support planning applications. Total cost = £22,400 	<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new coastal protection projects on MPA features to support planning applications. Total cost = £22,400 	<ul style="list-style-type: none"> Additional assessment is required to assess the potential impact of new coastal protection projects on MPA features to support planning applications. Total cost = £22,400 	
Description of quantified recurring impacts – (on-site)*		<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> n/a 	
Description of non-quantified impacts	On-site	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> n/a 	
	Off-site	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> n/a 	

Quantified Costs on the Activity of Designation of the Site as an MPA (in £000s)			
Total costs (2019–2038)	22	22	22
Average annual costs	1	1	1
Present value of total costs (2019–2038)	16	16	16
Total costs = Sum of one-off costs and recurring costs for the site summed over the 20 year period. Average annual costs = Total costs divided by the total number of years under analysis (i.e. 20). Present value of total costs = Total costs discounted to their current value, using a discount rate of 3.5%.			

Commercial fisheries

North-east Lewis pMPA lies within ICES rectangles 45E3, 46E3, 45E4 and 46E4 in ICES Division VIa. Approximately 11,697 tonnes of fish and shellfish were landed from these ICES rectangles per annum (2012-2016), predominantly (over 60%) pelagic species by weight and shellfish species (over 50%) by value. The main gear types were midwater and demersal trawls.

VMS-based estimates and ICES rectangle landings statistics indicate that demersal trawls and creels (over-12m vessels) and demersal trawls and creels (under-12m vessels) are the main gear types that operate within the North-east Lewis pMPA. The value of landings from the pMPA was £1.7 million (over-12m vessels, from VMS data) and £4.0 million (under-12m vessels, indicated from ICES rectangle landings data) (annual average for 2012–2016, 2019 prices). Vessels fishing in the North-east Lewis pMPA predominantly operate from: Stornoway and Ullapool (over-12m vessels) and Stornoway and Ayr (under-12m vessels). Landings from the over-12m vessels were made predominantly into Stornoway (50%), Ullapool (28%) and Kinlochbervie (8 %). Landings from the under-12m vessels were made predominantly into Back (27%), Bernera (Lewis) (16%), Stornoway (15%) and Carloway (14%).

For the over-12m vessels, creels operated in particular in the sandeel grounds in the north of the pMPA while demersal trawls operated mainly in the southern part of the pMPA. For the under-12m vessels, creels operated in particular along the coast of Lewis and the southern part of the site.

Due to the small number of vessels operating in the site (less than 5), the value of the loss of fishing income and potential GVA impacts cannot be disclosed for data protection and commercial sensitivity reasons. These values are negligible however.

Economic Costs on the Activity of Designation of the Site as an MPA			
	Lower Estimate	Intermediate Estimate	Upper Estimate
Assumptions for impacts	<ul style="list-style-type: none"> Reduce risk of entanglement of static gear with Risso's dolphin by following best practice. It is assumed that this does not 	<ul style="list-style-type: none"> Reduce risk of entanglement of static gear with Risso's dolphin by following best practice. It is assumed that this does not 	<ul style="list-style-type: none"> Reduce risk of entanglement of static gear with Risso's dolphin by following best practice. It is assumed that this does not entail additional

Economic Costs on the Activity of Designation of the Site as an MPA

		entail additional costs. Reduce risk of entanglement of Risso's dolphin with pelagic gear by following best practice. It is assumed that this does not entail additional costs.	entail additional costs. Reduce risk of entanglement of Risso's dolphin with pelagic gear by following best practice. It is assumed that this does not entail additional costs. <u>Exclude targeted fishing for sandeels.</u> ▪ <u>Exclusion of hydraulic gear from sandeel habitat.</u> <u>Exclusion of drift nets and set nets in southern half of site.</u>	costs. Reduce risk of entanglement of Risso's dolphin with pelagic gear by following best practice. It is assumed that this does not entail additional costs. Exclude targeted fishing for sandeels. ▪ Exclusion of hydraulic gear from sandeel habitat. Exclusion of drift nets and set nets <u>across site between May and October.</u>
One-off impacts (on-site)		None	None	None
Recurring impacts – cost impacts per fleet segment (annual values, £000s, 2019 prices) (on-site)*	Over-12m vessels No gears affected <i>Subtotal over-12m</i>	Loss of >12m fishing income: 0.0 0.0	Loss of >12m fishing income: 0.0 0.0	Loss of >12m fishing income: 0.0 0.0
	Under-12m vessels Set nets and drift nets <i>Subtotal under-12m</i>	Loss of <12m fishing income: 0.0 0.0	Loss of <12m fishing income: Cannot be disclosed Cannot be disclosed	Loss of <12m fishing income: Cannot be disclosed Cannot be disclosed
	Total all vessels	0.0	Cannot be disclosed	Cannot be disclosed
	Description of non-quantified impacts	On-site	None	None

Economic Costs on the Activity of Designation of the Site as an MPA				
	Off-site	None	If activity is displaced rather than lost, there is potential for: <ul style="list-style-type: none"> ▪ Gear conflict. ▪ Additional impacts on species outside of site. ▪ Changes to vessel costs/revenues. 	If activity is displaced rather than lost, there is potential for: <ul style="list-style-type: none"> ▪ Gear conflict. ▪ Additional impacts on species outside of site. ▪ Changes to vessel costs/revenues.

Unlike most other sectors, the potential cost of designation on commercial fisheries is a loss or displacement of current (and future) output, caused by restrictions on fishing activities. Any decrease in output will, all else being equal, reduce the Gross Value Added (GVA) generated by the sector and have knock-on effects on the GVA generated by those industries that supply commercial fishing vessels. The costs estimates for this sector have therefore been estimated in terms of GVA, which more accurately reflects the wider value of the sector to the local area and economy beyond the market value of the landed catch.³ Costs are presented in terms of the reduction in full-time equivalent (FTE) employment. It is also possible that effort not continuing in the area could be transferred to other locations resulting in no or reduced loss of income. However, as above, values cannot be disclosed in the intermediate and upper scenarios, as it represents the activity of fewer than 5 vessels.

GVA Impacts (£million 2019-2038)			
Commercial Fisheries	0	Disclosure threshold not met	Disclosure threshold not met

Ports and harbours

There are 5 minor ports and harbours within North-east Lewis pMPA or within a 1 km buffer of the North-east Lewis pMPA (Back, Bayble, Brevig, Garrabost and Ness). Therefore, management costs may be incurred under the assumption that minor ports/harbours will undertake development every 20 years (starting in 2029) within the assessment period (2019-2038).

It should be noted that additional cost impacts could arise as a result of consenting delays. The cost impacts and uncertainty associated with MPA designation may affect investor confidence.

Economic Costs on the Activity of Designation of the Site as an MPA			
	Lower Estimate	Intermediate Estimate	Upper Estimate
Assumptions for cost impacts	<ul style="list-style-type: none"> New development proposals affecting MPAs will require <ul style="list-style-type: none"> additional assessment of impacts to protected features; Additional assessment costs per licence application are estimated to be £7,600 (at 2019 prices); Costs are incurred by all major ports within 5km of new MPAs or all non-major ports within 1km of new MPAs; and 	<ul style="list-style-type: none"> New development proposals affecting MPAs will require additional assessment of impacts to protected features; Additional assessment costs per licence application are estimated to be £7,600 (at 2019 prices); Costs are incurred by all major ports within 5km of new MPAs or all non-major ports within 1km of new MPAs; and 	<ul style="list-style-type: none"> New development proposals affecting MPAs will require additional assessment of impacts to protected features; Additional assessment costs per licence application are estimated to be £7,600 (at 2019 prices); Costs are incurred by all major ports within 5km of new MPAs or all non-major ports within 1km of new MPAs; and
Description of one-off costs	<ul style="list-style-type: none"> Additional assessment cost for development of minor ports. Total cost = £38,000 	<ul style="list-style-type: none"> Additional assessment cost for development of minor ports. Total cost = £38,000 	<ul style="list-style-type: none"> Additional assessment cost for development of minor ports. Total cost = £38,000
Description of recurring costs	n/a	n/a	n/a
Description of non-quantified costs	n/a	n/a	n/a
Quantified Costs on the Activity of Designation of the Site as an MPA (in £000s)			
Total costs (2019–2038)	38	38	38
Average annual costs	2	2	2
Present value of total costs (2019–2038)	27	27	27
Total costs = Sum of one-off costs and recurring costs for the site summed over the 20 year period. Average annual costs = Total costs divided by the total number of years under analysis (i.e. 20). Present value of total costs = Total costs discounted to their current value, using a discount rate of 3.5%.			

Power interconnectors

There are no power interconnectors currently located within the North-east Lewis pMPA. There is one project identified for potential development over the assessment period (Western Isles HVDC, potentially due for construction in 2021) which crosses the site. This project will require additional assessments to support planning applications (including marine licence) and regular survey to support operation and maintenance following construction.

Economic Costs on the Activity of Designation of the Site as an MPA			
	Lower Estimate	Intermediate Estimate	Upper Estimate
Assumptions for cost impacts	<ul style="list-style-type: none"> It has been assumed that the additional 	<ul style="list-style-type: none"> It has been assumed that the additional 	<ul style="list-style-type: none"> It has been assumed that the additional

Economic Costs on the Activity of Designation of the Site as an MPA

	Lower Estimate	Intermediate Estimate	Upper Estimate
	<p>assessment required to include MPA features is £5,600 for each application.</p> <ul style="list-style-type: none"> It has been assumed that the Western Isles HVDC connection is the only proposed connection in NEL during the assessment period. 	<p>assessment required to include MPA features is £5,600 for each application.</p> <ul style="list-style-type: none"> It has been assumed that the Western Isles HVDC connection is the only proposed connection in NEL during the assessment period. 	<p>assessment required to include MPA features is £5,600 for each application.</p> <ul style="list-style-type: none"> It has been assumed that the Western Isles HVDC connection is the only proposed connection in NEL during the assessment period. It will take 3 days of survey effort to survey a 12 nm section of cable within the MPA The restriction on survey effort to Nov-April is assumed to double the amount of time required to undertake the survey (3 days of survey effort will take on average 8 days in winter, 4 in summer i.e. an additional 4 days downtime). The cost of an additional day (generally weather down-time) is assumed to be £10,000. It is assumed that the Western Isles HVDC will require survey annually following construction in 2021.
Description of one-off costs	Cost of additional assessment for proposed interconnector projects transecting sites. Total cost = £5,600	Cost of additional assessment for proposed interconnector projects transecting sites. Total cost = £5,600	Cost of additional assessment for proposed interconnector projects transecting sites. Total cost = £5,600
Description of recurring costs	n/a	n/a	n/a
Description of non-quantified costs	Cost of uncertainty and delays to licence applications	Cost of uncertainty and delays to licence applications	Cost of uncertainty and delays to licence applications
Quantified Costs on the Activity of Designation of the Site as an MPA (in £000s)			

Economic Costs on the Activity of Designation of the Site as an MPA			
	Lower Estimate	Intermediate Estimate	Upper Estimate
Total costs (2019–2038)	6	6	686
Average annual costs	0	0	34
Present value of total costs (2019–2038)	6	6	478
Total costs = Sum of one-off costs and recurring costs for the site summed over the 20 year period. Average annual costs = Total costs divided by the total number of years under analysis (i.e. 20). Present value of total costs = Total costs discounted to their current value, using a discount rate of 3.5%.			

Telecommunication cables

There is one telecommunication cable which transits through North-east Lewis (BT-HIE Seg1.13) totalling approximately 15 km of length within the site. This links mainland Scotland with the Isle of Lewis.

Economic Costs on the Activity of Designation of the Site as an MPA			
	Lower Estimate	Intermediate Estimate	Upper Estimate
Assumptions for cost impacts	<ul style="list-style-type: none"> ▪ It has been assumed that the cost associated with additional assessment to support planning applications is £5,600 in 2019 prices. ▪ It has been assumed that the cable is replaced during the assessment period. 	<ul style="list-style-type: none"> ▪ It has been assumed that the cost associated with additional assessment to support planning applications is £5,600 in 2019 prices. ▪ It has been assumed that the cable is replaced during the assessment period. 	<ul style="list-style-type: none"> ▪ It has been assumed that the cost associated with additional assessment to support planning applications is £5,600 in 2019 prices. ▪ It has been assumed that the cable is replaced during the assessment period.
Description of one-off costs	Cost of additional assessment. Total cost = £5,600	Cost of additional assessment. Total cost = £5,600	Cost of additional assessment. Total cost = £5,600
Description of recurring costs	N/A	N/A	N/A
Description of non-quantified costs	N/A	N/A	N/A
Quantified Costs on the Activity of Designation of the Site as an MPA (in £000s)			
Total costs (2019–2038)	6	6	6
Average annual costs	0	0	34
Present value of total costs (2019–2038)	4	4	4
Total costs = Sum of one-off costs and recurring costs for the site summed over the 20 year period. Average annual costs = Total costs divided by the total number of years under analysis (i.e. 20). Present value of total costs = Total costs discounted to their current value, using a discount rate of 3.5%.			

Public sector

The decision to designate North-east Lewis as an MPA, would result in costs being incurred by the public sector in the following areas:

- Preparation of Statutory Instruments
- Development of voluntary instruments
- Site monitoring
- Compliance and enforcement
- Promotion of public understanding

Regulatory and advisory costs associated with licensing decisions

The majority of these costs will accrue at the national level and as such have not been disaggregated to site level. Only the preparation of Statutory Instruments and regulatory and advisory costs associated with licensing decisions have been estimated at the site level

Site-specific Public Sector Costs (£Million, 2019-2038)			
	Lower Estimate	Intermediate Estimate	Upper Estimate
Preparation of Statutory Instruments	0	0.0042	0.0042
Preparation of a Management Scheme	0.0278	0.0278	0.0278
Promotion of Voluntary Measures	0.0042	0.0042	0.0042
Monitoring of Protected Features	0.324	0.324	0.324
Review of Assessments (PV)	0.007	0.007	0.007
Total Quantified Public Sector Costs	0.363	0.367	0.367
Average annual costs	0.018	0.018	0.018
Present value of total costs (2019 to 2038)	0.274	0.278	0.278

Total costs

Total quantified costs are presented in present value terms. Commercial fisheries costs are presented in terms of GVA.

Total Present Value of Quantified Costs (£Million, 2019-2038)			
	Lower Estimate	Intermediate Estimate	Upper Estimate
Finfish Aquaculture	0.009	0.071	0.107
Shellfish Aquaculture	0.009	0.009	0.009
Coastal Protection	0.016	0.016	0.016
Ports and Harbours	0.027	0.027	0.027
Power Interconnectors	0.006	0.006	0.478
Telecommunication Cables	0.004	0.004	0.004
Total present value	0.071	0.133	0.641

GVA Impacts (£million 2019-2038)			
Commercial Fisheries	0	Cannot be disclosed	Cannot be disclosed

Total Non-Quantified Costs			
Scenario	Low	Intermediate	Upper
Sector/Group			

Finfish Aquaculture	<ul style="list-style-type: none"> • Cost of uncertainty and delays • Potential displacement of new aquaculture sites to areas outwith the pMPA 	<ul style="list-style-type: none"> • Cost of uncertainty and delays • Potential displacement of new aquaculture sites to areas outwith the pMPA 	<ul style="list-style-type: none"> • Cost of uncertainty and delays • Potential displacement of new aquaculture sites to areas outwith the pMPA
Shellfish Aquaculture	Cost of uncertainty and delays	Cost of uncertainty and delays	Cost of uncertainty and delays
Commercial Fisheries	None	<p>If activity is displaced rather than lost, there is potential for:</p> <ul style="list-style-type: none"> • Gear conflict. • Additional impacts on species outside of site. • Changes to vessel costs/revenues. 	<p>If activity is displaced rather than lost, there is potential for:</p> <ul style="list-style-type: none"> • Gear conflict. • Additional impacts on species outside of site. • Changes to vessel costs/revenues.

Scottish Firms Impact Test

This section will be informed by evidence gathered during the consultation phase, and completed in the final BRIA. In addition to the written consultation process there will be meetings with a number of businesses who may be affected by the proposal.

Many of the businesses affected may include some small and micro-sized firms. For the commercial fisheries sector the average number of fishers per Scottish vessel in 2017 was 2.3. Additional costs imposed by the designation of North-east Lewis as an MPA have the potential to fall on small businesses.

- **Competition Assessment**

Designation of North-east Lewis as an MPA may affect marine activities where businesses operate within a given spatial area or require a spatial licence for new or amended operations. At the North-east Lewis pMPA such activities include:

Aquaculture – finfish and shellfish farms
Commercial fishing

There is a varying degree to which competitiveness may be affected, depending on the management. However it is not possible to quantify this, but it is expected that the most likely scenario would have little impact on competitiveness of the industries, given current consent and licensing requirements that will already be taking account of the features for which the MPA is proposed.

Competition Filter Questions

Will the proposal directly limit the number or range of suppliers? e.g. will it award exclusive rights to a supplier or create closed procurement or licensing programmes?

No. It is unlikely that designation of North-east Lewis as an MPA will directly limit the number or range of suppliers.

Will the proposal indirectly limit the number or range of suppliers? e.g. will it raise costs to smaller entrants relative to larger existing suppliers?

Limited / No Impact. Designation of North-east Lewis as an MPA could affect the spatial location of commercial fisheries activity and may restrict the output capacity of this sector. However, restrictions on fishing locations may well be negated by displacement i.e. vessels fishing elsewhere. It is expected that the distribution of additional costs will be felt more by larger existing suppliers than smaller entrants.

Designation could affect the preparation of applications, location of marine developments and activities, or requirements for marine developments which would apply to any developer of an affected licensed activity when preparing and submitting an application. Additional costs will potentially be incurred by developers submitting new licence applications, but they will apply to both new entrants and to incumbents looking to expand or alter their operations.

Will the proposal limit the ability of suppliers to compete? e.g. will it reduce the channels suppliers can use or geographic area they can operate in?

No. Designation of North-east Lewis as an MPA will not directly affect firms' route to market or the geographical markets they can sell into.

Will the proposal reduce suppliers' incentives to compete vigorously? e.g. will it encourage or enable the exchange of information on prices, costs, sales or outputs between suppliers?

No. Designation of North-east Lewis as an MPA is not expected to reduce suppliers' incentives to compete vigorously.

Test run of business forms

It is not envisaged that designation of North-east Lewis as an MPA will result in the creation of new forms for businesses to deal with, or result in amendments of existing forms.

Legal Aid Impact Test

It is not expected that the pMPA will have any impact on the current level of use that an individual makes to access justice through legal aid or on the possible expenditure from the legal aid fund as any legal/authorisation decision impacted will largely affect businesses rather than individuals.

Enforcement, sanctions and monitoring

Responsibility for compliance, monitoring and enforcement of the provisions will be carried out by Marine Scotland. Reserved issues will continue to be addressed by the respective departments within the UK government. The Plan will be delivered through the existing marine

licensing system, nature conservation measures, in addition to Scottish Planning Policy and other licensing/consenting frameworks. Enforcement and authorisation decisions within these frameworks carried out by public authorities must have regards to new MPAs, these include: local authorities, Crown Estate Scotland, port and harbour authorities and terrestrial planning authorities.

Implementation and delivery plan

If designated, public bodies will have to take any authorisation or enforcement decisions in accordance with the provisions defined in legislation to protect MPAs. If specific management measures are required for the site they will be developed and be subject of their own assessments, consultation, and implementation phase. The MPA network will be reviewed every six years to ensure that they are meeting, or are capable of meeting, the agreed conservation objectives and whether any additional management is likely to be required.

Summary and recommendation

To be updated when Final BRIA is published

Declaration and publication

I have read the Business and Regulatory Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) that the benefits justify the costs. I am satisfied that business impact has been assessed with the support of businesses in Scotland.

Signed:

A handwritten signature in black ink, appearing to be 'Mairi Gougeon', written in a cursive style.

Date:

07 Jun. 19

Mairi Gougeon, Minister for Rural Affairs and the Natural Environment

Scottish Government Contact Point:

marine_conservation@gov.scot

Summary of Ecosystem Services Benefits arising from the Designation and Management of the Site as an MPA (2019-2038)									
Services	Relevance to Site	On-site / Off-site	Baseline Level	Estimated Impacts of Management			Value Weighting	Scale of Benefits	Confidence
				Lower	Intermediate	Upper			
Fish and shellfish for human consumption	Moderate, benthic habitat and sandeels contribute to the food web	On-site and off-site	Stocks not at MSY	Nil		Nil, fisheries effects negligible	Moderate, sandeels are important in food webs for commercial species and priority wildlife species.	Minimal	Moderate
Fish and shellfish for non-human consumption			Stocks reduced from potential maximum						
Climate regulation	Moderate, in coastal areas	On-site	Moderate	Nil – management scenarios will not affect features providing this service			Moderate	Nil	High
Waste breakdown/detoxification	Minimal	On-site	Low	Nil – management scenarios will not affect features providing this service			Low, water quality in this area not affecting human welfare	Nil	High
Non-use value of natural environment	Moderate, Risso's dolphin and sandeels, and contribution of the site to MPA network, have non-use value	On-site and off-site	Non-use value of the site may decline	Moderate, protection of features of site from potential future decline			Low–Moderate, protection of features is valued by divers & anglers (Kenter <i>et al.</i> 2013).	Moderate	Moderate, extent of features, responses to management scenarios, and value to society all uncertain
					Low, recovery of features possible				
Recreation	Moderate, wildlife tourism and recreation at site, including angling (Kenter <i>et al.</i> 2013)	On-site	Recreation value of the site may decline	Minimal, protection of features of site	Low, protection of features of site that contribute to recreation, allowing some recovery		Moderate–High, recreation and tourism support jobs, and are valued (Kenter <i>et al.</i> 2013)	Low–Moderate	Low–Moderate, extent of change from management scenarios uncertain
Research and Education	Moderate, small number of biological features have research	On-site	Value of site may decline		Low, protection of key characteristics of site from decline, improving future research opportunities				

Summary of Ecosystem Services Benefits arising from the Designation and Management of the Site as an MPA (2019-2038)									
Services	Relevance to Site	On-site / Off-site	Baseline Level	Estimated Impacts of Management			Value Weighting	Scale of Benefits	Confidence
				Lower	Intermediate	Upper			
	value, but there are substitutes			Designation may play role in communicating management needs.			understand response of range of features to management.		
Total value of changes in ecosystem services			Value of site may decline	Minimal for lower scenario, Low for intermediate and upper scenario, designation has Moderate non-use value to protecting site from future decline (Kenter <i>et al.</i> 2013)			Low–Moderate	Moderate	
Total value of changes in ecosystem services				Low–Moderate				Moderate	