Orkney Islands Regional Marine Plan

Draft Strategic Environmental Assessment: Environmental Report

ORKNEY ISLANDS COUNCIL

The Scottish Government
Riaghaltas na h-Alba

SEA Environmental Report – Cover Note

Part 1

To: SEA.gateway@scotland.gsi.gov.uk or SEA Gateway Scottish Executive Area 1 H (Bridge) Victoria Quay Edinburgh EH6 6QQ.

Part 2

An Environmental Report is attached for (name of PPS):

Orkney Islands Regional Marine Plan: Consultation Draft

The Responsible Authority is:

OIC

Part 3

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Part 4

Signature (electronic signature is acceptable).	D.Morris
Date.	21/06/2024

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Contents

Non-technical Summary

Consultation

This draft Strategic Environmental Assessment (SEA) Environmental Report has been deposited for public consultation from 1 August to 25 October 2024 alongside the Orkney Islands Regional Marine Plan: Consultation Draft (OIRMP) and other supporting documents.

The consultation documents can be accessed at www.orkney.gov.uk/Marine-Plan-Consultation, Kirkwall Library & Archive, the Warehouse Buildings in Stromness or Customer Services, Orkney Islands Council, School Place, Kirkwall, KW15 1NY.

A consultation response can be submitted to the Development and Marine Planning team at Orkney Islands Council, by email: marine.planning@orkney.gov.uk or in writing: Development and Marine Planning, Orkney Islands Council, School Place, Kirkwall KW15 1NY. Respondents should provide responses using the Consultation Response Form.

The deadline for responses to this consultation is 17:00 on 25 October 2024.

1. Outline of contents and main objectives

The main purpose and scope of the OIRMP is to support the delivery of a vision for Orkney's coastal and marine environment, economy and communities. This vision will be delivered through agreed objectives, implemented through decision-making made in accordance with the OIRMP policies. The OIRMP aligns, where appropriate, with the National Marine Plan (NMP), any neighbouring regional marine plans, the Orkney Local Development Plan and national land use policy e.g. National Planning Framework 4 (NPF4).

Regional marine plans have a specific statutory purpose set out in the Marine (Scotland) Act 2010. In summary, this is:

- Regional marine plans need to set economic, social and marine ecosystem objectives, and objectives relating to the mitigation of, and adaptation to, climate change.
- Regional marine plans state policies for and in connection with the sustainable development of the area to which the OIRMP applies and policies on the contribution of Nature Conservation Marine Protected Areas, and other relevant nature conservation sites, to the protection and enhancement of the area.
- Public authorities must take any authorisation or enforcement decision in accordance with the appropriate regional marine plan, unless relevant considerations indicate otherwise.
- Public authorities must have regard to the appropriate regional marine plan in making any decision which relates to the exercise by them of any function capable of affecting the whole or any part of the Scottish marine area, but which is not an authorisation or enforcement decision.

Thus, in order to deliver this statutory purpose, the OIRMP contains General Policies to ensure the environmental, social and economic factors upon which sustainable development depends are appropriately protected and Sector Policies to enable sustainable economic development.

2. The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the OIRMP.

The current state of the environment was assessed, using the Orkney Marine Region: State of the Environment Assessment 2020 (SoEA)[1], the SEA Scoping Report and the documents in Appendix B as baseline information.

An assessment of options demonstrated that from three alternatives, shown below, Option 3 was the most appropriate:

Option 1. Do nothing: continue under the current approach to marine planning and management including using the Pilot Pentland Firth and Orkney Waters Marine and Spatial Plan (PFOW MSP) as non-statutory planning guidance, NMP and NPF.

Option 2. Use the policies within the PFOW MSP to form a regional marine plan without updates or additions.

Option 3. Adoption of the OIRMP after stakeholder engagement on the preparation of the policies guided by the public consultation and further engagement with stakeholders.

3. Environmental characteristics of areas likely to be significantly affected

From the assessments outlined above, a set of SEA objectives was refined, using an iterative process (see Sections 2c, 2g and Table 7). Assessments of the Vision (Appendix C.1), policies of the OIRMP for compatibility (Appendix C.2) and environmental effects of implementation of the OIRMP's policies (Appendix C.3) against the SEA receptors were undertaken. The nine SEA receptors (i.e. environmental characteristics) are: Climate factors; biodiversity, water, coastal processes/ benthic sediments/ soils, geology, landscape, cultural heritage, population and human health, and material assets.

4. Existing environmental problems which are relevant to the OIRMP

Climate change and biodiversity loss are and will continue to be global issues with local impacts. Impacts on water, coastal processes/ benthic sediments/ soils, geology, landscape, cultural heritage, population and human health, and material assets vary at the regional level depending on the nature and scale of development and/or activities that impact upon them.

5. Environmental protection objectives

Appendix A outlines the key plans, policies and strategies (PPS) against which the implications for, and/or relationship with, the OIRMP have been taken into account. These are shown in relationship to the nine SEA receptors outlined above.

6. Likely significant effects

[1] Orkney Islands Marine Region: SoEA

Table 8 summarises the likely environmental effects of the OIRMP in relation to the SEA receptors. Further detail is provided below.

7. The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the OIRMP.

The high level summary of the OIRMP-level effects on the SEA receptors are summarised in Table 8, including an assessment of cumulative, synergistic and secondary effects. This information is based on the assessments of each policy in relation to the SEA receptors as outlined in Appendix C.3, which in turn is informed by the information found in Appendices B and B.1 – B.6, the Islands Communities Impact Assessment and the partial Business and Regulatory Impact Assessment.

8. Outline of the reasons for selecting the alternatives chosen

Option 3: Adoption of the OIRMP after stakeholder engagement on the preparation of the policies guided by the public consultation and further engagement with stakeholders.

Under this option an OIRMP will be prepared giving all stakeholders the opportunity to contribute towards setting objectives and policies to achieve sustainable development in the Orkney Islands marine region. This option will ensure that regional marine planning policy in Orkney contributes towards national priorities and outcomes e.g. climate change mitigation and adaption, reversing biodiversity loss and sustainable economic growth. It would also ensure that the impacts of the OIRMP would be fully assessed via SEA, Habitats Regulations Appraisal (HRA), partial Business and Regulatory Impact Assessment (pBRIA), Equalities Impact Assessment (EqIA), Child Rights and Wellbeing Impact Assessment (CWRIA) and Island Communities Impact Assessment (ICIA).

A summary of the assessment framework established during the SEA scoping process, using the framework shown in Section 3a, has been amended and augmented following stakeholder input, and is provided in Table 8. The detailed assessments, including an analysis of short, medium and long-term effects; permanent and temporary effects; positive and negative effects; and secondary, cumulative and synergistic effects, is provided in Appendices A - C. Further supporting information is provided in Appendices D – F.

The identification of potential adverse socio-economic and environmental effects through the iterative development of the OIRMP and this SEA will likely add further weight to their consideration by prospective developers, marine users and consenting authorities. An opportunity for the OIRMP to improve efficiencies, for example in streamlining of current consenting processes around which applicant-led engagement with stakeholders is considered to be key, was also identified. As a consequence, there is the potential for overall positive effects.

9. Measures envisaged concerning monitoring

The monitoring of sectoral growth and environmental and socio-economic parameters will continue to be undertaken on an ongoing basis, in accordance with the Marine (Scotland) Act 2010 requirements, alongside the filling of data gaps through targeted research and studies, as capacity allows. A Monitoring and Evaluation Framework will be prepared in due course.

1. Introduction

1a. Purpose of this Environmental Report and Key Facts

As part of the preparation of Orkney Islands Regional Marine Plan: Consultation Draft, Orkney Islands Council (OIC) is carrying out a Strategic Environmental Assessment (SEA). SEA is a systematic method for considering the likely environmental effects of certain Plans, Policies and Strategies (PPS). SEA aims to:

- Integrate environmental factors into PPS preparation and decision-making.
- Improve PPS and enhance environmental protection.
- Increase public participation in decision making.
- Facilitate openness and transparency of decision-making.

SEA is required by the Environmental Assessment (Scotland) Act 2005. The key SEA stages are:

- **Screening**: determining whether the PPS is likely to have significant environmental effects and whether an SEA is required.
- **Scoping**: deciding on the scope and level of detail of the Environmental Report, and the consultation period for the report; this is done in consultation with Scottish Natural Heritage (now known as NatureScot), The Scottish Ministers (Historic Scotland) and the Scottish Environment Protection Agency.
- **Environmental Report**: publishing an Environmental Report on the PPS and its environmental effects, and consulting on that report.
- **Adoption**: providing information on the adopted PPS; how consultation comments have been taken into account; and methods for monitoring the significant environmental effects of the implementation of the PPS.
- **Monitoring**: monitoring significant environmental effects in such a manner so as to also enable the Responsible Authority to identify any unforeseen adverse effects at an early stage and undertake appropriate remedial action.

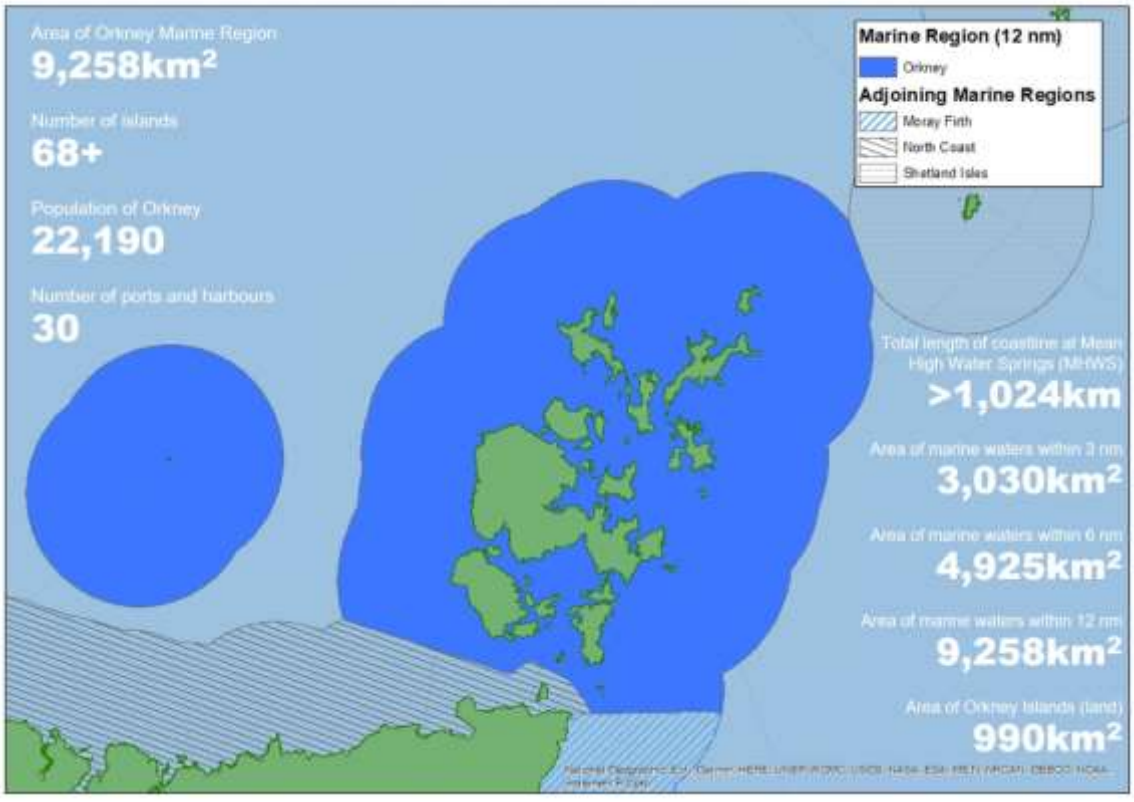
The purpose of this Environmental Report is to:

- Provide information on the Orkney Islands Regional Marine Plan: Consultation Draft (see Map 1).
- Identify, describe and evaluate the likely significant effects of the PPS and its reasonable alternatives.
- Provide an early and effective opportunity for the Consultation Authorities and the public to offer views on any aspect of this Environmental Report.

The key facts relating to the Orkney Islands Regional Marine Plan: Consultation Draft are set out in Table 1 below.

Table 1. Key facts relating to Orkney Islands Regional Marine Plan: Consultation Draft.

Name of Responsible Authority	OIC (OIC)
Title of PPS	Orkney Islands Regional Marine Plan (OIRMP): Consultation Draft
What prompted the PPS	Legislative: Marine (Scotland) Act 2010; Environmental Assessment (Scotland) Act 2005.
Subject	Marine planning
Period covered by PPS.	20 years from date of publication
Frequency of updates	Five yearly reviews, as per Marine (Scotland) Act 2010
Area covered by PPS	Mean High Water Springs of the Orkney Islands out to 12 nautical miles (see Map 1 below)
Purpose and/or objectives of PPS	To support sustainable development of the Orkney Islands marine region. See Table 3 for more detail.
Contact point	Marine.planning@orkney.gov.uk



Map 1: Boundary of Orkney Islands Marine Region

1b. SEA activities to date

Table 2 below is a summary of the key SEA activities undertaken to date. Further detail can be found Appendix E. The screening, scoping and preparation of this draft Environmental Report has been undertaken in accordance with the Environmental Assessment (Scotland) Act 2005.

Table 2 summarises the SEA activities to date in relation to the OIRMP.

Key Activity	**Date**	**Comments**
Screening to determine whether the PPS is likely to have significant environmental effects.	13/4/2021	Screening responses issued to OIC, as Responsible Authority
Scoping report to SEA Gateway	21/1/2022	Consultation Authorities responses received via SEA Gateway 25/2/2022
Review of Responses to Scoping	March 2022	The OIC Marine Planning team reviewed the comments received from the Consultation Authorities and these have been addressed in this draft Environmental Report.
Draft Environmental Report	May 2022 – ongoing	The OIRMP: Consultation Draft is assessed against the SEA objectives and the potential implications of development and activities on the marine environment. Mitigation, environmental enhancement and monitoring are detailed in this draft Environmental Report.

2. Context

2a Introduction

Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes "an outline of the contents and main objectives of the OIRMP or programme". The purpose of this section is to explain the nature, contents, objectives, and timescale of the PPS.

The OIRMP will support the delivery of a vision for Orkney's coastal and marine environment, economy and communities. This vision will be delivered through agreed objectives, implemented through decision-making made in accordance with the OIRMP policies.

Regional marine plans have a specific statutory purpose set out in the Marine (Scotland) Act 2010. In summary, this is:

- Regional marine plans need to set economic, social and marine ecosystem objectives, and objectives relating to the mitigation of, and adaptation to, climate change.
- Regional marine plans state policies for and in connection with the sustainable development of the area to which the OIRMP applies and policies on the contribution of Nature Conservation Marine Protected Areas, and other relevant nature conservation sites, to the protection and enhancement of the area.
- Public authorities must take any authorisation or enforcement decision in accordance with the appropriate regional marine plan, unless relevant considerations indicate otherwise.
- Public authorities must have regard to the appropriate regional marine plan in making any decision which relates to the exercise by them of any function capable of affecting the whole or any part of the Scottish marine area, but which is not an authorisation or enforcement decision.

2b Outline and objectives of Orkney Islands Regional Marine Plan

The consultation draft OIRMP has been prepared to guide decision making on sustainable development, activities, and use in the Orkney Islands marine region.

The Marine (Scotland) Act 2010 requires that the purpose of a regional marine plan is to state the Scottish Ministers' policies for and in connection with the sustainable development of the area to which the OIRMP applies. Regional marine plans should state Scottish Ministers' policies on the contribution of Nature Conservation Marine Protected Areas, and other relevant conservation sites, to the protection and enhancement of that area. The OIRMP has been prepared in accordance with this statutory purpose.

The OIRMP has been prepared by Orkney Islands Council (OIC), in accordance with the Delegation of Functions (Regional Marine Plan for the Scottish Marine Region for the Orkney Islands) Direction 2020. The Orkney Marine Planning Advisory Group (OMPAG) has provided expert input on environmental, social, economic and recreational matters to inform the preparation of the OIRMP[2] .

[2] Marine Planning Advisory Group (orkney.gov.uk)

The Marine (Scotland) Act 2010 requires public authorities to take any authorisation or enforcement decision in accordance with the appropriate regional marine plan, unless relevant considerations indicate otherwise. The Act also requires public authorities to have regard to the appropriate regional marine plan in making any decision which relates to the exercise by them of any function capable of affecting the Scottish marine area.

The OIRMP provides a policy framework to assist public authorities, including regulators, decision-makers and planners, to make decisions on sustainable development and activities that take place within, or that affect, the Orkney Islands marine region. Appendix 1 within the OIRMP also contains a summary of the relevant licensing and consent regimes, and associated processes, administered by public authorities to manage marine development and activities in the Orkney Islands marine region.

The OIRMP is structured into four sections:

1. Introduction,
2. General Policies,
3. Sector Policies and
4. Monitoring and review.

These sections are supported by appendices that provide further information to assist Plan users.

The OIRMP's policy framework consists of a suite of general policies and sector policies. These policies express intent and guide decisions to achieve the OIRMP's aim and objectives (see Table 3). The suite of general policies provides a framework for decision making to help deliver the Plan's environmental, social, economic, marine ecosystem and community well-being objectives. These types of policies are often referred to as cross-cutting policies as they can be applied to many different types of decision, for example decisions on renewable energy, aquaculture or harbour developments, to address a specific policy issue e.g. nature conservation. The Sector Policies are designed to support sustainable development and management of specific sectors e.g. aquaculture and renewable energy.

All the policies should be considered alongside the relevant legislation, policies and plans.

Table 3 Vision, Guiding Principles, Aim and Objectives for the Orkney Islands Regional Marine Plan

Vision The Orkney Islands marine region is clean, healthy, safe and productive; Orkney's marine and coastal environment is rich in biodiversity and managed sustainably to support thriving and resilient local communities.	
Guiding principles The Orkney Islands Regional Marine Plan has been developed in accordance with five guiding principles adopted to help steer the plan-making process, strategy and policies.	
A	**Sustainable development and use** Sustainable development and use are enabled whilst living within environmental limits; ensuring a strong, safe, healthy and just society; achieving a sustainable economy; promoting good governance; using sound science responsibly; and supporting the delivery of the United Nations Sustainable Development Goals.[3]
B	**Ecosystems-based approach** An ecosystems-based approach is used to manage human activities and enable climate change mitigation, as well as adaptation to the predicted effects of climate change.
C	**Coexistence** Coexistence between marine development, activities, and use is supported to minimise potential conflict and maximise synergistic benefits.
D	**Partnership working and stakeholder participation** This Plan is developed through an inclusive process of partnership working and stakeholder participation.
E	**Integrated approach to marine and land-use planning** Land and marine development are planned in a joined-up way to address development and infrastructure requirements, and associated impacts, across the interface between land and sea.

[3] United Nations Sustainable Development Goals https://www.un.org/en/sustainable-development-goals

Aim	
Sustainable development, activities, and use of the marine and coastal environment of Orkney is supported. Sustainable development, activities and use should maintain, and where appropriate enhance, biodiversity and ecosystem services; protect natural capital for future generations; and provide social and economic benefits for local communities.	
Objectives	
Number	**Objective**
1	A clear strategic direction is provided for development, activities and use in the Orkney Islands marine region and there is greater certainty for prospective developers, investors and local communities.
2	Development, activities and use are managed within an ecosystem approach, to protect and, where appropriate, enhance the biological, chemical and physical functioning of the marine and coastal environment, including the management of cumulative impacts.
3	A rapid and just transition to a low-carbon economy is supported to achieve net-zero commitments.
4	Mitigation of, and adaptation to, climate change is supported.
5	Socio-economic benefits and prosperity are delivered for local communities and the wider economy.
6	The well-being of local communities and the amenity of marine and coastal places are protected and enhanced.
7	Reliable information is provided on existing and proposed coastal and marine development, activities, use and assets.
8	Spatial planning and data are provided, enabling sustainable coexistence and synergies between existing and new marine development, activities and use, and the environment.
9	Plan users are assisted in navigating the relevant legislative and policy frameworks more easily and effectively.

The topics, policies and supporting appendices contained in the OIRMP are outlined in Table 4 below. The indicative timescale for the production of the OIRMP[4] and the associated documents are:

- Delegation of Functions to OIC: November 2020.
- Draft Statement of Public Participation (SPP) to Scottish Minsters May 2021.

[4] See Statement of Public Participation in 'Related Downloads' section: Marine Planning (orkney.gov.uk)

- Preparation of consultation draft Plan, draft SEA and other supporting draft documents February 2021 – October 2022.
- All drafts to OIC committees for endorsement Nov 2022 – Dec 2022.
- Draft Plan reviewed by the Scottish Government's Marine Directorate and approval of the draft Plan by Scottish Ministers for public consultation: Dec 2023 – July 2024.
- Consultation on draft documents 1 August 2024 – 25 October 2024.
- Consultation analysis and plan modifications Winter 2024/ Spring 2025.
- Approvals stage Summer-Autumn 2025.
- Adoption of Plan, independent investigation as required, Autumn/Winter 2025.
- Review of Plan 2030 or five years post publication and each subsequent five yearly review.

Further detail is provided in Appendix F.

Table 4: Topics included in the OIRMP. (GP = General Policy; SP = Sector Policy)

Section	Title
1	**Introduction**
2	**General Policies**
	Introduction
GP1	Sustainable Development, Activities and Use
GP2	Safety
GP3	Climate Change
GP4	Supporting Sustainable Social and Economic Benefits
GP5	Safeguarding Natural Capital and Ecosystem Services
GP6	Water Environment
GP7	Coastal Development and Coastal Change
GP8	Historic Environment
GP9	Nature
GP10	Seascape and Landscape
GP11	Surface and Underwater Noise, and Vibration
GP12	Marine Litter and Waste
GP13	Non-Native & Invasive Non-Native Species
GP14	Amenity, Well-being and Quality of Life of Local Communities

Assessment

This SEA assesses the Vision (see Table 3) and Policies (see Table 4) of the OIRMP and provides a summary assessment of the likely environmental effects of implementation of the OIRMP's policies. These assessments are in Appendices C.1 – C.3).

2c. Relationship with other PPS and environmental protection objectives

It is important to ensure that regional marine plans are appropriately aligned with wider relevant plans, programmes, and strategies (PPS). One of the early stages of the SEA process was to consider the relationship of the OIRMP to other relevant PPS and their environmental objectives. This allowed key environmental objectives to be identified for consideration during the OIRMP preparation process. It was also important to identify both the PPS that will influence the OIRMP and those that will be influenced by the OIRMP itself.

An understanding of the context and the hierarchy that the OIRMP sits within is also useful for giving insight to mitigation measures and where they may be best implemented. Appendix A outlines the PPS taken into consideration during the SEA process.

Where specific marine management issues are currently being addressed by other bodies through existing plans, strategies, and programmes (e.g., fisheries management by the Inshore Fisheries Group), it may not be appropriate for the OIRMP to take forward detailed policy on these matters. There will however be a requirement for appropriate integration and alignment, along with signposting where appropriate.

The OIRMP will have a significant influence on, and will draw from, other plans produced by OIC. It aligns with the Orkney Local Development Plan (2017) and the Indicative Orkney Regional Spatial Strategy, as well as NPF4 which forms part of the Development Plan. The NMP is also a key consideration to ensure effective integration with national policy.

Appendix A to this report contains a detailed review of the list of key plans, programmes, and strategies, as well as current legislation considered to be most directly relevant to the Gateway Programme, and includes details of how their environmental objectives have been considered as part of the SEA process.

The key environmental messages and initial objectives identified from this review are to:

1. Promote responsible stewardship of the coastal and marine environment, with particular focus on the twin threats of the climate emergency and biodiversity decline.
2. Encourage a reduction in greenhouse gas emissions (mitigation) and be positioned to respond to the predicted effects of climate change (adaptation).
3. Help halt the loss of biodiversity and seek to reverse previous losses through targeted protection for species, habitats, and ecosystems.
4. Enhance habitats and ecosystems, where this is appropriate and feasible.
5. Protect and enhance the water environment, ensuring that the status of all waters is protected from deterioration.

6. Protect against developments which have potential to cause or exacerbate coastal erosion and flooding.
7. Protect and, where appropriate, enhance landscape and seascape character, local distinctiveness, and scenic value.
8. Protect and, where appropriate, enhance the historic environment.
9. Ensure that development which would have a significant adverse impact on the Outstanding Universal Value of the Heart of Neolithic Orkney World Heritage Site, or its setting, does not occur.
10. Increase awareness, understanding and enjoyment of the natural and historic environment.
11. Protect opportunities for access to, and enjoyment of, coastal and marine environments.
12. Prepare a regional marine plan which meet the needs and ambitions of local people, and which gives weight to the voices and views of local communities.
13. Maximise the use / reuse of existing infrastructure assets to meet future needs.
14. Contribute towards a reduction in marine litter.
15. Promote the sustainable development of marine renewable energy.
16. Promote sustainable development.
17. Support planning outcomes that focus on the priorities identified in NPF4: net-zero emissions, a well-being economy, resilient economy, and better, greener places.
18. Revitalise our communities, particularly considering the COVID-19 pandemic which has changed the way we all live, work and learn.

The findings above are used, along with the baseline data in Appendix B, to further refine a set of SEA objectives (see section 2g).

2d. Relevant aspects of the current state of the environment

Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes a description of "the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the OIRMP or programme", and "the environmental characteristics of areas likely to be significantly affected". This section aims to describe the environmental context within which the PPS operates and the constraints and targets that this context imposes on the PPS.

The 'State o Environment Assessment (SoEA): A baseline assessment of the Orkney Islands Marine Region' provides the relevant aspects of the current marine environment in Orkney's marine waters[5]. To avoid excessive replication, the extensive detail will not be replicated here, but in summary, it provides a snap-shot of the following environments and associated environmental pressures:

- Physical
- Historic Coastal and marine
- Climate Change
- Biodiversity
- Productive coasts and sea
- Social and Community Value

In addition, an outline of the data gaps is provided. For each topic and sub-topic assessed, there are also data on the trend and data confidence, where known, along

[5] Orkney Islands Marine Region: SoEA

with an extensive reference list of data sources. A summary of these data is in Tables 5 and 6 below.

These baseline data were assessed using the Joint Nature Conservation Committee (JNCC's) Marine Activities and Pressures Evidence tool, which contains a Pressures-Activities Database (PAD)[6]. This is a compilation of evidence base for relationships between 112 marine-based human activities and their associated pressures (based on the OSPAR pressure list).

The PAD incorporates information on activities in Scotland based on Marine Scotland's Feature Activity Sensitivity Tool (FeAST) and a range of new activities that may occur in UK waters. In addition, information provided by expert organisations and stakeholders, such as Scottish Environment Protection Agency (SEPA), NatureScot (formerly Scottish Natural Heritage), the International Centre of Island Technology (ICIT), the Royal Society for the Protection of Birds (RSPB) and the Orkney Regional Inshore Fisheries Group (RIFG), has informed the assessment for the Orkney marine region and has informed the identification of additional pressures.

These identified pressures, and the supporting baseline information, are therefore helpful in informing this SEA process by providing:

- an identification of environmental problems and any data gaps;
- supports the process of assessing the environmental effects and;
- provides a baseline against which future monitoring data can be compared.

[6] https://jncc.gov.uk/our-work/marine-activities-and-pressures-evidence/#jncc-pressures-activities-database

Table 5: SoEA Summary (source SoEA[7])

Category	Topic	Pressure	Assessment	Trend	Data confidence
Physical	Geological and coastal	Erosion; Disturbance.	Some concerns	Deteriorating	High
	Landscape and Seascape	Erosion of special qualities of landscape and seascape; Coastal erosion, sea-level rise, flooding and change to vegetation types due to climate change.	Some concerns	Deteriorating	Medium
	Coastal Water Quality	Pollution	Some concerns	Static	High
	Air Quality	Pollution	Few concerns	Unknown	Low
	Marine litter	Entanglement; Ingestion; Amenity	Some concerns	Unknown	Medium
	Underwater noise	Disturbance; Injury;	Some concerns	Deteriorating	Low
Historic Coastal and Marine Environment	Historic Coastal and Marine Environment	Climate change; Erosion; Corrosion; Removal of artifacts.	Many concerns	Deteriorating	High
Climate Change	Climate Change	Multiple pressures: see Table 13	Many concerns	Deteriorating	Medium

[7] Orkney Islands Marine Region: SoEA

Category	Topic	Pressure	Assessment	Trend	Data confidence
Biodiversity	Designated Nature Conservation Sites	Climate change; Barrier to species movement; Collision; Disturbance; Overfishing; Pollution.	As there are many designated sites with varying site condition status, an overview assessment of the sites would be of limited value. Refer to Appendix 2 for individual site condition assessments.		
	Birds	Climate change; Collision; Disturbance; Marine litter	Many concerns	Deteriorating	Medium
	Grey Seals	Climate change; Disturbance; Pollution	Few concerns	Static	Medium
	Harbour Seals	Climate change; Competition; Disturbance; Pollution	Many concerns	Deteriorating	Medium
	Cetaceans	Climate change; Barrier to species movement; Collision; Disturbance: visual and displacement; Entanglement; Marine litter; Noise; Pollution	Some concerns	Unknown	Low
	Commercial Fish and Shellfish	Climate change; Disturbance; Removal of target species.	Unknown	Unknown	Not applicable
	Wider Fish Community	Climate change; Disturbance; Removal of non-target species.	Unknown	Unknown	Not applicable
	Invasive Non-native Species	Alter food webs; Outcompete native species.	Some concerns	Static	High

Table 6 summary of the OIRMP area (see SoEA for further detail[8])

SEA Issue / summary	Data used	Source of Data
Climatic factors Orkney Islands marine region is subject to global climate change issues. Key considerations are Sea Level Rise, ocean acidification and temperature changes, coastal processes and change, ecological impacts to food webs etc (see SoEA[9]).	CO^2 emissions data	www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics
	SNIFFER Online Handbook of Climate Trends across Scotland	www.sniffer.org.uk/climate-trends-handbook-for-web-pdf
	United Kingdom Climate Change Impacts Programme (UKCIP Climate Modelling)	www.ukcip.org.uk
	SEPA flood maps	www.sepa.org.uk/environment/water/flooding/flood-maps
	Dynamic Coast: Improving the evidence base of coastal change in Scotland.	https://www.dynamiccoast.com/
	Climate Risk Assessment for the Heart of Neolithic Orkney World Heritage Site (2019)	https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=c6f3e971-bd95-457c-a91d-aa77009aec69
Biodiversity 25% of Orkney's marine waters are designated to protect biodiversity (see Map 2 below). Some qualifying features in unfavourable condition.	Statutorily designated sites • 15 SPAs • 6 SACs (3 of which are designated for marine features) • 1 RAMSAR • 3 NC MPAs • 33 Sites of Special Scientific Interest (SSSI) (most of which have a coastal	https://sitelink.nature.scot

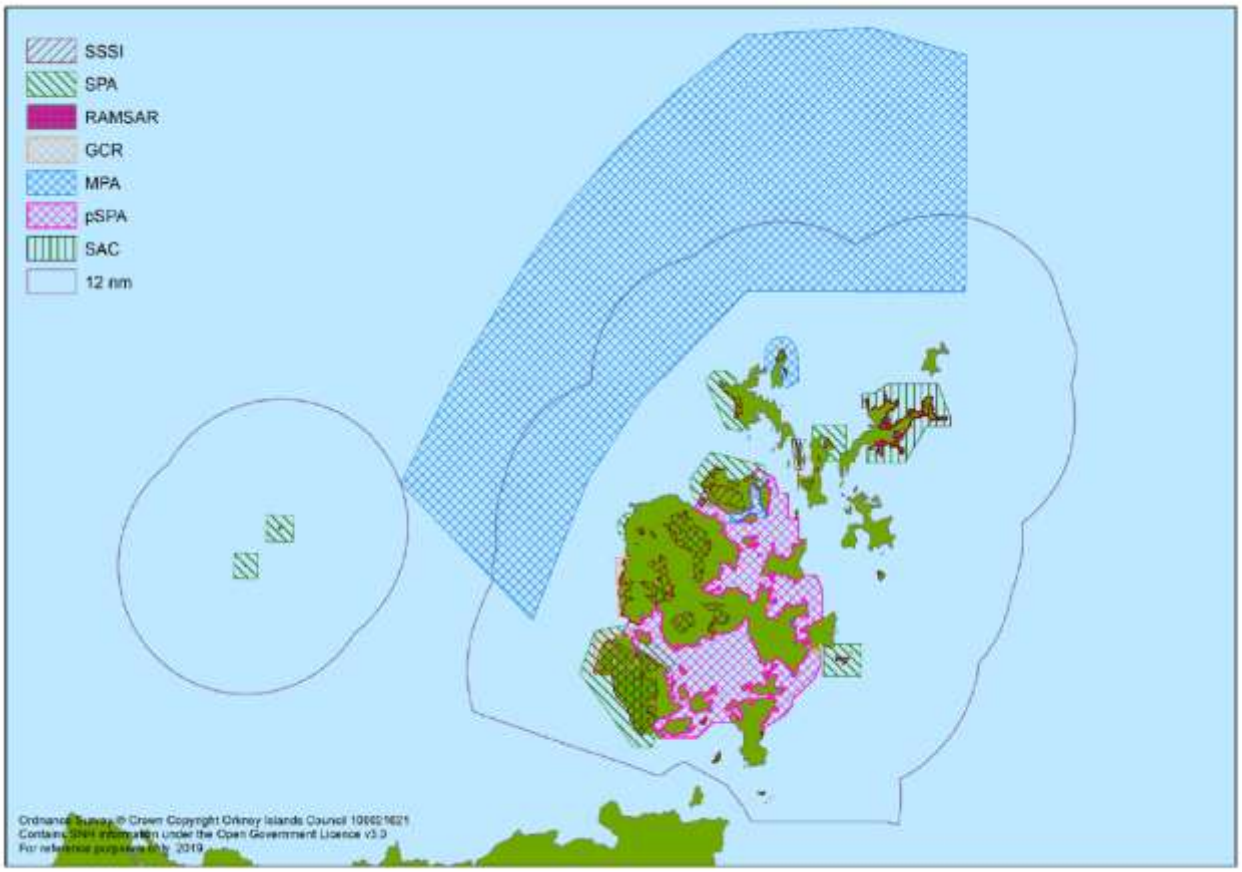
[8] Orkney Islands Marine Region: SoEA
[9] Orkney Islands Marine Region: SoEA

SEA Issue / summary	Data used	Source of Data
	and/or marine component European Protected Species.	
	Locally designated sites	Supplementary Guidance Natural Environment www.orkney.gov.uk/Service-Directory/D/natural-environment.htm
	RSPB reserves	https://www.rspb.org.uk/
	Local Nature Reserves	https://www.orkney.gov.uk/Service-Directory/N/local-nature-reserves.htm
	Priority Marine Features	https://www.nature.scot/doc/naturescot-commissioned-report-406-descriptions-scottish-priority-marine-features-pmfs https://marinescotland.atkinsgeospatial.com/nmpi/default.aspx?layers=7
Water Coastal water quality is classified as good or very good; this should be maintained.	Water quality data	www.sepa.org.uk/data-visualisation/water-classification-hub
Coastal processes/ benthic sediments/ soils For marine context, includes benthic seabed and coastal processes; these should be protected.	Broad scale seabed habitat	Figure 8 of SoEA Orkney Islands Marine Region: SoEA
Geology Varied ancient geology and geomorphology should be protected.	Statutorily designated sites: SSSI and Geological Conservation Review (GCR)	https://sitelink.nature.scot

SEA Issue / summary	Data used	Source of Data
	Local Nature Conservation Sites	Supplementary Guidance Natural Environment www.orkney.gov.uk/Service-Directory/D/natural-environment.htm
	Wider geodiversity interests	The Nature Conservancy Council's publication Orkney Localities of Geological and Geomorphological Importance (1978) provides information on the distribution and extent of important geological and geomorphological sites in Orkney.
Landscape / seascape 70+ islands provide rich and varied landscapes that should be protected.	Hoy and West Mainland National Scenic Area	https://sitelink.nature.scot
	Landscape Character types	Orkney Landscape Character Assessment, Land Use Consultants (1998)
	North Caithness and Orkney Coastal Character Assessment	Coastal Character Assessment | NatureScot
	Historic land use	https://data.gov.uk/dataset/79dfB.69c-d7C.3-4894-adda-5227a99295a1/national-record-of-the-historic-environment-historic-land-use-assessment
Cultural heritage Ancient cultural heritage assets and traditions should be protected.	The Heart of Neolithic Orkney World Heritage Site	Heart of Neolithic Orkney World Heritage Site Management Plan (2014-2019)
	Designated Sites, Buildings, Landscapes and Battlefields Regionally / locally important archaeological	Historic Environment Scotland GIS Downloader (Includes equivalent data to the Sites and Monuments Records)

SEA Issue / summary	Data used	Source of Data
	sites and unscheduled archaeology	Scotland's Historic Environment Audit 2016 Scotland's Environment Web
	Conservation Areas	Orkney Local Development Plan www.orkney.gov.uk/Service-Directory/O/Orkney-Local-Development-Plan.htm
Population and Human health Varying population trends across the islands.	Socio-economic data	Scotland's Environment Web Orkney Islands Economic Review 2020 Orkney Islands economic review | FAI (fraserofallander.org)
	Health and Place data	Welcome - Scottish Health and Social Care Open Data (nhs.scot)
Material assets improving transport infrastructure and services, reducing waste and promoting the waste hierarchy, with underpinning themes that seek to reduce emissions and shift towards a low carbon energy mix.	Core Paths	Orkney Core Paths Plan www.orkney.gov.uk/Service-Directory/C/Core-Paths.htm
	Infrastructure	Infrastructure Investment Plan for Scotland & Phase 1 report Orkney Ports Handbook. www.orkneyharbours.com/info/docs. Orkney Harbours Master Plan – Phase 1 https://www.orkneyharbours.com/documents/orkney-harbours-masterplan-phase-1
	Waste	OIC.
Cross sectoral issues	SoEA (2020). A baseline assessment of the Orkney Islands Marine Region	OIC https://www.orkney.gov.uk/Service-Directory/D/orkney-islands-marine-region-state-

SEA Issue / summary	Data used	Source of Data
		of-the-environment-assessment.htm



Map 2: Map of designated sites in Orkney Islands Marine Region (Note a larger scale map is in Appendix D.)

Appendix B contains the detailed environmental baseline report, which provides a description of the key environmental characteristics of Orkney. This allows any existing problems to be identified and provides the benchmark against which the forecast and monitored levels of environmental effects will be evaluated.

2e. Environmental problems

Schedule 3 paragraph 4 of the Environmental Assessment (Scotland) Act 2005 requires that the Environmental Report includes a description of existing environmental problems, in particular those relating to any areas of particular environmental importance. The purpose of this section is to explain how existing environmental problems will affect or be affected by Orkney Islands Regional Marine Plan, and whether the PPS is likely to aggravate, reduce or otherwise affect existing environmental problems, which have already been summarised in Tables 5 and 6 above.

Climate

It is widely accepted that the increasing atmospheric levels of certain gases are causing significant changes to global climates by reducing the rate of radiative heat loss and allowing temperatures around the world to rise. This is described as the enhanced greenhouse effect. Key considerations are Sea Level Rise, ocean acidification and temperature changes, coastal processes and change, ecological impacts to food webs etc (see SoEA[10]).

The policies and proposals of the OIRMP should seek to help ensure appropriate mitigation and adaptation measures are considered.

Biodiversity

Appendix B.1 provides a detailed summary of the site condition of all the internationally and nationally designed sites relevant to the OIRMP area. In summary, the key qualifying features that are in an unfavourable declining condition are:

- Some species of seabirds and seabird assemblages
- Harbour seals
- Some loch SSSIs and SACs

Appendix B.2 provides a list of the Priority Marine Features in Orkney.

The policies and proposals of the OIRMP should seek to protect and where practicable, enhance, biodiversity in Orkney's coastal and marine waters.

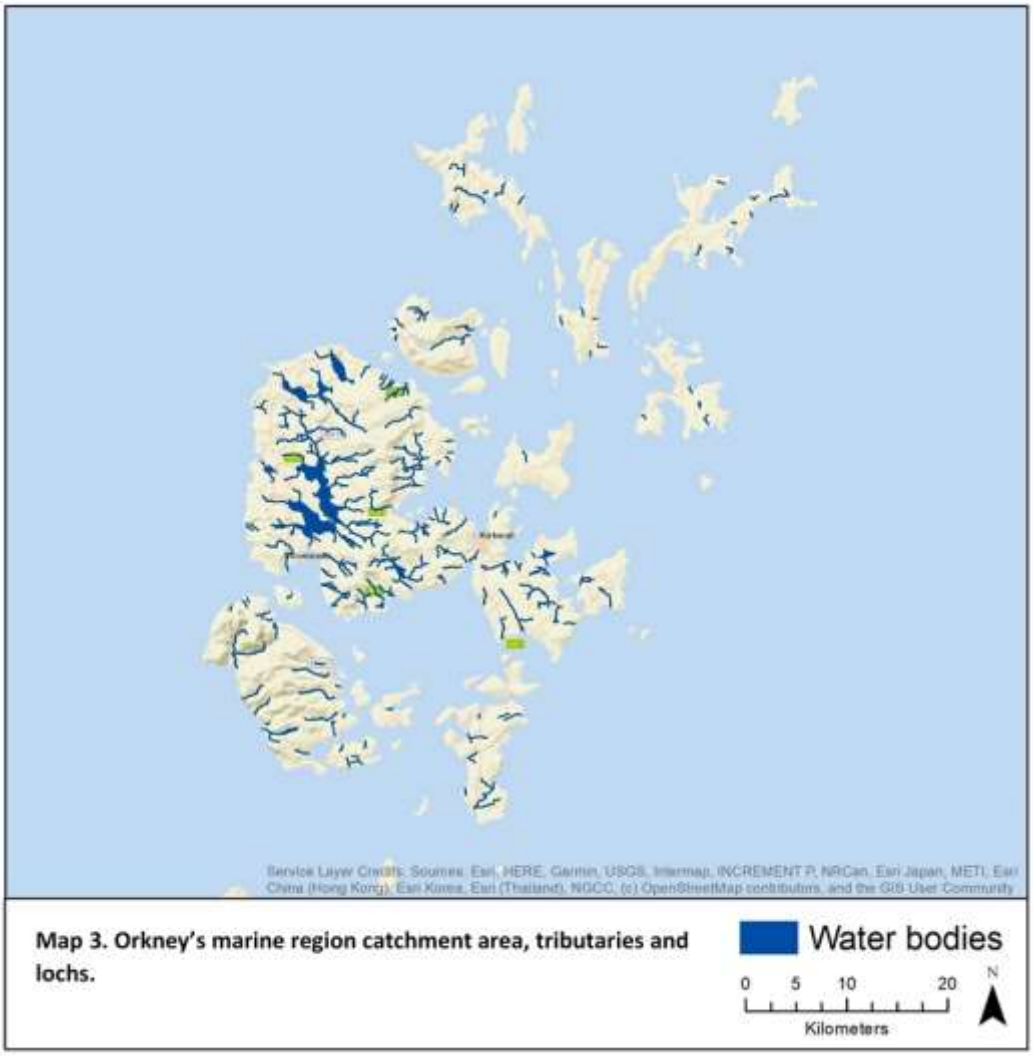
Water

As a planning authority, OIC has a duty to protect and improve Scotland's water environment (The Water Environment and Water Services (Scotland) Act 2003). Appendix B.3 provides a detailed breakdown of the lochs, burns and coastal waters, which are shown in Map 3 below.

Water quality in Orkney is generally good but locally there are waters which are polluted by waste-water, effluents and discharges from agriculture, mineral working, and other industries. The EC Water Framework Directive seeks to achieve the continuous improvement of all water bodies through the implementation of River Basin Management Frameworks. Town and country planning has a significant role to play in ensuring an appropriate distribution of land uses and protecting the environment from pollution.

The policies and proposals of the OIRMP should seek to protect and improve the quality and overall status of the water environment in and around Orkney. Sustainable solutions to waste-water treatment, including ballast water, should be promoted.

[10] Orkney Islands Marine Region: SoEA



Map 3. Orkney's marine region catchment area, tributaries and lochs.

Coastal processes / Benthic sediments / Soils

Marine and coastal development can result in changes to coastal process which, in turn, can affect rates of erosion, accretion and deposition. Coastal sand dunes are particularly vulnerable to disturbance which can cause blow-outs and loss of integrity.

Coastal erosion, predicted sea level rise and changes to coastal processes, linked to climate change are also a key issue, as outlined in the climate change section above.

Sandy and muddy sedimentary habitats support large populations of invertebrates which in turn support species at higher trophic levels. Many of these benthic habitats also store immense quantities of carbon (known as Blue Carbon)[11] .

[11] https://data.marine.gov.scot/dataset/blue-carbon-audit-orkney-waters

The policies and proposals of the OIRMP should seek to protect and improve the quality and overall status of the coastal processes and benthic sediments in and around Orkney.

Geology

Geological and geomorphological sites may be vulnerable to the effects of new developments and/or activities. Examples of development and/or activities which cross the interface between land and sea include new and replacement pipelines as well as energy and telecommunications cables.

The predicted effects of climate change are likely to subject coastal sites to enhanced rates of erosion, inundation, and weathering.

The policies and proposals of the OIRMP should provide effective protection to sites which are designated for their geological or geomorphological interest, and which illustrate Orkney's geological history.

Landscape

Orkney's relatively low-lying and undulating topography and open coastal seas provide long unobstructed views, with new features being highly visible in the landscape / seascape.

The policies and proposals of the OIRMP should provide effective protection to sites which are designated for their landscape/seascape quality and ensure the site condition of the National Scenic Area (NSA) is not eroded.

Cultural heritage

Cultural heritage sites and their settings may be vulnerable to the effects of new developments and/or activities. The policies and proposals of the OIRMP should provide effective protection to sites and their setting.

Population and human health

Population increase due to new major development may lead to increased pressure on existing infrastructure, for example housing, roads and sewage treatment plant. In this respect, any crossover with the Local Development Plan will be highlighted in the Environmental Report.

Material assets

Litter is already a problem in the Orkney marine and coastal environment. Plastics are especially long-lasting and pose a significant hazard to wildlife, e.g. in terms of accidental ingestion or entanglement. Coastal and marine litter impacts amenity in coastal areas. Fish farm waste is also an issue and includes redundant equipment which has been pulled up on the coast and abandoned.

An increasing level of marine development is likely to put additional pressure on port and harbour infrastructure.

Summary of Environmental problems

Environmental problems were identified through discussions with the Consultation Authorities, the OMPAG and local stakeholders, along with an analysis of the baseline that is presented in Appendix B of this report. Experience gained from the preparation of other SEA reports also assisted in highlighting the main environmental issues that are likely to affect Orkney during the lifetime of the OIRMP.

2f. Likely evolution of the environment without the OIRMP

Without the OIRMP, it is considered that the likely future changes to the area will be a less coordinated and sustainable approach to marine development and activities. This would lead to increased adverse environmental effects, particularly due to cumulative pressures from development and activities being planned in isolation and assessed/mitigated to varying standards.

As the Pilot Pentland Firth and Orkney Waters Marine Spatial Plan is non-statutory, marine planning decisions are not required to be made in accordance with it, as prescribed in the Marine (Scotland) Act 2010; rather it is a key guidance document and does not carry the same weight as a statutory regional marine plan.

2g. SEA Objectives

The SEA objectives are outlined in Table 7 below. SEA objectives are measures by which the environmental impacts of the PPS may be assessed. These have been refined using an iterative process during the scoping and development of the draft SEA phases, including the baseline report (see Section 2c and Appendix B).

Table 7: SEA Objectives

SEA OBJECTIVES
Climate factors:
Contribute to national targets to address the cause of climate change by reducing greenhouse gas emissions.
Support the transformational change to a low carbon economy, consistent with national objectives and targets.
Address vulnerability in the Orkney to the likely effects of climate change.
Biodiversity:
Conserve protected sites and species.
Safeguard valuable habitat from loss and fragmentation through development.
Protect biodiversity
Maintain healthy ecosystems and work with the natural processes which provide important services to communities.
Water:
Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.
Protect against developments which have potential to cause or exacerbate coastal erosion and flooding.
Coastal processes / Benthic sediments / Soils:
Reduce the threat of contamination and seek to protect soils from damage such as erosion or compaction.
Recognise the environmental benefits provided by soils and protect their quality and quantity.
Geology:
Protect designated and undesignated sites which are recognised and valued for their geological or geomorphological importance.
Landscape:
Maintaining and enhancing distinctive landscape character.
Cultural Heritage:

Promote the care and protection of the designated and non-designated historic environment.
Enable positive change in the historic environment which is informed by a clear understanding of the importance of Orkney's heritage assets and ensures their future use.
Safeguard cultural heritage features and their settings through responsible design and siting of development.
Population and Human Health:
Improve community environments and quality of life.
Protect and enhance human health and promote access to health, social and recreational facilities.
Material assets:
Promote sustainable and efficient use of natural resources.

3. Assessment of environmental effects and measures envisaged for prevention, reduction and offset of any significant adverse effects

3a Alternatives to which the SEA was applied

The SEA objectives identified above have been used as assessment criteria. Each alternative will be assessed in turn, and this assessment will identify options which would have environmental effects, and therefore require further assessment. Assessment will inform the nature of the preferred options that will be taken forward for development, refinement, and further assessment.

From the scoping report, the initial alternatives were:

Alternative 1: Do nothing.

Alternative 2: Update the existing Pentland Firth and Orkney Waters Marine Spatial Plan (PFOW MSP).

Alternative 3: Develop an Orkney Islands Regional Marine Plan.

Following an iterative process to SEA, the alternatives, now called options, were refined as follows:

Option 1. Do nothing: continue under the current approach to marine planning and management including using the Pentland Firth and Orkney Waters Marine and Spatial Plan (PFOW MSP) as non-statutory planning guidance, NMP and NPF.

Option 2. Use the policies within the PFOW MSP to form a regional marine plan without updates or additions.

Option 3. Adoption of the OIRMP after stakeholder engagement on the preparation of the policies guided by the public consultation and further engagement with stakeholders.

Option 1 Do nothing: continue under the current approach to marine planning and management including using the Pentland Firth and Orkney Waters Marine Spatial Plan (PFOW MSP) as non-statutory planning guidance, NMP and NPF.

Under this option a regional marine plan would not be developed/adopted and there would be no change to current arrangements. As the PFOW MSP is non-statutory it does not carry the same weight in decision making as a statutory regional marine plan and would therefore provide greater certainty in decision making.

The PFOW MSP has been adopted by the Scottish Government, Highland Council and OIC as non-statutory planning guidance. The OIRMP has not been adopted by other decision makers. This option therefore potentially creates inconsistency and uncertainty in decision making.

Option 1 does not bring marine planning in line with the provision for Regional Marine Planning set out in the Marine (Scotland) Act 2010.

Option 1 is not perceived as a viable option

Option 2: Use the policies within the PFOW MSP to form a regional marine plan without updates or additions.

Under this option the PFOW MSP would be put forward unamended, to be adopted as a regional marine plan. This option would place the existing local marine planning framework on a statutory footing. However, this would not allow a review and refinement of the objectives, policies and supporting data in light of changing legislation, priorities, opportunities, challenges and new data. This option would not meet current national policy or deliver current local community objectives and priorities.

As noted above, the existing NMP is somewhat dated therefore the existing statutory guidance is not as robust as it could be.

Option 2 does not bring marine planning in line with the provision for Regional Marine Planning set out in the Marine (Scotland) Act 2010.

Option 2 is not perceived as a viable option

Option 3: Adoption of the OIRMP after stakeholder engagement on the preparation of the policies guided by the public consultation and further engagement with stakeholders.

Under this option an OIRMP will be prepared giving all stakeholders the opportunity to contribute towards setting objectives and policies to achieve sustainable development in the Orkney Islands marine region. This option will ensure that regional marine planning policy in Orkney contributes towards national priorities and outcomes e.g. climate change mitigation and adaption, reversing biodiversity loss and sustainable economic growth. It would also ensure that the impacts of the OIRMP would be fully assessed via SEA, HRA, ICIA, BRIA, CRWIA and EQIA.

Option 3 is a viable option

In summary, as the OIRMP is being developed, Option 1 and 2 have been scoped out to leave Option 3: Adoption of the Orkney Islands Regional Marine Plan, in accordance with the Direction made[12] . Unlike the PFOW MSP, it will be a statutory plan, with more up to date information.

3b Assessment methods

The reasonable alternatives described above have been assessed against the range of environmental issues set out in Schedule 3 of the Environmental Assessment (Scotland) Act 2005. Comments from the Consultation Authorities: SNH (now NatureScot), SEPA and The Scottish Ministers (Historic Environment Scotland) have

[12] Delegation of Functions (regional marine plan for the Scottish Marine Region for the Orkney Islands) Direction 2020 - gov.scot (www.gov.scot)

been taken into account regarding the methods, scope and level of detail in this draft Environmental Report. The detailed assessments are in Appendix A - C. It will be further revised in light of any comments received during the public consultation phase.

3c Assessment of Environmental Effects of the OIRMP

A summary of the assessment framework established during the scoping process, using the framework shown in Section 3a, has been amended and augmented following stakeholder input, is provided in Table 8 below. The detailed assessments, including an analysis of short, medium and long-term effects; permanent and temporary effects; positive and negative effects; and secondary, cumulative and synergistic effects, is provided in Appendices A - C. Further supporting information is provided in Appendices D – F.

The identification of potential adverse socio-economic and environmental effects through the iterative development of the OIRMP and this SEA will likely add further weight to their consideration by prospective developers, marine users and consenting authorities. An opportunity for the OIRMP to improve efficiencies, for example in streamlining of current consenting processes around which applicant-led engagement with stakeholders is considered to be key, was also identified. As a consequence, there is the potential for overall positive effects.

3d. Measures envisaged for the prevention, reduction and offsetting of significant adverse effects

Schedule 3 paragraph 7 of the Environmental Assessment (Scotland) Act 2005 requires an explanation of “the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the OIRMP or programme.” These aspects are outlined in Table 8 and Appendix C.2.

Table 8: Assessment of Environmental Effects of the OIRMP

The high level summary of the OIRMP-level effects on the SEA receptors are summarised here, including an assessment of cumulative, synergistic and secondary effects. This information is based on the assessments of each policy in relation to the SEA receptors as outlined in Appendix C.3, which in turn is informed by the information found in Appendices B and B.1 – B.6, the Islands Communities Impact Assessment and the partial Business and Regulatory Impact Assessment.

Legend:

++	Significantly positive effects.
+	Positive effects.
0	Minor or neutral effect.
?	Uncertain effects.
-	Adverse effects.
--	Significantly adverse effects.

SEA receptor / assessment	Assessment pre-mitigation	Suggested mitigation	Assessment post-mitigation	Cumulative, synergistic and secondary effects	Comment
Climatic factors (0)	Climate change is a global issue and national targets are in place to reduce emissions of greenhouse gases.	The OIRMP's policies will contribute toward national targets by ensuring that the requirement to reduce carbon emissions is factored into new development and/or activity proposals in a sustainable manner.	Moderate benefit is likely in terms of climatic factors, biodiversity, flora and fauna, water, landscape and population / human health. Enhanced flood risk management,	Measures to enable adaptation to the effects of climate change will be integrated into the OIRMP and this will include planning to take account of flood risk and coastal erosion.	Climate change will remain a global issue.

SEA receptor / assessment	Assessment pre-mitigation	Suggested mitigation	Assessment post-mitigation	Cumulative, synergistic and secondary effects	Comment
			biodiversity, and improve access to coastal open space.		
Biodiversity (+) (see appendix B.1)	The continuing decline of biodiversity is another issue of global concern, along with the spread of non-native and potentially invasive species. Sites of international, national and local importance are designated throughout Orkney, on account of the habitats and species they support. The wider terrestrial and marine environments are also rich in biodiversity.	The OIRMP's policies will contribute toward protected designated sites and species in accordance with international/ national requirements.	Moderate benefit is likely in terms of biodiversity. Makes provision for new development to provide benefits for biodiversity. Ensures the continued availability of opportunities for enjoying and learning about Orkney's natural environment.	The balance of policies applied will help ensure biodiversity loss is minimised.	Biodiversity loss will remain a global issue. Positive effects for Biodiversity (Net Gain) is a relatively novel process for the Scottish marine environment. The OIRMP will support the development of this process and enhancement of the marine environment, where appropriate.
Water (+) (see appendix B.3)	Water quality in Orkney is generally good but locally there are waters which are polluted by waste-water, effluents and discharges from	The OIRMP's policies will contribute toward ensuring continued water quality in accordance with international/ national requirements.	Town and country planning has a significant role to play in ensuring an appropriate distribution of land uses and protecting	Overall positive benefit for biodiversity, water and benthic sediments.	

SEA receptor / assessment	Assessment pre-mitigation	Suggested mitigation	Assessment post-mitigation	Cumulative, synergistic and secondary effects	Comment
	agriculture, mineral working, and other industries.		the environment from pollution. The marine plan will assist with this integration of land/coastal/marine water protection.		
Coastal processes / benthic sediments / soils (?)	The combined forces of wave action and tidal currents are responsible for the constant reworking of seabed sediments which surround the coasts of Orkney. The growing demand for marine development and/or activities continues to add pressure to the seabed and coast.	Significant positive benefit for the protection of biodiversity, coastal processes, geology and materials as development and/or activities will have to be in accordance with multiple protection plans and frameworks and negative impacts on coastal processes and coastal protection should be minimised. All other SEA receptors are also given positive policy support.	Integrated application of land use and marine policies should help ensure impacts are minimised.	Mixed impact due to general policies providing protection against significant impacts and sectoral policies acknowledging some negative impacts.	
Geology (+)	Orkney's geological history is most clearly visible and interpreted along its coastlines where the rock has been subject to sea level change,	The OIRMP's policies will contribute toward ensuring SSSIs and GCR sites are not significantly impacted by development and/or activities.	The policies and proposals of the OIRMP should provide effective protection to sites which are designated for their geological or	Neutral or minor positive impacts from most general policies and sectoral policies.	

SEA receptor / assessment	Assessment pre-mitigation	Suggested mitigation	Assessment post-mitigation	Cumulative, synergistic and secondary effects	Comment
	deformation, erosion and localised deposition; and also, in quarries where rock extraction has exposed a sequence of rock strata.		geomorphological interest, and which illustrate Orkney's geological history.		
Landscape (0)	Orkney has one National Scenic Area: the Hoy and West Mainland National Scenic Area. The great ice-rounded eminences of the hills of North Hoy dominate the Orkney scene with a power that is scarcely in tune with their modest height (479 metres). Their bold shape, fine grouping, soaring cliffs and headlands, includes the famous stack of the Old Man of Hoy.	The OIRMP's policies will contribute toward ensuring continued landscape / seascape quality in accordance with national requirements.	Overall moderate benefit for the setting of cultural heritage and public enjoyment of the landscape, and major benefit in terms of protection seascape/ landscape.	Neutral or minor positive impacts from most general policies and potential for minor negative impacts sectoral policies. There is potential for the policy to promote greater consistency in the consideration of visual impacts in the development process, and in the early stages of consenting processes. As a consequence, the potential for significant benefits for the many recognised for landscape/ seascape areas in the OIRMP area were identified in the SEA.	

SEA receptor / assessment	Assessment pre-mitigation	Suggested mitigation	Assessment post-mitigation	Cumulative, synergistic and secondary effects	Comment
Cultural heritage (+)	Orkney is internationally renowned for the preservation and richness of 6,000 years of its archaeology upon which its successful tourism economy is based. Erosion and sea level rise due to climate change, along with deterioration and/or removal of artifacts are key considerations for cultural heritage	The policies and proposals of the OIRMP should provide effective protection to sites which are designated for their cultural heritage interest.	Moderate benefit is likely in terms of cultural heritage. The OIRMP general policies makes provision for the protection/ enhancement of cultural heritage assets and ensures the continued availability of opportunities for enjoying and learning about Orkney's cultural environment.	Cumulative, synergistic and secondary effects will be considered on a case by case basis, based on the nature and scale of a development or activity proposal.	
Population and human health (+)	On 30 June 2020, the population of Orkney Islands was 22,400. This is an increase of 0.6% from 22,270 in 2019.	The OIRMP's policies will contribute toward ensuring continued viability and safety of the island communities.	The potential for enhanced involvement of communities in the future growth of the use of the OIRMP area was seen as a key positive effect, particularly in relation to the consideration of potential social and	Potential benefits for population and human health were identified with the promotion of the long-term sustainability objectives of the group of policies, and through supporting social and economic benefits and promotion of economic	

SEA receptor / assessment	Assessment pre-mitigation	Suggested mitigation	Assessment post-mitigation	Cumulative, synergistic and secondary effects	Comment
			economic impacts and opportunities for fostering further community involvement in the decision-making process.	and wellbeing considerations.	
Material assets (0)	The seabed, intertidal zone, water environment and the species and habitats they contain are vital components of natural resources, that perform a variety of ecosystem services.	The OIRMP's policies will contribute toward ensuring material assets are used in a sustainable way.	Overall largely neutral effects on material assets.	Potential benefits for materials assets were identified with the promotion of the long-term sustainability objectives of the policies.	

4. Monitoring

The monitoring of sectoral growth and environmental and socio-economic parameters will continue to be undertaken on an ongoing basis, in accordance with the requirements of the Marine (Scotland) Act 2010, alongside the filling of data gaps through targeted research and studies, as capacity allows. Together, the information obtained from this wide range of sources, complemented by targeted monitoring and research on specific sectoral and environmental effects, would likely help to further inform the development of the OIRMP.

A Monitoring and Evaluation Framework will be prepared in due course, subject to funding/capacity. The public consultation may provide additional information regarding data sources that may be helpful in the monitoring process and the SEA will be updated accordingly, linked to the objectives outlined for the SEA in Section 2g: Table 7 above and the effectiveness of measures proposed for prevention, reduction and offsetting of significant adverse effects, where any remain.

5. Next steps

This draft Strategic Environmental Assessment (SEA) Environmental Report has been deposited for public consultation from 1 August and 25 October 2024, alongside the Orkney Islands Regional Marine Plan (OIRMP): Consultation Draft and other supporting documents. Following the end of consultation deadline, comments will be considered over the following few months, prior to submission to the OIC committee process, and the approval processes by Scottish Ministers. The indicative timetable (see Appendix F) and engagement process is outlined in the SPP[13]. In summary, the key planning and SEA outputs, including indicative timescales, are:

- Update draft documents following public consultation Winter 2024/Spring 2025;
- OIC committee process Summer 2025;
- Submission to Scottish Misters for approval Summer/Autumn 2025
- Publish Plan Autumn/Winter 2025 or independent investigation post Autumn 2025
- Post adoption statement for SEA Winter 2025/26
- Ongoing monitoring of Plan post adoption.

Should Scottish Ministers require an independent investigation of the OIRMP, this would likely add another year to the publication process.

[13] Orkney Islands Marine Region: SoEA

Appendix A. Links to other PPS and environmental objectives

Appendix B. Full assessment results: Baseline Assessment

APPENDIX B.1 Orkney's internationally and nationally designated sites

APPENDIX B.2 List of Priority Marine Features in Orkney

APPENDIX B.3 Water quality

APPENDIX B.4 Hoy and West Mainland National Scenic Area

APPENDIX B.5 Orkney's Scheduled Monuments

APPENDIX B.6 Orkney's Historic Properties in Care

Appendix C. Full assessment results

APPENDIX C.1 Assessment of the Vision

APPENDIX C.2 Assessment of the policies for compatibility with SEA objectives

APPENDIX C.3 Assessment of the of the environmental effects of the policies

Appendix D. Map of natural heritage designations

Appendix E. Detailed list of SEA activates to date

Appendix F. SPP indicative timetable for preparation of the OIRMP.

APPENDIX A: RELATIONSHIP WITH OTHER PLANS, PROGRAMMES AND STRATEGIES (PPS) AND THEIR ENVIRONMENTAL OBJECTIVES

Relationship with other plans, programmes and strategies and their environmental objectives

Name of PPS, Convention, Treaty or Directive and their environmental objectives.	Implication for, and/or relationship with, the Orkney Islands Regional Marine Plan.
OVERARCHING MARINE PPS	
United Nations Convention on the Law of the Sea (UNCLOS) (1982) provides an overarching framework for the marine environment, setting national jurisdictions and establishing rights of navigation and the legal regime of the high sea. It provides the legal basis for the protection and sustainable development of the marine environment and addresses environmental control, UNCLOS scientific research economic activities and the settlement of disputes. UNCLOS introduced the concept of Exclusive Economic Zones (EEZ). UNCLOS covers virtually all uses of the sea including navigation and over-flight, resource exploration and exploitation, conservation and pollution fishing and shipping.	In the OIRMP consideration should be given to protecting the right of navigation. The seas around Orkney include important navigational routes for ferried, fishing vessels and freight vessels.
The Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR) (1992) aims to contribute to the control and prevention of marine pollution within the waters of the North East Atlantic (which includes all UK waters), as well as scientific co-operation in assessing the quality of these waters. Annex V of the convention also provides for the adoption of programmes and measures to assist management of human activities that can have an adverse impact on the marine environment. Marine spatial planning was included in the OSPAR Biodiversity Committee's work programmes in 2003-04. Currently there are five annexes in force which deal with: prevention and elimination of pollution from land-based sources, by dumping or incineration and from offshore sources; assessment of	The OIRMP should include policies to prevent pollution and protect and conserve the ecosystem of the maritime area; and include provision for priority species and habitats. Activities should be compliant with national legislation implementing OSPAR recommendations and decisions.

the quality of the marine environment; and protection and conservation of the ecosystem and biological diversity of the marine area.	
Safeguarding Our Seas: A Strategy for the Conservation and Sustainable Development of our Marine Environment. Defra (2002) sets out a vision for the marine environment - clean, healthy, safe, productive, and biologically diverse oceans and seas. It is underpinned by the principles of sustainable development, integrated management, the conservation of biological diversity, robust science, the precautionary principle, and stakeholder involvement. It outlines an ecosystem-based approach to marine management to better integrate marine protection objectives with sustainable social and economic goals. It covers the broad spectrum of policies that affect the marine environment.	The OIRMP should reflect the vision and principles set out in the UK Strategy for the marine environment.
EC Integrated Maritime Policy for the European Union (Blue Paper) COM (2007) 575 is based on the clear recognition that all matters relating to Europe's oceans and seas are interlinked, and that sea-related policies must develop in a joined-up way. This integrated inter-sectoral approach ensures stakeholder participation, reinforcing co-operation and co-ordination of all sea related policies. The **Communication "Roadmap for Maritime Spatial Planning: Achieving common principles in the EU"** was adopted by the Commission on 25 November 2008.	The OIRMP should consider how to fulfil the objective of the policy, including promoting the sustainable use of the marine environment to enable economic growth.
Guidelines for an Integrated Approach to Maritime Policy: Towards Best Practice in Integrated Maritime Governance and Stakeholder Consultation. (COM/2008/395) aims to provide a holistic approach on how to handle maritime affairs as an increasing number of governments, in Europe, and all over the world, are signing up to a new, cross-cutting, integrated approach to the governance of maritime affairs. Member States should develop their own national integrated maritime policies, embracing economic, social, cultural, and environmental contexts, with active stakeholder participation and being implemented through marine spatial planning.	The OIRMP should consider how best to support the implementation of a holistic approach to marine governance.
The EC Marine Strategy Framework Directive (2008/56/EC) establishes an overarching approach to the management of Europe's seas. It requires the UK to put in	The policies of the OIRMP should support and contribute towards national

place measures to achieve or maintain good environmental status (GES) in the marine environment by 2020. The MSFD is transposed for the whole of the UK by the Marine Strategy Regulations 2010, providing a UK-wide framework for meeting the requirements of the Directive. As a member of the EU, the UK was required to collaborate with other Member States in the north east Atlantic, to monitor, assess and report progress towards GES; and to implement a programme of measures to achieve or maintain GES targets. Scotland's NMP adopts the GES descriptors as strategic objectives.	strategic objectives to achieve or maintain good environmental status in the marine environment. It should consider the implications of the OIRMP on biodiversity, flora and fauna; habitats; contaminants; marine litter; and underwater noise.
Marine and Coastal Access Act, 2009 **Marine (Scotland) Act, (2010).** The 2009 and 2010 Acts provide a statutory framework for a more simplified marine planning and licensing system. The main management measures introduced as part of the 2010 Marine Act include marine planning, marine licensing, marine conservation, seal conservation, and enforcement.	The Marine Scotland Act provides the legal basis for the development of national and regional marine plans. The OIRMP should therefore address the legislative requirements detailed within the Act.
UK Marine Policy Statement (MPS) has been prepared and adopted for the purposes of section 44 of the Marine and Coastal Access Act 2009. It will facilitate and support the formulation of Marine Plans, ensuring that marine resources are used in a sustainable way in line with the high-level marine objectives and thereby: Promote sustainable economic development. Enable the UK's move towards a low-carbon economy, in order to mitigate the causes of climate change and ocean acidification and adapt to their effects. Ensure a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and our heritage assets. Contribute to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues.	The OIRMP should conform to the UK MPS as set out in the 2010 Act.
UK Marine Policy Statement (MPS) (2011) sets the framework for preparing Marine Plans and taking decisions affecting the marine environment.	The objectives and policies of the OIRMP should align with the UK Marine

The Marine (Scotland) Act 2010, section 6(1) requires a NMP and a regional marine plan to be in conformity with any marine policy statement currently in effect for the Scottish marine area, unless relevant considerations indicate otherwise.	Policy Statement High-level Marine Objectives.
The **EC Directive Establishing a framework for maritime spatial planning (2014/89/EU)** sets out the fundamental elements that must be included in Maritime Spatial Plans. These include taking an ecosystem-based approach to spatial planning of marine resources; and promoting the coexistence of relevant uses and activities. The intention was to set out a planning framework within which all human activities at sea could fit.	The OIRMP should take account of the requirements of the Directive, including the adoption of an ecosystems approach.
Scotland's NMP (NMP) (2015) provides a comprehensive overarching framework for all marine activity in both Scottish inshore waters (out to 12 nautical miles) and offshore waters (12 to 200 nautical miles). The NMP sets out guidance specifically for regional planners to inform the development of regional marine plans.	The objectives and policies of the regional marine plan should: • be in conformity with the objectives and policies in the NMP. • identify any requirements to take a regionally specific approach to any particular objectives and/or policies, Identify proposed deviation from the national approach and agree this at an early stage with the Marine Directorate. A PPS integration exercise will ensure that key policies, strategies and plans (PPS) are considered in the development of the OIRMP.
Scotland's NMP 2015 - Policies and Regional Policy Guidance. **The Marine (Scotland) Act 2010, section 6(1)** requires a NMP and a regional marine plan to be in conformity with any marine policy statement currently in effect for the Scottish marine area, unless relevant considerations indicate otherwise. **Note: An updated NMP is being developed**	
The Pilot Pentland Firth and Orkney Waters Marine Spatial Plan aimed to establish a coherent strategic vision, objectives and policies to further the achievement of sustainable development including the protection and, where appropriate, enhancement of the health of the OIRMP area	The OIRMP will be informed by the Marine Spatial Plan and will further develop its objectives.

Guidance to the UK Marine Policy Statement from 2021 (2020) is published on behalf of all the UK Administrations by the Department of Environment, Food and Rural Affairs. It explains how references to EU law in the UK Marine Policy Statement (MPS) should be interpreted from 1 January 2021 following the UK's withdrawal from the EU. The European Union (Withdrawal) Act 2018 will convert many EU measures into UK law. Former EU measures converted into UK law are referred to as 'retained EU law' with statutory instruments amending the retained EU law to ensure it is operable. References in the MPS to EC or EU legislation, EU legislative requirements, European legislation and EU requirements are to be read as references to retained EU law from 1 January 2021.	The OIRMP will adopt the relevant current terminology.
The UK Marine Strategy (2019) consists of a 3-stage framework for achieving Good Environmental Status (GES) in our seas. Achieving GES is about protecting the marine environment, preventing its deterioration and restoring it where practical, while allowing sustainable use of marine resources. The strategy covers 11 elements: biodiversity; non-indigenous species; commercial fish; food webs; eutrophication; sea-floor integrity; hydrographical conditions; contaminants; contaminants in seafood; marine litter and underwater noise. The updated UK Marine Strategy Part 1 marks the beginning of its second implementation cycle and reports on progress made, along with further action that is necessary.	An integration exercise will ensure that key plans, policies and strategies (PPS) are considered in the development of the OIRMP.
The Scottish Marine Regions Order (2015) The Marine Act provides for the delegation of marine planning functions to a regional level. It designated 11 Scottish marine regions for the Scottish marine area and defines their boundaries, the coordinates establishing the marine region boundaries, and the suggested names of the regions. The Orkney Marine Region is defined within the Order.	The OIRMP should cover the area defined as the Orkney Islands Marine Region.
The Coast Protection Act (1949) is the key legislation for matters relating to coastal erosion risk on the open coast.	The OIRMP should include policy on coastal erosion.

The Scottish Crown Estate Act (2019) makes provision for the management of the Scottish Crown Estate; and for connected purposes.	The OIRMP should pay due regard to the Act and any necessary requirements.
The Islands (Scotland) Act (2018) introduced measures to support and help meet the unique needs of Scotland's islands now and in the future. It will also seek to help create the right environment for sustainable growth and empowered communities.	The OIRMP should pay due regard to the measures introduced in the Islands Act and the National Plan for Scotland's Islands.
The National Plan for Scotland's Islands (2019) and associated Implementation Plan provides a framework for action to meaningfully improve outcomes for island communities.	The OIRMP should pay due regard to the National Plan for Scotland's Islands.
The Submarine Telegraph Act (1885) underpinned an International Convention for the Protection of Submarine Telegraph Cables.	The OIRMP should include policy for the installation and protection of submarine cables.
The Food and Environment Protection Act (1985) replaced the Dumping at Sea Act 1974 with fresh provision for controlling the deposit of substances and articles both in the sea and under the sea-bed.	The OIRMP should include policy for the deposit of substances and articles in the sea and on the seabed.
The Orkney County Council Act (1974) authorised the County Council of Orkney to exercise harbour jurisdiction and powers in respect of development, including powers to license the construction of works and dredging in certain areas of and adjacent to the county. Also introduced the right of compulsory purchase of land for development.	The Orkney Harbour Authority forms part of the OMPAG to ensure relevant matters are considered. These additional harbour areas should be reflected in the appropriate OIRMP policies.
The OIC Harbour Revision Order 1989 adds two areas to the Schedule of the Orkney County Council Act 1974 and thereby confers jurisdiction as a harbour authority on OIC within those areas, together with the powers contained within the 1974 Act.	

CLIMATE CHANGE	
UN Framework Convention on Climate Change entered into force on 21 March 1994 and now has near-universal membership. The ultimate objective of the Convention is to stabilize greenhouse gas concentrations "*at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system."*	The policies of the OIRMP have a role to play in contributing towards achievement of these high-level objectives and should promote a reduction in greenhouse gas emissions, in line with national and international targets.
The Second European Climate Change Programme (2005) established the European Climate Change Programme (ECCP) in 2000 to help identify the most environmentally and cost-effective policies and measures that can be taken at European level to cut greenhouse gas emissions; and explored further cost-effective options for reducing greenhouse gas emissions in synergy with the EU's Lisbon strategy for increasing economic growth and job creation.	
Limiting Global Climate Change to 2 degrees Celsius. The way ahead for 2020 and beyond (EC, 2007) proposed that, through international negotiations, the EU should pursue a 30% reduction in greenhouse gas emissions by developed countries by 2020 (compared to 1990 levels). This was deemed necessary to ensure that the world stays within the limit of a 2ºC increase in average global temperatures.	
The **UK Climate Change Act 2008 a**nd the **Climate Change (Scotland) Act, (2009).** focus on the need to cut greenhouse gas emissions. As of June 2019, national targets were for a 100% reduction by 2050, contributing to climate change abatement targets set at the UK, EU and international levels. In May 2019 amendments to the Scottish Climate Change Bill were lodged to set a legally binding target of net-zero (100% reduction) greenhouse gas emissions by 2045 at the latest, with Scotland becoming carbon neutral by 2040.	

The **Paris Agreement (2015)** is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century. The Paris Agreement is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects.	
Draft Energy Strategy and Just Transition Plan: vision is that by 2045 Scotland will have a flourishing, climate friendly energy system that delivers affordable, resilient and clean energy supplies for Scotland's households, communities and business.	The OIRMP should pay due regard to the draft Energy Strategy and Just Transition Plan and includes a policy on Net Zero.
OIC has commitments to reduce the Islands' total carbon dioxide emissions by 42% from the 2004-2015 baseline by 2026; **OIC Carbon Management Programme 2016-2026** sets out the Council's aims to move towards a low carbon operation, through careful planning of all their energy consuming activities and by assessing future plans in terms of their Carbon Impact in order to reduce their total Carbon Dioxide emissions in the financial year 2025 by 42% of the baseline year 2004-05. With 18% already achieved, a further 24% reduction has been committed to by the Council.	The OIRMP should be compatible with the objectives of Orkney's Carbon Management Programme, the Sustainable Energy Strategy, and the Hydrogen Strategy.
A Sustainable Energy Strategy for Orkney, (2017-2025) provides a framework to ensure a secure, sustainable low carbon island economy driven uniquely by innovation and collaboration, enabling the community to achieve ambitious carbon reduction targets, address fuel poverty and provide energy systems solutions to the world.	
Orkney Hydrogen Strategy 2019-2025 seeks to aid development of an appropriate sustainable hydrogen economy for Orkney. This would provide economic benefits such	

as: local jobs; establishing a local supply chain; and an increased resilience in the local energy system.	
Climate ready Scotland: climate change adaptation programme 2019-2024 sets out policies and proposals to prepare Scotland for the challenges that we will face as our climate continues to change in the decades ahead. The Programme is a requirement of the Climate Change (Scotland) Act 2009 and addresses the risks set out in the UK Climate Change Risk Assessment (UK CCRA) 2017, published under section 56 of the UK Climate Change Act 2008.	The OIRMP should be informed by Scotland's Climate Change Adaptation Framework to promote policies which increase the resilience and preparedness of the Orkney Islands to adapt to the effects of climate change. Measures to enable climate change adaptation should be integrated into the OIRMP. Holistic planning will be vital in building resilience to the impacts of climate change amongst communities, businesses and ecosystems. It includes planning to take account of flood risk and coastal erosion, identifying vulnerable land and infrastructure and making space for habitats.
Directive on the Assessment and Management of Flood Risks (EC Directive 2007/60/EC) aims to establish a framework for measures to reduce the risk of floods in the EU by assessing the risk of flooding in river basins and coastal regions, mapping out areas that are prone to significant floods and drawing up flood-risk management plans based on close cooperation between the EU countries.	The OIRMP must take account of the probability of flooding from all sources and the risks involved. The potential additional influence of climate change should also be borne in mind. The OIRMP should use the Orkney Strategic Flood Risk have regard to the flood maps prepared by
The Flood Risk Management (Scotland) Act (2009) requires the production of Flood Risk Management Strategies by SEPA and Local Flood Risk Plans by the Council as lead authority.	

The Orkney Flood Risk Management Strategy, SEPA (2015) includes a vision for how flooding should be managed. It identifies the main flood hazards and impacts and sets objectives to manage these, along with a series of prioritised actions that aim to achieve these objectives. **A Flood Risk Management Plan for Orkney (2016)** identifies works and actions that are to be undertaken locally during the period 2016-2022, and how these are to be funded. **The Surface Water Management Plan for Kirkwall (2019)**	SEPA and take account of finalised and approved Flood Risk Management Strategies and Plans. It should protect land with potential to contribute to managing flood risk, for example through natural flood management, managed coastal realignment, wash-land or green infrastructure creation, or as part of a scheme to manage flood risk.
BIODIVERSITY, FLORA & FAUNA	
The **Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)** aims to encourage the identification, protection and preservation of cultural and natural heritage around the world, considered to be of outstanding value to humanity.	The OIRMP and its policies must reflect the objectives of these three conventions.
The **Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)** is an intergovernmental treaty concerned with the conservation of wildlife and habitats on an international scale. It aims to conserve marine, terrestrial, and avian species throughout their range through international cooperation. The UK is party to the convention and to several agreements that have been concluded under its auspices. Examples include ASCOBANS (small cetaceans – Odontoceti); ARWA (migratory birds) and EUROBATS (bats).	
The **Convention on the Conservation of European Wildlife and Natural Habitats (1979). (The Bern Convention)** was established to ensure conservation and protection of wild plant and animal species and their natura; habitats, to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species).	

The **Conservation of Wild Birds Directive (79/409/EEC)** is the EU's oldest piece of nature legislation. Known as the **Birds Directive** it was adopted unanimously by Member States in 1979 as a response to increasing concerns about the declines in Europe's wild bird populations resulting from pollution, loss of habitats as well as unsustainable use. It protects all wild birds (together with their nests and eggs) and their associated habitats. The **Conservation of Natural Habitats and of Wild Fauna and Flora Directive (92/43/EEC),** more commonly known as the **Habitats Directive** was adopted in 1992 to protect natural habitats and certain species of wild plants and animals. The species listed on Annexes II, IV and V of the Habitats Directive, plus those birds protected under the Birds Directive, are called species of 'Community interest'. Together these Directives established a commitment to designating a network of sites known as Natura 2000 sites. Following the departure of the United Kingdom from the European Union, these sites are now described in the UK as European sites. Special Protected Areas (SPA) are designated under the Birds Directive and Special Areas of Conservation (SAC) are designated under the Habitats Directive. This is a key underlying international policy commitment, to be reflected in the policies of the OIRMP. The **Convention on Wetlands of International Importance 1971 (amended 1982 and 1987)** emphasizes the special value of wetland, particularly as a key habitat for waterfowl. The Convention resulted in the designation of sites known as Ramsar Sites for management and conservation at an international level. All Ramsar sites are also European sites. **The Marine (Scotland) Act 2010** establishes a new power for Marine Protected Areas (MPAs) in the seas around Scotland, to recognise features of national importance and to meet international commitments for developing a network of MPAs. The Act allows for three different types of MPAs to be set up: • Nature Conservation MPAs.	The OIRMP should: • Identify all international and national natural heritage designations (including potential SPAs and SACs) on maps, distinguishing clearly between international or national sites. • Make reference to local nature conservation sites which are described and mapped in Supplementary Guidance Natural Environment Annex 1. • Include marine planning policy for any areas identified as being or international national or local importance for their natural heritage and safeguard any areas being of major importance for nature conservation. • Make clear the requirement to protect the integrity and qualifying interests of European sites and indicate the criteria against which a development affecting a natural heritage designation will be assessed. The OIMRP will be subject to a Habitats Regulations Assessment

• Demonstration and Research MPAs. • Historic MPAs. Supplementary Guidance Natural Environment Annex 1 Local Nature Conservation Sites (2017) OIC.	(HRA) under Article 6(3) of the Habitats Directive.
When enacted to implement the Birds Directive and Bern Convention, the **Wildlife and Countryside Act 1981** provided a relatively straightforward source of wildlife law in Great Britain. However, the legal picture is now more complicated: Firstly, the introduction of the **Conservation (Natural Habitats, &c.) Regulations 1994**, commonly known as the **Habitats Regulations**, created a separate set of rules for those species (and habitats) protected under the Habitats Directive. Secondly, devolution has meant that changes to the 1981 Act through the **Nature Conservation (Scotland) Act 2004** and the Habitats Regulations have been made differently in Scotland than in England and Wales. **Part 1 of the Wildlife & Countryside Act 1981** details many offences in relation to the killing and taking of wild birds, other animals and plants. Schedules are attached which categorise species. This means that the degree of protection afforded varies according to which Schedule a species is listed on. The Act applies to the terrestrial environment and inshore waters (0-12 nautical miles). The **Marine (Scotland) Act 2010** also introduced improved protection for seals. **The Wildlife and Natural Environment (Scotland) Act 2011** draws together and updates legislation on nature conservation. It updates much of the Wildlife and Countryside Act (WCA). Includes legislation relating to Invasive Non-Native Species (INNS).	The OIRMP should: • Include policy for protected species. • Include policy for Priority Marine Features (PMFs). • Provide for the conservation of the wider biodiversity out-with designated areas. It should also address issues that enable the spread of INNS.
The **Great Britain Invasive and Non-Native Strategy (2015)** aims to protect against the adverse impacts of invasive non-native species. It aims to: • get people to work better together, including the government, stakeholders, land managers and the general public.	The OIRMP should consider how to reduce the spread of INNS,

improve co-ordination and co-operation on issues at a European and international level.	
Managing Invasive Species in Scotland's Water Environment was developed by SEPA as a supplementary plan to the River Basin Management Plans. It provides guidance on a co-ordinated approach for organisations with a role in risk assessment, monitoring, classification, data collection and presentation and control mechanisms, to reduce the risk posed by INNS on the ecological quality of water bodies.	
OIC Ballast Water Management Policy aims to minimise the risk of introduction of INNS during ballast water discharge activities in Scapa Flow.	
The Nature Conservation (Scotland) Act 2004 introduced the 'biodiversity duty' - a 'duty to further the conservation of biodiversity' - for all public bodies and sets out more specific provisions within this (e.g., for SSSIs). It also required the preparation of a Scottish Biodiversity Strategy to which all public bodies should pay regard, as well as a **Scottish Biodiversity List** of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. The purpose of the list is to help public bodies carry out their Biodiversity Duty by identifying the species and habitats which are the highest priority for biodiversity conservation in Scotland	OIC has a duty, "….*in exercising any functions, to further the conservation of biodiversity so far as it is consistent with the proper exercise of those functions."* This duty must be reflected in the OIRMP and in development management decisions
Future Fisheries Management Strategy: sets the vision for Scotland to be a world class fishing nation, delivering responsible and sustainable fisheries management.	The OIRMP should pay due regard to the strategy.
Seafood Strategy: Affirms the importance of the seafood sector and sets out how the Scottish Government are supporting industry to contribute to achieving our blue economy aspirations.	The OIRMP should pay due regard to the strategy.

Article 6 of the **UN Convention on Biological Diversity (1992) (commonly known as the Rio Convention** requires that all parties develop national biodiversity strategies, plans or programmes, and that they seek to integrate the provisions of these across other policy sectors. International targets call for a step change in efforts to halt the loss of biodiversity and to restore essential services that a healthy natural environment provides.	The OIRMP should: • Assist in reversing the decline of biodiversity including Priority Marine Features and other species and habitats that are identified as priorities for conservation. The role of certain marine habitats in storing carbon (blue carbon) should be fully recognised in the OIRMP and these habitats should be afforded protection from development. The role of planning in relation to biodiversity, and in terms of raising awareness and appreciation of natural heritage, should be reinforced, and promoted by the OIRMP as far as possible.
Scotland's Biodiversity It's in Your Hands (2004), aims to 'conserve biodiversity for the health, enjoyment and wellbeing of the people of Scotland, now and in the future' and sets out a vision for 2030 as well as objectives and desired outcomes.	
Biodiversity strategy to 2045: tackling the nature emergency: sets out the clear ambition for Scotland to be Nature Positive by 2030, and to have restored and regenerated biodiversity across the country by 2045.	
The overarching aim of the **Great Britain Invasive and Non-Native Strategy, (2015)** is to minimise the risk posed by and reduce the negative impacts of INNS in Britain. It follows a hierarchical approach stressing prevention, followed by early detection and rapid response and finally long-term management and control. It aims to get people to work better together and improve coordination and cooperation on issues at a European and international level.	The OIRMP should include policies to address the threat of invasive non-native species.
Managing Invasive Species in Scotland's Water Environment: A Supplementary Plan to the River Basin Management Plans. (SEPA, 2013) describes the roles of organisations and partners involved in risk assessment, monitoring, classification, data	

collection, and prevention and control mechanisms. Since these roles and responsibilities are shared across a number of organisations, both north and south of the border, it also aims to form a basis for cross-border discussions and partnership working with counterpart organisations in England. Most importantly, the OIRMP identifies resourcing pressures and proposes key actions to address these in order to ensure that the WFD objectives are met in future river basin planning cycles.	
Scapa Flow Ballast Water Management Policy (OIC, 2017) seeks to minimize the potential for pollution resulting from oil, chemical, heavy metals and transfer of non-native aquatic organisms and pathogens which may be contained within ships ballast water and associated sediments. The policy applies to all vessels over 400 gross tonnage within or using Scapa Flow Harbour Area. The discharge of a ship's ballast water whilst within Scapa Flow as defined by the harbour limits is prohibited unless in accordance with the policy.	
WATER	
The **Water Framework Directive 2000/60/EC** provides an overarching strategy for the aquatic environment, including a requirement for EU Member States to ensure that water bodies achieve 'good ecological status' by 2015. The **Water Environment and Water Services (Scotland) Act 2003 (WEWS) Act** transposes the Water Framework Directive into the Scottish context. Aims to protect the water environment including marine waters. The **Water Environment (Controlled Activities) (Scotland) Regulations 2005** sets out the process by which activities which have the potential to affect the water are regulated.	Planning authorities have a duty under the WEWS Act to protect and improve Scotland's water environment. The OIRMP should include policies which protect and, where appropriate, improve the water environment. These policies should support the aims and objectives of the Water Framework Directive and the WEWS Act by preventing adverse impacts on the water environment.
River Basin Management Plans were prepared under the Water Framework Directive and the WEWS Act and set specific objectives for the protection and improvement of	The policies of the OIRMP should support River Basin Management

water resources within each river basin. Orkney lies within the area covered by the **Scotland River Basin Management Plan (2009).**	Planning aims and objectives by ensuring that adverse impacts on the water environment are avoided or appropriately mitigated. They should also contribute towards improving the ecological status of water bodies in and around Orkney.
The Water Environment (Shellfish Water Protected Areas: Designation) (Scotland) Order 2013) Regulations Identifies waters as 'shellfish water protected areas'.	The OIRMP should afford an appropriate level of protection to areas designated as shellfish waters.
SOIL, GEOLOGY AND COASTAL PROCESSES	
The **Scottish Soil Framework** provides an overarching policy framework for the protection of soils in Scotland, in line with the European Directive. Includes coastal areas.	The OIRMP should have regard to developments which may have the potential to impact on coastal processes.
The Scottish Government's **Dynamic Coast Project** undertook a wide range of analysis, from coastal change due to sea level rise, to the social disadvantage of the population exposed to coastal erosion. A guidance document produced by NatureScot, **Looking Ahead: Planning for Coastal Change (2019)** has been prepared in partnership and promotes the use of coastal change information to plan for development and infrastructure around the coast.	The predicted effects of climate change include rising sea levels which in turn increase the risk of coastal erosion. The OIRMP should be informed by the findings of the Dynamic Coast project and the NatureScot guidance
Scotland's Geodiversity Charter 2018-2023 encourages the promotion and management of Scotland's geodiversity and better integration of geodiversity into policy and guidance, consistent with the country's economic, social, cultural and	The OIRMP should: Identify all national and local geological and geomorphological designations

environmental needs. The Charter seeks to help protect this aspect of our natural heritage and deliver more sustainable management of Scotland's natural resources.	within the natural heritage policy, distinguishing clearly between national sites and sites of more local importance. It should provide for the conservation of geodiversity within and outwith designated areas by linking to the OLDP policy.
LANDSCAPE / SEASCAPE	
The policies of the **Council of Europe, European Landscape Convention (2000) (The Florence Convention)** aim to not only safeguard protected areas, but to recognise and conserve wider landscapes. These may not be formally designated but make an important contribution to the quality of environment.	Landscapes and the natural heritage are sensitive to inappropriately designed and/or sited development. The OIRMP should address the potential effects of development on landscapes and seascapes, including the cumulative effect of incremental change.
The overarching aim of **NatureScot Landscape Policy Framework: Policy Statement No. 05/01** is: "*To safeguard and enhance the distinct identity, the diverse character and the special qualities of Scotland's landscapes as a whole, so as to ensure tomorrow's landscapes*	

contribute positively to people's environment and are at least as attractive and valued as they are today." These principles are based on four propositions: □ Scotland's landscapes are a shared responsibility. □ All of Scotland's landscapes deserve attention. □ Scotland's landscapes will continue to change. □ Scotland's landscapes deserve greater care. The Landscape Policy Framework is currently being revised following publication of the NatureScot and HES joint Landscape Position Statement (2019).	The OIRMP should seek to protect and where appropriate enhance all types of landscape character areas, and support development that is sensitive to and does not harm the quality and distinctiveness of Orkney's landscapes and seascapes.
The shared vision expressed in the **NatureScot and HES Landscape Position Statement (2019)** is that "*All Scotland's landscapes are vibrant and resilient. They realise their potential to inspire and benefit everyone. They are positively managed as a vital asset in tackling climate change. They continue to provide a strong sense of place and identity, connecting the past with the present and people with nature, and fostering wellbeing and prosperity."* To deliver the vision the following strategic action is needed: • Talking about landscape and its range of benefits • Engaging more local communities and other stakeholders in helping shape future landscape change • Strengthening the role of landscape approaches in the management and design of built development and other land uses.	The OIRMP should pay due regard to the information and guidance provided in both the LCA and the CCA.
Orkney Landscape Character Assessment Land Use Consultants (1998) Scottish Natural Heritage Review No. 100 Provides information on the formation and shaping of Orkney's landscape and its characteristic features.	

Examines the nature of recent changes in the landscape and assesses future trends and potential threats to landscape character. Develops general guidelines for planning and management throughout Orkney. Classifies the landscape by character type and provides island character area descriptions for inhabited islands. Identifies both general and area specific sensitivities or requirements for planning and management.	
The principal aim of the **Coastal Character Assessment: Orkney and North Caithness Prepared** by LUC for NatureScot (2016) was to undertake a coastal character assessment of Orkney and the North Caithness Coast, to include classification and description of both regional and local coastal character areas. Coastal character assessment (CCA) is designed to complement and add to landscape character assessment (LCA). An existing series of LCAs, carried out in the 1990s and currently under review, covers the whole of Scotland. These LCAs cover coastal landscapes, but the attention given to the coast, including marine influences, varies considerably. The CCA approach seeks to ensure a consistent treatment of Scotland's coastal landscapes.	
The special qualities of the National Scenic Areas. NatureScot Commissioned Report No. 374 (2010). Special qualities are defined as 'the characteristics that, individually or combined, give rise to an area's outstanding scenery.' These special qualities underpin the reason for designating an area as a National Scenic Area (NSA). Defining the special qualities of a particular NSA clarifies what needs to be safeguarded to maintain its outstanding scenery and provides a firm basis for future consultation and policy development, particularly in relation to managing development and land use change within NSAs. This should help ensure that we pass on the appeal and value of our finest landscapes to future generations.	The OIRMP should ensure that development proposals should not impact significantly on the special qualities of the Hoy and West Mainland NSA,
Orkney Landscape Capacity for Aquaculture: Scapa Flow and Wide Firth. NatureScot Commissioned Report 466 (2011) aims to assess both the strategic and	The OIRMP policy on Aquaculture should pay due regard to the

local level landscape capacity for the siting of finfish and shellfish farms within the Scapa Flow and Wide Firth waters of Orkney. The capacity assessment should provide a basis for assessing future individual lease applications and determining their suitability for location within a specific seascape.	Landscape Capacity for Aquaculture document.
CULTURAL HERITAGE	
Landscape and the Historic Environment – A Common Statement (Strategic Historic Environment Forum). The Strategic Historic Environment Forum's vision is for the historic dimension of landscape to be fully acknowledged and valued. It is at the core of a shared and unifying approach to managing change in our landscape in ways which maximise public benefit for present and future generations.	The OIRMP should pay due regard to the effect of development proposals on the historic dimension of landscape.
Historic Environment Scotland Act 2014. **Historic Environment Policy for Scotland (2019).** **Our Place in Time: The Historic Environment Strategy for Scotland (2014).** **PAN 2/2011 Planning and Archaeology.** **Historic Environment Scotland Corporate Plan 2019 onwards.** **Managing Change in the Historic Environment Guidance Notes.** These national historic environment policies aim to identify and protect historic buildings and sites from inappropriate development and damage. Policies extend beyond specific designated sites to reflect the value of undesignated / unknown sites, wider townscapes, the setting of monuments and historic buildings, and wider cultural landscapes.	The OIRMP should include policy for the protection of Orkney's cultural heritage features, including its archaeological heritage.

UNESCO Convention on Protection of Underwater Cultural Heritage (2001) aims to ensure and strengthen the protection of Underwater Cultural Heritage (UCH) over 100 years old, promoting in situ protection and preventing commercial exploitation. Responsible non-intrusive access to observe or document in situ UCH is encouraged to create public awareness, appreciation and protection of the heritage.	The OIRMP should consider how best to preserve and promote UCH sites in the region.
International Council on Monuments and Sites (ICOMOS) Charter on the Protection and Management of Underwater Cultural Heritage.	The OIRMP should consider the protection of underwater cultural heritage.
The **Protection of Wrecks Act (1973)** secures the protection of wrecks in territorial waters and the sites of such wrecks, from interference by unauthorised persons; and for connected purposes.	The OIRMP should consider the protection of underwater wrecks.
Marine Protected Areas in the Seas around Scotland: Guidelines on the selection, designation and management of Historic Marine Protected Areas (HMPAs). This guidance note sets out how Historic Environment Scotland will work with the Scottish Government to apply powers under the Marine (Scotland) Act 2010 to select, designate and manage HMPAs, a designation to help celebrate and protect evidence of outstanding marine cultural heritage that survives in the coasts and seas around Scotland.	The OIRMP should include policy for the protection of HMPAs in the region.
The **Heart of Neolithic Orkney World Heritage Site Management Plan 2014 – 2019** has been developed by various partners and provides a framework document for how the Site will be managed over the next five years by identifying a series of key issues and devising specific objectives or actions to address these issues. This plan is currently under review and emerging changes to its vision, objectives and actions will be taken into account where possible.	The Neolithic village of Skara Brae is one of the monuments of the WHS and occupies a coastal location at Bay of Skaill.
The Heart of Neolithic Orkney World Heritage Site Setting Project Atkins. Ltd 2008 was commissioned by Historic Scotland to provide an objective description of the setting of the Heart of Neolithic Orkney World Heritage Site and to provide recommendations on	

approaches to defining any future Buffer Zone and the nature of policies that may apply to that Buffer Zone. Supports the HONO Management Plan and the Orkney Local Development Plan.	Coastal erosion is a significant issue at this site. The policies of the OIRMP should take full account of the effects of marine and coastal development proposals on Skara Brae and its setting.
Climate Risk Assessment for the Heart of Neolithic Orkney World Heritage Site describes outcomes from a workshop in Orkney, Scotland (April 2019) to apply the Climate Vulnerability Index (CVI). The CVI is a new methodology developed to rapidly assess climate impacts – both to Outstanding Universal Value (OUV) and the associated 'community' (local, domestic and international) – for all types of World Heritage properties (natural, cultural or mixed). In its first application to a cultural World Heritage property, the CVI process was undertaken for the 'Heart of Neolithic Orkney' (HONO).	
HUMAN HEALTH AND POPULATION	
Community Empowerment Act (Scotland) 2015. Community Planning Partnerships, which involve a number of public bodies, have a duty to make plans for local areas which meet the needs and ambitions of local people. Community planning priorities stress the important role played by communities in shaping and making local decisions.	
The Orkney Community Plan 2023 -2030 incorporating Orkney's Local Outcomes Improvement Plan allows for providers of public services to work together with the community to plan and deliver services that will improve long term outcomes for individuals, families, and communities where inequality persists. Its strategic priorities are: • Cost of Living. • Sustainable Development. • Local Equality	The OIRMP should be consistent with the Council Plan and Community Planning priorities.

The Council Plan 2023-2028 The Council is a leading member of The Orkney Partnership, and the Council Plan supports the strategic priorities of the Community Plan. The Council Plan focuses on growing Orkney's economy, strengthening its communities and developing local infrastructure over the next five years.	
The **Land Reform (Scotland) Act 2003, as amended** establishes rights of responsible access to most land and inland water for informal recreation and includes requirement for local authorities to draw up a plan for a system of paths (core paths) to give public reasonable access throughout their area.	The OIRMP should have a policy on tourism, sport, recreation, and leisure.
The **Orkney Outdoor Access Strategy (2017)** was first published in 2006 and was reviewed and updated in 2016 The strategy provides a framework to guide the development and management of outdoor access throughout the islands.	
The **Orkney Core Paths Plan (2018)** identifies a series of paths to promote outdoor access across Orkney and sets out the right of responsible access in Scotland. It aims to promoting more widespread and functional walking, cycling and riding and thereby support improved levels of physical activity.	
The Islands (Scotland) Act (2018) is legislation with provision to 'island-proof' decision-making across the public sector that will ensure the interests of islanders are reflected in future legislation and policy from the very outset.	The OIRMP will be screened for Island Communities Impact Assessment (ICIA).

Improving Health in Scotland – the Challenge (2003). **Creating Places – A policy statement on architecture and place for Scotland.** **Good Places Better Health (2008).** **Equally Well: Implementation Plan (2008) and 2010 Review Recommendations.** National policy outlines the need to seek to improve health and quality of life. There is a growing recognition of an additional need to shape places which are nurturing of positive health, wellbeing and resilience.	The OIRMP may include a policy on Amenity, Well-being and Quality of Life of coastal communities and pay due regard to the six Scottish government place principles.
The national tourism strategy **Scotland Outlook 2030: Responsible Tourism for a Sustainable Future** aims to make Scotland "the world leader in 21st century tourism which will see "communities embrace visitors and the stories of our destinations and world-famous assets are brought to life by Scotland's people; where strong partnerships are in play to protect and enhance our environment whilst growing social, cultural and economic wealth." This will be achieved by focusing on four key priorities: our passionate people, our thriving places, our diverse businesses, our memorable experiences.	The OIRMP should consider a Tourism, recreation, sport and leisure policy that promotes activities that have minimal impact on the environment.
Working in concert with the national tourism strategy, **A Visitor Management Strategy for Scotland (2021)** seeks "to create a dynamic, forward looking and inclusive approach to Visitor Management for Scotland." Its mission is: "through strategic leadership and by harnessing the collective skills of our partners in the private, public and third sectors we will deliver a world class approach to Visitor Management that protects our environment, respects our communities, enhances the experience of our visitors and supports a thriving tourism sector."	
The **Orkney Tourism Strategy 2020-2025: A strategy for sustainable tourism** seeks to establish Orkney as "a world-class sustainable destination enriching the lives of its people and visitors," pursuing the following objectives: (1) increasing economic prosperity of the islands; (2) extending the visitor season and increasing visitor spend; (3) sustainably managing visitor numbers to protect the quality of experience, the key	

sites and routes to the sites, for visitors and local residents; (4) enhancing the islands' natural and cultural heritage; (5) conserving and people, our visitors, our businesses and our environment at the heart of tourism objectives and their delivery. These strategies reflect the changing world we live in, our new mindset and approach to how we live and work and represents a new approach, putting our communities, our dispersing the benefits of tourism throughout the whole of Orkney	
MATERIAL ASSETS – INFRASTRUCTURE	
A National Mission with Local Impact. Draft Infrastructure Investment Plan for Scotland 2021-2022 to 2025-2026 The Scottish Government has taken forward the recommendations from the Infrastructure Commission on the key challenges and opportunities for infrastructure in Scotland. The emerging National Infrastructure Investment Plan sets out a new approach to investment decision making and identifies various priorities around promoting a whole-life approach to asset management, with a particular focus on supporting net-zero objectives driven by Climate Change legislation. The draft Infrastructure Investment Plan will focus on three core strategic themes for guiding investment decisions in Scotland: • Enabling the transition to net zero. emissions and environmental sustainability • Driving inclusive growth. • Building resilient and sustainable places.	The OIRMP should have policies that support sustainable development and use.
The **Orkney Harbours Masterplan Phase 1** is an ambitious blueprint that provides a framework for the first phase of future port and harbour development in Orkney.	The OIRMP should pay due regard to the Masterplan.

MATERIAL ASSETS - ENERGY	
The **Electricity Act (1989)** provides the legislative background within which the energy sector functions and sets out the framework within which applications for marine energy development should seek consent. Under Section 36 of the Electricity Act 1989 (Requirements for Consent of Offshore Generating Stations) (Scotland) Order 2002, consent is required for electricity generation schemes with a capacity over 1MW.	The OIRMP should ensure compliance with the Electricity Act.
The Future of Energy in Scotland: Scottish Energy Strategy (2017) sets two targets for the Scottish energy system by 2030: • The equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied by renewable sources. • An increase by 30% in the productivity of energy use across the Scottish economy. Climate Change Plan: third report on proposals and policies 2018-2032 (RPP3) presented proposals and policies to meet Scotland's annual emissions reduction targets to 2032 through a sectoral approach. The seven sectors are: electricity; buildings; transport; industry; waste; land use, land use change and forestry (LULUCF); and agriculture.	The OIRMP should include policy for renewable energy development and should seek to ensure an area's full potential for electricity and heat from renewable sources is achieved, in line with national climate change targets, giving due regard to relevant environmental, community and cumulative impact considerations. It should include policy for types of development that are compatible with delivering a green recovery from the COVID-19 pandemic.
Securing a green recovery on a path to net zero: climate change plan 2018-2032 – an update (Scottish Government) sets new targets to end Scotland's contribution to climate change by 2045, with commitments to reduce emissions by 75% by 2030 and to net zero by 2045. It sets out the Scottish Government's approach to delivering a green recovery from the COVID-19 pandemic.	
Sectoral Marine Plan for Offshore Wind Energy sets out the sites to be offered via the ScotWind offshore wind leasing round – and a finalised Offshore Wind Policy statement, which sets out the Scottish Government's ambitions for the future of offshore wind in Scotland.	The OIRMP should take account of areas identified for the development of wind, wave and tidal energy generation.

and **Draft Sectoral Marine Plans for Wind Wave and Tidal - 2013**	
National Renewables Infrastructure Plan (N-RIP and N-RIP2) aims to assist the development of a globally competitive offshore renewables industry in Scotland through the creation of infrastructure to support largescale manufacturing, assembly, deployment and operations, as well as maintenance of offshore renewable energy devices.	The OIRMP should pay due regard to N-RIP and N-RIP2 when guiding the sustainable development of the marine environment.
MATERIAL ASSETS - WASTE	
Scotland's Zero Waste Plan (2010) seeks to achieve a zero waste Scotland, where we make the most efficient use of resources by minimising Scotland's demand on primary resources, and maximising the reuse, recycling and recovery of resources instead of treating them as waste.	Consider the role of the OIRMP in waste prevention and management.
Scotland: Making Things Last – a Circular Economy Strategy (2016) was developed to move the country towards a more circular economy, aligning its economic and environmental objectives. It aims to bring together business sectors and individuals to jointly work towards that goal.	
Orkney & Shetland Area Waste Plan (2003) was developed through the joint efforts of Orkney and Shetland Waste Strategy Area Groups (WSAG) to provide a strategic framework for improved waste management across the two local authority areas. The key aim of the OIRMP is to: "Contribute to the sustainable development of the Orkney and Shetland Area by developing waste management systems that will control waste generation, reduce the environmental impacts of waste production, improve resource efficiency, stimulate investment and maximise the economic opportunities arising from waste**."**	

The **Marine Litter Strategy for Scotland (2022)** aims to develop current and future measures to reduce litter entering the marine and coastal environment.	The OIRMP should have a policy on marine litter and waste.
MATERIAL ASSETS - AQUACULTURE	
EC Directive (2006/88/EC) Concerning the Placing on the Market of Aquaculture Animals and Products covers the placing on the market of community aquaculture animals and aquaculture products either for breeding purposes or human consumption which must satisfy general health requirements, regarding transference of diseases, introduction of exotic diseases, processing / handling and transport/storage of aquaculture animals.	The OIRMP should how consider how it can support the sustainable development of aquaculture.
The **Aquaculture and Fisheries (Scotland) Act (2013)** seeks to ensure that farmed and wild fisheries - and their interactions with each other - continue to be managed effectively, maximising their combined contribution to supporting sustainable economic growth with due regard to the wider marine environment.	The OIRMP should promote aquaculture which is appropriately sited and does not cause adverse impact on wild fish.
A Fresh Start, the renewed Strategic Framework for Scottish Aquaculture' was launched at a Scottish Parliamentary debate on 21 May 2009. It is based on six themes: □ healthier fish and shellfish □ improved systems for licensing aquaculture developments □ improved containment □ better marketing and improved image □ improved access to finance □ Shellfish Forum The framework sets out plans for a re-focused Ministerial Group on Aquaculture (MGA) to oversee the work of six working groups working on critical themes for the industry.	The OIRMP should promote a sustainable aquaculture industry with good stewardship.

Aquaculture Growth to 2030 – a Strategic Plan for farming Scotland's seas notes the priorities for the sector include: • industry leadership and ambition • enabling and proportionate regulation • accelerating innovation • skills development • finance • infrastructure	The OIRMP should consider how it can provide planning certainty for aquaculture by providing a clear development steer.
Delivering Planning Reform for Aquaculture 2 (2016) sets out how the aquaculture industry, statutory consultees, and the planning authorities continue to work together to refine the plannning system for aquaculture. The benefits as it relates to marine planning include up-to-date development plans which provide the industry and communities with greater certainty – particularly for new and previously unused sites	
Locational Guidelines for the Authorisation of Marine Fish Farms in Scottish waters. Scottish Government (updated quarterly) provide guidance on the factors to be taken into account when considering proposals for new marine fish farms or modifications to existing operations.	The OIRMP should considering carrying capacity constraint when guiding new or expanding aquaculture developments.
The Town and Country Planning (Marine Fish Farming) (Scotland) Order, (2007) applies to marine fish farms which will now be subject to statutory planning controls, for the preparation of a development plan in the area for marine fish farms and also for the purposes of preparing a National Park Plan. It designates marine planning zones for relevant planning authorities for marine fish farming and introduces transitional arrangements where an application for a Works License has not been determined before planning controls have come into force.	The OIRMP should consider how it can support the sustainable development of aquaculture in Shetland waters
Circular SEDD 1/2007: Planning Controls for marine Fish Farming explains and gives guidance to planning officers, developers, communities and regulators on the provisions contained in the following Acts, Regulations and Order which pertain specifically to marine fish farming and which come into force on the relevant dates around April 2007.	The OIRMP should consider how it can support sustainable aquaculture and promote understanding of relevant legislation.

• Water Environment and Water Services (Scotland) Act 2003 • Planning etc. (Scotland) Act 2006 • Town and Country Planning (Marine Fish Farming) (Scotland) Order 2007 • Town and Country Planning (Prescribed Date) (Scotland) Regulations 2012 • Town and Country Planning (Marine Fish Farming) (Scotland) Regulations 2007 (amended 2012)	
The **Scottish Salmon Producers Organisation Code of Good Practice** is the entry point for membership of Scottish Salmon Producers' Organisation. The CoGP was reviewed and revised by a CoGP Working Group. It sets out the standards that farmers must demonstrate. Compliance with the Code is independently audited	The OIRMP should consider how it can support and promote compliance to the Code of Good practice.
The Association of Scottish Shellfish Growers Code of Good Practice targets the overall activities of shellfish growers with the aim that growers can produce a superior quality product, maintain a high standard of shellfish health and meet or exceed hygiene regulations, whilst minimising their impact of their activities on the natural environment and ensuring that they are managed in a manner that is in harmony with the needs of other marine and shoreline users.	
Statutory Instrument 1998 No. 994. The Food Safety (Fishery Products and Live Shellfish) (Hygiene) Regulations (1998) designates areas which are suitable or prohibited for the production or collection of live shellfish. It also covers the transportation and storage of live shellfish after dispatch. In the UK, the Shellfish Hygiene Directive and relevant Regulations are the responsibility of the Food Standards Agency (FSA). This includes responsibility for the designation of harvesting areas, setting standards and reporting the classification of harvesting areas according to the presence of faecal indicator organisms	The OIRMP should consider how it can support high standards of water quality to promote the safe production of shellfish.
MATERIAL ASSETS: FISHERIES	
The **Inshore Fishing (Scotland) Act 1984 (as amended)** regulates fishing in inshore waters by way of prohibiting combinations of the following: • all fishing for sea fish	The OIRMP provides spatial information on important fishing

• fishing for a specified description of sea fish • fishing by a specified method • fishing from a specified description of fishing boat • fishing from or by means of any vehicle, or any vehicle of a specific description • fishing by means of a specified description of equipment.	grounds as well as policies to safeguard fishing opportunities.
The **Sea Fisheries (Shellfish) Act, (1967) (as amended)** has been amended many times. From the mid-nineties regulating orders under this Act were considered as a means of enabling more local, area management of inshore shellfish fisheries. Several Orders also under this Act have been used specifically for the localised cultivation of shellfish.	The OIRMP provides spatial information on important fishing grounds as well as policies to safeguard fishing opportunities.
The **Scottish Inshore Fisheries Strategy (2015)** Sets out a vision to support the development of a more sustainable, profitable and well-managed inshore fisheries sector in Scotland. The 2015 inshore strategy will therefore focus on: • improving the evidence base on which fisheries management decisions are made • streamlining fisheries governance, and promoting stakeholder participation • embedding inshore fisheries management into wider marine planning.	
The **Sea Fish (Conservation) Act, (1967) (as amended)** relates to the licensing of fishing boats and places restrictions on time spent at sea. The Act also regulates size limits for fish, net size and gear type	The OIRMP supports the local management of sustainable fisheries
MATERIAL ASSETS: SHIPPING, PORTS AND TRANSPORT	
The **International Maritime Organisation (IMO)** is a specialised UN agency with responsibility for the safety of international shipping and the prevention of pollution from ships. Its protocols include: • The international convention on the control of harmful anti-fouling systems on ships	The IMO Conventions must be considered by the OIRMP to ensure it is compliant with national legislation, and in relation to management issues, development opportunities and oil spill contingency planning.

• The international convention for the control and management of ships ballast water and sediments • The convention of the prevention of pollution from ships (MARPOL 73/78).	
The Safety of Life at Sea (SOLAS) Convention (1974) as amended includes provisions for navigation and pollution prevention. It also includes the International Ship and Port facility Security Code (ISPS), the Convention on the Control of Harmful Anti-Fouling Systems on Ships and the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS) (1972).	The OIRMP must be compliant with SOLAS requirements relating to navigation.
Department of Transport. National Policy Statement for Ports. 2012 is part of the system established under the 2008 Act to deal with nationally significant infrastructure proposals. It is a National Policy Statement (NPS) and provides the framework for decisions on proposals for new port development. While the NPS covers England and Wales, statistical material, including forecasts of port freight traffic, covers Scotland and Northern Ireland, as well as England and Wales, and helps to inform ports policy there	Consider how the OIRMP can support an integrated transport policy for the Shetland Islands.
The National Transport Strategy 2 (2020) sets out an ambitious vision for Scotland's transport system for the next 20 years. The vision is underpinned by four priorities: Reduces Inequalities; Takes Climate Action; Helps Deliver Inclusive Economic Growth; and Improves our Health and Wellbeing.	The OIRMP should be consistent with both the national and local transport strategies and should consider policies that promote the use of 'greener' transport, e.g., hydrogen ferries. The Draft Orkney Local Transport Strategy 2024-2044 is expected to be adopted in 2024.
The Orkney Local Transport Strategy, OIC, (2007-2010) seeks to "promote, encourage and deliver an effective and efficient transportation network that supports the economic vitality, community well-being and environmental integrity of all of Orkney", through focusing on six objectives: • Ensuring that travel opportunities meet the needs of the whole community. • Integrating various means of travel around Orkney. • Promoting accessibility for all. • Increasing levels of active travel. • Making travel safer. Reducing traffic in sensitive areas.	

PLANNING	
Under the **Town and Country Planning (Scotland) Act (1997**) permission is required from the local authority for coastal developments (piers, jetties, slipways, marinas etc,) that are located above the level of Mean Low Water Springs (MLWS), and also for fish farm developments.	The policies of the OIRMP should align with those of the Orkney Local Development Plan.
The Planning Etc, (Scotland) Act (2006) establishes the NPF, a strategy for Scotland's spatial development with the objective of contributing to sustainable development. It includes management development and planning permission for marine fish farms.	Consider how the OIRMP can guide sustainable development.
Planning Circular: The relationship between the statutory land use planning system and marine planning and licensing (2013) explores the linkages between the marine and terrestrial planning systems and provides guidance about joint working	The OIRMP should integrate land and marine planning.
National Planning framework 4 National Planning Framework 4 (NPF4) provides a long-term spatial plan for Scotland that sets out where development and infrastructure is needed to support sustainable and inclusive growth. It guides spatial development, sets out national policies, designates national developments and reflects regional spatial priorities.	The OIRMP development process has considered NPF4 from the outset to ensure effective integration.
Orkney's Regional Spatial Strategy (ORSS) (indicative at this stage) Following the publication of NPF4 in 2022 and the adoption of statutory guidance by the Scottish Government, an Orkney's Regional Spatial Strategy (ORSS) will be prepared. The ORSS will identify the strategic priorities for development planning in Orkney over the next 25 years and beyond to 2050. The key strategic developments necessary to	The OIRMP is being developed alongside the indicative ORSS to ensure effective integration.

deliver these priorities will be identified alongside the outcomes to which they will contribute. The Regional Spatial Strategy will not be part of the "development plan" however the preparation of the NPF and Local Development Plans is to "have regard to" an adopted Regional Spatial Strategy.	
The **Orkney Local Development Plan (2017)** seeks to ensure that effective planning policies are in place to strengthen and support Orkney's communities by enabling those developments which will have a positive and sustainable socio-economic impact, and utilise locally-available resources, whilst striving to preserve and enhance the rich natural and cultural heritage assets upon which Orkney's economy and society depends.	The OIRMP should be consistent with the policies and proposals of the Orkney LDP.
Sustainable Development	
A key principle of the **United Nations Conference on Environment and Development (UNCED, Earth Summit), the 'Rio Declaration' (1992)** produced conventions dealing with climate change, biodiversity, forestry and recommended a list of development practices called Agenda 21. It gave the concept of sustainable development to be combined economic growth with ecological responsibility.	Ensuring that future development is sustainable should be a key principle of the OIRMP.
The **World Summit on Sustainable Development (WSSD) (2002)** sought to focus the world's attention and direct action toward meeting difficult challenges, including improving people's lives and conserving our natural resources in a world that is growing in population, with ever-increasing demands for food, water, shelter, sanitation, energy, health services and economic security.	
Securing the Future – UK Government sustainable development strategy (2005) sets out five principles for sustainable development and shared priorities agreed across the UK, including the Devolved Administrations: • living within environmental limits, • ensuring a strong, healthy, and just society, • using sound science responsibly,	

• promoting good governance • achieving a sustainable economy.	
Choosing Our Future: Scotland's Sustainable Development Strategy (2005) set out action which would be taken in Scotland to turn the shared priorities of the UK framework for sustainable development into action.	
Thematic Strategy on the Protection and Conservation of the Marine Environment (2002) Scottish Government provides strategic direction for the protection and conservation of the marine environment.	The OIRMP should consider the strategy in the context of protection of the water environment.
Seas the Opportunity: A Strategy for the Long-term Sustainability of Scotland's Coasts and Seas. Scottish Government (2005) is founded on the same five sustainable development guiding principles as the Securing the Future – UK Government sustainable development strategy (2005). It specifically states that these will be delivered through developing the concept of Marine Spatial Planning.	The OIRMP should adopt the guiding principles of the Strategy.
In September 2015, the 193 countries of the United Nations General Assembly, including the United Kingdom, adopted the **2030 Agenda for Sustainable Development**, which included **17 Sustainable Development Goals (SDGs)** focused on the three key dimensions of sustainability: economic prosperity, social equity and the environment. The Scottish Government signed up to deliver the UNSDGs in 2015.	Local government has been identified as being best-placed to link the global goals with local communities. The key goals that can be supported through coastal and marine planning should be identified to consider alignment with regional marine planning objectives and policies.
Europe 2020 (2010) is a European strategy for smart, sustainable and inclusive growth which sought to enable Europe to emerge stronger from the financial crisis of 2008. The Commission proposed five measurable EU targets for 2020 that would steer the process and be translated into national targets: for employment; for research and innovation; for climate change and energy; for education; and for combating poverty.	Ensuring that future development is sustainable should be a key principle of the OIRMP.

The **Environment Strategy for Scotland: vision and outcomes. (2020)** creates an overarching framework for Scotland's existing environmental strategies and plans, including the Climate Change Plan. These will be reviewed over time, to reflect international targets and other policy developments. The Strategy will sit alongside existing high-level Scottish Government policy frameworks, including Scotland's Economic Strategy, the Fairer Scotland Action Plan, the National Transport Strategy and the NPF.	The OIRMP should contribute to the vision of the Environment Strategy for Scotland.
UK Withdrawal from the European Union (Continuity) (Scotland) Bill (2020) aims to make sure that Scottish law can continue to align with EU law after 31 December 2020. It sets up a new organisation called Environmental Standards Scotland which will be responsible for making sure that: • public bodies in Scotland apply environmental law, and • environmental law in Scotland is effective in protecting the environment and our wellbeing.	The OIRMP should be consistent with the requirements of the Continuity Bill.
The Scottish Government has developed a **Blue Economy Action Plan** , a **Blue Economy Vision, and Delivering Scotland's Blue economy approach** to have a programme of collaborative projects across the public sector, Scotland's science base, marine industries and the marine environmental sector. The OIRMP sets out clear actions to strengthen the resilience of Scotland's marine industries ranging from renewable energy to fisheries (and the marine science, research and innovation which underpin them) and to support coastal communities, recognising the vital importance to our marine economy of the abundant natural capital in Scotland's seas and rivers.	The OIRMP pays due regard to the aims and objectives of the Blue Economy Action Plan and Blue Economy Vision.
CROSS SECTORAL PPS	
The **Aarhus Convention (1998)** establishes a number of rights of members of the public (individuals and their associations) regarding the environment: access to environmental information; public participation in environmental decision making; and	The OIRMP should consider how best to ensure inclusivity and transparency

access to justice. The convention is not only an environmental agreement; it is also a convention about government accountability, transparency and responsiveness.	in the development and dissemination of the OIRMP.
The **Strategic Environmental Assessment (SEA) Directive 2001/42/EC** aims to ensure that environmental consequences of certain plans, programmes and policies are identified and assessed during their preparation and before their adoption. The process contributes to more transparent planning by involving the public and by integrating environmental considerations, helping to achieve the goal of sustainable development.	The OIRMP is a type of plan which qualifies for strategic environmental assessment (SEA).
The **Environmental Assessment (Scotland) Act (2005)** transposes the SEA Directive into Scottish legislation. It requires the preparation of an environmental report and a period of public consultation. The environmental report and the result of the consultation exercise must be taken into account in decision making.	The OIRMP should be informed by the SEA and responses to public consultation on the Environmental Report.
The **Environmental Impact Assessment (EIA) Directive (85/337/EEC) amended (97/11/EC)** requires an Environmental Impact Assessment (EIA) and a public consultation document, an Environmental Statement (ES) to be submitted for certain projects likely to have a significant effect on the environment. The provisions of the EIA Directive have been transposed in part into the following Scottish legislation: • The **Town and Country Planning (Environmental Impact Assessment (Scotland) Regulations (2017)** • The **Electricity Works (Environmental Impact Assessment) (Scotland) Regulations (2017)** • The **Marine Works (Environmental Impact Assessment (Scotland) Regulations (2017)**	The OIRMP should consider how it can best provide baseline information to inform site selection for development and EIA. It should also consider how best it can inform an effective EIA using marine spatial planning.

Appendix B – Environmental Baseline Report

To enable the current state of environment features of Orkney to be assessed, a search has been carried out of a range of baseline data which are relevant to the SEA issues considered in this Environmental Report. A summary is produced in this section which provides a brief description of the key environmental characteristics of Orkney. This allows any existing problems to be identified and provides the benchmark against which the forecast and monitored levels of environmental effects will be evaluated. The following features of the environment are examined:

1. Climatic effects
2. Biodiversity, fauna and flora
3. Water
4. Coastal processes / Benthic sediments / Soils
5. Geology
6. Landscape
7. Cultural heritage
8. Population and human health
9. Material assets

This report provides a baseline under each of these features, together with the relevant Strategic Environmental Assessment objectives which have been identified as criteria against which to assess the possible environmental effects of the Orkney Islands Regional Marine Plan. Each topic will include a section on the background information, current status and the environmental issues linked to the policies and text in the OIRMP.

Baseline Overview of Orkney

Number of islands:	70+
Number of inhabited islands:	19
Total (land) area of the Orkney Islands:	990 km^2
Total length of coastline:	over 980 km
Dimensions: Approximately 85 km north to south and 37 km east to west	
Outlying Island with highest population:	Westray
Smallest permanently inhabited island:	Papa Stronsay
Longitude: (Kirkwall)	3° W
Latitude: (Kirkwall)	59°N
Population of Orkney[14]	22,400 (mid-year estimate 30 June 2020)

[14] General Register Office for Scotland

1 Climatic Factors

SEA objectives
Contribute to national targets to address the cause of climate change by reducing greenhouse gas emissions.
Support the transformational change to a low carbon economy, consistent with national objectives and targets.
Address vulnerability in the Orkney to the likely effects of climate change.

1.1 Background: The Enhanced Greenhouse Effect

Increasing atmospheric levels of certain gases are causing significant changes to global climates by reducing the rate of radiative heat loss and allowing temperatures around the world to rise. This is described as the enhanced greenhouse effect.

The United Nations Convention on Climate Change was established in 1992 as an international framework to agree strategies to reduce greenhouse gas emissions.

1.2 Current Status

A State of the Environment Report: Climate (2014) describes the changes in weather patterns experienced in Scotland over the last century and notes that observed recent climate trends over the period 1961-2011 show the mean annual temperature across Scotland has increased by 1.3 °C.

The Climate Change (Emissions Reductions Targets) (Scotland) Act 2019, which amends the Climate change (Scotland) Act 2009, sets targets to reduce Scotland's emissions of all greenhouse gases to net-zero by 2045 at the latest, with interim targets for reductions of at least 56% by 2020, 75% by 2030, and 90% by 2040.

Six gases are considered to contribute towards the greenhouse effect, and of these, carbon dioxide (CO_2) is the most abundant in the earth's atmosphere. CO_2 estimates are monitored on an annual basis and data supporting CO_2 emissions within the scope of Local Authorities are reported for each local authority area in the United Kingdom. The most recent emissions data for Orkney is set out in Table 1.1 below.

Table 1.1 Local authority CO_2 estimates for Orkney (2005 – 2019) [15]

Year	Industry	Commerce	Public sector	Domestic	Transport	LULUCF* net emissions	Total	Population (000s mid-year estimate)	Per capita emissions (t)
		Kt CO_2							
2005	64.7	19.2	9.7	77.5	29.0	155.3	355.3	20.1	17.7
2006	63.1	21.9	8.6	82.0	30.0	153.0	358.6	20.3	17.6
2007	66.7	23.4	8.6	80.1	30.6	150.8	360.2	20.6	17.5
2008	55.5	20.0	7.5	80.8	30.0	148.8	342.6	20.7	16.5
2009	53.7	17.7	6.1	73.3	29.5	146.8	327.2	20.9	15.6
2010	57.1	22.1	6.9	78.9	29.4	145.4	339.8	21.2	16.0
2011	55.5	19.0	7.1	70.9	28.7	144.0	325.3	21.4	15.2
2012	54.2	20.7	6.2	72.7	28.0	142.7	324.6	21.5	15.1
2013	54.0	20.0	5.6	67.1	28.5	141.5	316.7	21.6	14.7
2014	57.9	16.9	5.6	59.4	29.6	140.4	309.8	21.6	14.4
2015	53.4	14.7	4.1	54.6	30.7	139.4	296.8	21.7	13.7
2016	53.6	11.1	3.2	49.2	32.1	138.3	287.6	21.9	13.2
2017	53.6	9.7	2.9	45.3	32.6	137.4	281.4	22.0	12.8
2018	57.3	9.6	2.8	44.2	31.8	136.5	282.2	22.2	12.7
2019	57.0	8.9	2.6	42.0	31.1	135.6	277.2	22.3	12.4

***LULUCF = Land Use, Land Use Change and Forestry**

Table 1.1 indicates that, although there have been minor increases in some years, most notably in 2010, per capita emissions figures for Orkney over this period show an overall decrease from 17.7 to 12.4 tonnes.

[15] https://data.gov.uk/dataset/723C.243d-2f1a-4d27-8B.61-cdb93e5B.10ff/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2019

1.3 Environmental Issues: Likely Effects of Climate Change in Orkney

Recorded weather data confirms that temperatures have increased in the UK over recent decades, but not at the same rate in all regions. Information on climate trends for Scotland published by SNIFFER shows that between 1961 to 2004 annual average temperatures in the north of Scotland showed an upward trend. Correspondingly, the annual heating degree days (an indicator of how much heat energy households use and represents the energy needed to keep a building at a constant temperature) have significantly reduced by 9% over the same period and may reduce even further in the future; the possible reduction by the 2080s is 50% to 300% greater than that experienced so far[16].

Flooding risk due to sea level rise is likely to increase, which will put some existing vulnerable areas under greater stress. Coastal flooding can arise from a combination of factors including high tides, wind and wave exposure and storm surge. Such events are predicted to be further exacerbated by increases in sea level and storm conditions attributed to climate change. The upper range for the latest UK sea-level rise projections is higher than previous estimates, implying increased coastal-flood risk. The likelihood of compound effects from tidal flooding and extreme rainfall is increasing, which can greatly exacerbate flood impacts[17].

The Orkney Flood Risk Management Plan identifies that the main source of flooding in Orkney is from the coast, which accounts for approximately 92% of the annual average damage[18]. The Flood Risk Management Plan considers the County's priorities and actions to avoid and reduce the risk of flooding. There are eight Potentially Vulnerable Areas across Orkney; the flood risk management plan provides detail on how flood risk is managed and minimised in these areas. The eight vulnerable areas shown include all localities at risk from flooding, some from river flooding rather than coastal flooding.

As detailed in the State of the Environment Assessment (SoEA)[19], Orkney has significant potential for renewable energy development in wind, wave and tidal resources that can support climate change targets**.** The policies and proposals of the OIRMP should seek to support climate change mitigation and adaptation measures and support a transition to renewable energy sources.

[16] LEWIS PDF proof page (south-ayrshire.gov.uk)
[17] http://www.mccip.org.uk/impacts-report-cards/full-report-cards/2020/
[18] https://www.orkney.gov.uk/Service-Directory/F/local-flood-risk-management-plan.htm
[19] Orkney Islands Marine Region: SoEA

2 Biodiversity, Flora and Fauna

SEA objectives
Conserve protected sites and species.
Safeguard valuable habitat from loss and fragmentation through development.
Protect biodiversity
Maintain healthy ecosystems and work with the natural processes which provide important services to communities.

During 2020 OIC published its SoEA, a baseline assessment of the Orkney Islands Marine Region. The following paragraphs summarise Section 5 Biodiversity of the Assessment, which provides an overview of the marine biodiversity of Orkney.

2.1 Background: Designated Sites

Biodiversity encompasses the whole variety of life on Earth. It is important for our health and wellbeing, and for the ecosystem services that it provides. The Orkney Islands are particularly valued for their wildlife and several sites are designated for conservation.

- **European sites** were originally designated under the EU Habitats and Birds Directives. They continue to be protected under domestic law as European sites and represent the very best of Scotland's nature and are internationally important areas for threatened habitats and species. The network includes two types of protected area:
    - **Special Areas for Conservation (SAC)** are classified under the Habitats Directive for the protection of rare, endangered, or vulnerable natural habitats and species of plants or animals (other than birds). These are the 189 habitats listed in Annex 1 and the 788 species listed in Annex 11 of the Habitats Directive. There are six SACs in Orkney.
    - **Special Protection Areas** are classified under the Birds Directive and are areas which support rare, vulnerable, and regularly occurring migratory species which are listed in Annex 1 of the Birds Directive. SPAs are intended to safeguard the habitats of these species and to protect the birds from significant disturbance. There are 15 SPAs in Orkney, including two that are entirely marine.
- **Ramsar sites** are classified under the Convention on Wetlands of Significant Importance and are internationally important wetland sites protecting wildfowl habitat. Orkney has only one Ramsar site – the East Sanday coast.
- **Sites of Special Scientific Interest (SSSI)** and designated on account of their plants, animals, or habitats; their rocks or landforms; or a combination of such natural features. They form a network of the best examples of terrestrial natural

features throughout Scotland and support a wider network across Great Britain and the European Union. SSSIs are protected under the Nature Conservation (Scotland) Act 2004. There are 36 SSSIs in Orkney but many of these are also designated as SPAs or SACs.

- **Nature Conservation Marine Protected Areas (NCMPA)** are designated to protect a wide range of habitats, species, geology and undersea landforms in Scottish Waters. There are three NCMPAs in Orkney waters.

- **Local Nature Conservation Sites (LNCS)** have been identified by OIC in the Local Development Plan 2017. They are regarded as being worthy of protection for their ornithological, botanical or geological / geomorphological interest. Orkney has over 240 LNCS.

- **Local Nature Reserves** are places with special local natural interest, set up to protect nature and for people to enjoy and appreciate. Orkney has two LNRs - one at Mull Head in Deerness and another at Happy Valley in Stenness.

Table 2.1 which is presented as **Appendix B.1** to this baseline, provides a summary of Orkney's national and international sites, along with the reasons for their designation (qualifying features) and the current condition status of each qualifying feature.

The distribution and extent of these sites is illustrated in **Appendix D Orkney's Nationally and Internationally Designated Natural Heritage Sites.**

2.1.2 Locally identified sites

Outwith the statutorily designated sites, the Local Nature Conservation Sites are areas of land and water that are recognised as having high biodiversity value and therefore worthy of protection, albeit at a lower level than that afforded to national and international sites. They contain valuable natural habitats which support a wide range of Orkney's wildlife and include coastal and marine habitats such as intertidal mudflats, saline lagoons, coastal saltmarsh, coastal sand dunes and vegetated shingle. Further information on Orkney's LNCSs may be accessed online at https://www.arcgis.com/apps/MapJournal/index.html?appid=273d8d6359ae451cbe16f3a867297276

Protected Species

Orkney's marine and coastal environments host a number of species which are protected through specific legislation:

Eurasian otter and all cetacean species (whales, dolphins, and porpoises) are afforded a strict level of protection under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended in Scotland). They are listed in Schedule 2 of the Regulations, and commonly known as European Protected Species. Information on activities that constitute an offence against EPS may be accessed on the NatureScot website at https://www.nature.scot/professional-advice/protected-areas-and-

species/protected-species/legal-framework/habitats-directive-and-habitats-regulations/european-protected

Two species of seal are native to Orkney waters – the grey seal and the harbour seal. The main legislation that protects seals in Scottish waters is the Marine (Scotland) Act 2010. This Act also provides for Scottish Ministers to designate Seal Conservation Areas. Orkney is one of five Seal Conservation Areas in Scotland.

The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) also prohibit certain methods of catching or killing seals.

Under the Protection of Seals (Designation of Haul-Out Sites) (Scotland) Order certain coastal areas are designated as seal haulouts and grey seal pupping areas. Information on their locations may be accessed from Marine Scotland's NMP interactive map at https://marinescotland.atkinsgeospatial.com/nmpi/ .

Priority Marine Features

Priority marine features (PMFs) are habitats and species that are considered to be marine nature conservation priorities in Scottish waters. Orkney's PMFs include benthic habitats such as blue mussel beds and mudflats and species with low or limited mobility including Fan mussel and Ocean quahog as well as fully mobile species such as sea trout and sand eel. Information on the presence of certain PMFs in Orkney waters may be accessed from Marine Scotland's NMP interactive map at https://marinescotland.atkinsgeospatial.com/nmpi/ .

The full list of PMFs found in Orkney is included as **Appendix B.2: List of Priority Marine Features recorded within 12 nm of Orkney**

Many these habitats and species are vulnerable to the effects of human activities, including various types of development. Some of these interactions are described in the Feature Activity Sensitivity Tool (FeAST) is a web-based application which allows users to investigate the sensitivity of marine features and may be accessed at https://www.nature.scot/professional-advice/protected-areas-and-species/priority-marine-features-scotlands-seas/feature-activity-sensitivity-tool-feast

2.3 Environmental Issues

Continuing decline in biodiversity remains a key concern; including decline of seabird species, harbour seals. Climate change, abrasion, smothering, collision. entanglement and pollution are all pressures identified in the SoEA[20]. The policies and proposals of the OIRMP should seek to protect and improve the quality and overall status of biodiversity in and around Orkney, including, support for biodiversity enhancement.

[20] Orkney Islands Marine Region: SoEA

3. Water

SEA Objectives
Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.
Protect against developments which have potential to cause or exacerbate coastal erosion and flooding.

3.1 The water environment of Orkney

Orkney has a diverse freshwater and marine water environment. Its catchment areas provide water supplies for people, community services and industry in the islands and the marine environment supports both the shellfish fishing industry and aquaculture. Freshwater watercourses in Orkney generally include freshwater lochs and lochans, streams and drainage ditches, in addition considerable areas of the islands are described as Groundwater Dependent Terrestrial Ecosystems (GDTE) which are waterlogged with areas of standing water for much of the year these. GDTEs are wetlands which critically depend on groundwater flows and/or chemistries[21] and include dune slack, fen, wetland, peat bog, reedbed, saltmarsh, springs, flushes and seepages, swamp, wet grassland, wet heath, wet machair and wet woodland[22]. In the marine environment there are coastal waters and saline lagoons.

Foul water treatment

Scottish Water also has responsibility for waste-water and, in recent years has upgraded sewerage treatment facilities at a number of locations including: Head of Work, which serves the town of Kirkwall; The Bu, which serves the town of Stromness; St Margaret's Hope; Burray; Holm; Stenness; Dounby; Evie; Finstown, Sanday and Westray. However, in several rural settlements foul water drainage facilities are at, or close to, capacity. In others there is no strategic provision for foul water drainage and properties are reliant on private systems, e.g., septic tanks and soakaways. Where a number of houses are in close proximity to each other this can lead to a proliferation of septic tank systems and a significant risk of water pollution, especially during the wetter months when percolation rates within the soil are poor. This has been a particular problem in certain areas and SEPA has designated the following Planning Consultation Areas where proliferation of private waste water systems has led to a cumulative impact on the water environment:

- Pierowall, Westray
- Whitehall, Stronsay
- Birsay
- Tingwall
- Grimeston Road, Harray

[21] Water Framework Directive UK Technical Advisory Group http://www.wfduk.org/resources/groundwater-dependent-terrestrial-ecosystem-threshold-values

[22] Scotland's Environment Web

- Houton
- Hatston
- Carness
- Berstane
- Burray Village
- Herston
- Longhope

3.2 Water quality and overall status classification in Orkney

The Scottish Environment Protection Agency (SEPA) has primary responsibility for the water environment and, under the Water Environment (Controlled Activities Regulations) (Scotland) 2005, operates as a regulator for abstraction from and discharges to surface and ground waters. A water quality classification system allows SEPA to determine the state of the environment, highlighting areas that need particular protection, and where improvements need to be made. On an annual basis each water body is reported as high, good, moderate, poor or bad.

The overall status classification of surface water bodies describes by how much their condition ("status") differs from near natural conditions. Water bodies in a near natural condition are at high status while those whose quality has been severely damaged are at bad status.

The water quality classification looks at both biological and chemical indicators of pollution. Water bodies with low levels of pollution are classified as high or good water quality, whereas those with high levels of pollution are classified as poor or bad.

The classification system was devised following EU and UK guidance. It is underpinned by a range of biological quality elements, supported by measurements of chemistry, hydrology (changes to water levels and water flows), morphology (changes to the beds, banks and shores of water bodies) and an assessment of invasive non-native species.

The following settlements are located close to freshwater watercourses that are included in SEPA's monitoring programme:

- Burnside (Burn of Netherbrough)
- The Palace (Burn of Boardhouse)
- Lyron (Burn of Sweenalay)
- Burray Village (Burn of Sutherland)
- Stenness Village (Loch of Stenness)

The water quality and overall status classification of monitored watercourses in Orkney, based on the findings of sampling undertaken during 2013 is summarised in Appendix B.2.

3.3 Environmental Issues

As a planning authority OIC has a duty to protect and improve Scotland's water environment (The Water Environment and Water Services (Scotland) Act 2003).

Water quality in Orkney is generally good but locally there are waters which are polluted by waste-water, effluents and discharges from agriculture, mineral working, and other industries. The EC Water Framework Directive seeks to achieve the continuous improvement of all water bodies through the implementation of River Basin Management Frameworks. Town and country planning has a significant role to play in ensuring an appropriate distribution of land uses and protecting the environment from pollution.

The policies and proposals of the OIRMP should seek to protect and improve the quality and overall status of the water environment in and around Orkney. Sustainable solutions to waste-water treatment should be promoted.

4. Coastal processes / Benthic sediments / Soils

SEA Objectives
Reduce the threat of contamination and seek to protect soils from damage such as erosion or compaction.
Recognise the environmental benefits provided by soils and protect their quality and quantity.

4.1 Background

The geology is predominately flagstone and sandstone deposited in Lake Orcadie, a large freshwater lake belonging to the Devonian (Old Red Sandstone) period (416 – 359 million years ago)[23]. Metamorphic rocks are exposed near Stromness, Yesnaby and on Graemsay, mostly consisting of granitic gneisses.

4.2 Current status

The length of the Orkney Islands coastline at Mean High Water Springs (MHWS) is 1,024 km, which makes up 5% of the Scottish coastline. Of this length, 61% (623km) has been categorised as hard, 36% (373 km) as soft and 3% (28 km) as artificial.

The surrounding seabed is composed of a rich variety of marine and coastal habitats including submerged reefs, maerl beds, sandbanks, burrowed mud, salt marshes and dune systems. The seabed is dominated by coast sediment and high energy infralittoral rock around most of the islands, with large areas of sand and muddy sand to the east and west of the islands, out towards and beyond the 12 nm limit (see Figure 1).

4.3 Environmental issues

[23] http://www.landforms.eu/orkney/geology.htm#:~:text=Geology%20of%20Orkney%20The%20rocks%20of%20Orkney%20are,Sandstone%29%20period%20%28416%20%E2%80%93%20359%20million%20years%20ago%29

All of the economic sectors assessed within this report are likely to cause some physical disturbance to the seabed. These pressures are due to abrasion; physical disturbance of seabed; disturbance in relation to physical change to another seabed type (e.g. concrete); habitat structure changes and substratum extraction. Developments including ports and harbours, aquaculture, cable laying and marine renewable energy are likely to exert the most significant pressures.

Erosion in areas of soft coast can require the installation of built defences, altering the profile and changing the substate type. In addition, pressures from the potential effects of climate change including sea level rise and soft coast erosion.

The policies and proposals of the OIRMP should seek to protect overall status of the physical coastal and benthic sediment in and around Orkney.

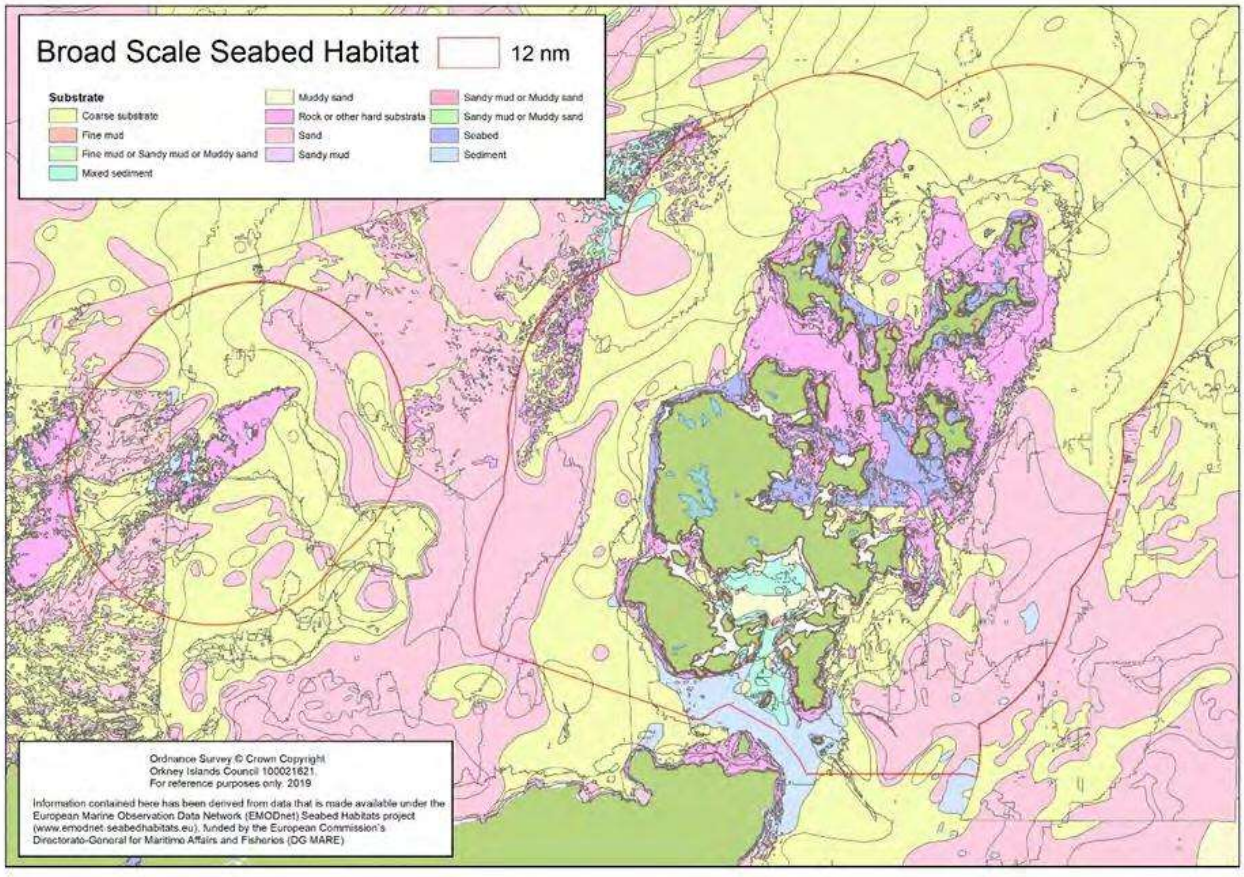


Figure 1 Seabed habitat for the Orkney Island's Marine Region

5. Geology

SEA Objective
Protect designated and undesignated sites which are recognised and valued for their geological or geomorphological importance.

5.1 Background: Summary of Orkney's geological history[24,25]

Most of the rocks which make up Orkney as we know it today formed around 400 million years ago during the Devonian Period when Britain was positioned approximately 10° south of the equator and was part of a supercontinent made up of the land masses which are today North America and Northern Europe. At that time there were mountains to the north-west and the open Devonian Sea covered the area that is now southwest England. Between the mountains and the sea was a vast desert plain within which a large, shallow, freshwater lake occupied the topographic lowest levels. This shallow lake, known as Lake Orcadie, extended from Shetland, through Orkney, Caithness and the Moray coast and across to western Norway. It was fed by numerous rivers which flowed down from the western mountains eroding gravel sand and mud and transporting these materials into the lake where they settled out as layers on the lake bed.

The oldest rock exposed in Orkney is the Precambrian Basement Complex, examples of which outcrop around the town of Stromness and on the neighbouring island of Graemsay. These outcrops represent the tops of island hills which were surrounded by Lake Orcadie. In the warm, tropical climate evaporation rates were high and rainfall was seasonally variable, and this caused large fluctuations in the depth of the lake and the area that it covered. Mud flats on the lake margins periodically dried out before being inundated again. Evidence for this can be seen today in flagstones where mud cracks are visible which have been filled in by sand. Superimposed on this seasonal cycle were climatic patterns which varied on a much longer timescale, causing the lake to become steadily deeper and wider, at times meeting the edge of the western mountains before retreating to begin the cycle again. These cycles are easily seen in the well exposed coastal cliffs of the West Mainland where the cycle begins with a finely laminated dark grey to black muddy flagstone representing periods of greatest water depth in Lake Orcadie and ends with shallow water lake margin sediments consisting of sands, silts, and light grey muds.

At times Lake Orcadie appears to have been very productive and evidence shows that during intervening periods of drought large numbers of fish died, sinking out of the water column to the bed of the lake where they became preserved in the fine-grained muds. Remains of these fish can be seen today as fossil fragments in the flagstone strata known as the Sandwick and Rousay fish beds, which are most

[24] Geology of Orkney. www.fettes.com/Orkney/geology.htm
[25] Orkney and Shetland a Landscape Fashioned by Geology www.snh.org.uk

clearly visible at Cruaday Quarry in the parish of Sandwick. The discovery of many fossil fish during the extraction of stone for construction purposes led to designation of the quarry as a Site of Special Scientific Interest. Some of the particularly fine specimens recovered from Cruaday are now displayed at the Fossil Centre in Burray along with fossils from other locations in the Orkney and Caithness area.

This cyclicity of lake deposition continued until Upper Devonian times when the waters of Lake Orcadie retreated so far that it became broken up into many small separate lakes in a predominantly desert landscape. This dry period is characterised by sandstones derived from deposits laid down by the large, braided rivers which continued to flow from the Western Mountains, as well as the sand dunes which migrated across the desert plains. Great thicknesses of sand and gravel were deposited and are preserved, for example, on Orkney's best known natural feature, the Old Man of Hoy, where they rest on a basal plinth of tough lavas that resist erosion by the sea.

Changes in stress within the Earth's crust during Carboniferous to Permian times led to considerable volcanic activity in the area, leaving lavas and vents filled with agglomerate and ash. Intrusive igneous dykes dating from the Younger Permian (250 million years ago) are numerous and can be seen traversing the intertidal areas of many rocky shores. A particularly clear example is found at the Point of Buckquoy in Birsay where the black basalt dyke containing vesicles (bubbles) contrasts strongly with the surrounding paler sedimentary rock.

The formation of depressions in the Earth's crust, where sediments accumulated, continued around Scotland throughout Mesozoic and up to Quaternary times. Economic quantities of oil and gas accumulated in some of these depressions or basins. By the late Permian period, stresses in the Earth's crust created the Viking Graben, a rift valley located in what was to become the North Sea. This event marked the partial break-up of the supercontinent. The rift valley filled with sediments eroded from adjacent areas, including the Orkney-Shetland region, and by early Jurassic times a link with the open sea was established.

Thick sequences of marine sediments accumulated in basins around Britain during Jurassic and Cretaceous times at this time. Tensional stresses were creating a new ocean, the Atlantic, as the supercontinent split apart. North America separated from Africa in the Jurassic (around 165 million years ago) and from Europe in the Late Cretaceous. Europe and North America gradually moved apart as volcanic eruptions added new material along the central spine of the widening ocean – the Mid-Atlantic Ridge.

The earliest stages of stretching and thinning of the Earth's crust near the margin of the emergent ocean allowed molten lava to break through the crust to form a line of volcanoes, for example those running from Skye to Arran. To the present day, we continue to move farther and farther away from America as volcanic eruptions along the Mid-Atlantic Ridge adds new ocean floor, thus forcing the continents apart.

The land mass containing Orkney continued to move northward and during the Quaternary (2.6 million years ago) its geology became heavily modified by glaciation which smoothed and rounded hills and ridges on land and excavated the major firths of Hoy Sound, Eynhallow Sound and Westray Firth. Local glaciers developed at intervals on the island of Hoy where they carved out striking corries and valleys. As the last ice sheet thinned and retreated, considerable thicknesses of glacial deposits

were laid down in hollows. A coastal section at Den Wick in Deerness contains two superimposed depositions of glacial till. Likewise, cliff sections at Scara Taing in Rousay are important for the exposure of three superimposed tills and the adjacent striated (scratched) bedrock surfaces which provide evidence of fluctuating patterns of ice flow.

Although ice has covered Orkney and Shetland many times during the last two million years and sculpted the landscape, the broad outline of the islands owes much to the action of the wind, rain and sea over the last 150 million years. The sea has cut 'geos', which are long narrow slots following faults and joints, into the cliffed coastline and also eroded 'gloups' (blow-holes), caves and natural arches. The Gloup in Deerness is probably the finest example of a blow hole to be seen in Orkney and in the island of Stronsay a natural arch remains intact at the Vat of Kirbister. As erosion continues, the rock spanning arches protruding from the retreating cliff line often collapses, leaving vertical rock pillars as sea stacks; the most famous of these are the Old Man of Hoy and the Castle of Yesnaby, both formed of sandstone.

The power of the sea during westerly gales is vividly illustrated by the high-level storm beaches formed of large blocks of rock, which have been torn from the cliff by the waves and piled up in crescent-shaped ridges behind the cliff top. An excellent example can be seen at Sacquoy Head on Rousay, where boulders lie as much as 80 metres inland at the top of 18-metre-high sea cliffs.

A rise in sea level following the melting of the glaciers about 10,000 years ago was responsible for the drowned landscape of the inner coasts of Orkney. Flooding of the gently undulating Orkney landscape has formed broad open bays, generally backed by sand dunes. Layers of peat, some containing tree trunks and roots, occur beneath the sand and shingle of some modern beaches.

The combined forces of wave action and tidal currents are responsible for the constant reworking of seabed sediments which surround the coasts of Orkney, for example the process of long-shore drift causes sand and gravel to be transported laterally along the shoreline often forming distinctive geomorphological features including narrow spits of shingle or sand. These coastal features are known as ‘ayres’ in Orkney and are commonly found cutting across the seaward ends of shallow bays. In some cases, spits may partly, or completely, cut off a sheltered stretch of water from the sea to form a shallow lagoon or 'oyce', which eventually may silt up to become a stretch of fertile land. Spits can also form tombolos, joining islands to offshore isles. The island of Sanday is one of the best locations in Orkney where these and other coastal sand features can be seen.

5.2 Current Status: Sites identified for their geological / geomorphological importance.

Orkney’s geological history is most clearly visible and interpreted along its coastlines where the rock has been subject to sea level change, deformation, erosion and localised deposition; and also, in quarries where rock extraction has exposed a sequence of rock strata. A number of sites are designated, either nationally as Sites of Special Scientific Interest and/or Geological Conservation Review Sites; or locally as Local Nature Conservation Sites on account of their geological/geomorphological importance in an Orkney context. A full list of these sites is included in **Table 5.1.**

Table 5.1: Sites in Orkney, that are designated for their geological / geomorphological importance[26]

SITE	Type	GEOLOGICAL/GEOMORPHOLOGICAL INTEREST
Birsay		
Point of Buckquoy	LNCS	Unique exposure demonstrates consequences of oscillation in the level of Lake Orcadie during the Devonian
Whitaloo Point	LNCS	A typical monoclinal fold in Upper Stromness Flags
Deerness		
Denwick	SSSI/GCR	Best example in Orkney of a multiple till section
Point of Ayre	GCR	Area of basaltic lava flow
Taracliff Bay – Newark Bay	GCR	Section showing transition from Rousay Flag series to Lower Eday Flag series
Mirkady Point	LNCS	Shingle spit
Eday		
Greenan Nev Coast,	GCR	Exposure of Eday marls of interest in the study of Palaeo environments
Newbiggin to Neven Point,	LNCS	Good section of the western limb of the Eday Syncline
South Fersness Bay,	GCR	Good section of the western limb of the Eday Syncline
Evie & Rendall		
Links of Aikerness	LNCS	Outcrops of Aeolianite unique in Scotland
Hoy & Graemsay		

[26] JNCC website; also The Orkney Local Development Plan 2014

SITE	Type	GEOLOGICAL/GEOMORPHOLOGICAL INTEREST
Hoy	SSSI / GCR	geology, geomorphology, petrifying tufa springs, (Ward Hill, Enegars Corrie & Dwarfie Hamars) Exposures of the Hoy Volcanics and the Hoy Sandstone in their type area (Old Man of Hoy Coast) Silurian and Devonian volcanic rocks (Too of the Head)
Melsetter Coast section, Hoy	LNCS	Outcrops of the Hoy Lavas
Muckle Head and Selwick	SSSI/ GCR	Geological site due to locally important raised beach deposits
North Coast of Graemsay	LNCS	Exposure of the lower section of the Stromness Flags and crystalline basement
Sanday		
Central Sanday	SSSI/ GCR	Machair and other blown sand and shingle landforms unique in North Scotland.
Doun Helzie,	LNCS	Beach Dune and Machair association
Hegglie Ber,	LNCS	Coarse pebbly and conglomeratic facies of Lower Eday Sandstone
*Scar**	*LNCS*	*Glacial erratic*
Sandwick		
Bay of Skaill	SSSI/GCR	Middle Devonian Fish Beds with fossil plant community
*Cruaday Quarry**	*SSSI/GCR*	*Site is of outstanding geological importance due to exposure and preservation of the Sandwick Fish Beds*
Stromness Heaths & Coasts	SSSI/GCR	Coastal geomorphology (West Coast of Orkney) Non-marine Devonian (Yesnaby & Gaulton Coast Section)

SITE	Type	GEOLOGICAL/GEOMORPHOLOGICAL INTEREST
Shapinsay		
Vasa Loch	LNCS	Complex cuspate foreland
Lairo Water and The Ouse	LNCS	Complex of shingle depositional landforms
South Ronaldsay		
Ayre of Cara	LNCS	Provides opportunity for study of rates of accretion and erosion due to construction of Churchill Barriers
Croo Stone Vent coast section	LNCS	Largest and most complex vent to be found in Orkney
Dam of Hoxa	LNCS	Composite depositional structure
South-east Coast	LNCS	Shows relationship of coastal morphology to geological structure
The Altar	LNCS	Demonstrates the influence of jointing on the resultant coastal landforms
Stromness		
South Stromness Coast	SSSI/ GCR	Crystalline basement rock with overlying Stromness Flags. Lead mineralisation.
Stronsay		
Mill Bay, Stronsay	SSSI/ GCR	Geological: Classic shelly till with palaeo-geomorphological importance.

*Non-coastal sites

SSSI: Site of Special Scientific Interest

GCR: Geological Conservation Review site (nationally important Earth Science Site)

LNCS: Local Nature Conservation Site

5.3 Environmental issues

The policies and proposals of the OIRMP should provide effective protection to sites which are designated for their geological or geomorphological interest, and which illustrate Orkney's geological history.

6.Landscape

SEA Objectives
Maintaining and enhancing distinctive landscape character.

6.1 Background

Orkney has one National Scenic Area: the Hoy and West Mainland National Scenic Area (see Map 2). The great ice-rounded eminences of the hills of North Hoy dominate the Orkney scene with a power that is scarcely in tune with their modest height (479 metres). Their bold shape, fine grouping, soaring cliffs and headlands, including the famous stack of the Old Man of Hoy, are almost as important to the Caithness scene as they are in that of Orkney.

6.2 Current status

North Hoy has a particularly strong visual inter-relationship with the south-west mainland of Orkney, the pastoral character of which around the shores of the Loch of Stenness makes a good foil for the bold hills of Hoy. The basin of this loch is enclosed by low rolling hills of lush grassland, some arable land, scattered farm steadings and stone dykes with a noticeable lack of trees, giving a very open landscape, the character of which is enlivened by the abundant remains of ancient occupation.

This landscape culminates in the west in cliffed headlands like a rampart against the sea, which breaks through at Hoy Sound in a tidal race of impressive swiftness. The stone-built settlement of Stromness rising steeply out of its harbour further enhances the character of the area.

The Special Qualities of the Hoy and West Mainland National Scenic Area are:

• A palimpsest of geology, topography, archaeology and land use

• An archaeological landscape of World Heritage Status

• The spectacular coastal scenery

• Sandstone and flagstone as an essence of Orkney

• A long-settled and productive land and sea

• The contrast between the fertile farmland and the unimproved moorland

• A landscape of contrasting curves and lines

• Land and water in constantly changing combinations under the open sky

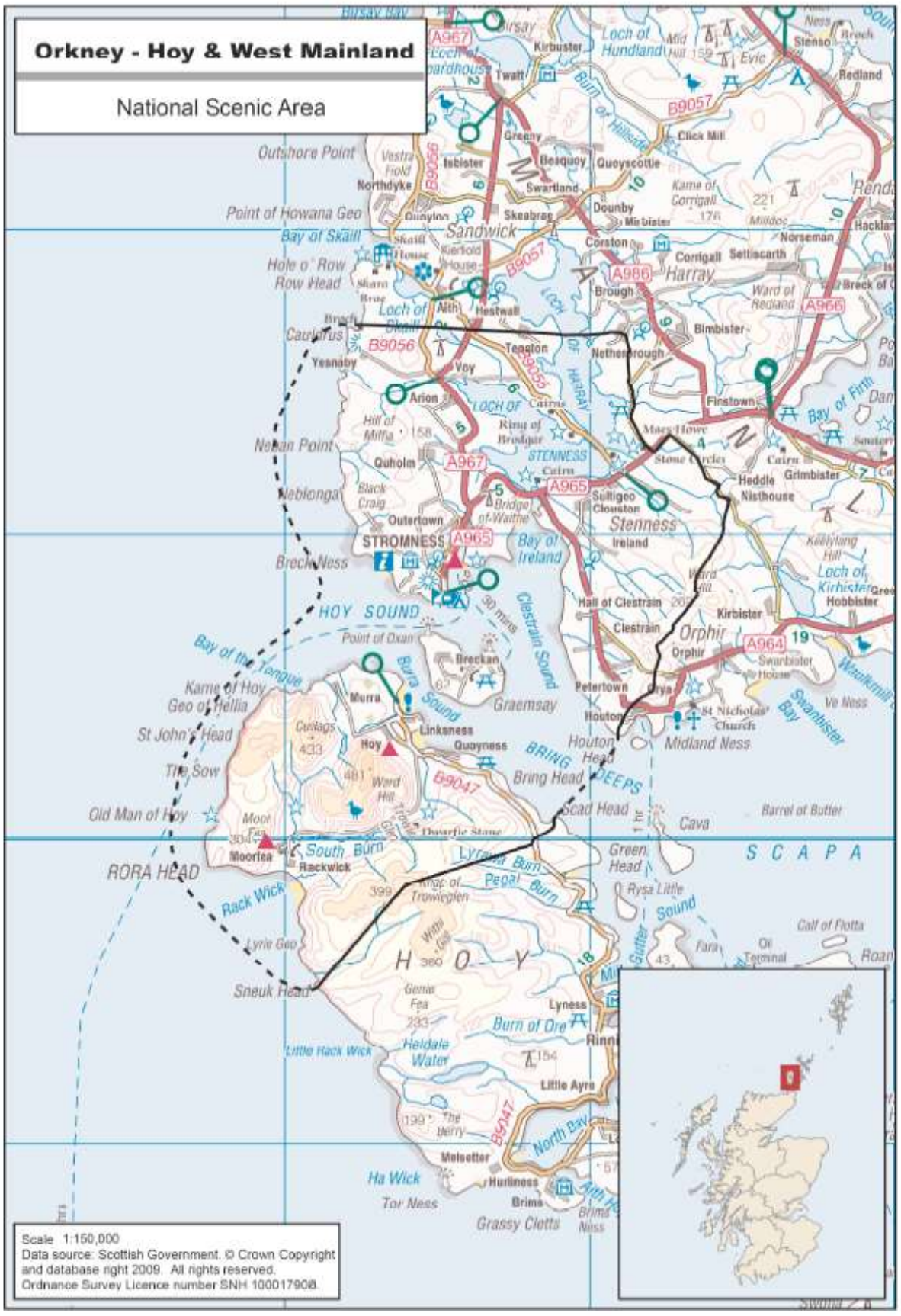
• The high hills of Hoy

• The townscape of Stromness, its setting and its link with the sea

• The traditional buildings and crofting patterns of Rackwick.

6.3 Environmental issues

Increased development can lead to the erosion of the setting of the seascapes and landscapes of the NSA. For example, as the infrastructure used for offshore wind farms increases in height, the distance of their visibility and therefore potential impacts increases. The policies and proposals of the OIRMP should provide effective protection to sites which are designated for their seascape and landscape interests.



Map 2 Hoy and West Mainland National Scenic Area

7. Cultural Heritage

SEA Objectives
Promote the care and protection of the designated and non-designated historic environment.
Enable positive change in the historic environment which is informed by a clear understanding of the importance of Orkney's heritage assets and ensures their future use.
Safeguard cultural heritage features and their settings through responsible design and siting of development.

7.1 Background

Orkney is internationally renowned for the preservation and richness of 6,000 years of its archaeology upon which its successful tourism economy is based. This includes a Neolithic World Heritage site; spectacular Iron Age tower houses of the broch villages; rich Viking heritage of international significance and the unique 1st World War submerged archaeology of the German High Seas Fleet, that is at the heart of Stromness' diving industry. Orkney also has a rich maritime industrial past from the kelp industry to the herring boom and the Hudson's Bay Trading Company. Through history, the islands have played a significant role in trade, industry, politics and war.

7.2 Current status

A summary of the key elements is outlined below; further detail can be found in the SoEA[27]

- Orkney has internationally significant coastal and marine historic environment assets.

- Since the Neolithic period some 5,000 to 6,000 years ago, when the land was first farmed, sea levels have risen approximately 5 metres.

- Sea-level change, precipitation change and storm intensity and frequency are the three key climate drivers impacting Orkney's coastal archaeology.

[27] Orkney Islands Marine Region: SoEA

- Climate-change causing rising sea-levels is the single greatest threat to Orkney's coastal historic environment assets.

- Orkney contains 3,000 documented archaeological sites of which 800 are coastal and threatened or presently eroding[55].

- Coastal and marine historic environment assets can be significantly impacted by renewable energy, aquaculture and harbour developments.

- Uncontrolled recovery of artefacts and associated damage to historic assets has a significant detrimental effect on historic significance.

7.3 Environmental issues

Erosion and sea level rise due to climate change, along with deterioration and/or removal of artifacts are key considerations for cultural heritage. The policies and proposals of the OIRMP should provide effective protection to sites which are designated for their cultural heritage interest.

8. Population and Human Health

SEA Objectives
Improve community environments and quality of life.
Protect and enhance human health and promote access to health, social and recreational facilities.

8.1 Background

The Orkney archipelago consists of 68+ islands over an area of 990km^2. Sixteen of the islands are populated according to census data, some uninhabited ones are still used for farming, whilst others are relatively small rocky outcrops. In addition, although the 2011 census does not show any population for Papa Stronsay, there are currently nine monks living on the island (per comm).

8.2 Current status

The Orkney population from the 2011 census is 21,349 and is estimated to be 22,2070 for 2019, across 16 islands (see Table 8.1)[28]. A small number of other

[28] For further detail, see the accompanying Islands Communities Impact Assessment

islands e.g. Auskerry, Copinsay and Hunda have seasonal populations. At the time of writing the 2022 census data is not available for Orkney.

Table 8.1: Population of Orkney Islands (Source OIC extractions from 2011 census)

Island	2011 census	Comment
Burray	409	Burray lies between Mainland and South Ronaldsay, connected by the Churchill Barriers.
Eday	160	Situated centrally among the North Isles of Orkney, 14 miles north-east of Kirkwall, Eday, the isthmus isle, eight miles long and pinched at the waist, offers a unique blend of heather-clad hilly moorland with panoramic views over sea and islands, sheer cliffs, sweeping beaches and sand dunes and rich in archaeology. Most of the crofts and farms are located on the fertile coastal strip. The numerous derelict houses are clear indicators that Eday's population was once much greater.
Egilsay	26	Three miles long by a mile and half wide off the east coast of Rousay, Egilsay a haven for birds, especially the rare Corncrake.
Flotta	80	Flotta has one of the most spectacular 360 degree panoramas in the UK: the sweep of the Hills of Hoy, the great expanse of Scapa Flow and the hills of Mainland Orkney beyond, to the east Burray and South Ronaldsay, completing the circle by looking out across the Pentland Firth to the Scottish mainland. Flotta was a strategic military base in both World Wars therefore contains much military history. Since the mid 1970s, as the location for an oil terminal that has helped keep Orkney's economy afloat.
Graemsay*	28	Graemsay is located in the Western approaches to Scapa Flow lying between Stromness on Orkney mainland and the North end of Hoy, separated from the Mainland by Clestrain Sound. The island is 409 ha (1.58 sq mi) in area and is around two miles x a mile and half.

		Large parts of the island have been left largely undeveloped and are a haven for many wild plants. It is mainly crofted and has a predominantly ageing population.
Hoy	419	Hoy is the second largest island in Orkney, at 57 square miles. From the summit of Ward Hill, the highest point in the county at 1570 feet, every island in Orkney can be seen with the exception of Rysa Little, which is the nearest. Hoy has significant military history. During World War II, thousands of navy personnel were based at Lyness and the now deserted naval base has been converted to a visitor centre with many exhibits from both world wars and the scuttled German fleet. This, along with the Old Man of Hoy stack and the spectacular hills and wildlife, are key tourist attractions.
North Ronaldsay	72	etc
Papa Westray	90	
Rousay	216	
Sanday	494	
Shapinsay	307	
South Ronaldsay	909	
Stronsay	353	
Westray	588	
Wyre	29	
Mainland	17169	
Total	**21349**	

8.3 Environmental issues

Depopulation is a problem in the smaller islands of Orkney and geographical isolation is a major contributory factor. Whilst these issues are more relevant to land use policy, the socio-economic benefits of supported by the OIRMP will contribute to the protection of human health. In addition, better connectivity also has potential to

improve access to health, social and recreational facilities, which will be supported by the Sector Policy 4 Pipelines, Electricity and Telecommunications Infrastructure.

9. Material assets

SEA Objectives
Promote sustainable and efficient use of natural resources.

9.1 Background

The seabed, intertidal zone, water environment and the species and habitats they contain are vital components of natural resources, that perform a variety of ecosystem services.

9.2 Current status

Marine litter has been an environmental problem in the oceans and seas for decades, which can impact a variety of material assets.

9.3 Environmental issues

Litter is widespread in the marine environment and is harmful to wildlife and ecosystems. It is estimated that about 60-80% of marine debris is plastic and plastic comprises a large percentage of beach litter[29]. The policies and proposals of the OIRMP should provide effective protection for materials assets.

[29] https://meam.openchannels.org/news/skimmer-marine-ecosystems-and-management/what-marine-plastic-pollution-costing-us-impacts

10. Summary of Baseline

The information summarised below are additional sources to compliment those provide in the body of the report.

Table 10.1: Summary of data collected in compiling the environmental baseline

DATA	SOURCE
Area and population of Orkney	General Register Office for Scotland
CLIMATIC FACTORS	
CO_2 emissions within the scope of influence of OIC	Ricardo-AEA May 2014 Local and Regional CO_2 Emissions Estimates for 2005-2012 (Ricardo-AEA/R/3374)
Types of central heating used in Orkney	Scotland's Census 2011 http://www.scotlandscensus.gov.uk/r2-downloadable-files
Average number of cars or vans in Orkney	http://www.scotlandscensus.gov.uk/documents/censusresults/release2a/rel2asbfigure21.pdf
Passenger numbers for subsidised bus services in Orkney	Transport Service, OIC 2014
Operational grid-connected wind turbines in Orkney December 2012 (0.5MW and over)	OIC Development Management Service
Information on lease arrangements for wave and tidal energy development	www.thecrownestate.co.uk
Average rainfall in Orkney	SNIFFER, 'A handbook of climate trends across Scotland', 2006 www.sniffer.org.uk
Information on current climate trends	http://www.scotlandscensus.gov.uk/documents/censusresults/release2a/rel2asbfigure21.pdf ; SNIFFER, 'A handbook of climate trends across Scotland', 2006 www.sniffer.org.uk
Information on sea level rise	National Oceanic and Atmospheric Administration (NOAA) http://oceanservice.noaa.gov/facts/sealevel.html
North of Scotland future climate change scenarios	UK Climate Impacts Programme www.ukcip.org.uk
Passenger numbers at Kirkwall Airport	Transportation Service, OIC 2007/08.

DATA	SOURCE
Information on Orkney's prevailing winds	May, V.J. and Hansom, J.D. (2003) *Coastal Geomorphology of Great Britain*, Geological Conservation Review Series, No. 28, Joint Nature Conservation Committee, Peterborough, 754 pp.
LOCAL AIR QUALITY	
Discharges to air from major industrial processes	Scottish Pollutant Release Inventory (SEAP), www.sepa.org.uk
Air quality in Orkney	Local Air Quality Management Progress Reports
BIODIVERSITY, FLORA & FAUNA	
Legislation relating to European Protected Species	SNH website: www.snh.gov.uk
List of statutory and non-statutory designated natural heritage sites	NatureScot (SNH) www.snh.gov.uk OIC Local Plan
Information on cetacean presence in Orkney	Booth, C. & J. Sillocks, Skarfies & Selkies, (2005)
Measures to protect species outwith designated areas	SNH website: www.snh.gov.uk
Information relating to RSPB reserves in Orkney	RSPB website: www.rspb.org.uk
Climate change and natural heritage	NatureScot http://www.snh.gov.uk/climate-change/impacts-in-scotland/effects/habitats/
WATER	
Water quality data (freshwater and coastal) and Groundwater quality data	Scottish Environment Protection Agency (SEPA)
Definition of Groundwater Dependent Terrestrial Ecosystems	Water Framework Directive UK Technical Advisory Group http://www.wfduk.org/resources/groundwater-dependent-terrestrial-ecosystem-threshold-values
GDTEs present in Orkney	Scotland's Environment Web

DATA	SOURCE
SOIL	
Information relating to Orkney soil types	Soil and land capability for agriculture maps (Orkney and Shetland) mapsales@macaulay.ac.uk
Scottish Natural Heritage Review No 100, Orkney Landscape Character Assessment. Land Use Consultants, Glasgow (1998)	
Plans to establish a soil monitoring system	Changing Our Ways, Scotland's Climate Change Programme, Scottish Executive 2006
Data on Agricultural Land Use in Orkney between 2005-2012	Scottish Agricultural Census 2005 – 2012
Contaminated Land Inspection Strategy 2003	OIC Department of Environmental Health
Derelict and Urban Vacant Land in Orkney	Scottish Vacant and Derelict Land Survey 2013 http://www.gov.scot/Publications/2014/02/7170
GEOLOGY	
Geology of Orkney	www.fettes.com/orkney/geology
Orkney and Shetland a Landscape Fashioned by Geology	www.snh.org.uk
Orkney geological sites	JNCC website The Orkney Local Development Plan 2014
LANDSCAPE	
Information on Landscape Character Assessment	Scottish Natural Heritage Review No 100, Orkney Landscape Character Assessment
Hoy and West Mainland NSA	NatureScot NatureScot
Landscape capacity for wind energy development	Landscape Capacity Assessment for Wind Energy in Orkney, Ironside Farrer (2014)
CULTURAL HERITAGE	
Definition of the historic environment	SHEP 1 (Historic Scotland's policy for the sustainable management of the historic environment)
Current status of cultural heritage	Orkney Islands Marine Region: SoEA
Lists of Scheduled Monuments and Listed Buildings Information on Conservation Areas and Gardens and Designed Landscapes	PASTMAP, www.historic-scotland.gov.uk/index/ancientmonuments/searchmonuments.htm NatureScot, www.nature.scot

DATA	SOURCE
POPULATION & HUMAN HEALTH	
Population trends in Orkney	Orkney Economic Review 2012-13 (source General Register Office for Scotland (GROS)
Population estimates for Orkney 2015-2035	General Register Office for Scotland (GROS) estimates http://www.gro-scotland.gov.uk/mwg-internal/de5fs23hu73ds/progress?id=ntGhk25ubu
Population trends in the Orkney Islands over the period 1961 – 2011	Scotland's Census Results Online
Life expectancy at birth of residents of the Orkney Islands over the period 2000 – 2010	General Register Office for Scotland
Age and sex structure of the population of the Orkney Islands (2011	General Register Office for Scotland
Summary of Orkney health statistics	www.scotpho.org.uk/comparative-health/profiles/2010-chp-profiles
MATERIAL ASSETS	
Treatment of waste produced in Orkney	www.SEPA.org.uk
Scottish waste recycling targets	SEPA, www.sepa.org.uk
Source of aggregates used in Orkney	OIC Roads Department
Litter impacts	https://meam.openchannels.org/news/skimmer-marine-ecosystems-and-management/what-marine-plastic-pollution-costing-us-impacts
National Planning Framework	National Planning Framework 4

Appendix B.1: Internationally and nationally designated sites in Orkney (at the time of writing)[30]

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
Auskerry SSSI/SPA	Breeding storm petrel, breeding Arctic tern.	Arctic tern unfavourable declining (2018). Storm petrel favourable declining (2018).	Breeding storm petrel, breeding Arctic tern.	Arctic tern unfavourable declining (2018). Storm petrel favourable declining (2018).
Bay of Skaill SSSI	Palaeozoic palaeobotany (fossil plants).	Favourable maintained (2012).	N/A	N/A
Calf of Eday SSSI/SPA	Breeding cormorant.	Cormorant favourable maintained (2016).	Breeding cormorant; breeding fulmar; breeding great black-backed gull; breeding kittiwake breeding guillemot; breeding seabird assemblage.	Cormorant breeding favourable recovered (2016). Fulmar breeding favourable maintained (2016). Great black backed gull unfavourable declining (2016). Guillemot breeding unfavourable declining (2016). Kittiwake breeding unfavourable declining (2016). Seabird assemblage breeding unfavourable declining (2016).

[30] NatureScot www.nature.scot

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
Central Sanday SSSI	Coastal geomorphology of Scotland (coastal sedimentary landforms); saltmarsh; machair; sand dunes.	Machair unfavourable no change (2013) Sand dunes unfavourable no change (2013). Saltmarsh favourable maintained (2012). Coastal geomorphology of Scotland favourable maintained (2010).	N/A	N/A
Copinsay SSSI/SPA	Breeding seabird colony; breeding guillemot; breeding kittiwake.	Guillemot unfavourable no change (2015). Kittiwake unfavourable declining (2015) Seabird colony, breeding unfavourable no change (2015).	Breeding seabird assemblage; breeding fulmar; breeding great black-backed gull; breeding guillemot; breeding kittiwake.	Fulmar breeding favourable maintained (2015). Great black backed gull unfavourable declining (2015). Guillemot unfavourable no change (2015). Kittiwake unfavourable declining (2015). Seabird assemblage, breeding unfavourable no change (2015).
Cruaday quarry SSSI	Silurian - Devonian chordata (fossil fish).	Silurian-Devonian chordata favourable maintained (2009)	N/A	N/A
Denwick SSSI	Quaternary of Scotland (multiple glacial till section).	Quaternary of Scotland favourable maintained (2017).	N/A	N/A
Doomy and Whitemaw Hill SSSI	Breeding Arctic skua; breeding whimbrel.	Arctic skua breeding unfavourable declining (2016).	N/A	N/A

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
		Whimbrel breeding unfavourable no change (2016).		
East Sanday coast SSSI/SPA/Ramsar site	Non-breeding ringed plover, non-breeding bar-tailed godwit, non-breeding purple sandpiper, non-breeding sanderling, non-breeding turnstone; passage turnstone; rocky shore; sandflats; Harbour seal; vascular plant assemblage.	Rocky shore favourable maintained (2008). Sandflats favourable maintained (2008). Harbour seal unfavourable declining (2013). Vascular plant assemblage favourable maintained (2006). Bar-tailed godwit non-breeding favourable maintained (2015). Purple sandpiper non-breeding favourable maintained (2015). Ringed plover non-breeding favourable maintained (2015). Sanderling non-breeding favourable maintained (2015). Turnstone non-breeding favourable maintained (2015). Turnstone passage favourable maintained (2016).	SPA - Non-breeding bar-tailed godwit; non-breeding turnstone; non-breeding purple sandpiper. Ramsar – Non-breeding purple sandpiper; non-breeding turnstone.	SPA Bar-tailed godwit non-breeding favourable maintained (2015). Purple sandpiper non-breeding favourable maintained (2015). Turnstone non-breeding favourable maintained (2015). Ramsar Purple sandpiper non-breeding favourable maintained (2015). Turnstone non-breeding favourable recovered (2015).
Eynhallow SSSI	Harbour seal.	Harbour seal unfavourable declining (2013).	N/A	N/A

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
Faray and Holm of Faray SSSI/SAC	Grey seal.	Grey seal favourable maintained (2014).	Grey seal.	Grey seal favourable maintained (2014).
Glims Moss and Durkadale SSSI	Raised bog; Hydro morphological mire range; valley fen.	Hydromorphological mire range favourable maintained (2014). Raised bog favourable maintained (2004). Valley fen favourable maintained (2004).	N/A	N/A
Holm of Papa Westray SSSI (also forms part of Papa Westray (North Hill and Holm) SPA)	Breeding black guillemot.	Black guillemot breeding unfavourable no change (2013).	Papa Westray SPA Breeding Arctic skua; breeding Arctic tern.	Papa Westray SPA Arctic skua breeding unfavourable declining (2015). Arctic tern breeding unfavourable no change (2017).
Hoy SSSI/SPA/SAC	Breeding seabird colony; breeding Arctic skua, breeding fulmar, breeding great skua, breeding guillemot. Breeding bird assemblage; breeding peregrine, breeding red-throated diver, breeding great black-backed gull; blanket bog.	Upland oak woodland favourable maintained (2009). Blanket bog favourable maintained (2014). Dystrophic loch favourable maintained (2013). Breeding bird assemblage favourable maintained (2013). Non-marine Devonian favourable maintained (2003).	SPA - Breeding seabird assemblage; breeding Arctic skua; breeding great skua; breeding great black-backed gull; breeding guillemot; breeding kittiwake; breeding peregrine; breeding red-throated diver; breeding fulmar; breeding puffin. SAC – Blanket bog; dry heaths; wet heathland with cross-leaved heath; base-rich fens; hard-water springs depositing lime; plants in crevices in base-rich rocks; Alpine and subalpine heaths; acid peat-stained lakes and ponds; vegetated sea cliffs.	SPA Arctic skua breeding unfavourable declining (2019). Fulmar breeding unfavourable no change (2017). Great black-backed gull breeding unfavourable declining (2019). Great skua breeding unfavourable declining (2019). Guillemot breeding unfavourable no change (2017).

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
		Old Red Sandstone igneous favourable maintained (2003). Quaternary of Scotland favourable maintained (2003). Coastal geomorphology of Scotland favourable maintained (2003). Upland assemblage favourable recovered (2014). Arctic skua unfavourable declining (2019). Fulmar breeding unfavourable no change (2017). Great skua breeding unfavourable declining (2019). Great black backed gull unfavourable declining (2019). Guillemot breeding unfavourable no change (2017). Peregrine breeding favourable maintained (2013). Red-throated diver favourable maintained (2007). Seabird colony breeding favourable maintained (2000).		Kittiwake breeding unfavourable declining (2017). Peregrine breeding favourable maintained (2013). Puffin breeding unfavourable declining (2004). Red-throated diver breeding favourable maintained (2007). Seabird assemblage breeding unfavourable declining (2019). SAC Acid peat-stained lakes and ponds favourable maintained (2014). Alpine and subalpine heaths favourable maintained (2014). Base rich fens favourable maintained (2014). Blanket bog favourable maintained (2014). Dry heaths favourable maintained (2014). Hard-water springs depositing lime favourable maintained (2006).

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
				Plants in crevices on base-rich rocks favourable recovered (2015). Vegetated sea cliffs favourable maintained (2010). Wet heathland with cross-leaved heath favourable maintained (2004).
Keelylang and Swartaback Burn SSSI (also forms part of Orkney Mainland Moors SPA)	Breeding hen harrier; breeding bird assemblage; upland habitat assemblage (mosaic).	Breeding bird assemblage favourable maintained (2003). Hen harrier breeding favourable maintained (2013). Upland habitat assemblage favourable maintained (2016)	Orkney Mainland Moors SPA Breeding hen harrier, breeding short-eared owl and breeding red-throated diver; non-breeding hen harrier.	Orkney Mainland Moors SPA Hen harrier breeding favourable maintained (2013). Hen harrier non-breeding favourable maintained (2013). Red-throated diver breeding favourable maintained (2007). Short-eared owl breeding favourable maintained (2004).
Loch of Banks SSSI	Non-breeding hen harrier; breeding bird assemblage; basin fen.	Basin fen unfavourable no change (2013). Breeding bird assemblage favourable maintained (2019). Hen harrier non-breeding unfavourable no change (2014).	N/A	N/A
Loch of Isbister and The Loons SSSI Loch of Isbister SAC	Breeding pintail; breeding bird assemblage; basin fen.	Basin fen favourable maintained (2021).	Loch of Isbister SAC Very wet mires often identified by an unstable 'quaking' surface; Otter; Naturally nutrient-rich lakes or lochs	Naturally nutrient-rich lochs often dominated by pondweed unfavourable declining (2014).

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
		Breeding bird assemblage favourable maintained (2007). Pintail breeding favourable maintained (2012).	which are often dominated by pondweed.	Otter favourable maintained (2011). Very wet mires often identified by an unstable quaking surface favourable maintained (2012).
Lochs of Harray and Stenness SSSI Stenness SAC	Non-breeding goldeneye, non-breeding pochard, non-breeding scaup, non-breeding tufted duck; saline lagoon; freshwater nerite snail (*Theodoxus fluviatilis*); a caddis fly; eutrophic loch.	Eutrophic loch unfavourable no change (2010). Saline lagoon favourable maintained (1999). Freshwater nerite snail favourable maintained (2013). Goldeneye non-breeding unfavourable declining (2013). Pochard non-breeding unfavourable recovered (2013). Scaup non-breeding favourable maintained (2013). Tufted duck non-breeding unfavourable no change (2013). Caddis fly favourable maintained (2013).	Loch of Stenness SAC Lagoons.	Lagoons favourable maintained (2013).
Marwick Head SSSI/SPA	Breeding seabird colony; breeding guillemot; breeding kittiwake.	Guillemot breeding unfavourable declining (2017).	Breeding seabird assemblage; breeding guillemot; breeding kittiwake.	Guillemot breeding unfavourable declining (2017).

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
		Kittiwake breeding unfavourable declining (2015). Seabird colony breeding unfavourable declining (2015).		Kittiwake breeding unfavourable declining (2015). Seabird assemblage breeding unfavourable declining (2015).
Mill Bay SSSI	Quaternary of Scotland (exposed shelly till).	Quaternary of Scotland favourable maintained (2014).	N/A	N/A
Mill Loch SSSI	Breeding red-throated diver.	Red-throated diver breeding favourable maintained (2012).	N/A	N/A
Muckle Head and Selwick SSSI	Quaternary of Scotland.	Quaternary of Scotland favourable maintained (2002).	N/A	N/A
Muckle and Little Green Holm SSSI	Grey seal.	Grey seal favourable maintained (2014).	N/A	N/A
North Hill SSSI (also forms part of Papa Westray SPA)	Breeding Arctic skua; breeding Arctic tern; maritime cliff.	Maritime cliff favourable maintained (2012). Arctic skua breeding unfavourable declining (2015). Arctic tern breeding unfavourable no change (2017).	Papa Westray SPA Breeding Arctic skua; breeding Arctic tern.	Arctic skua breeding unfavourable declining (2015). Arctic tern breeding unfavourable no change (2017).
Northwall SSSI	Machair loch; machair.	Machair loch favourable maintained (2004). Machair favourable maintained (2012).	N/A	N/A
North Orkney	Breeding Red-throated diver.			

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
	Non-breeding Great northern diver and Slavonian grebe. Migratory Velvet scoter.			
Orphir and Stenness Hills SSSI (also forms part of Orkney Mainland Moors SPA)	Breeding hen harrier; breeding bird assemblage; Upland habitat assemblage (mosaic).	Breeding bird assemblage favourable maintained (2012). Upland habitat assemblage favourable maintained (2006). Hen harrier breeding favourable maintained (2013).	Orkney Mainland Moors SPA Breeding hen harrier, breeding short-eared owl and breeding red-throated diver; non-breeding hen harrier.	Orkney Mainland Moors SPA Hen harrier breeding favourable maintained (2013). Hen harrier non-breeding favourable maintained (2013). Red-throated diver breeding favourable maintained (2007). Short-eared owl breeding favourable maintained (2004).
Pentland Firth Islands SSSI/SPA	Breeding Arctic tern; Vascular plant assemblage.	Vascular plant assemblage favourable recovered (2019). Arctic tern breeding unfavourable no change (2018).	Breeding Arctic tern.	Arctic tern breeding unfavourable no change (2018).
Rousay SSSI/SPA	Breeding Arctic tern, breeding guillemot, breeding kittiwake; breeding seabird colony; breeding Arctic skua; breeding bird assemblage; blanket bog; subalpine wet heath; mesotrophic loch; maritime cliff.	Subalpine wet heat favourable recovered (2008). Blanket bog favourable maintained (2014). Mesotrophic loch unfavourable declining (2014). Maritime cliff unfavourable recovering (2008).	Breeding seabird assemblage; breeding guillemot; breeding Arctic skua; breeding Arctic tern; breeding fulmar; breeding kittiwake.	Arctic skua breeding unfavourable no change (2015). Arctic tern breeding unfavourable declining (2007). Fulmar breeding favourable maintained (2016). Guillemot breeding unfavourable declining (2016).

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
		Vascular plant assemblage favourable maintained (2009). Breeding bird assemblage favourable maintained (2002). Arctic skua breeding unfavourable no change (2015). Arctic tern breeding unfavourable declining (2007). Guillemot breeding unfavourable declining (2016). Kittiwake breeding unfavourable declining (2016) Seabird colony breeding unfavourable declining (2016).		Kittiwake breeding unfavourable declining (2016). Seabird assemblage unfavourable declining (2016).
Sanday SAC	N/A	N/A	Reefs; subtidal sandbanks; intertidal mudflats and sandflats; Harbour seal.	Harbour seal unfavourable declining (2013). Intertidal mudflats and sandflats favourable maintained (2008). Reefs favourable maintained (2008). Subtidal sandbanks favourable maintained (2008).
Scapa Flow	Breeding red-throated diver Non-breeding Black-throated diver, Common eider, European shag, Great			

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
	northern diver, Long-tailed duck, Red-breasted merganser, Slavonian grebe.			
Stromness heaths and Coast SSSI/SAC	Subalpine dry heath; coastal geomorphology; non-marine Devonian stratigraphy; maritime cliff.	Subalpine dry heath favourable maintained (2008). Maritime cliff favourable maintained (2012). Non-marine Devonian partially destroyed (2017). Coastal geomorphology of Scotland favourable maintained (2013).	Dry heaths; base-rich fens; vegetated sea cliffs.	Base rich fens favourable maintained (2014). Dry heaths favourable maintained (2008). Vegetated sea cliffs favourable maintained (2012).
Sule Skerry SSSI Part of Sule Skerry and Sule Stack SPA	Breeding seabird colony; breeding puffin; breeding shag; breeding storm petrel.	Puffin breeding favourable declining (2015). Shag breeding unfavourable declining (2015). Storm petrel breeding favourable declining (2018). Seabird colony breeding favourable maintained (2015).	Sule Skerry and Sule Stack SPA Breeding gannet; breeding storm petrel; breeding seabird assemblage; breeding guillemot; breeding Leach's petrel; breeding puffin; breeding shag.	Sule Skerry and Sule Stack SPA Gannet breeding favourable maintained (2013). Guillemot breeding favourable maintained (2015). Leach's petrel breeding unfavourable declining (2018). Puffin breeding favourable declining (2015). Seabird assemblage breeding favourable maintained (1998). Shag breeding unfavourable declining (2015).
Sule Stack SSSI Part of Sule Skerry and Sule Stack SPA	Breeding gannet.	Gannet breeding favourable maintained (2013).		

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
				Storm petrel breeding favourable declining (2018).
Switha SSSI/SPA	Non-breeding Greenland barnacle goose.	Greenland barnacle goose non-breeding favourable maintained (2013).	Non-breeding Greenland barnacle goose.	Greenland barnacle goose non-breeding favourable maintained (2013).
Ward Hill Cliffs SSSI	Maritime cliff.	Maritime cliff favourable maintained (2012).	N/A	N/A
Waulkmill SSSI	Saltmarsh; golden-rod case-bearer moth; maritime cliff.	Saltmarsh favourable maintained (2012). Golden-rod case-bearer moth favourable maintained (2014) Maritime cliff favourable maintained (2012).	N/A	N/A
West Mainland Moorlands SSSI (also forms part of Orkney Mainland Moors SPA)	Breeding hen harrier, breeding short-eared owl and breeding red-throated diver; breeding bird assemblage; upland assemblage (mosaic); blanket bog.	Blanket bog unfavourable recovering (2014). Breeding bird assemblage favourable maintained (2015). Upland assemblage unfavourable recovering (2014). Hen harrier breeding favourable maintained (2013). Red-throated diver breeding favourable maintained (2007). Short-eared owl breeding not assessed.	Orkney Mainland Moors SPA Breeding hen harrier, breeding short-eared owl and breeding red-throated diver; non-breeding hen harrier.	Orkney Mainland Moors SPA Hen harrier breeding favourable maintained (2013). Hen harrier non-breeding favourable maintained (2013). Red-throated diver breeding favourable maintained (2007). Short-eared owl breeding favourable maintained (2004).

Site	SSSI qualifying features	SSSI Site Condition	SPA/SAC/Ramsar qualifying interests	SPA/SAC/Ramsar Site Condition
West Westray SSSI/SPA	Breeding guillemot; breeding seabird colony; breeding Arctic skua; breeding Arctic tern; breeding kittiwake; breeding razorbill; maritime cliff.	Maritime cliff favourable maintained (2012). Arctic skua breeding unfavourable declining (2017). Arctic tern breeding unfavourable no change (2017). Guillemot breeding unfavourable declining (2017). Kittiwake breeding unfavourable declining (2017). Razorbill breeding favourable recovered (2017). Seabird colony breeding unfavourable declining (2017).	Breeding guillemot; breeding seabird assemblage; breeding Arctic skua; breeding Arctic tern; breeding fulmar; breeding kittiwake; breeding razorbill;	Arctic skua breeding unfavourable declining (2017). Arctic tern breeding unfavourable no change (2017). Fulmar breeding favourable recovered (2017). Guillemot breeding unfavourable declining (2017). Kittiwake breeding unfavourable declining (2017). Razorbill breeding favourable recovered (2017). Seabird assemblage breeding unfavourable declining (2017).

Site	Nature Conservation Marine Protected Area (NCMPA) qualifying features	Conservation Objectives	NCMPA Site Condition

Wyre and Rousay Sound	Kelp and seaweed communities on sublittoral sediment; maerl beds; Marine Geomorphology of the Scottish Shelf Seabed – forms part of the Orkney carbonate production area..	Conserve in favourable condition or bring into, and maintain, in favourable condition.	Required measures were implemented in 2016 and the features are considered to be achieving their objectives.
Papa Westray	Black guillemot; Marine Geomorphology of the Scottish Shelf Seabed – forms part of the Orkney carbonate production area..	Conserve in favourable condition or bring into, and maintain, in favourable condition.	Black guillemot declining since site designation. The implementation of fisheries management measures should improve feature status. Geodiversity features achieving their objectives.
North-west Orkney	Sandeels; Sand banks, sand wave fields and sediment wave fields representative of the Fair Isle Strait Marine Process Bedforms Key Geodiversity Area	Conserve in favourable condition or bring into, and maintain, in favourable condition.	The protected features are considered to be in favourable condition.

Appendix B.2: List of Priority Marine Features recorded within 12 nm of Orkney (at the time of writing)

Blue mussel beds

1. *Mytilus edulis* **on littoral sediments** (at outflow of Burn of Lingro, Scapa bay)

Flame shell beds

Horse mussel beds

1. *Modiolus modiolus* beds with hydroids and red seaweeds on tide-swept circalittoral mixed substrata
2. *Modiolus modiolus beds on open coast circalittoral mixed sediment*
3. *Modiolus modiolus* beds with fine hydroids and large solitary ascidians on very sheltered circalittoral mixed substrata
4. *Modiolus modiolus* beds with *Chlamys varia,* sponges, hydroids and bryozoans on slightly tide-swept very sheltered circalittoral mixed substrata

Intertidal mudflats

Kelp and seaweed communities on sublittoral sediment

Kelp beds

1. *Laminaria hyperborea* forest with a faunal cushion (sponges and polyclinids) and foliose red seaweeds on very exposed upper infralittoral rock
2. *Laminaria hyperborea* with dense foliose red seaweeds on exposed infralittoral rock
3. *Laminaria hyperborea* on tide-swept, infralittoral rock
4. *Laminaria hyperborea* on tide-swept infralittoral mixed substrata
5. *Laminaria hyperborea* and foliose red seaweeds on moderately exposed infralittoral rock

Low or variable salinity habitats

1. Kelp in variable or reduced salinity
2. Submerged fucoids, green or red seaweeds (Low salinity infralittoral rock)
3. Bird’s nest stonewort – *Tolypella nidifica*
4. Baltic stonewort – *Chara baltica*
5. Small brackish water snail – *Hydrobia acuta neglecta*

Maerl beds

1. Maerl or coarse shell gravel with burrowing sea cucumbers

Native oysters

1. *Ostrea edulis*

Seagrass beds

1. *Zostera marina/angustifolia* beds on lower shore or infralittoral clean or muddy sand
2. *Ruppia maritima* in reduced salinity infralittoral muddy sand

Tide-swept algal communities

1. Fucoids in tide-swept conditions
2. *Halidrys siliquosa* and mixed kelps on tide-swept infralittoral rock with coarse sediment
3. Kelp and seaweed communities in tide-swept sheltered conditions
4. *Laminaria hyperborea* on tide-swept infralittoral mixed substrata

Tide-swept coarse sands with burrowing bivalves

Low or limited mobility species

1. Northern feather star – Leptometra celtica
2. Fan mussel - *Atrina fragilis*
3. Ocean quahog – *Arctica islandica*

Mobile species

1. European spiny lobster – *Palinurus elephas*
2. European eel – *Anguilla Anguilla*
3. Atlantic salmon - *Salmo salar*
4. Sea lamprey – *Petromyzon marinus*?
5. Sea trout - *Salmo trutta*
6. Sparling – *Osmerus eperlanus*
7. Angler fish – *Lophius piscatorius*
8. Atlantic halibut – *Hippoglossus hippoglossus*
9. Atlantic herring – *Clupea harengus*
10. Atlantic mackerel – *Scomber scombrus*
11. Cod – *Gadus morhua*
12. Greenland halibut – *Reinhardtius hippoglossoides*
13. Horse mackerel – *Trachurus trachurus*
14. Ling – *Molva molva*
15. Norway pout – *Trisopterus esmarkii*
16. Round-nose grenadier – *Coryphaenoides rupestris*
17. Saithe – *Pollachius virens*
18. Sandeels – *Ammodytes marinus* and *Ammodytes tobianus*
19. Sand goby – *Pomatoschistus minutus*
20. Whiting – *Merlangius merlangus*
21. Basking shark – *Cetorhinus maximus*
22. Common skate – *Dipturus batis* complex

23. Porbeagle shark – *Lamna nasus*
24. Spiny dogfish – *Squalus acanthias*
25. Atlantic white-sided dolphin – *Lagenorhynchus acutus*
26. Bottlenose dolphin – *Tursiops truncates*
27. Fin whale – *Balaenoptera physalus*
28. Harbour porpoise – *Phocoena phocoena*
29. Killer whale – *Orcinus orca*
30. Long-finned pilot whale – *Globicephala melas*
31. Minke whale – *Balaenoptera acutorostrata*
32. Northern bottlenose whale – *Hyperoodon ampullatus*
33. Risso's dolphin – *Grampus griseus*
34. Short-beaked common dolphin – *Delphinus delphis*
35. Sowerby's beaked whale – *Mesoplodon bidens*
36. Sperm whale – *Physeter macrocephalus*
37. White-beaked dolphin – *Lagenorhynchus albirostris*
38. Harbour seal – *Phoca vitulina*
39. Grey seal – *Halichoerus grypus*
40. Otter – *Lutra lutra*

Appendix B.3: Water quality and overall status classification (at the time of writing)

Water body	Water quality	Change	Overall status	Change
LOCHS				
Loch of Swanney	**Good**	**No change**	**Good**	**No change**
Loch of Hundland	**Good**	**No change**	**Good**	**No change**
Loch of Boardhouse	**Good**	**No change**	**Good**	**No change**
Loch of Harray	**Good**	**No change**	**Good**	**No change**
Loch of Skaill	**Good**	**No change**	**Good**	**No change**
Loch of Tankerness	**Good**	**No change**	**Good**	**No change**
Loch of Kirbister	**Good**	**No change**	**Good**	**No change**
Heldale Water	**Good**	**No change**	**Good**	**No change**
BURNS				
Burn of Hourston	**Moderate**	**Degraded**	**Moderate**	**Improved**
Voy Burn	**Moderate**	**Improved**	**Moderate**	**Improved**
Tormiston Burn	**Good**	**No change**	**Moderate**	**No change**
Netherbrough Burn	**High**	**No change**	**Moderate**	**No change**
Burn of Corrigall	**Good**	**Degraded**	**Moderate**	**No change**
Suso Burn	**High**	**No change**	**Poor**	**No change**
Burn of Sweenalay	**Good**	**Degraded**	**Good**	**No change**
Mill Burn d/s of Loch of Kirbister	**High**	**No change**	**Moderate**	**Degraded**
Mill Burn u/s of Loch of Kirbister	**High**	**No change**	**Good**	**No change**
Burn of Boardhouse	**Moderate**	**Degraded**	**Moderate**	**Degraded**
Burn of Kirbuster	**High**	**No change**	**Good**	**No change**

Water body	Water quality	Change	Overall status	Change
Burn of Hillside	High	No change	Good	No change
Swannay Burn d/s Swanney Farm	High	No change	Good	No change
Swannay Burn u/s Swannay Farm	High	No change	Good	No change
Burn of Etheriegeo	High	No change	Good	No change
Rackwick Burn	Good	Degraded	Good	No change
Mill Burn	Good	Degraded	Good	No change
Loch of Stenness to Harray connecting water	High	No change	High	No change
COASTAL WATERS				
Old Head to Tor Ness	Good	No change	Good	No change
Dunnet Head to Duncansby Head	Good	No change	Good	No change
Mull Head to Old Head	Good	No change	Good	No change
Kirk Hope	Good	No change	Good	No change
Skaith, Mainland	Good	No change	Good	No change
Burgh Head to Mull Head	High	Improved	High	Improved
Long Ayre Lagoon	High	No change	High	No change
Tor Ness to Breck Ness	Good	No change	Good	No change
The Ouse, Finstown	High	Improved	High	Improved
Point of Backaquoy Lagoon	High	Improved	High	Improved
Kirkwall	High	Improved	High	Improved
Oyce of Isbister	High	Improved	High	Improved
The Ouse, Ling Holm, Shapinsay	High	Improved	High	Improved

Water body	Water quality	Change	Overall status	Change
Breck Ness to Noup Head	High	Improved	High	Improved
Oyce of Huip, Stronsay	High	Improved	High	Improved
Sule Skerry and Sule Stack	High	Improved	High	Improved
Start Point to Burgh Head	High	Improved	High	Improved
Westray Firth	High	Improved	High	Improved
Noup Head to Start Point	High	Improved	High	Improved
Quivals Loch, Sanday	High	No change	High	No change
Bay of Brough Lagoons, Sanday	High	No change	High	No change
Bay of Brough Lagoons, Sanday	High	No change	High	No change
Point of Nevin Lagoon, Sanday	High	No change	High	Improved
Little Sea Lagoon, Sanday	High	No change	High	Improved
Bay of Ham Lagoon	High	No change	High	Improved
Vasa Loch, Shapinsay	High	No change	High	Improved
Kirkwall Lagoon (Peedie Sea)	High	No change	Good	No change
Loch of Ayre, Mainland	Good	Degraded	Good	Degraded
Loch of Stenness, Mainland	Good	Degraded	Good	Degraded
Scapa Flow	Good	No change	Good	No change

Appendix B.4 Hoy and West Mainland National Scenic Area


Orkney - Hoy & West Mainland
National Scenic Area
Outshore Point
Point of Howana Geo
Bay of Skaill
Hole o' Row
Row Head
Loch of Skaill
Sandwick
Isbister
Northdyke
Swartland
Quoyscottie
Dounby
Corston
Harray
Brough
Loch of Hundland
Evie
Stenso
Redland
Norseman
Corrigall
Settiscarth
Hestwall
Birsay
Kirbuster
Twatt
Greeny
Beaquoy
Skeabrae
Yesnaby
Tenston
Voy
Netherbrough
Bimbister
Finstown
Bay of Firth
Arion
Loch of Harray
Ring of Brodgar
Stenness
Maes Howe
Stone Circles
Neban Point
Quholm
Heddle
Grimbister
Nisthouse
Neblonga
Black Craig
Outertown
Bridge of Waithe
Sulligeo
Clouston
STROMNESS
Bay of Ireland
Ireland
Breck Ness
Loch of Kirbister
Hobbister
HOY SOUND
Point of Oxan
Hall of Clestrain
Clestrain
Clestrain Sound
Kirbister
Orphir
Swanbister
Bay of the Tongue
Kame of Hoy
Geo of Hellia
Breckan
Graemsay
Burra Sound
Murra
Petertown
Houton
St Nicholas Church
Waulkmill
Swanbister Bay
Midland Ness
Linksness
Quoyness
St John's Head
Cuilags
Hoy
Houton Head
Bring Head
BRING DEEPS
The Sow
Ward Hill
Scad Head
Cava
Barrel of Butter
Old Man of Hoy
Moor Fea
Moorfea
Rackwick
South Burn
Dwarfie Stane
Lyrawa Burn
Pegal Burn
Green Head
S C A P A
RORA HEAD
Rack Wick
Rysa Little
Sound
Calf of Flotta
Lyrie Geo
H O Y
Sneuk Head
Genie Fea
Lyness
Burn of Ore
Little Rack Wick
Heldale Water
Little Ayre
The Berry
North Bay
Melsetter
Ha Wick
Hurliness
Tor Ness
Brims
Grassy Cletts
Scale 1:150,000
Data source: Scottish Government. © Crown Copyright and database right 2009. All rights reserved.
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Extract from: Scottish Natural Heritage (2010). The special qualities of the National Scenic Areas. *SNH Commissioned Report No.374.*

HOY AND WEST MAINLAND NATIONAL SCENIC AREA

Orkney Isles

Description from *Scotland's Scenic Heritage* 1978

The great ice-rounded eminences of the hills of North Hoy dominate the Orkney scene with a power that is scarcely in tune with their modest height (479 metres). Their bold shape, fine grouping, soaring cliffs and headlands, including the famous stack of the Old Man of Hoy, are almost as important to the Caithness scene as they are in that of Orkney.

North Hoy has a particularly strong visual inter-relationship with the south-west mainland of Orkney, the pastoral character of which around the shores of the Loch of Stenness makes a good foil for the bold hills of Hoy. The basin of this loch is enclosed by low rolling hills of lush grassland, some arable land, scattered farm steadings and stone dykes with a noticeable lack of trees, giving a very open landscape, the character of which is enlivened by the abundant remains of ancient occupation.

This landscape culminates in the west in cliffed headlands like a rampart against the sea, which breaks through at Hoy Sound in a tidal race of impressive swiftness. The stone-built settlement of Stromness rising steeply out of its harbour further enhances the character of the area.

The Special Qualities of the Hoy and West Mainland National Scenic Area

- A palimpsest of geology, topography, archaeology and land use
- An archaeological landscape of World Heritage Status
- The spectacular coastal scenery
- Sandstone and flagstone as an essence of Orkney
- A long-settled and productive land and sea
- The contrast between the fertile farmland and the unimproved moorland
- A landscape of contrasting curves and lines
- Land and water in constantly changing combinations under the open sky
- The high hills of Hoy
- The townscape of Stromness, its setting and its link with the sea
- The traditional buildings and crofting patterns of Rackwick

Special Quality	Further information
• ***A palimpsest of geology, topography, archaeology and land use***	
This is a landscape composed of different layers that can be readily seen and understood: A base layer of Geology, with its horizontal strata of Devonian sandstones and flagstones, exemplified by the Old Man of Hoy and the cliffs of the western coastline. Overlain by undulating Topography, where a rocky coast rises through gentle lowlands to higher rounded summits. Overlain by Archaeology and Land Use, where a succession of different inhabitants have left their own distinctive patterns and monuments in the Orcadian landscape.	Orkney is a landscape of distinctive geology, topography, archaeology and land use which can be seen as layers within the landscape – a palimpsest. The NSA exemplifies this. The geology is horizontally bedded and relatively uniform. The topography consists of coasts both shallow and steep, extensive lowlands in the basins of the Lochs of Harray and Stenness, and the extensive uplands of Hoy. The surface layer contains archaeological sites, modern farmland and unimproved moorland.
• ***An archaeological landscape of world heritage status***	
By their location, shape and vertical presence, the Neolithic monuments of the Ring of Brodgar, the Stones of Stenness and the grass-covered tomb of Maes Howe, are distinctive landmarks of international renown.	*'The Orkney imagination is haunted by time.'* George Mackay Brown The Neolithic monuments of central Orkney comprise the Heart of Neolithic Orkney World Heritage Site, and have become recognisable landmarks of West Mainland. Within the NSA they include:

They lie within a landscape of low-lying farmland, which has been farmed for millennia. Wilder moors and hills rise to the east, and the Hills of Hoy form the backdrop to the south. Unusually for Orkney, there are few clear views of the open sea. The area feels enclosed, in the middle of a vast lowland amphitheatre of glistening loch and fertile pasture. The NSA is also rich in remains from other eras, from Norse and medieval to the Second World War. However, visible monuments represent only the clearest element of much more extensive and complex evidence of settlement and use of the landscape as revealed by archaeological excavations.	• The Stones of Stenness, the Ring of Brodgar and other standing stones composed of large flags of Devonian sandstone. • Maes Howe and Unstan (Onston) cairns, and other cairns and tumuli, which form distinctive, often grass covered low mounds in the landscape. The solid carved boulder block of the Dwarfie Stane on Hoy lies within the NSA (although not in the World Heritage Site).
• ***The spectacular coastal scenery***	
With their towering red cliffs, the Atlantic coastline creates a spectacular scene, enhanced by the presence of the Old Man of Hoy, the highest sea stack in the British Isles. These vertical structures of red sandstone, home to numerous seabirds are both a landmark and an iconic image of the Orkney Islands, especially for those arriving by sea from across the Pentland Firth. In comparison, the sheltered waters and gentle topography of the western approaches to Scapa Flow contrast with the Atlantic-battered western seaboard.	The west coast of Mainland and Hoy contain high vertical cliffs, with St John's Head on Hoy, rising to 338m (the third highest sea cliff in Britain). They are composed of the Devonian Sandstone, with its distinctive bedding planes. The erosive force of the Atlantic storms and waves has exploited weaknesses in the strata to create cavities, skerries, gloups, geos, caves, wave cut platforms and boulder-strewn beaches. The Old Man of Hoy towers 137m from its resistant, igneous rock foundation at sea level; it was not climbed until 1966. The cliffs provide home to numerous sea birds. The west coast of Hoy is part of the Hoy SSSI, SAC & SPA, and RSPB reserve, containing around 120,000 birds. These include nationally important populations of fulmar, great black-backed gull and guillemot.
• ***Sandstone and flagstone as an essence of Orkney***	
The presence of sandstones and flagstones, whether occurring as natural exposures or comprising human artefacts, is a characteristic of the NSA, indeed of Orkney as a whole. There are the towering cliffs and stacks of Hoy with their rusty reds and ochres, and also the lower rocky coasts with their	Hoy and West Mainland are composed predominantly of Devonian Old Red Sandstone, which includes Hoy Sandstone and Stromness Flags. The sandstone fractures along bedding planes, creating blocky stones and flag stones, which creates an excellent building material, including for standing stones. It is also prone to weathering, leading to changes in the colour and hue of the rock.

wave-cut platforms and beaches of flagstones. There are the drystane dykes with their characteristic flattened stones, the traditional flagstone roofs as exemplified at Rackwick, and the golden or honey coloured stone of farm buildings and of old Stromness. There are ancient sandstone tombs, the solid carved boulder of the Dwarfie Stane, and the upstanding standing stones of the ancient circles.	
• ***A long-settled and productive land and sea***	
The land has the appearance of a long and well-settled agricultural landscape, with solid farm buildings, fertile, green fields and numerous cattle. Likewise the ever-presence of the sea is a reminder that fishing and whaling have also been key to the prosperity of the islands.	The history of agriculture in Orkney goes back to Neolithic times. The mild climate, level ground and fertile soils have always made Orkney surprisingly fertile compared to Shetland, the Western Isles or mainland Scotland immediately to the south. This has been the key to the prosperity of the islands. Currently there are over 100,000 cattle in Orkney. It is a working landscape, and the current farms have had a long evolutionary history, including crofting townships and 19th century improvement farms. The steadings often preserve examples of kiln barns and other 19th century structures typical of crofting, such as the linear farmsteads. Examples of old townships include Clouston and Grimeston. The sea has always provided a source of food, as far back as the fish and shellfish remains found in the Neolithic middens. Additionally, Stromness was a centre of whaling and fishing industries, which brought prosperity to the islands.
• ***The contrast between the fertile farmland and the unimproved moorland***	
The fertile low ground with its farms and fields contrasts markedly with the open, uninhabited higher ground of moorland and hill. This is emphasised by the differing colours of the two areas – the bright greens of the farmland and the browns of the uplands.	Much of the low ground of the NSA, around the loch basin of Stenness and on the gentle, coastal slopes, is comprised of rich, fertile agricultural land. The fields consist of improved grassland. On the higher ground of Ward Hill (Stenness), and on the rugged, glaciated hills of Hoy there is open, unimproved, often heather-dominated, moorland and blanket peat. These areas have long been used for peat extraction, with old cuttings and extraction routes visible in many areas.

• ***A landscape of contrasting curves and lines***	
The combination of curves and lines is a defining feature of this landscape. The pattern of the landform is smooth, with gentle curves, but the land itself often ends spectacularly in vertical cliffs and a horizontal horizon of sea. Rocks on the seashore and in the buildings and dykes tend to be flat and linear, and the field boundaries take straight lines across the curving landscape. There are no trees to soften the regular outlines of the farm buildings that stand proud on the undulating pasture, and the ancient monuments can be a combination of the linear and the circular: upstanding stones within a circular surround.	The low-lying land rises gently from the sea, to rounded farmland and moorland; above are the more dramatic, steeper, but smoothly-curved hills of Hoy. There are curves also in many of the ancient monuments: the distinctive curved forms of Maes Howe and other cairns in the landscape; and the circular forms of the ditches in the henge monuments of Brodgar and Stenness. These curves contrast with the linear, angular forms, often derived from the underlying sandstone: the geological bedding planes, the joints and fractures in the rocky coastline, the vertical and angular cliffs and stacks, the blocky nature of the stones, the dykes with their flat stones. Additionally, the fields and buildings tend to be rectilinear.
• ***Land and water in constantly changing combinations under the open sky***	
Under the wide horizons, endless combinations of water, land, sea and sky can be experienced, varying both with location and the weather. Movement is brought to the landscape by the almost ceaseless wind, whether the scudding of clouds, the shafts of sunlight moving across the fields and moors, the patterns on the water, or long grass blowing in the wind.	Sea or loch is never far distant: the lochs of Harray and Stenness, surrounded by smooth lowlands and hills; small voes and wicks such as Hamnavoe; the larger bay of Ireland, leading to sounds and deeps, and to the whale-shaped Graemsay; the enclosed Scapa Flow (bordering the NSA); the exposed Pentland Firth; and the open Atlantic Ocean.
Location-specific qualities	
• ***The high hills of Hoy***	
The high, rounded hills of Hoy form a spectacular backdrop to much of West Mainland. With their corries, deep U-shaped valleys and patterned ground, these rugged, moorland hills reflect their glacial history. Within a sheltered gully in these hills lies the small Berriedale birchwood, the most northerly native wood in Britain.	Glaciated landforms on Hoy include distinctive U-shaped valleys, moraines, including a terminal moraine at Rackwick, and corries, the most northerly in Britain. Post-glacial features include patterned ground on the summit of Ward Hill (Hoy) and raised beaches. In contrast to Hoy, Mainland is a drowned coast without raised beaches. Berriedale Wood is composed of downy birch, with rowan, willow, aspen and hazel. There is an understorey of heather, roses, honeysuckle, ferns and blaeberry.

• *The townscape of Stromness, its setting and its link with the sea*	
The stone-built settlement of Stromness, rising steeply out of its harbour, further enhances the character of the area. The townscape is distinctive, comprised of sandstone houses around the bay and on the hill behind, its traditional settlement pattern little altered. Particularly notable are its narrow, stone-flagged main street, with vennels leading down to the numerous private wharves; and narrow streets and paths leading up the hill behind. The town has always been dependent on the sea, and maintains strong maritime links. There is constant movement of boats in the harbour and the surrounding seas, from fishing and diving boats, to the arrival and departure of the ferry from Caithness.	Stromness and Hamnavoe go back to Viking times, if not before, with the natural harbour and relative calm waters compared to the surrounding seaways of the Atlantic ocean and the North Sea. Immediately north of mainland Britain, Orkney and its seaways have always been a strategic point for sea navigation. In times of war it has been an alternative route to the potentially dangerous English Channel. The town has had a rich, maritime history, including being of key importance to the herring fishery. It has been an important strategic location in times of war, for example during the Napoleonic and First & Second World Wars. It has had strong links to the arctic, particularly through whaling and as base for the Hudson Bay Company.
• *The traditional buildings and crofting patterns of Rackwick*	
Set at the end of a glacial valley, between towering sandstone cliffs and a rocky beach open to the Atlantic Ocean, the distinctive and attractive village of Rackwick contains stone buildings and crofts in a traditional layout and in a spectacular setting.	*'Rackwick… the only example of a … crofting township on estate land where most of the houses are still in place.'* Bailey (2007) The distinctiveness of Rackwick is brought about by the prevalence of vernacular buildings. Modern buildings, where present, have broadly retained the vernacular style. There are also examples of old longhouses. Sandstone is the building material and some roofs consist of flagstones or turf.

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APPENDIX B.5: Scheduled Monuments in the Orkney Islands

Prehistoric domestic and defensive (136 items)

1282HY318191 Howen Brough, broch, Corston
1283 HY588054 The Howie, mound 300m SE of Newbanks, Deerness
1284 HY297263 Hundland, settlement mound 270m SW of
1287 HY552288 -HY554290 Knoll of Merrigarth, burnt mound & mound 300m SW of Greentoft, Southside
1289 HY266238 Knowe of Brenda, burnt mound 250m WNW of Downatown
1293 HY374320 Knowe of Dale, burnt mound 230m NNW of Mid Quandale
1294 HY249243 Knowe of Dale, burnt mound, Netherdale Marwick
1295 HY230229 Knowe of Eversti, burnt mound S of Howe
1297 HY237237 Knowe of Garraquoy, burnt mound NW of Muce
1298 HY387334 Knowe of Gorn, burnt mound N of Breckan
1302 HY293211 Knowe of Makerhouse, burnt mound 100m ESE of Makerhouse
1303 HY398235 Knowe of Midgarth, settlement & cairn SE of Wood Wick
1304 HY279256 Knowe of Nesthouse, settlement
1305 HY234242 Knowe of Netherskaill, burnt mound S of Netherskaill
1308 HY249238 Knowe of Scorn, burnt mound
1310 HY375297 Knowe of Swandro, mound 400m SSE of Skaill, Westside
1328 HY512162 Hillock of Howe, broch
1333 HY289205 Easthouse, burnt mound 100m SSW of
1344 HY253149 Voy, burnt mound, NW end of Loch of Stenness
1346 HY226150 East Bigging, burnt mounds 200m S of ,Yesnaby
1355 HY555393 Muckle Hill of Linkataing, chambered cairn, homestead and field system
1360 HY390180 - HY39018 Northwald, mounds & burnt mound 300m NNE of
1362 HY312269 Park Holm, artificial island and causeway, Loch of Swannay
1363 HY368319 Lower Quandale, burnt mound WSW of
1365 HY417129 Quanterness, chambered cairn and prehistoric house 50m NW
1367 HY364319 Quoynalonga Ness, burnt mound 400m SE of, Quandale
1371 HY362266 Robie's Knowe, burnt mound N of Dyke
1372 HY293219 Loch of Sabiston, island structure
1373 HY246270 Saevar Howe, mound
1375 HY565329 Sandhill, burnt mound 200m SE of
1377 HY449331 Loch of Scockness, broch at N end of
1394 HY311273 Stoney Holm, crannog, Loch of Swanney
1395 HY450219 Sweyn's Castle, burnt mound ESE of Skelbist, Gairsay
1412 HY412219 Wass Wick, mound
1418 HY224167 Borwick, Brough of, broch
1419 HY770527 Brae of Stennabreck, settlement WNW of Stennabreck, North Ronaldsay
1420 HY425210 Hall of Rendall, settlement 275m NE of and St Thomas's Kirk
1421 HY541210 Hillock of Burroughston, broch
1422 ND337890 Green Hill of Hestiegeo, broch
1423 HY251164 Loch of Clumly, broch
1424 HY709379 Wasso, broch, Tres Ness, Sanday
1425 HY372303 Brough, broch, Westside

1426 HY352276 Burgar, broch 320m NE of
1427 HY762514 Burrian, broch and settlement S end of Stromness, North Ronaldsay
1428 HY323193 Burrian Broch, broch, Corrigall
1429 HY296183 Burrian, broch, NE shore of Loch of Harray
1430 HY288153 Burrian, broch W shore of Loch of Harray
1431 HY308168 Knowe of Burrian, broch, Netherbrough
1434 HY513003 Castle Howe, broch 400m NW of Banks
1435 HY547033 Dingy's Howe, broch, Upper Sanday
1436 HY665299 Doocot Knowe, broch, Papa Stronsay
1437 HY220054 Upper Cairn, souterrain, Braebuster
1438 ND489988 East Broch of Burray
1439 HY548061 Eves Howe, broch 640m N of Braebuster
1440 HY527380 Quoy, broch 270m NW of
1441 HY564374 Fold of Setter, enclosure 500m SW of Carrick
1442 HY442210 Ness of Boray, broch
1443 HY632300 Green Hill, broch WSW of Huip
1444 HY253267 Oxtro or Oxtra, broch, Boardhouse
1445 HY353050 Hillock of Breakna, broch 300m SE of Swanbister House
1446 HY619242 Hillock of Baywestbroch 300m W of Loch of Rothiesholm, Bay of Holland
1447 HY536223 The Hillock, broch 500m NNW of Ness of Ork
1448 HY361141 The Hillock, broch
1449 HY758522 Howmae Brae, settlement 100m WSW of Kirbist, South Bay
1450 HY390127 Ingashowe, broch 300m NE of, Finstown
1451 HY400275 Knowe of Burrian, broch, Frotoft
1452 HY431429 Knowe of Burristae, broch W of Langskaill, Bay of Kirbist
1453 HY425199 Knowe of Dishero or Discrow, broch 400m NE of South Ettit, Gorsness
1454 HY356272 Knowe of Grugar or Ryo, broch SE of Burgar
1455 HY307163 Knowe of Gullow, broch, Netherbrough
1456 HY414272 Knowe of Hunclett, broch ESE of Hunclett, Frotoft, Rousay
1457 HY425495 Knowe of Queen o'Howe, broch
1458 HY264234 Knowe of Skogar, broch S of Skogar
1459 HY363267 Knowe Stenso, broch N of Dyke
1460 HY276176 Loch of Harray, broch on W shore of
1461 HY434087 Broch of Lingro, broch
1462 HY470013 Loch of Ayre, broch at N end of, St Mary's
1463 HY371081 Loch of Kirbister, enclosures on Holm of Groundwater
1464 HY308199 Midhouse, broch 100m SSW of
1465 HY323290 Mithouse, souterrain 320m NE of
1466 HY486527 Munger House, house W of St Boniface Church, Holland
1467 HY400248 Ness of Woodwick, broch
1469 HY370307 North Howe, broch W of Quoycare, Westside
1470 HY239217 Vestra Fiold, enclosure & quarry, W of Hillcrest, North Dyke
1472 HY270151 Stackrue, broch 370m W of Lyking, Wasbister
1473 HY401228 Thing Woll, broch, Tingwall
1474 HY319298 Verron, broch 640m NW of Upper Midhouse
1475 HY231197 Verron, broch, platform and cultivation rigs, N of Bay of Skaill
1476 HY391281 Viera Lodge, broch, Frotoft
1477 HY327283 Vinquin, broch, Costa
1479 HY677159 - HY673163 Auskerry, chapel & Monkshouses
1483 HY337286 Peter's Kirk, church, burial ground and broch N of Outer Urrigar
2124 HY496508 St Tredwall's Chapel & Brough
2292 HY440323 Braes of Rinyo, settlement
2399 HY246173 South Unigarth, souterrain
3399 HY663450 Whistlebare, platform settlement 250m N of, Burness
3681 HY678164 Auskerry Island, homestead
3864 HY455262 Skirmie Clett, enclosures, Wyre
4065 HY494522 Knowes of Maebeck, burnt mound
4346 HY441112 Pickaquoy, burnt mound & settlement
4654 HY596087 Brough of Deerness, chapel and settlement
4725 HY333047 Bu of Orphir, burnt mound and mill dam 250m NW of Bu Farm
5286 HY226149 East Bigging, burnt mounds 350m S of
5631 HY690214 Lamb Head, broch, Stronsay

5871 HY283117 Diamond Cottage, defended promontory N of
6162 HY676457 - HY678458 Scar, Viking burials and settlement NE of, Sanday
6214 HY219157 Brough of Bigging, promontory fort, Yesnaby
6246 HY484005 Lamb Holm, settlement 450m WSW of Italian Chapel
6405 HY332044 Lavacroon, settlement W of Bu of Orphir
7700 HY288137 - HY288138 Wasbister, disk barrow and round houses 600m SSE of The Brecks
7855 HY291137 - HY289136 Wasbister, Stenness - Sandwick parish boundary, earthwork
8631 HY768523 Brides Loch, burnt mound 340m WNW of Bride's Kirk
8632 HY765530 Knowe o' Samilands, burnt mound, North Ronaldsay
8645 HY750534 - HY767522 Muckle Gairsty, linear earthworks between Viggay Banks and Gairsna Geo
8651 HY760514 Strom Ness, settlement 400m S of Howar, North Ronaldsay
8662 HY245018 Whaness Burn, enclosed settlement 1420m NNE of Dwarfie Stane, Hoy
8663 HY246021 Whaness Burn, enclosure 1680m NNE of Dwarfie Stane, Hoy
8664 HY247020 Whaness Burn, enclosure 1620m NNE of Dwarfie Stane, Hoy
9288 HY667294 Papa Stronsay, burnt mound 500m E of Mill
10104 HY389335 Knowe of Hamar, burnt mound, 300 m ESE of Innister
10974 ND314909 Greenhill Broch, South Walls, Orkney
10982 ND286879 The Skeo, broch, Brims, Hoy
90154 HY442116 Grain Earth House and Grainbank, two souterrains, Hatston
90157 HY381268 Aiker Ness,Broch of Gurness, broch and settlement
90195 HY483518 Knap of Howar, houses
90218 HY371305 Midhowe Broch, broch and settlement, Rousay
90245 HY397126 Rennibister, souterrain
90276 HY229188 - HY234187 Skara Brae, settlement, mounds and other remains
90337 HY427492 - HY430493 Links of Noltland, settlements
90352 HY305126 - HY309127 Watch Stone, stone settings, Barnhouse settlement, and related remains

Crosses and carved stones (1 items)

1478 HY488527 St Boniface Graveyard, tombstone

Ecclesiastical (17 items)

1253 HY388156 Burness, broch & chapel 200m S of
1420 HY425210 Hall of Rendall, settlement 275m NE of and St Thomas's Kirk
1480 HY653392 Backaskaill Bay, Cross Parish Church
1482 HY529186 Linton, chapel & graveyard 140m ENE of, Shapinsay
1483 HY337286 Peter's Kirk, church, burial ground and broch N of Outer Urrigar
1484 HY488527 St Boniface Church
1486 HY424197 South Ettit, church NE of
2124 HY496508 St Tredwall's Chapel & Brough
2438 HY479117 Bay of Meil, chapel 250m W of Holland
2934 HY230241 Marwick, chapel & burial ground
2949 HY389142 Damsay, St Mary's Chapel
3245 HY312035 Houton, chapel 60m E of Sunnybraes
3626 HY374302 Westness Church
3862 HY677164 Auskerry Island, two graves
4654 HY596087 Brough of Deerness, chapel and settlement
6162 HY676457 - HY678458 Scar, Viking burials and settlement NE of, Sanday
10977 ND283881 Chapel of Brims, Hoy
90034 HY239285 Brough of Birsay, settlements, church and related remains
90137 HY466304 St Magnus Church, Egilsay
90144 HY359288 Eynhallow Church and settlement
90235 HY335044 St Nicholas' Church, Orphir
90240 HY439488 Pierowall Church (Lady Kirk), Westray
90312 HY455431 Cross-Kirk (Westside Church), church & burial ground, Tuquoy, Westray
90317 HY443262 St Mary's Chapel, Wyre

Secular (34 items)

1260 HY668292 Earls Knoll, long cairn & windmill SSW of East House
1487 HY224093 Breckness House and site of chapel
1488 HY280205 Nether Benzieclett,house, Skeabrae
1489 HY320188 Bridge of Scuan, bridge, 350m NNE of Scuan
2181 HY434220 Langskaill, Viking houses
2726 ND324934 Crockness, Martello Tower, Long Hope
2884 HY228239 - HY229241 Marwick, Viking houses 550m NW of Howe
3249 HY466145 - HY468144 Car Ness Battery, Car Ness
3253 ND374933 Buchanan Battery, Stanger Head
3268 ND403928 Hoxa Battery & Balfour Battery, Hoxa Head
3302 ND374924 - ND378926 Stanger Head Battery, Stanger Head
3534 HY375296 - HY375293 Westness, Viking houses, noost & graveyard
3756 HY670167 Auskerry Island, longhouse
3852 HY671168 Auskerry Island, mound & rectilinear foundations
3859 HY617846 Auskerry Island, square structure
3873 HY676160 Auskerry Island, two rectangular buildings
5773 HY373301 The Wirk,t ower and hall, Westness, Rousay
5871 HY283117 Diamond Cottage, defended promontory N of
5944 HY564288 Stackel Brae, castle, Maltbarn, Eday
6405 HY332044 Lavacroon, settlement W of Bu of Orphir
8208 HY454431 Tuquoy, settlement W of Cross-Kirk, Westray
8241 HY248080 Ness Battery, coast defence battery, Stromness
8647 HY767526 Southness, farm mound E of, North Ronaldsay
8650 HY783559 Versa Breck, buildings 130m W of lighthouse, North Ronaldsay
8651 HY760514 Strom Ness, settlement 400m S of Howar, North Ronaldsay
9289 HY662296 Papa Stronsay, kelp kiln 120m N of Mill
9298 HY328010 - HY329013 Scapa Flow, wrecks of 3 battleships of German High Seas Fleet
9308 HY343000 - HY316008 Scapa Flow, wrecks of 4 cruisers of German High Seas Fleet
10340 HY410328 - HY410326 Green Gairsty, dyke, 740 m E of Langskaill
10944 ND378958 Roan Head, World War II Balloon Barrage site, 290m SW of Golta
10945 ND386958 Roan Head, World War I Coastal Battery, 580m ESE of Golta
10946 ND368955 Golta, World War II Z Battery and Light AA Battery, Flotta
90033 HY248277 Earl's Palace, Birsay
90034 HY239285 Brough of Birsay, settlements, church and related remains
90079 HY441263 Cobbie Row's Castle
90144 HY359288 Eynhallow Church and settlement
90193 HY449108 Bishop's Palace, Kirkwall
90194 HY449107 Earl's Palace, Kirkwall
90211 ND338914 Hackness, Battery and Martello Tower
90231 HY429487 Noltland Castle
90236 HY335045 - HY335043 Earl's Bu, Norse settlement and mill, Orphir

Industrial (4 items)

3689 HY675159 Auskerry Island, kelp kiln
4725 HY333047 Bu of Orphir, burnt mound and mill dam 250m NW of Bu Farm
5567 ND301943 Lyness, Hoy, diesel pumping station
6596 HY790553 Dennis Head, Old Beacon, North Ronaldsay
9289 HY662296 Papa Stronsay, kelp kiln 120m N of Mill
90076 HY325228 Click Mill,500m ESE of Eastabist, Dounby

APPENDIX B.6: Orkney Scheduled Monuments in the Care of Historic Scotland

Name	Location	Grid reference
Earl's Palace	Birsay	HY248277
Brough of Birsay, settlements, church and related remains	Birsay	HY239285
St Magnus Church	Egilsay	HY 466304
Aikerness, Broch of Gurness, broch and settlement	Evie	HY381268
Eynhallow Church and settlement	Eynhallow	HY359288
Cuween Hill, chambered cairn	Firth	HY364127
Rennibister, souterrain	Firth	HY397126
Wideford Hill, chambered cairn	Firth	HY409121
Click Mill, 500m ESE of Eastabist	Harray	HY325288
Dwarfie Stane, rock-cut tomb	Hoy	HY 244005

Name	Location	Grid reference
Hackness, Battery and Martello Tower	Hoy	ND 338912
Grain Earth House and Grainbank, two souterrains	Kirkwall	HY442116
Bishop's Palace	Kirkwall	HY449108
Earl's Palace	Kirkwall	HY449107
St Nicholas' Church	Orphir	HY335044
Earl's Bu, Norse settlement and mill	Orphir	HY335045
Holm of Papa Westray South, chambered cairn	Papa Westray	HY 505523
Knap of Howar, houses	Papa Westray	HY484519
Blackhammer, chambered cairn	Rousay	HY 414276
Knowe of Yarso, chambered cairn	Rousay	HY 404279
Midhowe Broch, broch and settlement	Rousay	HY 371308
Midhowe, chambered cairn and remains nearby	Rousay	HY 372306

Name	Location	Grid reference
Taversoe Tuick, chambered cairn and nearby remains	Rousay	HY 426276
Quoyness ,chambered cairn, Els Ness	Sanday	HY 677378
Skara Brae, settlement, mounds and other remains	Sandwick	HY229188
Ring of Brodgar, stone circle, henge and nearby remains	Stenness	HY294132
Maes Howe, chambered cairn	Stenness	HY318127
Knowe of Onston or Unstan, chambered cairn	Stenness	HY282117
Stenness, stone circle and henge	Stenness	HY306125
Barnhouse Stone, standing stone	Stenness	HY312121
Watch Stone, stone settings, Barnhouse settlement, and related remains	Stenness	HY305126
Tormiston Mill	Stenness	HY319125
Noltland Castle	Westray	HY 429488
Pierowall Church (Lady Kirk)	Westray	HY 439488

Name	Location	Grid reference
Cross-Kirk (Westside Church), church & burial ground, Tuquoy	Westray	HY 455432
Links of Noltland, settlements	Westray	HY 428492
Cobbie Row's Castle	Wyre	HY 442264
St Mary's Chapel	Wyre	HY 443264

Appendix C.1: Assessment of the Vision for the Orkney Islands Regional Marine Plan

LEGEND:

++	+	0	?	-	--
Significantly positive effects	**Positive effects**	**Minor or neutral effects**	**Effects uncertain**	**Adverse effects**	**Significantly adverse effects**

SEA receptors	Assessment findings	Comment
Climatic factors	+	The OIRMP's vision is that the Orkney Islands marine region is clean, healthy, safe and productive; Orkney's marine and coastal environment is rich in biodiversity and managed sustainably to support thriving and resilient local communities.
Biodiversity, flora & fauna	+	The OIRMP seeks to protect Orkney's rich natural and cultural heritage assets which underpin its economy and contribute to the quality of life in the islands
Water	+	
Coastal processes / Benthic sediments / Soils	+	
Geology	+	
Landscape	+	
Cultural heritage	+	

SEA receptors	Assessment findings	Comment
Population & Human health	**+**	Amenity, well-being and quality of life of local communities is a key policy strand of the OIRMP.
Material assets	**+**	The OIRMP directs development and/or activities to areas of least constraint.
Assessment summary	The Vision aims to strengthen and support Orkney's marine and coastal communities by enabling those developments and/or activities which will safeguard the natural and cultural environment and have positive and sustainable socio-economic impacts. It commits to encouraging development which will make use of and support existing services and facilities and promotes development and/or activities that will facilitate resilient local communities and safeguard quality of life.	

Appendix C.2: Assessment of the Policies of the OIRMP for their Compatibility with the SEA Objectives

Key:		
	++	Fully compatible with the SEA Objectives which are relevant to the policy
	+	Broadly compatible with SEA Objectives which are relevant to the policy
	-	Incompatible with the SEA Objectives relevant to the policy
	0	No link
	?	Compatibility with SEA Objectives is uncertain

OIRMP Policy	Initial Assessment									How recommendations were incorporated
	Climatic factors	Biodiversity	Water	Coastal processes / Benthic sediments / Soils	Geology	Landscape	Cultural heritage	Population & Human health	Material Assets	
GP1 Sustainable Development, Activities and Use	++	+	+	+	+	+	+	+	++	N/A

<table>
<tr><th>OIRMP

Policy</th><th>Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td></td><td>Policy is compatible with SEA objectives for:

• Climate change by supporting the transformational change to a low carbon economy and increasing the use of sustainable techniques in development.
• Safeguard valuable habitat from loss and fragmentation through development.
• Protect against developments which have potential to cause or exacerbate coastal erosion and flooding.
• Reduce the threat of contamination and seek to protect soils from damage such as erosion or compaction.
• Protect designated and undesignated sites which are recognised and valued for their geological or geomorphological importance.
• Seascape and landscape by facilitating positive change while maintaining and enhancing distinctive landscape character.
• Safeguard cultural heritage features and their settings through responsible design and siting of development.
• Population and human health by contributing to the protection of human health
• Material assets by promoting the efficient use of resources and the minimisation of wastes and promoting the sustainable use of natural resources.
No further recommendations.</td><td></td></tr>
<tr><td>GP2 Safety</td><td><table><tr><th>Climatic factors</th><th>Biodiversity</th><th>Water</th><th>Coastal processes / Benthic sediments / Soils</th><th>Geology</th><th>Landscape</th><th>Cultural heritage</th><th>Population & Human health</th><th>Material Assets</th></tr><tr><td>?</td><td>+</td><td>+</td><td>0</td><td>0</td><td>0</td><td>?</td><td>+</td><td>++</td></tr></table>Policy is compatible with SEA objectives for:

• Safeguarding valuable habitat from loss and fragmentation through development
• Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.
• Protect and enhance human health and promote access to health, social and recreational facilities.
• Promote sustainable and efficient use of natural resources.</td><td>N/A</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th colspan="9">Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td></td><td colspan="9">No further recommendations.</td><td></td></tr>
<tr><td>GP3. Climate Change</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td>N/A</td></tr>
<tr><td></td><td>++</td><td>++</td><td>+</td><td>0</td><td>0</td><td>0</td><td>+</td><td>+</td><td>++</td><td></td></tr>
<tr><td></td><td colspan="9">Policy is compatible with SEA objectives for:

• Climate change by contributing to national targets to address the cause of climate change by reducing greenhouse gas emissions
• supporting the transformational change to a low carbon economy and increasing the use of sustainable techniques in development.
• Supporting nature based solutions are considered
• Population and human health by contributing to the protection of human health
• Material assets by promoting the efficient use of resources and the minimisation of wastes and promoting the sustainable use of natural resources.

No further recommendations.</td><td></td></tr>
<tr><td>GP4 Supporting Sustainable Social and Economic Benefits.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td>N/A</td></tr>
<tr><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td><td>+</td><td>+</td><td></td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th>Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td></td><td>Policy is compatible with SEA objectives for:

• supporting the transformational change to a low carbon economy and increasing the use of sustainable techniques in development.
• Population and human health by contributing to the protection of human health

No further recommendations.</td><td></td></tr>
<tr><td>GP5 Safeguarding natural capital and ecosystem services.</td><td>
<table>
<tr><th>Climate factors</th><th>Biodiversity</th><th>Water</th><th>Coastal processes / Benthic sediments / Soils</th><th>Geology</th><th>Landscape</th><th>Cultural heritage</th><th>Population & Human Health</th><th>Material Assets</th></tr>
<tr><td>++</td><td>++</td><td>+</td><td>+</td><td>0</td><td>0</td><td>0</td><td>+</td><td>+</td></tr>
</table>
Policy is compatible with SEA objectives for:

• Maintain healthy ecosystems and work with the natural processes which provide important services to communities.
• Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.
• Protect against developments which have potential to cause or exacerbate coastal erosion and flooding.
• Reduce the threat of contamination and seek to protect soils from damage such as erosion or compaction.
• Protect and enhance human health and promote access to health, social and recreational facilities.
• Promote sustainable and efficient use of natural resources.

No further recommendations.</td><td>N/A</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th colspan="9">Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td rowspan="3">GP6 Water Environment.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td rowspan="3">N/A</td></tr>
<tr><td>?</td><td>+</td><td>++</td><td>+</td><td>0</td><td>0</td><td>0</td><td>+</td><td>+</td></tr>
<tr><td colspan="9">Policy is compatible with SEA objectives for:

• Maintain healthy ecosystems and work with the natural processes which provide important services to communities.
• Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.
• Protect against developments which have potential to cause or exacerbate coastal erosion and flooding.
• Reduce the threat of contamination and seek to protect soils from damage such as erosion or compaction.
• Protect and enhance human health and promote access to health, social and recreational facilities.
• Promote sustainable and efficient use of natural resources.

No further recommendations.</td></tr>
<tr><td rowspan="3">GP7 Coastal development and coastal change.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td rowspan="3">N/A</td></tr>
<tr><td>?</td><td>0</td><td>+</td><td>++</td><td>++</td><td>+</td><td>?</td><td>+</td><td>+</td></tr>
<tr><td colspan="9">Policy is compatible with SEA objectives for:</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th>Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td></td><td>

- Climate change by addressing vulnerability to the likely effects of climate change.
- Water by promoting protection and improvement of the water environment.
- Soils by addressing issues which lead to increased risk of erosion.
- Geology by protecting designated and undesignated sites that are recognised and valued for their geological or geomorphological importance.

No further recommendations

</td><td></td></tr>
<tr><td>GP8 Historic Environment.</td><td>

<table>
<tr><th>Climatic factors</th><th>Biodiversity</th><th>Water</th><th>Coastal processes / Benthic sediments / Soils</th><th>Geology</th><th>Landscape</th><th>Cultural heritage</th><th>Population & Human health</th><th>Material Assets</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>++</td><td>+</td><td>0</td></tr>
</table>

The policy is compatible with SEA objectives for:

• Cultural heritage by promoting the care and protection of the designated and non-designated historic environment; enabling positive change whilst ensuring the future use of Orkney's heritage assets; safeguarding cultural heritage features and their settings through responsible design and siting of development; and protecting the integrity and Outstanding Universal Value of the heart of Neolithic Orkney World Heritage Site.
• Seascape and landscape by protecting features which contribute to the character of Orkney's distinctive seascapes and landscapes.
• Population and human health by supporting opportunities for enjoying and learning about Orkney's cultural environment.

No further recommendations.

</td><td>N/A</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th colspan="9">Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td rowspan="3">GP9 Nature.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td rowspan="3">N/A</td></tr>
<tr><td>++</td><td>++</td><td>+</td><td>0</td><td>0</td><td>0</td><td>+</td><td>+</td><td>++</td></tr>
<tr><td colspan="9">Policy is compatible with SEA objectives for:

• Biodiversity by affording appropriate protection to natural heritage sites and protected species; enabling the protection of ecosystems which provide important services to communities; safeguarding valuable habitat from loss and fragmentation; affording appropriate protection marine and coastal species and promoting the protection of biodiversity as well as the appropriate enhancement or restoration of habitats.
• Water by promoting protection and improvement of the water environment.
• Geology by protecting designated and undesignated sites which are valued for their geological or geomorphological importance.
• Landscape by facilitating positive change while maintaining and enhancing distinctive seascape and/or landscape character.
• Climate change by protecting natural features which contribute towards community resilience to the effects of climate change.
• Cultural heritage by recognising and protecting the contribution of coastal built features within landscapes.
• Population and human health by supporting opportunities for enjoying and learning about Orkney’s natural environment.

No further recommendations.</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th colspan="9">Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td rowspan="3">GP10 Seascape and Landscape.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td rowspan="3">N/A</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>++</td><td>+</td><td>+</td><td>0</td></tr>
<tr><td colspan="9">The policy is compatible with SEA objectives for:

• Landscape by facilitating positive change while maintaining and enhancing distinctive seascape and landscape character.

No further recommendations.</td></tr>
<tr><td rowspan="3">GP11 Surface and Underwater Noise and Vibration.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td rowspan="3">N/A</td></tr>
<tr><td>0</td><td>++</td><td>0</td><td>?</td><td>0</td><td>0</td><td>0</td><td>+</td><td>0</td></tr>
<tr><td colspan="9">The policy is compatible with SEA objectives for:

• Conserve protected sites and species.
• Protect and enhance human health and promote access to health, social and recreational facilities.
No further recommendations.</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th colspan="9">Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td rowspan="3">GP12 Marine Litter and Waste.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td rowspan="3">N/A</td></tr>
<tr><td>0</td><td>+</td><td>+</td><td>+</td><td>0</td><td>+</td><td>0</td><td>+</td><td>0</td></tr>
<tr><td colspan="9">The policy is compatible with SEA objectives for:

• Maintain healthy ecosystems and work with the natural processes which provide important services to communities.
• Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.
No further recommendations.</td></tr>
<tr><td rowspan="3">GP13 Invasive Non-Native Species and Non-Native Species.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td rowspan="3">N/A</td></tr>
<tr><td>+</td><td>++</td><td>+</td><td>0</td><td>0</td><td>0</td><td>0</td><td>+</td><td>+</td></tr>
<tr><td colspan="9">The policy is compatible with SEA objectives for:

• Conserve protected sites and species.
• Maintain healthy ecosystems and work with the natural processes which provide important services to communities.
• Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.
• Protect and enhance human health and promote access to health, social and recreational facilities.</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th>Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td></td><td>No further recommendations</td><td></td></tr>
<tr><td>GP14 Amenity, Well-being and Quality of Life of Coastal Communities.</td><td>
<table>
<tr><th>Climatic factors</th><th>Biodiversity</th><th>Water</th><th>Coastal processes / Benthic sediments / Soils</th><th>Geology</th><th>Landscape</th><th>Cultural heritage</th><th>Population & Human health</th><th>Material Assets</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>+</td><td>++</td><td>0</td></tr>
<tr><td colspan="9">The policy is compatible with SEA objectives for:

• Population and human health by supporting opportunities for enjoying and learning about Orkney’s natural environment.
No further recommendations</td></tr>
</table>
</td><td>N/A</td></tr>
<tr><td>SP1 Commercial Fishing.</td><td>
<table>
<tr><th>Climatic factors</th><th>Biodiversity</th><th>Water</th><th>Coastal processes / Benthic sediments / Soils</th><th>Geology</th><th>Landscape</th><th>Cultural heritage</th><th>Population & Human health</th><th></th><th>Material Assets</th><th></th></tr>
<tr><td>0</td><td>-</td><td>?</td><td>-</td><td>0</td><td>0</td><td>0</td><td>+</td><td>-</td><td>+</td><td>-</td></tr>
<tr><td colspan="11">Management of commercial fishing will be for Marine Scotland to determine. The OIRMP policy aims to safeguard areas for fishing but cannot prevent removal of biodiversity nor impact on benthic sediments.</td></tr>
</table>
</td><td>N/A</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th>Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td></td><td>SEA comments:

Potential for largely positive effects associated with the policy through the promotion of the consideration of interactions with the fisheries sector by potential developers and other marine users in the OIRMP area. In setting out requirements for developers and marine users, and outlining support for the safeguarding of existing fishing practices where possible, preserving the potential for opportunities for future sustainable activities, and supporting the safeguarding of environmental factors upon which the sector relies (e.g. fish stocks, spawning and nursery areas), the policy has the potential for contributing overall positive effects for the sector. However, there is potential for conflicts and trade-offs between the fishing sector and other sectors (e.g. particularly in terms of displacement due factors such as the location and timing/design of development, amongst others), and hence the potential for both positive and negative effects for Material Assets, and Population and Human Health.</td><td></td></tr>
<tr><td>SP2
Aquaculture.</td><td>
<table>
<tr><th>Climatic factors</th><th>Biodiversity</th><th>Water</th><th>Coastal processes / Benthic sediments / Soils</th><th>Geology</th><th>Landscape</th><th>Cultural heritage</th><th>Population & Human ...</th><th>Material Assets</th></tr>
<tr><td>0</td><td>-</td><td>-</td><td>-</td><td>0</td><td>-</td><td>0</td><td>++</td><td>+</td></tr>
</table>
The policy is compatible with SEA objectives for:

• Improve community environments and quality of life.
SEA comments:

The mitigation applied during the determination of an aquaculture application, through existing consenting processes (e.g. potentially including planning permission under the Town and Country Planning (Scotland) Act 1997, obtaining seabed leases from TCE and landowners, Controlled Activity Regulations (CAR) Licenses from SEPA, Marine Licensing from Marine Scotland) etc will address the potential for any significant environmental effects.

The policy will provide support to these processes by providing awareness and clarity for future developers and stakeholders on these requirements, and could result in benefits for Material Assets and Communities,</td><td>N/A</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th>Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td></td><td>Population and Human Health topic areas (i.e. potential for improved efficiency in the consenting process, enhanced consultation between developers and stakeholders, early identification of interactions and potential</td><td></td></tr>
<tr><td>SP3 Shipping, Ports, Harbours and Ferries.</td><td>
<table>
<tr><th>Climatic factors</th><th colspan="2">Biodiversity</th><th colspan="2">Water</th><th colspan="2">Coastal processes / Benthic sediments / Soils</th><th colspan="2">Geology</th><th colspan="2">Landscape</th><th>Cultural heritage</th><th>Population & Human ...</th><th>Material Assets</th></tr>
<tr><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>?</td><td>++</td><td>-</td></tr>
</table>
The policy is compatible with SEA objectives for:

• Improve community environments and quality of life.
• Protect and enhance human health and promote access to health, social and recreational facilities.
SEA comments:

Potential for overall positive environmental and socio-economic effects associated with the Policy. However, there is the potential for these effects to be mixed; potential socio-economic benefits through promoting the safeguarding and sustainable growth of existing port and harbour facilities, the potential safeguarding of jobs and recreational/leisure activities that rely on these facilities, and setting out support for the communities that rely economically on them.

In general, protecting access to ports and harbours in the OIRMP area is considered likely to be beneficial for many marine users, particularly if the use of these facilities is shared (e.g. marine transport sector, recreational users, fishing sector, renewables sector, vessels servicing oil and gas).

The potential for associated positive effects for biodiversity, water quality, coastal processes, benthic sediments and soil, geology and landscape are mixed due to the potential for likely major development of harbours and for a reduction in collision and pollution risk associated with promoting navigational safety and the safeguarding of port and harbour access.</td><td>N/A</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th colspan="11">Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td rowspan="3">SP4 Pipelines, Electricity and Telecommunications Infrastructure.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td colspan="2">Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td colspan="2">Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td rowspan="3">N/A</td></tr>
<tr><td>+</td><td>0</td><td>0</td><td>-</td><td>+</td><td>+</td><td>0</td><td>-</td><td>+</td><td>++</td><td>+</td></tr>
<tr><td colspan="12">The policy is compatible with SEA objectives for:

• Support the transformational change to a low carbon economy, consistent with national objectives and targets.
• Protect designated and undesignated sites which are recognised and valued for their geological or geomorphological importance
• Improve community environments and quality of life.
• Protect and enhance human health and promote access to health, social and recreational facilities.
• Promote sustainable and efficient use of natural resources.
SEA comments

In some instances the effects of this policy could be mixed on the SEA objectives. Promoting suitable routing of cable and pipeline infrastructure could lead to the avoidance of sensitive or designated areas, and could for example, aid in the protection of sensitive or important seabed habitats and benthic species from disturbance of effects of operation such as EMF, but would impact the seabed areas used. The potential for similar benefits for avoiding impacts to historic assets (e.g. submerged wreck sites, etc.) throughout the OIRMP area were identified. There is the potential for benefits for other marine users through avoiding conflicts and potential displacement of other marine users (e.g. fishing activities such as scallop dredging, vessel anchoring areas, etc).</td></tr>
<tr><td>SP5 Offshore Wind, Wave, and Tidal Renewable</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td colspan="2">Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td colspan="2">Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td></td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th colspan="17">Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td>Energy Generation.</td><td>++</td><td>+</td><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>+</td><td>?</td><td>++</td><td></td></tr>
<tr><td></td><td colspan="17">The policy is compatible with SEA objectives for:

• Climatic factors by supporting the transformational change to a low carbon economy; it addresses proposals to develop electricity generation from renewable energy techniques as well as heat networks, energy from waste and district heating.
• Material assets by promoting the efficient use of resources and the minimisation of wastes through their recovery through energy recovery.
SEA comments:

It is also broadly compatible with objectives relating to the other SEA receptors as it seeks to ensure that energy-related developments would have no unacceptable impacts on environmental and community considerations.

However, the proposals within the OIRMP Option areas for offshore wind development may impact European sites, but until the agreed location and extent of a final suite of offshore windfarms' is confirmed, it will not be possible to determine the compatibility of this policy with the SEA objectives. The policy includes criteria to ensure a thorough assessment of environmental effects.</td><td></td></tr>
<tr><td>SP6 Zero Carbon Fuels, Oil and Gas Transition.</td><td>Climatic factors</td><td>Biodiversity</td><td>Water</td><td>Coastal processes / Benthic sediments / Soils</td><td>Geology</td><td>Landscape</td><td>Cultural heritage</td><td>Population & Human health</td><td>Material Assets</td><td></td></tr>
<tr><td></td><td>++</td><td>+</td><td>+</td><td>+</td><td>0</td><td>0</td><td>0</td><td>++</td><td>+</td><td></td></tr>
<tr><td></td><td colspan="9">The policy is compatible with SEA objectives for:</td><td>N/A</td></tr>
</table>

<table>
<tr><th>OIRMP

Policy</th><th>Initial Assessment</th><th>How recommendations were incorporated</th></tr>
<tr><td></td><td>

Contribute to national targets to address the cause of climate change by reducing greenhouse gas emissions.
Maintain healthy ecosystems and work with the natural processes which provide important services to communities.
Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.
Support the transformational change to a low carbon economy, consistent with national objectives and targets.
Reduce the threat of contamination and seek to protect soils from damage such as erosion or compaction.
Improve community environments and quality of life.
Protect and enhance human health and promote access to health, social and recreational facilities.
Promote sustainable and efficient use of natural resources.

SEA comments:

In general terms, support for the sustainable growth of the renewables sector has the potential for both positive and negative effects on marine, coastal and terrestrial environments due to offshore and associated land-based and landfall renewables infrastructure. The transition away from oil and gas products to zero carbon fuels should have an overall positive effect on climate mitigation and the associated environmental effects.
</td><td></td></tr>
<tr><td>SP7 Tourism, Recreation, Sport and Leisure.</td><td>
<table>
<tr><th>Climatic factors</th><th>Biodiversity</th><th>Water</th><th>Coastal processes / Benthic sediments / Soils</th><th>Geology</th><th>Landscape</th><th>Cultural heritage</th><th>Population & Human health</th><th>Material Assets</th></tr>
<tr><td>0</td><td>++</td><td>+</td><td>++</td><td>0</td><td>++</td><td>++</td><td>++</td><td>+</td></tr>
<tr><td colspan="9">The policy is compatible with SEA objectives for:</td></tr>
</table>
</td><td>N/A</td></tr>
</table>

OIRMP Policy	Initial Assessment	How recommendations were incorporated
	• Conserve protected sites and species. • Safeguard valuable habitat from loss and fragmentation through development. • Promote the protection and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater. • Reduce the threat of contamination and seek to protect soils from damage such as erosion or compaction. • Recognise the environmental benefits provided by soils and protect their quality and quantity. • Maintaining and enhancing distinctive landscape character. • Safeguard cultural heritage features and their settings through responsible design and siting of development. • Improve community environments and quality of life. • Protect and enhance human health and promote access to health, social and recreational facilities. • Promote sustainable and efficient use of natural resources. **SEA comments:** The OIRMP will support the sustainable development of marine recreation, sport, leisure and tourism, whilst ensuring SEA objectives are supported, providing overall positive socio-economic and environmental benefits.	

Appendix C.3: Summary of assessment of the likely environmental effects of implementation of the Orkney Islands Regional Marine Plan Policies

Key:		
	++	Major benefit
	+	Minor - moderate benefit
	--	Major adverse effects
	-	Minor - moderate adverse effects
	0	Neutral effects
	?	Effects uncertain

SEA receptor										
Policy	**Climatic factors**	**Biodiversity flora & fauna**	**Water**	**Coastal processes / Benthic sediments / Soil**	**Geology**	**Landscape**	**Cultural heritage**	**Population & human health**	**Material assets**	**Cumulative effect / Notes**
GP1 Sustainable Development, Activities and Use	+	0	0	0	0	0	0	0	+	Broadly neutral with moderate benefit in terms of climatic factors and material assets. Policy promotes the delivery of sustainable environmental, social and economic benefits, and the application of the precautionary principle.
GP2 Safety	0	+	+	+	?	?	?	+	?	Broadly positive with moderate benefit because safety is a significant consideration therefore the policy will support safe practices thereby reducing potential impacts on biodiversity, water, benthic sediments and population and human health.
GP3 Climate Change	+	+	+	0	0	0	0	+	0	Moderate benefit is likely in terms of climatic factors, biodiversity, flora and fauna, water, landscape and population / human health. Enhanced flood risk management, biodiversity, and improve access to coastal open space, delivered via nature based solutions.
GP4 Supporting Sustainable Social and Economic Benefits	+	0	0	0	0	0	0	+	+	Broadly neutral with moderate benefit in terms of climatic factors, and population / human health.

SEA receptor										
Policy	**Climatic factors**	**Biodiversity flora & fauna**	**Water**	**Coastal processes / Benthic sediments / Soil**	**Geology**	**Landscape**	**Cultural heritage**	**Population & human health**	**Material assets**	**Cumulative effect / Notes**
										Encourages developments and/or activities to deliver sustainable economic benefits and synergistic benefits with the existing activities of other marine and coastal users.
GP5 Safeguarding Natural Capital and Ecosystem Services	+	++	+	+	+	0	0	+	+	Overall positive benefit for most SEA receptors as the ecosystem services and natural capital that underpin the health of ecosystems are supported.
GP6 Water Environment	0	+	+	+	0	0	0	?	?	Overall positive benefit for biodiversity, water and benthic sediments.
GP 7 Coastal Development and Coastal Change	+	++	+	++	++	+	+	+	++	Significant positive benefit for the protection of biodiversity, coastal processes, geology and materials as development and/or activities will have to be in accordance with multiple protection plans and frameworks and negative impacts on coastal processes and coastal protection should be minimised. All other SEA receptors are also given positive policy support.
GP8 Historic Environment.	0	0	0	0	0	+	+	+	0	Moderate benefit is likely in terms of cultural

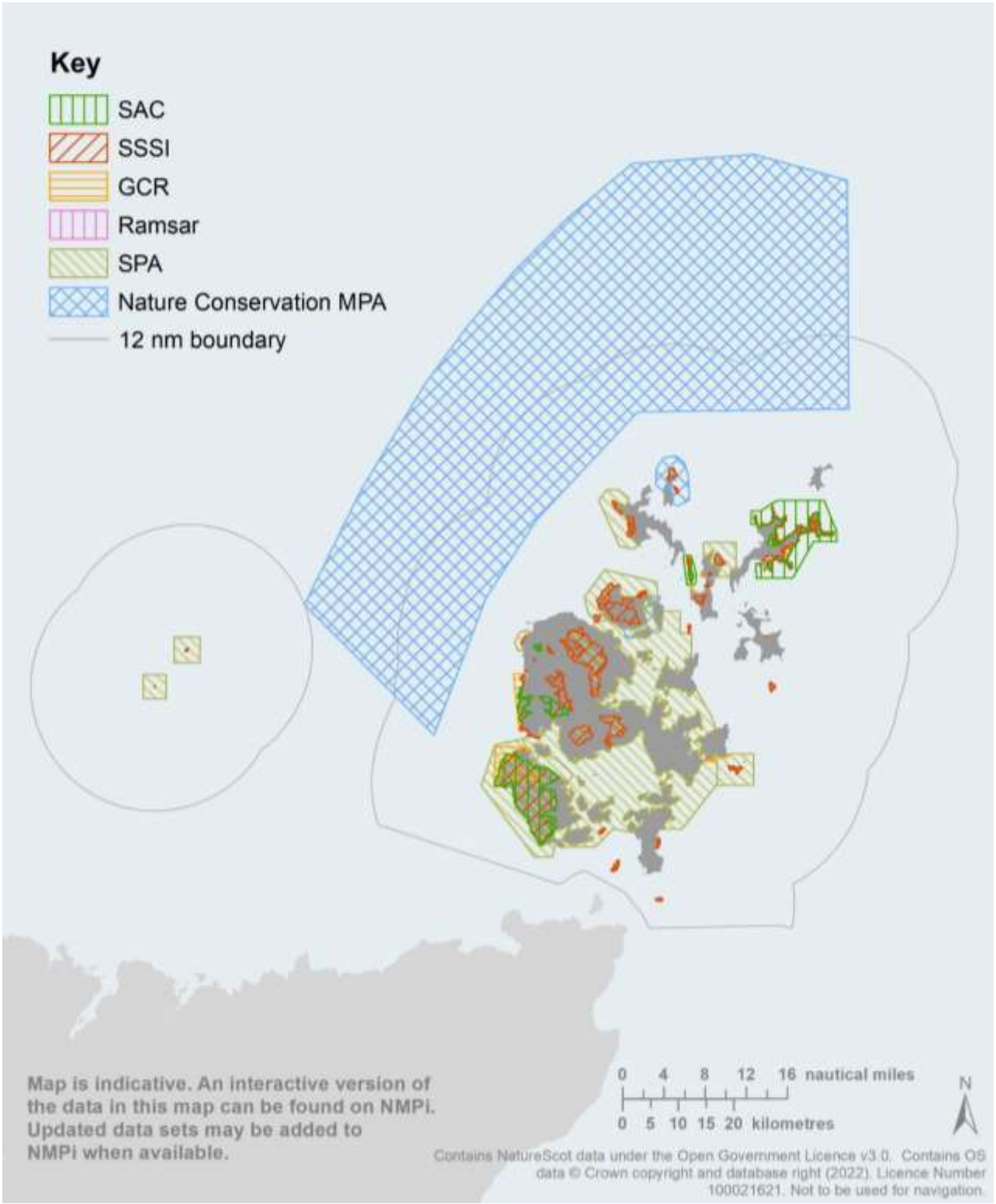
SEA receptor										
Policy	**Climatic factors**	**Biodiversity flora & fauna**	**Water**	**Coastal processes / Benthic sediments / Soil**	**Geology**	**Landscape**	**Cultural heritage**	**Population & human health**	**Material assets**	**Cumulative effect / Notes**
										Heritage, its setting in the landscape and population / human health. The policy makes provision for enhancement of cultural heritage assets and ensures the continued availability of opportunities for enjoying and learning about Orkney's cultural environment.
GP9 Nature	**0**	**+**	**+**	**0**	**0**	**0**	**0**	**+**	**0**	Moderate benefit is likely in terms of biodiversity, flora and fauna, water and population / human health. Makes provision for new development to provide benefits for biodiversity and improve the water environment. Ensures the continued availability of opportunities for enjoying and learning about Orkney's natural environment
GP10 Seascape and Landscape	**0**	**0**	**0**	**0**	**0**	**++**	**+**	**+**	**0**	Overall moderate benefit for the setting of cultural heritage and public enjoyment of the landscape, and major benefit in terms of protection seascape/ landscape.
GP11 Surface and Underwater Noise and Vibration	**0**	**+**	**0**	**0**	**0**	**0**	**0**	**+**	**0**	Overall neutral benefit but will support reduced impacts on biodiversity and human health.

SEA receptor										
Policy	Climatic factors	Biodiversity flora & fauna	Water	Coastal processes / Benthic sediments / Soil	Geology	Landscape	Cultural heritage	Population & human health	Material assets	Cumulative effect / Notes
GP12 Marine Litter and Waste	0	+	+	?	0	+	0	+	0	Litter and waste reduction will have a positive effect on biodiversity, water, landscape and human health.
GP13 Invasive Non-Native Species and Non-Native Species	0	++	+	?	0	0	0	?	?	Positive benefits for biodiversity and water quality but impacts on benthic sediments, human health and materials assets unclear.
GP14 Amenity, Wellbeing and Quality of Life of Coastal Communities	0	+	0	0	0	+	?	++	0	Moderate benefit as amenity impacts considered in all development and activity proposals.
SP1 Commercial Fishing	0	-	0	-	0	0	0	+	0	Mixed effects associated with the policy through the promotion of the consideration of interactions with the fisheries sector by potential developers and other marine users in the OIRMP area but overall the biodiversity is removed.
SP2 Aquaculture	0	-	-	-	0	-	0	+	0	Overall moderate negative impact; development within this sector will continue to be managed through existing consenting processes.

SEA receptor										
Policy	**Climatic factors**	**Biodiversity flora & fauna**	**Water**	**Coastal processes / Benthic sediments / Soil**	**Geology**	**Landscape**	**Cultural heritage**	**Population & human health**	**Material assets**	**Cumulative effect / Notes**
SP3 Shipping, Ports, Harbours and Ferries	0	?	0	-	0	0	0	+	0	Overall neutral impacts but essential for supporting population and human health.
SP4 Pipelines, Electricity and Telecommunications Infrastructure	0	0	0	-	-	0	0	+	0	Disturbance to benthic sediments and geology will remain, but impacts will be minimised as far as reasonably practicable.
SP5 Offshore Wind, Wave, and Tidal Renewable Energy Generation	++	0	0	0	0	-	0	+	0	Positive effects on helping reduce climate change impacts, and thus benefit human health.
SP6 Zero Carbon Fuels, Oil and Gas Transition	0	0	0	0	0	0	0	+	+	Oil and gas transition projects are largely outside the influence of the OIRMP, but the move to zero carbon fuels is supported.
SP7 Tourism, Recreation, Sport and Leisure	0	+	+	0	0	0	+	+	0	Increased awareness of potential interactions with recreational users, and setting out expectations for developers and other marine users, has the potential for a range of positive effects (e.g. potential for displacement of activities, impacts on

SEA receptor										
Policy	Climatic factors	Biodiversity flora & fauna	Water	Coastal processes / Benthic sediments / Soil	Geology	Landscape	Cultural heritage	Population & human health	Material assets	Cumulative effect / Notes
										navigational safety and human health, impacts on the natural environment).

Appendix D: Map of Nature Designated Sites in Orkney



APPENDIX E: SEA activities

Table AE: Detailed list of SEA activities to date.

SEA Action/Activity.	**When carried out.**	**Notes (e.g., comment on data availability, particular issues or any advice from the Consultation Authorities that has now been taken into account).**
Screening to determine whether the PPS is likely to have significant environmental effects.	2021	Screening report to SEA Gateway 17/3/2021 for distribution to Consultation Authorities (CA) Screening responses issued to OIC, as Responsible Authority, 13/4/2021. Section 8(1) Screen Determination advert publicised in The Orcadian newspaper, dated 10/1/2022. Details are on the OIC website, along with the Statement of Reasons.
Scoping the consultation periods and the level of detail to be included in the Environmental Report.	2022	Scoping report to SEA Gateway 21/1/2022. Includes Appx 1: Other PPS (see below) CA responses received via SEA Gateway 25/2/2022.
Outline and objectives of the PPS.	2021	The OIRMP will support sustainable marine development in the Orkney Islands Marine Region. The objectives are given in the RMP.
Relationship with other PPS and environmental objectives.	2021 / 2022	Done at scoping stage and updated.
Environmental baseline established.	2020	SoEA published 2020.
Environmental problems identified.	2020	See SoEA.
Assessment of future of area without the PPS.	2021	See SEA report.
Alternatives considered.	2021	See SEA report.
Environmental assessment methods established.	2021	See scoping report.

Selection of PPS alternatives to be included in the environmental assessment.	2021-2022	Data gathering on PPS that have a bearing on the marine plan commenced 22/3/2021. Early draft of scoping report, including PPS considerations, prepared 18/6/2021. Final list of PPS considered prepared 16/12/2021.
Identification of environmental problems that may persist after implementation and measures envisaged to prevent, reduce and offset any significant adverse effects.	N/A	
Monitoring methods proposed.	tbc	Monitoring and review to follow publication of plan, resources permitting.
Consultation timescales. • Timescale for Consultation Authorities. • Timescale for public.	See SPP[31]	12 week consultation
Notification/publicity action.	See SPP[32]	SEA Environmental Report public consultation notice published in The Orcadian newspaper on 25/07/24.

[31] Marine Planning (orkney.gov.uk)
[32] ibid

Appendix F Copy of indicative timetable for preparation of the OIRMP from the Statement of Public Participation[33]

2021												
Document	J	F	M	A	M	J	J	A	S	O	N	D
SPP*	Stage 1			Stage 1	Stage 1	Update as required						
Draft Plan		Stage 2										
SEA/HRA * etc		Stage 2										
2022												
Document	J	F	M	A	M	J	J	A	S	O	N	D
SPP	Update as required											
Draft Plan	Stage 2											Stage 3
SEA/HRA* etc	Stage 2											Stage 3
2023												
Document	J	F	M	A	M	J	J	A	S	O	N	D
SPP	Update as required											
Draft Plan	Stage 3											
SEA/HRA* etc	Stage 3											
2024												
Document	J	F	M	A	M	J	J	A	S	O	N	D
SPP	Update as required											
Draft Plan	Stage 3							Stage 4				Stage 5
SEA/HRA* etc	Stage 3							Stage 4				Stage 5
2025												
Document	J	F	M	A	M	J	J	A	S	O	N	D
SPP	Update as required											
Draft Plan	Stage 5				Stage 5				Stage 6			Stage 6
SEA/HRA* etc	Stage 5				Stage 5				Stage 6			Stage 6
2026												
Document	J	F	M	A	M	J	J	A	S	O	N	D
SPP	Update as required											
Draft Plan	Stage 7 + Independent investigation, if required**											
SEA/HRA* etc	Post Adopt SEA											

*	See acronym list	OIC 1	Development and Infrastructure Committee
**	If independent investigation required, this will take approximately another year	OIC 2	General Meeting of the Council

	Preparation
	Endorsement / Approval
	Consultation
	Published

This indicative timetable for the preparation of the Orkney Islands Regional Marine Plan is from the Statement of Public Participation (2024). It may be updated in accordance with any Marine Directorate requirements on behalf of Scottish Ministers.

[33] Marine Planning (orkney.gov.uk)

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