NatureScot
Scotland's Nature Agency
Buidheann Nàdair na h-Alba

Conservation and Management Advice

COPINSAY SPA

UK SITE: 9002151

DECEMBER 2024

This document provides advice to Public Authorities and stakeholders about the activities that may affect the protected features of Copinsay Special Protection Area (SPA). It provides advice from Scottish Natural Heritage (SNH) (operating under the name of and hereinafter referred to as NatureScot) under Regulation 33(2) of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) to other relevant authorities on the Conservation Objectives for the Copinsay SPA, and any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species for which the site has been designated. It covers a range of different activities and developments but is not exhaustive. It focuses on where there is a risk to achieving the Conservation Objectives. The paper does not attempt to cover all possible future activities or eventualities (e.g. as a result of accidents) and does not consider cumulative effects.

Further information on marine protected areas and management is available at -

https://www.gov.scot/policies/marine-environment/marine-protected-areas/

For the full range of MPA site documents and more on the fascinating range of marine life to be found in Scotland's seas, please visit -

www.nature.scot/mpas or https://jncc.gov.uk/advice/marine-protected-areas/

Document version control			
Version	**Date**	**Author**	**Reason / Comments**
1	16th December 2022	Jen Graham	1st Draft
2	2nd February 2024	Jen Graham	2nd Draft
3	9th July 2024	Jen Graham	3rd Draft
4	October 2024	Lucy Quinn	Sign off
5	26 November 2024	Graham Neville	Sign off

Distribution list			
Format	**Version**	**Issue date**	**Issued to**
Electronic	1	Dec 2022	Dan Brazier
Electronic	3	Oct 2024	Lucy Quinn
Electronic	4	Oct 2024	Graham Neville

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1 Overview of document

This document provides details of the Conservation and Management Advice for the Copinsay Special Protection Area (SPA) and it is divided into eight main sections. The introduction in section 2 gives an overview of the Copinsay SPA and its contribution in terms of conservation and wider benefits. Section 3 provides an overview of the roles of the various bodies involved with advising, regulating and managing the SPA. Section 4 describes the protected features and their condition, and section 5 introduces the Conservation Objectives for the site. Section 6 describes the threats and pressures to which the protected features are sensitive, and section 7 provides the management advice for these activities. Section 8 identifies what further research and surveys may be required to increase our understanding of how the protected features utilise the marine protected area.

Annex 1 sets out the Copinsay SPA Conservation Objectives. Annex 2 provides supporting information relating to the protected features.

Throughout this document the term Special Protection Area (SPA) is used in relation to the site name, e.g. Copinsay SPA or in discussion of the specific legislation relating to the site. Otherwise the term Marine Protected Area (MPA) is used when discussing the MPA network generally. The term *qualifying features* is used in the Conservation Objectives to refer to those Annex 1 and regularly occurring migratory bird species that the Copinsay SPA has specifically been designated to protect. Within the wider document text, the term *protected features* is used to refer both to these specific site features and more generally to species or habitats protected through MPA designations.

2 Introduction

2.1 Purpose statement

The Copinsay Special Protection Area (SPA) has been designated to protect four species of breeding seabirds, and their supporting habitats. By doing so it contributes to the Scottish, UK and OSPAR MPA networks, the conservation of the wider marine environment around Scotland, and progress towards Good Environmental Status within the North-East Atlantic marine region.

The main purpose of the Copinsay SPA is to contribute towards the Favourable Conservation Status of the protected features in the Marine Atlantic Biogeographic Region. The Conservation Objectives form the framework for establishing appropriate management measures and assessing all future plans and projects that have the potential to affect the protected features of the MPA.

2.2 Conservation benefits

The conservation benefits for the Copinsay SPA are:

- Protecting nationally important populations of common guillemot (contributing around 3% of the GB population), black-legged kittiwake (contributing around 2% of the GB population), great black-backed gull (contributing around 3% of the GB population), and northern fulmar, (contributing around 0.3% of the GB population).
- Protecting important waters immediately surrounding the seabird breeding colony, which birds use for resting, preening and other maintenance activities.
- Protecting important cliff habitats where the seabird protected features can nest.

- Protecting waters with rich marine habitats, including important shelf waters with areas of high productivity, that support a diversity of pelagic and demersal fish, bivalve molluscs, gastropods and crustaceans where the seabirds can feed.

2.3 Wider benefits

The protected features of the Copinsay SPA provide ecosystem services locally and to the wider marine ecosystem. We describe these ecosystem services in terms of their functions (the support or provision of something to the wider ecosystem e.g. habitat, nutrient cycling, sediment stabilisation) and natural resources (e.g. fish and shellfish, aggregates, wildlife), which in turn lead to benefits for people.

Figure 1 illustrates how the protected features of the Copinsay SPA contribute to benefits for people. There can be many complex interactions and dependencies amongst the protected features, their functions, associated natural resources and the benefits we gain from them.

The protected features, especially when taken within the context of the whole SPA and/or local ecosystem, contribute to certain functions more than others, e.g. biomass production and nutrient cycling and are fundamental to the continued supply of natural resources and benefits associated with this SPA, and to the long-term health of the protected features.

In terms of resources, the SPA comprises the Orkney Island of Copinsay and the three smaller islets of Corn Holm, Ward Holm and Black Holm, which are connected to Copinsay at low tide via a storm beach. The SPA also encompasses an area of sea and seabed which extends approximately 2 km around the islands. The coastline is characterised by rocky, sheer cliffs to the east which extend for 1.5 kilometres. At its highest point the cliffs reach over 65 metres in height and provide an ideal breeding site for a range of nationally and internationally important seabirds. The island offers a range of habitats for bird species. This includes high numbers of breeding seabird species such as, guillemot and kittiwake.

The rich and varied natural resources present within the SPA give rise to a wide range of benefits to people. The seascapes and wildlife within the SPA provide opportunities for tourism, recreation, wildlife watching, all of which encourage local jobs and businesses. Fisheries and supporting businesses from local communities within and around the SPA utilise and benefit from the wildlife and the area's fish and shellfish resources. Fisheries and supporting businesses from local communities within and around the SPA utilise and benefit from the wildlife and the area's fish and shellfish resources. Further benefits relating to health and well-being, food and nutrition also arise from the site's natural resources, resulting in a place where communities and visitors can spend time connecting with and enjoying nature.

The benefits that arise from the functions and natural resources of the SPA are typically small in the context of the whole of Scotland, but some are of greater importance for this MPA and the people that use it. There is potential for benefits to be enhanced by improving the quantity or quality (health) of the protected features themselves.

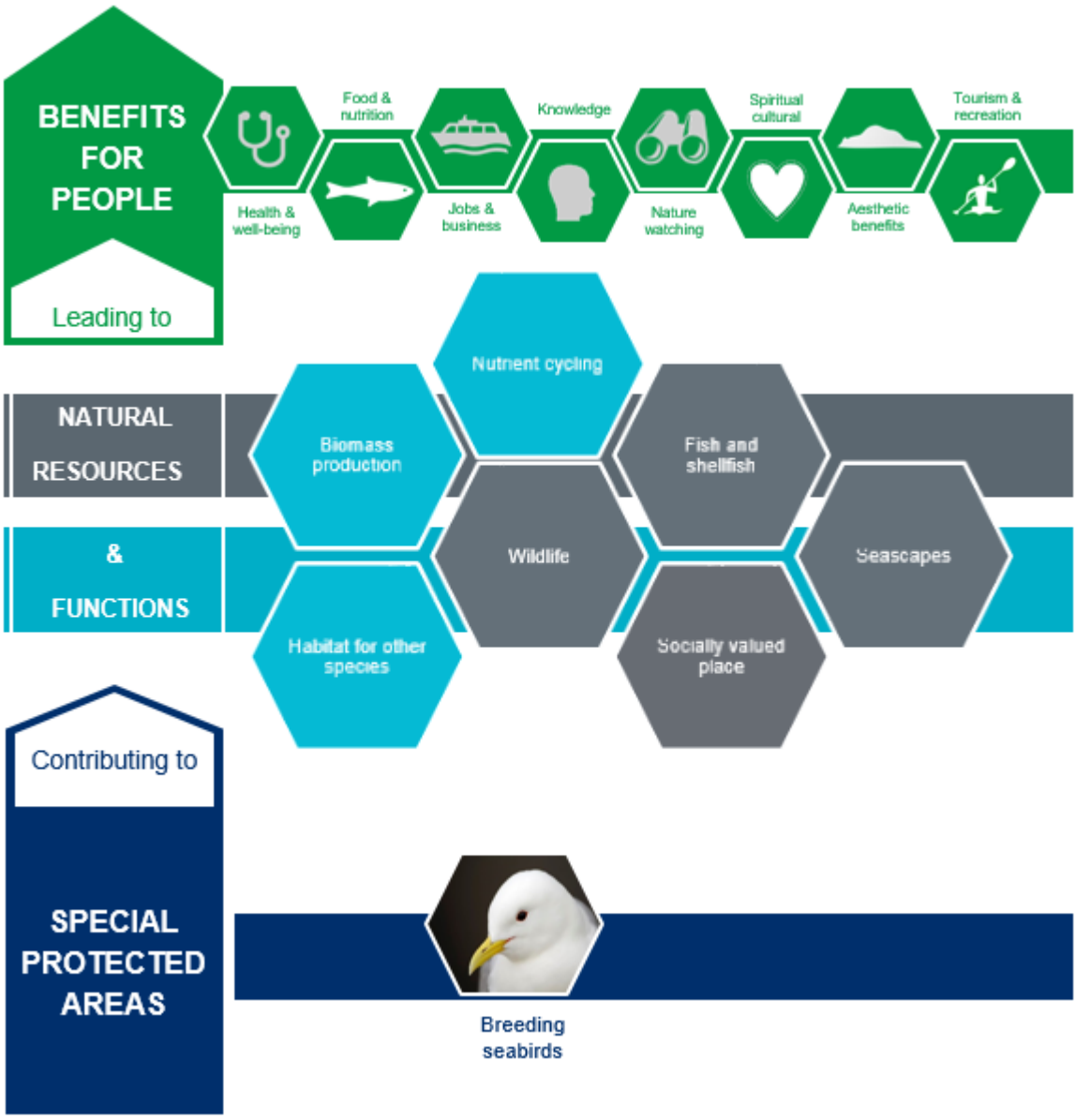

Figure 1. Benefits to people associated with protected features of the Copinsay SPA.

2.4 Contribution to policy commitments

Managing the Copinsay SPA to maintain the protected features in favourable condition, will ensure the continued provision of the benefits above as well as the SPA's contribution to:

- An ecologically coherent network of MPAs which are well managed under the OSPAR convention and national legislation.
- Achieving Favourable Conservation Status for the protected features in the Atlantic Biogeographic Region.
- Progress towards achieving Good Environmental Status in relation to maintaining biological diversity, and ensuring marine food web abundance and diversity.
- Making a significant contribution to the protection, enhancement and health of the marine area under the National Marine Plan.
- Restoring marine and coastal ecosystems and increasing the environmental status of our seas under the Scottish Biodiversity Strategy.

- Helping to adapt to climate change under The Scottish Climate Change Adaptation Programme.

3 Roles

This document provides advice for the Copinsay SPA in relation to activities that may affect the protected features. More detailed advice can be provided to relevant authorities to inform their decision making as required. In doing this, our aim is to ensure the Conservation Objectives for the protected features are met.

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) (the "Habitats Regulations") under Regulation 33(2), make special provisions for the protection of European marine sites, requiring SNH (now referred to as NatureScot), to advise other relevant authorities of the Conservation Objectives for a site, and also of the operations which may cause deterioration of the habitats or species, or disturbance of species protected in the SPA.

It is the role of the relevant and competent authorities[1] to ensure that the activities they regulate, permit or license do not hinder the achievement of the Conservation Objectives of the Copinsay SPA. The management advice in this document is provided to assist authorities in managing the activities outlined in section 7 and undertaking Habitats Regulations Appraisals of plans and projects.

Stakeholders can provide additional evidence to support the development of management including local knowledge of the environment and of activities. This will contribute to the development of well-designed and effective management measures.

4 Protected features and status

The Copinsay SPA has been selected to become part of the UK's SPA network, contributing to Scotland's MPA network, which in turn has been established to help conserve and recover a range of Scotland's important marine habitats, wildlife, geology and landforms.

The protected features of the Copinsay SPA are protected within the SPA throughout the year, irrespective of the season for which they qualified as a protected feature.

Table 1 provides a summary of the protected features within the MPA, their condition within the site (where known) based on the latest NatureScot Site Condition Monitoring assessment, and the broader conservation status of the protected features. Current trends for relevant seabird colonies can be found in JNCC (2021) and is based on trends derived from the Seabird Monitoring Programme (SMP) including where available, Seabird Counts census data (Burnell *et al.* 2023). Where the SMP data is more recent than the SCM data this has been used to inform the feature condition at the site.

[1] A relevant authority is a body or authority that has a function in relation to land or waters within or adjacent to the site (Regulation 5) and include: a nature conservation body; a local authority; water undertakers; a navigation authority; a harbour authority; a lighthouse authority; a river purification board (SEPA); a district salmon fishery board; and a local fisheries committee. All relevant authorities are competent authorities. A competent authority is defined in Regulation 6 as "any Minister, government department, public or statutory undertaker, public body of any description or person holding a public office". In the context of a plan or project, the competent authority is the authority with the power or duty to determine whether or not the proposal can proceed.

Table 1. Protected features and status for the Copinsay SPA.
Feature condition refers to the condition of the protected feature at a site level. Broader conservation status is the overall conservation status of the feature within the UK and Europe. No assessment on the condition of the feature at the Marine Atlantic Biogeographic Region scale is available.

Protected Feature	Feature condition at site	Assessment year	Broader conservation status	
			UK[2]	European region[3]
Black-legged kittiwake (breeding)	Unfavourable declining	2023	Red	Vulnerable
Common guillemot (breeding)	Unfavourable declining	2023	Amber	Least concern
Great black-backed gull (breeding)	Unfavourable declining	2023	Red	Near threatened
Northern fulmar (breeding)	Favourable maintained	2023	Amber	Vulnerable

5 Setting Conservation Objectives

5.1 Background

Under Regulation 33(2) of the Habitats Regulations, NatureScot have responsibility for providing the Conservation Objectives for European marine sites in Scottish territorial waters. These site-level Conservation Objectives seek to define the contribution that each SPA should make to achieving Favourable Conservation Status for the protected features. They provide the framework for the setting of site conservation measures (management) and for the Habitats Regulations Appraisal of projects and plans.

Annex 1 sets out the Conservation Objectives for Copinsay SPA.

5.2 Relationship between feature condition and Conservation Objectives

The Conservation Objectives seek to *maintain* protected SPA features where evidence exists that a feature is in favourable condition in the site, or where there is uncertainty concerning the assessed condition of a feature (see section 4) but no reason to suspect deterioration in condition since designation. Where evidence exists that a feature is declining and/or damaged and therefore not in a favourable condition in the site, the Conservation Objectives will seek to *restore* the protected feature.

The following protected feature is in favourable condition at Copinsay SPA: fulmar. Therefore, the Conservation Objectives seek to *maintain* this condition.

[2] Based on Birds of Conservation Concern 5 (BoCC5), for further details on definitions see Stanbury *et al.* 2024.
[3] Based on BirdLife International, 2021

The following protected features are in unfavourable condition at Copinsay SPA: kittiwake, guillemot, and great black-backed gull. Therefore, the Conservation Objectives seek to *restore* this condition.

Breeding kittiwake are in unfavourable condition at the Copinsay SPA due to a decline of 96% since designation from 9,550 pairs (1994 citation) to 296 pairs (2023 count). The reasons for declines of kittiwakes at this SPA are uncertain however reduction of prey in their foraging areas is considered a key contributing factor. Kittiwake breeding success was found to be related to sandeel abundance and availability (e.g. Daunt *et al.* 2008; Poloczanska *et al.* 2004). No loss or deterioration of suitable nesting habitat (sea-cliffs) has been noted at Copinsay SPA.

Breeding guillemot are in unfavourable condition at the Copinsay SPA due to a decline of 72% from 29,450 individuals at designation (1994 citation) to around 8,177 individuals (2023 count). The reasons for the decline are uncertain however factors such as reduction in prey in foraging areas may be contributing to the decline. Predation is also considered an on-site factor at this SPA. Predation of eggs has been recorded (including by great skuas).

Breeding great black-backed gull are in unfavourable condition at Copinsay SPA due to a decline of 80% from 490 pairs at designation (1994 citation) to around 98 pairs (2018 count). The reasons for the decline are uncertain but are likely to be related to a reduction in opportunities to feed on fishery discards in the seas around the colony or reduction in other prey in foraging areas. Great black-backed gulls can also be vulnerable to poor weather conditions during the breeding season causing nest failures. These species are also subject to licensed control.

5.3 Conservation priorities

On the rare occasion where the need to favour the management of one protected feature of a site over another, conservation priority will be given to the most important species/habitats to take action for and/or the most important or urgent measures to be taken.

For the Copinsay SPA, all protected features are regularly occurring migratory species. Therefore no protected feature is favoured over another.

There are currently no apparent management conflicts between the protected features within the Copinsay SPA.

5.4 Overlapping Protected Areas

The following protected area boundaries overlap with, or are immediately adjacent to, the Copinsay SPA:

- Copinsay Site of Special Scientific Interest (SSSI)
- Scapa Flow SPA
- Point of Ayre Geological Conservation Review (GCR)

Conservation measures in the overlapping protected areas need to ensure the Conservation Objectives of all sites are met. Priority would be given to the SPA protected features. There are no apparent management conflicts between the protected features of the Copinsay SPA and the protected features of the other overlapping protected areas.

Site information including the Conservation Objectives for the sites overlapping Copinsay SPA are available on SiteLink.

6 Feature sensitivity

The following section provides an overview of the pressures associated with human activities that are most relevant to the protected features. Further information on feature sensitivity, will be made available on Marine Scotland's Feature Activity Sensitivity Tool (FeAST)[4]. The information in FeAST will reflect our current understanding of the interactions between activities, pressures and features. It highlights that activities can give rise to a range of pressures, which the protected features may be sensitive to. Our assessment of sensitivity is based on a feature's tolerance (response to change) and its ability to recover.

6.1 Black-legged kittiwake (breeding)

Kittiwakes may be susceptible to collision (Furness *et al.* 2013) and displacement (Peschko *et al.* 2020) from marine developments. They may also be vulnerable to oil spills (Mendel *et al.* 2008) and organochlorine pollution (Tartu *et al.* 2015), which can lead to lower adult survival and reduced breeding performance (Tartu *et al.* 2013; Svendsen *et al.* 2018). Kittiwakes are identified as potentially sensitive to accidental bycatch in fishing nets particularly in surface gears in UK waters (Bradbury *et al.* 2017). Kittiwakes may also be susceptible to disease (OSPAR Commission, 2009), including avian flu (APHA). Any reduction in prey items will also have an effect on kittiwake populations (Tasker *et al.* 2000), whether due to climate change (Sandvik *et al.* 2014) or industry (Bicknell *et al.* 2013). (*See also Sandeel sensitivity assessment in FeAST*).

6.2 Common guillemot (breeding)

Guillemots may be prone to accidental bycatch in fishing nets particularly in surface gears (Zydelis *et al.* 2013). Depletion of prey resources either due to climate change or industry can also have effects on their populations (Mendel *et al.* 2008). This species is also susceptible to large scale mortality in major oil spills (Mendel *et al.* 2008), particularly during their flightless moult period. There is potential for impacts on auk species (including guillemots) due to collision with artificial structures under water (Furness *et al.* 2012). Guillemots may also be susceptible to disease, including avian flu (APHA). This species may be displaced as a result of marine developments (Furness *et al.* 2013) and associated vessel activities (Furness, 2016). Guillemots show sensitivity to visual disturbance associated with vessels (Cook & Burton, 2010) and noise disturbance due to marine industry may also occur (Leopold & Camphuysen, 2009). As this is a species that feed in the water column, they can be potentially affected by any increase in turbidity that would affect their ability to successfully forage for their prey (Cook & Burton, 2010). (*See also Sandeel sensitivity assessment in FeAST).*

6.3 Great black-backed gull (breeding)

Gulls may be susceptible to disease (including avian flu (APHA)), persecution and licensed control (Mitchell *et al.* 2004). Gulls are vulnerable to collision with marine development above water (Furness *et al.* 2013). Other pressures include: accidental bycatch in fishing nets (Žydelis *et al.* 2013), oil pollution (Mendel *et al.* 2008) and organochlorine pollution (Camphuysen *et al.* 2010). Great black-backed gulls are also vulnerable to breeding failures due to invasive mammals such as mink (Mitchell *et al.* 2004). Gulls may also be displaced by marine development. Great black-backed gulls are sensitive to large-scale changes in prey availability (e.g. Bicknell *et al.* 2013).

[4] http://www.marine.scotland.gov.uk/feast/

6.4 Northern fulmar (breeding)

Fulmars are one of the main seabird species taken as accidental bycatch in long-line fisheries in the northern hemisphere (Tasker *et al.* 2000; ICES, 2013) and are identified as among the species most sensitive to bycatch in surface gears in UK waters (Bradbury *et al.* 2017). Examination of corpses indicates high levels of plastic ingestion in fulmars, but there is currently a lack of published information on the population level impacts of this (Franeker *et al.* 2011). Fulmars are also vulnerable to diseases such as avian flu (APHA). Human intrusions and disturbance of fulmars at their nest site can cause nest desertion if they are approached too closely, particularly if there is repeated disturbance during the sensitive egg incubation period. Fulmars are vulnerable to changes in their prey resource, whether due to changes in fisheries practices (Bicknell *et al.* 2013) or to large-scale climatic factors (Thompson & Ollason, 2001).

7 Management

7.1 Conservation Measures

The following conservation measures are currently in place for the Copinsay SPA:

- The Habitats Regulations require all plans or projects that may have an effect on the protected features of a SPA to be assessed against the Conservation Objectives for that site. This process is known as a Habitats Regulations Appraisal (HRA). An HRA is a statutory procedure that ensures the integrity of the site is maintained. It also provides an opportunity to consider appropriate mitigation that can reduce impacts, avoid adverse effects and permit plans or projects to proceed having taken full account of the protected features of an SPA.

Other relevant measures include:

- The SPA overlaps with a number of notified Site of Special Scientific Interests and management changes described on their lists of Operations Requiring Consent, available on SiteLink, must have prior consent from NatureScot.
- There is a designated seal haul out site within the Copinsay SPA. The protected features will benefit from the reduced disturbance in areas where the seals are.
- Agreement in place for the Northern Lighthouse Board visits, required for lighthouse maintenance. Seasonal restrictions are in place.
- The 'Biosecurity for Scotland's seabird islands' project (2023 – 2026), builds on the Biosecurity for LIFE project (2018 – 2023), and aims to permanently remove the threat of introduction and establishment of invasive predators on seabird islands. The project will work with stakeholders to implement and maintain sustainable biosecurity measures including awareness raising, prevention, surveillance, and incursion response. Copinsay SPA is one of the seabird islands this project is focusing work on, with particular regard to ensuring the successful rat eradication on this island remains.

7.2 Advice to support management

Table 2 provides NatureScot's advice on management for activities where we consider this may be necessary to achieve the Conservation Objectives for the protected features. The advice is focused on the activities that cause an effect (a pressure) that a feature is sensitive to. Pressures can be physical (e.g. abrasion of the seabed), chemical (e.g. introduction of pollutants) or biological (e.g. removal of prey resources). Different activities may cause the same pressure, e.g. fishing using bottom gears and aggregate dredging both cause abrasion which can damage the surface of the seabed.

Our advice takes a risk-based approach, i.e. we are focusing on providing advice where we believe there is a risk to achieving the Conservation Objectives. We have identified risks to achieving the Conservation Objectives where there is an overlap between protected features and activities associated with pressures that the features are sensitive to. We have provided management advice to support public authorities and others in managing these risks. Our advice is based on existing data and information on protected features and relevant activities, and our understanding of the relationships between the features and activities. We have identified a range of management advice:

- management to remove or avoid pressures;
- management to reduce or limit pressures; or
- no additional management required.

For our advice on fisheries management we have also stated where we think this should be 'considered.' This term is included to highlight that an issue exists, but circumstances mean that a specific recommendation for action cannot / or need not be made at this point. However, there is sufficient cause to make fishery managers aware of the issue and for them to consider if a fishery management measure may be helpful in achieving Conservation Objectives – particularly where there may be a synergy between the benefits of management actions for the fishery and the Conservation Objectives for the feature. The term 'recommended' highlights that an issue of fishery-feature interaction exists, there is a reasonable evidence base and a specific recommendation can be made/ justified.

New or other activities not identified within the table would need to be considered on a case-by-case basis.

We recognise that stakeholders can provide local environmental knowledge and more detailed information on activities, including in relation to intensity, frequency and methods. This additional information will help public authorities and others develop more specific management, focussed on the interaction between features and activities. If new information becomes available our management advice may be revised.

Table 2 describes the activities that are considered capable of affecting the protected features. Spatial data relating to the location and extent of the activities listed can be accessed on Marine Scotland's National Marine Plan Interactive[5] (where available). Activities that are considered not likely to affect the protected features (other than insignificantly) are listed in Table 3.

7.3 Best Practice

In our management advice for activities in Table 2 we refer to the development, adoption or use of 'best practice' as a way of managing interactions between activities and the features. Best practice is taken to mean approaches or procedures that are developed and accepted by regulators and relevant stakeholders as being an effective way of dealing with an interaction between a habitat or species and the pressures created by an activity. Much of this best practice is already being implemented by sectors and regulators, e.g. pre-application discussions between developers and regulators, the Scottish Marine Wildlife Watching Code, Scottish Outdoor Access Code, and Technical Standards for Scottish Finfish Aquaculture.

[5] https://marinescotland.atkinsgeospatial.com/nmpi/

Table 2. NatureScot's advice to support management for Copinsay SPA for activities which are considered capable of affecting the protected features.

The text under the 'Advice to support management' columns provides NatureScot's management advice for the features in relation to the activities (further details about the terminology used are provided in section 7.2). Where a cell is coloured grey this indicates that management is already in place, this includes where there are existing regulatory requirements for new proposals. Cells are also coloured grey where it is considered there is no additional management required to achieve the Conservation Objectives. An * has been used to highlight those activities to which the advice under '*Boat use associated with both commercial and recreational activities'* also applies. For some activities, the pressures associated with new proposals are considered unlikely to affect some the features either because these activities do not occur in the same locations as the features or the pressure is unlikely to be at levels that can affect the features (see also Table 3). In these cases, we have not provided advice however, where regulated; this does not exempt new plans or projects related to these activities undergoing a Habitats Regulations Appraisal (HRA).

Activities considered capable of affecting the protected features	**Advice to support management**
	Kittiwake, guillemot, fulmar, great black-backed gull
Aircraft (helicopter and unmanned aerial vehicles (UAV))	**Reduce or limit pressures** (disturbance) associated with UAVs within the SPA through effective mitigation such as: • following the Good Practice Advice for drones and wildlife • seasonal restrictions to avoid sensitive time periods for those protected features most susceptible to disturbance and/or; • spatial restrictions.
Boat use associated with both commercial (includes ship to ship) and recreational activities	**Reduce or limit pressures** (disturbance) associated with boat use during commercial and recreational activities through effective mitigation such as: • following the Scottish Marine Wildlife Watching Code (SMWWC); • seasonal restrictions to avoid sensitive time periods for those protected features most susceptible to disturbance and/or; • production of vessel management plans associated with activities that require a marine licence. This may include agreed routes and for boats, potential seasonal speed restrictions. **Remove or avoid** any potential biosecurity threat as a result of any vessel landing at Copinsay SPA.
Coastal development	**No additional management** for existing coastal protection and flood defences.

Activities considered capable of affecting the protected features	Advice to support management Kittiwake, guillemot, fulmar, great black-backed gull
	Reduce or limit pressures (disturbance, loss of prey-supporting habitat) associated with new coastal development through effective seasonal and temporal mitigation.
Ferry routes	**No additional management required** for established routes.
Fishing - demersal mobile/active gear (inc. mechanical trawls and benthic trawls)*	Whilst we have limited understanding about the extent of interactions between benthic fisheries and prey supporting habitat within the site, a principal objective of the management of the relevant fisheries should be to ensure that the fishing activity does not cause such disturbance to the benthic habitats that it adversely affects the abundance and availability of prey. **Reduce or limit pressures** (removal of prey species and abrasion of prey-supporting habitat) associated with fishing that has the potential to damage seabed habitat (in particular, sandeel habitat) **should be considered.**
Fishing – hydraulic dredge*	Hydraulic dredging has the potential to cause significant disturbance to the sediment habitats that support the prey species of the protected features, particularly for sandeel and herring. A principal objective of the management of the relevant fisheries should be to ensure that the fishing activity does not cause such disturbance to the benthic habitats that it adversely affects the abundance and availability of prey. **Remove or avoid pressures** (removal of prey species and disturbance of prey-supporting habitat) associated with hydraulic fishing that has the potential to damage seabed habitat (in particular, sandeel habitat, herring spawning grounds) **is recommended**.
Fishing – static gear (drift nets and bottom set nets inc. fyke nets)*	**Remove or avoid pressures** (entanglement) associated with the use of all static nets. Spatial exclusion of static nets in areas identified as being important for guillemot (as identified from habitat and dive depth preferences) **is recommended**.
Fishing – pelagic*	**Remove or avoid pressures** (removal of key prey species) associated with fishing for sandeels. There is no current targeted sandeel fishery within the SPA, this position should be retained.

Activities considered capable of affecting the protected features	Advice to support management Kittiwake, guillemot, fulmar, great black-backed gull
	Pelagic fishing for herring/sprat may occur within or around the SPA. **We recommend** that a principle objective of the management of the fishery should be ensuring that the fishing activity does not prevent or disrupt the availability of prey species for the qualifying features, i.e. it should be considered as part of a broader ecosystem-based approach to management of this fishery. **Reduce or limit pressures** (bycatch, reduction of prey) associated with longline fishing is **recommended**. Fisheries managers should consider a range of actions to reduce the risk of seabird bycatch within the site
Fishing – long-lining (not including jigging)	Our current understanding is that long-line fisheries are largely restricted to offshore waters. Site-specific measures for long-lining are not currently considered appropriate due to the scale of the fishery, and the wide-spread interaction with seabirds. However, there is evidence of seabird bycatch in long-line (not jigging) fisheries which **we recommend** require wider seas management measures.
Renewable energy (inc. wind)	**No additional management** for operational and for consented, but not yet constructed, offshore wind developments. There are new marine renewable development proposals within connectivity to the Copinsay SPA. Mitigation should focus on **reducing or limiting pressures** (disturbance, displacement, collision) on the protected features of the Copinsay SPA.
Tourism & recreation (inc. jet-skiing, kite surfing, rowing, wildfowling, walking, angling, boating, diving, kayaking)	**No additional management** for existing recreational activities (includes angling, boating, diving, kayaking) providing the Scottish Marine Wildlife Watching Code (SMWWC) is followed by water-borne recreational users. The SMWWC highlights why birds are sensitive to disturbance and offers practical advice on how to avoid disturbance. **No additional management** for current levels of land-based tourism activities (walking), providing Scottish Outdoor Access Code is followed. **Reduce or limit pressures** (disturbance) of protected features from jet-skiing. **Reduce or limit pressures** (disturbance) where an increase by water-borne or land-based recreational activities demonstrates there is evidence of impacts at particular locations and/or if there is a major increase in intensity of these pursuits within the SPA. There would be potential for some zonation of measures across the site given that some protected features exhibit behavioural sensitivity to disturbance.

Activities considered capable of affecting the protected features	Advice to support management Kittiwake, guillemot, fulmar, great black-backed gull
Scientific research and survey	**No additional management** for current level of scientific survey or research, provided appropriate mitigations to minimise disturbance in the breeding season is in place.
Wildlife tour operators*	**No additional management** for existing wildlife tours providing the Scottish Marine Wildlife Watching Code is followed by Wildlife tour operators. The Scottish Marine Wildlife Watching Code (SMWWC) should be followed by water-borne recreational users and Scottish Outdoor Access Code is followed by land users. **Reduce or limit pressures** (disturbance) associated with an increase in wildlife tour operators if in the future there is evidence of impacts at particular locations and/or if there is an increase in intensity of these pursuits within the SPA. There would be potential for some zonation of measures across the site given that some protected features exhibit behavioural sensitivity to disturbance.

Table 3. Activities that are considered not likely to affect the protected features (other than insignificantly) [6]

Activity	Comments
Anchorages & moorings	Beyond pressures associated with the vessel traffic (covered in Table 2), we are not aware of any further pressures that have the potential to cause an adverse effect on the protected features.
Fishing – static gear – Creels (including lobster, crabs and *Nephrops*)	Fishing using creels is widespread throughout the MPA. Whilst there is the potential for entanglement for all the protected features, the occurrence is thought to be rare and therefore we consider this method poses a low risk to the protected features.
Infrastructure – pipelines and outfalls.	There are pressures associated with vessel movements (covered in Table 2) and there is a potential both temporary and permanent seabed habitat destruction. However, due to the scale of it and the low occurrence of this activity in this area at this time, we consider this poses a low risk to conservation objectives.
Fishing – line fishing (jigging)	Beyond pressures associated with the vessel movement (covered in Table 2), this activity is not expected to have the potential to cause an adverse effect on the protected features.
Fishing – diver collection or bivalves and hand gathering of mussels and oysters	We are not aware of any ongoing diver collection for bivalves and hand gathering of oysters and mussels that have the potential to cause an adverse effect on the protected features.

[6] Only the specific examples of activities listed in the table have been excluded, rather than the broad activity types. New plans or projects will still need to be considered by the relevant competent authority (see Annex 1 for further details).

Fishing – intertidal shellfish and bait digging	We are not aware of any ongoing intertidal shellfish and bait digging that have the potential to cause an adverse effect on the protected features.

8 Research and survey

We recognise that there are still important gaps in our understanding and knowledge of the features of this site. We will identify research and survey projects to inform our understanding of these aspects. The knowledge gaps identified below are not a commitment to undertake this work. However, by highlighting these gaps we hope to inform future discussions with parties interested in undertaking research in this site and/or on these features, to help direct research and improve understanding of monitoring needs. The following list of research and survey needs is not prioritised and is not exhaustive.

- Establish adequate baseline information for supporting habitats and prey species and gain an understanding of which prey items are the most important at a local scale within the SPA for all protected features.
- Establish a marine bird monitoring programme that informs changes in species populations and distributions at a site and SPA network level, and which may include monitoring of the supporting prey, habitats and processes within the SPA.
- Further understanding required on the reasons behind the protected features' decline at the SPA. Productivity estimates at the SPA would be beneficial to help understand this decline.
- Further ecological studies of all protected features habitat preferences and use, and movements within the SPA.
- Better understanding on the implications of new onshore and offshore developments around the site on the protected features.
- Oceanographic studies, such as sea temperature and acidity levels, how these might change in future, and the effects of such changes on prey availability for birds.
- Studies of food availability and competition for food between different fish predators (e.g., birds, seals, dolphins, porpoises, whales) in relation to fisheries policy.
- Improved understanding of what supporting processes the key prey species are reliant upon within the SPA.
- Additional research is required to better understand the relationships between the impact of dredging and benthic trawling on supporting habitats, their ability to support suitable prey and any consequential effect this may have on protected features.
- Understanding of the impact of tourism on the protected features at the SPA.
- Understanding of the impacts of non-native mammals on the protected features at the SPA.
- Investigation is required to assess the potential impact of highly pathogenic avian flu on the protected features both within the SPA and at a wider scale.
- Research required on the evolution of the HPAI virus, exposure and survival rates in affected seabird species following the 2021-2023 HPAI outbreak.
- Evaluate the potential mitigations that could be put into place to limit disease spread should another outbreak of HPAI occur at this, or any other SPAs.
- Better understanding of temporal foraging strategies of fulmar and whether there are any differences between daytime and night-time attraction of these species to fishing.
- Research is required on understanding the connectivity between the SPA and inland sites used by gull species.
- Research is required on understanding the connectivity between the SPA and inland sites used by gull species and whether gulls from this SPA are at risk of collision with wind turbines.

- Research is required on understanding the potential population level impact of licensed control on great black-backed gulls which use this SPA.

Annex 1. Copinsay SPA Conservation Objectives

The box below provides the high-level Conservation Objective statements for the Copinsay SPA.

The full Conservation Objectives, which includes site-specific advice and information on the qualifying features that form part of this SPA, are provided in the tables that follow. The site-specific advice and information provides more detail in relation to each of the high level Conservation Objective statements for each feature, e.g. detail on the seasonal timings and what the supporting habitats and prey are for the qualifying features.

Information is also provided below on how minor changes to features should be considered and the influence of environmental change on features, particular in relation to climate change. Temporary impacts on the qualifying features resulting from plans or projects can only be permitted where there is certainty that the features will be able to quickly recover. Further details on the potential for each qualifying feature to recover are described in more detail in Annex 2 '*Factors determining the potential of features to recover'*.

A definition of the terms used is in the Glossary (Annex 3).

Copinsay SPA
Qualifying features: • Black-legged kittiwake (*Rissa tridactyla*) • Common guillemot (*Uria aalge*) • Great black-backed gull (Larus marinus) • Northern fulmar (Fulmarus glacialis)
The Copinsay SPA also supports: • Breeding seabird assemblage (includes all qualifying features)
1. To ensure that the qualifying features of Copinsay SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status. 2. To ensure that the integrity of Copinsay SPA is restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature: 2a. The populations of the qualifying features are viable components of the Copinsay SPA. 2b. The distribution of the qualifying features is maintained throughout the site by avoiding significant disturbance of the species. 2c. The supporting habitats and processes relevant to qualifying features and their prey resources are maintained, or where appropriate restored, at Copinsay SPA.

1. To ensure that the qualifying features of Copinsay SPA are in favourable condition and make an appropriate contribution to achieving Favourable Conservation Status.
Achieving FCS is defined in terms of the natural range and population of the species and the extent of habitat necessary for long-term maintenance of populations. There is an important role for all protected sites in the UK in defining, achieving and maintaining FCS for any habitat or species. Achieving FCS requires that each parameter is either stable or increasing, exceeds the relevant reference value and has good prospects of continuing to do so in the foreseeable future (JNCC, 2018). Favourable Conservation Status (FCS) is assessed across the Marine Atlantic Biogeographic Region with individual SPAs and SPA networks contributing to FCS. The conservation status will be taken as 'favourable' when: • population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; • the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; • there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis; When carrying out appraisals of plans and projects against these Conservation Objectives, it is not necessary to understand the status of the qualifying features within each individual SPA in this Biogeographic Region. The focus of the appraisal should be to understand whether the integrity of the Copinsay SPA would be maintained. If this is the case, then its contribution to FCS across the qualifying features' biogeographic range will be met. Similarly, when determining whether management measures may be required to ensure that the Conservation Objectives for this SPA are achieved, the focus should be on maintaining the contribution that it makes to FCS. Further advice on how these appraisals should be focussed in relation to maintaining site integrity is provided by Conservation Objective 2 (including parts a, b and c). If broader information (status, trends) on the qualifying features is available, it should be used to provide context to the site-based appraisal. Note '*Appropriate'* within this part of the Conservation Objectives is included to indicate that the contribution to FCS varies from site to site, and feature to feature.

2. To ensure that the integrity of Copinsay SPA is restored in the context of environmental changes by meeting objectives 2a, 2b and 2c for each qualifying feature:

This objective recognises that kittiwake, guillemot and great black-backed gull are in unfavourable condition at the Copinsay SPA and consequently site integrity is compromised.

For Copinsay SPA, when carrying out appraisals of plans or projects, the focus of the appraisal should be to understand the impact of the plan or project on site integrity. For qualifying features that are favourable condition this means maintaining that condition. For kittiwake, guillemot and great black-backed gull that are in unfavourable condition, it means ensuring that the plan or project does not prevent or reduce the potential for recovery. The expectation is not for the plan or project to restore site integrity. Should the plan or project compromise the ability of the qualifying features to recover (e.g. result in a further decline or accelerate the rate of decline, or prevent a recovery from occurring), then Copinsay SPA will not make an appropriate contribution to achieving FCS across the Atlantic Biogeographic Region. Similarly, when determining whether management measures are required to meet the Conservation Objectives, the focus is on ensuring the conditions are appropriate to support recovery and subsequently restore site integrity. Further advice on how these appraisals should be focussed in relation to site integrity is provided in 2a, b and c.

The breeding seabird assemblage is not considered further in the Conservation Objectives as each qualifying feature and 'named qualifier' of the assemblage are addressed individually.

Temporary impacts on these objectives resulting from plans or projects can only be permitted where there is a high degree of certainty that the features will be able to quickly recover from the impact and that impacts do not prevent the ability of unfavourable features to fully recover in the long-term.

Environmental changes

This Conservation Objective recognises that the qualifying features are part of a complex, dynamic and multi-dimensional marine environment. Marine birds depend on environmental conditions (for example water movement, up-wellings and prevailing weather) which vary over time and space. Consequently, marine bird species are exposed to a wide range of drivers of change. 'Environmental changes' for the purpose of these Conservation Objectives means any change to the qualifying features reflecting both natural population dynamics and also broader environmental changes (i.e. those related to climate change and environmental variability, management of which is beyond the scope of the SPA). The impact of human activities on the SPA that can be managed will not be considered as part of the broader context of environmental change (i.e. where required they should be managed).

Some site-level changes are natural and are not a direct result of human influences (e.g. population fluctuations arising from factors such as variable breeding success or weather conditions across the wintering range / shifts or changes in prey availability resulting from variability in environmental factors processes such as water temperature and movements). Changes in the qualifying features' distribution and use of the site, which are brought about by entirely natural drivers, directly or indirectly, are normally considered compatible with the SPA's Conservation Objectives.

There may also be historical human influences that have now ceased but have modified and continue to drive change within the site. It is also recognised that climate change pressures could affect the qualifying features within the site. These changes cannot be prevented, so the Conservation Objectives seek at a site level to take account of them and where possible, improve the qualifying species' resilience to environmental change when considering future plans or projects. The magnitude of the future impacts will depend on the nature, scale, duration and intensity of the activity and the qualifying features tolerance and ability to recover from such an impact.

Additionally, management of human activities at a wider scale (i.e. regional, Scotland or the area covered by an international agreement such as the OSPAR convention) may also affect the qualifying features associated with this site (either by making a positive contribution or having a negative impact). Wider scale impacts may affect the ability of the qualifying features to recover from site level changes, and therefore additional precaution over the impacts of any future human activities may be necessary.

An assessment of whether a change is natural or anthropogenic, or a combination of both, will need to be looked at on a case-by-case basis.

In relation to Copinsay SPA and its qualifying features, the following effects of environmental change (climate change) are relevant. These effects should be taken into account when considering plans and projects as additional pressures may reduce the protected features' resilience to climate change, and conversely climate change impacts may start to hinder the their ability to recover from human activities.

- ***All qualifying features -*** Under climate change, sea temperatures are predicted to increase, sea levels will rise and there could be increases in the frequency of stormy conditions. Increased levels of atmospheric CO_2 will also result in ocean acidification. Any of these factors could cause changes in bird abundance and distribution at the SPA due to changes in prey (species, availability and distribution).
- ***For breeding seabirds -*** climate change may result in effects at wintering grounds or in other parts of the overall breeding range which could have subsequent effects on their breeding population and distributions. In coastal breeding sites, increased flooding associated with storm tides may also cause nest site failures in breeding seabirds (Mendel *et al.* 2008). Increased storminess could also affect cliff-nesting seabirds, as eggs or chicks are more likely to be dislodged by waves, wind or rain. Parent birds may also find foraging more difficult during storms, reducing their ability to maintain their own body condition whilst also incubating or feeding chicks.
- ***Common guillemot:*** This species may be vulnerable to extreme weather events, particularly winter storms, which have been linked to adult mortality and winter 'wreck' events (BirdLife International, 2022). Decreased survival rates in this species have been linked to increased sea temperatures and stronger winds (Votier *et al.* 2005; 2008; Sandvik *et al.* 2005).

- ***Black-legged kittiwake:*** Breeding phenology is affected by climate change, with a trend in later breeding being seen in kittiwakes (Wanless *et al.* 2009). Kittiwake breeding populations are highly vulnerable to the impacts of climate change on the population dynamics and distribution of their preferred prey (e.g. Sandvik *et al.* 2014).
- ***Great-black-backed gull:*** predicted to decrease in number of breeding pairs across GB and Ireland as a result of climate change, with temperature, precipitation and potential energy anomaly all variables playing a role in predicted population changes (Davies *et al.* 2021).
- ***Northern fulmar:*** a species which has been identified as sensitive to climate change. Studies have demonstrated a link between a large-scale climatic factor, the North Atlantic Oscillation (NAO) on both survival and reproduction. Survival in fulmars, particularly of females, has been shown to be influenced by the NAO (Grosbois & Thompson 2005). Reproductive success at this colony has also been linked to winter NAO and lagged winter NAO, with year to year variation in breeding success strongly related to oscillations in the NAO (Thompson & Ollason 2001; Lewis et al. 2009).

2a. The populations of the qualifying features are viable components of the Copinsay SPA.

This objective seeks to specifically protect the qualifying features from ***significant*** mortality, injury or removal that can lead to a long-term decline of the feature(s) within the site. It protects the features from significant risk of incidental killing and injury from activities both within and outwith the site. Impacts and effects are considered 'significant' where they could result in a permanent reduction or continued decline in the population and consequently, reduction in the contribution Copinsay SPA makes to the maintenance of the qualifying features in their natural range in the UK. It should be ensured that the qualifying features are protected from anthropogenic pressures that could lead to a significant long-term decline in numbers using the site, such that recovery cannot be expected. Ensuring the capacity of Copinsay SPA to support all the essential behaviours and activities required to support viable populations of the qualifying features in the relevant season(s) are addressed by Conservation Objectives 2b and 2c.

At a site level, the population is considered to be viable if the species can carry out their life cycle functions relevant to the season(s) they are present, irrespective of dependencies such as immigration. For the qualifying features, the viability of the species within the Copinsay SPA is intrinsically linked to their ability to access and use foraging habitat in areas of functionally linked sea, within foraging range, outwith the site, in addition to the ability of the site to support breeding adult survival and chick-rearing.

When assessing the effects of any plan or project consideration should also be given to whether impacts outwith the SPA could affect achievement of this Conservation Objective. This Conservation Objective is considered to be met if the conditions to support all the species' essential behaviours and activities are in place. This includes:

- avoiding effects within and outwith the site that could prevent or reduce the ability of the populations of qualifying features to recover.
- avoiding effects within and outwith the site that could lead to a permanent reduction in the populations of qualifying features through mortality, injury, or impacts caused by disturbance, displacement, barrier effects or reduction in mobile prey resources.
- maintaining the species' ability to use all areas of importance within the site (to be considered under Conservation Objective 2b)

- maintaining access to, and availability of, supporting habitats and prey within the site (to be considered under Conservation Objective 2c).

Where known, the populations of the qualifying features should be maintained at or above site reference populations, as detailed below. The site reference population may be revised from the baseline at designation where a) there is evidence to show that a population's size has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period (generally equivalent to at least one generation length for the given species) and/or b) to reflect any wider strategic objectives for the species (e.g. national or international species action plan). Where there is evidence to show that a qualifying feature has historically been more abundant than the stated minimum target and current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account.

All qualifying features are protected throughout the whole site, throughout the year. This means that irrespective of the season for which they are designated, the qualifying features are protected during both their breeding and non-breeding seasons when using the SPA.

Temporary short-term changes in the populations due to human activity may be considered not to compromise the Conservation Objectives within the site provided it can be demonstrated that the populations of any affected qualifying features can fully recover. Factors limiting the recovery of the qualifying features include: the average generation times, population growth rates, availability of prey and the timing and duration of the activity around vulnerable stages of their life cycles such as during moulting or chick-rearing period.

Direct mortality can arise from: collision (above and underwater); entanglement (incidental bycatch); and pollution. Indirect mortality can arise from loss of or damage to prey or prey-supporting habitats (e.g. through harvesting; physical removal of or damage to seabed; nutrient enrichment; changes to water temperature, salinity, or flows; introduction of invasive non-native species (INNS); pollution). Indirect mortality can arise from reduced ability to capture or access prey arising from e.g. increased water turbidity or displacement from foraging areas.

The site-specific information includes a site reference population that is considered the most appropriate for assessments of plans and projects. Where this is based on the citation population at classification or recent surveys, the site reference population is rounded using standard procedures (Stroud *et al.* 2001).

Feature	Site-specific advice	Site-specific information
Black-legged kittiwake	Ensure the breeding population of kittiwake have the ability to recover to the site reference population.	The site reference population for kittiwakes at the Copinsay SPA is 9,600 pairs (based on 1994 citation). The latest SCM count data available for Copinsay SPA in 2023 showed a decrease of 96% of kittiwakes to 296 pairs. Kittiwake populations have declined in both Scotland and the UK, with decreases of 42% in their UK population since Seabird 2000 (1998-2002) and 57% in Scotland (Burnell *et al.* 2023).

	and Ensure kittiwake from Copinsay SPA are not at significant risk from injury or mortality. ***and*** Ensure kittiwake can move safely between the site and important areas of functionally linked sea outwith the site.	It is acknowledged that due to the steep national decline in kittiwakes it will be difficult to recover the kittiwake population to the site reference population. Reasons for the decline in kittiwakes at the Copinsay SPA, are not fully understood but are likely to be related to off-colony factors affecting their food supply. Wider pressures on kittiwakes, such as climate change or disease, may limit the potential for kittiwakes to achieve Favourable Conservation Status. When assessing the effects of any plan or project, consideration should be given to ensuring that the plan or project will not hinder the ability to recover. This will help ensure resilience within the wider kittiwake population. Plans or projects should also ensure that kittiwakes are not at significant risk from injury or mortality either within or outwith the SPA. The long-term recovery of kittiwakes at the Copinsay SPA is also intrinsically linked to their ability to access and use habitats in areas of functionally linked sea outwith the SPA. When assessing the effects of any plan or project consideration should therefore also be given to whether impacts on the population whilst outwith the SPA could affect achievement of this Conservation Objective.
Common guillemot	Ensure the breeding population of guillemot have the ability to recover to the site reference population. ***and*** Ensure guillemot from Copinsay SPA are not at significant risk from injury or mortality. ***and***	The site reference population for guillemots at the Copinsay SPA is 29,000 individuals (based on 1994 citation). The latest count data available for Copinsay SPA in 2023 shows this number has decreased by 72% to 8,177 individuals. Guillemot populations in the UK have decreased by 8% since Seabird 2000 (1998-2002) and 31% in Scotland (Burnell *et al.* 2023). Reasons for the decline in guillemots at the Copinsay SPA are unclear. Off-colony factors, such as reduction in fish prey, is thought to be contributing towards the decline but on-site factors such as predation (potentially by raptors and rats) may also be impacting the population. The long-term recovery of guillemots at the Copinsay SPA is intrinsically linked to their ability to access and use habitats in areas of functionally linked sea outwith the SPA. When assessing the effects of any plan or project consideration should therefore also be given to whether impacts on the population whilst outwith the SPA could affect achievement of this Conservation Objective.

	Ensure guillemot can move safely between the site and important areas of functionally linked sea outwith the site.	
Great black-backed gull	Ensure the breeding population of great black-backed gull have the ability to recover to the site reference population. ***and*** Ensure great black-backed gull from Copinsay SPA are not at significant risk from injury or mortality. ***and*** Ensure great black-backed gull can move safely between the site and important areas of functionally linked sea outwith the site.	The site reference population for breeding great black-backed gulls at the Copinsay SPA is 490 pairs (1994 citation). The latest assessment of site condition noted a decrease of around 80% to approximately 98 pairs (2018 count). Great black-backed gulls in the UK have decreased by around 43% since Seabird 2000 (1998-2002). The trend in Scotland is even more pronounced with a decrease of 63% (Burnell *et al.* 2023). Monitoring in 2023 indicated a further decline of 19% in Scotland due to avian flu (Tremlett *et al.* 2024). The reasons for the decline of this species at the Copinsay SPA are uncertain but are likely to be related to a reduction in prey and reduction in opportunities to feed on fishery discards. Great black-backed gulls can also be vulnerable to poor weather conditions during the breeding season causing nest failures. This species is also subject to licensed control, although population-level effects of this are poorly understood. Research is required to fully understand the reasons behind the decline and whether there is anything that can be done to reverse it. The long-term recovery and maintenance of great black-backed gulls in the Copinsay SPA is intrinsically linked to their ability to access and use habitats in areas of functionally linked sea and land outwith the SPA. When assessing the effects of any plan or project consideration should therefore also be given to whether impacts on the population whilst outwith the SPA could affect achievement of this Conservation Objective.
Northern fulmar	Maintain the breeding population of fulmar at a stable or increasing trend	The site reference population for fulmars at Copinsay SPA is 1,600 pairs (based on 1994 citation). The latest count data available for Copinsay SPA shows this number has increased by 19% to

	relative to the site reference population. ***and*** Ensure fulmar from Copinsay SPA are not at significant risk from injury or mortality. ***and*** Ensure fulmar can move safely between the site and important areas of functionally linked sea outwith the site.	around 1,906 pairs (2023 count). Fulmar populations in the UK have decreased by 35% since Seabird 2000 (1998-2002). In Scotland fulmar have decreased by 37% (Burnell *et al.,* 2023). The long-term maintenance of fulmars at the Copinsay SPA is also intrinsically linked to their ability to access and use habitats in areas of functionally linked sea outwith the SPA. When assessing the effects of any plan or project consideration should therefore also be given to whether impacts on the population whilst outwith the SPA could affect achievement of this Conservation Objective.

2b. The distribution of the qualifying features is maintained throughout the site by avoiding significant disturbance of the species.
This objective seeks to ensure that the qualifying features can continue to use and access all areas within Copinsay SPA used for breeding, feeding, moulting, roosting, loafing, shelter and other maintenance activities. Changes in the distribution of the qualifying features are most likely to be brought about through disturbance, therefore this objective relates to avoiding significant disturbance. Disturbance associated with human activity may take a variety of forms including: noise, light, sound, vibration, trampling, presence of people, animals and structures, as well as displacement and barrier effects on the species. The type of disturbance, its duration and the area over which the qualifying features are likely to be affected are important considerations in any appraisal of disturbance. Disturbance can, for example, result in changes to feeding or roosting behaviour, increased energy expenditure due to increased time spent moving to avoid stressors , abandonment of nest sites and desertion of supporting habitat (both within or outside the protected area where appropriate). This may affect successful chick rearing in the subsequent breeding season (related to poor winter condition of adult birds), feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts.

'Significant disturbance' should be interpreted to mean disturbance that affects the integrity of the site through alteration of the distribution of the qualifying features such that recovery cannot be expected or effects can be considered long term. It is expected that significant disturbance will lead to more than a transient effect on the distribution of the qualifying features. It may result in the following types of effect:

- Contributes to the long-term decline in the use of the site by the qualifying features.
- Changes to the distribution of the qualifying features on a continuing or sustained basis.
- Changes to the qualifying features behaviour such that it reduces the ability of the species to survive, breed or rear their young.

There are two main ways in which the qualifying features' continued access to suitable resources could be restricted and distribution affected and this is where assessments should be focussed:
1. Large scale physical barriers, or;
2. Significant disturbance which alters their distribution within the site or disrupts important behaviours.

Temporary short-term disturbances due to human activity may be considered not to compromise the Conservation Objectives within the site provided it can be demonstrated that the population can fully recover with a high degree of certainty. Factors limiting the recovery of the qualifying features include the timing, frequency and duration of the activity around vulnerable stages of their life cycle such as during moulting or chick-feeding period.

All qualifying features are protected throughout the whole site, throughout the year. We anticipate that some locations within the Copinsay SPA will be more, or less, important than others for individual species. Distributions within the site may also change over time in response to a range of abiotic and biotic factors (e.g. changes in abundance or quality of prey resources at particular locations, numbers of each qualifying feature within the site as a whole, seasonal fluctuations or trends in prevailing weather conditions etc.). In some cases detailed bespoke surveys of bird numbers and distributions, to determine qualifying features' current usage of particular locations within a proposals area of influence, may be required to complete the necessary assessments.

Direct displacement/redistribution of the qualifying features can arise from: barriers to movement to and between foraging and roosting locations; and visual disturbance (e.g. associated with vessel movements). Indirect displacement/redistribution can arise from loss of or damage to prey or prey-supporting habitats (e.g. through harvesting; physical removal of or damage to seabed; nutrient enrichment; changes to water temperature, salinity, or flows; introduction of INNS; pollution (e.g. light, noise, chemical)).

For breeding seabirds: Disturbance to foraging birds may reduce the time spent feeding or cause them to move to different areas that are less energetically profitable. Disturbance that creates an avoidance response or disrupts/reduces incubation, chick-rearing, foraging or resting behaviour can also put increased energetic demands on birds during an already energetically expensive season. Ensuring safe movement within and between the breeding colony and those areas used for foraging, roosting and other maintenance behaviours (see also 2c) is important to

meet the energetic demands required to achieve or maintain body condition needed to support migration and successful breeding and for subsequent winter survival,. Barriers to movement may reduce access to preferred foraging habitat and cause sub-optimal foraging.		
Feature	**Site-specific advice**	**Site-specific information**
Black-legged kittiwake	Ensure kittiwakes continue to have access to and can utilise all optimal habitats suitable for all relevant aspects of their life cycle associated with the site. ***and*** Avoid significant disturbance to kittiwakes and ensure individuals can move safely between these areas within the site.	Kittiwakes are migratory species. The vast majority of adults from North Atlantic colonies such as Copinsay SPA appear to winter in the west Atlantic between Newfoundland and the mid-Atlantic ridge with relatively small numbers wintering in the North Sea and west of the British Isles. Kittiwakes are present at Copinsay SPA during their breeding period from mid-April to end of August. However feeding aggregations may still be seen around the Scottish coast until late October/early November. They will therefore be present during both the breeding and non-breeding seasons. In Copinsay SPA kittiwakes nest on steep, coastal cliffs and offshore stacks, and may roost on manmade walls and sandy shores. They require access to areas of fresh water for bathing. Kittiwakes at Copinsay SPA will use inshore waters within 1km of their colony for loafing, preening, bathing and other important maintenance behaviours, and waters further offshore and on the continental shelf for foraging. In the breeding period, the mean maximum foraging range for kittiwakes is 156.1+/- 144.5km, though they will forage further, with a maximum range of 770km (Woodward *et al.* 2019). After breeding, kittiwakes will also use sandy beaches near their breeding grounds to moult in large flocks.
Common guillemot	Ensure guillemots continue to have access to and can utilise all optimal habitats suitable for all relevant aspects of their life cycle associated with the sites. ***and*** Avoid significant disturbance to guillemots and ensure individuals can move safely	Guillemots remain near their breeding colonies throughout the year and will continue to attend their breeding sites at Copinsay SPA frequently during the non-breeding period, particularly from February onwards. From the beginning of August to mid-October they will remain on the waters nearby Copinsay SPA, where adults will undergo a flightless moult period. Their breeding season is from April until mid-August. Guillemots nest in dense colonies on bare cliff ledges at Copinsay SPA. They use offshore waters as well as areas close to the coast to forage, rest, and carry out other maintenance activities. In the breeding period, the foraging range of common guillemot has a mean maximum of 73.2 ± 80.5 km, with a maximum range of 338km (Woodward *et al.* 2019). Guillemots forage both at the seabed (demersal) and within the water column (pelagic), primarily during daylight hours (Wakefield *et al.* 2017). They have an average dive depth of 42m, though can forage up to 200m depth (Ropert-Coudert *et al.* 2018). Guillemots may fly in small groups and will often form large rafts on the sea close to the colony before heading out on a foraging trip. When ready to fledge the chick will leave the nest site and joins the

	between these areas within the sites.	male of the pair on the sea, where they travel further out to sea together and remain close for around two months (Harris & Wanless, 2003).
Great black-backed gull	Ensure great black-backed gulls continue to have access to and can utilise all optimal habitats suitable for all relevant aspects of their life cycle associated with the site. ***and*** Avoid significant disturbance to great black-backed gulls and ensure individuals can move safely between these areas within the site.	Great black-backed gulls will be present at the Copinsay SPA throughout the year. Their breeding season is from March to the end of August, and their non-breeding period from September to end of February. Great black-backed gulls at the Copinsay SPA nest on ledges near the top of the cliffs, and on top of stacks and promontories throughout Copinsay SPA. As with other gull species, great black-backed gulls nest on flat ground, with a shallow nest made from grass, moss and sometimes seaweed. Great black-backed gulls are predators and opportunistic scavengers, which will also kleptoparasitise other seabirds for fish such as sandeel. In the breeding period, great black-backed gulls have a mean maximum foraging range of 73km (Woodward *et al.* 2019). As well as using the SPA for breeding and foraging, the great black-backed gulls will also use the SPA for roosting. It is not currently known if they have preferred roost locations within the SPA.
Northern fulmar	Ensure fulmar continue to have access to and can utilise all optimal habitats suitable for all relevant aspects of their life cycle associated with the site. ***and*** Avoid significant disturbance to fulmar and ensure individuals can move safely	Fulmars have their main breeding period at Copinsay SPA from April to mid-September. Despite dispersing large distances during the non-breeding period, fulmars will regularly visit their colonies over the non-breeding period and thus will be present at Copinsay SPA throughout the yearly cycle. Fulmars at Copinsay SPA nest on grassy slopes and cliff ledges around the coast, amongst boulders on steep hillsides inland, or around stone dykes and ruined buildings. Fulmars Copinsay SPA will forage in the offshore waters, often over shelf-break waters. They have a large foraging range, generally 542.3 ±657.9km during the breeding period, though distances of 2890km have been recorded (Woodward *et al.* 2019). Given the extensive foraging range of this species, fulmars from various colonies across the UK could be making use of the marine extension around Copinsay SPA, but these marine waters are expected to be particularly important for those breeding at Copinsay SPA. Fulmars forage both during the day and at night. They are surface feeding predators and scavengers, usually diving only to 5m at most (Edwards *et al.* 2013).

	between these areas within the site.	

2c. The supporting habitats and processes relevant to qualifying features and their prey resources are maintained, or where appropriate restored at Copinsay SPA.
This objective seeks to maintain the current extent, quality and distribution of supporting habitats within the site as well as ensure a sufficient food supply within the site. It also recognises however, that the populations of breeding kittiwake, guillemot and great black-backed gull using the Copinsay SPA are in unfavourable condition and that this may, in part, be due to a reduction in prey causing declines at the breeding colonies. The qualifying features require suitable habitat for shelter, roosting, foraging, loafing, moulting and other maintenance activities. The variety, quality, abundance and availability of food resources on which the qualifying features depend is important for ensuring adult fitness, survival and breeding success (including for over-wintering species). The supply of food resources is supported by environmental processes. In the terrestrial environment, supporting habitats refer to the characteristics of the sea cliffs and coastal slopes, moulder beaches, freshwater pools and lochs, heathland and moorland relevant to their use by the qualifying features. Supporting processes relates to wider processes such as factors affecting coastal erosion, factors affecting vegetation formation, and nutrient flow into and hydrology of freshwater lochs, all of which will influence the habitat types and prey distribution available for the qualifying features. In the marine environment, supporting habitats refer to the characteristics of the seabed and water column relevant to their use by the qualifying features. Supporting processes relates to wider oceanographic processes such as up-wellings, tidal flows, hydrological movements which may be necessary for the habitat, and thus affects nutrient cycling and prey distribution. Maintenance of prey species and their supporting habitats is important to maintain the conditions required to support the qualifying features populations. Temporary short-term changes in supporting habitat and/or food resources due to human activity may be considered not to compromise the Conservation Objectives within the site provided it can be demonstrated with a high degree of certainty that the populations of any affected qualifying features can fully recover. The species-specific information includes a summary of available information on food resources and where known, the distribution of the key supporting habitats and associated processes within the Copinsay SPA.

The overall water body condition status relevant to Copinsay SPA was assessed as "High"[7]. This assessment includes consideration of water chemistry, pollutants, the physical condition of the water body, plant and animal communities, including plankton, and the risk from invasive non-native species. There is currently insufficient information to provide quantitative advice on the environmental processes associated with the supporting habitats and prey of the qualifying features at Copinsay SPA.		
Feature	**Site-specific advice**	**Site-specific information**
Black-legged kittiwake	Maintain or enhance the extent and distribution of the supporting habitats for kittiwakes within the site. ***and*** Ensure the variety and abundance of food resources and the condition of supporting habitats and associated processes have the ability to recover. ***and*** Existing water quality should be maintained and any increase in eutrophication or water turbidity, where this could reduce supporting	Kittiwakes at Copinsay SPA will use steep, coastal cliffs and offshore stacks for nesting. Their nest is made of compacted mud, grass, feathers and occasionally seaweed (Snow & Perrins, 1998). Kittiwakes require access to areas of freshwater for bathing and may use manmade walls and shores for roosting. Kittiwakes at Copinsay SPA will use inshore waters within 1km of their colony for loafing, preening, bathing and other important maintenance behaviours, and waters further offshore and shelf waters for foraging. Kittiwakes may also use shorelines to moult in flocks. Kittiwakes diet consists predominantly of shoaling marine fish and invertebrates (e.g. squid and shrimps) obtained at depths up to 4m below the sea surface. During the breeding season they may also feed on intertidal molluscs, crustaceans (e.g. crayfish), earthworms and plant matter (del Hoyo et al. 1996) and may use seaweed for foraging due to the association of seaweed with benthic infauna (Goodship & Furness, 2019). Sandeel are a particularly important prey item, as well as sprat, rockling and gadoids. When fishing, they will often feed in small flocks. Information is lacking on the supporting habitat for kittiwakes at Copinsay SPA, but may relate to the availability of cliff nesting habitat. In the marine environment the supporting processes may relate to water quality (nutrients and turbidity) and water flow.

[7] https://www.sepa.org.uk/data-visualisation/water-classification-hub/

	habitats and/or prey, should be avoided.	
Common guillemot	Maintain or enhance the extent and distribution of the supporting habitats for guillemots within the site. ***and*** Ensure the variety and abundance of food resources and the condition of supporting habitats and associated processes have the ability to recover. ***and*** Existing water quality should be maintained and any increase in eutrophication or water turbidity, where this could reduce supporting habitats and/or prey, should be avoided.	Guillemots at Copinsay SPA require suitable habitat for breeding, foraging, resting, and other maintenance activities. They will use cliff ledges as their nesting habitat. Guillemots use areas close to the coast as well as offshore waters in which to forage and rest. Guillemots forage both at the seabed (demersal) and within the water column (pelagic) up to 200m, primarily during daylight hours (Wakefield *et al.* 2017). Breeding guillemot feed on small schooling fish including sandeels, capelin, sprats and juvenile herring and cod (Wakefield *et al.* 2017). They may also consume molluscs, marine worms, squid, crustaceans and amphipods. Studies on Foula show annual variation in guillemot chick diet: in 2011 sandeels were present in between 45% of samples, clupeids were present in 32% and gadoids in 14%, with 'small silvery fish' (likely to be rockling) comprising 9%. In 2008 sandeels were dominant, also gadoid and clupeid were present, but rockling relatively scarce in the sample. In 2007, diet was fairly evenly split between juvenile rockling, sandeels and gadoids, and indigestible pipefish (Money 2006, 2007, 2008; Prior 2011). Less is known about non-breeding guillemots' diet. The key supporting processes for guillemots at Copinsay SPA are water quality (nutrients and turbidity), tidal cycles, and water flow. As they are a species that feeds in the water column, they can be potentially affected by any increase in turbidity that would affect their ability to successfully forage for their prey (Cook & Burton, 2010). Studies have shown guillemots foraging in areas at fronts between thermally distinct bodies of water (BirdLife International, 2019). They show a weak preference for such regions and for substrate containing a relatively low proportion of gravel (Wakefield *et al.* 2017). They have also been observed to forage in riptides (Wanless *et al.* 1990).
Great black-backed gull	Maintain or enhance the extent and distribution of the supporting habitats for great black-backed gull within the site.	Great black-backed gulls require suitable habitat for nesting, roosting, loafing, foraging, and maintenance activities within this SPA. Their nest will usually be shallow and made from grass, moss and sometimes seaweed. Great black-backed gulls are predators and opportunistic scavengers, which will also kleptoparasitise other seabirds for fish such as sandeel. They will also predate other seabirds (both adults, young and

	and Ensure the variety and abundance of food resources and the condition of supporting habitats and associated processes have the ability to recover. ***and*** Existing water quality should be maintained any increase in nutrients, turbidity or contaminants where this could reduce supporting habitats and/or prey, should be avoided.	eggs). Prey is normally eaten on the water or on low-tide rocks and pulled apart (Cramp & Simmons, 2004). Seabird prey may be killed in the air, on the water, or as they emerge from their burrows. Other food sources may include fish (such as herring, whiting, sandeels, and capelin), mammals, marine invertebrates (e.g. molluscs), carrion and human refuse (Birdlife International, 2022). Chicks are fed similar items than those taken by adults but some studies have demonstrated that chick diets have a higher proportion of fish and marine invertebrate prey items. Information is lacking on the supporting processes for great black-backed gulls at the Copinsay SPA, but may indirectly relate to processes that are important for their seabird prey.
Northern fulmar	Maintain or enhance the extent and distribution of the supporting habitats for fulmars within the site. ***and*** Ensure the variety and abundance of food resources and the condition of supporting habitats and associated processes have the ability to recover.	Fulmars require suitable habitat for breeding, foraging, loafing, and other maintenance activities within Copinsay SPA and the marine extension. Fulmars at Copinsay SPA nest on grassy slopes and cliff ledges around the coast amongst boulders on steep hillsides inland, or around stone dykes and ruined buildings. Fulmars at Copinsay SPA will forage in the offshore waters, often over shelf-break waters, feeding within 5m of the surface. Fulmars forage both during the day and at night, taking a wide range of prey, particularly small fish, zooplankton (especially copepods and amphipods), shrimp, squid, jellyfish, crustaceans, offal from fisheries, and carrion (BirdLife International, 2019). The key supporting processes for fulmars at Copinsay SPA may relate to shelf-breaks, where there are areas of high biological productivity due to the oceanic thermal fronts (Edwards *et al.* 2013).

	and Existing water quality should be maintained and any increase in eutrophication or water turbidity, where this could reduce supporting habitats and/or prey, should be avoided.	

Annex 2. Supporting information

Factors determining the potential for feature recovery.

Feature	Factors determining the potential for feature recovery
Black-legged kittiwake	Kittiwake estimated generation length is 9.8 years and age of first breeding is 4 years old (Bird *et al.* 2020). Maximum age recorded is around 29 years (Fransson *et al.* 2010). Kittiwake clutch size is 2 (1-3) (Snow & Perrins, 1998). Fledglings typically depart colonies between late July and mid-August, dispersing rapidly from colonies, leaving the area about 10 days on average after their first flight (Coulson, 2011). Adult survival rates vary with period and colony but range from 0.8-0.93, with an average survival of 0.854 (Coulson, 2011; Horswill & Robinson, 2015). Any effect on adult mortality can potentially have serious effects on breeding numbers. As a long-lived seabird species, the adult will balance parental investment into their current breeding attempt with their own need to survive, and future reproductive attempts. A wide-scale tracking study found that the vast majority of adults from North Atlantic colonies appear to winter in the west Atlantic between Newfoundland and the mid-Atlantic ridge with the relatively small numbers wintering in the North Sea and west of the British Isles coming mostly from colonies in the British Isles or in the Barents Sea (Furness, 2015). Feeding aggregations may be seen around the Scottish coast until late October/early November (Forrester *et al.* 2007). Numbers of kittiwakes passing through UK waters in spring and autumn vary strongly from year to year apparently in relation to weather conditions (Furness, 2015). Pressures in these wintering or passage grounds could limit potential for populations to recover from impacts arising in breeding areas. Adult moult may begin during the breeding season but in general will occur after breeding. This species will often moult in large flocks of several thousand individuals on sandy beaches between the breeding grounds and the open sea (BirdLife International, 2022). Any pressure (e.g. disturbance) to these moulting flocks may have subsequent effects on their energy expenditure and hence their survival. Kittiwakes are surface feeders and are therefore limited to those prey found in the upper 1m of the sea (Snow & Perrins, 1998). Kittiwakes have a high reliance on sandeel as their main prey (Daunt *et al.* 2008), and as such are judged to be one of the most vulnerable species in terms of breeding success in relation to sandeel abundance (Furness & Tasker, 2000). This means they may be less resilient to a loss of sandeel prey resource, and thus their recovery would be compromised.
Common guillemot	Guillemot estimated generation length is 14.8 years and age of first breeding is 4 years (Bird *et al.* 2020). Guillemots can live in excess of 40 years (Fransson *et al.* 2010), though the average lifespan is likely to be less than 25 years. Guillemots lay a single egg and will not relay if the egg is lost (Snow & Perrins, 1998), meaning they have a slow reproductive rate. As with many species, productivity of first time breeders is relatively low, and for guillemots stabilises from the fifth breeding attempt (Crespin *et al.* 2006). When ready to fledge the chick will leave the nest site and joins the male of the pair on the sea, where they then travel further out to sea together and remain close for around two months (Harris & Wanless, 2003). In this post-fledgling period, the chicks will be vulnerable to predation at this lifestage being less able to

	escape predators (from late July-end of August during fledging). Adult survival is estimated as being 0.935 (Bird *et al.* 2020) and average productivity 0.672 (Horswill & Robinson, 2015). Any effect on adult mortality can potentially have serious effects on breeding numbers. As with other long-lived seabird species, the adult will balance parental investment into their current breeding attempt with their own need to survive, and future reproductive attempts. The majority of common guillemots in UK waters during the non-breeding season are likely to be from UK colonies (Furness, 2015). Few adults move beyond UK waters, although immatures range more widely during the non-breeding season (Furness, 2015). Non-breeding adults tend to remain near their breeding colonies throughout the year and attend their nest ledges, except during their flightless moult period from beginning of August to mid-October. Pressures during this moult period, where adults will be flightless for 1-2 months, could have a subsequent effect on reproduction or survival. Guillemots are not particularly agile in the air and they find take-off from water difficult (Bédard, 1985), which may limit their ability to avoid e.g. fast moving vessels. A guillemot's foraging technique means that they only carry one fish back to their chick at a time, whereas other auk species can carry multiple fish. This limits the quantity of prey they can bring back to their chick each day. As guillemots can dive deeply, they can feed both at the seabed (on demersal prey) and in the water column (on pelagic prey) (Wakefield *et al.* 2017), meaning they may have more flexibility in the prey items they can forage on, depending on their availability. Guillemots, as with other auk species, have a high wing loading, meaning that there is a high energetic cost of flight (Thaxter *et al.* 2010). This may mean if they have to travel further to find food they may suffer energetically (Masden *et al.* 2010).
Great black-backed gull	Estimated generation length is 12 years, which is longer than most other gull species, with a maximum known longevity of around 30 years (Bird *et al.* 2020). Age of first breeding is around 4-5 years old (Bird *et al.* 2020). Clutch size is generally 2-3 (range of 1-5) eggs (Cramp & Simmons, 2004). Great black-backed gulls have the ability to lay more than one clutch if the first one has been destroyed, but it depends on the female's physiological condition and replacement clutches will often have smaller or fewer eggs than the first clutch. Incubation takes 27-28 days and fledgling period takes around 7-8 weeks (Cramp & Simmons, 2004). Productivity is estimated as being around 1.1 (Horswill & Robinson, 2015). Adult survival rates have been estimated to be between 0.89-0.93 (Bird *et al.* 2020; Horswill & Robinson, 2015). Any effect on adult mortality can potentially have serious effects on breeding numbers. As a long-lived seabird species, the adult will balance parental investment into their current breeding attempt with their own need to survive, and future reproductive attempts. Great black-backed gulls show high site fidelity to their breeding sites. Such high site fidelity may limit individual ability to adapt to changes and hence potential for population recovery from perturbations. Great black-backed gulls are predatory and opportunistic foragers but unlike other gulls such as herring gulls and lesser black-backed gulls, do not appear to readily adapt to feeding in more man-made or urban environments. They have the ability to switch prey depending on what is available, meaning they may be more resilient to change if a particularly prey item decreases but this may depend on the breeding colony. Due to their large size, this may make

	them able to out-compete other gull species when scavenging, particularly in relation to scavenging from fishing vessels.
Northern fulmar	Estimated generation length is 25.3 years (Bird *et al.* 2020), one of the longest in any bird species, meaning they may be less resilient to any negative effects on their population. Fulmars generally begin breeding ~10 years old (Dunnet, 1991) and can continue to breed into old age; some individuals still recorded as breeding in their late 40s (P.Thompson, unpub.data). Maximum longevity is recorded as being 51 years (Bird *et al.* 2020). Reproduction rates in fulmars are slow with clutch size being 1 egg, one clutch per year. Fulmars may not breed every year (Ollason & Dunnet, 1988), deferring by at least a year if poor food conditions exist such that the adult cannot reach good body condition to breed, or if the bird's partner has not returned and a new partnership may need to establish. Adult survival rates have been estimated at 0.971 (Bird *et al.* 2020), one of the highest of all seabird species, and average productivity as 0.419 (Horswill & Robinson, 2015). Changes in adult survival rates are most likely to drive population change. The fulmar non-breeding population will be mixed individuals across many differing colonies. Tracked birds from Scotland disperse during the non-breeding period to the West Atlantic, to the Labrador Sea, across to the Barents Sea and northern Norway, to the west of Ireland, and some may remain within North Sea waters (Quinn, 2014). There are sex differences in foraging such that female fulmars tracked from Scotland travelled further on average and towards the West Atlantic, compared to males which on average remained closer to the colony over the non-breeding period (Quinn, 2014). There therefore may be different pressures in the wintering grounds for females and males. Despite dispersing large distances in the non-breeding period, from November onwards fulmars will regularly visit their breeding colonies; from January onwards numbers will increase at the colony (Quinn, 2014). In April, breeding fulmars undertake a pre-laying exodus (Macdonald, 1977), an important period of foraging to ensure body condition is ready for the energetically expensive egg laying period. Fulmars may be particularly sensitive to disturbance during their egg laying period, and may abandon their nest if disturbed, leaving the egg vulnerable to predation. During chick-rearing it is common for both pair members to forage away from the nest (Mallory *et al.* 2008), leaving the chick to defend itself with its ability to expel oil and vomit. Fulmars are highly site faithful, which may limit individual ability to adapt to changes within these areas and hence potential for population recovery from perturbations. The majority of the fulmar's primary moult is usually post-breeding during September and October (Quinn, 2016). It is thought that individuals undergoing wing moult may remain largely flightless for the period of wing moult (Warham, 1996), thus making them more vulnerable to pressures during this time. In a typical year, a full wing and tail moult should be completed by the end of February (Ginn & Melville, 2000). In unusual years (e.g. 2004, during a winter wreck event), 60% of birds examined from a wreck were still in primary moult in February, compared to 8% in a normal year (van Franeker, 2004), indicating in years of poor food supply the energetically expensive period of moult may be delayed or arrested. Fulmars have a wide prey base (BirdLife International, 2022), so they should be more resilient to changes in prey abundance. However, in the past, population increases and decreases have been linked to changes in anthropogenic food sources such as offal discharges (Tasker, 2004). Fulmars

	are surface feeders which scavenge on anything that looks like prey. Thus, can be more susceptible to ingesting non-prey items, such as marine litter. Fulmars have the ability to forage widely across large distances (Woodward *et al.* 2019) which means they may be more resilient to changes in prey abundances closer to their breeding colonies.

Annex 3: Glossary for Conservation Objectives and References

Glossary

Conservation Objective term	Definition
Distribution	The “distribution” is how the qualifying feature is spread out within the site.
Favourable condition	This refers to the assessed condition of a feature through Site Condition Monitoring. Features considered to be in favourable condition for the purposes of these Conservation Objectives are those that have an assessed condition of either: • Favourable declining - The attribute targets set for the natural feature have been met, but evidence suggests that its condition will worsen unless remedial action is taken. • Favourable Maintained - the attribute targets set for the natural features have been met, and the natural feature is likely to be secure on the site under present conditions. • Favourable Recovered - the condition of the natural feature has recovered from a previous unfavourable condition, and attribute targets are now being met.
Generation length	Generation length is “the average age of parents of the current cohort”. Generation length therefore reflects the turnover rate of breeding individuals in a population (IUCN, 2019).
Maintain	Where a qualifying feature of the SPA is assessed as being in favourable condition the conservation objective is ‘maintain’. This means that the various attributes of the feature should be kept at that favourable level. This can include increasing/improving condition as well, but not a permanent decline.
Marine birds	This term encompasses true seabirds and waterfowl (seaducks, divers, and grebes).
Metapopulation	A group of connected populations of a species within a defined area, where the individual populations may interact with one another.
Restore	Where a qualifying feature of the SPA is assessed as being in unfavourable condition the conservation objective is ‘restore’. This means that the various attributes of the feature should be returned to the favourable level by increasing/improving condition.
Site integrity	The integrity of a site is defined in general terms as the coherence of its ecological structures and function, across its whole area, which enables it to sustain the habitat, complex of habitats and and/or the levels of populations of the species for which it was designated.
Site reference population	This refers to the estimated population figure for the site and should be used to form the basis of carrying out HRAs. In most cases, the site reference population will be the baseline population (figure at designation). However, where recent surveys show a population to have increased or stayed stable, the current population is considered the most appropriate population figure to use for HRA’s.

Conservation Objective term	Definition
Supporting habitats and processes	This includes the following environmental conditions (but is not limited to) which are important for maintaining/restoring the protected features, e.g. hydrography and supporting water currents, chemical water quality parameters, suspended sediment levels, radionuclide levels.
Unfavourable condition	This refers to the assessed condition of a feature through Site Condition Monitoring. Features considered to be in unfavourable condition for the purposes of these Conservation Objectives are those that have an assessed condition of either: • Unfavourable recovering - One or more of the attribute targets have not been met on the site, but management measures are in place to improve the condition. • Unfavourable no change - One or more of the attribute targets have not been met, and recovery is unlikely under the present management and activity on the site. • Unfavourable declining - One or more of the attribute targets have not been met, evidence suggests that condition will worsen unless remedial action is taken.
Waterfowl	Encompasses seaducks, grebes and divers.

References

Bédard, J. 1985. "Evolution and characteristics of the Atlantic Alcidae." In: Nettleship DN, Birkhead TR (Eds) The Atlantic Alcidae. Academic Press, London, 1-50.

Bicknell, A.W.J., Oro, D., Camphuysen, K. & Votier, S.C. 2013. Potential consequences of discard reform for seabird communities. Journal of Applied Ecology, 50, 649–658.

Bird, J., Martin, R., Akcakaya, H.R, Gilroy, J., Burfield, I., Garnett, S., Symes, A., Taylor, J., Sekercioglu, C., & Butchart, S. 2020. Generation lengths of the world's birds and their implications for extinction risk. Conservation Biology. 10.1111/cobi.13486.

BirdLife International. 2021. European Red list of birds. Accessed at: https://www.birdlife.org/wp-content/uploads/2021/10/BirdLife-European-Red-List-of-Birds-2021.pdf

BirdLife International. 2022. Species factsheets Downloaded from http://www.birdlife.org on 07/05/2022.

BirdLife International. 2019. Species factsheets Downloaded from http://www.birdlife.org on 07/05/2019.

Bradbury, G., Shackshaft, M., Scott-Hayward, L., Rexstad, E., Miller, D. & Edwards, D. 2017. Risk assessment of seabird bycatch in UK waters. Report to Defra. Defra Project: MB0126. Available from:http://sciencesearch.defra.gov.uk/Document.aspx?Document=14236_MB0126Riskassessmentofseabirdbycatchin UKwaters.pdf

Burnell, D., Perkins, A.J., Newton, S.F., Bolton, M., Tierney, T.D. & Dunn, T.E., 2023. Seabirds Count: a census of breeding seabirds in Britain and Ireland (2015–2021). Lynx Nature Books, Barcelona.

Camphuysen, C.J., Schouten, S. & Gronert, A. 2010. Mystery spill of Polyisobutylene (C4H8) off the Dutch coast affecting seabirds in March 2010. *Seabird,* 23, 143-145.

Cook, A.S.C.P. & Burton, N.H.K. 2010. A review of the potential impacts of marine aggregate extraction on seabirds. Marine Environment Protection Fund Project 09/P130. British Trust for Ornithology. Thetford, Norfolk, UK.

Coulson, J.C. 2011. The Kittiwake. T. & A.D. Poyser, London.

Cramp, S. & Simmons, K. E. L. (eds.). 2004. BWPi: Birds of the Western Palearctic interactive (DVD-ROM). BirdGuides Ltd, Sheffield

Crespin, L., Harris, M. P., Lebreton, J. D., & Wanless, S. 2006. Increased adult mortality and reduced breeding success with age in a population of common guillemot Uria aalge using marked birds of unknown age. *Journal of Avian Biology*, *37*(3), 273-282.

Daunt, F., Wanless, S., Greenstreet, S. P., Jensen, H., Hamer, K. C., & Harris, M. P. 2008. The impact of the sandeel fishery closure on seabird food consumption, distribution, and productivity in the northwestern North Sea. Canadian journal of fisheries and aquatic sciences, 65(3), 362-381.

Davies, J.G., Humphreys, E.M. & PearceHiggins, J.W. 2021. Species factsheet for Great Black-backed Gull. From MarPAMM Lot 5: Projected future vulnerability of seabirds within the INTERREG VA area to climate change. Report to Agri-Food and Biosciences Institute and Marine Scotland Science. BTO, Thetford.

del Hoyo, J.; Elliott, A. & Sargatal, J. (1996). Handbook of the Birds of the World, vol. 3, Hoatzin to Auks. Lynx Edicions, Barcelona, Spain: 821pp.

Edwards, E., Quinn, L.R., Wakefield, E.D., Miller, P.I. & Thompson, P.M. 2013. Tracking a northern fulmar from a Scottish nesting site to the Charlie Gibbs Fracture Zone: evidence of linkage between coastal breeding seabirds and Mid-Atlantic Ridge feeding sites. Deep Sea Research Part II: Topical Studies in Oceanography, 98, Part B, 438-444.

Forrester, R. W., Andrews, I. J., McInerny, C. J., Murray, R. D., McGowan, R. Y., Zonfrillo, B., Betts, M. W., et al. 2007. The Birds of Scotland. Scottish Ornithologists' Club, Aberlady.

Fransson, T., Kolehmainen, T., Kroon, C., Jansson, L. & Wenninger, T. 2010. EURING list of longevity records for European birds.

Furness, R.W. & Tasker, M.L. 2000. Seabird-fisheries interactions quantifying the sensitivity of seabirds to reductions in sandeel abundance and identification of key areas for sensitive seabirds in the North Sea. *Marine Ecology Progress Series,* 202, 253-264

Furness, R.W., Wade, H.M., Robbins, A.M.C. & Masden, E.A. 2012. Assessing the sensitivity of seabird populations to adverse effects from tidal stream turbines and wave energy devices. *ICES Journal of Marine Science*, 69 (8), 1466-1479.

Furness, R.W. 2016. Key pressures and threats faced by marine birds in the UK, conservation action for these birds, and identification of pressures and threats not effectively addressed by existing conservation action. Unpublished report to JNCC.

Furness, R.W. 2015. Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS). Natural England Commissioned Reports, Number 164. (http://publications.naturalengland.org.uk/publication/6427568802627584)

Furness, R.W., Wade, H.M. & Masden, E.A. 2013. Assessing vulnerability of marine bird populations to offshore wind farms. *Journal of Environmental Management*,119: 56-66

Ginn, H.B. & Melville, D.S. 2000 (reprint). 'Moult in Birds'.

Goodship, N. & Furness, R.W. 2019. Seaweed hand-harvesting: literature review of disturbance distances and vulnerabilities of marine and coastal birds. *Scottish Natural Heritage Research Report No. 1096.*

Grosbois, V. & Thompson, P.M. 2005. North Atlantic climate variation influences survival in adult fulmars. Oikos, 109, 273-290.

Harris, M.P. & Wanless, S. 2003. Postfledging occupancy of breeding sites by female common murres (*Uria aalge*). The Auk. 120: 75. *doi*:*10.1642/0004-8038(2003)120[0075:POOBSB]2.0.CO;2*.

Horswill, C. & Robinson R. A. 2015. Review of seabird demographic rates and density dependence. JNCC Report No. 552. Joint Nature Conservation Committee, Peterborough

ICES 2013. Report of the Workshop to review and advise on Seabird Bycatch (WKBYCS) 14-18 October 2013, Copenhagen, Denmark

Joint Nature Conservation Committee (JNCC), 2004. Common Standards Monitoring Guidance for Birds. August 2004. Accessed at: https://data.jncc.gov.uk/data/dc33b514-d571-44b3-8936-08d2d7a1e1b1/CSM-Birds-2004.pdf

Joint Nature Conservation Committee (JNCC), 2018. Favourable Conservation Status: UK Statutory Nature Conservation Bodies Common Statement. Accessed at https://hub.jncc.gov.uk/assets/b9c7f55f-ed9d-4d3c-b484-c21758cec4fe

Joint Nature Conservation Committee (JNCC) 2016. Seabird Monitoring Programme data (http://www.jncc.defra.gov.uk/page-3201). Joint Nature Conservation Committee.

Joint Nature Conservation Committee (JNCC) 2019 Black-legged kittiwake. Available at: https://jncc.gov.uk/our-work/black-legged-kittiwake-rissa-tridactyla/

Leopold M.F. & Camphuysen C.J. 2009. Local birds in and around the Offhore Wind Park Egmond aan Zee (OWEZ) (T1). NoordzeeWind Rapport OWEZ R 221 T1 20080201

Lewis, S., Elston, D.A., Daunt, F., Cheney, B. & Thompson, P.M. 2009. Effects of extrinsic and intrinsic factors on breeding success in a long lived seabird. Oikos, 118, 521- 528.

Macdonald, M.A. 1977. The pre-laying exodus of the Fulmar Fulmarus glacialis. Ornis Scandinavica, 8, 33-38.

Mallory, M.L., Akearok, J.A., Edwards, D.B., O'Donovan, K. & Gilbert, C.D. 2008. Autumn migration and wintering of northern fulmars (*Fulmarus glacialis*) from the Canadian high Arctic. Polar Biology, 31, 745-750.

Masden, E.A., Haydon, D.T., Fox, A.D. & Furness, R.W. 2010. Barriers to movement: modelling energetic costs of avoiding marine wind farms amongst breeding seabirds. Marine Pollution Bulletin, 60(7), pp.1085-1091.

Mendel, B, Sonntag, N., Wahl, J., Schwemmer, P., Dries, H., Guse, N., Müller, S. & Garthe, S. 2008. Profiles of seabirds and waterbirds of the German North and Baltic Seas: Distribution, ecology and sensitivities to human activities within the marine environment. Bonn, Bundesamt für Naturschutz.

Mitchell, P.I., Newton, S.F., Ratcliffe, N. and Dunn, T.E., 2004. Seabird populations of Britain and Ireland. T. & AD Poyser, London.

O'Hanlon, N., James, N., Masden, E. & Bond, A. 2017. Seabirds and marine plastic debris in the northeastern Atlantic: A synthesis and recommendations for monitoring and research. Environmental Pollution. 231. 10.1016/j.envpol.2017.08.101.

OSPAR Commission. 2009. Background document for black-legged kittiwake (*Rissa tridactyla tridactyl*a). OSPAR Commission Biodiversity Series.

Peschko, V., Mendel, B., Müller, S., Markones, N., Mercker, M. & Garthe, S. 2020. Effects of offshore windfarms on seabird abundance: Strong effects in spring and in the breeding season. Marine Environmental Research, 162, p.105157.

Poloczanska, E. S., Cook, R. M., Ruxton, G. D., & Wright, P. J. 2004. Fishing vs. natural recruitment variation in sandeels as a cause of seabird breeding failure at Shetland: a modelling approach. ICES Journal of Marine Science, 61(5), 788-797.

Quinn, L.R. 2014. Intra- and inter-colony differences in non-breeding strategies in the Northern Fulmar, Fulmarus glacialis. Unpublished PhD Thesis, University of Aberdeen

Quinn, L. R., Meharg, A. A., van Franeker, J. A., Graham, I. M., & Thompson, P. M. 2016. Validating the use of intrinsic markers in body feathers to identify inter-individual differences in non-breeding areas of northern fulmars. Marine Biology, 163, [64]. https://doi.org/10.1007/s00227-016-2822-1

Robinson, R.A. 2005. *BirdFacts: profiles of birds occurring in Britain & Ireland*. BTO, Thetford (http://www.bto.org/birdfacts, accessed on 03 May 2022).

Ropert-Coudert Y., Kato A., Robbins A. & Humphries G.R.W. 2018. The Penguiness book. World Wide Web electronic publication (http://www.penguiness.net), version 3.0, October 2018. DOI:10.13140/RG.2.2.32289.66406

Sandvik, H., Reiertsen, T.K., Erikstad, K.E., Anker-Nilssen, T., Barrett, R.T., Lorentsen, S.H., Systad, G.H. & Myksvoll, M.S. 2014. The decline of Norwegian kittiwake populations: modelling the role of ocean warming. Climate Research, 60, 91-102.

Sandvik, H., Erikstad, K.E., Barrett, R.T. & Yoccoz, N.G. 2005. The effect of climate on adult survival in five species of North Atlantic seabirds. Journal of Animal Ecology, 74(5), 817- 831.

Snow, D.W. & Perrins, C.M. 1998. *The Birds of the Western Palearctic, Volume 1: Non-Passerines*. Oxford University Press, Oxford.

Stanbury, A., Burns, F., Aebischer, N., Baker, H., Balmer, D., Brown, A., Dunn, T., Lindley, P., Murphy, M., Noble, D., Owens, R., Quinn, L. 2024. The status of the UK's breeding seabirds: an addendum to the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds, 117, pp.471-487

Stroud,D.A., Chambers,D., Cook,S., Buxton,N., Fraser,B., Clement,P., Lewis,I., Mclean,E., Baker,H., & Whitehead,S. 2001. The UK SPA network: its scope and content, 1-3 ed Peterborough, UK.

Svendsen, N.B., Herzke, D., Harju, M., Bech, C., Gabrielsen, G.W. and Jaspers, V.L.B., 2018. Persistent organic pollutants and organophosphate esters in feathers and blood plasma of adult kittiwakes (Rissa tridactyla) from Svalbard–associations with body condition and thyroid hormones. *Environmental research*, *164*, pp.158-164.

Tartu, S., Goutte, A., Bustamante, P., Angelier, F., Moe, B., Clément-Chastel, C., Bech, C., Gabrielsen, G.W., Bustnes, J.O. and Chastel, O., 2013. To breed or not to breed: endocrine response to mercury contamination by an Arctic seabird. *Biology letters*, *9*(4), p.20130317.

Tartu, S., Lendvai, A.Z., Blevin, P., Herzke, D., Bustamante, P., Moe, B., Gabrielsen, G.W., Bustnes, J.O. & Chastel, O. 2015. Increased adrenal responsiveness and delayed hatching date in

relation to polychlorinated biphenyl exposure in Arctic-breeding black-legged kittiwakes (Rissa tridactyla). General and Comparative Endocrinology, 219, 165-172

Tasker, M. L., Camphuysen, C.J., Cooper, J., Garthe, S., Montevecchi, W.A. & Blaber, S.J.M. 2000. The impacts of fishing on marine birds. ICES Journal of Marine Science, 57, 531–5

Thaxter, C. B., Wanless, S., Daunt, F., Harris, M. P., Benvenuti, S., Watanuki, Y., & Hamer, K. C. 2010. Influence of wing loading on the trade-off between pursuit-diving and flight in common guillemots and razorbills. *Journal of Experimental Biology*, *213*(7), 1018-1025.

Thompson, P.M. & Ollason, J.C. 2001. Lagged effects of ocean climate change on fulmar population dynamics. Nature, 413, 417-420

Tremlett, C.J., Morley, N., and Wilson, L.J. (2024). UK seabird colony counts in 2023 following the 2021- 22 outbreak of Highly Pathogenic Avian Influenza. RSPB Research Report 76. RSPB Centre for Conservation Science, RSPB, The Lodge, Sandy, Bedfordshire, SG19 2DL

van Franeker, J.A. 2004. Mass-sterfte van Noordse Stormvogel in de zuidelijke Noordzee. Nieuwsbrief NZG, 5, 6-7.

Van Franeker, J.A., Blaize, C., Danielsen, J., Fairclough, K., Gollan, J., Guse, N., Hansen, P.L., Heubeck, M., Jensen, J.K., Le Guillou, G. and Olsen, B., 2011. Monitoring plastic ingestion by the northern fulmar Fulmarus glacialis in the North Sea. Environmental pollution, 159(10), pp.2609-2615.

Votier, S.C., Birkhead, T.R., Oro, D., Trinder, M., Grantham, M.J., Clark, J.A., McCleery, R.H. & Hatchwell, B.J. 2008. Recruitment and survival of immature seabirds in relation to oil spills and climate variability. Journal of Animal Ecology, 77, 974-983.

Votier, S.C., Hatchwell, B.J., Beckerman, A., McCleery, R.H., Hunter, F.M., Pellatt, J., Trinder, M. and Birkhead, T.R., 2005. Oil pollution and climate have wide-scale impacts on seabird demographics. *Ecology letters*, *8*(11), pp.1157-1164.

Wakefield, E. Ellie, O., Baer, J., Carroll, M., Daunt, F., Dodd, S., Green, J. Guilford, T., Mavor, R., Miller, P., Newell, M., Newton, S., Robertson, G., Shoji, A., Soanes, L., Votier, S., Wanless, S., Bolton, M. 2017. Breeding density, fine-scale tracking and large-scale modeling reveal the regional distribution of four seabird species. Ecological applications: a publication of the Ecological Society of America. 27. 10.1002/eap.1591.

Wanless, S., Harris, M. P. and Morris, J. A. 1990. A comparison of feeding areas used by individual common murres (*Uria aalge*), razorbills (*Alca torda*) and an Atlantic puffin (*Fratercula arctica*) during the breeding season. Col. Waterbirds 13, 16-24.

Wanless, S., Frederiksen, M. Walton, J. & Harris, M. 2009. Long-term changes in breeding phenology at two seabird colonies in the western North Sea. Ibis. 151. 274 - 285. 10.1111/j.1474-919X.2008.00906.x.

Warham, J. 1996. The behaviour, population biology and physiology of the petrels. Academic Press, London.

Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. 2019. Desk-based revision of seabird foraging ranges used for HRA screening. BTO Research Report No. 724.

Žydelis, R., Small, C., & French, G. 2013. The incidental catch of seabirds in gillnet fisheries: A global review. *Biological Conservation*, 162, 76-88.