

## Appendix C: Assessment of Environmental Effects of Supplementary Guidance Aquaculture

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

SEA issue.	Likely environmental effect of implementing Supplementary Guidance Aquaculture.		
	Scoring pre-mitigation.	Notes.	Mitigation required?
<p><b>Biodiversity, flora &amp; fauna.</b></p> <p>SEA objectives:</p> <ul style="list-style-type: none"> <li>• Conserve protected sites and species</li> <li>• Safeguard valuable habitat from loss and fragmentation through development</li> <li>• Protect biodiversity, enabling and encouraging habitat enhancement or</li> </ul>	-	<p>Effects are likely to be broadly neutral, with potential for minor - moderate adverse effects, e.g. through wildlife entanglements and impacts on wild salmonids.</p> <p><b>DC2: Natural Heritage Designations, Protected Species and the Wider Biodiversity and Geodiversity</b> includes sections of the OLDP Proposed Plan Policy 9 Natural Heritage and Landscape which relate to designated natural heritage sites, protected species and the wider biodiversity and geodiversity.</p> <p>Internationally designated sites are illustrated in Map DC2a, with nationally designated sites in Map DC2b and designated seal haul-outs in Map DC2c.</p> <p>Three new Nature Conservation Marine Protected Areas – North-west</p>	No.

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restoration where appropriate, and contribute towards achievement of Orkney LBAP actions and targets.		<p>Orkney, Papa Westray and Wyre and Rousay Sounds - have been designated in Orkney waters since the previous Planning Policy Advice Aquaculture was prepared. These are included in Map DC2b.</p> <p><b>DC3: Predator Control and Interaction with Other Species</b> explains how seals and certain bird species may be attracted to fish cages, causing damage to stock and potential for fish escapes. It also highlights the risk of fatal entanglement posed to marine birds and mammals by top nets and sub-sea nets. It also notes the importance of site location when considering the use of Acoustic Deterrent Devices (ADDs) as a method for deterring predation by seals and possible licencing requirements.</p> <p>It requires planning applications to be supported by a predator management strategy and confirms that the Council's preferred method of predator control is for passive, non-destructive methods, such as well-tensioned nets of appropriate mesh size and the use of locations where the risk of potentially damaging interactions with wildlife are low. It also recommends the preparation of adaptive Environmental Management Plans which would enable the collection and subsequent reporting of entanglement data to Scottish Natural Heritage, in turn allowing the strategy to be amended during its lifetime.</p> <p><b>DC4: Wild Salmonid Fish Populations</b> identifies the potential for the farming of Atlantic salmon to impact on wild salmonid populations and makes clear that development proposals with potential for significant adverse effects on wild salmonid fish species that are not addressed through effective mitigation will not be supported. It confirms that the</p>	

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		<p>planning authority will be advised by Marine Scotland as to whether a proposed development is likely to have any significant effects on wild salmonid populations.</p> <p>Developers are required to address the following issues through assessment and, where appropriate, mitigation:</p> <ul style="list-style-type: none"> <li>• Transfer of sea lice and disease from farmed fish to wild fish</li> <li>• Disruption of genetic integrity and local adaptation of wild stocks arising from interbreeding with escapees from salmon farms</li> <li>• Introduction of non-native farmed species.</li> </ul> <p>Developers are required to provide information which demonstrates that the business has taken adequate consideration of measures to minimise the impact of escapes, minimise the risk of disease spread and deter predation.</p> <p>The main update to this DC is the inclusion of guidance on Disease Management Areas (DMA). There are currently three DMAs in Orkney. New sites that would have no effect on existing DMAs or are in DMAs of their own, pose less risk to the spread of disease than those which bridge DMAs. The guidance therefore confirms that there is a general presumption against farming at new sites that bridge existing DMAs as detailed in Scotland's National Marine Plan Policy Aquaculture 6.</p> <p><b>DC9: Construction and Operational Impacts</b> notes that sub-sea lighting installed to slow fish maturation may impact on wildlife, and requires the developer to agree measures with the planning authority to reduce the impact to the surrounding environment.</p> <p><b>DC10: Decommissioning and Reinstatement</b> requires developers to</p>	

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		<p>provide a detailed account of the necessary works and the method of reinstatement of the site to its original condition, with the removal of all equipment associated with the development.</p> <p><b>Annex 2</b> is an important addition to the SG as it identifies a range of pathways through which aquaculture interacts with habitats and species, as well as describing the potential for significant effects. The table uses the headings from the Scottish Aquaculture Research Forum (SARF) EIA scoping templates to identify issues for consideration, as well as the information that developers will be required to provide to support their application. Potential mitigation measures are outlined, along with sources of further useful information, e.g. the Feature Activity Sensitivity Tool (FEAST), the National Marine Plan interactive (NMPi) and SEPA's marine cage fish farming procedures manual, Annex F Seabed Monitoring and /Assessment.</p> <p>The assimilation of this information into a single table should prove helpful to developers during the preparation of EIAs by enabling a clearer understanding of the vulnerabilities of the natural environment to the effects, as well as the types of mitigation that can be incorporated to avoid or minimise adverse effects.</p>	
<p><b>Water.</b></p> <p>SEA objective:</p> <ul style="list-style-type: none"> <li>Promote the protection</li> </ul>	0	<p>Although further development of the aquaculture industry in Orkney waters will lead to additional localised impacts on the water column and benthic environment (seabed), effects on the wider water and seabed environments are likely to be broadly neutral.</p>	<p>Yes – in DC5 amend reference to Shellfish Waters</p>

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<p>and improvement of the water environment, including burns, lochs, estuaries, wetlands, coastal waters and groundwater.</p>		<p><b>DC5: Water Quality and Benthic Impacts</b> includes the section of the OLDP Proposed Plan Policy 9 Natural Heritage and Landscape which relates to the water environment and is relevant to aquaculture development.</p> <p>It also requires development proposals to be supported by modelling and calculations which demonstrate that the water column and benthic impacts are localised and within environmental limits, taking account of cumulative impacts.</p> <p>It explains the Scottish Environment Protection Agency's (SEPA) role in regulating the aquaculture industry through the Water Environment (Controlled Activities) (Scotland) Regulations 2011 and confirms that the Planning Authority will be advised by SEPA on issues relating to water quality and benthic impacts.</p> <p><b>Annex 2</b> provides additional information on how aquaculture developments impact on the benthic environment, highlighting issues for consideration, as well as the information that developers will be required to provide to support their application. Potential mitigation measures are outlined, along with sources of further useful information, e.g. the Feature Activity Sensitivity Tool (FEAST), the National Marine Plan interactive (NMPi) and SEPA's marine cage fish farming procedures manual, Annex F Seabed Monitoring and /Assessment.</p> <p>DC5 has been updated to take account of Scotland's National Marine Plan policy 4 Aquaculture.</p>	<p>Directive.</p>

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		<p>It confirms that the planning authority supports the development of new shell fish growing sites, particularly in Shellfish Water Protected Areas. Where this is not possible, the location of new shellfish sites in proximity to existing sewage discharges or waters with diffuse pollution inputs should be avoided in consultation with SEPA. The locations of major water treatment discharges are shown on map DC8d.</p> <p>Map DC8d also identifies the Flotta Oil Terminal pipeline Restricted Area, through which North Sea crude oil is imported.</p> <p><b>Mitigation:</b> Amend reference to the Shellfish Waters Directive: The Directive was repealed in December 2013 and has been replaced by the <a href="#">Water Environment (Shellfish Water Protected Areas: Designation) (Scotland) Order 2013</a> which came into force on 22 December 2013.</p>	
<p><b>Geology and sediments.</b></p> <p>SEA objective:</p> <ul style="list-style-type: none"> <li>Protect designated and undesignated sites which are recognised and valued for their geological or geomorphological importance.</li> </ul>	0	<p>Effects are likely to be broadly neutral.</p> <p>DC2 includes the OLDP policy on natural heritage sites and the wider geodiversity. Three new Nature Conservation Marine Protected Areas – North-west Orkney, Papa Westray and Wyre and Rousay Sounds - have been designated in Orkney waters since the previous Planning Policy Advice Aquaculture was prepared. The qualifying features of the latter two sites include sand waves within the Orkney carbonate production area, an internationally important example of a shelf carbonate system. These features may be vulnerable to certain aspects of fish farm development, e.g. scouring at anchorage points. The North-west Orkney site also includes geomorphological features of interest; however it is</p>	No

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		<p>located outwith the 3 nautical mile zone, therefore any aquaculture development in this area would not fall within the remit of the land use planning system.</p> <p><b>DC2:</b> includes the Council's OLDP Proposed Plan policy relating to NC MPAs and the boundaries of all three MPAs are included in Map DC2b.</p>	
<p><b>Landscape.</b></p> <p>SEA objective:</p> <ul style="list-style-type: none"> <li>Facilitate positive change while maintaining distinctive landscape and seascape character.</li> </ul>	-	<p>Effects are likely to be broadly neutral, with potential for localised minor impacts.</p> <p><b>DC1: Landscape, Coast, Siting and Design</b> includes the section of the OLDP Proposed Plan Policy 9 Natural Heritage and Landscape which relates to landscape and is relevant to aquaculture development.</p> <p>Guidance is provided on aspects of the development that should be assessed, along with references to a number of publications which provide more detailed guidance on how to accommodate aquaculture into landscapes / seascapes. These include the recently published North Caithness and Orkney Coastal Character Assessment.</p> <p>DC1 Confirms that proposals should be supported by a Landscape and Visual Impact Assessment (LVIA) including, where appropriate, a full cumulative assessment (CLIVIA) which takes account of any existing and proposed developments.</p> <p>It highlights the requirement to consider impacts on the National Scenic Area, including its special qualities, as well as the Hoy area of Wild Land; both areas are illustrated in Map DC1.</p>	No.

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<p><b>Cultural heritage.</b></p> <p>SEA objective:</p> <ul style="list-style-type: none"> <li>Safeguard cultural heritage features and their settings.</li> </ul>	0	<p>Effects are likely to be broadly neutral.</p> <p><b>DC6: Historic Environment</b> includes the section of OLDP Proposed Plan Policy 8 Historic Environment and Cultural Heritage which is relevant to aquaculture and it lists the range of cultural heritage sites which have legal protection. Where relevant, these are illustrated in Map DC6.</p> <p>It also explains how aquaculture development has potential to affect cultural heritage resources either directly or indirectly, e.g. by impacting upon the setting of the resource. It also confirms the requirement for the historic environment to be included in an Environmental Impact Assessment and sets out a range of issues that should be considered. The potential requirement for a visual impact analysis or Cultural Heritage Impact Assessment is also highlighted.</p>	No.
<p><b>Population.</b></p> <p>SEA objective:</p> <ul style="list-style-type: none"> <li>Retain and, where appropriate, improve quality and quantity of publicly accessible open space.</li> </ul>	0	<p>Effects are likely to be broadly neutral.</p> <p><b>DC9: Construction and Operational Impacts</b> highlights the potential for aquaculture development to impact on the local transport network during construction, operation and decommissioning phases and requires the developer to provide sufficient information regarding vehicular and pedestrian access/egress to the site. It also requires aquaculture development to avoid or appropriately mitigate adverse impacts on statutory access rights, core paths, other public footpaths and rights of way, in accordance with Orkney LDP Policy 10 Green Infrastructure</p>	No.

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		<p>In an island community marine and coastal areas are important to people in terms of economic activity as well as recreation, sport and leisure. The SG includes a new Development Criterion – DC7 Social and Economic Impacts which requires developers to demonstrate that significant adverse effects on existing activities have been avoided or appropriately mitigated.</p> <p><b>DC8: Other Marine Users</b> also requires aquaculture development proposals to identify potential impacts on recreation, sport or leisure activities in consultation with affected stakeholders and ensure that any significant disturbance or disruption is minimised or appropriately mitigated.</p>	
<p><b>Material assets.</b> SEA objective:</p> <ul style="list-style-type: none"> <li>Promote the efficient use of resources and the minimisation of wastes through their re-use or their recovery through recycling, composting or energy recovery, in line with 2020 national targets.</li> </ul>	0	<p>Effects are likely to be broadly neutral.</p> <p><b>DC9: Construction and Operational Impacts</b> explains that there is potential for aquaculture to generate waste during construction, operation and decommissioning and that this can affect both visual amenity and the natural environment. Developers are required to prepare a Site Waste Management Plan which demonstrates steps that will be taken to reduce, re-use and recycle waste materials and how any remaining wastes will be disposed of.</p> <p><b>DC10: Decommissioning and Reinstatement</b> requires developers to provide a detailed account of the necessary works and the method of reinstatement of the site to its original condition, with the removal of all equipment associated with the development.</p>	<p>Yes. The section on waste management in DC9 does not address the disposal of fish mortalities or other fish wastes.</p>

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		<b>Mitigation:</b> DC9 should include a requirement for the Site Waste Management Plan to detail how fish mortalities and other fish wastes would be disposed of.	
<b>Interrelationships</b>	<p>Orkney is a group of islands where human settlement has traditionally focused on the coast and coastal landscapes therefore include much evidence of Orkney’s cultural heritage. The effects of aquaculture development on the settings of cultural heritage sites are therefore closely linked with effects on the wider landscape.</p> <p><b>DC1: Landscape, Coast, Siting and Design</b> includes reference to a number of publications which provide detailed guidance on how to accommodate aquaculture into coastal landscapes and seascapes. These include the Orkney Landscape Capacity for Aquaculture: Scapa Flow and Wide Firth (2011) and the North Caithness and Orkney Coastal Character Assessment (2016). In both documents the landscape summaries for each defined area of coastline highlight cultural heritage features which should be taken into consideration when assessing the effects of an aquaculture proposal.</p> <p>There are also strong links between biodiversity and water receptors as water bodies are classified in terms of their chemical and ecological quality.</p>		