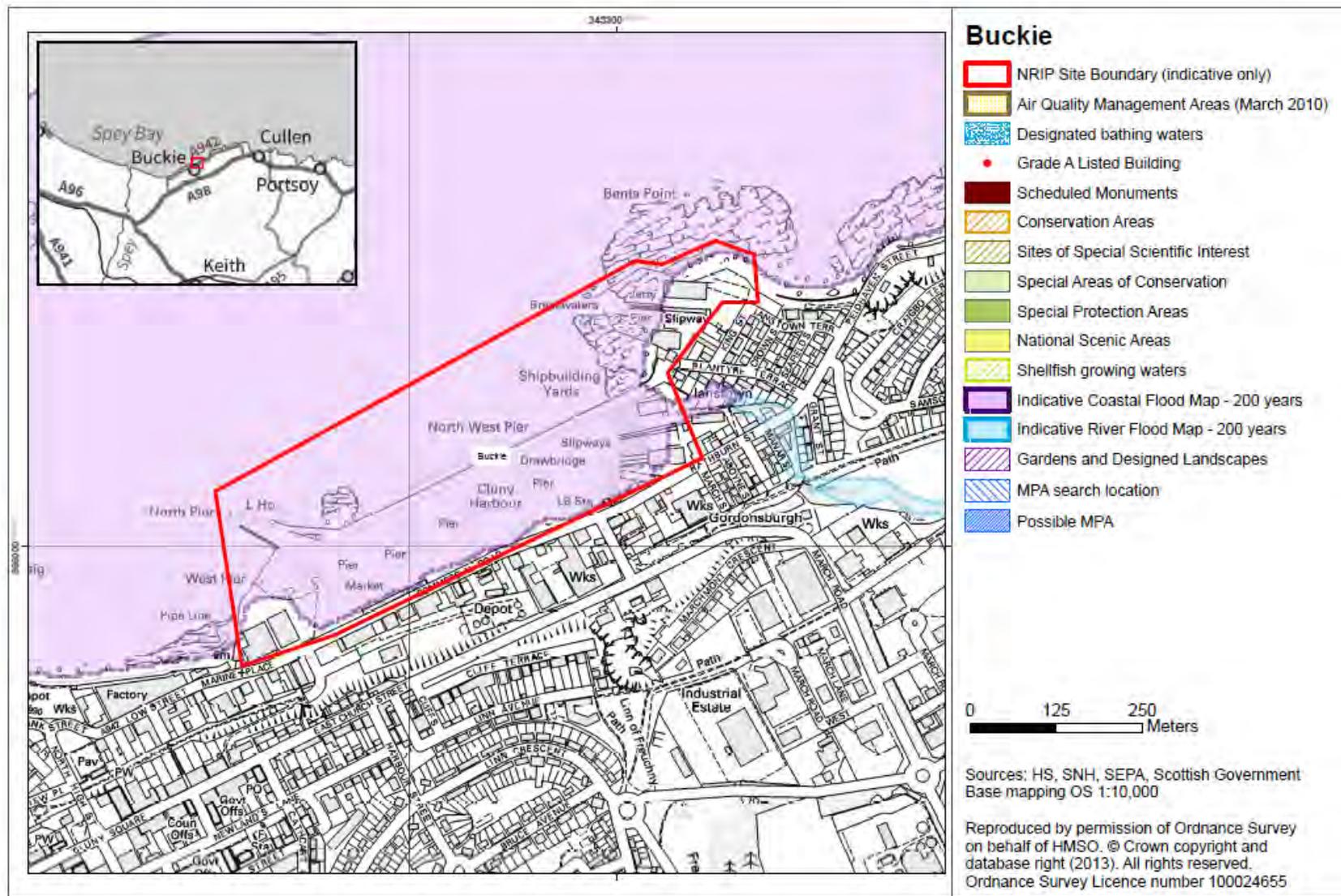


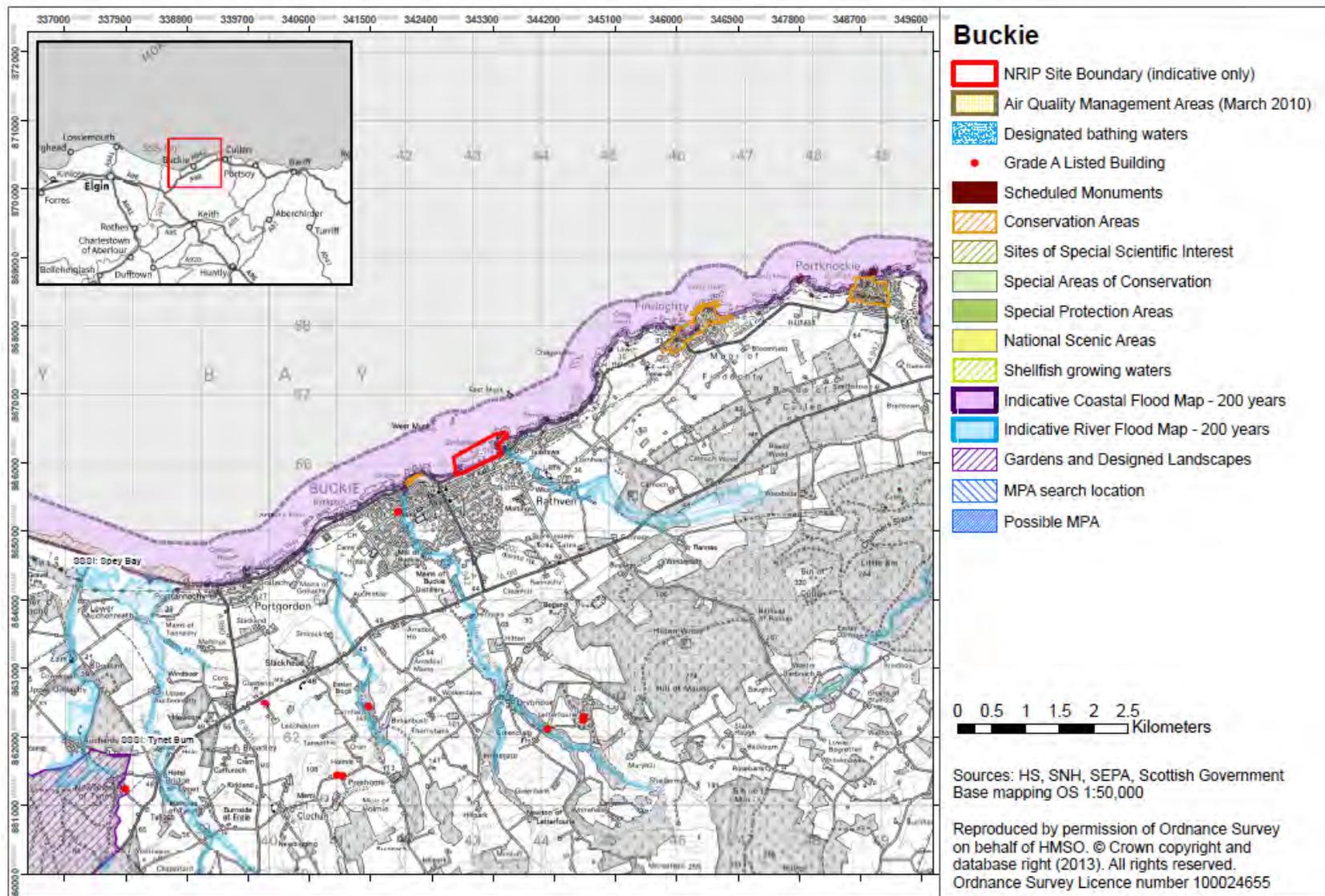
Appendix 6. MRIP Support Sites - Maps & Assessment Tables – Moray

1. Buckie

Site Map: Buckie



Wider Map: Buckie



Assessment Table: Buckie

SITE USE – Operations and Maintenance
POTENTIAL DEVELOPMENT
<p>Operations & Maintenance</p> <ul style="list-style-type: none"> • Within the existing port, re-use existing buildings, where possible, or provide new ones. No further infrastructure upgrade required. • Wet storage of devices may be employed at this location. <p>See Section 3 of the Environmental Report for assumptions about wet storage.</p>

ENVIRONMENTAL BASELINE - BUCKIE
<p><i>Biodiversity, flora and fauna –</i></p> <p>Spey Bay SSSI – Broad-leaved, mixed and yew woodland (wet woodland); Butterflies - Small blue (<i>Cupido minimus</i>) and Dingy skipper (<i>Erynnis tages</i>); Hydromorphological mire range; Littoral sediment (saltmarsh); Supralittoral sediment (shingle); vascular plant assemblage. Geomorphological features. Spey Bay SSSI lies approximately 4 km south-west of Buckie.</p> <p>Cullen to Stake Ness Coast SSSI – Lowland dry heath; Springs (including flushes); Saltmarsh; geomorphology features (approximately 8 km to the east of Buckie).</p> <p>Moray and Nairn Coast SPA/Ramsar – aggregations of breeding birds – osprey; aggregations of non-breeding birds – oystercatcher, velvet scoter, waterfowl assemblage, bar-tailed godwit, common scoter, dunlin, greylag goose, long-tailed duck, pink-footed goose (approximately 5 km south-west of Buckie).</p> <p>River Spey SAC/ SSSI – sea lamprey, Atlantic salmon, otter, freshwater pearl mussel. Approximately 5 km south-west of Buckie.</p> <p>Lower River Spey – Spey Bay SAC/ SSSI – Alder woodland on floodplains, coastal shingle vegetation outside the reach of waves. Approximately 5 km south-west of Buckie.</p> <p>Moray Firth SAC – subtidal sandbanks; bottlenose dolphin. Approximately 20 km west of Buckie.</p> <p>Dornoch Firth and Morrich More SAC – reefs, subtidal sandbanks, littoral sediment (coast and marine), otter, harbour seal, supralittoral sediment (approximately 65 km west of Buckie).</p>

ENVIRONMENTAL BASELINE - BUCKIE

Seals – Potential designated haul-out sites for both grey and harbour seals are located in the Moray Firth well to the west of the site and in the Pentland Firth to the north¹. Indications are that the waters off the Moray Firth and Scotland's north coast are well used by grey seals in particular². Harbour seals from Dornoch Firth and Morrich More SAC may be using the waters off Buckie.

European Protected Species – Cetaceans are likely to be passing through the area. Bottlenose dolphins from the Moray Firth SAC are likely to be using the waters off Buckie. Otters may be found using this area of coast (see above).

Waterbirds – An Area of Search developed to identify a possible marine SPA is located in the Moray Firth. While these areas do not as yet represent formal designations, they provide additional information for identifying important aggregations of waterbirds in Scotland and complement the existing network of SPAs³.

Population and Human Health – Buckie Harbour is within the town of Buckie, adjacent to residential areas.

Water and marine environment – Coastal waters classification (2011): Good.

Climatic Factors – The site is within an Indicative 200 year Flood Zone.

Air – No air quality issues identified.

Soil, Geology & Coastal Processes – Spey Bay SSSI – Geomorphology – Coastal geomorphology of Scotland; Spey Bay SSSI lies approximately 4 km SW of Buckie.

Cullen to Stake Ness Coast SSSI – geomorphology features include Quaternary geology and geomorphology; structural and metamorphic geology (Dalradian); and supralittoral (approximately 8 km to the east of Buckie).

Sections of the Moray Firth coastline (e.g. beaches, soft cliffs, etc.) have been identified as having the potential for erosion or accretion, particularly the west of Spey Bay and further west, and sheltered coastlines to the east. Erosion and accretion has been observed in Spey Bay to the west of the Buckie.

Cultural heritage – There are no scheduled monuments in the environs of the site. The nearest is the remains of the Castle of Findochty (No 5489), approximately 4 km east of the harbour.

There are two listed buildings in the harbour: the lighthouse on the North Pier (Category C; Ref: 22724) and the North-west and North Piers (Category B; Ref: 22725). Outwith the harbour, nearby, are the former lifeboat station (Category B; Ref: 22723) and the leading light on Cliff Terrace (Category C; Ref: 22722).

¹ The Scottish Government (2011) Consultation on Seal Haul-out Sites, March 2011.

² SMRU (2013) Marine Mammal Scientific Support Research Programme MMSS/001/11, Grey and harbour seal usage maps [online] Available at: <http://www.scotland.gov.uk/Resource/0043/00437053.pdf> [accessed 5/12/2013]

³ The Scottish Government (2011) Special Protection Areas (SPAs) [online] Available at: <http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/protectedareas/NATURA/SPAs> (accessed 5/4/2014)

ENVIRONMENTAL BASELINE - BUCKIE

There are numerous wrecks in the waters off Buckie, amongst them Speedwell; Jessie McLelland; Seaforth; Norge; and Town of Liverpool.

Landscape / Seascape – No national designation. Residents of Buckie are likely to have views of the Moray Firth.

Material Assets – There are no aquaculture sites in the waters off Buckie.

The waters around Buckie support demersal fishing, scallop dredging and the shellfish sector, both trawling (Nephrops) and static gear (Nephrops, crabs, lobsters). It is an important traditional fishing harbour. The port also supports manufacturing, ship-building, boat repair, cargo handling, and fishing businesses⁴. The Beatrice demonstrator turbines in the Moray Firth are currently serviced from the harbour.

The harbour does not appear to support recreational vessels. There is a RYA medium recreational cruising route along the Moray Firth coast. It is likely that recreational vessels sail along this coast past Buckie.

Issues Scoped Out:

Air – There is likely to be increased boat traffic due to the movement of devices, which could result in increased atmospheric emissions. However, given existing levels of boat movements, these additional emissions are unlikely to result in significant effects.

ASSESSMENT – BUCKIE

Environmental Receptor	Effect	Characteristic	Mitigation	Residual Effects
Biodiversity, Flora and Fauna Birds - Moray and Nairn Coast SPA/Ramsar, Area of Search	Potential disturbance (vessel noise and human presence) from O&M activities, including wet storage. Presence of new features may disturb and possibly displace birds from feeding.	Temporary, depending on location, duration and frequency of activity.	Time storage activities and vessel movements to avoid bird breeding season, overwintering, etc.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
Spey Bay SSSI, Cullen to Stake Ness Coast SSSI, Lower River Spey – Spey Bay SAC/ SSSI	No mobile species interests. Sites will not be affected due to distance from harbour.	No effect	None required	None

⁴ Ports of Scotland Yearbook 2013, page 165

ASSESSMENT – BUCKIE				
Environmental Receptor	Effect	Characteristic	Mitigation	Residual Effects
Otter – River Spey SAC/ SSSI and elsewhere (European Protected Species)	Potential disturbance of otters (noise during storage, physical presence of devices and human presence) from storage of devices.	Effects will be temporary but, depending on duration and frequency of storage, may be medium-term.	Devices should not be stored on or near habitat used by otters.	Assuming mitigation is implemented, significant adverse environmental effects should be avoided.
European Protected Species: cetaceans (including Moray Firth SAC bottlenose dolphin). For otters, see above.	Risk of collision with vessels; entanglement in mooring lines (e.g. minke whale); disturbance and displacement	Risk of these events occurring is unclear, thus significance of effect is unknown. Injury and/or death of individuals may affect overall population numbers/viability	Avoid cetacean habitat and migration routes. Use high-visibility mooring lines.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Seals including those from Dornoch Firth and Morrich More SAC	Risk of corkscrew injury from slow-moving vessels with certain types of ducted propeller or those using dynamic positioning; disturbance to seal haul-out locations.	Death of individual seals may affect overall population numbers/ viability, given that the harbour species in particular is generally in decline; displacement of seals.	Avoid using vessels with ducted propellers for slow-speed activities, e.g. manoeuvring, particularly during breeding season. Avoid storage of devices near seal haul out locations during moulting times and breeding season if relevant.	Assuming mitigation is implemented, significant adverse environmental effects may be avoided.
Population / Human Health Residential developments adjacent to the harbour	Noise disturbance during site operations. Due to the nature of existing activities in the harbour, it is unlikely this will add significantly to existing levels of noise and disturbance.	Localised	Site protocols and/or good neighbour agreements would set out conditions for controlling noise and/or disturbance from construction activities and site operations.	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
Water & Marine Environment Coastal waters classification	Increased turbidity from the anchorage or storage of gravity devices directly on the seabed. Introduction of devices into the waterbody.	Effects are likely to be localised and temporary	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.	Increased turbidity: as above. No mitigation proposed for temporary morphological effects.

ASSESSMENT – BUCKIE				
Environmental Receptor	Effect	Characteristic	Mitigation	Residual Effects
Climatic Factors	Potential to be at risk of flooding from the sea	This will be a permanent threat given the long-term impacts of climate change.	Ensuring suitable design measures to increase defensibility and mitigate adverse effects of potential sea level rises	Assuming mitigation is implemented, significant adverse environmental effects could be avoided.
Site is within an Indicative 200 year Flood Zone				
	Increase in GHG emissions due to vessel movements associated with O&M.	Emissions from vessels are unlikely to contribute significantly to those from the existing Scottish fleet.	Vessel operators may wish to implement energy- and fuel-efficiency measures to reduce fuel consumption and consequent GHG emissions.	Emissions from vessels would continue but are unlikely to contribute significantly to those from the existing Scottish fleet.
Soil, Geology & Coastal Processes	O&M activities/ wet storage are unlikely to affect the features of either of the geological SSSIs.	No effect	None required	None
Spey Bay SSSI; Cullen to Stake Ness Coast SSSI				
Wave patterns and coastal processes	Given the vessel movements and numbers of devices assumed for this assessment, it is considered unlikely that changes to wave patterns would be such that they would result in significant alterations of coastal processes or in significant impacts on soil and marine geology.	No significant adverse effect	None required	None
Cultural Heritage	O&M activities/ wet storage operations are unlikely to affect the setting of the scheduled monuments and listed buildings.	No effect	None required	None
Scheduled Monuments and Listed Buildings in the environs of the harbour.				

ASSESSMENT – BUCKIE				
Environmental Receptor	Effect	Characteristic	Mitigation	Residual Effects
Wreck sites	Storage of devices could affect wreck sites through destruction of features.	Permanent loss of wreck features	Avoid storage on these areas.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Landscape/ seascape local residents	Residents in environs of Buckie are likely to have views of stored devices which are on or break the water surface.	Effects are likely to be local in nature and temporary, and are unlikely to be significant.	If necessary, locate devices in a sheltered bay away from overall views of the Moray Firth. This could affect SAC features and locations should be selected to avoid this.	Assuming mitigation is implemented, the potential for significant adverse visual effects should be reduced.
Material Assets Harbour access and Navigation	Possible effects on navigational safety, e.g. vessels. Devices could block access to the harbour and displace harbour users.	Collisions could result in injury/death of human beings, oil spills etc. Potential displacement of harbour activities.	Ensure that devices are located away from access points to the harbour. Wet storage sites will need to be appropriately lit and/or marked. Liaison with MCA, Harbour Authority, aquaculture operators and other vessel operators to agree storage areas and navigable channels.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Fishing grounds	Possible disturbance and/or displacement of local fishing grounds by wet storage of devices.	Temporary loss of fishing grounds during storage operations. Potential displacement of fishing activities – adverse socio-economic and community effects; potential intensification of fishing elsewhere	Ensure that devices are located away from these areas. Liaison with Inshore Fisheries Group and/or local fishermen as required.	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.
Recreational areas	Possible disturbance and/or displacement of recreational areas by wet storage of devices.	Temporary loss of recreational areas during storage operations, with concomitant local economic	Ensure that devices are located away from these areas. Liaison with Royal Yachting Association	Assuming mitigation is implemented, the risk of significant adverse effects should be reduced.

ASSESSMENT – BUCKIE				
Environmental Receptor	Effect	Characteristic	Mitigation	Residual Effects
		loss.	Scotland as required.	
OTHER DEVELOPMENT Beatrice; MORL				
Cumulative Effects	Significant adverse cumulative effects are possible in terms of corkscrew seal injuries.			

Implications for development:

The following requires further examination at the project level:

- effects on otters; breeding birds, particularly disturbance and/or displacement from feeding habitat. Early discussions should be held with SNH regarding timing, extent, location and duration of storage.
- risk of disturbance to seal haul outs and corkscrew injury to seals.
- risk of disturbance/displacement of bottlenose dolphins.
- need to alleviate flood risk through project planning and design.
- planning and design to avoid and/or reduce landscape/visual effects and effects on wrecks.
- if wreck sites cannot be avoided, undertake survey and recording of wrecks prior to wet storage

Habitats Regulations Appraisal

It is likely that Habitats Regulations Appraisal will be required at the project level, covering at least the following issues:

- disturbance of birds from noise and human presence
- disturbance of birds from wet storage of devices
- disturbance of bottlenose dolphins from SAC
- review of potential effects on otters from SAC

Early discussions should be held with SNH.