

Habitats Regulations Assessment document: LINSPA-tLSE 022

European Marine Site:	Lindisfarne SPA
Generic sub-feature(s):	Estuarine Birds, Benthic Feeding birds, Water column
Gear type(s):	Entangling nets
NIFCA tLSE type:	Detailed
Gear/feature interaction reference(s):	LINSPA-160 LINSPA-163 LINSPA-449

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<i>Date</i>	<i>Revision</i>	<i>Editor</i>
23/11/2015	Document created	SM
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Has Natural England been formally consulted on this tLSE (and do they agree)?	Yes
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Test for Likely Significant Effect (LSE)

LINSPA-160: Estuarine Birds

<p>1. Is the activity/activities directly connected with or necessary to the management of the site for nature conservation?</p>	<p>No</p>
<p>2. What pressures (such as abrasion, disturbance) are potentially exerted by the gear type(s)?</p> <p><i>*Sensitivities as listed are based on DRAFT Interim conservation advice. Reference to Regulation 33 advice for the Lindisfarne SPA and best judgement has been used to determine which of these pressures are truly exerted by the gear type(s).</i></p>	<p>Above and below water noise (Sensitive)¹</p> <p>Barrier to species movement (Sensitive)²</p> <p>Collision above water (Sensitive)³</p> <p>Collision below water (Sensitive)³</p> <p>Introduction of light (Sensitive)⁴</p> <p>Introduction or spread of non-native species (Sensitive)⁵</p> <p>Removal of non-target species i.e. bycatch (Sensitive)⁶</p> <p>Litter i.e. Ghost fishing (Sensitive)⁷</p> <p>Visual disturbance (Sensitive)⁸</p>
<p>3. Is the feature potentially exposed to the pressure(s)?</p>	<p>Yes</p>

4. What are the conservation objectives for the feature?

*DRAFT interim conservation advice does not give definitive conservation objectives. However, completing an HRA without COs is difficult. The CO as listed in this document is based on current knowledge of the status, and the pressures, affecting designated features (see sections 4 &5).

Expert judgement has been used to determine which features may be exposed to the pressure(s) resulting in inferred COs. These COs are assigned a degree of uncertainty i.e. a subjective confidence level based on evidence 'High', 'Medium,' 'Low', and 'Unknown'.

Generic conservation objectives for Estuarine seabirds in the Lindisfarne SPA are to **Maintain***:

- The population size of the feature
- A high density of channel networks within intertidal feeding areas
- Availability of key prey species
- Safe passage of birds between feeding and roosting areas
- Open and unobstructed terrain around nesting, roosting and feeding sites
- Shallow slope gradients
- The vegetation structure of key roost sites
- Stocking densities at/to suitable levels within breeding areas
- Water availability within feeding areas to moderately high water tables, providing shallow surface water
- The availability of freshwater on mudflats
- Water availability within nesting areas
- The availability of standing water
- Overall adult survival and body condition
- The extent and distribution of suitable supporting habitat
- Water quality and quantity
- Concentrations and deposition of air pollutants to site-relevant Critical load levels
- The structure, function and supporting processes associated with the feature
- **Restrict:** the frequency, duration and intensity of disturbance within nesting, foraging and roosting areas

Those conservation objectives that might be affected by entangling netting are underlined.

*Confidence level for interim, inferred Conservation Objective: **LOW** (see section 6 for detail).

<p>5. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level?</p> <p><i>(reference to conservation objectives)</i></p>	<p>There is currently no commercial entangling netting activity occurring within the Lindisfarne SPA and static fixed netting off the Northumberland coast in general has declined considerably in recent years, with only one or two boats known at the present time to occasionally set nets in the northern sectors of the NIFCA district. Nevertheless, despite the low levels of activity, designated estuarine bird species from the Lindisfarne SPA may overlap with infrequent netting activity creating potential for a gear/feature interaction between static nets and birds with the greatest risk coming from accidental bycatch of birds in nets.</p> <p>NIFCA Byelaw 6 (Fixed Engines) includes a number of technical, spatial and temporal restrictions designed to minimise the potential of accidental bycatch of birds within the district. For instance, between 26th March – 31st October it is prohibited to set a fixed engine in waters less than 7m depth and the headline of the fixed engine must be at least 4m below the surface of the water.</p> <p>Given the low levels of activity, this is not deemed to have a significant adverse effect on the bird population from Lindisfarne SPA, however more information is needed to confirm this.</p>
<p>6. Condition and Conservation Objective Inferences</p>	<p>No definitive conservation objective for estuarine birds in the Lindisfarne SPA is given in the draft interim Regulation 33 advice (July 2015). The CO for this feature is set to 'Maintain' in the Regulation 33 advice for the site (June 2000), however this is outdated and conflicting with the information provided in the site-specific SPA toolkit on the population status of classified bird species.</p> <p>6 out of the 14 designated estuarine bird species at the Lindisfarne SPA are listed as 'Assessed – site specific decline' while 5 species are 'Assessed – No site-specific decline' and the remaining species are not assessed (Natural England SPA toolkit, 2014). Therefore a low confidence level is assigned to the CO of Maintain.</p>

<p>7. Is the potential scale or magnitude of any effect likely to be significant?</p>	<p>Alone:</p> <p>No</p> <p>* However a full Appropriate Assessment is required to confirm this. Given the similarities with other forms of static fixed netting (i.e. gill and trammel nets), entangling nets will be considered alongside gill and trammel netting in a full Appropriate Assessment.</p>	<p>OR In-combination</p> <p>No</p>
<p>8. Have NE been consulted on this LSE test? If yes, what was NE's advice?</p>	<p>Yes</p> <p>Synthesis of evidence and local knowledge informing this decision occurred between January 2014 and the date of this document's creation with stakeholders (where appropriate) and other statutory authorities. Natural England (CS) was involved with this formal process.</p>	

Conclusion

Is the proposal likely to have a significant effect 'alone or in combination' on the Lindisfarne SPA?

No, however a full Appropriate Assessment is required to confirm this. Given the similarities with other forms of static fixed netting (i.e. gill and trammel nets), entangling nets will be considered alongside gill and trammel netting in a full Appropriate Assessment.

Test for Likely Significant Effect (LSE)

LINSPA-163: Benthic feeding birds

<p>1. Is the activity/activities directly connected with or necessary to the management of the site for nature conservation?</p>	<p>No</p>
<p>2. What pressures (such as abrasion, disturbance) are potentially exerted by the gear type(s)?</p> <p><i>*Sensitivities as listed are based on DRAFT Interim conservation advice. Reference to Regulation 33 advice for the Lindisfarne SPA and best judgement has been used to determine which of these pressures are truly exerted by the gear type(s).</i></p>	<p>Above and below water noise (Sensitive)¹</p> <p>Barrier to species movement (Sensitive)²</p> <p>Collision above water (Sensitive)³</p> <p>Collision below water (Sensitive)³</p> <p>Introduction of light (Sensitive)⁴</p> <p>Introduction or spread of non-native species (Sensitive)⁵</p> <p>Removal of non-target species i.e. bycatch (Sensitive)⁶</p> <p>Litter i.e. Ghost fishing (Sensitive)⁷</p> <p>Visual disturbance (Sensitive)⁸</p>
<p>3. Is the feature potentially exposed to the pressure(s)?</p>	<p>Yes</p>

<p>4. What are the conservation objectives for the feature?</p> <p><i>*DRAFT interim conservation advice does not give definitive conservation objectives. However, completing an HRA without COs is difficult. The CO as listed in this document is based on current knowledge of the status, and the pressures, affecting designated features (see sections 4 &5).</i></p> <p><i>Expert judgement has been used to determine which features may be exposed to the pressure(s) resulting in inferred COs. These COs are assigned a degree of uncertainty i.e. a subjective confidence level based on evidence 'High', 'Medium,' 'Low', and 'Unknown'.</i></p>	<p>Generic conservation objectives for Benthic feeding seabirds in the Lindisfarne SPA are to Maintain*:</p> <ul style="list-style-type: none"> - The overall heights of vegetation patches within nesting areas - <u>The overall size of the feature population</u> - The availability of water 2-4m deep - <u>The distribution, abundance and availability of key prey items</u> - Adult survival and body condition - The extent and distribution of supporting habitat - Water quality to a standard which supports the feature - Concentrations and deposition of critical air pollutants to below the site relevant Critical Load - The structure, function and supporting processes associated with the feature - <u>Restrict: the frequency, duration and intensity of disturbance within nesting, foraging and roosting areas.</u> <p><i>Those conservation objectives that might be affected by entangling netting are underlined.</i></p> <p><i>*Confidence level for interim, inferred Conservation Objective: HIGH (see section 6 for detail).</i></p>
<p>5. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level?</p> <p><i>(reference to conservation objectives)</i></p>	<p>There is currently no commercial entangling netting activity occurring within the Lindisfarne SPA and static fixed netting off the Northumberland coast in general has declined considerably in recent years, with only one or two boats known to occasionally set nets in the northern sectors of the NIFCA district. Nevertheless, despite the low levels of activity, designated benthic bird species from the Lindisfarne SPA may overlap with infrequent netting activity creating potential for a gear/feature interaction between static nets and birds with the greatest risk coming from accidental bycatch of birds in nets.</p> <p>NIFCA Byelaw 6 (Fixed Engines) includes a number of technical, spatial and temporal restrictions designed to minimise the potential of accidental bycatch of birds within the district. For instance, between 26th March – 31st October it is prohibited to set a fixed engine in waters less than 7m depth and the headline of the fixed engine must be at least 4m below the surface of the water.</p> <p>Given the low levels of activity, this is not deemed to have a significant adverse effect on the bird population from Lindisfarne SPA, however more information is needed to confirm this.</p>

<p>6. Condition and Conservation Objective Inferences</p>	<p>No definitive conservation objective for benthic feeding bird species in the Lindisfarne SPA is given in the draft interim Regulation 33 advice (July 2015). The CO for this feature is set to 'Maintain' in the Regulation 33 advice for the site (June 2000), which correlates with the site-specific information provided in the SPA toolkit.</p> <p>Both benthic feeding bird species designated for the Lindisfarne SPA, Eider duck and Common Scoter, are listed as 'Assessed – no site specific decline' (Natural England SPA toolkit, 2014).</p>	
<p>7. Is the potential scale or magnitude of any effect likely to be significant?</p>	<p>Alone:</p> <p>No</p> <p>* However a full Appropriate Assessment is required to confirm this. Given the similarities with other forms of static fixed netting (i.e. gill and trammel nets), entangling nets will be considered alongside gill and trammel netting in a full Appropriate Assessment.</p>	<p>OR In-combination</p> <p>No</p>
<p>7. Have NE been consulted on this LSE test? If yes, what was NE's advice?</p>	<p>Yes</p> <p>Synthesis of evidence and local knowledge informing this decision occurred between January 2014 and the date of this document's creation with stakeholders (where appropriate) and other statutory authorities. Natural England (CS) was involved with this formal process.</p>	

Conclusion

Is the proposal likely to have a significant effect 'alone or in combination' on the Lindisfarne SPA?

No, however a full Appropriate Assessment is required to confirm this. Given the similarities with other forms of static fixed netting (i.e. gill and trammel nets), entangling nets will be considered alongside gill and trammel netting in a full Appropriate Assessment.

Test for Likely Significant Effect (LSE)

LINSPA- 449: Water Column

<p>1. Is the activity/activities directly connected with or necessary to the management of the site for nature conservation?</p>	<p>No</p>
<p>2. What pressures (such as abrasion, disturbance) are potentially exerted by the gear type(s)?</p> <p><i>*Sensitivities as listed are based on DRAFT Interim conservation advice. Reference to Regulation 33 advice for the Lindisfarne SPA and best judgement has been used to determine which of these pressures are truly exerted by the gear type(s).</i></p>	<p>Barrier to species movement²</p> <p>Genetic modification and translocation of indigenous species⁹</p> <p>Hydrocarbon & PAH contamination¹⁰</p> <p>Introduction of light⁴</p> <p>Introduction of other substances (solid, liquid or gas)¹¹</p> <p>Introduction or spread of non-indigenous species⁵</p> <p>Litter⁷</p> <p>Organic enrichment¹²</p> <p>Removal of non-target species⁶</p> <p>Synthetic compound contamination¹³</p> <p>Transition elements & organo-metal (e.g. TBT) contamination¹³</p> <p>Underwater noise changes¹⁴</p> <p>Visual disturbance⁸</p>
<p>3. Is the feature potentially exposed to the pressure(s)?</p>	<p>Yes</p>

4. What are the conservation objectives for the feature?

*DRAFT interim conservation advice does not give definitive conservation objectives. However, completing an HRA without COs is difficult. The CO as listed in this document is based on current knowledge of the status, and the pressures, affecting designated features (see sections 4 &5).

Expert judgement has been used to determine which features may be exposed to the pressure(s) resulting in inferred COs. These COs are assigned a degree of uncertainty i.e. a subjective confidence level based on evidence 'High', 'Medium,' 'Low', and 'Unknown'.

Conservation objectives for supporting habitat 'Coastal and offshore waters' for all designated SPA bird features are to **Maintain***:

- The availability of water of 2-4 m deep [over at least X hectares] (Eider)
- The distribution, abundance and availability of key prey items (e.g. Mytilus, Carcinus and gastropods) at preferred prey sizes (e.g. Mytilus of <30 mm, gastropods 12-15 mm). Average biomass >25 gm/m³ (Eider)
- The availability of water of 3-20 m deep [over at least X hectares] (Eider)
- The frequency, duration and/or intensity of disturbance affecting roosting and/or feeding birds should not reach levels that substantially affects the feature (Long tailed duck)
- The distribution, abundance and availability of key prey items (e.g. Mytilus, Cardium, Spisula, Mya, Hydrobia, and gobies, sticklebacks, flatfish) at preferred prey sizes (e.g. Mytilus of <20 mm) (Long tailed duck)
- The distribution, abundance and availability of key prey items (e.g. Macoma, Mytilus, Cardium) at preferred prey sizes (<4 cm) (Long tailed duck)
- The depth of inshore waters currently used as feeding or moulting sites at <20 m (Common scoter)
- The frequency, duration and/or intensity of disturbance within 2 km of foraging and/or roosting birds should not reach levels that substantially affects the feature (Common scoter)
- The distribution, abundance and availability of key prey items (e.g. stickleback, gobies, flatfish, herring, shrimps, Nereis) at preferred prey sizes (e.g. herring of <11 cm) (Red breasted merganser)
- The availability of key prey species (e.g. sandeel, sprat) at preferred prey sizes (Roseate tern)
- The availability of key prey species (e.g. crustacea, annelids, sandeel, herring, clupeidae) at preferred prey sizes (Little tern)

Those conservation objectives that might be affected by entangling netting are underlined.

*Confidence level for interim, inferred Conservation Objective: **LOW**(see section 6 for detail).

<p>5. What are the potential effects/impacts of the pressure(s) on the feature, taking into account the exposure level?</p> <p><i>(reference to conservation objectives)</i></p>	<p>There is currently no commercial entangling netting activity occurring within the Lindisfarne SPA and static fixed netting off the Northumberland coast in general has declined considerably in recent years, with only one or two boats known to occasionally set nets in the northern sectors of the NIFCA district. Nevertheless, despite the low levels of activity, where and when netting does occur there will be an interaction with the water column feature.</p> <p>At current low levels of activity, entangling netting is not deemed to have any significant adverse impact on the conservation objectives outlined above. Entangling netting in the district predominantly targets whitefish e.g. Cod, Saithe and flatfish or lobsters and the mesh sizes of nets are too large to entrap any of the smaller prey species listed.</p> <p>Activity levels are insufficient however to cause significant contamination of any kind to the water column and the introduction of non-native species is unlikely due to the nature of this fishery. Similarly, levels of noise pollution directly related to gill netting activities are unlikely to be significant. The greatest risk comes from accidental by-catch of birds in the nets, which will be considered in the Appropriate Assessment for netting on Benthic feeding seabirds and Estuarine birds. However, NIFCA Byelaw 6 (Fixed Engines) includes a number of technical, spatial and temporal restrictions designed to minimise the potential of accidental bycatch of birds within the district. For instance, between 26th March – 31st October it is prohibited to set a fixed engine in waters less than 7m depth and the headline of the fixed engine must be at least 4m below the surface of the water.</p> <p>Entangling netting is not deemed to have a significant adverse effect on the bird population from Lindisfarne SPA at current levels but more information is needed to confirm this.</p>
<p>6. Condition and Conservation Objective Inferences</p>	<p>No evidence is available on the current condition of the ‘water column’ within the Lindisfarne SPA. In lieu of a definitive conservation objective for this feature, a CO of ‘Maintain’ has been inferred, based on a low level of confidence.</p>

<p>7. Is the potential scale or magnitude of any effect likely to be significant?</p>	<p>Alone:</p> <p>No</p> <p>* By-catch of birds considered in Appropriate Assessment for gill netting and SPA bird features.</p>	<p>OR In-combination</p> <p>No</p>
<p>8. Have NE been consulted on this LSE test? If yes, what was NE's advice?</p>	<p>Yes</p> <p>Synthesis of evidence and local knowledge informing this decision occurred between January 2014 and the date of this document's creation with stakeholders (where appropriate) and other statutory authorities. Natural England (CS) was involved with this formal process.</p>	

Conclusion

Is the proposal likely to have a significant effect 'alone or in combination' on the Lindisfarne SPA?

No.

References

1. ICES (International Council for Exploration of the Sea), 2013; Stillman et al., 2007; Wildfowl and Wetlands Trust (WWT) Consulting, 2012. "Whilst activity would cause pressure, impact considered better captured by 'visual disturbance". **706 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
2. No reference. "While unlikely this could occur as a result of setting nets in confined water bodies/estuaries, or behavioural effects from the use of 'pingers' on nets – the impacts from the latter may be better covered under 'under water noise' pressures." **704. (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
3. Davenport and Davenport, 2006. "Collision can occur as a result of this activity in instances where a vessel in used". **150 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
4. Birdlife International, 2012b. "Lighted vessels pose a collision risk to many species of birds. Birds drawn to light often become disoriented and collide with these structures, resulting in injury and death.". **323 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
5. ICES (International Council for Exploration of the Sea), 2009. "The introduction and movement of invasive non-indigenous species may occur as a result of vessel movements, hull fouling and fishing activities." **619 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
6. Gubbay and Knapman, 1999; ICES (International Council for Exploration of the Sea), 2013; Kaiser et al., 2001; Sewell and Hiscock, 2005; Wildfowl and Wetlands Trust (WWT) Consulting, 2012. "Pressure may be exerted by by-catch associated with fixed nets and lines. However, vulnerability of feature to pressure will need to be considered on a case-by-case basis." **543 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
7. Wildfowl and Wetlands Trust (WWT) Consulting, 2012. "Discarded/lost lines, hooks and nets which could be problematic for mobile species. Other types of litter generated by activity generally not considered to occur at level that would cause concern.". **190 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
8. Stillman et al., 2007; Wildfowl and Wetlands Trust (WWT) Consulting, 2012. "May result from the presence/movement of the vessel and potentially also the presence/movement of the gear. Magnitude of pressure would depend on nature and scale/intensity of activity." **362 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
9. Gubbay and Knapman, 1999; Kaiser et al., 2001; Sewell et al., 2007; Sewell and Hiscock, 2005. "Fishing can lead to genetic selection for different body and reproductive traits, result in changes in the genetic makeup of populations and can extirpate distinct local stocks." **256 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
10. Ware, 2009. "Fishing vessels could result in hydrocarbon contamination but considered unlikely to generally occur at level that would cause concern (with exception of large scale pollution event)." **258 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
11. Ware, 2009. "Vessels used during these activities could result in e.g. oil slicks but considered unlikely to generally occur at level that would cause concern (with exception of

large scale pollution event).” **684**
(UK9006011_Lindisfarne_SPA_Advice_on_Operations)

12. Dayton et. al., 1995. “Discarded fish or fish that experience fishing mortality that are retained within the marine environment decompose and add organic material to the benthic environment.” **752 (UK9006011_Lindisfarne_SPA_Advice_on_Operations)**
13. OSPAR Commission, 2011. “Could occur as a result of vessels associated with this activity. Generally considered unlikely to occur at level that would cause concern (with exception of large scale pollution event).” **166**
(UK9006011_Lindisfarne_SPA_Advice_on_Operations)
14. Thomsen and Intersessional correspondence group on underwater noise (2007 - 2009), 2009. “Pressure (e.g. increase in noise above ambient level) would be exerted via vessel movement, gear deployment/towing/hauling and the use of fish finding sonars.” **536**
(UK9006011_Lindisfarne_SPA_Advice_on_Operations)