

Scores and uncertainty assessments

Table A1. Conservation factors A–C. Uncertainty assessments U1 (Specificity), U2 (Relevance) and U3 (Relevance) are indicated in brackets.

Species	Factor A: % Biogeographic population in Scotland Score	Factor A: References	Factor B: Life History Score	Factor B: References	Factor C: UK Threat Status Score	Factor C: References
Mute swan (<i>Cygnus olor</i>)	3 (1/1/1)	[31,33]	2 (1/1/1)	[33,56]	3 (1/1/1)	[35,36]
Whooper swan (<i>Cygnus cygnus</i>)	3 (1/1/1)	[31,33]	3 (1/1/2)	[33,57]	4 (1/1/1)	[35,36]
White-fronted goose (<i>Anser albifrons</i>)	2 (1/1/1)	[31,33]	3 (1/1/2)	[33,58]	5 (1/1/1)	[35,36]
Greylag goose (<i>Anser anser</i>)	5 (1/1/1)	[31,33]	3 (1/1/2)	[33,59]	4 (1/1/1)	[35,36]
Canada goose (<i>Branta canadensis</i>)	5 (1/1/1)	[31,33]	3 (1/1/1)	[33,60]	1 (1/1/1)	[35,36]
Barnacle goose (<i>Branta leucopsis</i>)	5 (1/1/1)	[31,33]	3 (1/1/2)	[33,61]	4 (1/1/1)	[35,36]
Brent goose (<i>Branta bernicla</i>)	2 (1/1/1)	[31,33]	3 (1/1/2)	[33,62]	4 (1/1/1)	[35,36]
Shelduck (<i>Tadorna tadorna</i>)	3 (1/1/1)	[31,33]	1 (1/1/1)	[33,63]	4 (1/1/1)	[35,36]
Mallard (<i>Anas platyrhynchos</i>)	2 (1/1/1)	[31,33]	1 (1/1/2)	[33,64]	4 (1/1/1)	[35,36]
Wigeon (<i>Anas penelope</i>)	3 (1/1/1)	[31,33]	2 (1/1/1)	[33,65]	4 (1/1/1)	[35,36]
Teal (<i>Anas crecca</i>)	3 (1/1/1)	[31,33]	2 (1/1/2)	[33,66]	4 (1/1/1)	[35,36]
Greater scaup (<i>Aythya marila</i>)	2 (1/1/1)	[31,33]	2 (1/1/2)	[33,67]	5 (1/1/1)	[35,36]
Tufted duck (<i>Aythya fuligula</i>)	2 (1/1/1)	[31,33]	1 (1/1/2)	[33,68]	2 (1/1/1)	[35,36]
Common eider (<i>Somateria mollissima</i>)	2 (1/1/1)	[31,33]	3 (1/1/2)	[33,69]	4 (1/1/1)	[35,36]
Common scoter (<i>Melanitta nigra</i>)	2 (1/1/1)	[31,33]	2 (1/1/2)	[33,69]	5 (1/1/1)	[35,36]
Long-tailed duck (<i>Clangula hyemalis</i>)	2 (1/1/1)	[31,33]	2 (1/1/2)	[33,70]	5 (1/1/1)	[35,36]
Common goldeneye (<i>Bucephala clangula</i>)	2 (1/1/1)	[31,33]	1 (1/1/2)	[33,69]	4 (1/1/1)	[35,36]
Red-breasted merganser (<i>Mergus serrator</i>)	3 (1/1/1)	[31,33]	2 (1/1/2)	[33,71]	1 (1/1/1)	[35,36]
Red-throated diver (<i>Gavia stellata</i>)	4 (1/1/1)	[31,33]	4 (1/1/2)	[33,72]	2 (1/1/1)	[35,36]
Black-throated diver (<i>Gavia arctica</i>)	3 (1/1/1)	[31,33]	4 (1/1/2)	[33,73]	4 (1/1/1)	[35,36]
Great northern diver (<i>Gavia immer</i>)	5 (1/1/1)	[31,33]	4 (1/1/3)	[33,30] - from related species	4 (1/1/1)	[35,36]
Slavonian grebe (<i>Podiceps auritus</i>)	3 (1/1/1)	[31,33]	4 (1/1/3)	[33,30] - from related species	5 (1/1/1)	[35,36]
Little grebe (<i>Tachybaptus ruficollis</i>)	3 (1/1/1)	[31,33]	1 (1/1/2)	[33,74]	2 (1/1/1)	[35,36]
Northern fulmar (<i>Fulmarus glacialis</i>)	4 (1/1/1)	[31,33]	5 (1/1/2)	[33,29]	4 (1/1/1)	[35,36]

Sooty shearwater (<i>Puffinus griseus</i>)	1 (1/1/1)	[31,33]	5 (1/1/3)	[33,75]	2 (1/1/1)	[35,36]
Manx shearwater (<i>Puffinus puffinus</i>)	5 (1/1/1)	[31,33]	5 (1/1/1)	[33,76]	4 (1/1/1)	[35,36]
European storm-petrel (<i>Hydrobates pelagicus</i>)	3 (1/1/1)	[31,33]	5 (1/1/1)	[33,77]	4 (1/1/1)	[35,36]
Leach's storm-petrel (<i>Oceanodroma leucorhoa</i>)	2 (1/1/1)	[31,33]	5 (1/1/3)	[30,33] - from related species	4 (1/1/1)	[35,36]
Northern gannet (<i>Morus bassanus</i>)	5 (1/1/1)	[31,33]	5 (1/1/1)	[33,78]	4 (1/1/1)	[35,36]
Great cormorant (<i>Phalacrocorax carbo</i>)	3 (1/1/1)	[31,33]	3 (1/1/2)	[33,79]	1 (1/1/1)	[35,36]
Shag (<i>Phalacrocorax aristotelis</i>)	5 (1/1/1)	[31,33]	4 (1/1/1)	[33,80]	5 (1/1/1)	[35,36]
Grey heron (<i>Ardea cinerea</i>)	3 (1/1/1)	[31,33]	4 (1/1/1)	[33,81]	1 (1/1/1)	[35,36]
White-tailed eagle (<i>Haliaeetus albicilla</i>)	1 (1/1/1)	[31,33]	4 (1/1/2)	[29,33]	5 (1/1/1)	[35,36]
Osprey (<i>Pandion haliaetus</i>)	2 (1/1/1)	[31,33]	4 (1/1/3)	[33,82]	4 (1/1/1)	[35,36]
Golden eagle (<i>Aquila chrysaetos</i>)	3 (1/1/1)	[31,33]	4 (1/1/1)	[33,83]	2 (1/1/1)	[35,36]
Peregrine falcon (<i>Falco peregrinus</i>)	3 (1/1/1)	[31,33]	4 (1/1/1)	[33,84]	1 (1/1/1)	[35,36]
Oystercatcher (<i>Haematopus ostralegus</i>)	5 (1/1/1)	[31,33]	4 (1/1/2)	[33,85]	4 (1/1/1)	[35,36]
Ringed plover (<i>Charadrius hiaticula</i>)	3 (1/1/1)	[31,33]	1 (1/1/2)	[33,86]	5 (1/1/1)	[35,36]
Grey plover (<i>Pluvialis squatarola</i>)	2 (1/1/1)	[31,33]	3 (1/1/2)	[33,87]	4 (1/1/1)	[35,36]
Golden plover (<i>Pluvialis apricaria</i>)	4 (1/1/1)	[31,33]	4 (1/1/2)	[33,88]	2 (1/1/1)	[35,36]
Knot (<i>Calidris canutus</i>)	3 (1/1/1)	[31,33]	3 (1/1/2)	[33,86]	4 (1/1/1)	[35,36]
Sanderling (<i>Calidris alba</i>)	4 (1/1/1)	[31,33]	3 (1/1/2)	[33,86]	3 (1/1/1)	[35,36]
Purple sandpiper (<i>Calidris maritima</i>)	5 (1/1/1)	[31,33]	3 (1/1/2)	[33,86]	4 (1/1/1)	[35,36]
Turnstone (<i>Arenaria interpres</i>)	5 (1/1/1)	[31,33]	3 (1/1/2)	[33,86]	4 (1/1/1)	[35,36]
Dunlin (<i>Calidris alpina</i>)	2 (1/1/1)	[31,33]	4 (1/1/2)	[33,86]	4 (1/1/1)	[35,36]
Little stint (<i>Calidris minuta</i>)	4 (1/1/1)	[31,33]	3 (2/3/3)	[33] - Presumed similar to Sanderling	1 (1/1/1)	[35,36]
Common sandpiper (<i>Actitis hypoleucos</i>)	3 (1/1/1)	[31,33]	3 (1/1/2)	[33,86]	4 (1/1/1)	[35,36]
Redshank (<i>Tringa totanus</i>)	5 (1/1/1)	[31,33]	4 (1/1/2)	[33,86]	4 (1/1/1)	[35,36]
Greenshank (<i>Tringa nebularia</i>)	2 (1/1/1)	[31,33]	4 (2/3/3)	[33] - Presumed similar to Sanderling	3 (1/1/1)	[35,36]
Black-tailed godwit (<i>Limosa limosa</i>)	1 (1/1/1)	[31,33]	3 (1/1/2)	[33,86]	5 (1/1/1)	[35,36]
Bar-tailed godwit (<i>Limosa lapponica</i>)	4 (1/1/1)	[31,33]	4 (1/1/2)	[33,86]	4 (1/1/1)	[35,36]
Curlew (<i>Numenius arquata</i>)	5 (1/1/1)	[31,33]	4 (1/1/2)	[33,86]	5 (1/1/1)	[35,36]
Whimbrel (<i>Numenius phaeopus</i>)	1 (1/1/1)	[31,33]	3 (1/1/2)	[33,86]	5 (1/1/1)	[35,36]

Grey phalarope (<i>Phalaropus fulicarius</i>)	2 (1/1/1)	[31,33]	3 (2/3/3)	[33] - Presumed similar to Red-necked phalarope	1 (1/1/1)	[35,36]
Red-necked phalarope (<i>Phalaropus lobatus</i>)	1 (1/1/1)	[31,33]	3 (1/1/2)	[33,89]	5 (1/1/1)	[35,36]
Great skua (<i>Catharacta skua</i>)	5 (1/1/1)	[31,33]	4 (1/1/1)	[33,90]	4 (1/1/1)	[35,36]
Pomarine skua (<i>Stercorarius pomarinus</i>)	3 (1/1/1)	[31,33]	4 (2/3/3)	[33] - Presumed similar to Arctic skua	1 (1/1/1)	[35,36]
Arctic skua (<i>Stercorarius parasiticus</i>)	3 (1/1/1)	[31,33]	4 (1/1/2)	[29,33]	5 (1/1/1)	[35,36]
Long-tailed skua (<i>Stercorarius longicaudus</i>)	2 (1/1/1)	[31,33]	4 (2/3/3)	[33] - Presumed similar to Arctic skua	1 (1/1/1)	[35,36]
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	2 (1/1/1)	[31,33]	4 (1/1/2)	[33,91]	4 (1/1/1)	[35,36]
Common gull (<i>Larus canus</i>)	3 (1/1/1)	[31,33]	4 (1/1/2)	[29,33]	4 (1/1/1)	[35,36]
Herring gull (<i>Larus argentatus</i>)	3 (1/1/1)	[31,33]	4 (1/1/1)	[33,92]	5 (1/1/1)	[35,36]
Great black-backed gull (<i>Larus marinus</i>)	4 (1/1/1)	[31,33]	4 (1/1/2)	[29,33]	4 (1/1/1)	[35,36]
Lesser black-backed gull (<i>Larus fuscus</i>)	4 (1/1/1)	[31,33]	4 (1/1/1)	[33,92]	4 (1/1/1)	[35,36]
Black-legged kittiwake (<i>Rissa tridactyla</i>)	4 (1/1/1)	[31,33]	4 (1/1/1)	[33,80]	5 (1/1/1)	[35,36]
Glaucous gull (<i>Larus hyperboreus</i>)	1 (1/1/1)	[31,33]	4 (1/1/3)	[33,93]	4 (1/1/1)	[35,36]
Iceland gull (<i>Larus glaucoideus</i>)	1 (1/1/1)	[31,33]	4 (2/3/3)	[33] - Presumed similar to Glaucous gull	4 (1/1/1)	[35,36]
Little tern (<i>Sterna albifrons</i>)	2 (1/1/1)	[31,33]	4 (1/1/2)	[30,33] - from related species	4 (1/1/1)	[35,36]
Common tern (<i>Sterna hirundo</i>)	2 (1/1/1)	[31,33]	4 (1/1/2)	[29,33]	4 (1/1/1)	[35,36]
Arctic tern (<i>Sterna paradisaea</i>)	4 (1/1/1)	[31,33]	5 (1/1/2)	[29,33]	4 (1/1/1)	[35,36]
Little auk (<i>Alle alle</i>)	1 (1/1/1)	[31,33]	5 (1/1/2)	[33,94]	1 (1/1/1)	[35,36]
Atlantic puffin (<i>Fratercula arctica</i>)	4 (1/1/1)	[31,33]	5 (1/1/1)	[33,80]	5 (1/1/1)	[35,36]
Black guillemot (<i>Cepphus grylle</i>)	4 (1/1/1)	[31,33]	5 (1/1/2)	[33,95]	4 (1/1/1)	[35,36]
Common guillemot (<i>Uria aalge</i>)	5 (1/1/1)	[31,33]	5 (1/1/1)	[33,80]	4 (1/1/1)	[35,36]
Razorbill (<i>Alca torda</i>)	4 (1/1/1)	[31,33]	5 (1/1/1)	[33,80]	4 (1/1/1)	[35,36]
Rock dove (<i>Columba livia livia</i>)	1 (2/1/1)	[31,33]	1 (2/1/1)	[33,96]	1 (1/1/1)	[35,36]

Rock pipit (<i>Anthus petrosus</i>)	5 (1/1/1)	[31,33]	4 (2/1/2)	Presumed similar to meadow pipit [33,97]	1 (1/1/1)	[35,36]
Chough (<i>Pyrrhocorax pyrrhocorax</i>)	1 (1/1/1)	[31,33]	4 (1/1/1)	[33,98]	2 (1/1/1)	[35,36]
Hooded crow (<i>Corvus cornix</i>)	3 (2/3/3)	[31,33]	4 (2/1/2)	[33,99]	1 (1/1/1)	[35,36]
Raven (<i>Corvus corax</i>)	2 (1/1/1)	[31,33]	3 (1/1/1)	Presumed similar to carrion crow [33]	1 (1/1/1)	[35,36]
Starling (<i>Sturnus vulgaris</i>)	3 (1/1/1)	[31,33]	2 (1/1/1)	[33,100]	5 (1/1/1)	[35,36]
Twite (<i>Carduelis flavirostris</i>)	4 (1/1/1)	[31,33]	3 (2/1/1)	Presumed similar to Linnet [33,101]	5 (1/1/1)	[35,36]

Table A2. Vulnerability factors D–F. Uncertainty assessments U1 (Specificity), U2 (Relevance) and U3 (Relevance) are indicated in brackets.

Species	Factor D: Flight manoeuvrability Score	Factor D: References	Factor E: Nocturnal flight activity Score	Factor E: References	Factor F: Habitat preference Score	Factor F: References
Mute swan (<i>Cygnus olor</i>)	5 (3/3/1)	[28,32]	3 (1/1/1)	[102]	2 (1/1/1)	[28,29,32]
Whooper swan (<i>Cygnus cygnus</i>)	5 (3/3/1)	[28,32]	3 (1/1/1)	[103]	2 (1/1/1)	[28,29,32]
White-fronted goose (<i>Anser albifrons</i>)	4 (3/3/3)	[28,32]	2 (1/2/1)	[104]	2 (1/1/1)	[28,29,32]
Greylag goose (<i>Anser anser</i>)	4 (3/3/1)	[28,32]	3 (1/1/2)	[105]	2 (1/1/1)	[28,29,32]
Canada goose (<i>Branta canadensis</i>)	4 (3/3/1)	[28,32]	3 (1/1/2)	[106]	2 (1/1/1)	[28,29,32]
Barnacle goose (<i>Branta leucopsis</i>)	4 (3/3/1)	[28,32]	3 (1/1/1)	[107]	2 (1/1/1)	[28,29,32]
Brent goose (<i>Branta bernicla</i>)	4 (3/3/3)	[28,32]	3 (1/1/2)	[108]	2 (1/1/1)	[28,29,32]
Shelduck (<i>Tadorna tadorna</i>)	3 (3/3/3)	[28,32]	4 (1/1/1)	[109]	2 (1/1/1)	[28,29,32]
Mallard (<i>Anas platyrhynchos</i>)	3 (3/3/1)	[28,32]	3 (1/1/1)	[110]	2 (1/1/1)	[28,29,32]
Wigeon (<i>Anas penelope</i>)	3 (3/3/3)	[28,32]	4 (1/1/1)	[111]	2 (1/1/1)	[28,29,32]
Teal (<i>Anas crecca</i>)	2 (3/3/3)	[28,32]	4 (1/1/1)	[112]	2 (1/1/1)	[28,29,32]
Greater scaup (<i>Aythya marila</i>)	3 (1/1/2)	[113]	5 (1/1/2)	[114]	2 (1/1/1)	[28,29,32]
Tufted duck (<i>Aythya fuligula</i>)	3 (3/3/3)	[28,32]	5 (1/1/2)	[115]	2 (1/1/1)	[28,29,32]
Common eider (<i>Somateria mollissima</i>)	4 (1/2/2)	[15]	3 (1/2/2)	[15]	2 (1/1/1)	[28,29,32]
Common scoter (<i>Melanitta nigra</i>)	3 (1/2/2)	[15]	3 (1/2/2)	[15]	2 (1/1/1)	[28,29,32]
Long-tailed duck (<i>Clangula hyemalis</i>)	3 (1/2/2)	[116]	3 (3/3/3)	Presumed similar to scoter	2 (1/1/1)	[28,29,32]
Common goldeneye (<i>Bucephala clangula</i>)	3 (1/1/2)	[116]	3 (3/3/3)	Presumed similar to scoter	4 (1/1/1)	[28,29,32]
Red-breasted merganser (<i>Mergus serrator</i>)	4 (1/1/1)	[113]	2 (1/1/2)	[114]	4 (1/1/1)	[28,29,32]
Red-throated diver (<i>Gavia stellata</i>)	5 (1/2/2)	[15]	1 (1/2/2)	[15,117]	5 (1/1/1)	[28,29,32]
Black-throated diver (<i>Gavia arctica</i>)	5 (1/2/2)	[15]	1 (1/2/2)	[15]	4 (1/1/1)	[28,29,32]
Great northern diver (<i>Gavia immer</i>)	5 (1/2/2)	Presumed similar to other divers	1 (3/3/3)	Presumed similar to other divers	4 (1/1/1)	[28,29,32]
Slavonian grebe (<i>Podiceps auritus</i>)	4 (2/2/2)	[118]	2 (1/2/2)	Presumed similar to great crested grebe [15]	4 (1/1/1)	[28,29,32]
Little grebe (<i>Tachybaptus ruficollis</i>)	4 (2/2/2)	[118]	1 (1/1/1)	[119]	3 (1/1/1)	[28,29,32]

Northern fulmar (<i>Fulmarus glacialis</i>)	3 (1/1/1)	[15,120]	4 (1/2/2)	[15]	5 (1/1/1)	[28,29,32]
Sooty shearwater (<i>Puffinus griseus</i>)	3 (1/1/2)	[121,122]	3 (1/2/2)	[29]	5 (1/1/1)	[28,29,32]
Manx shearwater (<i>Puffinus puffinus</i>)	3 (1/1/2)	[121]	3 (1/2/2)	[29]	5 (1/1/1)	[28,29,32]
European storm-petrel (<i>Hydrobates pelagicus</i>)	1 (1/1/2)	[121]	4 (1/1/2)	[123]	5 (1/1/1)	[28,29,32]
Leach's storm-petrel (<i>Oceanodroma leucorhoa</i>)	1 (1/1/2)	[121,122]	4 (1/2/2)	[29]	4 (1/1/1)	[28,29,32]
Northern gannet (<i>Morus bassanus</i>)	3 (1/1/1)	[15,120]	2 (1/1/1)	[15]	5 (1/1/1)	[28,29,32]
Great cormorant (<i>Phalacrocorax carbo</i>)	4 (1/2/1)	[15,124]	1 (1/2/2)	[29]	5 (1/1/1)	[28,29,32]
Shag (<i>Phalacrocorax aristotelis</i>)	3 (1/1/1)	[120]	1 (1/2/2)	[29]	5 (1/1/1)	[28,29,32]
Grey heron (<i>Ardea cinerea</i>)	4 (3/3/1)	[28,32]	4 (1/1/1)	[26]	5 (1/1/1)	[28,29,32]
White-tailed eagle (<i>Haliaeetus albicilla</i>)	4 (3/3/1)	[28,32,125]	1 (1/3/1)	[125,126]	5 (1/1/1)	[28,29,32]
Osprey (<i>Pandion haliaetus</i>)	4 (2/3/3)	[28,32]	3 (1/1/3)	[127]	4 (1/1/1)	[28,29,32]
Golden eagle (<i>Aquila chrysaetos</i>)	4 (1/1/2)	[128]	1 (3/3/3)	Lack of observations to the contrary	4 (1/1/1)	[28,29,32]
Peregrine falcon (<i>Falco peregrinus</i>)	3 (1/1/2)	[128]	3 (1/1/2)	[129]	5 (1/1/1)	[28,29,32]
Oystercatcher (<i>Haematopus ostralegus</i>)	2 (3/3/1)	[28,32]	3 (1/1/1)	[130]	4 (1/1/1)	[28,29,32]
Ringed plover (<i>Charadrius hiaticula</i>)	2 (3/3/1)	[28,32]	3 (1/1/1)	[131]	4 (1/1/1)	[28,29,32]
Grey plover (<i>Pluvialis squatarola</i>)	2 (3/3/3)	[28,32]	4 (1/1/1)	[132]	1 (1/1/1)	[28,29,32]
Golden plover (<i>Pluvialis apricaria</i>)	2 (3/3/3)	[28,32]	2 (1/2/1)	[104]	2 (1/1/1)	[28,29,32]
Knot (<i>Calidris canutus</i>)	2 (3/3/3)	[28,32]	4 (1/1/2)	[133]	2 (1/1/1)	[28,29,32]
Sanderling (<i>Calidris alba</i>)	2 (3/3/3)	[28,32]	3 (1/1/3)	[134]	1 (1/1/1)	[28,29,32]
Purple sandpiper (<i>Calidris maritima</i>)	2 (3/3/1)	[28,32]	4 (1/1/1)	[135]	1 (1/1/1)	[28,29,32]
Turnstone (<i>Arenaria interpres</i>)	2 (3/3/1)	[28,32]	1 (1/1/3)	[136]	1 (1/1/1)	[28,29,32]
Dunlin (<i>Calidris alpina</i>)	2 (3/3/3)	[28,32]	3 (1/1/1)	[137]	2 (1/1/1)	[28,29,32]
Little stint (<i>Calidris minuta</i>)	2 (3/3/3)	[28,32]	3 (1/1/3)	[136]	2 (1/1/1)	[28,29,32]
Common sandpiper (<i>Actitis hypoleucos</i>)	2 (3/3/1)	[28,32]	4 (1/1/2)	[138]	2 (1/1/1)	[28,29,32]
Redshank (<i>Tringa totanus</i>)	2 (3/3/1)	[28,32]	4 (1/1/1)	[139]	2 (1/1/1)	[28,29,32]
Greenshank (<i>Tringa nebularia</i>)	2 (3/3/3)	[28,32]	3 (1/1/3)	[136]	2 (1/1/1)	[28,29,32]

Black-tailed godwit (<i>Limosa limosa</i>)	2 (3/3/3)	[28,32]	3 (1/1/2)	[140]	2 (1/1/1)	[28,29,32]
Bar-tailed godwit (<i>Limosa lapponica</i>)	2 (3/3/3)	[28,32]	3 (1/2/1)	[104]	2 (1/1/1)	[28,29,32]
Curlew (<i>Numenius arquata</i>)	2 (3/3/1)	[28,32]	2 (1/1/2)	[141]	2 (1/1/1)	[28,29,32]
Whimbrel (<i>Numenius phaeopus</i>)	2 (3/3/3)	[28,32]	3 (1/2/1)	[104]	2 (1/1/1)	[28,29,32]
Grey phalarope (<i>Phalaropus fulicarius</i>)	2 (3/3/3)	[28,32]	3 (3/3/3)	No information available	2 (1/1/1)	[28,29,32]
Red-necked phalarope (<i>Phalaropus lobatus</i>)	2 (3/3/3)	[28,32]	3 (3/3/3)	No information available	2 (1/1/1)	[28,29,32]
Great skua (<i>Catharacta skua</i>)	1 (1/1/1)	[15,120]	1 (1/2/2)	[15]	2 (1/1/1)	[28,29,32]
Pomarine skua (<i>Stercorarius pomarinus</i>)	1 (1/1/1)	[113]	1 (3/3/3)	Assumed similar to arctic skua	2 (1/1/1)	[28,29,32]
Arctic skua (<i>Stercorarius parasiticus</i>)	1 (1/1/1)	[15,120]	1 (1/2/2)	[15]	2 (1/1/1)	[28,29,32]
Long-tailed skua (<i>Stercorarius longicaudus</i>)	1 (1/1/1)	[113]	1 (3/3/3)	Assumed similar to arctic skua	2 (1/1/1)	[28,29,32]
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	1 (1/2/1)	[15]	2 (1/2/2)	[15]	2 (1/1/1)	[28,29,32]
Common gull (<i>Larus canus</i>)	1 (1/2/1)	[15]	3 (1/2/2)	[15]	2 (1/1/1)	[28,29,32]
Herring gull (<i>Larus argentatus</i>)	2 (1/1/1)	[15,120]	3 (1/2/2)	[15,142]	4 (1/1/1)	[28,29,32]
Great black-backed gull (<i>Larus marinus</i>)	2 (1/1/1)	[15,120]	3 (1/2/2)	[15,142]	4 (1/1/1)	[28,29,32]
Lesser black-backed gull (<i>Larus fuscus</i>)	2 (1/2/1)	[15,32,124]	3 (1/2/2)	[15,142]	5 (1/1/1)	[28,29,32]
Black-legged kittiwake (<i>Rissa tridactyla</i>)	1 (1/1/1)	[15,120]	3 (1/2/2)	[15,143]	4 (1/1/1)	[28,29,32]
Glaucous gull (<i>Larus hyperboreus</i>)	2 (3/3/3)	[28]	3 (3/3/3)	Assumed similar to herring gull	4 (1/1/1)	[28,29,32]
Iceland gull (<i>Larus glaucoides</i>)	1 (3/3/3)	[28]	3 (3/3/3)	Assumed similar to herring gull	4 (1/1/1)	[28,29,32]
Little tern (<i>Sterna albifrons</i>)	1 (2/2/2)	[122]	1 (1/1/1)	[144]	3 (1/1/1)	[28,29,32]
Common tern (<i>Sterna hirundo</i>)	1 (1/2/1)	[15]	1 (1/2/2)	[15]	5 (1/1/1)	[28,29,32]
Arctic tern (<i>Sterna paradisaea</i>)	1 (1/2/1)	[15,120]	1 (1/2/2)	[15]	5 (1/1/1)	[28,29,32]
Little auk (<i>Alle alle</i>)	3 (1/1/2)	[145]	1 (3/3/3)	Assumed similar to other alcids	5 (1/1/1)	[28,29,32]
Atlantic puffin (<i>Fratercula arctica</i>)	3 (1/2/1)	[15,120]	1 (1/2/2)	[15]	5 (1/1/1)	[28,29,32]
Black guillemot (<i>Cephus grylle</i>)	3 (1/1/1)	[113]	1 (3/3/3)	Assumed similar to other alcids	4 (1/1/1)	[28,29,32]
Common guillemot (<i>Uria aalge</i>)	4 (1/2/1)	[15,120,146]	2 (1/2/2)	[15]	5 (1/1/1)	[28,29,32]
Razorbill (<i>Alca torda</i>)	4 (1/2/1)	[15,120,146]	1 (1/2/2)	[15]	5 (1/1/1)	[28,29,32]

Rock dove (<i>Columba livia livia</i>)	2 (1/2/2)	[147]	1 (1/1/3)	[148]	5 (1/1/1)	[28,29,32]
Rock pipit (<i>Anthus petrosus</i>)	2 (3/3/1)	[28,32]	1 (1/2/2)	No information available	5 (1/1/1)	[28,29,32]
Chough (<i>Pyrrhocorax pyrrhocorax</i>)	1 (3/3/3)	[28,32]	1 (1/1/2)	[149]	5 (1/1/1)	[28,29,32]
Hooded crow (<i>Corvus cornix</i>)	2 (3/3/1)	[28,32]	1 (1/1/1)	[150]	4 (1/1/1)	[28,29,32]
Raven (<i>Corvus corax</i>)	2 (3/3/1)	[28,32]	1 (1/1/2)	[151]	4 (1/1/1)	[28,29,32]
Starling (<i>Sturnus vulgaris</i>)	2 (3/3/1)	[28,32]	1 (1/2/2)	[152]	5 (1/1/1)	[28,29,32]
Twite (<i>Carduelis flavirostris</i>)	2 (3/3/1)	[28,32]	1 (1/1/1)	[153]	4 (1/1/1)	[28,29,32]

Table A3. Interaction factors G–I. Uncertainty assessments U1 (Specificity), U2 (Relevance) and U3 (Relevance) are indicated in brackets.

Species	Factor G: Foraging around fish farms Score	Factor G: References	Factor H: Resting on fish farms Score	Factor H: References	Factor I: Feeding on shellfish among aquaculture Score	Factor I: References
Mute swan (<i>Cygnus olor</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Whooper swan (<i>Cygnus cygnus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
White-fronted goose (<i>Anser albifrons</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Greylag goose (<i>Anser anser</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Canada goose (<i>Branta canadensis</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Barnacle goose (<i>Branta leucopsis</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Brent goose (<i>Branta bernicla</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Shelduck (<i>Tadorna tadorna</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Mallard (<i>Anas platyrhynchos</i>)	1 (3/3/3)	None identified	2 (3/3/3)	None identified	3 (1/1/1)	[154]
Wigeon (<i>Anas penelope</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Teal (<i>Anas crecca</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Greater scaup (<i>Aythya marila</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	5 (1/1/2)	[37,155]
Tufted duck (<i>Aythya fuligula</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Common eider (<i>Somateria mollissima</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	5 (1/1/1)	[27,38,156]
Common scoter (<i>Melanitta nigra</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	5 (1/1/2)	[156]
Long-tailed duck (<i>Clangula hyemalis</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	5 (1/1/2)	[155,156]

Common goldeneye (<i>Bucephala clangula</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	5 (1/1/1)	[156]
Red-breasted merganser (<i>Mergus serrator</i>)	2 (1/1/1)	[12]	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Red-throated diver (<i>Gavia stellata</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (1/1/1)	[154]
Black-throated diver (<i>Gavia arctica</i>)	2 (1/1/1)	[12]	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Great northern diver (<i>Gavia immer</i>)	2 (1/1/1)	[12]	1 (3/3/3)	None identified	1 (1/1/1)	[154]
Slavonian grebe (<i>Podiceps auritus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Little grebe (<i>Tachybaptus ruficollis</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Northern fulmar (<i>Fulmarus glacialis</i>)	2 (1/1/1)	[14]	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Sooty shearwater (<i>Puffinus griseus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Manx shearwater (<i>Puffinus puffinus</i>)	2 (1/1/1)	[12]	1 (3/3/3)	None identified	1 (3/3/3)	None identified
European storm-petrel (<i>Hydrobates pelagicus</i>)	3 (1/1/3)	[14,157]	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Leach's storm-petrel (<i>Oceanodroma leucorhoa</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Northern gannet (<i>Morus bassanus</i>)	2 (1/1/1)	[12,14]	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Great cormorant (<i>Phalacrocorax carbo</i>)	5 (1/1/1)	[12,14]	5 (1/1/1)	[12,14]	1 (3/3/3)	None identified
Shag (<i>Phalacrocorax aristotelis</i>)	5 (1/1/1)	[12,14,158]	5 (1/1/1)	[12,14]	1 (3/3/3)	None identified
Grey heron (<i>Ardea cinerea</i>)	5 (1/1/1)	[12,14]	4 (1/1/1)	[12,14]	1 (3/3/3)	None identified
White-tailed eagle (<i>Haliaeetus albicilla</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Osprey (<i>Pandion haliaetus</i>)	3 (1/1/1)	[12]	3 (1/1/1)	[12]	1 (3/3/3)	None identified

Golden eagle (<i>Aquila chrysaetos</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Peregrine falcon (<i>Falco peregrinus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Oystercatcher (<i>Haematopus ostralegus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	3 (1/1/1)	[154]
Ringed plover (<i>Charadrius hiaticula</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	3 (1/1/1)	[154]
Grey plover (<i>Pluvialis squatarola</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Golden plover (<i>Pluvialis apricaria</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Knot (<i>Calidris canutus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Sanderling (<i>Calidris alba</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Purple sandpiper (<i>Calidris maritima</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Dunlin (<i>Calidris alpina</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Little stint (<i>Calidris minuta</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Turnstone (<i>Arenaria interpres</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Common sandpiper (<i>Actitis hypoleucos</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Redshank (<i>Tringa totanus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Greenshank (<i>Tringa nebularia</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Black-tailed godwit (<i>Limosa limosa</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Bar-tailed godwit (<i>Limosa lapponica</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Curlew (<i>Numenius arquata</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified

Whimbrel (<i>Numenius phaeopus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Grey phalarope (<i>Phalaropus fulicarius</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Red-necked phalarope (<i>Phalaropus lobatus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Great skua (<i>Catharacta skua</i>)	1 (3/3/3)	None identified	2 (3/3/3)	None identified	1 (3/3/3)	None identified
Pomarine skua (<i>Stercorarius pomarinus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Arctic skua (<i>Stercorarius parasiticus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Long-tailed skua (<i>Stercorarius longicaudus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	2 (1/1/1)	[12]	4 (3/3/3)	[12]	3 (1/1/1)	[154]
Common gull (<i>Larus canus</i>)	2 (1/1/1)	[12,14]	5 (1/1/1)	[12,14]	3 (1/1/1)	[154]
Herring gull (<i>Larus argentatus</i>)	5 (2/1/1)	[14,159]	5 (1/1/1)	[12,14]	3 (1/1/1)	[154]
Great black-backed gull (<i>Larus marinus</i>)	5 (3/3/1)	[27]	5 (3/3/3)	None identified	3 (1/1/1)	[154]
Lesser black-backed gull (<i>Larus fuscus</i>)	5 (3/3/1)	[27]	5 (3/3/3)	None identified	3 (1/1/1)	[154]
Black-legged kittiwake (<i>Rissa tridactyla</i>)	1 (3/3/3)	None identified	2 (3/3/3)	None identified	3 (1/1/1)	[154]
Glaucous gull (<i>Larus hyperboreus</i>)	2 (1/3/2)	[159]	3 (3/3/3)	None identified	3 (3/3/3)	None identified
Iceland gull (<i>Larus glaucoides</i>)	2 (3/3/3)	None identified	3 (3/3/3)	None identified	3 (3/3/3)	None identified
Little tern (<i>Sterna albifrons</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Common tern (<i>Sterna hirundo</i>)	2 (2/1/1)	[12,159]	3 (2/1/1)	[12,159]	1 (3/3/3)	None identified
Arctic tern (<i>Sterna paradisaea</i>)	2 (2/1/1)	[12]	3 (2/1/1)	[12,159]	1 (3/3/3)	None identified
Little auk (<i>Alle alle</i>)	2 (1/1/1)	[12]	1 (3/3/3)	None identified	1 (3/3/3)	None identified

Atlantic puffin (<i>Fratercula arctica</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Black guillemot (<i>Cepphus grylle</i>)	1 (3/3/3)	None identified	2 (3/3/3)	None identified	2 (1/1/1)	[154]
Common guillemot (<i>Uria aalge</i>)	2 (1/1/1)	[12]	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Razorbill (<i>Alca torda</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Rock dove (<i>Columba livia livia</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Rock pipit (<i>Anthus petrosus</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Chough (<i>Pyrrhcorax pyrrhcorax</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified
Hooded crow (<i>Corvus cornix</i>)	3 (1/1/1)	[12]	3 (3/3/3)	[12]	3 (1/1/1)	[154]
Raven (<i>Corvus corax</i>)	1 (3/3/3)	[159]	2 (3/3/3)	None identified	1 (3/3/3)	None identified
Starling (<i>Sturnus vulgaris</i>)	3 (1/1/1)	[14]	2 (1/1/1)	[14]	1 (3/3/3)	None identified
Twite (<i>Carduelis flavirostris</i>)	1 (3/3/3)	None identified	1 (3/3/3)	None identified	1 (3/3/3)	None identified

Table A4. Interaction factors J–L. Uncertainty assessments U1 (Specificity), U2 (Relevance) and U3 (Relevance) are indicated in brackets.

Species	Factor J: Use of floating structures Score	Factor J: References	Factor K: Feeding on fishery discards Score	Factor K: References	Factor L: Interaction with wind farms in flight Score	Factor L: References
Mute swan (<i>Cygnus olor</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[160]
Whooper swan (<i>Cygnus cygnus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[160]
White-fronted goose (<i>Anser albifrons</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[161]
Greylag goose (<i>Anser anser</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[161]
Canada goose (<i>Branta canadensis</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (2/1/1)	[161]
Barnacle goose (<i>Branta leucopsis</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[161]
Brent goose (<i>Branta bernicla</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (2/1/1)	[161]
Shelduck (<i>Tadorna tadorna</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[162]
Mallard (<i>Anas platyrhynchos</i>)	2 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (1/1/1)	[163]
Wigeon (<i>Anas penelope</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (2/1/1)	[162]
Teal (<i>Anas crecca</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[162]
Greater scaup (<i>Aythya marila</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/2/1)	[164]
Tufted duck (<i>Aythya fuligula</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/2/1)	[164]
Common eider (<i>Somateria mollissima</i>)	3 (1/3/1)	Personal observation (SB)	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[7]
Common scoter (<i>Melanitta nigra</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[165]
Long-tailed duck (<i>Clangula hyemalis</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[165]

Common goldeneye (<i>Bucephala clangula</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (2/2/2)	Assumed similar to Aythya species
Red-breasted merganser (<i>Mergus serrator</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	5 (1/1/1)	[165]
Red-throated diver (<i>Gavia stellata</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[165]
Black-throated diver (<i>Gavia arctica</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[165]
Great northern diver (<i>Gavia immer</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (2/1/1)	Assumed similar to other divers
Slavonian grebe (<i>Podiceps auritus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (2/1/1)	Assumed similar to other divers
Little grebe (<i>Tachybaptus ruficollis</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (2/1/1)	Assumed similar to other divers
Northern fulmar (<i>Fulmarus glacialis</i>)	1 (3/3/3)	None identified	5 (1/1/1)	[166]	1 (1/1/1)	[165]
Sooty shearwater (<i>Puffinus griseus</i>)	1 (3/3/3)	None identified	3 (1/1/1)	[166]	1 (1/1/1)	[165]
Manx shearwater (<i>Puffinus puffinus</i>)	1 (3/3/3)	None identified	3 (1/1/1)	[166]	1 (2/3/3)	Assumed similar to Sooty shearwater
European storm-petrel (<i>Hydrobates pelagicus</i>)	1 (3/3/3)	None identified	3 (1/1/1)	[166]	1 (2/3/3)	Assumed similar to Sooty shearwater
Leach's storm-petrel (<i>Oceanodroma leucorhoa</i>)	1 (3/3/3)	None identified	3 (1/1/1)	[166]	1 (2/3/3)	Assumed similar to Sooty shearwater
Northern gannet (<i>Morus bassanus</i>)	1 (3/3/3)	None identified	5 (1/1/1)	[166]	1 (1/1/1)	[165]
Great cormorant (<i>Phalacrocorax carbo</i>)	5 (1/1/1)	[154,167]	3 (1/1/1)	[166]	5 (1/1/1)	[165]
Shag (<i>Phalacrocorax aristotelis</i>)	5 (1/1/1)	[154,167]	3 (1/1/1)	[166]	5 (1/1/1)	[165]
Grey heron (<i>Ardea cinerea</i>)	3 (1/3/1)	Personal observation (SB)	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[168]
White-tailed eagle (<i>Haliaeetus albicilla</i>)	1 (3/3/3)	None identified	2 (1/3/2)	[169]	3 (1/1/1)	[170]
Osprey (<i>Pandion haliaetus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (1/1/1)	[171]

Golden eagle (<i>Aquila chrysaetos</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (1/1/1)	[172,173]
Peregrine falcon (<i>Falco peregrinus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (1/1/2)	[172]
Oystercatcher (<i>Haematopus ostralegus</i>)	3 (1/1/1)	[154]	1 (1/1/1)	Assumed based on diet	3 (1/2/1)	[170]
Ringed plover (<i>Charadrius hiaticula</i>)	3 (1/1/1)	[154]	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Grey plover (<i>Pluvialis squatarola</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Golden plover (<i>Pluvialis apricaria</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/1)	[170]
Knot (<i>Calidris canutus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (1/1/2)	[175]
Sanderling (<i>Calidris alba</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Purple sandpiper (<i>Calidris maritima</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Turnstone (<i>Arenaria interpres</i>)	3 (1/3/1)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Dunlin (<i>Calidris alpina</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (2/1/2)	[170]
Little stint (<i>Calidris minuta</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Common sandpiper (<i>Actitis hypoleucos</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Redshank (<i>Tringa totanus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Greenshank (<i>Tringa nebularia</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Black-tailed godwit (<i>Limosa limosa</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Bar-tailed godwit (<i>Limosa lapponica</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Curlew (<i>Numenius arquata</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]

Whimbrel (<i>Numenius phaeopus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Grey phalarope (<i>Phalaropus fulicarius</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Red-necked phalarope (<i>Phalaropus lobatus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	1 (3/3/3)	[174]
Great skua (<i>Catharacta skua</i>)	2 (3/3/3)	None identified	5 (1/1/1)	[166]	1 (1/1/1)	[176]
Pomarine skua (<i>Stercorarius pomarinus</i>)	1 (3/3/3)	None identified	3 (1/1/1)	[166]	1 (2/3/1)	[177]
Arctic skua (<i>Stercorarius parasiticus</i>)	1 (3/3/3)	None identified	3 (1/1/1)	[166]	1 (2/1/1)	[177]
Long-tailed skua (<i>Stercorarius longicaudus</i>)	1 (3/3/3)	None identified	3 (1/1/1)	[40]	1 (2/3/1)	[177]
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	5 (1/1/1)	[154,167]	3 (1/1/1)	[166]	5 (1/1/1)	[165]
Common gull (<i>Larus canus</i>)	5 (1/1/1)	[154,167]	3 (1/1/1)	[166]	3 (1/1/1)	[165]
Herring gull (<i>Larus argentatus</i>)	5 (1/1/1)	[154,167]	5 (1/1/1)	[166]	3 (1/1/1)	[165]
Great black-backed gull (<i>Larus marinus</i>)	5 (1/1/1)	[154,167]	5 (1/1/1)	[166]	5 (1/1/1)	[165]
Lesser black-backed gull (<i>Larus fuscus</i>)	5 (1/1/1)	[154,167]	5 (1/1/1)	[166]	3 (1/1/1)	[165]
Black-legged kittiwake (<i>Rissa tridactyla</i>)	3 (1/1/1)	[154,167]	5 (1/1/1)	[166]	3 (1/1/1)	[165]
Glaucous gull (<i>Larus hyperboreus</i>)	3 (3/3/3)	None identified	3 (1/1/1)	[166]	3 (3/3/3)	Assumed similar to Herring gull
Iceland gull (<i>Larus glaucoides</i>)	3 (3/3/3)	None identified	3 (1/1/1)	[40]	3 (3/3/3)	Assumed similar to Herring gull
Little tern (<i>Sterna albifrons</i>)	1 (3/3/3)	None identified	2 (3/3/3)	Assumed based on diet	3 (3/3/3)	Assumed similar to Common tern
Common tern (<i>Sterna hirundo</i>)	3 (2/1/1)	[154,167]	2 (1/1/1)	[166]	3 (1/1/1)	[165]
Arctic tern (<i>Sterna paradisaea</i>)	3 (2/1/1)	[154,167]	2 (1/1/1)	[40]	3 (1/1/1)	[165]

Little auk (<i>Alle alle</i>)	1 (3/3/3)	None identified	2 (3/3/3)	[166]	1 (3/3/3)	[174]
Atlantic puffin (<i>Fratercula arctica</i>)	1 (3/3/3)	[154]; personal observation (SB)	2 (3/3/3)	Assumed based on diet	1 (3/3/3)	[174]
Black guillemot (<i>Cephus grylle</i>)	4 (1/1/1)	None identified	2 (1/1/1)	[178]	1 (3/3/3)	[174]
Common guillemot (<i>Uria aalge</i>)	1 (3/3/3)	None identified	2 (1/1/3)	[179]	1 (1/1/1)	[165]
Razorbill (<i>Alca torda</i>)	1 (3/3/3)	None identified	2 (1/1/1)	[40]	1 (1/1/1)	[165]
Rock dove (<i>Columba livia livia</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (2/1/1)	[163]
Rock pipit (<i>Anthus petrosus</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (3/3/3)	[163]
Chough (<i>Pyrrhocorax pyrrhocorax</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (3/3/3)	[163]
Hooded crow (<i>Corvus cornix</i>)	3 (1/1/1)	[154]	1 (1/1/1)	Assumed based on diet	3 (3/3/3)	[163]
Raven (<i>Corvus corax</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (3/3/3)	[163]
Starling (<i>Sturnus vulgaris</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (1/1/1)	[163]
Twite (<i>Carduelis flavirostris</i>)	1 (3/3/3)	None identified	1 (1/1/1)	Assumed based on diet	3 (3/3/3)	[163]

Table A5. Sensitivity Index summary. Final values were calculated based on Factors A-L as described in Methods (Final uncertainty values in brackets).

Species	A	B	C	D	E	F	G	H	I	J	K	L	FINAL SI VALUE
Mute swan (<i>Cygnus olor</i>)	3	2	3	5	3	1	1	1	1	1	1	1	8.0 (64)
Whooper swan (<i>Cygnus cygnus</i>)	3	3	4	5	3	1	1	1	1	1	1	1	10.0 (65)
White-fronted goose (<i>Anser albifrons</i>)	2	3	5	4	2	1	1	1	1	1	1	1	7.8 (68)
Greylag goose (<i>Anser anser</i>)	5	3	4	4	3	1	1	1	1	1	1	1	10.7 (66)
Canada goose (<i>Branta canadensis</i>)	5	3	1	4	3	1	1	1	1	1	1	1	8.0(66)
Barnacle goose (<i>Branta leucopsis</i>)	5	3	4	4	3	1	1	1	1	1	1	1	10.7 (65)
Brent goose (<i>Branta bernicla</i>)	2	3	4	4	3	1	1	1	1	1	1	1	8.0 (69)
Shelduck (<i>Tadorna tadorna</i>)	3	1	4	3	4	1	1	1	1	1	1	1	7.1 (66)
Mallard (<i>Anas platyrhynchos</i>)	2	1	4	3	3	1	1	2	3	2	1	3	10.9 (59)
Wigeon (<i>Anas penelope</i>)	3	2	4	3	4	1	1	1	1	1	1	1	8.0 (67)
Teal (<i>Anas crecca</i>)	3	2	4	2	4	1	1	1	1	1	1	1	7.0 (67)
Greater scaup (<i>Aythya marila</i>)	2	2	5	3	5	1	1	1	5	1	1	1	12.0 (59)
Tufted duck (<i>Aythya fuligula</i>)	2	1	2	3	5	1	1	1	1	1	1	1	5.0 (69)
Common eider (<i>Somateria mollissima</i>)	2	3	4	4	3	5	1	1	5	3	1	1	18.0 (55)
Common scoter (<i>Melanitta nigra</i>)	2	2	5	3	3	5	1	1	5	1	1	1	14.7 (60)
Long-tailed duck (<i>Clangula hyemalis</i>)	2	2	5	3	3	5	1	1	5	1	1	1	14.7 (64)
Common goldeneye (<i>Bucephala clangula</i>)	2	1	4	3	3	1	1	1	5	1	1	1	7.3 (65)
Red-breasted merganser (<i>Mergus serrator</i>)	3	2	1	4	2	1	2	1	1	1	1	5	10.5 (56)
Red-throated diver (<i>Gavia stellata</i>)	4	4	2	5	1	5	1	1	1	1	1	1	12.2 (59)
Black-throated diver (<i>Gavia arctica</i>)	3	4	4	5	1	5	2	1	1	1	1	1	16.8 (59)
Great northern diver (<i>Gavia immer</i>)	5	4	4	5	1	5	2	1	1	1	1	1	19.9 (59)
Slavonian grebe (<i>Podiceps auritus</i>)	3	4	5	4	2	5	1	1	1	1	1	1	14.7 (68)
Little grebe (<i>Tachybaptus ruficollis</i>)	3	1	2	4	1	1	1	1	1	1	1	1	4.0 (65)
Northern fulmar (<i>Fulmarus glacialis</i>)	4	5	4	3	4	3	2	1	1	1	5	1	22.9 (57)
Sooty shearwater (<i>Puffinus griseus</i>)	1	5	2	3	3	3	1	1	1	1	3	1	19.8 (65)
Manx shearwater (<i>Puffinus puffinus</i>)	5	5	4	3	3	3	2	1	1	1	3	1	9.3 (62)
European storm-petrel (<i>Hydrobates pelagicus</i>)	3	5	4	1	4	3	3	1	1	1	3	1	17.8 (63)
Leach's storm-petrel (<i>Oceanodroma leucorhoa</i>)	2	5	4	1	4	3	1	1	1	1	3	1	11.4 (70)
Northern gannet (<i>Morus bassanus</i>)	5	5	4	3	2	3	2	1	1	1	5	1	19.7 (54)
Great cormorant (<i>Phalacrocorax carbo</i>)	3	3	1	4	1	5	5	5	1	5	3	5	35.0 (46)
Shag (<i>Phalacrocorax aristotelis</i>)	5	4	5	3	1	5	5	5	1	5	3	5	63.0 (44)
Grey heron (<i>Ardea cinerea</i>)	3	4	1	4	4	1	5	4	1	3	1	1	23.3 (48)
White-tailed eagle (<i>Haliaeetus albicilla</i>)	1	4	5	4	1	1	1	1	1	1	2	3	10.6 (70)
Osprey (<i>Pandion haliaetus</i>)	2	4	4	4	3	1	3	3	1	1	1	3	22.2 (57)
Golden eagle (<i>Aquila chrysaetos</i>)	3	4	2	4	1	1	1	1	1	1	1	3	9.0 (67)
Peregrine falcon (<i>Falco peregrinus</i>)	3	4	1	3	3	1	1	1	1	1	1	3	9.3 (63)
Oystercatcher (<i>Haematopus ostralegus</i>)	5	4	4	2	3	1	1	1	3	3	1	3	15.9 (54)
Ringed plover (<i>Charadrius hiaticula</i>)	3	1	5	2	3	1	1	1	3	3	1	1	8.0 (59)
Grey plover (<i>Pluvialis squatarola</i>)	2	3	4	2	4	1	1	1	1	1	1	1	7.0 (73)
Golden plover (<i>Pluvialis apricaria</i>)	4	4	2	2	2	1	1	1	1	1	1	1	5.6 (68)
Knot (<i>Calidris canutus</i>)	3	3	4	2	4	1	1	1	1	1	1	1	7.8 (69)
Sanderling (<i>Calidris alba</i>)	4	3	3	2	3	1	1	1	1	1	1	1	6.7 (75)
Purple sandpiper (<i>Calidris maritima</i>)	5	3	4	2	4	1	1	1	1	1	1	1	9.3 (71)
Turnstone (<i>Arenaria interpres</i>)	5	3	4	2	1	1	1	1	1	3	1	1	6.2 (69)
Dunlin (<i>Calidris alpina</i>)	2	4	4	2	3	1	1	1	1	1	1	1	6.7 (69)
Little stint (<i>Calidris minuta</i>)	4	3	1	2	3	1	1	1	1	1	1	1	5.3 (79)
Common sandpiper (<i>Actitis hypoleucos</i>)	3	3	4	2	4	1	1	1	1	1	1	1	7.8 (72)
Redshank (<i>Tringa totanus</i>)	5	4	4	2	4	1	1	1	1	1	1	1	10.1 (71)
Greenshank (<i>Tringa nebularia</i>)	2	4	3	2	3	1	1	1	1	1	1	1	6.0 (79)
Black-tailed godwit (<i>Limosa limosa</i>)	1	3	5	2	3	1	1	1	1	1	1	1	6.0 (74)

Bar-tailed godwit (<i>Limosa lapponica</i>)	4 4 4 2 3 1 1 1 1 1 1 1	8.0 (74)
Curlew (<i>Numenius arquata</i>)	5 4 5 2 2 1 1 1 1 1 1 1	7.8 (72)
Whimbrel (<i>Numenius phaeopus</i>)	1 3 5 2 3 1 1 1 1 1 1 1	6.0 (74)
Grey phalarope (<i>Phalaropus fulicarius</i>)	2 3 1 2 3 3 1 1 1 1 1 1	5.3 (83)
Red-necked phalarope (<i>Phalaropus lobatus</i>)	1 3 5 2 3 3 1 1 1 1 1 1	8.0 (79)
Great skua (<i>Catharacta skua</i>)	5 4 4 1 1 5 1 2 1 2 5 1	19.3 (62)
Pomarine skua (<i>Stercorarius pomarinus</i>)	3 4 1 1 1 3 1 1 1 1 3 1	5.2 (74)
Arctic skua (<i>Stercorarius parasiticus</i>)	3 4 5 1 1 3 1 1 1 1 3 1	7.8 (64)
Long-tailed skua (<i>Stercorarius longicaudus</i>)	2 4 1 1 1 3 1 1 1 1 3 1	4.5 (74)
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	2 4 4 1 2 1 2 4 3 5 3 5	16.3 (46)
Common gull (<i>Larus canus</i>)	3 4 4 1 3 5 2 5 3 5 3 3	37.6 (40)
Herring gull (<i>Larus argentatus</i>)	3 4 5 2 3 5 5 5 3 5 5 3	57.8 (39)
Great black-backed gull (<i>Larus marinus</i>)	4 4 4 2 3 5 5 5 3 5 5 5	64.4 (49)
Lesser black-backed gull (<i>Larus fuscus</i>)	4 4 4 2 3 5 5 5 3 5 5 3	57.8 (49)
Black-legged kittiwake (<i>Rissa tridactyla</i>)	4 4 5 1 3 3 1 2 3 3 5 3	24.4 (50)
Glaucous gull (<i>Larus hyperboreus</i>)	1 4 4 2 3 5 2 3 3 3 3 3	27.5 (77)
Iceland gull (<i>Larus glaucoideus</i>)	1 4 4 1 3 5 2 3 3 3 3 3	24.8 (83)
Little tern (<i>Sterna albifrons</i>)	2 4 4 1 1 5 1 1 1 1 2 3	12.3 (76)
Common tern (<i>Sterna hirundo</i>)	2 4 4 1 1 5 2 3 1 3 2 3	19.4 (49)
Arctic tern (<i>Sterna paradisaea</i>)	4 5 4 1 1 5 2 3 1 3 2 3	25.3 (49)
Little auk (<i>Alle alle</i>)	1 5 1 3 1 3 2 1 1 1 2 1	7.3 (74)
Atlantic puffin (<i>Fratercula arctica</i>)	4 5 5 3 1 3 1 1 1 1 2 1	11.8 (75)
Black guillemot (<i>Cepphus grylle</i>)	4 5 4 3 1 5 1 2 2 4 2 1	21.7 (61)
Common guillemot (<i>Uria aalge</i>)	5 5 4 4 2 3 2 1 1 1 2 1	18.7 (59)
Razorbill (<i>Alca torda</i>)	4 5 4 4 1 3 1 1 1 1 2 1	12.5 (63)
Rock dove (<i>Columba livia livia</i>)	1 1 1 2 1 1 1 1 1 1 1 3	2.0 (67)
Rock pipit (<i>Anthus petrosus</i>)	5 4 1 2 1 1 1 1 1 1 1 3	6.7 (74)
Chough (<i>Pyrrhocorax pyrrhocorax</i>)	1 4 2 1 1 1 1 1 1 1 1 3	3.5 (73)
Hooded crow (<i>Corvus cornix</i>)	3 4 1 2 1 1 3 3 3 3 1 3	10.1 (55)
Raven (<i>Corvus corax</i>)	2 3 1 2 1 1 1 2 1 1 1 3	4.7 (71)
Starling (<i>Sturnus vulgaris</i>)	3 2 5 2 1 1 3 2 1 1 1 3	10.0 (54)
Twite (<i>Carduelis flavirostris</i>)	4 3 5 2 1 1 1 1 1 1 1 3	8.0 (71)

References

1. FAO. *The State of World Fisheries and Aquaculture 2018—Meeting the Sustainable Development Goals*; FAO: Rome, Italy, 2018.
2. Aquatera Ltd. *Renewable Power Generation on Aquaculture Sites*; A Report Commissioned by SARF and Prepared by Aquatera Ltd. P498—November 2013; Aquatera Ltd.: Stromness, UK, 2014.
3. Syse, H.L. *Investigating Off-Grid Energy Solutions for the Salmon Farming Industry*; University of Strathclyde: Glasgow, UK, 2016.
4. Abhinav, K.A.; Collu, M.; Ke, S.; Zhou, B. Frequency domain analysis of a hybrid aquaculture-wind turbine offshore floating system. In Proceedings of the American Society of Mechanical Engineers (ASME) 37th International Conference on Ocean, Offshore, and Arctic Engineering (OMAE), Glasgow, UK, 8–14 June 2019; 2019; p. 8.
5. Lagasco, F.; Collu, M.; Mariotti, A.; Safier, E.; Arena, F.; Attack, T.; Brizzi, G.; Tett, P.; Santoro, A.; Bourdier, S.; et al. New engineering approach for the development and demonstration of a Multi-Purpose Platform for the Blue Growth economy. In Proceedings of the American Society of Mechanical Engineers (ASME) 37th International Conference on Ocean, Offshore, and Arctic Engineering (OMAE), Glasgow, UK, 8–14 June 2019.
6. Leung, D.Y.C.; Yang, Y. Wind energy development and its environmental impact: A review. *Renew. Sustain. Energy Rev.* **2012**, *16*, 1031–1039, doi:10.1016/j.rser.2011.09.024.
7. Desholm, M.; Kahlert, J. Avian collision risk at an offshore wind farm. *Biol. Lett.* **2005**, *1*, 296–298, doi:10.1098/rsbl.2005.0336.
8. Drewitt, A.L.; Langston, R.H.W. Assessing the impacts of wind farms on birds. *Ibis (Lond. 1859)* **2006**, *148*, 29–42, doi:10.1111/j.1474-919X.2006.00516.x.

9. Marques, A.T.; Batalha, H.; Rodrigues, S.; Costa, H.; Pereira, M.J.R.; Fonseca, C.; Mascarenhas, M.; Bernardino, J. Understanding bird collisions at wind farms: An updated review on the causes and possible mitigation strategies. *Biol. Conserv.* **2014**, *179*, 40–52, doi:10.1016/j.biocon.2014.08.017.
10. Callier, M.D.; Byron, C.J.; Bengtson, D.A.; Cranford, P.J.; Cross, S.F.; Focken, U.; Jansen, H.M.; Kamermans, P.; Kiessling, A.; Landry, T.; et al. Attraction and repulsion of mobile wild organisms to finfish and shellfish aquaculture: A review. *Rev. Aquac.* **2018**, *10*, 924–949, doi:10.1111/raq.12208.
11. Barrett, L.T.; Swearer, S.E.; Dempster, T. Impacts of marine and freshwater aquaculture on wildlife: A global meta-analysis. *Rev. Aquac.* **2019**, *11*, 1022–1044, doi:10.1111/raq.12277.
12. Carss, D.N. Killing of piscivorous birds at Scottish fin fish farms, 1984–1987. *Biol. Conserv.* **1994**, *68*, 181–188, doi:10.1016/0006-3207(94)90349-2.
13. Price, I.M.; Nickum, J.G. Aquaculture and birds: The context for controversy. *Colon. Waterbirds* **1995**, *18*, 33–45, doi:10.2307/1521522.
14. Quick, N.J.; Middlemas, S.J.; Armstrong, J.D. A survey of antipredator controls at marine salmon farms in Scotland. *Aquaculture* **2004**, *230*, 169–180, doi:10.1016/S0044-8486(03)00428-9.
15. Garthe, S.; Hüppop, O. Scaling possible adverse effects of marine wind farms on seabirds: Developing and applying a vulnerability index. *J. Appl. Ecol.* **2004**, *41*, 724–734, doi:10.1111/j.0021-8901.2004.00918.x.
16. Scottish Government. *Marine Scotland Science—Scottish Fish Farm Production Survey 2016*; Scottish Government: Edinburgh, UK, 2017.
17. Ellis, T.; Turnbull, J.F.; Knowles, T.G.; Lines, J.A.; Auchterlonie, N.A. Trends during development of Scottish salmon farming: An example of sustainable intensification? *Aquaculture* **2016**, *458*, 82–99, doi:10.1016/j.aquaculture.2016.02.012.
18. Scotland Food and Drink. *Aquaculture Growth to 2030. A Strategic Plan for Farming Scotland's Seas*; Scotland Food and Drink: Edinburgh, UK, 2016.
19. Scottish Government Policy: Renewable and Low Carbon Energy. Available online: <https://www.gov.scot/policies/renewable-and-low-carbon-energy/> (accessed on 26 April 2020).
20. Recalde-Camacho, L.; Yue, H.; Leithead, W.; Anaya-Lara, O.; Liu, H.; You, J. Hybrid renewable energy systems sizing for offshore Multi-Purpose Platforms. In Proceedings of the American Society of Mechanical Engineers (ASME) 37th International Conference on Ocean, Offshore, and Arctic Engineering (OMAE), Glasgow, UK, 8–14 June 2019.
21. UK and China Centre for Offshore Renewable Energy (CORE) Investigation of the Novel Challenges of an Integrated Offshore Multi-Purpose Platform—EP/R007497/1. Available online: <https://www.ukchn-core.com/project/inno-mpp/> (accessed on 25 April 2020).
22. AKVA Group. *Cage Farming Aquaculture Prospectus*; AKVA Group: Klepp, Norway, 2018.
23. Aeolos Wind Energy. *Datasheet Aeolos-H 20kW*; Aeolos Wind Energy: London, UK, 2018.
24. Polaris America LLC. P10-20 Specification Sheet. Polaris America LLC: Allenwood, New Jersey, USA, **2015**.
25. Scottish Government Aquaculture—Finfish and Shellfish Farms (Including Fishery Sites): Marine_Scotland_FishDAC_1249. Available online: https://spatialdata.gov.scot/geonetwork/srv/eng/catalog.search#/metadata/Marine_Scotland_FishDAC_1249 (accessed on 26 April 2020).
26. Carss, D.N. Grey heron, *Ardea cinerea* L., predation at cage fish farms in Argyll, western Scotland. *Aquac. Res.* **1993**, *24*, 29–45, doi:10.1111/j.1365-2109.1993.tb00826.x.
27. Furness, R.W. Interactions between seabirds and aquaculture in sea lochs. In *Aquaculture and Sea Lochs. Proceedings of a Joint Meeting of the Scottish Association for Marine Science and the Challenger Society at Dunstaffnage*, 1995; Black, K.D., Ed.; Scottish Association for Marine Science: Oban, UK, 1996; pp. 50–55, ISBN 0952908905 9780952908906.
28. Svensson, L. *Collins Bird Guide*, 2nd ed.; HarperCollins Publishers: London, UK, 2009; ISBN 9780007268146.
29. *Handbook of the Birds of the World*; Del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A., Eds.; Lynx Edicions: Barcelona, Catalunya, Spain, 2010;.
30. Furness, R.W.; Wade, H.M.; Masden, E.A. Assessing vulnerability of marine bird populations to offshore wind farms. *J. Environ. Manag.* **2013**, *119*, 56–66, doi:10.1016/j.jenvman.2013.01.025.
31. *The Birds of Scotland*; Forrester, R., Andrews, I., Eds.; Scottish Ornithologists' Club: Aberlady, UK, 2007; ISBN 978-0951213902.
32. Holden, P.; Housden, S. *RSPB Handbook of Scottish Birds*, 1st ed.; Bloomsbury Publishing Plc: London, UK, 2009; ISBN 9781408112328.

33. Birdlife International Birds in Europe: Population Estimates, Trends and Conservation Status. Available online: <https://www.bto.org/understanding-birds/birdfacts> (accessed on 26 April 2020).
34. Furness, R.W.; Wade, H.M.; Robbins, A.M.C.; Masden, E.A. Assessing the sensitivity of seabird populations to adverse effects from tidal stream turbines and wave energy devices. *ICES J. Mar. Sci.* **2012**, *69*, 1466–1479, doi:10.1093/icesjms/fss131.
35. Eaton, M.A.; Brown, A.F.; Noble, D.G.; Musgrove, A.J.; Hearn, R.D.; Aebischer, N.J.; Gibbons, D.W.; Evans, A.; Gregory, R.D. Birds of Conservation Concern 3: The population status of birds in the United Kingdom, Channel Islands and the Isle of Man. *Br. Birds* **2009**, *102*, 296–341.
36. Eaton, M.; Aebischer, N.; Brown, A.; Hearn, R.; Lock, L.; Musgrove, A.; Noble, D.; Stroud, D.; Gregory, R. Birds of Conservation Concern 4: The population status of birds in the UK, Channel Islands and Isle of Man. *Br. Birds* **2015**, *108*, 708–746.
37. Dionne, M.; Lauzon-Guay, J.-S.; Hamilton, D.J.; Barbeau, M.A. Protective socking material for cultivated mussels: A potential non-disruptive deterrent to reduce losses to diving ducks. *Aquac. Int.* **2006**, *14*, 595–613, doi:10.1007/s10499-006-9058-x.
38. Varennes, É.; Hanssen, S.A.; Bonardelli, J.; Guillemette, M. Sea duck predation in mussel farms: The best nets for excluding common eiders safely and efficiently. *Aquac. Environ. Interact.* **2013**, *4*, 31–39, doi:10.3354/aei00072.
39. Garthe, S.; Huppopp, O. Distribution of ship-following seabirds and their utilization of discards in the North Sea in Summer. *Mar. Ecol. Prog. Ser.* **1994**, *106*, 1–10, doi:10.3354/meps106001.
40. Camphuysen, C.J.; Calvo, B.; Durinck, J.; Ensor, K.; Follestad, A.; Furness, R.W.; Garthe, S.; Leaper, G.; Skov, H.; Tasker, M.L.; et al. *Consumption of Discards by Seabirds in the North Sea; Final Report to the European Commission DG XIV Research Contract BIOECO/93/10, NIOZ-Report 1995-5; Den Burg: Texel, The Netherlands, 1995.*
41. Garthe, S.; Walter, U.; Tasker, M.L.; Becker, P.H.; Chapdelaine, G.; Furness, R.W. Evaluation of the role of discards in supporting bird populations and their effects on the species composition of seabirds in the North Sea. In *ICES Cooperative Research Report No. 232: Diets of Seabirds and Consequences of Changes in Food Supply*; Furness, R.W., Tasker, M.L., Eds.; International Council for the Exploration of the Sea: Copenhagen, Denmark, 1999; pp. 29–41, ISSN 1017–6195, doi: 10.17895/ices.pub.5363.
42. Johnston, R.F. Synanthropic birds of North America. In *Avian Ecology and Conservation in an Urbanizing World*; Marzluff, J.M., Bowman, R., Donnelly, R., Eds.; Springer: New York, USA, 2001; pp. 49–67, ISBN 978-0792374589.
43. Dierschke, V.; Furness, R.W.; Garthe, S. Seabirds and offshore wind farms in European waters: Avoidance and attraction. *Biol. Conserv.* **2016**, *202*, 59–68, doi:10.1016/j.biocon.2016.08.016.
44. Roycroft, D.; Kelly, T.C.; Lewis, L.J. Birds, seals and the suspension culture of mussels in Bantry Bay, a non-seaduck area in Southwest Ireland. *Estuar. Coast. Shelf Sci.* **2004**, *61*, 703–712, doi:10.1016/j.ecss.2004.07.012.
45. Mitchell, P.I.; Newton, S.F.; Ratcliffe, N.; Dunn, T.E. *Seabird Populations of Britain and Ireland: Results of the Seabird 2000 Census (1998–2002)*; T. and A.D. Poyser Ltd.: London, UK, 2004.
46. Jones, H.P.; Holmes, N.D.; Butchart, S.H.M.; Tershy, B.R.; Kappes, P.J.; Corkery, I.; Aguirre-Muñoz, A.; Armstrong, D.P.; Bonnaud, E.; Burbidge, A.A.; et al. Invasive mammal eradication on islands results in substantial conservation gains. *Proc. Natl. Acad. Sci. USA* **2016**, *113*, 4033–4038, doi:10.1073/pnas.1521179113.
47. Miles, W.T.S.; Mavor, R.; Riddiford, N.J.; Harvey, P.V.; Riddington, R.; Shaw, D.N.; Parnaby, D.; Reid, J.M. Decline in an Atlantic Puffin population: Evaluation of magnitude and mechanisms. *PLoS ONE* **2015**, *10*, e0131527, doi:10.1371/journal.pone.0131527.
48. Perkins, A.; Ratcliffe, N.; Suddaby, D.; Ribbands, B.; Smith, C.; Ellis, P.; Meek, E.; Bolton, M. Combined bottom-up and top-down pressures drive catastrophic population declines of Arctic skuas in Scotland. *J. Anim. Ecol.* **2018**, *87*, 1573–1586, doi:10.1111/1365-2656.12890.
49. Desholm, M.; Fox, A.D.; Beasley, P.D.L.; Kahlert, J. Remote techniques for counting and estimating the number of bird-wind turbine collisions at sea: A review. *Ibis (Lond. 1859)* **2006**, *148*, 76–89, doi:10.1111/j.1474-919X.2006.00509.x.
50. Masden, E.A.; Haydon, D.T.; Fox, A.D.; Furness, R.W. Barriers to movement: Modelling energetic costs of avoiding marine wind farms amongst breeding seabirds. *Mar. Pollut. Bull.* **2010**, *60*, 1085–1091, doi:10.1016/j.marpolbul.2010.01.016.
51. Band, W. *Strategic Ornithological Support Services programme (SOSS), Project SOSS-02. Using a Collision Risk Model to Assess Bird Collision Risks for Offshore Windfarms*; SOSS: London, UK, 2012.

52. Cook, A.S.C.P.; Johnston, A.; Wright, L.J.; Burton, Niall, H.K. *BTO Research Report Number 618. Strategic Ornithological Support Services Project SOSS-02: A Review of Flight Heights and Avoidance Rates of Birds in Relation to Offshore Wind Farms*; SOSS: London, UK, 2012.
53. Tasker, M.L.; Jones, P.H.; Dixon, T.I.M.; Blake, B.F. Counting seabirds at sea from ships: A review of methods employed and a suggestion for a standardized approach. *Auk* **1984**, *101*, 567–577, doi:10.1093/auk/101.3.567.
54. Camphuysen, C.J.; Fox, A.D.; Leopold, M.F.; Petersen, I.K. *Towards Standardised Seabirds at Sea Census Techniques in Connection with Environmental Impact Assessments for Offshore Wind Farms in the UK: A Comparison of Ship and Aerial Sampling Methods for Marine Birds and Their Applicability to Offshore Wind Farm a*; Den Burg: Texel, The Netherlands, 2004.
55. Mendel, B.; Schwemmer, P.; Peschko, V.; Müller, S.; Schwemmer, H.; Mercker, M.; Garthe, S. Operational offshore wind farms and associated ship traffic cause profound changes in distribution patterns of Loons (*Gavia* spp.). *J. Environ. Manag.* **2019**, *231*, 429–438, doi:10.1016/j.jenvman.2018.10.053.
56. Fliessbach, K.L.; Borkenhagen, K.; Guse, N.; Markones, N.; Schwemmer, P.; Garthe, S. A ship traffic disturbance vulnerability index for Northwest European seabirds as a tool for marine spatial planning. *Front. Mar. Sci.* **2019**, *6*, 1–15, doi:10.3389/fmars.2019.00192.
57. McCleery, R.H.; Perrins, C.; Wheeler, D.; Groves, S. Population structure, survival rates and productivity of Mute swans breeding in a colony at Abbotsbury, Dorset, England. *Waterbirds* **2002**, *25*, 192–201.
58. Haapanen, A. Whooper swan *Cygnus c. cygnus* population dynamics in Finland. *Wildfowl* **1991**, *1*, 137–141.
59. Fox, A.D.; Ebbinge, B.S.; Mitchell, C.; Heinicke, T.; Aarvak, T.; Colhoun, K.; Clausen, P.; Dereliev, S.; Faragö, S.; Koffijberg, K.; et al. Current estimates of goose population sizes in western Europe, a gap analysis and an assessment of trends. *Ornis Svec.* **2010**, *20*, 115–127, doi:10.34080/os.v20.19922.
60. Nilsson, L.; Persson, H. Variation in survival in an increasing population of the greylag goose *Anser anser* in Scania, southern Sweden. *Ornis Svec.* **1993**, *3*, 137–146.
61. Balmer, D.E.; Peach, W.J. *British Trust for Ornithology Research Report No. 175: Review of Natural Avian Mortality Rates*; BTO: Norfolk, UK, 1997.
62. Ebbinge, B.S.; Vanbiezen, J.B.; Vandervoet, H. Estimation of annual adult survival rates of barnacle geese *Branta leucopsis* using multiple resightings of marked individuals. *Ardea* **1991**, *79*, 73–112.
63. Sedinger, J.S.; Chelgren, N.D.; Lindberg, M.S.; Martin, P.; Anderson, B.A.; Ward, D.H. Life-History Implications of Large-Scale Spatial Variation in Adult Survival of Black Brant (*Branta bernicla nigricans*). *Auk* **2002**, *119*, 510–515, doi:10.2307/4089897.
64. Patterson, I.J.; Makepeace, M.; Williams, M. Limitation of local-population size in the shelduck. *Ardea* **1983**, *71*, 105–116.
65. Giudice, J.H. Survival and recovery of Mallards and Gadwalls banded in eastern Washington, 1981–1998. *J. Field Ornithol.* **2003**, *74*, 1–11, doi:10.1648/0273-8570-74.1.1.
66. Guillemain, M.; Fox, A.D.; Pöysä, H.; Väänänen, V.M.; Christensen, T.K.; Triplet, P.; Schricke, V.; Korner-Nievergelt, F. Autumn survival inferred from wing age ratios: Wigeon juvenile survival half that of adults at best? *J. Ornithol.* **2013**, *154*, 351–358, doi:10.1007/s10336-012-0899-y.
67. Chu, D.S.; Nichols, J.D.; Hestbeck, J.B.; Hines, J.E. Banding Reference Areas and Survival Rates of Green-Winged Teal, 1950–1989. *J. Wildl. Manag.* **1995**, *59*, 487, doi:10.2307/3802455.
68. Lake, B.C.; Walker, J.; Lindberg, M.S. Survival of ducks banded in the boreal forest of Alaska. *J. Wildl. Manag.* **2006**, *70*, 443–449, doi:10.2193/0022-541x(2006)70[443:sodbit]2.0.co;2.
69. Blums, P.; Mednis, A.; Bauga, I.; Nichols, J.D.; Hines, J.E. Age-specific survival and philopatry in three species of European ducks: A long-term study. *Condor* **1996**, *98*, 61–74, doi:10.2307/1369509.
70. Kremetz, D.G.; Barker, R.J.; Nichols, J.D. Sources of variation in waterfowl survival rates. *Auk* **1997**, *114*, 93–102, doi:10.2307/4089068.
71. Schamber, J.L.; Flint, P.L.; Grand, J.B.; Wilson, H.M.; Morse, J.A. Population dynamics of long-tailed ducks breeding on the Yukon-Kuskokwim delta, Alaska. *Arctic* **2009**, *62*, 190–200, doi:10.14430/arctic131.
72. Sperduto, M.B.; Powers, S.P.; Donlan, M. Scaling restoration to achieve quantitative enhancement of loon, seaduck, and other seabird populations. *Mar. Ecol. Prog. Ser.* **2003**, *264*, 221–232, doi:10.3354/meps264221.
73. Schmutz, J.A. Survival of adult Red-Throated Loons (*Gavia stellata*) may be linked to marine conditions. *Waterbirds* **2014**, *37*, 118–124, doi:10.1675/063.037.sp114.
74. Nilsson, S.G. Adult Survival Rate of the Black-Throated Diver *Gavia arctica*. *Ornis Scand. (Scand. J. Ornithol.)* **1977**, *8*, 193–195, doi:10.2307/3676104.

75. Abt, K.; Konter, A. Survival rates of adult European grebes (Podicipedidae). *Ardea* **2009**, *97*, 313–321, doi:10.5253/078.097.0307.
76. Clucas, R.J.; Fletcher, D.J.; Moller, H. Estimates of adult survival rate for three colonies of Sooty Shearwater (*Puffinus griseus*) in New Zealand. *Emu* **2008**, *108*, 237–250, doi:10.1071/MU07069.
77. Perrins, C.M.; Harris, M.P.; Britton, C.K. Survival of Manx shearwaters. *Ibis (Lond. 1859)* **1973**, *115*, 535–548, doi:10.1111/j.1474-919X.1973.tb01991.x.
78. Insley, H.; Hounscome, M.; Mayhew, P.; Elliott, S. Mark-recapture and playback surveys reveal a steep decline of European Storm Petrels *Hydrobates pelagicus* at the largest colony in western Scotland. *Ringed Migr.* **2014**, *29*, 29–36, doi:10.1080/03078698.2014.936230.
79. Wanless, S.; Frederiksen, M.; Harris, M.P.; Freeman, S.N. Survival of Gannets *Morus bassanus* in Britain and Ireland, 1959–2002. *Bird Study* **2006**, *53*, 79–85, doi:10.1080/00063650609461419.
80. Frederiksen, M.; Bregnballe, T. Evidence for density-dependent survival in adult cormorants from a combined analysis of recoveries and resightings. *J. Anim. Ecol.* **2000**, *69*, 737–752, doi:10.1046/j.1365-2656.2000.00435.x.
81. Harris, M.P.; Wanless, S.; Rothery, P. Adult survival rates of shag *Phalacrocorax aristotelis*, common guillemot *Uria aalge*, razorbill *Alca torda*, puffin *Fratercula arctica* and kittiwake *Rissa tridactyla* on the Isle of May 1986–1996. *Atl. Seabirds* **2000**, *2*, 133–150.
82. Freeman, S.N.; North, P.M. Estimation of survival rates of British, Irish and French Grey Herons. *Ring* **1990**, *13*, 139–166.
83. Klaassen, R.H.G.; Hake, M.; Strandberg, R.; Koks, B.J.; Trierweiler, C.; Exo, K.-M.; Bairlein, F.; Alerstam, T. When and where does mortality occur in migratory birds? Direct evidence from long-term satellite tracking of raptors. *J. Anim. Ecol.* **2014**, *83*, 176–184, doi:10.1111/1365-2656.12135.
84. Whitfield, D.P.; Fielding, A.H.; McLeod, D.R.A.; Haworth, P.F.; Watson, J. A conservation framework for the golden eagle in Scotland: Refining condition targets and assessment of constraint influences. *Biol. Conserv.* **2006**, *130*, 465–480, doi:10.1016/j.biocon.2006.01.008.
85. Smith, G.D.; Murillo-García, O.E.; Hostetler, J.A.; Mearns, R.; Rollie, C.; Newton, I.; McGrady, M.J.; Oli, M.K. Demography of population recovery: Survival and fidelity of peregrine falcons at various stages of population recovery. *Oecologia* **2015**, *178*, 391–401, doi:10.1007/s00442-014-3168-3.
86. Ens, B.J.; Underhill, L.G. Synthesis of oystercatcher conservation assessments: General lessons and recommendations. *Int. Wader Stud.* **2014**, *20*, 5–22.
87. Méndez, V.; Alves, J.A.; Gill, J.A.; Gunnarsson, T.G. Patterns and processes in shorebird survival rates: A global review. *Ibis (Lond. 1859)* **2018**, *160*, 723–741, doi:10.1111/ibi.12586.
88. Evans, P.R.; Pienkowski, M.W. Population dynamics of shorebirds. In *Shorebirds: Breeding Behavior and Populations*; Burger, J., Olla, B.L., Eds.; Springer Science & Business Media: New York, USA, 1984; pp. 83–123, ISBN 9781468446913.
89. Piersma, T.; Rogers, K.G.; Boyd, H.; Bunschoke, E.J.; Jukema, J. Demography of Eurasian Golden Plovers *Pluvialis apricaria* staging in the Netherlands, 1949–2000. *Ardea* **2005**, *93*, 49–64.
90. COSEWIC. *Assessment and Status Report Red-Necked Phalarope Phalaropus lobatus in Canada*; Committee on the Status of Endangered Wildlife in Canada (COSEWIC): Ottawa, ON, Canada, 2014; x + 52 pp, ISBN 9781100253862.
91. Ratcliffe, N.; Catry, P.; Hamer, K.C.; Klomp, N.I.; Furness, R.W. The effect of age and year on the survival of breeding adult Great Skuas *Catharacta skua* in Shetland. *Ibis (Lond. 1859)* **2002**, *144*, 384–392, doi:10.1046/j.1474-919X.2002.00066.x.
92. Prévot-Julliard, A.-C.; Lebreton, J.-D.; Pradel, R. Re-evaluation of adult survival of Black-Headed Gulls (*Larus ridibundus*) in presence of recapture heterogeneity. *Auk* **1998**, *115*, 85–95, doi:10.2307/4089114.
93. Wanless, S.; Harris, M.P.; Calladine, J.R.; Rothery, P. Modelling responses of herring gull and lesser black-backed gull populations to reduction of reproductive output: Implications for control measures. *J. Appl. Ecol.* **1996**, *33*, 1420–1432, doi:10.2307/2404781.
94. Gaston, A.J.; Descamps, S.; Gilchrist, H.G. Reproduction and survival of glaucous gulls breeding in an Arctic seabird colony. *J. Field Ornithol.* **2009**, *80*, 135–145, doi:10.1111/j.1557-9263.2009.00215.x.
95. Hovinen, J.E.H. *Foraging, Reproduction and Survival of the Zooplanktivorous Seabird Little Auk (Alle alle) in the Arctic in Relation to Climatic and Environmental Variability*; University of Tromsø: Tromsø, Norway, 2014.
96. Frederiksen, M.; Petersen, A. Adult survival of the Black Guillemot in Iceland. *Condor* **1999**, *101*, 589–597, doi:10.2307/1370188.

97. Murton, R.K.; Thearle, R.J.P.; Thompson, J. Ecological Studies of the Feral Pigeon *Columba livia* var. I. Population, Breeding Biology and Methods of Control. *J. Appl. Ecol.* **1972**, *9*, 835–874, doi:10.2307/2401909.
98. Spaepen, J.F. Estimation of the survival rates of meadow pipits—A comparison of two different methods. *Ring. Migr.* **1988**, *9*, 117–130, doi:10.1080/03078698.1988.9673934.
99. Reid, J.M.; Bignal, E.M.; Bignal, S.; McCracken, D.I.; Monaghan, P. Identifying the demographic determinants of population growth rate: A case study of red-billed choughs *Pyrrhocorax pyrrhocorax*. *J. Anim. Ecol.* **2004**, *73*, 777–788, doi:10.1111/j.0021-8790.2004.00854.x.
100. Böhmer, A. Zur Struktur der schweizerischen Rabenkrähenpopulation *Corvus corone corone* mit einer Diskussion der Methodik von Populationsberechnungen. *Ornithol. Beobachter* **1976**, *73*, 109–136.
101. Freeman, S.N.; Robinson, R.A.; Clark, J.A.; Griffin, B.M.; Adams, S.Y. Population dynamics of starling *Sturnus vulgaris* breeding in Britain: An integrated analysis. In *Investigation into the Causes of the Decline of Starlings and House Sparrows in Great Britain*; BTO Research Report No. 290; Crick, H.Q.P., Robinson, R.A., Appleton, G.F., Clark, N.A., Rickard, A.D., Eds.; Defra: London, UK, 2002; pp. 121–140.
102. Siriwardena, G.M.; Baillie, S.R.; Wilson, J.D. Temporal variation in the annual survival rates of six granivorous birds with contrasting population trends. *Ibis (Lond. 1859)* **1999**, *141*, 621–636, doi:10.1111/j.1474-919x.1999.tb07370.x.
103. Owen, M.; Cadbury, C.J. The ecology and mortality of swans at the Ouse Washes, England. *Wildfowl* **1975**, *26*, 31–42.
104. Larsen, J.K.; Clausen, P. Potential Wind Park Impacts on Whooper Swans in Winter : The Risk of Collision. *Waterbirds* **2002**, *25*, 327–330.
105. McNeil, R.; Drapeau, P.; Goss-Custard, J.D. The occurrence and adaptive significance of nocturnal habits in waterfowl. *Biol. Rev. Camb. Philos. Soc.* **1992**, *67*, 381–419, doi:10.1111/j.1469-185X.1992.tb01188.x.
106. Kleinhenz, A.; Koenig, A. Home ranges and movements of resident graylag geese (*Anser anser*) in breeding and winter habitats in Bavaria, South Germany. *PLoS ONE* **2018**, *13*, e0202443, doi:10.1371/journal.pone.0202443.
107. Wege, M.L.; Raveling, D.G. Factors influencing the timing , distance , and path of migrations of Canada geese. *Wilson Bull.* **1983**, *95*, 209–221, doi:10.2307/4161751.
108. Boyd, H.; Bell, M.V.; Watson, A.D. Spring weather and the migration of geese from Scotland to Iceland. *Ring. Migr.* **2000**, *20*, 153–165, doi:10.1080/03078698.2000.9674238.
109. Lane, S.J.; Hassall, M. Nocturnal feeding by Dark-bellied Brent Geese *Branta bernicla bernicla*. *Ibis (Lond. 1859)* **1996**, *138*, 291–297, doi:10.1111/j.1474-919x.1996.tb04341.x.
110. Buxton, N.E. The importance of food in the determination of the winter flock sites of the shelduck. *Wildfowl* **1981**, *32*, 79–87.
111. Sauter, A.; Korner, P.; Fiedler, W.; Jenni, L. Individual behavioural variability of an ecological generalist: Activity patterns and local movements of Mallards *Anas platyrhynchos* in winter. *J. Ornithol.* **2012**, *153*, 713–726, doi:10.1007/s10336-011-0788-9.
112. von Känel, A. Winter feeding ecology of wigeon *Anas penelope* at the Ouse Washes, England. *Ibis (Lond. 1859)* **1981**, *123*, 438–449, doi:10.1111/j.1474-919X.1981.tb04048.x.
113. Olney, P.J.S. The food and feeding habits of teal *Anas crecca crecca* L. *Proc. Zool. Soc. Lond.* **1963**, *140*, 169–210, doi:10.1111/j.1469-7998.1963.tb01860.x.
114. Leopold, M.F.L.; Dijkman, E.M. *Offshore Wind Farms and Seabirds in the Dutch Sector of the North Sea: What Are the Best and the Worst Locations for Future Development?*; IMARES Wageningen University Research Report Number C134/10; IMARES-WUR: Den Helder, the Netherlands, 2010.
115. Nilsson, L. Food-seeking activity of south Swedish diving ducks in the non-breeding season. *Oikos* **1970**, *21*, 145–154, doi:10.2307/3543670.
116. Pedrolí, J.C. Activity and time budget of tufted ducks on Swiss lakes during winter. *Wildfowl* **1982**, *33*, 105–112.
117. Bradbury, G.; Trinder, M.; Furness, B.; Banks, A.N.; Caldow, R.W.G.; Hume, D. Mapping Seabird Sensitivity to offshore wind farms. *PLoS ONE* **2014**, *9*, doi:10.1371/journal.pone.0106366.
118. Reimchen, T.E.; Douglas, S. Seasonal and diurnal abundance of aquatic birds on the Drizzle Lake Reserve, Queen Charlotte Islands, British Columbia. *Can. Field-Nat.* **1984**, *98*, 22–28.
119. Storer, R.W. The behavior of the Horned grebe in Spring. *Condor* **1969**, *71*, 180–205, doi:10.2307/1366078.
120. Fox, A.D. Estuarine winter feeding patterns of little grebes *Tachybaptus ruficollis* in central Wales. *Bird Study* **1994**, *41*, 15–24, doi:10.1080/00063659409477192.

121. Pennycuik, C.J. Flight of auks (Alcidae) and other northern seabirds compared with southern procellariiformes: Ornithodolite observations. *J. Exp. Biol.* **1987**, *128*, 335–347.
122. Warham, J. Wing loadings, wing shapes, and flight capabilities of procellariiformes. *N. Z. J. Zool.* **1977**, *4*, 73–83, doi:10.1080/03014223.1977.9517938.
123. Spear, L.B.; Ainley, D.G. Flight speed of seabirds in relation to wind speed and direction. *Ibis (Lond. 1859)* **1997**, *139*, 234–251, doi:10.1111/j.1474-919x.1997.tb04621.x.
124. Perkins, A.J.; Bingham, C.J.; Bolton, M. Testing the use of infra-red video cameras to census a nocturnal burrow-nesting seabird, the European Storm Petrel *Hydrobates pelagicus*. *Ibis (Lond. 1859)* **2018**, *160*, 365–378, doi:10.1111/ibi.12539.
125. Watanabe, Y.Y.; Takahashi, A.; Sato, K.; Viviant, M.; Bost, C.A. Poor flight performance in deep-diving cormorants. *J. Exp. Biol.* **2011**, *214*, 412–421, doi:10.1242/jeb.050161.
126. Dahl, E.L.; Bevanger, K.; Nygård, T.; Røskft, E.; Stokke, B.G. Reduced breeding success in white-tailed eagles at Smøla windfarm, western Norway, is caused by mortality and displacement. *Biol. Conserv.* **2012**, *145*, 79–85, doi:10.1016/j.biocon.2011.10.012.
127. Krone, O.; Berger, A.; Schulte, R. Recording movement and activity pattern of a White-tailed Sea Eagle (*Haliaeetus albicilla*) by a GPS datalogger. *J. Ornithol.* **2009**, *150*, 273–280, doi:10.1007/s10336-008-0347-1.
128. DeCandido, R.; Bierregaard, R.O., Jr.; Martell, M.S.; Bildstein, K.L. Evidence of nocturnal migration by Osprey (*Pandion haliaetus*) in North America and western Europe. *J. Raptor Res.* **2006**, *40*, 156–158, doi:10.3356/0892-1016(2006)40[156:EONMBO]2.0.CO;2.
129. Noguera, J.C.; Pérez, I.; Mínguez, E. Impact of terrestrial wind farms on diurnal raptors: Developing a spatial vulnerability index and potential vulnerability maps. *Ardeola* **2010**, *57*, 41–53.
130. DeCandido, R.; Allen, D. Nocturnal hunting by peregrine falcons at the Empire State Building, New York City. *Wilson J. Ornithol.* **2006**, *118*, 53–58, doi:10.1676/1559-4491(2006)118[0053:nhbpf]2.0.co;2.
131. Heppleston, P.B. The feeding ecology of Oystercatchers (*Haematopus ostralegus* L.) in winter in northern Scotland. *J. Anim. Ecol.* **1971**, *40*, 651–672, doi:10.2307/3443.
132. Pienkowski, M.W. Diet and energy intake of Grey and Ringed plovers, *Pluvialis squatarola* and *Charadrius hiaticula*, in the non-breeding season. *J. Zool.* **1982**, *197*, 511–549, doi:10.1111/jzo.1982.197.4.511.
133. Wood, A.G. Diurnal and nocturnal territoriality in the Grey Plover at Teesmouth, as revealed by radio telemetry. *J. Field Ornithol.* **1986**, *57*, 213–221, doi:10.2307/4513133.
134. Cohen, J.B.; Gerber, B.D.; Karpanty, S.M.; Fraser, J.D.; Truitt, B.R. Day and Night Foraging of Red Knots (*Calidris canutus*) during Spring Stopover in Virginia, USA. *Waterbirds* **2011**, *34*, 352–356, doi:10.1675/063.034.0309.
135. Burger, J.; Gochfeld, M. Human activity influence and diurnal and nocturnal foraging of Sanderlings (*Calidris alba*). *Condor* **1991**, *93*, 259–265, doi:10.2307/1368941.
136. Atkinson, N.K.; Summers, R.W.; Nicoll, M.; Greenwood, J.J.D. Population, movements and biometrics of the Purple Sandpiper *Calidris maritima* in eastern Scotland. *Ornis Scand. (Scand. J. Ornithol.)* **1981**, *12*, 18–27, doi:10.2307/3675900.
137. Zwarts, L.; Blomert, A.-M.; Hupkes, R. Increase of feeding time in waders preparing for Spring migration from the Banc D’Arguin, Mauritania. *Ardea* **1990**, *78*, 237–256, doi:10.5253/arde.v78.p237.
138. Mouritsen, K.N. Day and night feeding in Dunlins *Calidris alpina*: Choice of habitat, foraging technique and prey. *J. Avian Biol.* **1994**, *25*, 55, doi:10.2307/3677294.
139. Iwajomo, S.B.; Hedenström, A. Migration patterns and morphometrics of Common Sandpipers *Actitis hypoleucos* at Ottenby, Southeastern Sweden. *Ringing Migr.* **2011**, *26*, 38–47, doi:10.1080/03078698.2011.586509.
140. Burton, N.H.K.; Armitage, M.J.S. Differences in the diurnal and nocturnal use of intertidal feeding grounds by Redshank *Tringa totanus*. *Bird Study* **2005**, *52*, 120–128, doi:10.1080/00063650509461381.
141. Santiago-Quesada, F.; Estrella, S.M.; Sánchez-Guzmán, J.M.; Masero, J.A. Why water birds forage at night: A test using black-tailed godwits *Limosa limosa* during migratory periods. *J. Avian Biol.* **2014**, *45*, 406–409, doi:10.1111/jav.00420.
142. Rippe, H.; Dierschke, V. Picking out the plum jobs: Feeding ecology of curlews *Numenius arquata* in a Baltic Sea wind flat. *Mar. Ecol. Prog. Ser.* **1997**, *159*, 239–247, doi:10.3354/meps159239.
143. Garthe, S.; Huppopp, O. Nocturnal scavenging by gulls in the southern North Sea. *Colon. Waterbirds* **1996**, *19*, 232–241, doi:10.2307/1521861.
144. Kotzerka, J.; Garthe, S.; Hatch, S.A. GPS tracking devices reveal foraging strategies of Black-legged

- Kittiwakes. *J. Ornithol.* **2009**, *151*, 459–467, doi:10.1007/s10336-009-0479-y.
145. Perrow, M.R.; Skeate, E.R.; Lines, P.; Brown, D.; Tomlinson, M.L. Radio telemetry as a tool for impact assessment of wind farms: The case of Little Terns *Sterna albifrons* at Scroby Sands, Norfolk, UK. *Ibis (Lond. 1859)* **2006**, *148*, 57–75, doi:10.1111/j.1474-919X.2006.00508.x.
 146. Stempniewicz, L. Hunting methods of the Glaucous gull and escape maneuvers of its prey, the Dovekie. *J. Field Ornithol.* **1983**, *54*, 329–331, doi:10.2307/4512845.
 147. Thaxter, C.B.; Wanless, S.; Daunt, F.; Harris, M.P.; Benvenuti, S.; Watanuki, Y.; Grémillet, D.; Hamer, K.C. Influence of wing loading on the trade-off between pursuit-diving and flight in common guillemots and razorbills. *J. Exp. Biol.* **2010**, *213*, 1018–1025, doi:10.1242/jeb.037390.
 148. Warrick, D.R.; Dial, K.P.; Biewener, A.A. Asymmetrical force production in the maneuvering flight of pigeons. *Auk* **1998**, *115*, 916–928.
 149. Rattenborg, N.C.; Obermeyer, W.H.; Vacha, E.; Benca, R.M. Acute effects of light and darkness on sleep in the pigeon (*Columba livia*). *Physiol. Behav.* **2005**, *84*, 635–640, doi:10.1016/j.physbeh.2005.02.009.
 150. Blanco, G.; Fargallo, J.A.; Cuevas, J.A. Seasonal variations in numbers and levels of activity in a communal roost of Choughs *Pyrrhocorax pyrrhocorax* in central Spain. *Avocetta* **1993**, *17*, 41–44.
 151. Hansen, H.; Smedshaug, C.A.; Sonerud, G.A. Preroosting behaviour of hooded crows (*Corvus corone cornix*). *Can. J. Zool.* **2000**, *78*, 1813–1821, doi:10.1139/z00-111.
 152. Cotterman, V.; Heinrich, B. A large temporary roost of Common Ravens. *Auk* **1993**, *110*, 395, doi:10.2307/4088570.
 153. Summers, R.W.; Feare, C.J. Roost departure by European starlings *Sturnus vulgaris*: Effects of competition and choice of feeding site. *J. Avian Biol.* **1995**, *26*, 289–295, doi:10.2307/3677043.
 154. McLoughlin, D.; Benson, C.; Williams, B.; Cotton, D. The movement patterns of two populations of twites *Carduelis flavirostris* in Ireland. *Ringed Migr.* **2010**, *25*, 15–21, doi:10.1080/03078698.2010.9674409.
 155. Dionne, M. *Relationship between Diving Ducks and Mussel Aquaculture in Prince Edward Island, Canada*; University of New Brunswick: Fredericton, NB, Canada, 2004.
 156. Ross, B.P.; Lien, J.; Furness, R.W. Use of underwater playback to reduce the impact of eiders on mussel farms. *ICES J. Mar. Sci.* **2001**, *58*, 517–524, doi:10.1006/jmsc.2000.1025.
 157. Aguado-Giménez, F.; Sallent-Sánchez, A.; Eguía-Martínez, S.; Martínez-Ródenas, J.; Hernández-Llorente, M.D.; Palanca-Maresca, C.; Molina-Pardo, J.L.; López-Pastor, B.; García-Castellanos, F.A.; Ballester-Moltó, M.; et al. Aggregation of European storm-petrel (*Hydrobates pelagicus* ssp. *melitensis*) around cage fish farms. Do they benefit from the farms' resources? *Mar. Environ. Res.* **2016**, *122*, 46–58, doi:10.1016/j.marenvres.2016.09.006.
 158. Aguado-Giménez, F.; Eguía-Martínez, S.; Cerezo-Valverde, J.; García-García, B. Spatio-temporal variability of ichthyophagous bird assemblage around western Mediterranean open-sea cage fish farms. *Mar. Environ. Res.* **2018**, *140*, 126–134, doi:10.1016/j.marenvres.2018.06.008.
 159. Gorenzel, W.P.; Conte, F.S.; Salmon, T.P. Bird damage at aquaculture facilities. In *The Handbook: Prevention and Control of Wildlife Damage*; University of Nebraska: Lincoln, NE, USA, 1994; pp. E-5–E-18.
 160. Whitfield, D.P. *Natural Research Information Note 5: Avoidance Rates of Swans Under the 'Band' Collision Risk Model*; Natural Research Ltd.: Banchory, Scotland, UK, 2010.
 161. Rees, E.C. Impacts of wind farms on swans and geese: A review. *Wildfowl* **2012**, *62*, 37–72.
 162. Wang, S.; Wang, S.; Smith, P. Ecological impacts of wind farms on birds: Questions, hypotheses, and research needs. *Renew. Sustain. Energy Rev.* **2015**, *44*, 599–607, doi:10.1016/j.rser.2015.01.031.
 163. Grünkorn, T.; Blew, J.; Krüger, O.; Potiek, A.; Reichenbach, M.; von Rönn, J.; Timmermann, H.; Weitekamp, S.; Nehls, G. A Large-scale, multispecies assessment of avian mortality rates at land-based wind turbines in northern Germany. In *Wind Energy and Wildlife Interactions. Presentations from the CWW2015 Conference*; Gartman, V., Köppel, J., Eds.; Springer: Berlin, Germany, 2017; pp. 43–64, ISBN 978-3-319-51270-9.
 164. Dirksen, S.; Spaans, A.L.; Van der Winden, J.; Van den Bergh, L.M.J. Nachtelijke vliegpatronen en vlieghoogtes van duikeenden in het IJsselmeergebied. *Limosa* **1998**, *71*, 57–68.
 165. Bicknell, A.W.J.; Oro, D.; Camphuysen, K.C.J.; Votier, S.C. Potential consequences of discard reform for seabird communities. *J. Appl. Ecol.* **2013**, *50*, 649–658, doi:10.1111/1365-2664.12072.
 166. Branco, J.O.; Braun, J.R.R.; Verani, J.R. Seasonal variation in the abundance of seabirds in areas of mariculture. *Braz. Arch. Biol. Technol.* **2001**, *44*, 395–399, doi:10.1590/S1516-89132001000400009.

167. Everaert, J. Wind turbines and birds in Flanders: Preliminary study results and recommendations. *Oriolus* **2003**, 69, 145–155.
168. Shiraki, S. Current ecological status and conservation of White-tailed sea eagle breeding in Hokkaido. *Jpn. J. Zool. Wildl. Med.* **1999**, 4, 33–37.
169. Bevanger, K.; Berntsen, F.; Clausen, S.; Dahl, E.L.; Flagstad, Ø.; Follestad, A.; Halley, D.; Hanssen, F.; Johnsen, L.; Kvaløy, P.; et al. *Pre- and Post-Construction Studies of Conflicts between Birds and Wind Turbines in Coastal Norway (BirdWind)*; Norwegian Institute for Nature Research (NINA) Report #620, Trondheim, Norway, 2010.
170. Busse, P. Methodological Procedure for Pre-Investment Wind Farm Ornithological Monitoring Based on Collision Risk Estimation. *Ring* **2014**, 35, 3–30, doi:10.2478/ring-2013-0001.
171. Madders, M.; Whitfield, D.P. Upland raptors and the assessment of wind farm impacts. *Ibis (Lond. 1859)* **2006**, 148, 43–56, doi:10.1111/j.1474-919X.2006.00506.x.
172. Walker, D.; McGrady, M.; McCluskie, A.; Madders, M.; McLeod, D.R.A. Eagle behaviour before and after construction of a windfarm. *Scott. Birds* **2005**, 25, 24–40, doi:10.1.1.732.2910.
173. Scottish Natural Heritage. *Avoidance Rates for the Onshore SNH Wind Farm Collision Risk Model*; Scottish Natural Heritage: Battleby, Scotland, UK, 2017.
174. Burger, J.; Gordon, C.; Lawrence, J.; Newman, J.; Forcey, G.; Vlietstra, L. Risk evaluation for federally listed (roseate tern, piping plover) or candidate (red knot) bird species in offshore waters: A first step for managing the potential impacts of wind facility development on the Atlantic Outer Continental Shelf. *Renew. Energy* **2011**, 36, 338–351, doi:10.1016/j.renene.2010.06.048.
175. Furness, R.W. *A Review of Red-Throated Diver and Great Skua Avoidance Rates at Onshore Wind Farms in Scotland*; Scottish Natural Heritage: Battleby, Scotland, UK, 2015.
176. Cook, A.S.C.P.; Ross-Smith, V.H.; Roos, S.; Burton, N.H.K.; Beale, N.; Coleman, C.; Daniel, H.; Fitzpatrick, S.; Rankin, E.; Norman, K.; et al. *Identifying a Range of Options to Prevent or Reduce Avian Collision with Offshore Wind Farms Using a UK-Based Case Study*; British Trust for Ornithology (BTO) Report #580; BTO, Norfolk, UK 2011; ISBN 9781906204952.
177. Ewins, P.J. Opportunistic feeding of Black Guillemots *Cephus grylle* at fishing vessels. *Seabird* **1987**, 10, 58–59.
178. Sallent, Á.; Murcia, J.L.; Barberá, G. Association of seabirds with commercial fisheries at Murcia Region. Poster. XVIII Congreso Español y III Ibérico de Ornitología. 12-15 October 2006, Elche, Alicante, Spain; 2007.