Annex IV Risk Assessment

Proposed Maintenance Dredging and Dumping at Sea

Buncrana Harbour, Co. Donegal

Compiled by
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On behalf of Ayesa

for

Donegal County Council

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Contents

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1.0 Introduction

This Annex IV Risk Assessment Report has been prepared by Jessica Devlin MSc. Project Management and Environmental Services, on behalf of Ayesa for Donegal County Council for the purpose of obtaining statutory permissions pertaining to proposed maintenance dredging and dumping at sea at Buncrana Harbour, Co. Donegal.

EU countries must establish systems of strict protection for animal and plant species which are particularly threatened, and which are listed in Annex IV of the Habitats Directive. Article 12 and 13 of the Habitats Directive relates to the establishment of a system of strict protection for certain animal and plant species, while Article 16 provides for derogations from these provisions under limited circumstances. Article 12, 13 and 16 of the Habitats Directive are transposed into Irish law by Regulation 51, 52 and 54 of the Birds and Habitats Regulations of 2011, respectively.

The animal species listed in Annex IV, which occur in Ireland, are:

- the otter
- all bat species
- all cetaceans (whales and dolphins)
- the natterjack toad
- marine turtles
- the Kerry slug

The plant species listed in Annex IV, which occur in Ireland, are:

- the Slender Naiad
- Yellow Marsh Saxifrage
- the Killarney Fern

Each of these species is strictly protected in Ireland and a person who deliberately captures, kills or disturbs a specimen in the wild, or who damages or destroys a breeding site or resting place of such an animal, is guilty of an offence.

As an Annex IV species may be found throughout the country, the protection of these species is not restricted in geographical terms and is not necessarily associated with areas subject to a specific nature designation.

This risk assessment is intended to comply with the provisions of Article 12 of the Habitats Directive in relation to the protection afforded to relevant Annex IV species; it appraises proposed activities, for maintenance dredging and dumping at sea at Buncrana Harbour, Co. Donegal. It also proposes mitigation measures where there is a possibility of interactions with bats, testudines (marine turtles) and cetaceans (whales, dolphins and porpoises), seals (pinnipeds), Otter (*Lutra lutra*) and basking sharks (*Cetorhinus maximus*). A Marine Mammal Risk Assessment can be seen in Appendix 1.

2.0 Project proposals

Buncrana pier lies on the eastern shore of Lough Swilly. Sands/gravels that have accumulated due to shifting sand bars, storm driven sediment movement or infill from river flood events have caused a build up of sediment which requires maintenance dredging on an annual basis to keep the pier operational for the RNLI and local craft.

The proposed works at the site are planned to take place on an annual basis for a duration of 8 years, with the re-positioning/scattering of sediment in the region of 12,000m^3 on an annual basis (2026 – 2034) across two dredge campaigns.

This maintenance dredging has been carried out annually to ensure the RNLI access isn't impeded by siltation at the pier. A plough dredger is used, and the dredged material redistributed on the bottom of the sea bed.

The dump site extends approximately 180m north, 290m south and 370m seawards of the pier structure, as outlined in Figure 2.1 below. The total area encompassed within the dump site is approximately 274,500m^2

The total area encompassed by the dredge site is approximately 18,900m^2.

A plough-dredge, composed of a steel leveller, is dragged over the dredge area, thereby moving material along the bed to adjacent areas at a lower level. The result being local high points on the bed are levelled and design water depths are restored. As the sites will be plough dredged the dredge sites will also act as the dump-sites. In areas inaccessible to the plough dredger, an excavator will be deployed either from the pier deck or, at lower tides, from the seabed to remove material from the site. This material (1,250m^3 of the 12,000m^3 proposed) will be relocated a short distance away, across the beach, by tipper lorry to the golf course adjacent, under an existing Article 27 licence.

The plough will be used to pull, along the sea bed out of the berth alongside the pier seawards and to deeper water. The plough will work in series of movements from the berth alongside the pier and slipway and move seawards which each movement. Given the nature of the material and its grain size the vast majority will stay at bed level as it is being pulled along the seabed and material will also be in suspension within the water column. The material in suspension will drop out of the water column as the plough moves westwards from the pier location. There will be a localised plume associated with the ploughing movement. Currents and tidal movement will also influence the shape and extent of the plume with each plough movement. Given the naturally strong currents and tidal flows which pertain within Lough Swilly, it is expected that material will be evenly dispersed and the bed essentially re-profiled.

Plough dredging will be carried out over two dredge events during each year of the proposed eight year dredge campaign. Each dredge event is expected to take a week to 10 days to complete, and is tide and weather dependent. Land dredging will take place immediately before or after the plough dredging over a period of c.5 days and is tide dependent. Dredged volumes will comprise a maximum of 12,000m^3 of material per annum, a total of 96,000m^3.

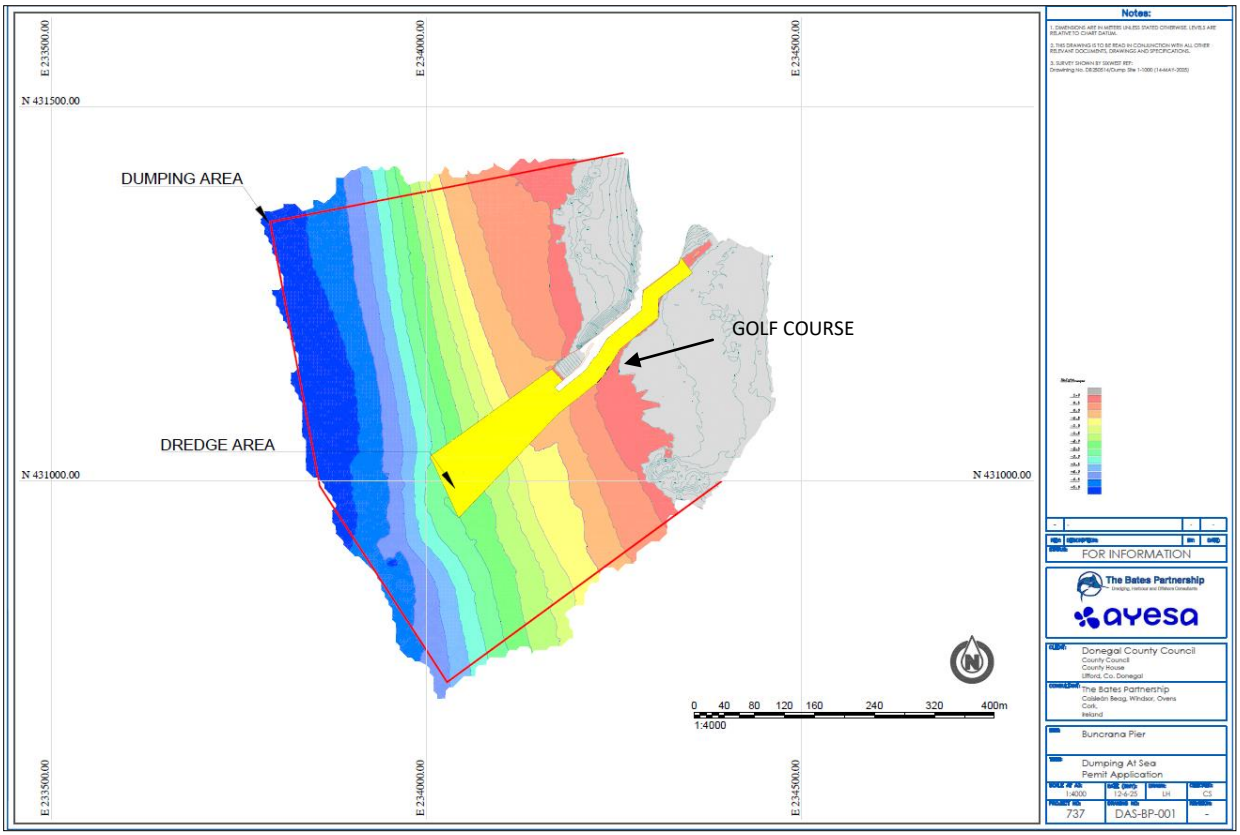

Figure 2.1 Proposed dredge and dump area at Buncrana.

Operation

Operational activities at the pier will not differ significantly from current day. Effects from the operational phase are not anticipated, it is a small rural pier of low intensity activity and do not require further assessment (Devlin, 2025).

3.0 Guidance and data sources

Collins, J. (ed.) (2023) Bat surveys for professional ecologists: Good practice guidelines (4th edition). The Bat Conservation Trust London. ISBN978-1-7395126-0-6.

European Commission (2021) Brussels, 12.10.2021 C(2021) 7301 final Commission notice Guidance document on the strict protection of animal species of Community interest under the Habitats Directive.

Department of Housing, Local Government and Heritage (2021) Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland. National Parks and Wildlife Service Guidance Series 1.

Mullen, E., Marnell, F. & Nelson, B. (2021) *Strict Protection of Animal Species*. National Parks and Wildlife Service Guidance, No. 2. National Parks and Wildlife Service, Department of Housing. Local Government and Heritage.

CIEEM (2013) Competencies for Species Survey: Eurasian Otter.

Online data available on European sites and protected habitats/species as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie, including conservation objectives documents and Article 17 data.

Online data available on protected species as held by the National Biodiversity Data Centre (NBDC) from www.biodiversityireland.ie.

Online data available on Irish Whale and Dolphin Group members page.

Data request IWDG

List not exhaustive see section 11 for full list of references and sources.

4.0 Annex IV species in the project area

The site was assessed for the likelihood of presence of Annex IV species in and around the project location

Annex IV species	**Habitat or species Present/ Absent**
Otter (lutra lutra)	No suitable habitat present for breeding/resting – potential for commuting and foraging.
All bat species	Negligible to low potential suitability for roosting habitats. Low – moderate suitability for commuting and foraging, better habitat upstream along the river. No signs of Bats were noted at the time of site visit.
All cetaceans (whales and dolphins)	Yes – see Appendix 1 for details of Marine Mammals recorded within 20Km of the site and the wider Inishowen peninsula.
The natterjack toad	Not present.
Marine turtles	Not likely to be present. IWDG data 2015 – 2025: no marine turtles recorded within 20km of project location and the wider Inishowen peninsula.
The Kerry slug	Not present.
The Slender Naiad	No suitable habitat – not present.
Yellow Marsh Saxifrage	No suitable habitat – not present.
The Killarney Fern	No suitable habitat – not present.

Table 4.1 Likelihood of presence of Annex IV species

Site visits were carried out on 07 October 2025. The species most likely to be present are Otter, Bats and cetaceans; these are discussed further in section 5.0, 6.0 and 7.0.

5.0 Otter

Otter (*Lutra lutra*), and their breeding and resting places, are protected under the Wildlife Acts. Otter are also listed on Annex II and Annex IV of the EU Habitats Directive. Otter was previously listed as "near threatened" in Ireland in the Ireland (Marnell *et al*., 2009), however following a revised assessment in Marnell *et al*. (2019) its conservation status is now listed as "least concern". It is believed that this is due to population recovery (Marnell *et al*., 2019) and Ireland is a stronghold for Otter, and they are widespread and relatively common throughout the island (Reid et al., 2013).

Assessment of suitable Otter habitat in the area surrounding the project site was carried out to determine Otter activity (if any). The identification of spraint and holts is the standard method for determining Otter activity in a particular area. Footprints can be used as an indicator of activity if the conditions are right for leaving prints. Suitable habitat a distance of 150m surrounding the proposed development site was surveyed to ensure breeding holts were not in the project vicinity (NPWS, 2009). Potential habitat within the dredge area was not identified and repeat surveys of potential Otter habitat were not deemed necessary. No mitigation with respect to habitat loss required.

The number of Otter sightings in the area is low, see appendix 1; however it is possible they commute and forage around the area. Activity is likely to be occasional. Though the risk is low, disturbance and displacement are possible if otter are in the vicinity of works, see MMRA appendix 1.

In general, according to NRA guidance 2009, disturbance effects from construction would not be expected to extend beyond 150m. Otter are largely nocturnal species and may be impacted by noise or vibration during the day if they are resting in the area when construction is ongoing.

Being inquisitive animals, they may investigate the work site, or conversely, they may be alarmed and be diverted from their normal paths on to a more dangerous route to avoid the dredging activity. As a result there are many possible hazards that could be fatal to animals such as being hit by or caught in machinery.

If Otter are in the vicinity of dredge works increased turbidity in the immediate area may cause some difficulty for Otter.

During operation, activities at the pier are not likely to have a significant effect on Otter. Unpublished observations by Kruuk and colleagues indicate that Otters will rest under roads, in industrial buildings, close to quarries, and at other sites close to high levels of human activity. These observations clearly indicate that Otters are very flexible in their use of resting sites and do not necessarily avoid 'disturbance' in terms of noise or proximity to human activity (Chandin, 2003). Potential effects of activity at the pier in the operational phase, alone or in combination with others, in terms of disturbance or displacement are not significant.

Mitigation to avoid effects from disturbance and displacement during construction

MMO (with a dual role of Protected Species Observer) to be employed as per Marine Mammal Risk Assessment in Appendix 1.

Works to be during daylight hours so as to avoid disturbing these largely nocturnal mammals.

Residual effects on Otter

Following the implementation of mitigation measures, there are no residual effects on Otters arising from the proposed development, either alone or in combination with other plans or projects. The conservation status of Otter will not be affected in any away.

See MMRA appendix 1 for further detail.

6.0 Bats

Bats, and their breeding and resting places, are protected under the Wildlife Acts. All bat species are also listed on Annex IV of the EU Habitats Directive, the Lesser horseshoe bat also listed on Annex II. All species of bats in Ireland are listed as "least concern" in the Ireland Red List No. 12: Terrestrial Mammals.

Information was collected to determine the need for Bat surveys.

Google Maps satellite imagery was used to assess the value of the surrounding habitat for bats in the area at a landscape scale (5km), including any potentially important habitat corridors (linear habitat features), feeding grounds or potential roost opportunities, such as large expanses of woodland. The features and habitats immediately surrounding the site (local area) were also assessed at a finer scale as these influence the likely presence of bats within the project site.

Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape were applied according to professional judgment.

A daytime bat walkover was undertaken in accordance with current accepted guidance: Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edn). The Bat Conservation Trust, London, and Aughney et al (2008) Bat Survey Guidelines: Traditional Farm Buildings Scheme. The Heritage Council, Áras na hOidhreachta, Church Lane, Kilkenny.

The wider habitat is likely to support a variety of bat species, including widespread species such as common pipistrelle (*Pipistrellus pipistrellus)* and soprano pipistrelle (*Pipistrellus pygmaeus*) and species that favour open landscape in which to forage, such as Leisler's (*Nyctalus leisleri*) and Daubenton's bat (*Myotis daubentonii*).

Landscape within the immediate vicinity of the project comprises the coastline and Lough Swilly, with the golf course to the south and the park to the north. The approach road to the pier is moderately developed with housing and buildings along the route. Features include the pier and car park and housing, amenity grassland. There is very limited treeline or hedgerow in the immediate vicinity of the project. The Mill river provides more optimal habitat; it enters Lough Swilly at the project location.

Project connectivity with suitable foraging habitat is low - moderate due to the coastal location; somewhat removed from neighbouring hedgerows, and occurs at the end of the Mill River, there is no significant native woodland in the area.

Other boat ruins are of negligible suitability due to their state of dereliction. A non intrusive internal and external inspection of the boats and the pier was undertaken during daylight to determine the potential for bats and establish, if possible, whether bats are using them or have been using them in the past. They were examined for evidence of bats e.g. droppings, urine stains, smell, dead bats and remains of food. No obvious signs were seen.

It was concluded that overall the site was of negligible to low suitability in terms of roost potential and commuting and foraging potential see table 6.1. The site does not appear to be, or to have been used by bats, and there will be no loss or fragmentation of habitat.

The survey work is considered sufficient to give confidence in a negative result (likely absence) of a significant roost within the pier, such as a maternity roost, for if such a roost was present, evidence would be expected. However, the possibility that the pier is used by small numbers of bats or itinerant bats throughout the summer months cannot be ruled out. It is unlikely that the conservation status of bats could be significantly impacted by the project; Works are small scale, short term, and will not directly impact the habitat, and nocturnal activities foraging/ commuting will not be restricted or impacted in any way. Dredging works will not differ significantly to existing activity at the pier. Impacts are very unlikely

Mitigation for bats is not required.

Suitability	Description Roosting habitats	Commuting and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year. (i.e. complete absence of all crevices / suitable shelter at all ground / underground levels).	No habitat features on site likely to be used by commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade protection for flight lines or generate / shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used by commuting or foraging bats; however a small element of uncertainty remains to account for non standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (*i.e.* unlikely to be suitable for maternity and not a classic coo/stable hibernation site, but could be used by individual hibernating bats). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.

High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts e.g. maternity of classic cool/stable hibernation sites.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, treelined watercourses and grazed parkland. Site is close to and connected to known roosts.

Table 6.1 Guidelines for assessing the potential suitability of proposed development sites for bats (Collins, 2023).

7.0 Cetaceans and basking sharks

In Ireland, cetaceans (whale, dolphins and porpoises) are protected under the Wildlife Act (1976) and amendments (2000-2023). The Act applies out to the 12 nm limit of Irish territorial waters. All cetaceans are also included in Annex IV of the EC Habitats Directive, as species 'in need of strict protection'. Under this Directive, the harbour porpoise (*Phocoena phocoena*), bottlenose dolphin (*Tursiops truncatus*), are listed under Annex II, which identifies these species of community interest and whose conservation requires the designation of SACs. It is an offence to hunt, injure or willfully interfere with, disturb or destroy the resting or breeding place of a protected species (except under license or permit from the Department).

New regulations giving legal protection to basking sharks mark a huge step forward in conserving the globally threatened species. As of October 3rd 2022, basking sharks in Irish waters are legally protected under Section 23 of Ireland's Wildlife Act.

There is a large amount of marine mammal activity in the wider area around the Inishowen Peninsula and the north coast of Ireland. Based on the number of sightings for the region and the type of works proposed (dredging), in the absence of mitigation, it is possible that the project could directly affect marine mammals in the area. A detailed Marine Mammal Risk Assessment can be seen in Appendix 1.

Species	Individuals recorded in Lough swilly	Individuals recorded in Inishowen
Basking shark	7	30
Bottlenose dolphin	183	1879
Ceatcean	7	10
Common dolphin	29	1078
Dolphin species	106	798
Possible Harbour porpoise	71	199
Harbour porpoise	39	212
Humpback whale	3	7
Large whale	1	1
Medium whale	1	1
Minke whale	8	25
Risso's Dolphin	0	49
Whale	1	7

Table 7.1 Breakdown of individual cetaceans and basking sharks recorded within 20km of the project area and Inishowen peninsula 2015-2025 by species, Data provided by Irish Whale and Dolphin Group.

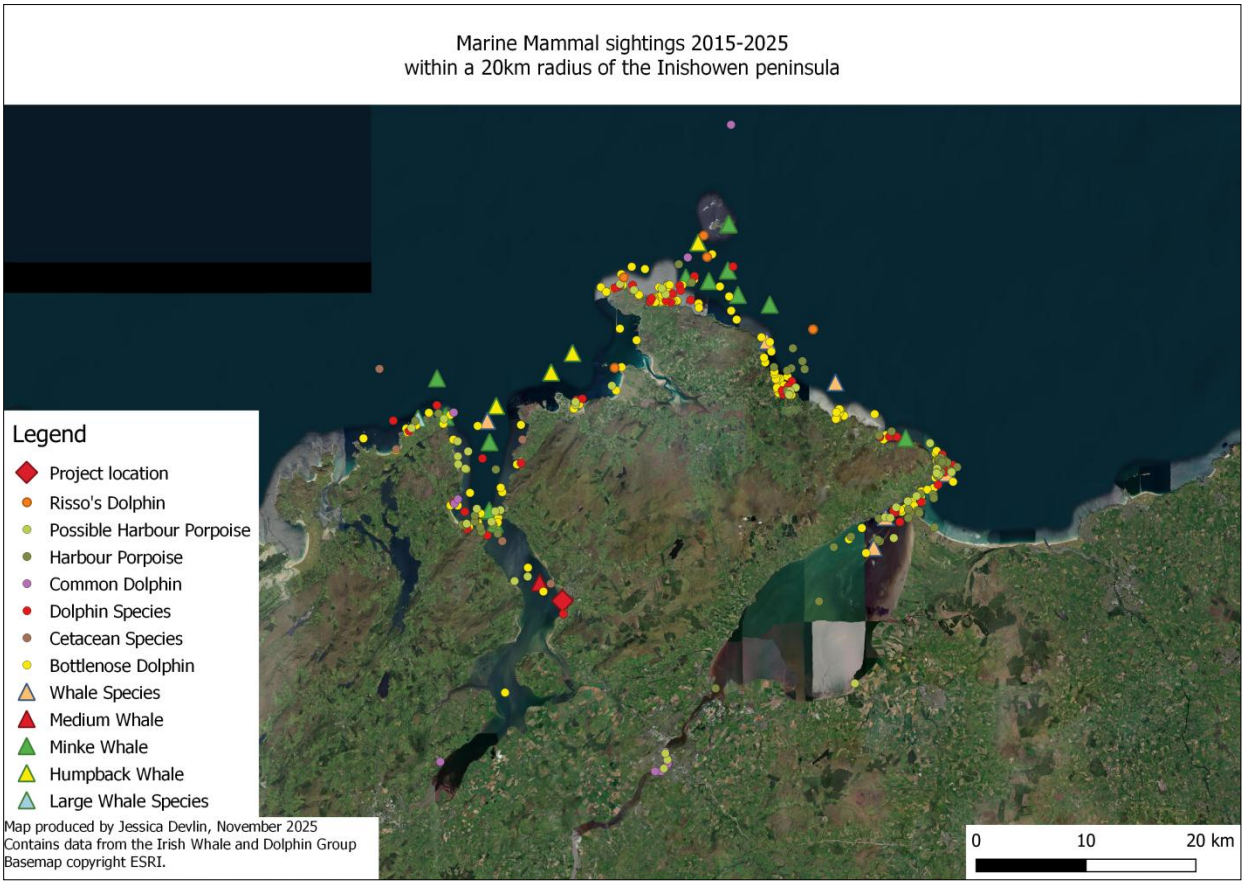

Figure 7.1 Map of cetacean distribution within a 20km radius of the Inishowen peninsula 2015- 2025. Data provided by the Irish Whale and Dolphin Group.

Buncrana maintenance dredging is a small scale project of short duration (c. 1 week to 10 days, twice, on an annual basis). The quantities of dredge materials are small, 12,000m^3 across the two dredge campaigns. The project is not in close proximity to marine mammal breeding or haul out sites.

Basking Sharks

Though not an Annex IV species basking sharks are considered a species of note and is discussed briefly. As with marine mammals there is potential to impact basking sharks during dredging works. According to IWDG data from 2015 to 2025, 30 individual basking sharks have been sighted in the waters around Inishowen, 7 of these were in Lough Swilly.

Basking sharks have not been sighted within the last decade within close proximity to the project location; however that does not necessarily mean they do not occur there. Anthropogenic noise and vibration has the potential to injure basking sharks, and to disturb and displace them from the area, with the potential to interfere with feeding and or breeding patterns should they occur in the vicinity of the project.

Mitigation to avoid effects from disturbance, displacement and injury of marine mammals and basking shark

As discussed in the MMRA, Appendix 1, it is recommended to adopt the NPWS guidelines. An independent marine mammal observer (MMO) will carry out observations from land and monitor the area for marine mammals during piling and dredging operations and implement the NPWS guidelines. The MMO will assume the collective role of protected species observers (PSOs), and will implement NPWS guidelines with regard to basking shark and any other protected megafauna that could occur during works.

Residual effects on marine mammals and basking shark

The proposed works, with mitigation, are considered unlikely to present a risk to marine mammals. No significant residual effects anticipated.

8.0 Water quality

Negative changes to water quality are considered unlikely. Specialist contractors with experience in working in marine environments will be appointed to implement the dredging and Article 27 reuse activity. Standard best practice guidelines will be adhered to such that the risk posed by such substances to the marine environment is minimised. The risk of pollution from works is further reduced by the scale and nature of works. Site specific mitigation is not required in terms of hydrocarbon/hazardous material management.

As part of the pre-dredging analytical requirements issued by the Marine Institute, Donegal Co. Co. is required to sample surface sediment from four locations within the licensed area in Lough Swilly. AQUAFACT (APEM Group) were commissioned by Donegal Co. Co. to carry out the sediment monitoring survey in Lough Swilly.

Sampling was carried out at four locations, followed by sediment, chemical and granulometric analysis of the samples. Activities were undertaken in accordance with the Dumping at Sea permit S0011-03 and any relevant EPA and Marine Institute guidance.

The sediment was found to be generally light brown silty sand, with some brown mottled grey slightly sandy clay and Light brown mottled grey silty sand

None of the samples exceeded guidance levels for trace metals, Organochlorines and PCBs, Total Extractable Hydrocarbons, Tributylin (TBT) and Dibutylin (DBT), or Polycyclic Aromatic Hydrocarbons.

The SOCOTEC values for Mercury (Hg) are below action levels. The SOCOTEC values for Arsenic (As) indicate exceedance of the original lower action level of 9 mg/kg-1 . The addendum raised this threshold to 20 mg/kg, and only the As levels for ST-3 exceeded this revised limit. This is thought to be due to natural processes rather than an external contamination source.

The sediment has been deemed suitable for dumping at sea.

According to the Guidelines for the assessment of dredge material for disposal in Irish waters Sediments are classified as Class 1:- Contaminant concentrations less than level 1. Uncontaminated: no biological effects likely. They have been deemed suitable for dumping at sea which is a higher criteria than that for landfill.

Mitigation to avoid water quality effects is not required.

9.0 Assessment of significance

Dredging / dumping at sea and reuse at the golf course is anticipated to take place twice a year over an 8 year period. Plough dredging activity is likely to take 1 week to 10 days and removal for reuse 5 days, and is weather and tide dependent.

The Annex IV species which are most likely to occur within the zone of influence of the project have been assessed: these include otter, bats, cetaceans and basking shark. While there is some risk of disturbance and displacement, mitigation is sufficient to negate potential impacts and effects. These are summarised in table 9.1 and section 10 of the NIS. Residual impacts from the project are not anticipated.

9.1 Mitigation Measures

Source	Pathway	Receptor	Mitigation Measure	Residual effect / Significance of potential impact
Dredging, dumping at sea and reuse at golf course	Dredge site	Otter	MMO/PSO to be employed as per Marine Mammal Risk Assessment in Appendix 1 Works outside daylight hours	No residual impact anticipated.
Noise and vibration	Acoustic (in water and in air)	Marine mammals and basking shark	An independent marine mammal observer (MMO) will carry out observations from land and monitor the area for marine mammals during dredging operations and implement the NPWS guidelines. The MMO will assume the collective role of protected species observers (PSOs), and will implement NPWS guidelines with regard to basking shark and any other protected megafauna that could occur during works.	No residual impact anticipated

Table 9.1 Source - Pathway - Receptor relationship with ANNEX IV species, mitigation measures and potential for residual effects.

10.0 Conclusion

The proposed maintenance dredging and dumping at sea at Buncrana Harbour, Co. Donegal has been assessed in terms of its risk to Annex IV species in the vicinity of the project, and its ability to impact significantly on them. It has been concluded that with mitigation there will be no residual effects on the Annex IV species that are likely to occur; namely otter, bats and cetaceans. Basking shark (after mitigation) will also not suffer any residual effects from the project.

11.0 References

Aughney, T., Kelleher, C. & Mullen, D. (2008) Bat Survey Guidelines: Traditional Farm Buildings Scheme. The Heritage Council, Áras na hOidhreachta, Church Lane, Kilkenny.

Aquafact (2024) Buncrana Pier – Sediment, Chemical and Granulometric Analysis for Donegal County Council December 2024

Bat Conservation Ireland (2015) Bats & Bat Boxes: Guidance Notes for Agri-environmental Schemes. August 2014. Updated January 2015. Available online at https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf

CIEEM (2013) Competencies for Species Survey: Eurasian Otter.

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

Chanin P (2003). Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough.

Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd edition. Bat Conservation Trust, London.

Department of Housing, Local Government and Heritage (2021) Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland. National Parks and Wildlife Service Guidance Series 1.

Devlin, J. (2025) Screening and Natura Impact Statement, Proposed maintenance dredging Buncrana, Co. Donegal for Donegal County Council.

European Commission (2021) Brussels, 12.10.2021 C(2021) 7301 final Commission notice Guidance document on the strict protection of animal species of Community interest under the Habitats Directive

Marnell, F., Looney, D. & Lawton, C. (2019) Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland

Marnell, F., Kingston, N. & Looney, D. (2009) Ireland Red List No. 3: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

Mullen, E., Marnell, F. & Nelson, B. (2021) Strict Protection of Animal Species. National Parks and Wildlife Service Guidance, No. 2. National Parks and Wildlife Service, Department of Housing. Local Government and Heritage

NPWS (2009) Threat Response Plan: Otter (2009-2011). National Parks & Wildlife Service, Department of the Environment, Heritage & Local Government, Dublin.

Reid, N., Hayden, B., Lundy, M.G.,Pietravalle, S., McDonald, R.A. & Montgomery, W.I. (2013) National Otter Survey of Ireland 2010/12. Irish Wildlife Manuals No. 76. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

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www.NPWS.ie

Appendix 1 Marine Mammal Risk Assessment