Ecological Report for Screening for Appropriate Assessment of housing development at Tamney,

Co. Donegal

To support the Appropriate Assessment process in line with the requirements of Article 6(3) of the EU Habitats Directive

Prepared by:

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1 CONTENTS

Appendices including all maps.

2 SUMMARY

Project title:	Housing Development
Project proponent:	Donegal County Council
Project location:	Tamney, Co. Donegal
Conclusion	It has been scientifically and objectively concluded during the Screening process that significant impacts on the following European Sites (located within 5 km) are not considered likely as a result of the proposed development as described in this report: Mulroy Bay SAC (02159) Greers Isle SPA (004082) Kindrum Lough SAC (01151) Ballyhoorisky Point to Fanad Head SAC (01975) Lough Nagreany Dunes SAC (0164) Therefore, these European Sites can be screened out and it is deemed that it is not necessary to proceed to Appropriate Assessment.

3 INTRODUCTION

This document has been prepared by Earthy Matters Environmental Consultants on behalf of Donegal County Council, to determine the potential impacts of the construction of a housing development and new wastewater treatment system (WWTS) at Tamney Co. Donegal, on European protected sites (Natura 2000).

This document is an ecological report for the purpose of Screening for Appropriate Assessment and is in line with the requirement of Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC). As such, this report provides information required to establish whether the proposed development is likely to have a significant impact on European sites in the context of their conservation objectives and specifically on the habitats and species for which they have been designated.

3.1 CONTEXT AND STAGES OF AN APPROPRIATE ASSESSMENT PROCESS

Article 6(3) of the Habitats Directive states:

"*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives*".

The Habitats Directive, via the Appropriate Assessment process promotes a hierarchy of avoidance, mitigation, and compensatory measures. First, the project should aim to avoid any negative impacts on European sites by identifying possible impacts early in the planning stage and designing the project to avoid such impacts. Second, mitigation measures should be applied, if necessary, during the process to the point where no adverse impacts on the site(s) remain. If the project is still likely to result in adverse effects and no further practicable mitigation is possible, then it is rejected. If no alternative solutions are identified and the project is required for imperative reasons of overriding public interest (IROPI), then compensation measures are required for any remaining adverse effects.

Following the obligations under Article 6(3), the European Commission's guidance promotes a four-stage process to complete the Appropriate Assessment and outlines the tests required at each stage. By taking the ecological impact assessment (in relation to the conservation objectives) in a step-by-step manner this report seeks to inform the screening process required as the first stage of the Appropriate Assessment procedure and also to provide full and detailed information as required for the second stage, namely Appropriate Assessment, should the competent authority, decide that such an assessment is required.

Screening stage:

- Determination whether the project is directly connected with or necessary to the management of the European site.
- Description of the project.
- Identification of European sites potentially affected.
- Identification and description of individual and cumulative impacts likely to result from the project.
- Assessment of the significance of the impacts identified above on site integrity.

- Statement of Appropriate Assessment screening (as per Irish guidance); exclusion of sites where no significant impacts are foreseen.

3.2 METHODOLOGY

This report includes the ecological impact assessment and testing required under the provisions of Article 6(3) by means of the first stage of Appropriate Assessment. In this context, a review of the potential, residual (indirect and direct) and cumulative impacts, as well as potential (if required) mitigation measures have been undertaken. It is based on an analysis of existing ecological information including documented information about the designated and non-designated areas involved, as well as a walk-over survey carried out by the author on the land on 2nd March 2023. A habitat/vegetation assessment was undertaken by the author to assess the ecological interest of the area.

Guidance documents on the Appropriate Assessment process have been referred to during the preparation of this NIS. These include:

- NPWS (2012) Marine Natura Impact Statements in Irish Special Areas of Conservation. A Working Document. Department of Arts, Heritage and the Gaeltacht.
- NPWS (2009) Revised February 2010. Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities.
- The European Communities (2002) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- The European Communities (2000) Managing Natura 2000: the provisions of Article 6 of the 'Habitats Directive' 92/43/EC.

4 OVERVIEW OF THE PROJECT AND THE RECEIVING ENVIRONMENT

4.1 BRIEF DESCRIPTION OF THE PROJECT

The proposed development site (0.81 ha) is located at Tamney, Fanad, Co. Donegal (Appendix 1a). It is proposed to build a social housing development comprising 10 housing units, open spaces and an entrance lane. A new WWTS (Tertiary Treatment System with mechanical aeration system and soil polishing filter) is also proposed and any existing sanitary arrangement to be decommissioned at this location following EPA protocol (Appendix 1b). Existing land drains will be upgraded and new land drain will be installed as indicated in Appendix 1c. In addition all storm water runoff will be collected and discharged via a silt trap/soakaway to a field drain that is located on the western boundary of the site (Appendix 1c). The site is served by existing mains water supply. Only native trees will be planted as part of the landscaping in the project. The remaining part of the site that will not be constructed will return to grassland use.

4.2 BRIEF DESCRIPTION OF THE RECEIVING ENVIRONMENT

The development site is located at Tamney, Co. Donegal, just off the R247 (Appendix 1a), in a rural landscape, at the edge of Tamney village. The site is on a convex slope of hillside, sloping gently towards the west (Mulroy Bay). The site adjoins an existing housing development on its south-eastern boundary, a local road on its north-eastern boundary, grazing pasture and a dwelling on its

northern boundary and Mulroy Bay on its western boundary and photos in Appendix 4). The adjoining existing housing development has a WWTS system together with Percolation facility (see photo of associated WWTS control cabinet and existing percolation area under grassland in Appendix 4). Surface ponding was noted around the existing treatment facility. The site is currently fenced agricultural pasture with a small hedgerow on the northern boundary. A small, fenced area in the southern corner is not grazed and is encroached by scrub and brambles (*Rubus* spp.). The general surface water flow is east to west with water running into Mulroy Bay. There are no streams within or in the immediate vicinity of the development and the site is within the Laddan_010 sub-basin belonging to the Burnside_SC_010 sub-catchment. The overall site boundary adjoins Massmount Bay which is within Mulroy Bay SAC (02159). The site is relatively dry on foot but experiences a fluctuating water table as indicated by the presence of rushes (*Juncus effusus*) closer to the bay and surface ponding throughout (see photos in Appendix 4). A sheough runs along the road and a shallow drain runs along the southern boundary of the site. It is stagnant due to the low gradient rather than from poor drainage capacity. The soil is gravelly silt/clay with a shallow organic layer, over alluvium subsoil. Groundwater vulnerability is qualified as *high* (gis.epa.ie).

The proposed development site is c. 20% wet grassland dominated by perennial ryegrass (*Lolium perenne*), rushes, dock (*Rumex* spp.) and brambles (see Appendix 2a). At the time of the survey, there were no protected habitats or species listed in the Habitats Directive within the proposed development. There were no invasive species within or at the edges of the site.

4.3 IDENTIFICATION OF DESIGNATED SITES WITHIN THE *ZONE OF INFLUENCE* OF THE DEVELOPMENT

The *zone of influence* is the 'effect area' over which changes could give rise to potentially significant impacts. The *zone of influence* over which the development may impact upon European Sites and their Qualifying Interests will differ for different ecological receptors depending on the pathway for potential impacts, as well as the specific nature of the habitats/species in question.

All European sites, namely Special Areas of Conservation (SAC) and Special Protection Areas (SPA), located within a 15 km radius of the proposed development site were reviewed. Following the Guidance for Planning Authorities (NPWS, 2010) and adopting the precautionary principle in identifying these sites, it was determined that given the nature and location of the project vis-à-vis natural features and surrounding topography (coastal location on a peninsula), all the European sites located outside the 5 km radius are not likely to be impacted by the proposed development. There are four SAC and one SPA located within the 5 km radius of the proposed project (see Table 1 and Appendices 2b, 2c).

The development site adjoins **Mulroy Bay SAC (02159)** and due to distance and hydrological pathways, it is deemed within the *zone of influence* of the project (Table 1). **Greers Isle SPA (004082)** is also within distance of the project (1.4 km) and such proximity may affect birds or habitats required by the bird population for which this SPA was designated. Therefore, it is deemed within the *zone of influence*. **Kindrum Lough SAC (01551)** is located 3.3 km north over a hill and due to topography and the absence of a source-receptor pathway between it and the development site, it is deemed outside the *zone of influence* and can be screened out. **Lough Nagreany Dunes SAC (0164)** and **Ballyhoorisky Point to Fanad Head SAC (01975)** on the northern point of Fanad head, are all upstream in the catchment (with no source-receptor pathways) and are deemed outside the *zone of influence* and have been screened out (Table 1).

Table 1: Designated European sites within 10 km of the proposed project.

Site Name & Code	Distance from development	Qualifying features (i.e. reasons for designation) (*=Priority Annex I Habitats)	Do any potential source-pathway-receptor links exist between the development and the European site?
Mulroy Bay SAC (02159)	Adjoining	• Large shallow inlets and bays • Reefs • Otter	**Yes.** Direct and indirect impacts may occur to Qualifying Interest habitats due to proximity of the development, as well as via hydrological pathways (surface flows) from potential impact sources (runoff, accidental pollution events and WWTS). **Screened in.**
Greers Isle SPA (004082)	1.4 km NW	• Black-headed Gull; Common Gull and Sandwich Tern	**Yes**. The development may impact on the quality of habitats required by populations of birds for which this SPA is designated.
Kindrum Lough SAC (01151)	3.3 Km N	• Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea • Slender Naiad (Najas flexilis)	**No**. The development does not directly affect any land within the SAC and there are no hydrological pathways between source (construction area) and receptors. **Screened out.**
Ballyhoorisky Point to Fanad Head SAC (01975)	4.2 km N	• Perennial vegetation of stony banks • Vegetated sea cliffs of the Atlantic coasts • Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae • Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. • Narrow-mouthed Whorl Snail • Slender Naiad	**No**. The development does not directly affect any land within the SAC and there are no hydrological pathways between source (construction area) and receptors. **Screened out.**
Lough Nagreany Dunes SAC (0164)	4.6 NW	• Embryonic shifting dunes • Shifting dunes with Ammophila arenaria • Fixed coastal dunes (grey dunes) • Decalcified fixed dunes with Empetrum nigrum • Atlantic decalcified fixed dunes • Dunes with Salix repens ssp. argentea • Humid dune slacks • Oligotrophic to mesotrophic standing waters • Najas flexilis (Slender Naiad) [1833]	**No**. The development does not directly affect any land within the SAC and there are no hydrological pathways between source and receptors. **Screened out.**

4.4 DESCRIPTION OF THE EUROPEAN SITES AND THEIR CONSERVATION OBJECTIVES

The Site Synopsis and Conservation Objectives of the identified European sites within the *zone of influence*, namely Mulroy Bay SAC, can be found in Appendix 3a (supporting documents on the Conservation Objectives of both designated sites are also available at www.npws.ie). To date, only a generic Conservation Objective has been published for Greers Isle. The proposed development is not directly connected with the management of the European sites identified above.

Taking into consideration the ecological characteristics of the identified European sites, together with the proposed development and associated activities (location and extent), direct and indirect potential impacts have been identified as part of the Screening Stage. Ecological receptors that are sensitive to potential impacts from the proposed development include the species and habitats listed above. In relation to the species that are listed, it is important to consider the habitat requirements to adequately assess potential impacts. The potential impacts that pertain to the listed habitats and species are identified below. Species or habitats not described below have been deemed not relevant due to their ecological characteristics or their distribution vis-à-vis site the development type, location and characteristics (i.e. no source-pathway-receptor links).

Mulroy Bay is an extremely sheltered, narrow inlet situated in the north-west of Ireland. It is approximately 20 km in length and 2 km wide at the mouth. The bay is the most convoluted of the marine inlets in north-west Ireland. It has three significant narrows between 100–150 m across, where the current is very strong (3–5 knots). Mulroy Bay is a glacial fjord and the Moross peninsula, which separates the North Water from the Broad Water, is a large glacial drumlin. The bedrock is principally metamorphic quartzite, limestone and schist and gneiss, with intrusive granite at the mouth. Some small islands are included in the site.

Mulroy Bay has high conservation interest due to very important examples of large shallow inlets and bays and reefs. It has a wide range of communities from exposed coast to ultra-sheltered areas. Mulroy Bay SAC is designated for the several habitats that it contains on the Annex I list of the EU Habitats Directive (Table 1).

Other rare or protected species identified in a 10 × 10 km square have been examined and annual knawel (*Scleranthus annuus*) has been recorded in the C2038 square within which the development is located. However, no record of this species has been found in the location of the development.

4.5 IDENTIFICATION AND SIGNIFICANCE OF POTENTIAL IMPACTS

Taking into consideration the ecological characteristics of the European site, together with the proposed development and associated activities (location and extent), direct and indirect potential impacts have been identified as part of the Screening Stage. Ecological receptors that are sensitive to potential impacts from the proposed development include the species and habitats listed above. In relation to the species that are listed, it is important to consider the habitat requirements to adequately assess potential impacts. The potential impacts pertaining to the listed habitats and species are identified below. Species or habitats not described below have been deemed not relevant due to their ecological characteristics or their distribution vis-à-vis site the development type, location, and characteristics.

- *Mulroy Bay SAC*

Direct and indirect damage to habitats within the SAC during the development
The development site is not located within a SAC or SPA but adjoins Mulroy Bay SAC (02159). The proposed development and associated construction are located away from the shore but could interfere indirectly with the maritime habitats that are Qualifying Interests for Mulroy Bay SAC (Appendices 2a and Table 3) via water quality deterioration during construction or operation of the WWTS. Thus, potential negative impacts on these habitats must be assessed.

Assessment: Several aspects of the development associated with the construction works, as well as operation, could lead to the deterioration of nearby habitats or the water quality at this location. However, the Method Statement (see Appendix 5), includes best practices in terms of site preparation, construction and operation of the development (especially regarding fuel storage) as well as appropriate pollution present measures and waste management (during construction as well as during operation via a new WWTS). In addition, there are satisfactory SuDS description regarding the remediation of the surface runoff via an oil filter and soakaway before discharge to a field drain (see Appendix 1b).

Significance: It is concluded that the development will not impact negatively the water quality entering Mulroy Bay and therefore will not impact its water-dependent qualifying interests such as Large Shallow Inlets and Bays and Reefs.

Direct or indirect impacts on the fauna: Otter
There are also additional potential impacts on the local fauna during the construction and development of the site. Of particular note is the potential damage to water-dependent habitats including those of the **otter** (*Lutra lutra*). The otter commuting zone (250 m HWM buffer) includes the coastal area, which adjoins the proposed development (see map 6 in Appendix 3b). However, any impact is likely to be negligible given that no material will be removed from the SAC and the coastal habitat will not be physically disturbed. Therefore, **no significant direct negative impacts on the otter are anticipated.** Indirect impacts may occur via water quality deterioration and thus potential negative impacts on these species must be assessed.

Significance: Several aspects of the development which could lead to deterioration of water quality and water-dependent habitats have been reviewed and the Method Statement includes appropriate SuDS and the new WWTS will make sure no negative impacts on the water quality downstream will occur.

- *Greers Isle SPA*

To date, only a generic Conservation Objective has been published for this SPA, which is:

(1) To maintain or restore the favourable conservation condition of the bird species for which it has been designated (see Table 1).

Greers Isle SPA is of ornithological importance because of its nationally important breeding tern and gull populations. All three species of tern recorded on the island are listed on Annex I of the E.U. Birds Directive. There are no suitable habitats within the development site.

Significance: The Method Statement associated with this development include best practices to avoid negative impacts from noise and vibration as well as prevent dust and air pollution during consturction. The small scale of construction and disturbance to low conservation habitats present on the development site will not significantly affect the bird populations associated with this SPA. Similarly, direct impacts due to anthropogenic activities during operation of development (noise and light) are deemed insignificant due to distance (> 900 m).

In conclusion, following an assessment of the proposed development with regard to its location and proximity to European sites, the proposed project will not impact on the designated European sites, due to:

- Location, size and Method Statement of the development.
- the proposed project does not comprise, and will not damage any habitats or species, that are Qualifying Interests for Mulroy Bay SAC and Greers Isle SPA.

It is recommended to attach the following conditions:

- All site preparation and re-surfacing work should occur within the boundary of the proposed development site **only**, which should be clearly marked.
- No dumping should occur within the remainder of the development site, and the site should be fenced.

Therefore, the integrity of both identified European sites Mulroy Bay SAC and Greers Isle SPA will remain the same after the proposed development.

4.6 CUMULATIVE OR IN-COMBINATION IMPACTS

The habitats and species for which the identified European site in this report have been designated would be vulnerable to cumulative impacts from various developments in the vicinity. Aquaculture, scallop dredging, and seaweed harvesting occur within Mulroy Bay. These pressures have been identified as likely potential threats to the ecological value of the area (Natura form). Other current and future developments located within the surroundings of Mulroy Bay SAC (Donegal County Council Planning Application map search) have been considered in the assessment of potential 'in-combination' effects. The other principal activities/land use within or nearby to the proposed development are private dwellings, extensive farming and aquaculture within Mulroy Bay itself. Very few developments have taken place in this area, with only a recent one (School car park upgrade 21/50544) assessed for Appropriate Assessment and screened out (see below). No other major developments are foreseen in the vicinity at the time of writing this report. Given this project has been assessed for Appropriate Assessment, it is concluded that **no cumulative** or in-combination impacts associated with this development on Mulroy Bay SAC are foreseen.

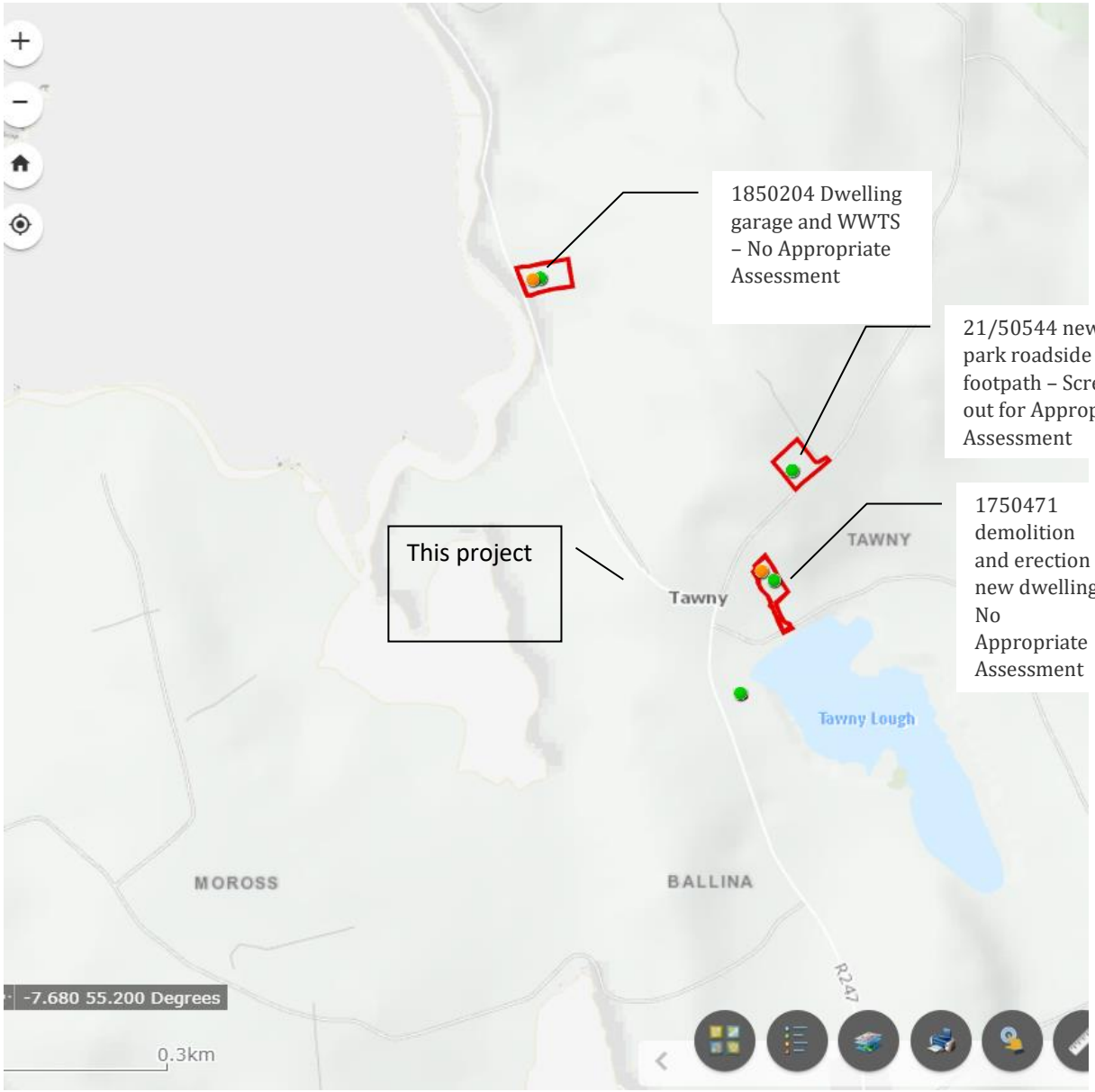

1850204 Dwelling garage and WWTS – No Appropriate Assessment
21/50544 new car park roadside footpath – Screened out for Appropriate Assessment
1750471 demolition and erection new dwelling; No Appropriate Assessment
This project
TAWNY
Tawny
Tawny Lough
MOROSS
BALLINA
R247
-7.680 55.200 Degrees
0.3km

Table 3: Description and significance of potential impacts on Qualifying Interests of the identified European sites.

Qualifying interests		Sensitivity	Potential threat from proposed development
Mulroy Bay SAC (002159)			
[1160] Large Shallow Inlets and Bays	2012 - Version 1 To maintain the favourable conservation condition of Large Shallow Inlets and Bay in this SAC as defined by six attributes and targets.	Marine ecosystem sensitive to: Effluent discharge, aquaculture, escallop dredging and seaweed harvesting.	This habitat comprises the whole of Mulroy Bay (see Maps 3 & 5 in Appendix 3b). The impact assessment of the proposed development has identified potential indirect pathways for water pollution associated with the development. However, the Method Statement will be sufficient to reduce any negative impacts that may arise from this project and, therefore, the integrity of this Qualifying Interest will remain the same after the project.
[1170] Reefs	2012 - Version 1 To maintain the favourable conservation condition of Reefs in this SAC as defined by three attributes and targets.	Marine ecosystem sensitive to: Effluent discharge, aquaculture, escallop dredging and seaweed harvesting.	This habitat is located c. 1 km north of the proposed development at its closest (see Map 4 in Appendix 3b). The impact assessment of the proposed development has identified potential indirect pathways for water pollution associated with the development. However, the Method Statement will be sufficient to reduce any negative impacts that may arise from this project and, therefore, the integrity of this Qualifying Interest will remain the same after the project.
[1355] Otter	2012 - Version 1 To maintain the favourable conservation condition of otter habitat, as defined by seven attributes and targets.	Anthropogenic disturbances and water quality and habitat degradation.	Otter commuting zone (238 m HWM buffer) includes all of Mulroy Bay shores (see Map 6 in Appendix 3b). However, any impact is likely to be very small given that no material will be removed from the SAC nor will the SAC be physically disturbed, while the activity level associated with the proposed development will remain low, and will be located away from the coastal habitats. The impact assessment of the proposed development has identified potential indirect pathways for water pollution associated with the development. However, the Method Statement will be sufficient to reduce any negative impacts that may arise from this project and, therefore, the integrity of this Qualifying Interest will remain the same after the project.

Greers Isle SPA (004082)			
A179 Black-headed Gull Chroicocephalus ridibundus A182 Common Gull Larus canus A191 Sandwich Tern Sterna sandvicensis	2022- First order site specific conservation objectives version 1.0	Anthropogenic disturbances and water quality and habitat degradation.	Due to the limited scale of the works and specifications (measures), its location vis-à-vis SPA bird loci on Greers Isle (>1.4 km) and associated habitats, it is anticipated that the proposed development (construction and operation) would not result in any direct or indirect disturbance to the bird species, to either the Qualifying Interest species for which this SPA has been designated.

Table 4: Finding of No Significant Effects report matrix.

Information about the project	
Brief description of the project	Housing development and entrance lane and tertiary WWTS, all following EPA guidelines.
Brief description of European sites within the likely scope of influence of the project	The European Sites investigated in this Screening Report are Mulroy Bay SAC (002159) and Greers Isle SPA (004082)
Is the project or plan directly connected with the management of any European site?	No.
Are there other projects or plans that together with the project being assessed could affect the site	No. Few projects are present or proposed in the vicinity, and no recent Appropriate Assessments have been carried out. There are no other known projects to be developed in the same location that would contribute (with the proposed development) to the deterioration of any European sites.
Assessment of significance of effects	The scope of influence of the project is regarded to be insignificant due to the following factors: - Small, temporary construction footprint. - No significant impacts via indirect hydrological pathways. Therefore, it is anticipated that the proposed project would not result in any direct or indirect disturbance to species or habitats associated with these European sites.
Describe the individual elements of the project likely to give rise to impacts on the European site.	No negative impacts are foreseen.
Describe any likely changes to the site arising as a result of: **-reduction of habitat area within European sites:** **-disturbance to key species:** **-habitat fragmentation:** **-reduction in species density:** **-changes in key indicators of conservation value:**	 - None - No disturbance to any key species associated with the two European sites will occur because of the proposed project. -The project is within a small grassland field surrounded by roads and dwelling. There will be no fragmentation of habitats, either coastal or terrestrial or designated, that could impact upon the Qualifying Interests of the identified European sites. -No mechanism to cause reduction in species density has been identified. None
Describe any likely impacts on the European site as a whole in terms of interference with the key relationships that define the structure or function of the site.	No likely significant impacts.

5 CONCLUSIONS

In order to determine the potential impacts, if any, of the development on any European Sites, an Appropriate Assessment Screening Exercise was undertaken and resulted in a statement of Appropriate Assessment (i.e. this Screening Report). The conclusion of the Screening process is that:

1. The project is **not** directly connected to the management of any European sites.

2. The project, alone or in combination with other plans and projects is **not likely** to have significant effects on any habitats or species for which a European site was designated.
3. Negative impacts from the project are not foreseen on species or habitats for which European sites have been designated.
4. Therefore, it can be concluded beyond all reasonable scientific doubt that the proposed development, on its own, or in combination with other projects, will not have a significant effect on European sites and thus a **Stage 2 Appropriate Assessment is not required for this project.**

6 REFERENCES

EU Natura 2000 – Standard Data Form:
https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0002159

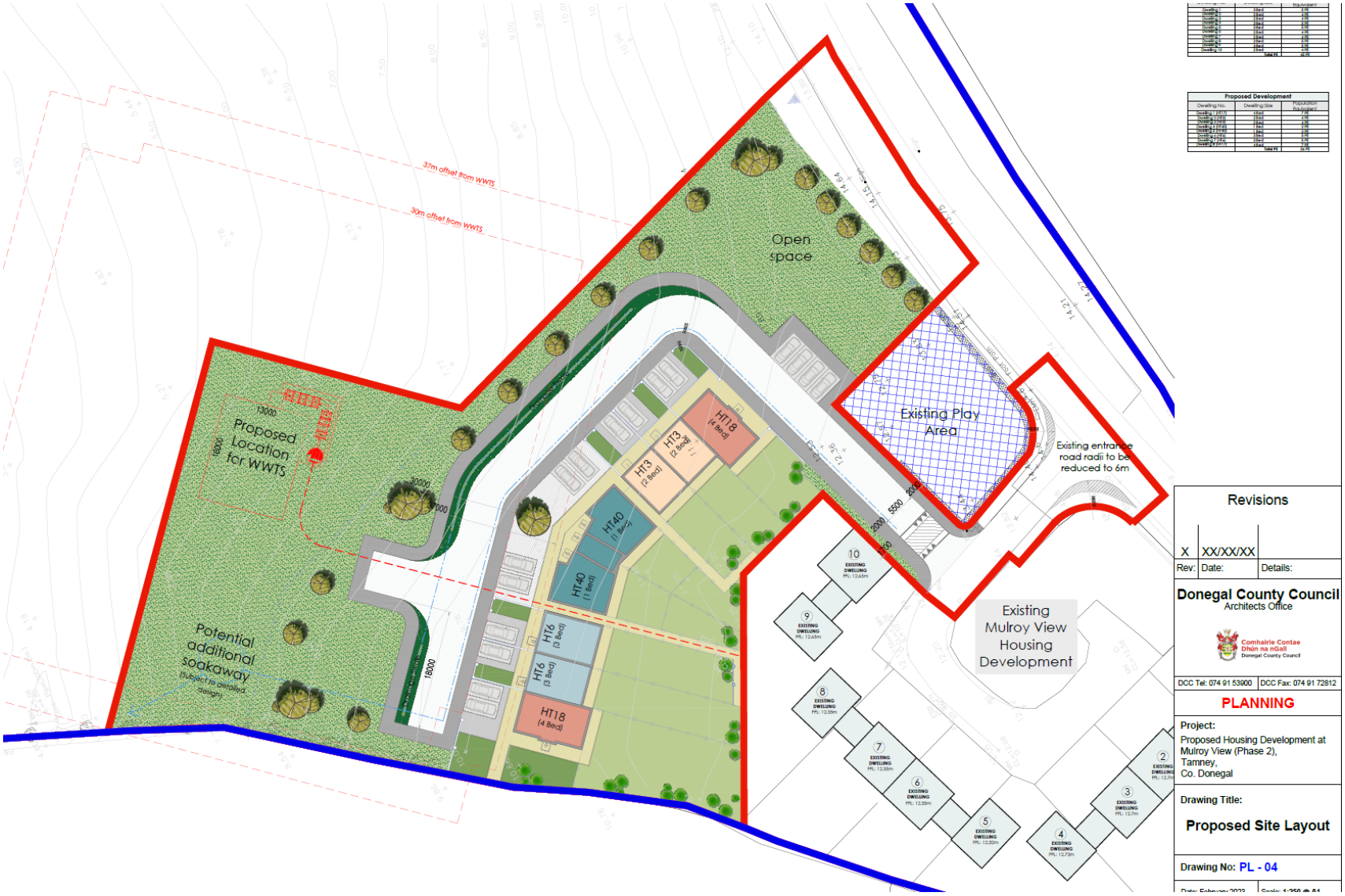
NPWS (2012) Conservation Objectives: Mulroy Bay SAC 002159. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2012) Mulroy Bay SAC (2159), Conservation Objectives supporting document – Marine Habitats. Version 1.

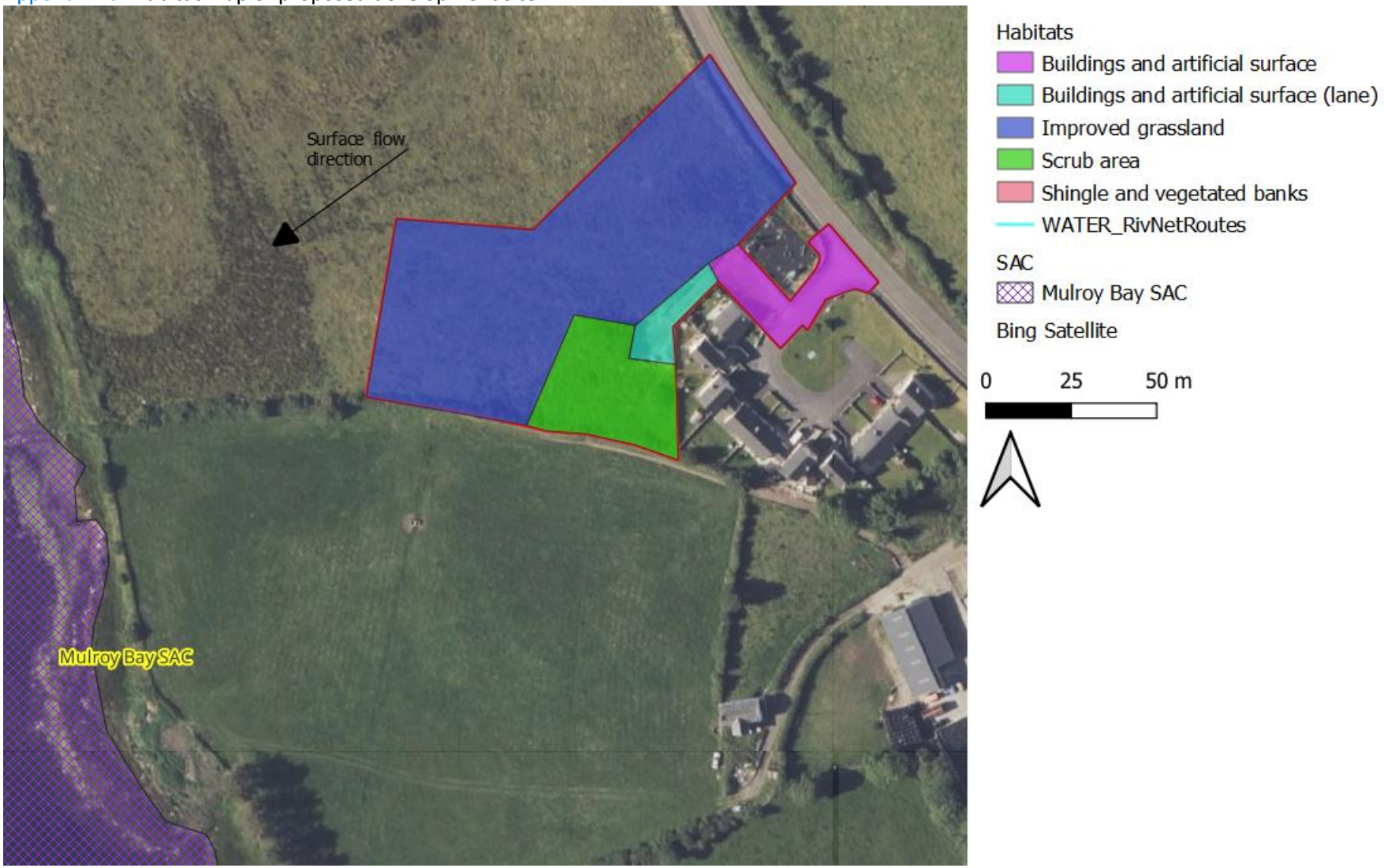
Appendix 1a: Site location (red cross/boundary) at Tamney, Co. Donegal, and the aerial view showing surrounding land use.

Appendix 1b: Overall site location and layout.

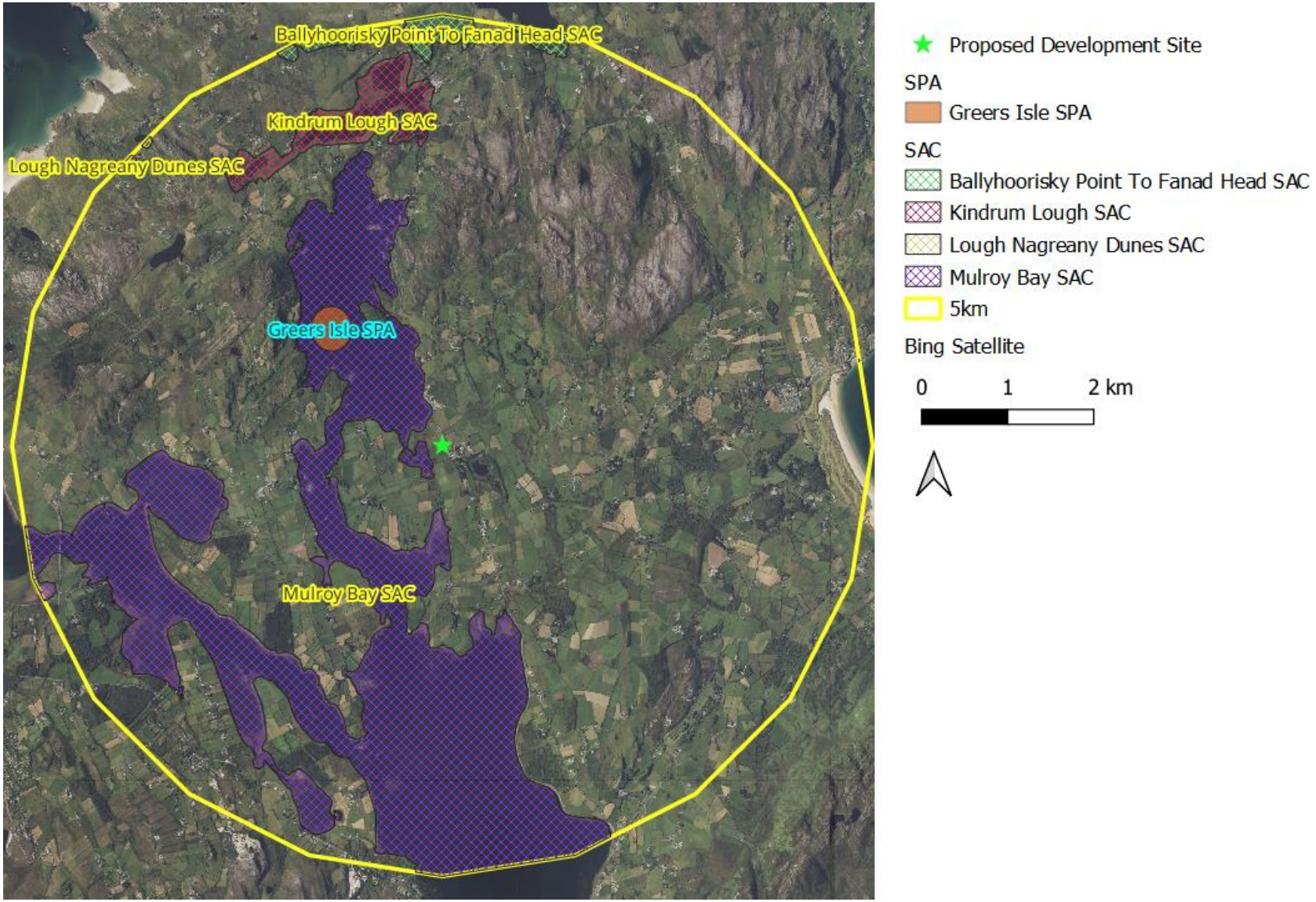
Appendix 1c: Close up of site lay out including WWTS.



Appendix 2a: Habitat map of proposed development site.



Appendix 2c: Location of proposed development (site centre) vis-a-vis European sites located within 5 km radius.



Appendix 3a: Site Synopsis and Conservation Objectives of Mulroy Bay SAC (NPWS 2014).

An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

SITE SYNOPSIS

Site Name: Mulroy Bay SAC Site

Code: 002159

Mulroy Bay is an extremely sheltered, narrow inlet situated on the north coast of Co. Donegal. The bay is a glacial fiord and the most convoluted of the marine inlets in north-west Ireland. It has three significant narrows where the current is very strong. The Moross peninsula, which separates the North Water from the Broad Water, is a large glacial drumlin. Bedrock is principally metamorphic quartzite, limestone, schist and gneiss, with intrusive granite at the mouth.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1160] Large Shallow Inlets and Bays
[1170] Reefs

[1355] Otter (*Lutra lutra*)

Mulroy Bay displays excellent examples of two habitats listed on Annex I of the E.U. Habitats Directive – reefs and large shallow inlets and bays. The site contains a good range of different sediment types which includes coarse sand, the free-living red calcareous algae called maerl (also known as 'coral') and a variety of exposed and sheltered reefs with strong to weak currents. Extremely sheltered reefs subject to weak currents, as found in Mulroy Bay, are rare in Ireland. The variety of different habitats within the site is reflected in the high number of communities found in the bay and the high species diversity. Rare species found in Mulroy Bay include Couches Goby (*Gobius couchi*), the file shell *Limaria hians*, the anthozoan *Paraerythropodium coralloides* and the hydorid *Halecium muricatum*. Species with a very restricted distribution or which are close to the limits of their distribution are the red alga *Dudresnay verticillata* and the bubble shell *Haminoea navicula*. A large population of the scallop *Pectin maximus* occur in Mulroy Bay and is now commercially managed.

Much of the shores of Mulroy Bay are a mixture of boulder, cobbles and gravel which support a community characterised largely by the alga *Ascophyllum nodosum* typical of these conditions. Tide-swept coarse gravel and boulders occurs at headlands within the bay and in channels leading into small loughs off the bay e.g. Back Lough and Wee Sea. These areas support fucoid (brown seaweeds) dominated communities with a high species diversity (up to 88 species at one site) of largely faunal species representative for the habitat. Rare species are also present, namely the chiton *Leptochiton scabridus*, the file shell *Lamaria hians* and the sea slug *Aeolidiella*

alderi which is close to the northern limits of its distribution. It is unusual to find species such as the sponge *Stelletta grubii* and the bivalves *Venus verrucosa* and *Venerupis senegalensis* on the shore. The small star fish *Asterina phyllactica* occurs at these sites and appears to be close to the limits of its northern distribution.

The shallow water reefs exposed to wave action are rugged bedrock with gullies characterised by the kelp *Laminaria hyperborea* and *Halidrys siliquosa,* with foliose red algae, including *Drachiella spectabilis* (close to northern limits of its distribution) on the upwards facing slopes and by the jewel anemones on the steeply sloping and vertical faces. Both communities are representative for these habitats. The northern hydroid *Abietinaria filicula* occurs here, the southern limit of its distribution being the Kerry Head Shoal, Co. Clare. In the tide-swept areas cobbles and boulders support the brown seaweed *Halidrys siliquosa,* with mixed kelp forests of *Laminaria hyperborea* with the sponge *Esperiopsis fucorum*. This community has a variety of sponges, hydroids and red algae that varies from site to site showing the range of representative examples of this community. In the more sheltered areas with less current the kelp forests of *Laminaria saccharina* occur and have a greater variety of sponges and solitary sea squirts with some variation from site to site. This community is considered to be uncommon. The red alga *Dudresnaya verticillata* occurs in a number of kelp communities and close to the northern limits of its distribution. The very rare Couches Goby occurs in kelp forests in both North Water and Broad Water; the only other known locations for this fish are Lough Hyne, Co. Cork and Cornwall, in the United Kingdom.

On exposed very steep bedrock at depths of 8 - 24 m animal dominated communities occur. In areas subject to strong tidal streams (e.g. the first narrows) a community dominated by the bryozoan *Flustra foliacea*, hydroids and sponges is present. The scarce northern hydroid *Halecium muricatum* is found here. The sheltered bedrock cliffs in North Water and Broad Water provide a rare habitat with the uncommon sponges *Dercitus bucklandi* and *Stelletta grubii* in abundance at both sites. An undescribed *Polymastia* species of sponge was typical of these communities. The cliff in Broad Water supported a community of *Ascidella aspersa* and, under the overhangs, a population of the anthozoan *Parerythropodium coralloides* which in Ireland has only been recorded in four locations and is also rare in Britain. This community is more characteristic of more open waters.

The sediment communities within the bay vary from coarse sand to very sheltered soft mud with a range of current strengths. In the outer part of the bay coarse sand with the burrowing sea urchin *Echinocardium cordatum* is found. With increasing shelter the sand is characterised by a number of bivalves, most notable *Spisula elliptica* and the burrowing sea urchin *Echinocardium cordatum*. Clean mobile sand with the red algae *Polyides rotundatus* occurs where the current increases approaching the first narrows. The burrowing sea cucumber *Neopentadactyla mixta* is found in beds of live maerl and maerl gravel. Within the shelter of the Moross channel there are extensive beds of the file shell *Limaria hians* on gravels and they have constructed nests. Sitting on top of the *Limaria* nests is a bed of the brittlestar *Ophiothrix fragilis* and at the southern end of the channel the brittlestar *Ophiocomina nigra* is also common. This is the only known area in Ireland for beds of *Limaria hians*.

Within the shelter of Broad Water the seabed is generally mud, but boulders and gravel may be present. The community may be characterised by the solitary sea squirt *Ascidella aspersa*, the sea cucumbers *Thyone fucus* and *Leptopentacta elongata*, the southern anemone *Anthopleura balli* and the turret shell *Turitella communis*.

Anthopleura balli was common in Mulroy Bay in a range of habitats and is close to the northern limits of its distribution here. Where boulders are present in shallow water a variety of red algae may be found. Eelgrass (*Zostera marina*) occurs in the Wee Sea, and in inner Mulroy Bay there is a dense stand with the normally burrowing sea cucumber *Leptosynapta inhaerns* abundant on the blades of the grass. In the same area, but slightly deeper in muddy sediment, a rare community characterised by the very small sea cucumber *Ocnus plancki* is present.

The otter, a species listed on Annex II of the E.U. Habitats Directive, frequents the site.

The bay also supports significant numbers of wintering birds, with Mute Swan present in nationally important numbers and several species recorded in regionally important numbers (Brent Goose, Shelduck, Wigeon, Teal, Red-breasted Merganser, Oystercatcher and Dunlin).

Aquaculture, scallop dredging and seaweed harvesting occur within the site and may pose a threat to the ecological value of the area.

Mulroy Bay displays excellent examples of two habitats listed on Annex I of the E.U. Habitats Directive – reefs and large shallow inlets and bays. The ornithological interest and the presence of a population of the Annex II species otter adds further to the importance of the site.

National Parks and Wildlife Service

Conservation Objectives Series

Mulroy Bay SAC 002159

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Introduction

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

its natural range, and area it covers within that range, are stable or increasing, and the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when: population dynamics data on the species concerned indicate that it is maintaining itself on a long- term basis as a viable component of its natural habitats, and the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Notes/Guidelines:

The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.

An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.

Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.

Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.

When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

**** indicates a priority habitat under the Habitats Directive***

002159 Mulroy Bay SAC

1160	Large shallow inlets and bays
1170	Reefs
1355	Otter *Lutra lutra*

Please note that this SAC overlaps with Greers Isle SPA (004082). It also adjoins Lough Nagreany Dunes SAC (000164), Tranarossan and Melmore Lough SAC (000194), Sheephaven SAC (001190), Ballyhooriskey Point to Fanad Head SAC (001975) and Horn Head to Fanad Head SPA (004194). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping and adjacent sites as appropriate.

Conservation objectives for: Mulroy Bay SAC [002159]

1160 Large shallow inlets and bays

To maintain the favourable conservation condition of Large shallow inlets and bays in Mulroy Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated as 3170ha using OSi data and the Transitional Water Body Area as defined under the Water Framework Directive
Community extent	Hectares	Maintain the extent of the *Zostera*-dominated community complex; maërl-dominated community; and *Limaria hians* associated community, subject to natural processes. See map 5	The likely extent of the *Zostera*-dominated community complex, the maërl-dominated community and the *Limaria hians* associated community was derived from a dive survey undertaken in 2008 (MERC, 2008). See marine supporting document for further details
Community structure: *Zostera* density	Shoots per m²	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes. See map 5	Established from diver observation and underwater viewer (MERC, 2008a). See marine supporting document for further details
Community structure	Biological composition	Conserve the high quality of the maërl-dominated community, subject to natural processes. See map 5	Established from diver observation and underwater viewer (MERC, 2008a). See marine supporting document for further details
Community structure: *Limaria hians* density	Individuals per m²	Conserve the high quality of the *Limaria hians* associated community, subject to natural processes. See map 5	Established from diver observation and underwater viewer (MERC, 2008a). See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand dominated by *Nephtys cirrosa* and *Bathyporeia* sp. community complex; Gravel to mixed sediment with nematodes community complex; Gravelly sand with bivalves, polychaetes and nemerteans community complex; *Laminaria*-dominated community complex and Reef community complex. See map 5	The likely area of communities was derived from a combination of data obtained during the 1993 BioMar survey (Picton and Costello, 1997); subtidal data obtained in 2008 (MERC, 2008a, b) and 2010 (Aquafact, 2011a, b); and an intertidal walkover August 2012. See marine supporting document for further details

Conservation objectives for: Mulroy Bay SAC [002159]

1170 Reefs

To maintain the favourable conservation condition of Reefs in Mulroy Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Occurrence	The distribution of reefs is stable or increasing, subject to natural processes. See map 4	Distribution was derived from the 1993 BioMar survey (Picton and Costello, 1997) and subtidal reef survey in 2010 (Aquafact, 2011b)
Habitat area	Hectares	The permanent area is stable or increasing, subject to natural processes. See map 4	Habitat area was estimated as 43ha from the 1993 BioMar survey (Picton and Costello, 1997) and subtidal reef survey in 2010 (Aquafact, 2011b)
Community structure	Biological composition	Conserve the following community types in a natural condition: *Laminaria*-dominated community complex; and Reef community complex. See map 5	The likely area of reef communities was derived from the 1993 BioMar survey (Picton and Costello, 1997) and subtidal reef survey in 2010 (Aquafact, 2011b). See marine supporting document for further details

Conservation objectives for: Mulroy Bay SAC [002159]

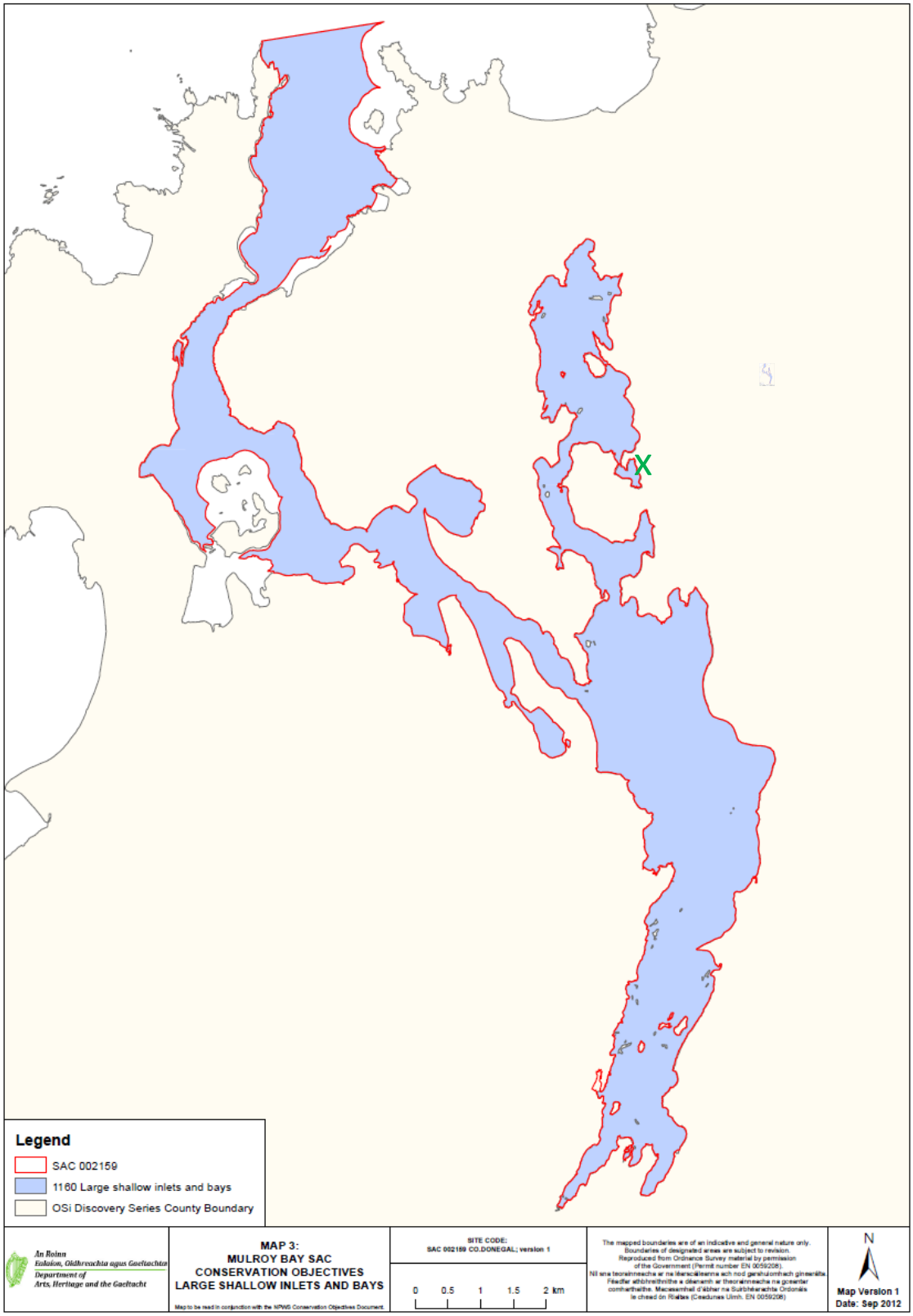
1355 Otter *Lutra lutra*

To restore the favourable conservation condition of Otter in Mulroy Bay SAC, which is defined by the following list of attributes and targets:

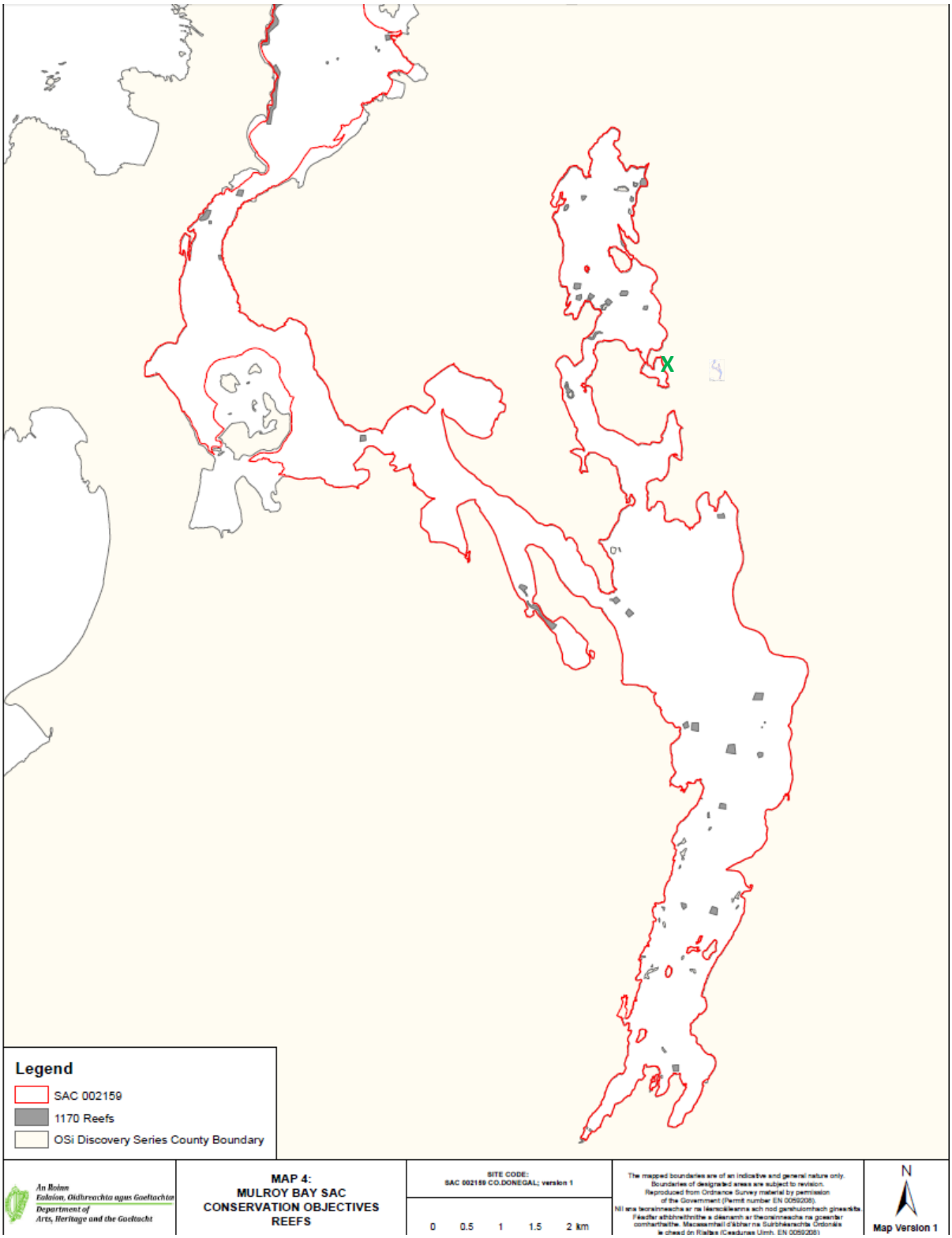
Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. FCS target, based on 1980/81 survey findings, is 88% in SACs. Current range in the north-west estimated at 65% (Bailey and Rochford, 2006)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 32.4ha above high water mark (HWM); 0.9ha along river banks	No field survey. Areas mapped to include 10m terrestrial buffer along shoreline (above HWM and along river banks) identified as critical for otters (NPWS, 2007)
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 800.2ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (HWM) (NPWS, 2007; Kruuk, 2006)
Extent of freshwater (river) habitat	Kilometers	No significant decline. Length mapped and calculated as 0.5km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk, 2006; Kruuk and Moorhouse, 1991)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006) and wrasse and rockling in coastal waters (Kingston et al., 1999)
Barriers to connectivity	Number	No significant increase. For guidance, see map 6	Otters will regularly commute across stretches of open water up to 500m. e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed

Appendix 3b: Distribution of Conservation Objectives of Mulroy Bay vis-à-vis proposed project.

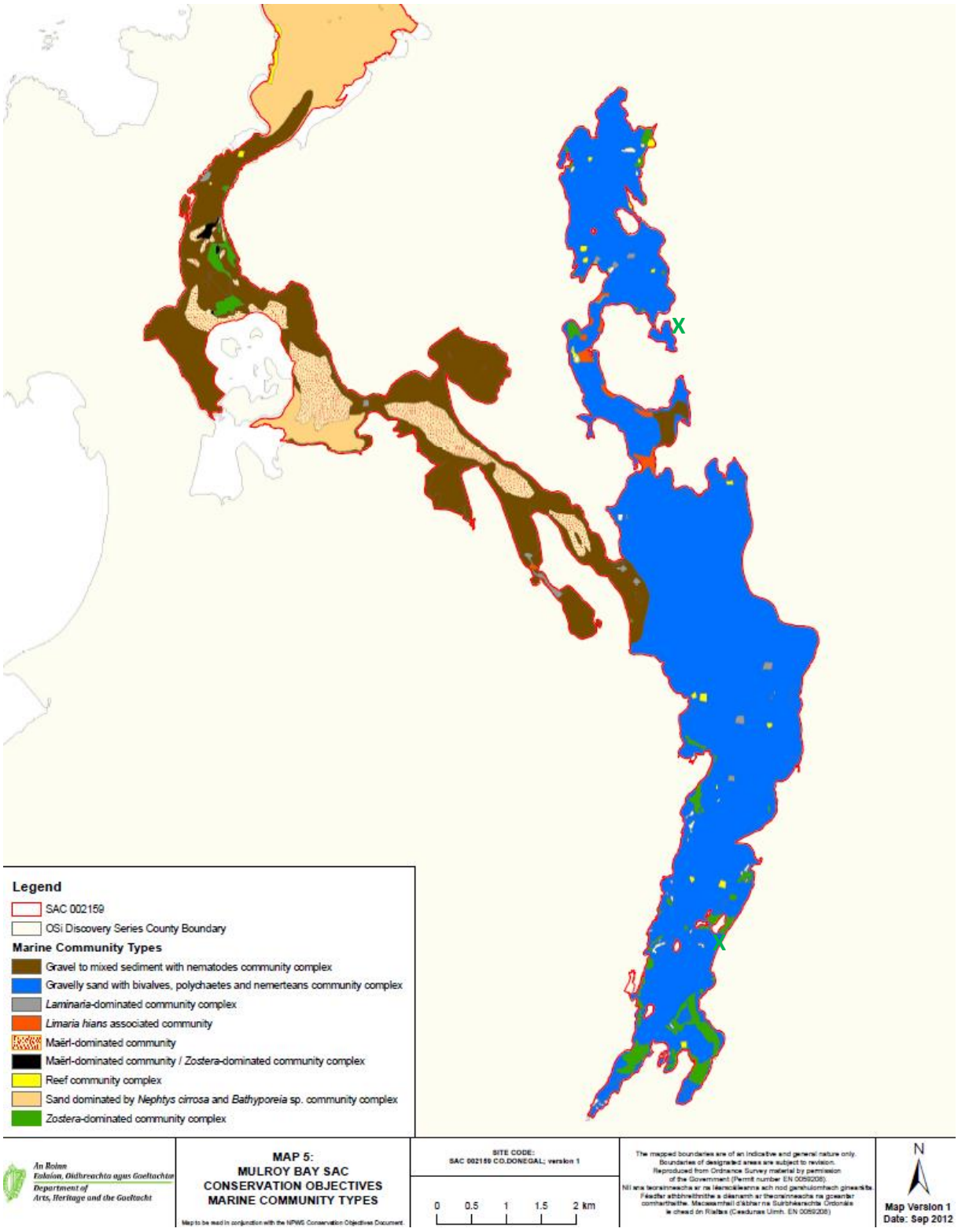
Location of proposed project (green cross) vis-à-vis Mulroy Bay SAC Conservation Objectives: Inlets and Bays.



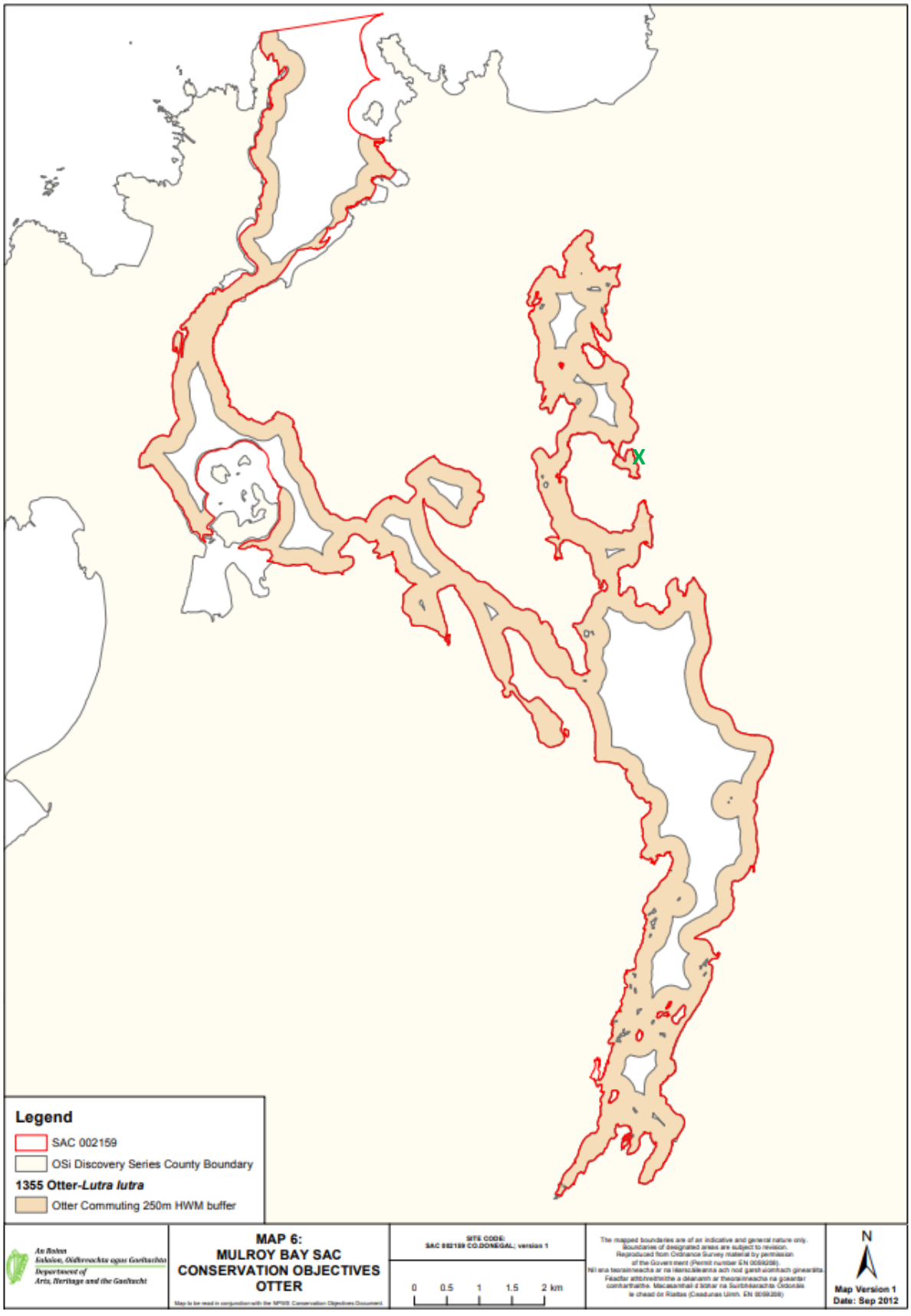
Location of proposed project (green cross) vis-à-vis Mulroy Bay SAC Conservation Objectives: Reefs.



Location of proposed project (green cross) vis-à-vis Mulroy Bay SAC Conservation Objectives: Marine Community Types.



Location of proposed project (green cross) vis-à-vis Mulroy Bay SAC Conservation Objectives: Otter.



Appendix 4: Photos taken in April 2023, Tamney, Co. Donegal.

View of proposed development site showing surface ponding and Mulroy Bay in the background (facing north).

Fenced area south of existing housing with encroaching scrub (facing west).

Existing treatment cabinet and percolation area in the foreground (facing east).

Rear of existing housing where new development is proposed (facing east).

End of report