Appendix 5-4

Habitat & Botanical Survey

An Rinn Rua Hotel & Leisure Park

Habitat & Botanical Survey

Prepared By:

Delichon Ecology

Prepared For:

Malachy Walsh & Partners

An Rinn Rua Hotel & Leisure Park
Habitat & Botanical Survey

Revision	Document Number	Description	Prepared by	Checked by	Date
0	39_2023	Habitat Survey	ED	ED	21/07/2023
1	39_2023	Habitat Survey	ED	ED	16/08/2023
2	39_2023	Habitat Survey	ED	ED	16/08/2023

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1. INTRODUCTION

Delichon Ecology were commissioned by Malachy Walsh and Partners to undertake a habitat survey for the proposed An Rinn Rua Hotel & Leisure Park, at Reenroe, Waterville, Co. Kerry. The habitat survey was undertaken on Monday July 03rd 2023 and Wednesday 12th July 2023 and was further informed by multi-disciplinary walkover survey held on April 20th 2023. The location of the study area is shown in **Figure 1.1**.

1.1 Study Area

The study site is located within an area dominated by wet grassland on degraded peatland soils near the eastern and northern boundaries of the site, with areas of free draining semi-improved grassland in mosaic with wet grassland located near the western and southern sections of the site. The study area includes the ruined Reenroe Hotel near the south-western boundary of the site.

The lands within the site and its environs are utilised for sheep and dry cattle grazing. Those lands near the south and western boundary of the site are freer draining than those areas located near the eastern boundary of the site. Fields boundaries support overgrown and unmanaged earth banks, most of which are adjoined by drainage channels. The eastern boundary of the study area is drained by the Inny (Kerry)_030 river. The most notable and sensitive habitat assemblages within the study area are located near the south-eastern boundary of the site, comprising reed and large sedge swamp with a strip of shingle and gravel banks and sand shores occurring along this area's intersection with the Inny Strand. The southern and south-western fringe of the study area boundary supports a strip of botanically diverse coastal calcareous grassland.

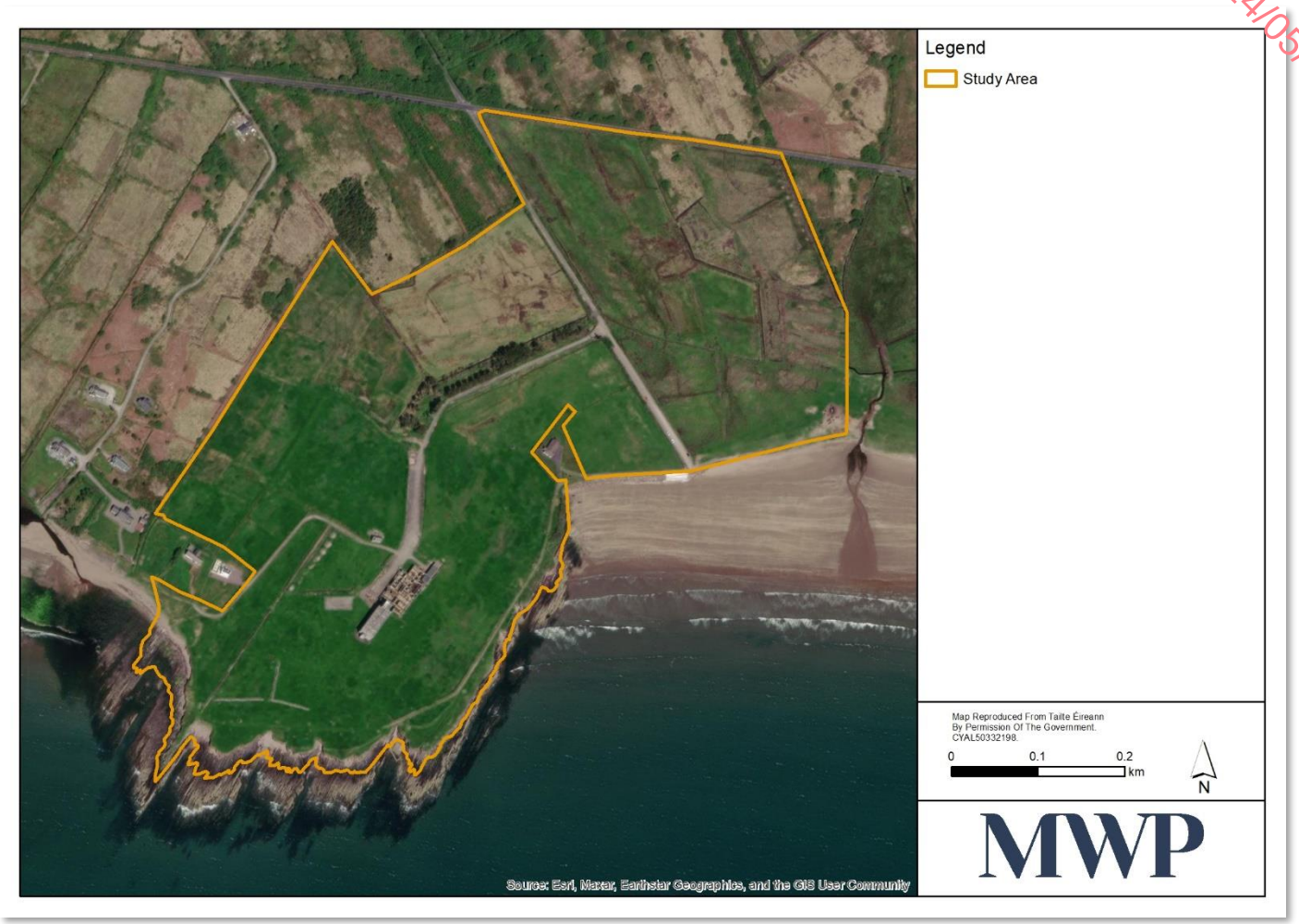

Figure 1-1 – Location of the proposed development area

1.2 Statement of Authority

Eamonn Delaney BSc, MSc, MCIEEM, CECOL prepared this report. Eamonn has sixteen years consultancy experience and has prepared Screening for Appropriate Assessment and Natura Impact Statements for various projects, including residential, amenity, renewable energy and transport developments in addition to strategic policy and planning proposals. Eamonn conducted a field visit to the Reenroe site in early July 2023. Eamonn's initial years in ecological consultancy involved botanical and habitat surveys for the purposes of EIA, EcIA and large-scale habitat surveys for local authorities. This included plant species identification and habitat classification in a wide range of rural, urban and peri-urban environments. Eamonn is a member of the Botanical Society of Britain and Ireland (BSBI) and regularly attends local and regional BSBI field meetings in addition to carrying out recording for the proposed BSBI 2020 Atlas, in north Co. Galway and south Co. Mayo.

Eamonn has extensive experience in the Ecological Clerk of Works (ECoW) role for Flood Relief Schemes, roads and pipeline developments which requires weekly site visits, monitoring of mitigation measures, reviewing contactors method statements in addition to ongoing liaison with site operational staff and the design team. Eamonn has also been involved in the preparation and review of numerous Screening for Appropriate Assessment reports, Natura Impact Statements, Ecological Impact Assessments and Invasive Species Management Plans for a range of project types including roads, water infrastructure, solar farms, wind farms and peatland rehabilitation works. Through his involvement in all of these projects, Eamonn has honed his skills in field-based assessments and the subsequent reporting and interpretation of information yielded from desk and field based resources.

Eamonn routinely drafts, reviews and completes AA's for numerous projects. As the project design is developed, Eamonn seeks to influence the project design and refine the AA process to avoid and reduce potential impacts to the habitats and species for which the potentially impacted European site is designated. The outcome ensures that the finalised AA has been developed through an iterative process where the findings of the AA inform and are being informed by the project design throughout.

2 METHODOLOGY

2.1 Assessment Guidance Methodology

The habitat survey and assessment had regard to the following guidelines:

- EPA (2002) *Guidelines on the information to be contained in Environmental Impact Statements*, Environmental Protection Agency;
- EPA (2003), *Advice Notes on current practice in the preparation of Environmental Impact Statements*, Environmental Protection Agency;
- Fossitt, J. (2000) A Guide to Habitats in Ireland. Heritage Council, Kilkenny.
- NRA (2009) *Guidelines for the Assessment of Ecological Impacts of National Road Schemes Rev. 2*, National Roads Authority;
- NRA (2008) *Ecological Surveying Techniques for Protected Flora and Fauna During the Planning of National Road Schemes*, National Roads Authority;
- (NRA, 2008c) *Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads*, National Roads Authority;
- Perrin, P.M., Barron, S.J., Roche, J.R. & O'Hanrahan, B. (2014). Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. Irish Wildlife Manuals, No. 79. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland;
- CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, Version 1.2 Updated April 2022*. Chartered Institute of Ecology and Environmental Management, Winchester; and
- EPA (2022) *Guidelines on the information to be contained in Environmental Impact Assessment Reports*, Environmental Protection Agency.
- Smith, G. F., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011) *Best Practice Guidance for Habitat Survey and Mapping.* Heritage Council, Kilkenny.

The assessment was carried out in two stages, firstly through a desktop study and secondly by field survey work in order to identify, describe and map areas of known or potential ecological value.

2.2 Desk Study

Sources of information that were used to inform the assessment were:

- Environmental Protection Agency (EPA) EnVision Mapping https://gis.epa.ie/EPAMaps/;
- EPA Catchments Website – for the 2nd cycle River Basin Management Planning www.catchments.ie;
- Geological Survey of Ireland online mapping www.gsi.ie;
- Information on the conservation status of birds in Ireland (Gilbert et al, 2021);
- NPWS online maps and data, site synopsis and conservation objectives www.npws.ie
- National Biodiversity Data Centre (NBDC) online maps and data www.biodiversityireland.ie;
- OSI Map Viewer www.osi.ie;
- Botanical Society of Britain and Ireland online maps and data https://bsbi.org/maps;

- Any other relevant ecological reports and literature (published scientific literature and 'grey' literature).

2.3 Field Survey

The principal aim of the field survey was to identify and map habitats and their component plant species within the study area. A Phase I Habitat Survey was undertaken as part of the site walkover survey. The methodology used during this survey was based on the Heritage Council's *Best Practice Guidance for Habitat Survey and Mapping* (2011)[1]. The classification of habitats recorded during the field survey is based on the *A Guide to Habitats in Ireland* (Fossitt, 2000)[2]. The *Guide to Habitats in Ireland* classifies habitats according to a hierarchical framework with Level 1 habitats representing broad habitat groups, Level 2 representing habitat subgroups and Level 3 representing individual habitat types. The Phase 1 Field Survey focused on identifying habitats to Level 3 of the *Guide to Habitats in Ireland*. Any other records of interest (e.g. invasive plant species) were also marked on field maps and locations were recorded using GPS handheld units.

The annotation of vegetation occurring within sites was undertaken using the DAFOR scale. This scale refers to plant species in terms of dominance, abundance, frequency, occasional and rare (DAFOR). All species were readily identifiable during the survey. Plant nomenclature for vascular plants follows 'New Flora of the British Isles' (Stace, 2019)[3], while mosses and liverworts nomenclature follows 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010)[4].

2.4 Evaluation

All ecological receptors within the project's zone of influence were assessed according to criteria for site evaluation outlined in the NRA *Guidelines for Ecological Impact Assessment of National Road Projects* (NRA, 2009). The geographic frame of reference used to determine the ecological value of receptors as they occurred within the project zone of influence are presented in **Table 2.1** below.

Table 2-1 - Ecological Site Assessment Scheme

Ratings for Ecological Sites
International Importance:
'European Site' including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation.
Proposed Special Protection Area (pSPA).
Site that fulfils the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended).

[1] Smith, G. F., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011) *Best Practice Guidance for Habitat Survey and Mapping.* Heritage Council, Kilkenny.
[2] Fossitt, J. (2000) *A Guide to Habitats in Ireland*. Kilkenny: Heritage Council.
[3] Stace, C. (2019) New Flora of the British Isles. Fourth Edition. C&M Floristics
[4] Atherton, I. Bosanquet S. & Lawley, M (2010) Mosses and Liverworts of Britain and Ireland a field guide. British Bryological Society

Ratings for Ecological Sites
Features essential to maintaining the coherence of the Natura 2000 Network. Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive. Resident or regularly occurring populations (assessed to be important at the national level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). Biosphere Reserve (UNESCO Man & the Biosphere Programme). Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979). Biogenetic Reserve under the Council of Europe. European Diploma Site under the Council of Europe. Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).
National Importance: Site designated or proposed as a Natural Heritage Area (NHA). Statutory Nature Reserve. Refuge for Fauna and Flora protected under the Wildlife Acts. National Park. Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park. Resident or regularly occurring populations (assessed to be important at the national level) of the following: Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Site containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.

Ratings for Ecological Sites
County Importance: Area of Special Amenity. Area subject to a Tree Preservation Order. Area of High Amenity, or equivalent, designated under the County Development Plan. Resident or regularly occurring populations (assessed to be important at the County level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance. County important populations of species or viable areas of semi-natural habitats or natural heritage features identified in the National or Local BAP, if this has been prepared. Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county. Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.
Local Importance (higher value): Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared; Resident or regularly occurring populations (assessed to be important at the Local level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality;

Ratings for Ecological Sites
Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.
Local Importance (lower value): Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; Sites or features containing non-native species that are of some importance in maintaining habitat links.

In summary, the habitats found are evaluated based on their naturalness, value and vulnerability, as well as their inclusion within the European site network. Habitats that are considered to be good examples of Annex I and Annex I Priority habitats are classed as being of International or National Importance. Semi-natural habitats with high biodiversity in a county context and that are vulnerable, are considered to be of County Importance. Habitats that are semi-natural, or locally important for wildlife, are considered to be of Local Importance (higher value) and sites containing small areas of semi-natural habitat or maintain connectivity between habitats are considered to be of Local Importance (lower value).

3 RESULTS

3.1 Desk Based Survey

3.1.1 National Biodiversity Data Centre

Records of protected and invasive plant species from the 10km grid square (hectad) supporting the study area was obtained from the National Biodiversity Data Centre (NBDC) online database[5]. **Table 3.1** below presents the protected species and invasive species records held by the National Biodiversity Data Centre for 10km grid square (hectad) V46.

Table 3-1 - National Biodiversity Data Centre Biodiversity rare, protected and invasive Records for hectad V46

Common Name	Species Name	Record Date	Conservation Status	Suitability of the site to support this species
Chamomile	*Chamaemelum nobile*	31/12/2010	Threatened Species: Near threatened	Not identified during the site surveys. Suitable habitat occurs along the south-western boundary of the site, outside of the proposed development footprint.
Cornflower	*Centaurea cyanus*	31/12/1929	Threatened Species: Waiting list	Species of arable field margins. No suitable habitat within the study area.
Giant-rhubarb	*Gunnera tinctoria*	23/07/2020	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)	Species of coastal areas. Very young *Gunnera* plant recorded within the treeline / linear woodland habitat fringing the access road.
Japanese Knotweed	*Fallopia japonica*	18/02/2023	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)	Where present it is common on riparian margins, waste ground and roadside verges. Japanese knotweed was recorded within the treeline / linear woodland habitat fringing the access road during site walkover surveys completed in summer 2023. 4-5 individual very young shoots of Japanese

[5] https://maps.biodiversityireland.ie/Map

Common Name	Species Name	Record Date	Conservation Status	Suitability of the site to support this species
				knotweed, all found within close proximity to each other in this wooded area. The ground in this area looks to have been previously disturbed and/or material disposed of at this location
Marsh-mallow	*Althaea officinalis*	17/06/2011	Threatened Species: Near threatened	Species of brackish ditches and grassland. Not identified within the study area during the site walkover survey.
Curl-leaved Forklet-moss	*Dicranella crispa*	16/05/2006	Threatened Species: Endangered	Not identified within the proposed study area during the site walkover survey.
Rounded Pygmy-moss	*Acaulon muticum*	31/12/1951	Threatened Species: Regionally Extinct	A species of bare, base deficient, well drained soil in arable fields, gravel pits, by tracks and paths. Not identified within the study area during the site walkover survey.

Table 3.2 below presents the records of rare and protected plant species held by the National Parks and Wildlife Service (NPWS) for 10km grid square (hectad) (V46). The NPWS do not hold invasive plant species records for this hectad.

3.1.2 NPWS Rare and Protected Plant Species Records

Table 3-2 - National Parks and Wildlife Service rare and protected plant species for hectad V46

Common Name	Species Name	Record Date(s)	Hectad(s)	Location(s)	Conservation Status[6][7]
Curl-leaved Forklet-moss	*Dicranella crispa*	2006	V46	Rinneen	Endangered

[6] Conservation Status for vascular plants quoted in accordance with Wyse Jackson, M., FitzPatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M. & Wright, M. (2016) Ireland Red List No. 10: Vascular Plants. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

[7] Conservation Status for bryophytes quoted in accordance with Lockhart, N., Hodgetts, N. & Holyoak, D. (2012) Ireland Red List No.8: Bryophytes. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Common Name	Species Name	Record Date(s)	Hectad(s)	Location(s)	Conservation Status[67]
Pennyroyal	*Mentha pulegium*	1900	V46	Ballinskelligs	Vulnerable and Protected under the Flora Protection Order (2015)
Chamomile	*Chamaemelum nobile*	2006	V46	Reenearagh	Near Threatened

The findings of the desk based review for rare, protected and invasive plant species within the study area and environs identifies historic records for *Mentha pulegium*, a plant species protected under the Flora Protection Order 2015, at Ballinskelligs, located 3.5km south-west of the survey area. The site walkover survey did not identify this species within the study area or its immediate environs. The NBDC hold records for two plant species listed on Schedule 3 of the Birds and Natural Habitats Regulations 2011 (as amended); i.e. Japanese knotweed and giant rhubarb. Young giant rhubarb and. Japanese knotweed plants were recorded within the treeline / linear woodland habitat fringing the access road during site walkover surveys completed in summer 2023.

The other vascular and bryophyte species were not identified during the site walkover survey and some of these, including Chamomile and *Dicranella crispa*, are historic records associated with remote areas of hectad V46.

3.2 Field Based Results

3.2.1 Phase 1 Habitat Survey

The findings of the Phase 1 habitat survey are described below, while a habitat map showing the location and extent of habitat within the study area are presented in **Figure 3.1**.

Habitats within the study site boundary are located east and west of a local access road providing access to Inny Strand and its component extensive sand shore habitat. Lands located to the east of the access road primarily comprise wet grassland on degraded peatland soils, with localised areas of improved grassland, pockets of scrub and with adjoining drainage channels and earth banks. The south-eastern corner of this area supports a localised area of reed and large sedge swamp habitat influenced by intermittent tidal influxes or the backing up of high tidal water of the Inny (Kerry)_030 watercourse.

The lands located to the west of the access road are served by an access track which provides access to the ruined hotel near the site's south-western boundary. The access road is fringed to the north by a strip of conifer woodland for 250m. Rush dominated wet grassland habitats grazed by sheep comprise the northernmost section of the site in this area. These wet grassland habitats have formed on drained and degraded peatland soils. The southern section is of this area comprises comparably freer draining semi-improved grassland occurring in mosaic with wet grassland. The coastal fringes support semi-improved and localised areas of more diverse dry neutral and calcareous grassland over rocky sea cliffs along the fringes of Ballinskelligs Bay.

Topography to the east of the local access road slopes moderately to gently from north to south from R567 regional road to the shoreline areas of the Inny Strand. West of the local access road the site is more gently sloping, particularly near the northern boundary. Topography near the southernmost boundary slopes gently to moderately, near the coastline area and Ballinskelligs Bay.

Descriptions of habitats within the study survey area are provided below.

Shingle and gravel banks (CB1)

This habitat is located along the south-eastern most fringes of the study area and forms the intersection between the wet / pastoral fields and the open area of sand shores associated with Inny Strand. The vegetation within this habitat includes spreading or creeping species providing a thin cover over exposed gravel or sand. Plant species composition includes creeping bent (*Agrostis stolonifera*), couch grass (*Elytrigia repens*), silverweed (*Potentilla anserina*), sand sedge (*Carex arenaria*), bird's foot trefoil (*Lotus corniculatus*), white clover (*Trifolium repens*), sea milkwort (*Lysimachia maritima*), sea mayweed (*Tripleurospermum maritmum*), curled dock (*Rumex crispus*), marram grass (*Ammophila arenaria*), broadleaved plantain (*Plantago major*) and sea orache (*Atriplex* sp.).

Recolonising Bare Ground (ED3)

This habitat is associated with hard standing fringes of the ruined hotel building and includes coltsfoot (*Tussilago farfara*), dandelion (*Taraxacum* agg.), annual meadow grass (*Poa annua*), toad rush (Juncus *bufonius*) and spreading moss growth.

Reed and Large Sedge Swamp (FS1)

A small area of reed and large sedge swamp is located near the south-eastern margins of the site boundary likely to occur within the flood regime / tidal regime of the Inny (Kerry)_030 river. This reed and large sedge swamp has developed on low lying terrain supporting peatland soils with a slightly brackish influence. This habitat exhibits signs of waterlogging and localised poaching by livestock. Common reed (*Phragmites australis*) is the dominant species within this habitat with occasional and localised marsh willowherb (*Epilobium palustre*), common rush (*Juncus effusus*), purple loosestrife (*Lythrum salicaria*), marsh ragwort (*Jacobaea vulgaris*) and sharp flowered rush (*Juncus acutiflorus*).

Improved Agricultural Grassland (GA1)

Where this habitat occurs within the study area, it occurs in mosaic with areas of wet grassland near the southern and south-westernmost boundaries, fringing or in proximity to the ruined hotel building. These areas are grazed by sheep and comprise locally frequent tufts of common rush, which forms the wet grassland element of the mosaic, while the remaining sections of this habitat comprise a damp semi-improved grassland habitat. Plant species composition includes perennial rye grass (*Lolium perenne*), sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), red fescue (*Festuca rubra*), white clover (*Trifolium repens*), creeping bent (*Agrostis stolonifera*), common sorrel (*Rumex acetosa*), creeping buttercup (*Ranunculus repens*), and meadow buttercup (*Ranunculus acris*). Yellow iris (*Iris pseudacorus*), carnation sedge (*Carex panicea*), jointed rush, creeping cinquefoil (*Potentilla reptans*) and marsh pennywort (*Hydrocotyle vulgaris*) are localised and occur occasionally within the wet grassland element of this habitat.

Amenity Grassland (GA2)

Amenity grassland is associated with a private residential dwelling located to the north-east of the ruined hotel building. This habitat is a maintained by routine cutting and comprises grass species including crested dog's tail (*Cynosurus cristatus*), sweet vernal grass, perennial rye grass and red fescue and forbs including white clover, daisy (*Bellis perennis*), selfheal (*Prunella vulgaris*), ribwort plantain (*Plantago lanceolata*), dandelion (*Taraxacum* agg.) and the mosses *Calliergonella cuspidata* and *Rhytidiadelphus squarrosus*.

Dry Neutral and Calcareous Grassland (GS1)

Dry neutral and calcareous grassland is a semi-natural and semi-improved grassland habitat which is located in isolated linear sections along the southern and southwestern fringes of the study area. This tightly grazed grassland has developed on the thin, coastal soils near the study area boundary. Plant species composition includes red fescue, crested dog's tail and sweet vernal grass. Where soil cover is thinner and most proximal to the coastline the grassland supports a reasonably diverse broadleaved herb assemblage, in addition to the aforementioned grasses and includies yarrow (*Achillea millefolium*), wild thyme (*Thymus drucei*), red clover (*Trifolium pratense*), white clover, bird's foot trefoil, sea plantain (*Plantago maritima*), glaucous sedge (*Carex flacca*), common knapweed (*Centaurea nigra*), sea thrift (*Armeria maritima*), selfheal and sheep's bit (*Jasione montana*).

The areas of this grassland habitat that are removed from the coastal fringe include co-abundant red fescue and crested dog's tail with clovers and self heal with a noted reduction in calcicole broadleaved herbs.

Wet Grassland (GS4)

Wet grassland habitats within the study area are located near the northern and eastern sections of the study area. These wet grassland areas have developed on degraded peatland soils, that have been, and continue to be drained to facilitate sheep grazing. The wet grassland to the east of the access road serving Inny Strand supports an open area that has formed on degraded peatland soil and includes localised abundance of jointed rush and common rush with locally frequent yellow iris. Other associated species occur locally throughout the rushy sward and includes creeping bent, common bent (*Agrostis capillaris*), sweet vernal grass, Yorkshire fog, greater bird's foot trefoil (*Lotus pedunculatus*), tormentil (*Potentilla erecta*), yellow iris, marsh thistle (*Cirsium palustre*), lesser spearwort (*Ranunculus flammula*) and carnation sedge. Sections of this wet grassland near its north-eastern boundary exhibit a replacement of rush cover with locally abundant purple moor grass (*Molinia caerulea*) and areas of bare peaty ground with occasional carnation sedge, bog pimpernel (*Anagallis tenella*), common rush, yellow sedge (*Carex demissa*) and bog myrtle (*Myrica gale*).

Another section of wet grassland is located to the north of the access road serving the ruined hotel building. This wet grassland has also developed on degraded peatland soils and is grazed by sheep. These wet grasslands are again rush dominated, mostly common rush, in addition to sweet vernal grass, jointed rush, greater bird's foot trefoil, yellow iris, creeping bent, common bent, Yorkshire fog and mosses *Calliergonella cuspidata* and *Pseudoscleropodium purum*. These wet grasslands support localised areas of bare peat and remnant species associated with the now degraded peatland habitat including occasional and localised tormentil, bog myrtle, ling heather (*Calluna vulgaris*), *Sphagnum rubellum* and *Sphagnum cuspidatum*.

A rush dominated wet grassland occurs in mosaic with openings of improved grassland near the north-western boundary of the study area. The more open improved grassland areas comprise a reduction in rush cover with Yorkshire fog, common bent and tormentil.

Sand Shores (LS2)

The southernmost fringes of the study area support this habitat and comprise open sand shores associated with Inny Strand. Plant species cover within this habitat was mostly absent due to the ongoing tidal regime.

Scrub (WS1)

Areas of linear scrub have established along some unmanaged field margins near the northern boundary of the study area and include grey willow (*Salix cinerea*), bramble (*Rubus fruticosus* agg.), gorse (*Ulex europaeus*), royal fern (*Osmunda regalis*) and bracken (*Pteridium aquilinum*).

Stonewalls and other stonework (BL1)

Stone walls occur locally within the south-western corner of the study area. These are remnant stone wall field boundaries and are partially covered with grass sod. Plant species cover is localised and includes Yorkshire fog, sweet vernal grass, foxglove (*Digitalis purpurea*), sheep's bit and navelwort (*Umbilicus rupestris*).

Earth banks (BL2)

Earth banks are component parts of the field boundaries for much of the pastoral lands with the survey. Most earth banks are heavily vegetated and comprises dry meadows and grassy verge grassland vegetation and localised areas of scrub. Plant species includes false oat grass (*Arrhenatherum elatius*), bramble, royal fern, broad buckler fern (*Dryopteris dilatata*), cock's-foot

(*Dactylis glomerata*), foxglove, nettle (*Urtica dioica*), hedge bindweed (*Calystegia sepium*) and angelica (*Angelica sylvestris*), in addition to localised shrubs such as grey willow, hawthorn (*Crataegus monogyna*) and with fuschia (*Fuschia magellanica*) and privet (*Ligustrum* sp.) along the local access road serving the hotel and the beach.

Buildings and Artificial Surfaces (BL3)

This habitat includes the access roads and tracks serving the site in addition to the ruined hotel building and associated outbuilding and hard standing areas.

Conifer Woodland (WD4)

The access road serving the ruined hotel building is fringed to the north and north-west by a section of linear conifer woodland comprising stunted and some failing Sitka spruce (*Picea sitchensis*) and Norway spruce (*Picea abies*) trees. The trees within the woodland have failed to form a canopy and are underlain by dense grassy verge grassland and bramble (*Rubus fruticosus* agg.) scrub.

Depositing Lowland Rivers (FW2)

The eastern boundary of the study area adjoins the Inny (Kerry)_030 watercourse[8]. This is a sinuous but free flowing watercourse that is fed by drainage channels near the eastern boundary of the site. The watercourse is fringed intermittently by gorse (*Ulex europaeus*) and grey willow shrubs with extensive areas of common reed dominated reed and large sedge swamp (FS1) occurring near its confluence with Inny Strand and Ballinskelligs Bay. Upstream of the study area boundary, this watercourse drains degraded peatland and rush dominated wet grassland habitats. The mouth of the river is partially within the tidal regime of Ballinskelligs Bay.

Drainage ditches (FW4)

The wet grassland fields within the northern half of the study area are fringed by drainage channels. The drainage channels support ephemeral water flows, and most were dry during the site walkover survey. Drainage channels were typically fringed by vegetated earth banks where they occur near roadside boundaries. Most of the boundary drainage channels have been recently fenced off from grazing livestock, which has resulted in the proliferation of dense common rush growth in addition to bramble, foxglove, royal fern, grey willow, gorse, angelica, purple loosestrife and ling heather. Drainage channels within the internal field boundaries are more routinely maintained and are not fenced off and support little or no fringing / emergent plant growth.

[8] Identified by the EPA as An Rinn Rua watercourse.

Habitat Evaluations

Habitat evaluations of habitats within the study area are presented in **Table 3.3** below.

Table 3-3 - Evaluation of habitats within the study area

Habitat	Evaluation[9]	Evaluation Rationale
Recolonising bare ground (ED3)	Local Importance – Lower Value	This is a habitat of moderate floristic diversity, supporting primarily ruderal species and is likely to be of local importance for invertebrate fauna.
Improved agricultural grassland (GA1)	Local Importance – Lower Value	This is a species poor habitat that offers little ecosystem services to avifauna, mammals and invertebrates.
Amenity Grassland (GA2)	Local Importance – Lower Value	This is a species poor habitat that offers little ecosystem services to avifauna, mammals and invertebrates.
Dry neutral and calcareous grassland (GS1)	Local Importance – Higher Value / International Importance	This is a habitat of moderate to high species diversity. This grassland habitat provides greater ecosystem services to mammals, avifauna and invertebrates, than areas of intensively managed pastoral lands.
Wet grassland (GS4)	Local Importance – Higher Value	This is a localised habitat within the site of moderate to high diversity. Near the south-eastern corner of the site, this habitat is contiguous with and within the influence of other semi-natural wetland habitats such as depositing lowland rivers and reed and large sedge swamp. These habitats support moderate to high botanical diversity in a local context and as such are likely to be of importance for local invertebrate fauna, in addition to provide viable foraging and commuting habitat for small mammals and passerine avifauna.
Reed and Large sedge swamp (FS1)	Local Importance – Higher Value	A localised habitat within the site of moderate botanical diversity. This habitat is contiguous with and within the influence of other semi-natural wetland habitats such as depositing lowland rivers, wet grassland and sand shores. This habitat supports moderate botanical diversity in a local context and as such is likely to be of importance for local invertebrate fauna, in addition to providing viable foraging and commuting habitat for small mammals and passerine avifauna.
Stonewalls and other stonework (BL1)	Local Importance – Lower Value	These are habitats of negligible to poor floristic value. Nonetheless, the structure of these stone walls provide suitable crevices and openings for use by small mammals such as Irish stoat and pygmy shrew and cavity nesting birds such as Blue Tit.
Earth banks (BL2)	Local Importance – Lower Value	A habitat of poor botanical diversity, associated with field boundaries and invariably supporting an assemblage of rough grasses, ferns and shrubs. However, these habitats

[9] International Importance attained where the habitat overlaps a European Site designation.

Habitat	Evaluation[9]	Evaluation Rationale
		provide viable refuge and breeding habitats for small mammals and avifauna.
Buildings and Artificial Surfaces (BL3)	Negligible	A habitat of negligible botanical diversity and consequent importance for ecological receptors.
Conifer Woodland (WD4)	Local Importance – Lower Value	A habitat of poor botanical diversity. However, these woodland habitats may provide viable refuge and breeding habitats for burrowing mammals such as rabbit, fox and badger.
Depositing Lowland Rivers (FW2)	Local Importance – Higher Value / International Importance	This is an important habitat locally providing connectivity between the local area and Ballinskelligs Bay. This southernmost sections of this watercourse intersects with Ballinskelligs Bay and Inny Estuary SAC and thus considered to be of International Importance.
Drainage ditches (FW4)	Local Importance – Lower Value	A habitat of moderate botanical diversity, associated with field boundaries. These are seasonally wet habitats that are likely to be of importance for local invertebrate fauna and amphibians and contribute to the corridor functionality of the study area and its environs.
Scrub (WS1)	Local Importance – Lower Value	A habitat of poor botanical diversity, associated with field boundaries allow lying sections of the study area. Nonetheless, this habitat provides valuable cover for a range of small mammals and avifauna.
Sand Shores (LS2)	County Importance / International Importance	A habitat of low botanical diversity but an important habitat in terms of Ballinskelligs Bay and its associated coastal and marine faunal species. This southernmost sections of this habitat intersects with Ballinskelligs Bay and Inny Estuary Special Area of Conservation (SAC) and thus are considered to be of International Importance. Furthermore, this habitat may contain examples of the annexed habitats, 'mudflats and sandflats not covered by sea water at low tide (1140)' and 'annual vegetation of drift lines (1210)'.
Shingle & Gravel Banks (CB1)	County Importance	A habitat of comparably high botanical diversity in the context of the study area and one associated with routine tidal cycles of Ballinskelligs Bay and Inny strand. This habitat corresponds to the annexed habitat, 'perennial vegetation of stony banks (1220)'.

Photos of the study area

	
Image 3-1 – Purple moor grass dominated wet grassland on peatland soils located to the east of the local access road	**Image 3-2 – Drainage channel and earthbank located near the north-eastern boundary of the site**
	
Image 3-3 – Reed and large sedge swamp located near the south-eastern boundary of the site	**Image 3-4 - Shingle and gravel bank located along the south-eastern fringe of the site boundary**

	
Image 3-5 – Extensive area of sand shore associated with Inny Strand	**Image 3-6 – Coastal dry neutral and calcareous grassland fringing the southern boundary of the site**
	
Image 3-7 – Ruined Reenroe hotel building	**Image 3-8 – Improved agricultural grassland adjoining the ruined hotel building**

Image 3-9 – Access road and adjoining conifer plantation / shelter belt

Image 3-10 – Rushy wet grassland on peat soils located near the northern boundary of the site

Image 3-11 – Existing access road serving the western section of the site

Image 3-12 – Rushy wet grassland on peat soils located near the northern boundary of the site

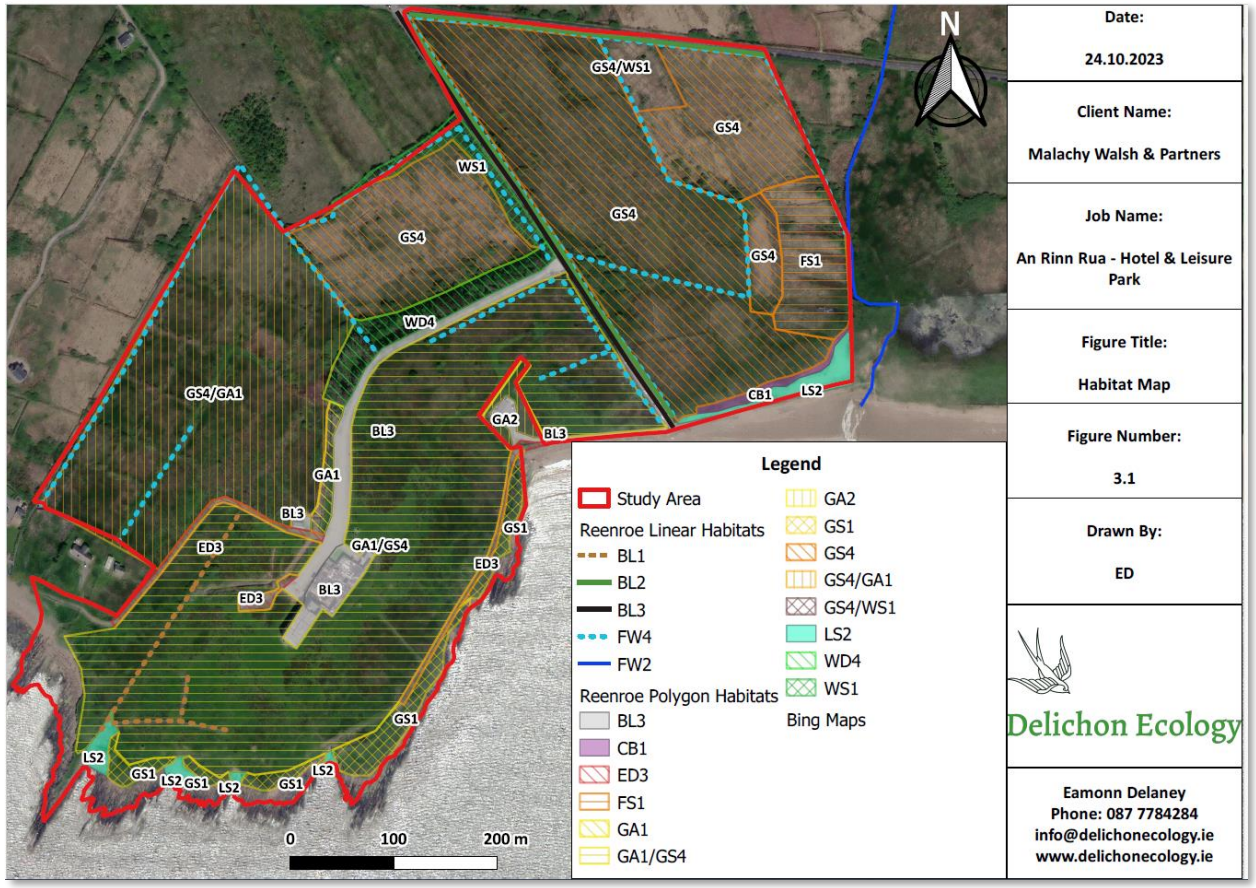

Figure 3-1 – Habitat map of proposed An Rinn Rua Hotel & Leisure Park

3.3 Summary and Conclusions

In summary, the study area footprint and immediate surrounds support habitat assemblages of local importance, primarily semi-improved pastoral lands and wet grassland on peat soils. These habitats are not intensively managed but are grazed by sheep. The study area's coastal fringe supports sand shores, shingle, and coastal grassland. These are habitats of High Local Importance to County Importance and habitats that represent moderate to high botanical diversity. Parts of these habitats overlap the site boundary of Ballinskelligs Bay and Inny Estuary SAC (Site Code: 000335). In addition, sand shores correspond with Annex I habitats mudflats and sandflats not covered by sea water at low tide (1140)' and 'annual vegetation of drift lines (1210)' while shingle correspond to 'perennial vegetation of stony banks (1220)'. The areas supporting these habitats are located outside of the study area boundary.

The study area and its immediate environs supports improved and semi-improved pastoral habitats associated with improved pastoral farming practices, primarily sheep grazing. These areas are less constrained from a development standpoint and their loss or disturbance may be readily offset or compensated as part of the project's operational phase.