# Appropriate Assessment Screening

In accordance with the requirements of
Article 6(3) of the EU Habitats Directive

## Site at
## Old Lucan Road
## Palmerstown
## Dublin 20

**February 2020**

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## Introduction and Terms of Reference

### Introduction

This is an appropriate assessment screening for the proposed development located on the site at Old Lucan Road. Palmerstown, Dublin 20, carried out in accordance with the requirements of Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC) and in line with the Guidance for Planning Authorities entitled "*Appropriate Assessment of Plans and Projects in Ireland*" as published by the Department of the Environment, Heritage and Local Government in December 2009.

The 1992 Habitats Directive requires member states to designate areas of their territory containing a representative sample of important habitats and species. These areas are known as Natura 2000 sites, and in Ireland they include Special Areas of Conservation (SAC's) and Special Protection Areas (SPA's). Article 6(3) and (4) require that an Appropriate Assessment be carried out for these sites where projects, plans or proposals are likely to have an effect on the protected site.

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. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public*'.

Article 6(4) states: '*if, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of economic or social nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest*'.

### Methodology

The methodology as set out in *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (December 2009) has been followed.

**Stage 1** The aim of Stage 1, 'Screening' is to determine whether or not Stage 2, the Appropriate Assessment is required, i.e. to determine whether or not the Plan is likely to negatively affect the conservation objectives on any Natura 2000 site. This is done by examining the design of the proposed project; and the conservation objectives of any Natura 2000 sites that might potentially be affected.

**Stage 2,** The aim of the 'Appropriate Assessment' proper, is to identify any significant negative impacts that the plan might have upon Natura 2000 sites and to propose changes to the project design that will avoid any such negative impacts.

The project design should then be amended accordingly, thereby avoiding the need to progress to Stage 3, which would require the implementation of measures to mitigate or compensate for the identified negative impacts on Natura 2000 sites. A key consideration of Appropriate Assessment is that the Plan or Project under consideration must take account of potential impacts on Natura 2000 sites 'in combination' with other plans or projects.

**Stage 3** - Alternative Solutions Following a Stage 2 negative result, that is, adverse effects cannot be excluded; an examination of alternative solutions or options, described in Article 6(4) of the Directive should be examined. These alternative solutions which should have been identified in the appropriate assessment stage should then return to be reassessed by a Stage 2 appropriate assessment, similar to a new plan or a variation of an existing plan. Alternatively, should no alternative solution which does not adversely effect a Natura 2000 site be identified, the 'least damaging' option should be considered with regard to Stage 4.

**Stage 4** - Imperative Reasons of Overriding Public Interest (IROPI) / Derogation Described as the derogation process of Article 6(4), this final stage allows for the plan or project to proceed in the knowledge that it will have adverse effects on the conservation objectives and as a consequence the integrity of a Natura 2000 site. This is essentially an assessment of the compensatory measures which should be proposed to offset damage to the site and should be practical, implementable, enforceable and approved by the Minister and referred to the European Commission.

In accordance with this guidance, the following four steps have been used to produce this stage 1 screening statement:

- Description of project and project area characteristics
- Identification of Natura 2000 sites and compilation of information on their qualifying interests and conservation objectives.
- Assessment of Likely Effects
- Screening conclusion and statement.

## Screening

### Description of project and project area characteristics

The site comprises an area previously used for commercial and it is bounded to the north by the Old Lucan Road and to the south, east and west by residential properties at Hollyville, Palmerstown, Dublin 20. The scheme provides for an infill scheme of 4 no. residential units on lands currently derelict, which formerly housed a motor vehicle premises. The proposal is for 4no. 1-bedroom apartments arranged around a central stairwell in a two storey structure with a pitched roof. The building aligns with the building line of the neighbouring houses and is similar in scale to the semi-detached houses that characterise the area. The external finishes of the building are also typical of the local semi-detached houses with a brick ground floor, rendered first floor and concrete tile/slate roof.

The site is not located within or directly adjacent to any Natura 2000 sites (SAC or SPA).

A field inspection to assess Flora and Fauna was undertaken on 6th January 2020, the timing has certain limitations and certain flora and fauna may be missed due to the time of year.

Habitats were identified using "Guide to Habitats in Ireland", Fossitt J., Heritage Council 2000. The site has the following habitat classifications;. *Buildings and artificial surfaces BL3.* There are no alien species as listed under schedule 3 of SI no. 477 of 2011 present on the site.

The site is located to the west of Palmerstown village, on the Old Lucan Road, to the south and east are the rear gardens of residential properties of 23-26 Hollyville Lawns. To the west is the side boundary of 9, Hollyville, Old Lucan Road.

The site is open with an area of concrete slab and tarmac. The boundary to the front (north) and a short section of the eastern boundary is a palisade fence, the south east and west are brick and block walls.

The flora, comprises typical ruderal plants which have colonized the tarmac and the base of the boundary walls and edges of the concrete slab.

Species present at the time of my inspection included; Thistle (*Cnicus arvensis C. vulgare*), Dandelion,(*Taraxacum officinale*), Herb Robert (Geranium robertianum), Rose bay willow herb *(Epilobium angustifolium),* Red valerian *(Centranthus ruber),* Shepherds Purse *(Capsella bursa-pastoris),* Chick weed*(Stellaria media),* Buddleja *(Buddleja davidii),* Speed well *( Veronica filiformus),* Sunspurge *(Euphorbia helioscopia) and a small* Cabage palm *(Cordyline australis)*

There are no suitable nesting places for birds, nor any suitable habitat for mammals including bats. No mammals were noted during the field study.

Birds noted flying over the site were a Gull, (*Larus argentatus*) Pigeon, (*Columba livia*), Jackdow, (*Corvus monedula*), Blackbird (*Turdus merula*), Magpie ( *Pica pica*) and Thrush (*Turdus philomelos*).

The usual assemblage of invertebrates associated with the limited flora can be expected.

## Identification of Natura 2000 sites and compilation of information on their qualifying interests and conservation objectives.

There are five Special Areas of Conservation (SAC) within the likely impact zone of 15km distance from the site, as set out for plans in the *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities;*

Ryewater Valley / Carton SAC (001398)
South Dublin Bay SAC (000210)
North Dublin Bay SAC (000206),
Glenasmole Valley SAC (001209)
Wicklow Mountain SAC (002122).

There are three Special Protection Areas (SPA) within the likely impact zone of 15km distance from the site as set out for plans in the *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*;

South Dublin Bay and river Tolka estuary SPA (004024)
North Bull SPA (004006)
Wicklow Mountain SPA (004040)

### Generic Conservation objectives:

Detailed objectives and site specific synopsis are attached in appendix 1

Generic objectives can be stated as follows:

- Avoid deterioration of the habitats of the qualifying species and species of special conservation interest or significant disturbance to these species thus ensuring the integrity of the sites are maintained.
- To ensure for the qualifying species and species of special conservation interest that the following are maintained in the long-term:
  (1) The population of the species as a viable component of the site

  (2) The distribution and extent of habitats supporting the species

  (3) The structure, function and supporting processes of habitats supporting the species.

### Natura 2000 sites with in the 15km Threshold distance

| Site Name | Area reduction | Disturbance | Fragmentation | Density reduction | Water Quality Modification |
|---|---|---|---|---|---|
| Ryewater/ Carton SAC | None anticipated | None anticipated | None anticipated | None anticipated | None anticipated |
| South Dublin Bay SAC | None anticipated | None anticipated | None anticipated | None anticipated | None anticipated |
| North Dublin Bay SAC | None anticipated | None anticipated | None anticipated | None anticipated | None anticipated |
| Glenasmole Valley SAC | None a Anticipated | None anticipated | None anticipated | None anticipated | None anticipated |
| Wicklow mountains SAC | None anticipated | None anticipated | None anticipated | None anticipated | None anticipated |
| South Dublin Bay and river Tolka estuary SPA | None anticipated | None anticipated | None anticipated | None anticipated | None anticipated |
| North Bull SPA | None anticipated | None anticipated | None anticipated | None anticipated | None anticipated |
| Wicklow Mountains SPA | None anticipated | None anticipated | None anticipated | None anticipated | None anticipated |

Site synopses for all sites are included in Appendix 1.

## Assessment of Likely Effects

No significant negative impact to local flora will occur because these habitats are common locally and are not significant habitat types for ground flora. There is no fauna in the footprint of the development and therefore there is not likely to be any adverse effect to fauna during works.

Potential impacts on Natura 2000 sites from the proposed development is restricted to discharge of surface and foul water from the site.

The proposal includes for the foul drainage to discharge by gravity to the existing public sewer which is treated in the Ringsend treatment plant, before being discharged into Dublin Bay. Emissions from the plant are currently not in compliance with the Urban Wastewater Treatment Directive. In February 2018 Irish Water announced proposals to upgrade the Ringsend plant and apply for planning permission for a new plant in north County Dublin. This will see improved treatment standards and will increase network capacity by 50%, with a target completion date of 2023.

The surface water is to be managed using permeable paving, tree pits and soakaways in the court yard areas, any surplus will be discharged into an existing surface water sewer on Old Lucan Road via a flow regulator. There will be a slight increase in the quantity of surface water being discharged but no variation in the quality.

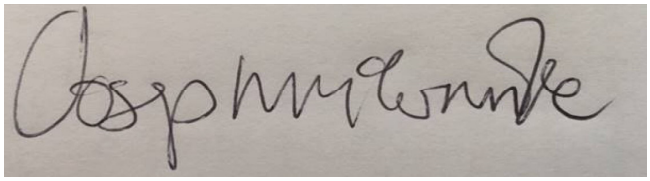
Based on the available information and data is not expected that the proposed project or anu combination of development will cause any impact on the SAC's or SPA's located within 15 km of the project site, however, there is a hydrological connection to Natura 2000 areas in Dublin Bay, particularly South Dublin Bay and river Tolka estuary SPA and South Dublin Bay SAC. The site is significantly removed and of such a minor scale within an existing serviced urban area that it will cause neither changes nor have any significant adverse direct, indirect or secondary impacts on the integrity of any Natura 2000 sites within the threshold distance.

More specifically, there will be no reduction in habitat area; no disturbance of key species, habitat or species fragmentation; no reduction in species density; no changes in key indicators of conservation value and no climate change brought about to, Ryewater Valley / Carton SAC, South Dublin Bay SAC, North Dublin Bay SAC, Glenasmole Valley SAC, Wicklow Mountains SAC; South Dublin Bay and river Tolka estuary SPA, North Bull SPA and Wicklow Mountains SPA, as a result of proposed project at Old Lucan Road, Palmerstown, Dublin 20

## Screening Conclusion and Statement

This screening process was carried out to ascertain if the project was likely to have significant effects on the six Natura 2000 sites within the threshold distance of the project site. If this were the case then it would be necessary to carry out an Appropriate Assessment.

Following the review of the project in accordance with the Guidance for Planning Authorities entitled "*Appropriate Assessment of Plans and Projects in Ireland*", this screening has established that the project poses no potential for significant effects and as such requires no further appropriate assessment.



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## Appendix 1

### Special Areas of Conservation

### Ryewater Valley/ Carton SAC

Rye Water Valley/Carton SAC is located between Leixlip and Maynooth, in Counties Meath and Kildare, and extends along the Rye Water, a tributary of the River Liffey. 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): [7220] Petrifying Springs* [1014] Narrow-mouthed Whorl Snail (Vertigo angustior) [1016] Desmoulin's Whorl Snail (Vertigo moulinsiana) The Rye Water in Carton Estate is dammed at intervals, creating a series of lakes. Reed Sweet-grass (Glyceria maxima) is frequent around the lakes, along with Yellow Iris (Iris pseudacorus), Reed Canary-grass (Phalaris arundinacea), Bulrush (Typha latifolia), Water Forget-me-not (Myosotis scorpioides), Marsh-marigold (Caltha palustris) and starworts (Callitriche spp.). Along the remainder of the site the river has been dredged and much of the reed fringe removed. To the north-west of Carton Bridge a small clump of willows (Salix spp.), with dogwood (Cornus sp.), Alder (Alnus glutinosa), Ash (Fraxinus excelsior) and Elder (Sambucus nigra) occurs. The ground flora found here includes Golden Saxifrage (Chrysosplenium oppostifolium), Meadowsweet (Filipendula ulmaria), Common Valerian (Valeriana officinalis), Wavy Bitter-cress (Cardamine flexuosa) and Bittersweet (Solanum dulcamara). The woods on Carton Estate are mostly old demesne woods with both deciduous and coniferous species. Conifers, including some Yew (Taxus baccata) – a native species, are dominant, with Beech (Fagus sylvatica), oak (Quercus sp.), Sycamore (Acer pseudoplatanus), Ash and Hazel (Corylus avellana) also occurring. The ground flora is dominated by Ivy (Hedera helix), with such species as Hedge Woundwort (Stachys sylvatica), Wood Speedwell (Veronica montana), Woodruff (Galium odoratum), Wood Avens (Geum urbanum), Common Dog-violet (Viola riviniana), Wild Angelica (Angelica sylvestris), Ramsons (Allium ursinum), Ground-ivy (Glechoma hederacea) and Ivy Broomrape (Orobanche hederae) also found. Hairy St. John's-wort (Hypericum hirsutum), a species legally protected under the Flora (Protection) Order, 1999, occurs in Carton Estate and there is an old record from the estate for the similarly protected Hairy Violet (Viola hirta). However, this latter species has not been recorded from the site in recent years. Another species Version date: 11.10.2013 2 of 2 001398_Rev13.Doc listed in the Red Data Book, Green Figwort (Scrophularia umbrosa), occurs on the site in several locations by the Rye Water. The woods at Carton Demesne are the site of a rare Myxomycete fungus, Diderma deplanatum. The marsh, mineral spring and seepage area found at Louisa Bridge supports a good diversity of plant species, including stoneworts, Marsh Arrowgrass (Triglochin palustris), Purple Moor-grass (Molinea caerulea), sedges (Carex spp.), Common Butterwort (Pinguicula vulgaris), Marsh Lousewort (Pedicularis palustris), Grass-ofparnassus (Parnassia palustris) and Cuckooflower (Cardamine pratensis). The mineral spring found at the site is of a type considered to be rare in Europe and is a habitat listed on Annex I of the E.U. Habitats Directive. The Red Data Book species Blue Fleabane (Erigeron acer) is found growing on a wall at Louisa Bridge. Within the woods, Blackcap, Woodcock and Long-eared Owl have been recorded. Little Grebe, Coot, Moorhen, Tufted Duck, Teal and Kingfisher, the latter a species listed on Annex I of the E.U. Birds Directive, occur on and about the lake. The Rye Water is also a spawning ground for Trout and Salmon, and the rare, Whiteclawed Crayfish (Austropotamobius pallipes) has been recorded at Leixlip. The latter two species are listed on Annex II of the E.U. Habitats Directive. The rare Narrowmouthed Whorl Snail and Desmoulin's Whorl Snail occur in marsh vegetation near Louisa Bridge. Both are rare in Ireland and in Europe, and are listed on Annex II of the E.U. Habitats Directive. The scarce

dragonfly, Orthetrum coerulescens, has also been recorded at Louisa Bridge. The conservation importance of the site lies in the presence of several rare and threatened plant and animal species, and the presence of petrifying springs, a habitat type listed on Annex I of the E.U. Habitats Directive. The woods found on Carton Estate and their birdlife are of additional interest.

The conservation objectives are to maintain the favorable conservation status of the qualifying interests of the SAC, to maintain the extent, species richness and biodiversity of the entire site and to establish effective liaison and co-operation with landowners, legal users and relevant authorities.

**South Dublin Bay SAC**

The designated SAC site contains an Annex 1 habitat, Tidal mudflats and sand flats not covered by seawater at low tide. This site lies south of the river Liffey and extends from the South Wall to the west pier at Dun Laoghaire.
It is an intertidal site with extensive areas of sand and mudflats. The flats include the largest bed of eelgrass (*Zostera noltii*) on the east coast, located near the Merrion Gates. Eelgrass supports a diversity of animal species such as snails, crabs, sea anemones, other invertebrates and fish. A range of alage, including Green algae (*Enteromorpha spp*. and *Ulva lactuca*) are distributed throughout the area at a low density. Fucoid algae occur on the rocky shore in the Maretimo to Dún Laoghaire area. The mudflats are important for the abundance and diversity of marine invertebrates they support. Species such as lugworms and cockles provide an important food resource for wading birds.

Conservation objectives are to maintain the Annex I habitat for which the SAC has been selected at favourable conservation status: Mudflats and sand flats not covered by seawater at low tide, to maintain the extent, species richness and biodiversity of the entire site and to establish effective liaison and co-operation with landowners, legal users and relevant authorities.

**North Dublin Bay SAC**

This site covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head.

The North Bull Island is the focal point of this site. The island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in length and is up to 1 km wide in places. A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. Marram Grass (*Ammophila arenaria*) is dominant on the outer dune ridges, with Lyme Grass (*Leymus arenarius*) and Sea Couchgrass (*Elymus farctus*) on the foredunes. Behind the first dune ridge, plant diversity increases with the appearance of such species as Wild Pansy (*Viola tricolor)*, Kidney Vetch (*Anthyllis vulneraria*), Bird's-foot Trefoil (*Lotus corniculatus*), Rest Harrow (*Ononis repens*), Yellow Rattle (*Rhinanthus minor*) and Pyramidal Orchid (*Anacamptis pyramidalis*). In these grassy areas and slacks, the scarce Bee Orchid (*Ophrys apifera*) occurs.

About 1 km from the tip of the island, a large dune slack with a rich flora occurs, usually referred to as the 'Alder Marsh' because of the presence of Alder trees (*Alnus* spp). The water table is very near the surface and is only slightly brackish. Saltmarsh Rush (*Juncus maritimus*) is the dominant species, with Meadow Sweet (*Filipendula ulmaria*) and Devil's-bit (*Succisa pratensis*) being frequent. The orchid flora is notable

and includes Marsh Helleborine (*Epipactis palustris*), Common Twayblade (*Listera ovata*), Autumn Lady's-tresses (*Spiranthes spiralis*) and Marsh orchids (*Dactylorhiza* spp.)

Saltmarsh extends along the length of the landward side of the island. The edge of the marsh is marked by an eroding edge which varies from 20 cm to 60 cm high. The marsh can be zoned into different levels according to the vegetation types present. On the lower marsh, Glasswort (*Salicornia europaea*), Saltmarsh Grass (*Puccinellia maritima*), Annual Sea-blite (*Suaeda maritima*) and Greater Sea-spurrey (*Spergularia media*) are the main species. Higher up in the middle marsh Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*) and Sea Pink (*Armeria maritima*) appear. Above the mark of the normal high tide, species such as Scurvy Grass (*Cochlearia officinalis*) and Sea Milkwort (*Glaux maritima*) are found, while on the extreme upper marsh, Sea Rushes (*Juncus maritimus* and *J. gerardii*) are dominant. Towards the tip of the island, the saltmarsh grades naturally into fixed dune vegetation.

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "*Salicornia* flat", which is dominated by *Salicornia dolichostachya*, a pioneer Glasswort species, and covers about 25 ha. Tassel Weed (*Ruppia maritima)* occurs in this area, along with some Eelgrass (*Zostera angustifolia*). Eelgrass (*Z. noltii*) also occurs in Sutton Creek. Cordgrass (*Spartina anglica*) occurs in places but its growth is controlled by management. Green algal mats (*Enteromorpha* spp., *Ulva lactuca*) cover large areas of the flats during summer. These sediments have a rich macrofauna, with high densities of Lugworms (*Arenicola marina*) in parts of the north lagoon. Mussels (*Mytilus edulis*) occur in places, along with bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*. The small gastropod *Hydrobia ulvae* occurs in high densities in places, while the crustaceans *Corophium volutator* and *Carcinus maenas* are common. The sediments on the seaward side of North Bull Island are mostly sands. The site extends below the low spring tide mark to include an area of the sublittoral zone.

Three Rare plant species legally protected under the Flora Protection Order 1987 have been recorded on the North Bull Island. These are Lesser Centaury (*Centaurium pulchellum*), Hemp Nettle (*Galeopsis angustifolia*) and Meadow Saxifrage (*Saxifraga granulata*). Two further species listed as threatened in the Red Data Book, Wild Sage (*Salvia verbenaca*) and Spring Vetch (*Vicia lathyroides*), have also been recorded. A rare liverwort, *Petalophyllum ralfsii,* was first recorded from the North Bull Island in 1874 and has recently been confirmed as being still present there. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. The North Bull is the only known extant site for the species in Ireland away from the western seaboard.
North Dublin Bay is of international importance for waterfowl. During the 1994/95 to 1996/97 period the following species occurred in internationally important numbers (figures are average maxima): Brent Geese 2,333; Knot 4,423; Bar-tailed Godwit 1,586. A further 14 species occurred in nationally important concentrations - Shelduck 1505; Wigeon 1,166; Teal 1,512; Pintail 334; Shoveler 239; Oystercatcher 2,190; Ringed Plover 346; Grey Plover 816; Sanderling 357; Dunlin 6,238; Blacktailed Godwit 156; Curlew 1,193; Turnstone 197 and Redshank 1,175. Some of these species frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes (mostly Brent Goose, Oystercatcher, Ringed Plover, Sanderling, Dunlin).

The tip of the North Bull Island is a traditional nesting site for Little Tern. A high total of 88 pairs nested in 1987. However, nesting attempts have not been successful since

the early 1990s. Ringed Plover, Shelduck, Mallard, Skylark, Meadow Pipit and Stonechat also nest. A well-known population of Irish Hare is resident on the island.

The invertebrates of the North Bull Island have been studied and the island has been shown to contain at least seven species of regional or national importance in Ireland (Orders Diptera, Hymenoptera, Hemiptera).

The main landuses of this site are amenity activities and nature conservation. The North Bull Island is the main recreational beach in Co Dublin and is used throughout the year. Much of the land surface of the island is taken up by two golf courses. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrrounding intertidal flats. The site is used regularly for educational purposes. North Bull Island has been designated a Special Protection Area under the E.U. Birds Directive and it is also a statutory Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site.

This site is an excellent example of a coastal site with all the main habitats represented. The holds good examples of ten habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several of the wintering bird species have populations of international importance, while some of the invertebrates are of national importance. The site contains a numbers of rare and scarce plants including some which are legally protected. Its proximity to the capital city makes North Dublin Bay an excellent site for educational studies and research.

The conservation Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected; Mudflats and sandflats not covered by seawater at low tide, Annual vegetation of drift lines, *Salicornia* and other annuals colonizing mud and sand, Atlantic salt meadows *Glauco‐Puccinellietalia* maritimae), *Petalophyllum ralfsii,* Mediterranean salt meadows (*Juncetalia maritimi*), Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")' Fixed coastal dunes with herbaceous vegetation ("grey dunes"), Humid dune slacks.

**Glenasmole Valley SAC**

The designated SAC site contains two priority habitats, Petrifying springs and orchid-rich calcareous grasslands, and one other Annex I habitat, *Molinia* (Purple Moor-grass) meadows, as listed under the EU Habitats Directive.

The Conservation Objectives are to maintain the Annex I habitats for which the SAC has been selected at favourable conservation status; Petrifying springs with tufa formation (*Cratoneurion*) (<1% area of the site), Semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (20% area of the site) and *Molinia* meadows on calcareous, peaty or clayey-siltladen soils (*Molinion caeruleae*) (2% area of the site). The Conservation objectives are to maintain the extent, species richness and biodiversity of the entire site. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

**Wicklow Mountains SAC**

This site is a complex of upland areas in Counties Wicklow and Dublin, flanked by Blessington Reservoir to the west and Vartry Reservoir in the east, Cruagh Mt. in the

north and Lybagh Mt. in the south. Most of the site is over 300m, with much ground over 600m and the highest peak of Lugnaquilla at 925m.

The vegetation over most of the site is a mosaic of heath, blanket bog and upland grassland (mostly on peaty soil, though some on mineral soil), with stands of dense Bracken (*Pteridium aquilinum*) and small woodlands mainly along the rivers. Mountain loughs and corrie lakes are scattered throughout the site. The site supports many habitats that are listed on Annex I of the E.U. Habitats Directive.

The two dominant vegetation communities in the area are heath and blanket bog. Heath vegetation, with both wet and dry heath well represented, occurs in association with blanket bog, upland acid grassland and rocky habitats. The wet heath is characterised by species such as Ling (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Cottongrasses (*Eriophorum* spp.), Tormentil (*Potentilla erecta*), Mat-grass (*Nardus stricta*), Bent grasses (*Agrostis* spp.) and bog mosses (*Sphagnum* spp.).

In places the wet heath occurs in conjunction with flush communities and streamside Vegetation, and here species such as Heath Rush (*Juncus squarrosus*) and *Carex* spp. are found. Dry heath at this site is confined to shallow peaty soils on steep slopeswhere drainage is better and particularly in sheltered conditions. It is characterised by species such as Ling, Gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). In places the heath grades into upland grassland on mineral soil, some examples of which correspond to the E.U. Habitats Directive Annex I priority habitat species-rich *Nardus* grassland.

Blanket bog is usually dominated by Cottongrasses, Ling and bog mosses (*Sphagnum* spp.). On steeper slopes there is some flushing and here Purple Moor-grass, Heath Rush, and certain *Sphagnum* species become more common. The Liffey Head blanket bog is among the best of its kind in eastern Ireland, with deep peat formations and an extensive system of dystrophic pools developed among the hummocks and hollows on the bog surface. The vegetation is largely dominated by Ling and Cross-leaved Heath, with Cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*), Deergrass (*Scirpus cespitosus*) and Bog Asphodel (*Narthecium ossifragum*). In drier areas, Bilberry and Cowberry (*Vaccinium vitis-idaea*) are common, while the scarce Bog Rosemary (*Andromeda polifolia*) is also found. Blanket bog occurs over extensive areas of deeper peat on the plateau and also on gentle slopes at high altitudes. Peat erosion is frequent on the peaks - this may be a natural process, but is likely to be accelerated by activities such as grazing.

Due to the underlying rock strata, the water of the rivers and streams tends towards acidity. The water is generally oligotrophic and free from enrichment. The lakes within the area range from the high altitude lakes of Lough Firrib and Three Lakes, to the lower pater-noster lakes of Glendalough, Lough Tay and Lough Dan. Spectacular corrie lakes (such as Loughs Bray (Upper and Lower), Ouler, Cleevaun, Arts, Kellys and Nahanagan) exhibit fine sequences of moraine stages. The deep lakes are characteristically species poor, but hold some interesting plants including an unusual form of Quillwort (*Isoetes lacustris* var. *morei*), a Stonewort (*Nitella* sp.) and Floating Bur-reed (*Sparganium angustifolium*). The Red Data Book fish species Arctic Char has been recorded from Lough Dan, but this population may now have died out.

Alpine vegetation occurs on some of the mountain tops, notably in the Lugnaquilla area, and also on exposed cliffs and scree slopes elsewhere in the site. Here alpine heath vegetation is represented with species such as Crowberry (*Empetrum nigrum*), Cowberry, Dwarf Willow (*Salix herbacea*), the grey-green moss *Racomitrium*

*lanuginosum* and scarce species such as Mountain Clubmoss (*Diphasiastrum alpinum*), Firmoss (*Huperzia selago*), and Starry Saxifrage (*Saxifraga stellaris*).

Some rare arctic-alpine species have been recorded, including Alpine Lady's-mantle (*Alchemilla alpina*) and Alpine Saw-wort (*Saussurea alpina*). Small areas of old oakwood (Blechno-Quercetum petraeae type) occur on the slopes of Glendalough and Glenmalure, near L. Tay and L. Dan, with native Sessile Oak (*Quercus petraea*) 100-120 years old. On wetter areas, wet broadleaved semi-natural woodlands occur, which are dominated by Downy Birch (*Betula pubescens*). Mixed woodland with non-native tree species also occurs.

The site supports a range of rare plant species, which are listed in the Irish Red Data Book: Parsley Fern (*Cryptogramma crispa*), Marsh Clubmoss (*Lycopodiella inundata*), Greater Broom-rape (*Orobanche rapum-genistae*), Alpine Lady's-mantle, Alpine Saw-wort, Lanceolate Spleenwort (*Asplenium billotii*), Small White Orchid (*Pseudorchis albida*) and Bog Orchid (*Hammarbya paludosa*). The latter three species are legally protected under the Flora (Protection) Order, 1999. The rare Myxomycete fungus, *Echinostelium colliculosum,* has been recorded from the Military Road.

Mammals and birds which occur are typical of the uplands. Deer are abundant, mainly hybrids between Red and Sika Deer. Other mammals include Hare, Badger and Otter, the latter being a species listed on Annex II of the E.U. Habitats Directive. Pine Marten has recently been confirmed as occurring within the site. Among the birds, Meadow Pipit, Skylark, Raven and Red Grouse are resident throughout the site. Wheatear, Whinchat and the scarce Ring Ouzel are summer visitors. Wood Warbler and Redstarts are rare breeding species of the woodlands. Dipper and Grey Wagtail are typical riparian species. Merlin and Peregrine Falcon, both Annex I species of the EU Birds Directive, breed within the site. Recently, Goosander duck has become established as a breeding species.

The conservation objectives are to maintain or restore the favorable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected for the area.

**Special Protection Areas**

**South Dublin Bay (Sandymount Strand) and river Tolka estuary SPA**

This site comprises a substantial part of Dublin Bay. It includes virtually all of the intertidal area in the south bay, as well as much of the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included. A large area of the site overlaps with the South Dublin Bay SAC. The site is designated for a large number of wading birds it supports including; Light-bellied Brent Goose, Oystercatcher, Knot, Sanderling, Dunlin, Redshank, Three species of Plover and three species of tern. The eelgrass around Merrion Gates provides an important feeding habitat for Brent Geese when they return to over winter in the area. The site includes the sea wood side of the west pier as it provides an important roosting habitat for a number of small waders at high tide.

The Conservation objectives are to maintain or restore the favourable conservation of the bird species listed as special conservation interests for this SPA, Wetlands & Waterbirds: Light-bellied Brent Goose (Branta bernicla hrota), Oystercatcher (Haematopus ostralegus), Ringed Plover (Charadrius hiaticula), Grey Plover (Pluvialis squatarola), Knot (Calidris canutus), Sanderling (Calidris alba) , Dunlin (Calidris

alpina), Bar-tailed Godwit (Limosa lapponica), Redshank (Tringa totanus), Black-headed Gull (Croicocephalus ridibundus), Roseate Tern (Sterna dougallii ), Common Tern (Sterna hirundo ), Arctic Tern (Sterna paradisaea),. To maintain the extent, species richness and biodiversity of the entire site and to establish effective liaison and co-operation with landowners, legal users and relevant authorities.

**North Bull SPA**

This site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses.

A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. Marram Grass (*Ammophila arenaria*) is dominant on the outer dune ridges. Species of the fixed dunes include Wild Pansy (*Viola tricolor*), Kidney Vetch (*Anthyllis vulneraria*), Bird's-foot Trefoil (*Lotus corniculatus*), Pyramidal Orchid (*Anacamptis pyramidalis*) and, in places, the scarce Bee Orchid (*Ophrys apifera*). A feature of the dune system is a large dune slack with a rich flora, usually referred to as the 'Alder Marsh' because of the presence of Alder (*Alnus glutinosa*) trees. The water table is very near the surface and is only slightly brackish. Sea Rush (*Juncus maritimus*) is the dominant species, with Meadowsweet (*Filipendula ulmaria*) and Devil's-bit Scabious (*Succisa pratensis*) being frequent.The orchid flora is notably diverse in this area.

Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. On the lower marsh, Glasswort (*Salicornia europaea*), Common Saltmarsh-grass (*Puccinellia maritima*), Annual Seablite (*Suaeda maritima*) and Greater Sea-spurrey (*Spergularia media*) are the main species. Higher up in the middle marsh Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*) and Thrift (*Armeriamaritima*) appear. Above the mark of the normal high tide, species such as Common Scurvygrass (*Cochlearia officinalis*) and Sea Milkwort (*Glaux maritima*) are found, while on the extreme upper marsh, Sea Rush and Saltmarsh Rush (*Juncus gerardi*) are dominant.

The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl.
The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. Tasselweed (*Ruppia maritima*) and small amounts of Eelgrass (*Zostera* spp.) are found in the lagoons. Common Cord-grass (*Spartina anglica*) occurs in places. Green algal mats (*Enteromorpha* spp., *Ulva lactuca*) are a feature of the flats during summer. These sediments have a rich macro-invertebrate fauna, with high densities of Lugworm (*Arenicola marina*) and Ragworm (*Hediste diversicolor*). Mussels (*Mytilus edulis*) occur in places, along with bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*. The small gastropod *Hydrobia ulvae* occurs in high densities in places, while the crustaceans *Corophium volutator* and *Carcinus maenas* are common. The sediments on the seaward side of North Bull Island are mostly sands and support species such as Lugworm and the Sand Mason (*Lanice conchilega*). The site includes a substantial area of the shallow marine bay waters.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank,Turnstone and Black-headed Gull. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. It also qualifies for international importance as the numbers of three species exceed the international threshold – Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bartailed Godwit (1,529) (all waterfowl figures given are average maxima for the five winters 1995/96 to 1999/00). The site is the top site in the country for both of these species. A further 14 species have populations of national importance – Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Ringed Plover (139), Golden Plover (1,741), Grey Plover (517), Knot (2,623), Sanderling (141), Dunlin (3,926), Curlew (937), Redshank (1,431) and Turnstone (157). The populations of Pintail and Knot are of particular note as they comprise more than 10% of the respective national totals. Species such as Grey Heron, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser and Greenshank are regular in winter in numbers of regional or local importance. Gulls are a feature of the site during winter, especially Black-headed Gull (2,196). Common Gull (332) and Herring Gull (331) also occur here. While some of the birds also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

The North Bull Island SPA is a regular site for passage waders, especially Ruff, Curlew Sandpiper and Spotted Redshank. These are mostly observed in single figures in autumn but occasionally in spring or winter.

The site formerly had an important colony of Little Tern but breeding has not occurred in recent years. Several pairs of Ringed Plover breed, along with Shelduck in some years. Breeding passerines include Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to 5 present in some winters.

The site has five Red Data Book vascular plant species, four rare bryophyte species, and is nationally important for three insect species. The rare liverwort, *Petalophyllum ralfsii*, was first recorded from the North Bull Island in 1874 and its presence here has recently been re-confirmed. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. A well-known population of Irish Hare is resident on the island.

The main land uses of this site are amenity activities and nature conservation. The North Bull Island is one of the main recreational beaches in Co. Dublin and is used throughout the year. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrounding intertidal flats. North Bull Island is also a Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site. Much of the SPA is also a candidate

Special Area of Conservation. The site is used regularly for educational purposes and there is a manned interpretative centre on the island.

The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is of international importance on account of both the total number of waterfowl and the individual populations of Lightbellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. Also of significance is the regular presence of several species that are listed on Annex I of the E.U. Birds Directive, notably Golden Plover and Bar-tailed Godwit, but also Ruff and Short-eared Owl.

The conservation objectives are to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; Lightbellied Breent Goose *Branta bernicla hrota* [wintering], Shelduck *Tadorna tadorna* [wintering] Teal *Anas crecca* [wintering], Pintail *Anas acuta* [wintering], Shoveler *Anas clypeata* [wintering], Oystercatcher *Haematopus ostralegus* [wintering], Golden plover *Pluvialis apricaria* [wintering], Grey Plover *Pluvialis squatarola* [wintering], Knot *Calidris canutus* [wintering], Sanderling *Calidris alba* [wintering], Dunlin *Calidris alpina* [wintering], Blacktailed Godwit *Limosa limosa* [wintering], Bar Tailed Godwit *Limosa lapponica* [wintering], Curlew *Numenius arquata* [wintering], and Redshank *Tringa totanus* [wintering].

**Wicklow Mountain SPA**

This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. Most of the site is in Co. Wicklow, but a small area lies in Co. Dublin. The underlying geology of the site is mainly of Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area was subject to glaciation and features fine examples of glacial lakes, deep valleys and moraines. Most of site is over 300 m, with much ground being over 600 m; the highest peak is Lugnaquillia (925 m). The substrate over much of site is peat, with poor mineral soil occurring on the slopes and lower ground. Exposed rock and scree are features of the site. The predominant habitats present are blanket bog, heaths and upland grassland.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Merlin and Peregrine.
The Conservation objectives are to maintain or restore the favourable conservation of the bird species listed as Special Conservation Interests for this SPA, *Falco columbarius* (Merlin) *and Falco peregrinus* (Peregrine falcon).

**End**