

**Appropriate Assessment Screening Report
Site at
Cherry Orchard
Dublin 10**

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**Compiled By G. Tobin BSc MA
For
Land Development Agency**

Introduction and Terms of Reference

Introduction

Gerard Tobin, BSc (Zoo), M.A., is an Ecological Consultant with 25 years' experience. He is a member of the Ecologist Panel with N.P.W.S and a member of the Bat Expert Panel with both N.P.W.S and the Heritage Council.

His sample client list includes Tipperary County Council, South Dublin County Council, McConville and Associates Landscape Architects, Heritage Council, NPWS, William McGarry Engineers, Muylgert & Associates Environmental Consultants., Fewer Harrington Lawlor & Partners Architecture & Engineering Specialists, Bluett and O'Donoghue Architecture and Engineering Specialists, among others.

He has advised South Dublin County Council on the control and management of Giant Hogweed and Japanese Knotweed in the area around Loughlinstown, Co. Dublin.

From 1998 to 2019, he was a visiting lecturer in UCD, in the Science and Archaeology Departments, lecturing at post graduate (Masters Degree) level to students in a Sustainable Development Module (MSC, World Heritage Management).

This is an appropriate assessment screening for a proposed development (GFA of c. 66,399sqm) which involves the construction of a residential led mixed use scheme across 16 blocks contained within 9 buildings ranging in height from 4 to 15 storeys. The development includes the provision of 708no. residential apartments comprising 547no. cost rental and 161no. social / affordable units (28no. studio units, 263no. one-bed units, 368no. two-bed units and 49no. three-bed units, together with a convenience retail supermarket (2,523sq.m GFA), 7no. retail / commercial units (totalling 373sq.m GFA), community, arts and cultural spaces delivered across 13no. community and arts / cultural units (totalling 1,222sq.m GFA), and associated external events space and community gardens (1,157sq.m) and a childcare facility (672sq.m GFA) with associated external playing space (200sq.m) and all ancillary accommodation including sub stations, plant, refuse stores, cycle stores, and metre / comms rooms. The proposed development also includes the provision of landscaped public open space of 6,123 sq. m. including a public plaza, play space, outdoor fitness trail, communal amenity space of 5,596 sq. m. Private open space for the apartment units is achieved through the provision of balconies or terraces for all individual apartments.

The proposed development will also involve the provision of sufficient car parking (including accessible car parking) and bicycle parking spaces at undercroft and surface level throughout the development. The development will also provide for all associated ancillary site development infrastructure including site clearance, boundary treatment, associated public lighting, internal roads and pathways, ESB substations, switch room, water tank rooms, storage room, meter room, sprinkler tank room, comms room, bin storage, bicycle stores, green roofs, hard and soft landscaping, play equipment, attenuation area, green and blue infrastructure including green roofs, PV panels and all associated works and infrastructure to facilitate the development including connection to foul and surface water drainage and water supply. Please refer to the statutory notices for full and complete description of the proposed development.

This Appropriate Assessment Screening is 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.



Figure 1 – Aerial View of 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/ assessment of Cumulative Effects
- Screening conclusion and statement.

Screening

Description of project and project area characteristics

The project subject of this appropriate assessment screening will comprise the construction of medium and high density residential development with some commercial and public realm works at Cherry Orchard, Dublin 10. "

Habitats were identified using "Guide to Habitats in Ireland", Fossitt J., Heritage Council 2000. The site has the following habitat classifications; There one main habitat within the study area

- Mosaic of Dry Meadows and Grassy Verges (GS2), Recolonising Bare Ground (ED3). There are associated hedgerows (WL1) with an area of Scrub (WS1) to the east across the road .
- The timing of the fieldwork necessary to compile any report is important as certain species/habitats are more prevalent at certain times of the year. This report has been compiled following field work during many different time periods. Site Visits 06/07/2022 07/07/2022, 10/07/2022,11/07/2022, 23/05/2023 and 24/05/2023

Mosaic habitat :

Holly (*Ilex aquifolium*)
Elder (*Sambucus niger*)
Bramble (*Rubus spp*)
Elm suckers. (*Ulmus spp.*)
Ash (*Fraxinus excelsior*)
Willow (*Salix spp.*)
Lonicera spp. hedge.
Sycamore. (*Acer pseudoplatanus*)
Holly (*Ilex spp*)
Clevers, (*Galium aparine*),
Creeping buttercup, (*Ranunculus repens*,
Chickweed, (*Stellaria media*),
Nettle, (*Urtica dioica*),
Dock, (*Rumex obtusifolius*),
Bindweed, (*Convolvulus arvensis*),
Thistle, (*Cirsium arvense*),
Bramble, (*Rubus fruticosus*),
Sun spurge, (*Euphorbia helioscopia*),
Ribwort Plantain (*Plantago lanceolata*),
Dandelion, (*Taraxacum officinale*),
Hawks beard, (*Crepis capillaries*),
Clover, (*Trifolium pratense*),
Herb Robert, (*Geranium robertianum*),
Groundsel, (*Senecio vulgaris*),
Cranesbill, (*Geranium dissectum*),
Rose bay willow herb, (*Epilobium angustifolium*,
Daisy, (*Bellis perennis*),
Ivy (*Hedra helix*),
Fathen (*Chenopodium album*)
Fumitory (*Fumaria officinalis*),
Lesser Celidine (*Ranunculus ficaria*),
Fools Parsely (*Aethusa cynapium*),
Buddleja,
Yarrow, (*Achillea millefolium*),

Ragwort (*Senecio jacobaea*),

Hogweed (*Heracleum sphondylium*),

Burdock (*Artium lappa*)

Teasel (*Dipsacus fullonum*)

Alder (*Alnus glutinosa*)

Birch (*Betula pubescens*)

Silverweed (*Potentilla anserine*)

Blackthorn (*Prunus spinosa*)

Meadowsweet (*Filipendula ulmaria*)

Oxford Ragwort (*Senecio squalidus*) Along the boundary with the railway.

Willow (*Salix* spp)

Marsh Orchd (*Dactylorhiza* spp.)

Pyramidal Orchis (*Anacamptis pyramidalis*)

Sedges (*Carex* spp)

Rushes (*Juncus* spp.)

and grasses including; Yorkshire fog (*Holcus lanatus*) Scutch (*Elymus repens*), Annual meadow grass (*Poa annua*), Cocksfoot (*Dactylis glomerata*) and False oat (*Arrhenatherum elatius*).

This is a heavily modified habitat as a result of human interference. The mosaic nature of the habitat stems from the years of neglect and has resulted in the encroachment of hedgerow into the meadow habitats. The grasses within the study area are all lodged and ungrazed.

The orchids are found clustered around the western boundary with the motorway in the recolonising bare ground section of the site at GR IO 07758 32794.

The sedges and rushes appear to occupy an area that at some stage was waterlogged within the recolonising bare ground.

The area currently bounding the railway track is characterised by Buddleia and Alder (*Alnus* spp.)

The scrub Area is characterised by Willow (*Salix* spp.), Buddleia and Mallow (*Malva sylvestris*) and is located across the road and east of the main site.

The boundary with the motorway is a substantial hedgerow with dense tree and ground flora. This area is outside the boundary of the development site.

Fauna

Fauna was identified by visual, and spraint evidence and the probable presence of certain species was ascertained by the availability of suitable habitat. Terrestrial vertebrate and invertebrate fauna on-site can be assumed to be mobile and capable of movement between the various habitats.

Invertebrates

Cinnabar Moth

Shield Bug (*Acanthasomosa haemorrhoidale*)

Earwig (*Forficula auricularia*)

Honey Bee (*Apis mellifera* spp.)

Ladybird (*Coccinell 7-punctata*)

Garden Spider (*Araneus diadematus*)

Woodlouse (*Oniscus asellus*)

Orange Tipped Butterfly (*Anthocaris cardamines*)

This is not an exhaustive list of the invertebrate species and is merely representative of the species found during field work.

Birds

Pied wagtail (*Motacilla alba*)

Thrush (*Turdus philomelos*)

Blackbird (*Turdus merula*)

Blue Tit (*Parus caeruleus*)

Great Tit (*Parus major*)

Chaffinch (*Fringilla coelebs*)

Greenfinch (*Carduelis chloris*)

Magpie (*Pica pica*)

Jackdaw (*Corvus monedula*)

Hooded Crow (*Corvus corone*)

Rook (*Corvus frugilegus*)

Sparrow Hawk (*Accipiter nisus*)

Robin (*Erithacus rubecula*)

Starling (*Sturnus vulgaris*)

Wren (*Troglodytes troglodytes*)

Dunnock (*Prunella modularis*)

Woodpigeon (*Columba palumbus*)

Feral Pigeon (*Columba livia*)

Goldcrest (*Regulus regulus*)

Swallow (*Hirundo rustica*) ,

Greenfinch (*Carduelis chloris*)

House Sparrow (*Passer domesticus*)

Tree Creeper (*Certhia familiaris*)

Meadow pipit (*Anthus pratensis*) nesting in the recolonizing bare ground

Herring Gull (*Larus argentatus*)

Buzzard (*Buteo buteo*)

Were all seen, heard.

Brent Geese are unlikely to forage in the area as they need cropped grass as a food source and the hedgerows present will prevent access to the open area for a species that need a glide path to land.

Mammals

No suitable roosting areas were seen for Bats (Chiroptera) within the site but a foraging presence is present. Twenty Common Pipistrelles and thirty Leislars bats were seen commuting/foraging along the southern boundary of the site with the adjacent railway line.

. Pipistrelle (*Pipistrellus pipistrellus*) (Red Data Book 2, Hab. Dir. 4, Bern Convention 3)

Soprano Pipistrelle (*P. pygmaeus*) (as per common)

Leislars Bat (*Nyctalus leisleri*) (Red Data Book 2, Hab. Dir. 4, Bern Convention 3)

Fox (*Vulpes vulpes*) denning within the site

Rat (*Rattus norvegicus*)

Hedgehog (*Erinaceus europaeus*) (Red Data Book 2, Bern Convention 3)

Field mouse (*Apodemus sylvaticus*)

Pygmy shrew (*Sorex minutus*)

Rabbit (*Oryctolagus cuniculus*)

Stoat (*Mustela erminea*)

Can all be expected on-site.

No badger setts were found and the absence of available forage areas would suggest that badgers are absent as a breeding species in the locality

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

There are nine 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*;

Howth Head SAC (000202),
Baldoyle Bay SAC (000199),
Malahide Estuary SAC (000205),
North Dublin Bay SAC (000206)
Irelands Eye SAC (002193)
South Dublin Bay SAC (000210).
Rockabill to Dalkey SAC (003000)
Lambay Island SAC (000204),
Rogerstown Estuary SAC (000208)
Rye Water Valley and Carton SAC (001398)

There are nine 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*;

North Bull SPA (004006),
Broadmeadow / Swords Estuary SPA (004025),
Howth head Coast SPA (004113),
Ireland's eye SPA (004117),
Baldoyle Bay SPA (004016)
South Dublin Bay and river Tolka estuary SPA (004024)
Dalkey Island SPA (0041752)
Rogerstown Estuary SPA(004015),
Lambay Island SPA (004069),

In addition to a 15km Zol all potential hydrological and other pathways that may connect the site with SACs and SPAs have been considered. There is no known hydrological link between the site and any Natura 2000 sites. There is no mechanism by which soils or detritus from the site can form a pathway leading to any of the Natura 2000 sites. There is no mechanism by which air pollution or noise pollution from the site can have a pathway to any Natura 2000 sites.

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
Howth Head SAC	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Baldoyle Bay SAC	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Malahide Estuary 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
Irelands Eye 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
Rockabill to Dalkey SAC	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Lambay Island SAC	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Rogerstown Estuary SAC	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
North Bull SPA	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated

Site Name	Area reduction	Disturbance	Fragmentation	Density reduction	Water Quality Modification
Broadmeadow / Swords Estuary SPA	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Howth head Coast SPA	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Ireland's eye SPA	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Baldoyle Bay SPA	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
Dalkey Island SPA	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Rogerstown Estuary SPA	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Lambay Island SPA	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated
Rye Water Valley and Carton SAC	None anticipated	None anticipated	None anticipated	None anticipated	None anticipated

Site synopses for all sites are included in Appendix 1.

Assessment of Likely Effects

There is no significant negative impact on qualifying interests of the Natura 2000 sites anticipated.

Howth Head SAC qualifying interests:

Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] (Not vulnerable from this development)

European dry heaths [4030] (Not vulnerable from this development)

Howth Head SPA qualifying interests:

Kittiwake (*Rissa tridactyla*) [A188] (Not vulnerable from this development)

Rye Water Valley and Carton SAC Qualifying Interests:

Petrifying springs with tufa formation (*Cratoneurion*), (7220)

Vertigo angusitior (Narrow-mouthed Whorl Snail) [1014]

Vertigo moulinsiana (Desmoulin's Whorl Snail) [1016]

None of these species or habitats are vulnerable to this development.

Baldoyle Bay SAC qualifying interests:

Mudflats and sandflats not covered by seawater at low tide [1140]

Salicornia and other annuals colonising mud and sand [1310]

Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]

Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

None of these habitats are vulnerable from this development.

Malahide Estuary SAC qualifying interests:

Mudflats and sandflats not covered by seawater at low tide [1140]

Salicornia and other annuals colonising mud and sand [1310]

Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]

Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]

Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]

None of these habitats are vulnerable from this development.

North Dublin Bay SAC qualifying interests:

Mudflats and sandflats not covered by seawater at low tide [1140]

Annual vegetation of drift lines [1210]

Salicornia and other annuals colonising mud and sand [1310]

Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]

Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

Embryonic shifting dunes [2110]

Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]

Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]

Humid dune slacks [2190]

Petalophyllum ralfsii (Petalwort) [1395]

None of these habitats are vulnerable from this development.

Irelands Eye SAC qualifying interests:

Perennial vegetation of stony banks [1220]

Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]

None of these habitats are vulnerable from this development.

South Dublin Bay SAC qualifying interests:

Mudflats and sandflats not covered by seawater at low tide [1140]

Annual vegetation of drift lines [1210]

Salicornia and other annuals colonising mud and sand [1310]

Embryonic shifting dunes [2110]

None of these habitats are vulnerable from this development.

Rockabill to Dalkey SAC qualifying interests:

Reefs [1170]

Phocoena phocoena (Harbour Porpoise) [1351]

None of these habitats or species are vulnerable from this development.

Lambay Island SAC qualifying interests:

Reefs [1170]

Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]

Halichoerus grypus (Grey Seal) [1364]

Phoca vitulina (Harbour Seal) [1365]

None of these habitats or species are vulnerable from this development.

Rogerstown Estuary SAC qualifying interests:

Estuaries [1130]

Mudflats and sandflats not covered by seawater at low tide [1140]

Salicornia and other annuals colonising mud and sand [1310]

Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]

Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]

Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]

None of these habitats are vulnerable from this development.

North Bull SPA qualifying interests:

Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]

Shelduck (*Tadorna tadorna*) [A048]

Teal (*Anas crecca*) [A052]

Pintail (*Anas acuta*) [A054]

Shoveler (*Anas clypeata*) [A056]

Oystercatcher (*Haematopus ostralegus*) [A130]

Golden Plover (*Pluvialis apricaria*) [A140]

Grey Plover (*Pluvialis squatarola*) [A141]

Knot (*Calidris canutus*) [A143]

Sanderling (*Calidris alba*) [A144]

Dunlin (*Calidris alpina*) [A149]

Black-tailed Godwit (*Limosa limosa*) [A156]

Bar-tailed Godwit (*Limosa lapponica*) [A157]

Curlew (*Numenius arquata*) [A160]

Redshank (*Tringa totanus*) [A162]

Turnstone (*Arenaria interpres*) [A169]

Black-headed Gull (*Chroicocephalus ridibundus*) [A179]

Wetland and Waterbirds [A999]

None of these species are vulnerable from this development.

Broadmeadow / Swords Estuary SPA qualifying interests:

Great Crested Grebe (*Podiceps cristatus*) [A005]

Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]

Shelduck (*Tadorna tadorna*) [A048]

Pintail (*Anas acuta*) [A054]

Goldeneye (*Bucephala clangula*) [A067]

Red-breasted Merganser (*Mergus serrator*) [A069]

Oystercatcher (*Haematopus ostralegus*) [A130]

Golden Plover (*Pluvialis apricaria*) [A140]

Grey Plover (*Pluvialis squatarola*) [A141]

Knot (*Calidris canutus*) [A143]

Dunlin (*Calidris alpina*) [A149]
Black-tailed Godwit (*Limosa limosa*) [A156]
Bar-tailed Godwit (*Limosa lapponica*) [A157]
Redshank (*Tringa totanus*) [A162]
Wetland and Waterbirds [A999]
None of these species are vulnerable from this development.

Ireland's eye SPA qualifying interests:

Cormorant (*Phalacrocorax carbo*) [A017]
Herring Gull (*Larus argentatus*) [A184]
Kittiwake (*Rissa tridactyla*) [A188]
Guillemot (*Uria aalge*) [A199]
Razorbill (*Alca torda*) [A200]
None of these species are vulnerable from this development.

Baldoyle Bay qualifying interests:

Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
Shelduck (*Tadorna tadorna*) [A048]
Ringed Plover (*Charadrius hiaticula*) [A137]
Golden Plover (*Pluvialis apricaria*) [A140]
Grey Plover (*Pluvialis squatarola*) [A141]
Bar-tailed Godwit (*Limosa lapponica*) [A157]
Wetland and Waterbirds [A999]
None of these species are vulnerable from this development.

South Dublin Bay and river Tolka estuary SPA qualifying interests:

Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
Oystercatcher (*Haematopus ostralegus*) [A130]
Ringed Plover (*Charadrius hiaticula*) [A137]
Grey Plover (*Pluvialis squatarola*) [A141]
Knot (*Calidris canutus*) [A143]
Sanderling (*Calidris alba*) [A144]
Dunlin (*Calidris alpina*) [A149]
Bar-tailed Godwit (*Limosa lapponica*) [A157]
Redshank (*Tringa totanus*) [A162]
Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
Roseate Tern (*Sterna dougallii*) [A192]
Common Tern (*Sterna hirundo*) [A193]
Arctic Tern (*Sterna paradisaea*) [A194]
Wetland and Waterbirds [A999]
None of these species are vulnerable from this development.

Dalkey Island SPA qualifying interests:

Roseate Tern (*Sterna dougallii*) [A192]
Common Tern (*Sterna hirundo*) [A193]
Arctic Tern (*Sterna paradisaea*) [A194]
None of these species are vulnerable from this development.

Rogerstown Estuary SPA qualifying interests:

Great Crested Grebe (*Podiceps cristatus*) [A005]
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
Shelduck (*Tadorna tadorna*) [A048]
Pintail (*Anas acuta*) [A054]
Goldeneye (*Bucephala clangula*) [A067]
Red-breasted Merganser (*Mergus serrator*) [A069]
Oystercatcher (*Haematopus ostralegus*) [A130]

Golden Plover (*Pluvialis apricaria*) [A140]
Grey Plover (*Pluvialis squatarola*) [A141]
Knot (*Calidris canutus*) [A143]
Dunlin (*Calidris alpina*) [A149]
Black-tailed Godwit (*Limosa limosa*) [A156]
Bar-tailed Godwit (*Limosa lapponica*) [A157]
Redshank (*Tringa totanus*) [A162]
Wetland and Waterbirds [A999]
None of these species are vulnerable from this development.

Lambay Island SPA qualifying interests:

Fulmar (*Fulmarus glacialis*) [A009]
Cormorant (*Phalacrocorax carbo*) [A017]
Shag (*Phalacrocorax aristotelis*) [A018]
Greylag Goose (*Anser anser*) [A043]
Lesser Black-backed Gull (*Larus fuscus*) [A183]
Herring Gull (*Larus argentatus*) [A184]
Kittiwake (*Rissa tridactyla*) [A188]
Guillemot (*Uria aalge*) [A199]
Razorbill (*Alca torda*) [A200]
Puffin (*Fratercula arctica*) [A204]
None of these species are vulnerable from this development.

Little significant negative impact to local flora will occur because these habitats are common locally and much of the flora will remain post works. Fauna in the footprint of the development is likely to be adversely affected during works. Any relocation of fauna during the proposed development may relocate back to undeveloped parts of the site post construction. No Key Ecological Receptors are currently found on site. Bats are using the southern boundary to commute/forage.

Potential impacts on Natura 2000 sites from the proposed development is restricted to discharge of surface and foul water from the site. All foul water from the site eventually discharges to waste water treatment works and then disposal, and therefore will not impact on the marine habitats of the Natura sites within the 15km threshold distance.

To meet the requirements of the surface water policy of Dublin City Council, the surface water will be based on an attenuation techniques, the surface water will be attenuated on site by the use of permeable paving, together with necessary attenuation tanks. Surface water collected in the car parks will pass through a hydrocarbon interceptor consequentially there will only be a small increase in quantity of water discharging into Dublin Bay and not the quality.

Based on the available information and data is not expected that the proposed project will cause any impact on the SAC's or SPA's located within 15 km of the project site. It is significantly removed and of such a scale within an existing serviced 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, Howth Head SAC, Baldoyle Bay SAC, Malahide Estuary SAC, North Dublin Bay SAC, Ireland's Eye SAC, South Dublin Bay SAC), Rockabill to Dalkey SAC, Rogerstown Estuary SAC, Lambay Island SAC; North Bull SPA, Broadmeadow / Swords Estuary SPA, Howth head Coast SPA, Ireland's eye SPA, Baldoyle Bay SPA, South Dublin Bay and river Tolka estuary SPA, and Dalkey Island SPA, Rogerstown Estuary SPA, Lambay Island SPA, as a result of proposed project at Cherry Orchard, Dublin 10.

Appropriate Assessment Screening: In Combination/Cumulative Impacts

This proposed development will have no significant negative impact in combination or cumulatively with other known planned projects proposed for the locale (including those proposed projects where an application for permission has been submitted but not yet determined. The current Dublin City Development Plan 2022-2028 and the Parkwest – Cherry Orchard Local Area Plan 2019 were considered during the assessment.

The following 4 no. residential planning applications have been included in the assessment, of which 3 are within the Dublin City administrative boundary and 1 within the South Dublin administrative boundary. The residential planning pipeline includes a total of 1,052 units.

List of Residential Development within the 1km buffer of the Subject Site

Reference Location Development Description Status Decision Date

4313/22

(Part 8 Application) Cherry Orchard Green, Dublin 10 Proposed construction of a residential development

comprising 172 no. dwellings (141 no. 3- bedroom two-storey terraced houses and 31 no. 2-bedroom two-storey terraced houses), 2 public open spaces approx. 0.83 ha /14% of site area, associated site infrastructure works/ supporting infrastructure, landscaping, public lighting, access roads/pavements, boundary treatments and provision for a link road/ pavements and cycleways to Ballyfermot City Council – Approved 03.10.2022.

312290

Park West Avenue and Park West Road, Park West, Dublin 12 750 no. apartments, creche and associated site works. Granted 16.06.2022

3403/21

Site (1.26 ha) at Blocks 70 and 72 Park West Avenue and Park West Road, Park West, Dublin 12 Planning permission for the proposed development will consist of modifications to the permitted residential development of 86 no. residential units over retail/restaurant uses (reg. ref. 3798/18, 3941/20, 2517/21) within blocks 70 and 72. Granted 21.10.2021

SD188/0006

(Part 8 Application) New Nangor Road, Clondalkin, Dublin 22.

Social Housing Development comprising of two and three storey housing and apartment Part 8 Approved by Council 08.10.2018

The area is heavily developed with many residential and commercial projects completed.

Potential proposals for the remainder of this site will entail similar connection to existing services and no impact from this accumulation of construction projects, both completed and proposed, is expected.

None of the habitat loss is locally, nationally or internationally important.

Key Environmental Receptors are not present on site. As such, there is no potential for the proposed development to contribute to any significant cumulative habitat loss when considered in combination with any other plans and projects..

No significant effects as a result of the proposed development in relation to disturbance, displacement or mortality of faunal species has been identified. The proposed development will not result in any significant residual effects on biodiversity and will not contribute to any cumulative effect when considered in combination with other plans and projects. In the review of the projects that was undertaken, no connection that could potentially result in additional or cumulative impacts was identified. Neither was any potential for different (new) impacts resulting from the combination of the various projects and plans in association with the proposed development.

Specifically there will be no loss of Key Ecological Receptor habitats or species. There will be no impact on population numbers of Key Ecological Receptors.

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There will be no fragmentation of Key Ecological Receptor habitats or species.

There will be no negative impacts on Natura 2000 sites within the potential impact zone.

There will be no effect on the natural range of protected habitats or species, and areas they cover within that range, are stable or increasing

The specific structure and functions which are necessary for the long-term maintenance of species and habitats exist and are likely to continue to exist for the foreseeable future

The conservation status of habitats and species is favourable.

There will be no effects on the 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

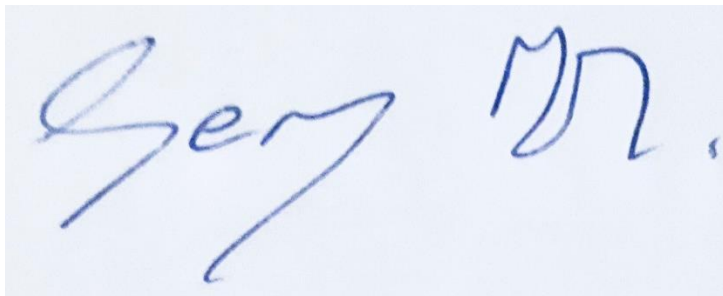
The natural range of the species will neither being reduced nor is likely to be reduced for the foreseeable future

There is and will probably continue to be, a sufficiently large habitat to maintain its population on a long-term basis.

Screening Conclusion and Statement

This screening process was carried out to ascertain if the project was likely to have significant effects on the 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.

A photograph of a handwritten signature in blue ink on a light blue background. The signature appears to be 'Gerry M.T.'.

Gerry Tobin BSc. MA. Environmental Consultant.

November 2023

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Appendix 1

Special Areas of Conservation

Howth Head SAC

Howth Head is a rocky headland situated on the northern side of Dublin Bay. The peninsula is composed of Cambrian slates and quartzites, joined to the mainland by post glacial raised beach. Limestone occurs on the north-west side while glacial drift is deposited against the cliffs in places.

Howth Head contains sea cliffs and dry heaths, two habitats listed on Annex I of the EU Habitats Directive. A mosaic of heathland vegetation occurs on the slopes above the sea cliffs and in the area of the summit. This is dominated by Western Gorse (*Ulex gallii*), Heather (*Calluna vulgaris*), Bell Heather (*Erica cinerea*) and localised patches of Bracken (*Pteridium aquilinum*). In more open areas species such as English Stonecrop (*Sedum anglicum*), Wood Sage (*Teucrium scorodonia*) and Navelwort (*Umbilicus rupestris*) occur, along with some areas of bare rock.

The heath merges into dry grassland in places, with Bent Grasses (*Agrostis* spp.), Red Fescue (*Festuca rubra*), Cock's-foot (*Dactylis glomerata*), Yorkshire-fog (*Holcus lanatus*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Lady's Bedstraw (*Galium verum*), Ribwort Plantain (*Plantago lanceolata*) and Yellow-wort (*Blackstonia perfoliata*). In the summit area there are a few wet flushes and small bogs, with typical bog species such as Bog Asphodel (*Narthecium ossifragum*) and Sundew (*Drosera* spp.). Patches of scrub, mostly Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Willow (*Salix* spp.) and Downy Birch (*Betula pubescens*), occur in places.

The maritime flora is of particular interest as a number of scarce and local plants have been recorded, including Golden-samphire (*Inula crithmoides*), Sea Wormwood (*Artemisia maritima*), Grass-leaved Orache (*Atriplex littoralis*), Frosted Orache (*Atriplex laciniata*), Sea Spleenwort (*Asplenium marinum*), Bloody Crane's-bill (*Geranium sanguineum*), Spring Squill (*Scilla verna*), Sea Stork's-bill (*Erodium maritimum*) and three Clover species: Knotted Clover (*Trifolium striatum*), Bird's-foot Clover (*T. ornithopodioides*) and Western Clover (*T. occidentale*).

Rock outcrops which are important for lichens are distributed widely around Howth Head. The richest area for lichens appears to be around Balscadden quarries. In addition, the Earlscliffe area is of national importance for lichens and is the type locality for the black, yellow and grey lichen zonation.

A number of Red Data Book plant species, which are legally protected under the Flora Protection Order, have been recorded at this site - Green-winged Orchid (*Orchis morio*), Bird's-foot (*Ornithopus perpusillus*), Hairy Violet (*Viola hirta*), Rough Poppy (*Papaver hybridum*), Pennyroyal (*Mentha pulegium*), Heath Cudweed (*Omalotheca sylvatica*) and Betony (*Stachys officinalis*).

Curved Hard-grass (*Parapholis incurva*), a species which had not previously been recognized as occurring in Ireland, was found at Red Rock in 1979.

The site is of national importance for breeding seabirds. A census in 1985-87 recorded the following numbers: Fulmar (105 pairs), Shags (25 pairs), Herring Gulls (70 pairs), Kittiwake (c.1,700 pairs), Guillemot (585 birds), Razorbill (280 birds). In 1990, 21 pairs of Black Guillemot were counted.

A number of rare invertebrates have been recorded from the site: the insect *Phaonia*

exoleta (Order Diptera) occurs in the woods at the back of Deerpark and has not been seen anywhere else in Ireland, while the ground beetle *Trechus rubens* (Order Coleoptera) is found on storm beaches on the eastern cliffs. A hoverfly, known from only a few Irish locations, *Sphaerophoria batava* (Order Diptera) is present in the heathland habitat within the site.

The main landuse within the area is recreation, mostly walking and horse-riding, and this has led to some erosion within the site. Fires also pose a danger to the site. There may also be a threat in some areas from further housing development.

Howth Head displays a fine range of natural habitats, including two Annex I habitats, within surprisingly close proximity to Dublin city. The site is also of scientific importance for its seabird colonies, invertebrates and lichens. It also supports populations of at least two legally protected plant species and several other scarce plants.

The conservation Objectives are 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; vegetated sea cliffs of the Atlantic and Baltic coasts and European dry heaths

Baldoyle Bay SAC

Baldoyle Bay extends from just below Portmarnock village to the west pier at Howth, Co. Dublin. It is a tidal estuarine bay protected from the open sea by a large and dune system. Two small rivers, the Mayne and the Sluice, flow into the bay. The site contains four habitats listed on Annex I of the EU Habitats directive: *Salicornia* mud, Mediterranean salt meadows, Atlantic salt meadows and Tidal mudflats.

Large areas of intertidal flats are exposed at low tide. These are mostly sands but grade to muds in the inner sheltered parts of the estuary. Extensive areas of Common Cord-grass (*Spartina anglica*) occur in the inner estuary. Both the Narrow-leaved Eelgrass (*Zostera angustifolia*) and the Dwarf Eelgrass (*Z. noltii*) are also found here. During summer, the sandflats of the sheltered areas are covered by mats of green algae (*Enteromorpha* spp. and *Ulva lactuca*).

The sediments have a typical macrofauna, with Lugworm (*Arenicola marina*) dominating the sandy flats. The tubeworm *Lanice conchilega* is present in high densities at the low tide mark and the small gastropod *Hydrobia ulvae* occurs in the muddy areas, along with the crustacean *Corophium volutator*.

Areas of saltmarsh occur near Portmarnock Bridge and at Portmarnock Point, with narrow strips along other parts of the estuary. Species such as Glasswort (*Salicornia* spp.), Sea-purslane (*Halimione portulacoides*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus maritimus*) are found here. Portmarnock Spit formerly had a well developed sand dune system but this has been largely replaced by golf courses and is mostly excluded from the site. A few dune hills are still intact at Portmarnock Point, and there are small dune hills east of Cush Point and below the Claremont Hotel. These are mostly dominated by Marram (*Ammophila arenaria*), though Lyme-grass (*Leymus arenarius*) is also found.

The site includes a brackish marsh along the Mayne River. Soils here have a high organic content and are poorly drained, and some pools occur. Rushes (*Juncus* spp.) and salt tolerant species such as Common Scurvygrass (*Cochleria officinalis*) and Greater Sea-spurrey (*Spergularia media*) are typical of this area. Knotted Hedge parsley (*Torilis nodosa*), a scarce plant in eastern Ireland, has been recorded here, along with Brackish Water-crowfoot (*Ranunculus baudotti*), a species of brackish pools and ditches which has declined in most places due to habitat loss.

Two plant species, legally protected under the Flora (Protection) Order, 1999, occur in

the Mayne marsh: Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*).

Baldoyle Bay is an important bird site for wintering waterfowl and the inner part of the estuary is a Special Protection Area under the EU Birds Directive as well as being a Statutory Nature Reserve. Internationally important numbers of Pale-bellied Brent Geese (418) and nationally important numbers of two Annex I Birds Directive species - Golden Plover (1,900) and Bar-tailed Godwit (283) - have been recorded. Four other species also reached nationally important numbers: Shelduck (147), Pintail (26), Grey Plover (148) and Ringed Plover (218) - all figures are average peaks for four winters 1994/95 to 1997/1998. Breeding wetland birds at the site include Shelduck, Mallard and Ringed Plover. Small numbers of Little Tern, a species listed on Annex I of the EU Birds Directive, have bred on a few occasions at Portmarnock Point but not since 1991.

Because the area surrounding Baldoyle Bay is densely populated, the main threats to the site include visitor pressure, disturbance to wildfowl and dumping. In particular, the dumping of spoil onto the foreshore presents a threat to the value of the site.

Baldoyle Bay is a fine example of an estuarine system. It contains four habitats listed on Annex I of the EU Habitats Directive and has two legally protected plant species. The site is also an important bird area and part of it is a Special Protection Area under the EU Birds Directive, as well as being a Statutory Nature Reserve. It supports internationally important numbers of Brent Geese and nationally important numbers of six other species including two Annex I Birds Directive species.

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, *Salicornia* and other annuals colonizing mud and sand, Atlantic salt meadows (*Glauco - Puccinellietalia maritimae*), Mediterranean salt meadows (*Juncetalia maritimi*),

Malahide Estuary SAC

Malahide Estuary is situated immediately north of Malahide and east of Swords. It is the estuary of the River Broadmeadow. The site is divided by a railway viaduct built in the 1800s.

The outer part of the estuary is mostly cut off from the sea by a large sand spit, known as "the island". The outer estuary drains almost completely at low tide, exposing sand and mud flats. There is a large bed of Eelgrass (*Zostera noltii* and *Z. angustifolium*) in the north section of the outer estuary, along with Tassel Weed (*Ruppia maritima*) and extensive mats of green algae (*Enteromorpha* spp., *Ulva lactuca*). Cordgrass (*Spartina anglica*) is also widespread in this sheltered part of the estuary.

The dune spit has a well developed outer dune ridge dominated by Marram Grass (*Ammophila arenaria*). The dry areas of the stabilised dunes have a dense covering of Burnet Rose (*Rosa pimpinellifolia*), Red Fescue (*Festuca rubra*) and species such as Yellow Wort (*Blackstonia perfoliata*), Field Gentian (*Gentianella amarella*), Hound's Tongue (*Cynoglossum officinale*), Carline Thistle (*Carlina vulgaris*) and Pyramidal Orchid (*Anacamptis pyramidalis*). Much of the interior of the spit is taken up by a golf course. The inner stony shore has frequent Sea-holly (*Eryngium maritimum*). Well-developed saltmarshes occur at the tip of the spit. Atlantic salt meadow is the principle type and is characterised by species such as Sea Purslane (*Halimolobos portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*). Elsewhere in the outer estuary, a small area of Mediterranean salt meadow occurs which is characterised by the presence of Sea Rush (*Juncus maritimus*).

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Below the salt marshes there are good examples of pioneering Glasswort swards and other annual species, typified by *Salicornia dolichostachya* and Annual Sea-blite (*Suaeda maritima*).

The inner estuary does not drain at low tide apart from the extreme inner part. Here, patches of saltmarsh and salt meadows occur, with Sea Aster, Sea Plantain (*Plantago maritima*) and Sea Clubrush (*Scirpus maritimus*). Tassel Weed (*Ruppia maritima*) occurs in one of the channels.

The site includes a fine area of rocky shore south-east of Malahide and extending towards Portmarnock. This represents the only continuous section through the fossiliferous Lower Carboniferous rocks in the Dublin Basin, and is the type locality for several species of fossil coral.

The estuary is an important wintering bird site and holds an internationally important population of Brent Geese and nationally important populations of a further 15 species. Average maximum counts during the 1995/96-1997/98 period were Brent Geese 1217; Great Crested Grebe 52; Mute Swan 106; Shelduck 471; Pochard 200; Goldeneye 333; Red-breasted Merganser 116; Oystercatcher 1228; Golden Plover 2123; Grey Plover 190; Redshank 454; Wigeon 50; Teal 78; Ringed Plover 106; Knot 858; Dunlin 1474; Greenshank 38; Pintail 53; Black-tailed Godwit 345; Bar-tailed Godwit 99. The high numbers of diving birds reflects the lagoon-type nature of the inner estuary.

The estuary also attracts migrant species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of the island and the habitat remains suitable for these birds.

The inner part of the estuary is heavily used for water sports. A section of the outer estuary has recently been filled for a marina and housing development. This site is a fine example of an estuarine system with all the main habitats represented.

The site is important ornithologically, with a population of Brent Geese of international significance.

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, *Salicornia* and other annuals colonizing mud and sand, *Spartina* swards (*Spartinion maritimae*), Atlantic salt meadows (*Glauco - Puccinellietalia maritimae*), Mediterranean salt meadows (*Juncetalia maritimi*), Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"), Fixed coastal dunes with herbaceous vegetation ("grey dunes").

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 (*Centaureum 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).

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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 surrounding 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.

Irelands Eye SAC

Ireland's Eye is located about 1.5 km north of Howth in Co. Dublin. It is a Cambrian island with quartzite which forms spectacular cliffs on the north-east side. Elsewhere much of the area is covered by drift. There is a Martello tower at the west end of the island and an ancient ruined church in the middle.

The drift soils support a plant community of Bracken (*Pteridium aquilinum*) and various grasses, especially Red Fescue (*Festuca rubra*), along with Bluebells (*Hyacinthoides non-scripta*), Common Dog-violet (*Viola riviniana*) and Pennywort (*Umbilicus rupestris*). The thinner soils have some interesting species, including Spring Squill (*Scilla verna*), Knotted Clover (*Trifolium striatum*) and Field Mouse-ear (*Cerastium arvense*). Bloody Cranesbill (*Geranium sanguineum*) has also been recorded from here.

The cliff maritime flora includes Rock Spurrey (*Spergularia rupicola*), Sea Stork'sbill (*Erodium maritimum*), Rock Samphire (*Crithmum maritimum*), Golden Samphire (*Inula crithmoides*), Sea Lavender (*Limonium binervosum*), Meadow Rue (*Thalictrum minor*), Portland Spurge (*Euphorbia portlandica*) and Tree Mallow (*Lavatera arborea*).

A small area of shingle vegetation occurs above the sandy beach at Carrigeen Bay on the western side of the island. This habitat is listed on Annex I of the EU Habitats Directive. Species

such as Curled Dock (*Rumex crispus*), Silverweed (*Potentilla anserina*) and Spear-leaved Orache (*Atriplex prostrata*) occur, while the rare Sea Kale (*Crambe maritima*), a very characteristic species of this habitat, has been known from this site since 1894 and was recorded as recently as 1981. Sea Kale is listed as threatened in the Irish Red Data Book. Also occurring on the sandy/shingle beach is the Red Data Book species Henbane (*Hyoscyamus niger*).

Ireland's Eye is of national importance for breeding seabirds. In 1999 the following were counted: Fulmar 70 pairs; Cormorant 306 pairs; Shag 32 pairs; Lesser Blackbacked Gull 1 pair; Herring Gull c.250 pairs; Great Black-backed Gull c.100 pairs; Kittiwake 941 pairs; Guillemot 2191 individuals; Razorbill 522 individuals. A Gannet colony was established on the stack at the east end of the island in the late 1980s, and in 1999 142 pairs bred. Puffin was formerly common, but nowadays not more than 20 individuals occur. Black Guillemot also breeds, with 15 individuals recorded in 1998. Several pairs each of Oystercatcher and Ringed Plover breed, while the island is a traditional site for Peregrine Falcon.

In winter small numbers of Greylag and Pale bellied Brent Geese graze on the island.

This uninhabited marine island has a well developed maritime flora, with two habitats (sea cliffs and shingle) listed on Annex II of the EU Habitats Directive, and nationally important seabird colonies. Owing to its easy access and proximity to Dublin it has great educational and amenity value.

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; Perennial vegetation of stony banks and vegetated sea cliffs of the Atlantic and Baltic coasts.

South Dublin Bay SAC

The designated SAC site contains an Annex I 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 algae, including Green algae (*Enteromorpha spp.* and *Ulva lactuca*) are distributed throughout the area at a low density. Furoid 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.

Rockabill to Dalkey Island SAC

This site includes a range of dynamic inshore and coastal waters in the western Irish Sea. These include sandy and muddy seabed, reefs, sandbanks and islands. This site extends southwards, in a strip approximately 7 km wide and 40 km in length, from Rockabill, running adjacent to Howth Head, and crosses Dublin Bay to Frazer Bank in south county Dublin. The site encompasses Dalkey, Muglins and Rockabill islands.

The area selected for designation represents a key habitat for the Annex II species harbour porpoise, within the Irish Sea. Population survey data show that porpoise occurrence within the site boundary meets suitable reference values for other designated sites in Ireland. The species occurs year-round within the site and comparatively high group sizes have been recorded. Porpoises with young (i.e. calves) are observed at favourable, typical reference values for the species. Casual and effort-related sighting rates from coastal observation stations are significant for the east coast of Ireland and the latter appear to be relatively stable across all seasons. The selected site contains a wide array of habitats believed to be important for harbour porpoise including inshore shallow sand and mud-banks and rocky reefs scoured by strong current flow. The site also supports Harbour seal (*Phoca vitulina*) and Grey seal (*Halichoerus grypus*), for which terrestrial haul-out sites occur in immediate proximity to the site. Bottlenose dolphin (*Tursiops truncatus*) has also occasionally been recorded in the area. A number of other marine mammals have been recorded in this area including minke, fin and killer whales and Risso's and common dolphins.

Reef habitat is uncommon along the eastern seaboard of Ireland due to prevailing geology and hydrographical conditions. Expansive surveys of the Irish coast have indicated that the greatest resource of this habitat within the Irish Sea is found fringing offshore islands which are concentrated along the Dublin coast. A detailed survey of selected suitable islands has shown areas with typical biodiversity for this habitat both intertidally and subtidally. Species recorded in the intertidal included *Fucus spiralis*, *Fucus serratus*, *Pelvetia canaliculata*, *Ascophyllum nodosum*, *Semibalanus balanoides* and *Necora puber*. Subtidally, a wide range of species include *Laminaria hyperborea*, *Flustra foliacea*, *Alaria esculenta*, *Halidrys siliquosa*, *Pomatocereos triqueter*, *Alcyonium digitatum*, *Metridium senile*, *Caryophyllia smithii*, *Tubularia indivisa*, *Mytilus edulis*, *Gibbula umbilicalis*, *Asterias rubens*, and *Echinus esculentus*. These Reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms.

This site is of conservation importance for reefs, listed on Annex I, and Harbour Porpoise, listed on Annex II, of the E.U. Habitats Directive.

The conservation objectives are to maintain the favourable conservation condition of Reefs in Rockabill to Dalkey Island SAC, which is defined by the following list of attributes and targets. Target 1, The permanent area is stable or increasing, subject to natural processes. The area of this habitat represents the minimum estimated area of reef at this site and underestimates the actual area due to the presence of vertical rock wall and steeply sloping rock within the reef habitat. This target refers to activities or operations that propose to permanently remove habitat from the site, thereby reducing the permanent amount of habitat area. It does not refer to long or short term disturbance of the biology of a site. Early consultation or scoping with the Department in advance of formal application is advisable for such proposals.

Target 2, The distribution of reefs is stable or increasing, subject to natural processes. The likely distribution of reef habitat in this SAC is indicated in figure 1 of the SAC conservation objectives. This target refers to activities or operations that propose to permanently remove reef habitat, thus reducing the range over which this habitat occurs within the site. It does not refer to long or short term disturbance of the biology of reef habitats. Early consultation or scoping with the Department in advance of formal application is advisable for such proposals.

Target 3, Conserve the following community types in a natural condition: Intertidal reef community complex and Subtidal reef community complex. A semi-quantitative description of the communities has been provided in Section 1 of the SAC conservation objectives.

An interpolation of their likely distribution is provided in figure 2 of the SAC conservation objectives. The estimated areas of the communities within the Reefs habitat given below are based on spatial interpolation and therefore should be considered indicative. In addition, as this habitat contains areas of vertical rock wall and steeply sloping rock, the mapped community extents will be underestimated:

- Intertidal reef community complex – 10ha
- Subtidal reef community complex - 172ha

This target relates to the structure and function of the reef and therefore it is of relevance to those activities that may cause disturbance to the ecology of the habitat. Significant continuous or ongoing disturbance of communities should not exceed an approximate area of 15% of the interpolated area of each community type, at which point an inter-Departmental management review is recommended prior to further licensing of such activities. Proposed activities or operations that cause significant disturbance to communities but may not necessarily represent a continuous or ongoing source of disturbance over time and space may be assessed in a context specific manner giving due consideration to the proposed nature and scale of activities during the reporting cycle and the particular resilience of the receiving habitat in combination with other activities within the designated site.

Specific conservation objectives and targets for Annex II species are to maintain the favourable conservation condition of harbour porpoise in Rockabill to Dalkey Island SAC, which is defined by the following list of attributes and targets.

Target 1 Species range within the site should not be restricted by artificial barriers to site use. This target may be considered relevant to proposed activities or operations that will result in the permanent exclusion of harbour porpoise from part of its range within the site, or will permanently prevent access for the species to suitable habitat therein. It does not refer to short-term or temporary restriction of access or range.

Early consultation or scoping with the Department in advance of formal application is advisable for proposals that are likely to result in permanent exclusion.

Target 2 Human activities should occur at levels that do not adversely affect the harbour porpoise community at the site. Proposed activities or operations should not introduce man-made energy (e.g. aerial or underwater noise, light or thermal energy) at levels that could result in a significant negative impact on individuals and/or the community of harbour porpoise within the site. This refers to the aquatic habitats used by the species in addition to important natural behaviours during the species annual cycle. This target also relates to proposed activities or operations that may result in the deterioration of key resources (e.g. water quality, feeding, etc) upon which harbour porpoises depend. In the absence of complete knowledge on the species ecological requirements in this site, such considerations should be assessed where appropriate on a case-by-case basis. Proposed activities or operations should not cause death or injury to individuals to an extent that may ultimately affect the harbour porpoise community at the site.

Rogerstown Estuary SAC

Rogerstown estuary is situated about 2 km north of Donabate. It is a relatively small, narrow estuary separated from the sea by a sand and shingle bar. The estuary is divided by a causeway and narrow bridge, built in the 1840s to carry the Dublin-Belfast railway line. The site contains good examples of a number of habitats listed on Annex I of the EU Habitats Directive.

The estuary drains almost completely at low tide. The intertidal flats of the outer estuary are mainly of sands, with soft muds in the north-west sector and along the southern shore. Associated with these muds are stands of Cordgrass (*Spartina anglica*). Green algae (mainly *Enteromorpha* spp. and *Ulva lactuca*) are widespread and form dense mats in the more sheltered areas. The intertidal angiosperm, Beaked Tasselweed (*Ruppia maritima*), grows profusely in places beneath the algal mats. The Lugworm (*Arenicola marina*) is common in the outer estuary and large Mussel beds (*Mytilus edulis*) occur at the outlet to the sea.

The area of intertidal flats in the inner estuary is reduced as a result of the local authority refuse tip on the north shore. The sediments are mostly muds, which are very soft in places. Cordgrass (*Spartina anglica*) is widespread in parts, and in summer, dense green algal mats grow on the muds. In the extreme inner part, the estuary narrows to a tidal river. Saltmarsh fringes parts of the estuary, especially the southern shores and parts of the outer sand spit. Common plant species of the saltmarsh include Sea Rush (*Juncus maritimus*), Sea Purslane (*Halimione portulacoides*) and Common Saltmarsh-grass (*Puccinellia maritima*). Salt meadows and wet brackish fields occur along the tidal river. Low sand hills occur on the outer spit, including some small areas of fixed dunes and *Ammophila* dunes. Fine sandy beaches and intertidal sandflats occur at the outer part of the estuary.

Two plant species, which are legally protected under the Flora (Protection) Order, 1999, occur within the site: Hairy Violet (*Viola hirta*) occurs on the sand spit and Meadow Barley (*Hordeum secalinum*) occurs in the saline fields of the inner estuary.

This species has declined apparently due to reclamation and embankment of lands ringing estuaries. Another rare species, Green-veined Orchid (*Orchis morio*), occurs in the sandy areas of the outer estuary.

Rogerstown Estuary is an important waterfowl site, with Brent Geese having a population of international importance (1176). A further 16 species have populations of national importance: Greylag Goose (186), Shelduck (785), Teal (584), Pintail (30), Shoveler (69), Oystercatcher (1028), Ringed Plover (152), Golden Plover (1813), Grey Plover (245), Lapwing (4056), Knot (2076), Dunlin (2625), Sanderling (57), Black-tailed Godwit (272), Curlew (1549), Redshank (732) and Greenshank (22) (All counts are average peaks over four winters 1994/95 - 1997/98). The presence of a significant population of Golden Plover is of note and this species is listed on Annex I of the EU Birds Directive. The estuary is a regular staging post for autumn migrants, especially Green Sandpiper, Ruff, Little Stint, Curlew Sandpiper and Spotted Redshank.

Little Tern has bred at the outer sand spit, but much of the nesting area has now been washed away as a result of erosion. The maximum number of pairs recorded was 17 in 1991. Ringed Plover breed in the same area.

The outer part of the estuary has been designated a statutory Nature Reserve and a Special Protection Area under the EU Birds Directive. The inner estuary has been damaged by the refuse tip which covers 40 hectares of mudflat.

This site is a good example of an estuarine system, with all typical habitats represented, including several listed on Annex I of the EU Habitats Directive. Rogerstown is an internationally important waterfowl site and has been a breeding site for Little Terns. The presence within the site of three rare plant species adds to its importance.

The conservation Objective is 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: Estuaries, Mudflats and sandflats not covered by seawater at low tide *Salicornia* and other annuals colonizing mud and sand, Atlantic salt meadows (*Glauco -Puccinellietalia maritima*), Mediterranean salt meadows (*Juncetalia maritimi*), Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"), Fixed coastal dunes with herbaceous vegetation ("grey dunes")

Lambay Island SAC

Lambay Island is a large (250 ha.) inhabited island lying 4 km off Portrane on the north Co. Dublin coast. It is privately owned and is accessible by boat from Rogerstown Quay. The island rises to 127 m and is surrounded by steep cliffs on the north, east and south slopes. These cliffs contain good diversity in height, slope and aspect. The west shore is low-lying and the land slopes gently eastwards to the summit in the centre of the island. The underlying geology is very varied, but is dominated by igneous rocks (of andesitic type) and ash. Also present are shales and limestones of Silurian origin, limestone conglomerates, and shales from the Old Red Sandstone era. The bedrock is exposed on the fringing cliffs and in rocky outcrops; elsewhere it is overlain by varying depths of glacial drift.

Most of the western third of the island is intensively farmed (mostly pasture), and there are small areas of parkland, deciduous and coniferous woodland, buildings, walled gardens and the harbour. Much of the rest of the island is a mixture of less intensively grazed land, rocky outcrops, patches of Bracken (*Pteridium aquilinum*) and Bramble (*Rubus fruticosus* agg.), and cliff slopes with typical maritime vegetation e.g. Thrift (*Armeria maritima*), Sea Campion (*Silene maritima*), Rock Sea-spurrey (*Spergularia rupicola*) and Spring Squill (*Scilla verna*). Some sheltered gullies have small areas of scrub woodland dominated by Elder (*Sambucus nigra*). Vegetated sea cliffs are listed on Annex I of the EU Habitats Directive.

Lambay supports the only colony of Grey Seals on the east coast. Although it is a long established breeding site for this species, it remains relatively small (45-60 individuals) probably because of the restricted area suitable for breeding. A herd of Fallow Deer (up to c. 80) roams the higher parts of the island, and a small number of wallabies (c. 10) survive in a feral state. This island may also hold the last Irish population of the Ship Rat, a species listed in the vertebrate Red Data Book.

Lambay Island is internationally important for its breeding seabirds. The most numerous species is the Guillemot, with almost 52,000 individuals on the cliffs. Razorbills (3,646 individuals), Kittiwakes (5,102 individuals), Herring Gulls (2,500 pairs), Cormorants (605 pairs), Shags (1,164 pairs), Puffins (235 pairs), and small numbers of Great and Lesser Black-backed Gulls also breed (all figures from 1995).

Between 1991 and 1995 Fulmar numbers varied between 573-737 pairs. There is a small colony (<100 pairs) of the nocturnal Manx Shearwater on the island and up to 20 pairs of Common Terns have bred in recent years. A few Black Guillemots have been recorded on Lambay, but it is not clear if they breed. A pair of Peregrines are known to breed on the island.

In winter the most notable bird species on Lambay Island is the Greylag Goose with numbers peaking at 1,000, though in recent winters there has been a decline to 400- 700 individuals. There is also a small wintering flock of Barnacle Geese (up to 50), and recently Brent Geese (up to 100) have started to occur regularly. Small numbers of Great Northern Diver and Red-throated Diver are also present in winter.

An intensive survey of the natural history of Lambay Island was carried out in 1906 and published in the Irish Naturalist. A similar, comparative survey has been carried out in the early 1990's and it is hoped this will be published soon. With this background, Lambay is an excellent

site for studies of marine biology, terrestrial fauna and flora, geology, geomorphology and ecology. The island has been maintained as a wildlife sanctuary by its owners and no threats are envisaged should the present land use continue. Rodents may be causing some damage to the populations of burrow-nesting sea-birds. Lambay Island has good examples of vegetated sea cliffs, a habitat listed on Annex I of the EU Habitats Directive, and these cliffs hold internationally important populations of sea-birds. The site is also of conservation for the population of Grey Seal, a species listed on Annex II of this directive, that it supports.

Conservation objective is 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, vegetated sea cliffs of the Atlantic and Baltic coasts, *Halichoerus grypus*, Grey Seal.

Site Name: Rye Water Valley/Carlton SAC Site Code: 001398

Rye Water Valley/Carlton 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 oppositifolium*), 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 hederæ*) 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-of-parnassus (*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.

Conservation objective is 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, Petrifying Springs* [1014] Narrow-mouthed Whorl Snail (*Vertigo angustior*) [1016] Desmoulin's Whorl Snail (*Vertigo moulinsiana*)

Special Protection Areas

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 (*Armeria maritima*) 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 Bar-tailed 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 Brent 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].

Malahide (Broadmeadow/Swords) Esturay SPA

This site is situated in north Co. Dublin, between the towns of Malahide and Swords. It is the estuary of the River Broadmeadow, a substantial river which drains a mainly agricultural, though increasingly urbanised, catchment. A railway viaduct, built in the 1800s, crosses the site and has led to the inner estuary becoming lagoonal in character and only partly tidal. Much of the outer part of the estuary is well-sheltered from the sea by a large sand spit, known as "The Island". This spit is now mostly converted to golf-course. The outer part empties almost completely at low tide and there are extensive intertidal flats exposed. The site extends eastwards to the rocky shore at Robswalls.

Substantial stands of eelgrass (both *Zostera noltii* and *Z. angustifolia*) occur in the sheltered part of the outer estuary, along with Tasselweed (*Ruppia maritima*). Green algae, mostly *Enteromorpha* spp. and *Ulva lactuca*, are frequent on the sheltered flats. Common Cord-grass (*Spartina anglica*) is well established in the outer estuary and also in the innermost part of the site. The intertidal flats support a typical macroinvertebrate fauna, with polychaete worms (*Arenicola marina* and *Hediste diversicolor*), bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*, the small gastropod *Hydrobia ulvae* and the crustacean *Corophium volutator*.

Salt marshes, which provide important roosts during high tide, occur in parts of the outer estuary and in the extreme inner part of the inner estuary. These are characterised by such species as Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*).

This site is of high importance for wintering waterfowl and supports a particularly good diversity of species. It has an internationally important population of Brent Goose (956) or 4.8% of the national total (figures given here and below are average maximum counts for the five winters 1995/96-1999/00) and nationally important populations of a further 12 species as follows: Shelduck (439), Pintail (58), Goldeneye (215), Red-breasted Merganser (105), Oystercatcher (1,493), Golden Plover (1,843), Grey Plover (201), Knot (915), Dunlin (1,594), Black-tailed Godwit (409), Redshank (581) and Greenshank (38). A range of other species occur in numbers of regional importance, including Great Crested Grebe, Mute Swan, Pochard, Ringed Plover, Lapwing, Bar-tailed Godwit, Curlew and Turnstone. The high numbers of diving ducks reflects the lagoon-type nature of the inner estuary, and this is one of the few sites in eastern Ireland where substantial numbers of Goldeneye can be found.

The estuary also attracts on a regular basis migrant wader species such as Ruff, Curlew Sandpiper, Spotted Redshank, Green Sandpiper and Little Stint. These occur mainly in autumn, though occasionally in spring and winter.

Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of Malahide Island. Grey Herons breed nearby and feed regularly within the site. The inner part of the estuary is heavily used for water sports, which causes disturbance to the bird populations. A section of the outer estuary has recently been in-filled for a marina and housing development.

Broadmeadow/Swords Estuary SPA is a fine example of an estuarine system, providing both feeding and roosting areas for a range of wintering waterfowl. The lagoonal nature of the inner estuary is of particular value as it increases the diversity of birds which occur. The site is of high conservation importance, with an internationally important population of Brent Goose and nationally important populations of a further 12 species. Three of the species which occur regularly (Golden Plover, Bar-tailed Godwit and Ruff) are listed on Annex I of the E.U. Birds Directive.

The conservation objective is to maintain or restore the favourable conservation condition of the habitat and the bird species listed as Special Conservation Interests for this SPA; Great crested Grebe *Podiceps cristatus* [wintering], Lightbellied Brent Goose *Branta bernicla hrota* [wintering], Shelduck *Tadorna tadorna* [wintering], Pintail *Anas acuta* [wintering], Goldeneye *Bucephala clangula* [wintering], Red-breasted Merganser *Mergus serrator* [wintering], Oystercatcher *Haematopus ostralegus* [wintering], Golden plover *Pluvialis apricaria* [wintering], Grey plover *Pluvialis squatarola*, [wintering], Knot *Calidris canutus* [wintering], Dunlin *Calidris alpina* [wintering], Godwit *Limosa limosa* [wintering], Bar Tailed Godwit *Limosa lapponica* [wintering], Redshank *Tringa totanus* [wintering] and Wetlands.

Howth Head Coast SPA

Howth Head is a rocky headland situated on the northern side of Dublin Bay. The peninsula is composed of Cambrian rock of the Bray Group, the most conspicuous component being quartzite. The site comprises the sea cliffs extending from just east of the Nose of Howth to the tip of the Bailey Lighthouse peninsula. The marine area to a distance of 500 m from the cliff base, where seabirds socialise and feed, is included within the site.

The cliffs vary from between about 60 m and 90 m in height, and in places comprise fairly sheer, exposed rock face. Here plants such as Rock Sea-spurrey (*Spergularia rupicola*), Navelwort (*Umbilicus rupestris*), Rock Samphire (*Crithmum maritimum*), English Stonecrop (*Sedum anglicum*) and Biting Stonecrop (*Sedum acre*) are found, along with a good diversity of lichen species. Where the gradient allows, shallow glacial drift supports a typical maritime flora, with such conspicuous species as Thrift (*Armeria maritima*), Sea Campion (*Silene vulgaris* subsp. *maritima*), Common Scurvygrass (*Cochlearia officinalis*), Sea Plantain (*Plantago maritima*), Sea Mayweed (*Matricaria maritima*) and Sea Beet (*Beta vulgaris*). Spring Squill (*Scilla verna*), Bloody Crane's-bill (*Geranium sanguineum*), Sea Stork's-bill (*Erodium maritimum*) and Golden-samphire (*Inula crithmoides*) are notable species of the cliff flora.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Kittiwake.

Howth Head has important colonies of breeding seabirds. A census in 1999 recorded the following species: Fulmar (33 pairs), Shag (12 pairs), Herring Gull (17 pairs), Great Black-backed Gull (5 pairs), Kittiwake (2,269 pairs), Guillemot (990 individuals) and Razorbill (416 individuals). In addition, 39 individual Black Guillemot were counted within the site in May 1998. The populations of Kittiwake and Black Guillemot are of national importance, while the Razorbill, Guillemot and Fulmar populations are of regional importance. The cliffs also support a breeding pair of Peregrine Falcon, a species listed on Annex I of the E.U. Birds Directive. The seabird colony at Howth Head has been monitored at intervals since the Operation Seafarer

project in 1969/70. The Kittiwake, Guillemot and Razorbill populations have increased in recent years. The seabirds within the site are not under significant threat at present.

This site is of high ornithological importance, with four seabird species having populations of national importance. It is also a traditional nesting site for Peregrine Falcon. The site is easily accessible and has important amenity and educational value due to its proximity to Dublin City.

The conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; Kittiwake *Rissa tridactyla* [breeding].

Ireland's eye SPA

Ireland's Eye is an uninhabited island located about 1.5 km north of Howth in Co. Dublin. The island has an area of c.24 ha above the high tide mark. The underlying geology is Cambrian greywackes and quartzites. These rocks form impressive near vertical cliffs, reaching 69 m, along the northern and eastern sides of the island, with scattered exposures elsewhere on the island and especially in the high northern half.

A tall stack, which is completely cut off from the main island at mid to high tide, occurs at the eastern side of the cliffs. A sandy beach, backed by low sand hills, occurs at Carrigeen Bay on the western shore, while a shingle beach extends from Carrigeen to Thulla Rocks. Elsewhere the island is covered by glacial drift. A low lying, sparsely vegetated islet, known as Thulla, occurs a little to the south of the island, and an extensive area of bedrock shore (heavily covered by brown seaweeds) is exposed at low tide between Thulla and the main island. There are no watercourses or springs on the island, though two small rainwater ponds form during winter in the north-west and north-east sectors. A substantial area of the sea to the north and east of the island, where seabirds socialise and feed, is included in the site.

The drift soils support a plant community of Bracken (*Pteridium aquilinum*) and various grasses, especially Red Fescue (*Festuca rubra*), along with Bluebells (*Hyacinthoides non-scripta*), Common Dog-violet (*Viola riviniana*) and Pennywort (*Umbilicus rupestris*). The localised Spring Squill (*Scilla verna*) is a feature of the flora. The cliff maritime flora includes Rock Spurrey (*Spergularia rupicola*), Sea Stork's-bill (*Erodium maritimum*), Rock Samphire (*Crithmum maritimum*), Golden Samphire (*Inula crithmoides*) and Sea Lavender (*Limonium binervosum*). The small area of shingle vegetation supports two Red Data Book plant species, Sea Kale (*Crambe maritima*) and Henbane (*Hyoscyamus niger*). The seabird populations exercise a strong influence on the vegetation over much of the island and in places only those plants which can survive liberal spraying with guano manage to survive. Hogweed (*Heracleum sphondylium*), Nettles (*Urtica dioica*) and Slender Thistle (*Cardus tenuiflorus*) are common in such areas.

Ireland's Eye has important populations of breeding seabirds. In 1999 the following were counted: Fulmar 70 pairs; Gannet 142 pairs, Cormorant 306 pairs; Shag 32 pairs, Lesser Black-backed Gull 1 pair; Herring Gull c.250 pairs; Great Black-backed Gull c.100 pairs; Kittiwake 941 pairs; Guillemot 2,191 individuals; Razorbill 522 individuals. In 2001 the following were counted: Gannet 202 pairs; Cormorant 438 pairs; Shag 39 pairs; Great Black-backed Gull 110 pairs; Kittiwake 1024 pairs; Guillemot 2948 individuals; Razorbill 686+ individuals. Puffin was formerly common, but nowadays not more than 20 individuals occur. Black Guillemot also breeds, with 15 individuals recorded in 1998. Manx Shearwater has bred in the past. The Gannet, Cormorant, Herring Gull, Great Black-backed Gull, Kittiwake, Guillemot and Razorbill populations are of national importance. When the Cormorant population is considered as part of a larger grouping with the colonies on nearby Lambay and St. Patrick's Island, this population is of international importance. The Gannet colony is of particular note as it is one of five in the country and the only one on the east coast. It is also notable that it has only been established as recently as the late 1980s.

Several pairs each of Shelduck, Oystercatcher and Ringed Plover breed, while the island is a traditional site for Peregrine Falcon, a species listed on Annex I of the EU Birds Directive. In winter small numbers of Grey lag and Pale-bellied Brent Geese graze on the island and it is used as a roost site by gulls and some waders.

Ireland's Eye is now one of the best monitored sites in the country, with the breeding seabirds having been systematically censused using standard methods almost annually since 1990 (and also in 1986). Prior to that, census data are available for 1969/70 from the Operation Seafarer project. The present status of most of the breeding seabirds on Ireland's Eye appears favourable. The principal direct threat to the nesting birds is potential disturbance from visitors to the island. While the present level of disturbance does not appear to be having adverse impacts on the majority of the breeding birds (most of which are on relatively inaccessible cliffs), regulation and management of visitors to the island may be necessary in the future. Brown rats are long established on the island but their recent status is not well known. It is likely, however, that the presence of rats may be a factor in keeping the Puffin population at a low level.

This relatively small island is of high ornithological importance, with seven seabird species having populations of national importance. The regular presence of a breeding pair of Peregrine Falcon is also of note.

The conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; Cormorant *Phalacrocorax carbo* [breeding], Herring Gull *Larus argentatus* [breeding], Kittiwate *Rissa tridactyla* [breeding], Guillemont *Uria aalge* [breeding], Razorbill *Alca torda* [breeding].

Baldoyle Bay SPA

Baldoyle Bay extends from just below Portmarnock village to the west pier at Howth, Co. Dublin. It is a tidal estuarine bay protected from the open sea by a large sand dune system. Two small rivers, the Mayne and the Sluice, flow into the inner part of the estuary.

Large areas of intertidal flats are exposed at low tide. These are mostly sands but grade to muds in the inner sheltered parts of the estuary. Extensive areas of Common Cord-grass (*Spartina anglica*) occur in the inner estuary. Both the Narrow-leaved Eelgrass (*Zostera angustifolia*) and the Dwarf Eelgrass (*Z. noltii*) are also found here. During summer, the sandflats of the sheltered areas are covered by mats of green algae (*Enteromorpha* spp. and *Ulva lactuca*). The sediments have a typical macrofauna, with Lugworm (*Arenicola marina*) dominating the sandy flats. The tubeworm *Lanice conchilega* is present in high densities at the low tide mark and the small gastropod Laver Spire-shell (*Hydrobia ulvae*) occurs in the muddy areas, along with the crustacean *Corophium volutator*. Areas of saltmarsh occur near Portmarnock Bridge and at Portmarnock Point, with narrow strips along other parts of the estuary. Species such as Glasswort (*Salicornia* spp.), Sea-purslane (*Halimione portulacoides*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus maritimus*) are found here.

Baldoyle Bay is of high ornithological importance for wintering waterfowl, providing good quality feeding areas and roost sites for an excellent diversity of waterfowl species. It supports an internationally important population of Pale-bellied Brent Geese (726), and has a further seven species with nationally important populations (all figures are average peaks for the five winters 1995/96 to 1999/2000): Great Crested Grebe (42), Shelduck (147), Pintail (22), Ringed Plover (221), Golden Plover (1810), Grey Plover (200) and Bar-tailed Godwit (353). The occurrence of Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive. Other species which occur in significant numbers include Teal (124), Mallard (48), Common Scoter (61), Oystercatcher (531), Lapwing (480), Knot

Appropriate Assessment Screening Cherry Orchard, Dublin 10.

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(115), Dunlin (879), Black-tailed Godwit (72), Curlew (96), Redshank (224), Greenshank (11) and Turnstone (43).

Regular breeding birds include Shelduck, Mallard and Ringed Plover. In autumn, passage migrants such as Curlew Sandpiper, Spotted Redshank and Green Sandpiper are regular in small numbers.

Baldoyle Bay SPA is of high conservation importance, with an internationally important population of Brent Geese and nationally important populations of a further seven species, including two which are listed on Annex I of the E.U. Birds Directive. The inner estuarine section is a Statutory Nature Reserve and is also designated as a wetland of international importance under the Ramsar Convention. The site is a candidate Special Area of Conservation under the E.U. Habitats Directive. The main threat to the birds is disturbance as it is located in a densely populated area.

The conservation Objective is to maintain or restore the favourable conservation condition of the habitat and bird species listed as Special Conservation Interests for this SPA; Lightbellied Brent Goose *Branta bernicla hrota* [wintering], Shelduck *Tadorna tadorna* [wintering], Ringed Plover *Charadrius hiaticula* [wintering], Golden Plover *Pluvialis apricaria* [wintering], Grey Plover *Pluvialis squatarola* [wintering], Bar Tailed Godwit *Limosa lapponica* [wintering] and Wetlands.

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.

Dalkey Island SPA

The site comprises Dalkey Island, Lamb Island and Maiden Rock, the intervening rocks and reefs, and the surrounding sea to a distance of 200 m. Dalkey Island, which is the largest in the group, lies c. 400 m off Sorrento Point on the Co. Dublin mainland from which it is separated by a deep channel. The island is low-lying, the highest point of which (c. 15 m) is marked by a Martello Tower. Soil cover consists mainly of a thin peaty layer, though in a few places there are boulder clay deposits.

Vegetation cover is low-growing and consists mainly of grasses. Dense patches of Bracken (*Pteridium aquilinum*) and Hogweed (*Heracleum sphondylium*) occur in places. Lamb Island lies to the north of Dalkey Island, and at low tide is connected by a line of rocks.

It has a thin soil cover and some vegetation, mainly of grasses, Nettles (*Urtica dioica*) and Hogweed. Further north lies Maiden Rock, a bare angular granite rock up to 5 m high that is devoid of higher plant vegetation.

This site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Roseate Tern, Common Tern and Arctic Tern. Dalkey Islands SPA is both a breeding and a staging site for *Sterna* terns. There is a good history of nesting by terns though success has been variable over the years. Common Tern is the most common species, usually outnumbering Arctic Tern by at least 3:1. Up to 1988, the range given for Common Tern was 15-53 pairs, and for Arctic Tern 'a few' pairs. Also, Roseate Tern attempted nesting in 1986, with 2 pairs recorded. A tern conservation scheme, co-ordinated by BirdWatch Ireland / National Parks and Wildlife Service, began in 1995, with wardening, nestbox deployment and monitoring being carried out. The ultimate aim was to attract Roseate Tern to breed. Numbers of terns increased in subsequent years, though numbers and breeding success is still variable between years. In 2003 62 pairs of Common Tern and 24 pairs of Arctic Tern were recorded. Of great significance is that Roseate Tern has returned, with 5 pairs recorded in 2003 and 11 pairs in 2004 - this is one of only three known sites in the country for this rare species.

The site, along with other parts of south Dublin Bay, is used by the three tern species as a major post-breeding/pre-migration autumn roost area. Birds are present from about late-July to September, with c. 2,000 individuals of all three species being recorded. The origin of the birds is likely to be the Dublin breeding sites (Rockabill and Dublin Docks) though the numbers recorded suggests that birds from other sites, perhaps outside the State, are also present. The site also has breeding Great Black-backed Gull (7 pairs in 2001), Shelduck (1-2 pairs) and Oystercatcher (1-2 pairs). Herring Gull bred in large numbers in the past but is now very scarce (14 pairs recorded in 1999). The site is known to be frequented in winter by Turnstone and Purple Sandpiper but recent count data are not available.

Dalkey Islands SPA is of particular importance as a post-breeding/pre-migration autumn roost area for Roseate Tern, Common Tern and Arctic Tern. The recent nesting by Roseate Tern is highly significant. All three tern species using the site are listed on Annex I of the E.U. Birds Directive.

The Conservation objectives are to maintain or restore the favourable conservation of the bird species listed as Special Conservation Interests for this SPA, *Sterna dougallii* Roseate Tern, *Sterna hirundo*, Common Tern and *Sterna paradisaea*, Arctic Tern.

Rogerstown Estuary SPA

Rogerstown estuary is situated about 2 km north of Donabate in north County Dublin. It is a relatively small, funnel shaped estuary separated from the sea by a sand and shingle peninsula and extending eastwards beyond the low water mark to include an area of shallow marine water. The estuary receives the waters of the Ballyboghil and Ballough rivers, both of which flow through intensive agricultural catchments. The estuary has a wide salinity range, from near full sea water to near full fresh water. The estuary is divided by a causeway and narrow bridge, built in the 1840s to carry the Dublin-Belfast railway line. The site contains good examples of a number of estuarine and coastal habitats listed on Annex I of the E.U. Habitats Directive.

At low tide extensive intertidal sand and mud flats are exposed and these provide the main food resource for the wintering waterfowl. The intertidal flats of the estuary are mainly of sands, with soft muds in the north-west sector and along the southern shore. Associated with these muds are stands of Common Cord-grass (*Spartina anglica*). Green algae (mainly *Enteromorpha* spp. and *Ulva lactuca*) are widespread and form dense mats in the more sheltered areas. The intertidal vascular plant Beaked Tasselweed (*Ruppia maritima*) grows profusely in places beneath the algal mats and is grazed by herbivorous waterfowl (notably Brent Geese and Wigeon). The Lugworm (*Arenicola marina*) is common in the outer estuary and large Mussel beds (*Mytilus edulis*) occur at the outlet to the sea.

Salt marsh fringes parts of the estuary, especially its southern shores. Common plant species of the saltmarsh include Sea Rush (*Juncus maritimus*), Sea Purslane (*Halimione portulacoides*) and Common Saltmarsh-grass (*Puccinellia maritima*).

Rogerstown Estuary is an important winter waterfowl site and supports a population of Pale-bellied Brent Goose of international importance (1194 - all counts given are average peaks over the five winters 1996/97 – 2000/01). A further 14 species have populations of national importance as follows: Greylag Goose 87, Shelduck 78, Shoveler 72, Oystercatcher 1794, Ringed Plover 188, Grey Plover 343, Knot 2159, Sanderling 89, Dunlin 3128, Redshank 674, Lapwing 2166, Black-tailed Godwit 212, Greenshank 26 and Turnstone 188. The Greylag Geese are part of a larger population

which spends most of the winter on Lambay Island. Other species which occur regularly in significant numbers include Wigeon 411, Teal 379, Mallard 267, Redbreasted Merganser 22, Golden Plover 159 and Curlew 245. The numbers of Golden Plover and Lapwing can at times be considerably higher than the averages given above. The presence of Golden Plover is of note as this species is listed on Annex I of the E.U. Birds Directive. Large numbers of gulls, mostly Herring, Great Blackbacked and Black-headed, are attracted to the area, partly due to the presence of an adjacent local authority landfill site.

Some of the wader species also occur on passage, notably Black-tailed Godwit with numbers often exceeding 300 in April. The estuary is a regular staging post for scarce migrants, especially in autumn when Green Sandpiper, Ruff, Little Stint, Curlew Sandpiper and Spotted Redshank may be seen. Shelduck breed within the site.

Rogerstown Estuary is an important link in the chain of estuaries on the east coast. It supports an internationally important population of Brent Goose and a further 14 species in numbers of national importance. Bird populations have been well monitored since the 1980s and the site is counted at monthly intervals each winter (September to March) as part of the Irish Wetland Bird Survey (I-WeBS). The site is a statutory Nature Reserve and a candidate Special Area of Conservation under the E.U. Habitats Directive.

The conservation objective is to maintain or restore the favourable conservation condition of the habitat and bird species listed as Special Conservation Interests for this SPA; Grey lag Goose *Anser anser* [wintering], Lightbellied Brent Goose *Branta bernicla hrota* [wintering], Shelduck *Tadorna tadorna* [wintering], Shoveler *Anas clypeata* [wintering], Oystercatcher *Haematopus ostralegus* [wintering], Ringed plover *Charadrius hiaticula* [wintering], Grey Plover *Pluvialis squatarola* [wintering], Knot *Calidris canutus* [wintering] Dunlin *Calidris alpina* [wintering], Godwit *Limosa limosa* [wintering], Redshank *Tringa totanus* [wintering] and Wetlands.

Lambay Island SPA

Lambay Island lies approximately 4 km off the north Dublin coastline and is separated from it by a channel of 10-13 m in depth. East of Lambay the water deepens rapidly into the Irish Sea basin. The island, which rises to 127 m, has an area of 250 ha above high tide mark. The underlying geology is very varied, but is dominated by volcanic igneous rocks (of andesitic type) and ash; also present are shales, limestones and limestone conglomerates. The soils are generally shallow and are derived from glacial

tills of Irish Sea origin. The shallow soils are peaty on high exposed ground and above the cliffs. The island is well raised above sea-level, with about two-thirds above the 50 m contour. On the western side of the island the land rises gently from a bedrock shoreline. Cobble storm beaches are associated with this shore and at low tide sand flats are exposed within the harbour and below a section of the rocky shore.

The northern, eastern and most of the southern shorelines consist of steep cliffs varying from about 15 m to 50 m. These are backed by vegetated slopes along most of their length. Several small streams occur. The seas to a distance of 500 m from the base of the cliffs are included within the site for the benefit of the seabirds.

The predominant landuse on the island nowadays is grazing for cattle. Most of the central and eastern part of the island was improved for grazing in the 1950s and is now semi-improved pasture, interspersed with outcropping rock, bramble (*Rubus fruticosus*) and Bracken (*Pteridium aquilinum*). The cliff slopes have a typical maritime vegetation, with such species as Thrift (*Armeria maritima*), Sea Campion (*Silene maritima*), Rock Sea-spurrey (*Spergularia rupicola*) and Spring Squill (*Scilla verna*). Some sheltered gullies have small areas of scrub woodland dominated by Elder (*Sambucus nigra*). The low-lying western third is more fertile and is used for grazing and silage production. The habitations, which comprise a castle, cottages and farm complex, occur in the western sector.

Lambay Island is internationally important for its breeding seabirds and is of particular note for its diversity, with 12 species breeding regularly. A survey in 1999 showed that it had internationally important populations of Cormorant (675 pairs), Shag (1,122 pairs), Razorbill (4,337 individuals) and Guillemot (59,824 individuals). A further five species have populations of national importance: Fulmar (635 pairs), Lesser Black-backed Gull (309 pairs), Herring Gull (1,806 pairs), Great Black-backed Gull (193 pairs) and Kittiwake (4,091 pairs). The island also supports the largest colony of Puffin (265 individuals) on the east coast and has the only known east coast colony of Manx Shearwaters (<50 pairs). Several pairs of Black Guillemot breed. The populations of Cormorant, Shag, Herring Gull and Guillemot are the largest in Ireland.

Lambay is a traditional nesting site for Peregrine (1 pair); this is a species that is listed on Annex I of the E.U. Birds Directive. It also supports the largest colony of breeding Oystercatcher (20-25 pairs) on the east coast. Several pairs of Ringed Plover and Shelduck breed, as well as Raven and a variety of passerines such as Stonechat, Whitethroat and Reed Bunting.

In winter, Lambay supports a nationally important population of Greylag Goose (311 – average maximum for winters 1995/96-1999/00). Up to the mid 1990s, a Barnacle Goose flock wintered on the island (the only such flock in eastern Ireland) but these have since abandoned the site. Brent Geese now winter regularly (55), as well as Oystercatcher (155), Purple Sandpiper (9),

Appropriate Assessment Screening Cherry Orchard, Dublin 10.

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Curlew (189) and Turnstone (32). Large numbers of gulls frequent the island during the winter. Several seabird species, notably Fulmar, Shag and Guillemot, regularly visit the breeding cliffs during winter.

Lambay supports the only breeding colony of Grey Seal on the east coast. Although it is a long established site for this species, it remains relatively small (45-60 individuals) probably because of the restricted area suitable for breeding. A herd of Fallow Deer (up to c. 80) roams the island. Lambay may also hold the last Irish population of the Ship Rat, a species that is listed in the Irish Red Data Book.

The birds of Lambay have been well documented since the mid 1850s. Of particular importance was an intensive survey of the natural history of Lambay Island, which included detailed information on the birds, carried out in 1906. Since the 1980s, the birds have been well monitored, with regular censuses of both breeding and wintering birds.

Lambay has essentially been maintained as a wildlife sanctuary by its owners since the early 20th century and the policy of preservation of wildlife continues. Rats may be causing some damage to the populations of burrow-nesting sea-birds. As Lambay is close to major shipping lanes, oil pollution is always a threat.

Lambay is an internationally important seabird colony and one of the top seabird sites in Ireland. Four species have populations of international importance and a further five have populations of national importance. In addition to the seabirds, it also supports a nationally important population of Greylag Goose. The site is also of conservation for the population of Grey Seal, a species that is listed on Annex II of the E.U. Habitats Directive.

The conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: Fulmar *Fulmarus glacialis* [breeding], Cormorant *Phalacrocorax carbo* [breeding], Shag *Phalacrocorax aristotelis* [breeding], Greylag Goose *Anser anser* [wintering], Lesser Black-backed Gull *Larus fuscus* [breeding], Herring Gull *Larus argentatus* [breeding + wintering], Kittiwate *Rissa tridactyla* [breeding], Guillemot *Uria aalge* [breeding], Razorbill *Alca torda* [breeding], Puffin *Fratercula arctica* [breeding].