

South Dublin County Habitats Directive Assessment

**Screening of the County Development Plan for
Appropriate Assessment**

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

October 2010

1 INTRODUCTION

1.1 Context

The recent ruling against Ireland in Case 418/04 EC Commission V Ireland determined that Ireland had incorrectly transposed the Habitats Directive (92/43/EEC) by not providing explicitly for appropriate assessment under Article 6 of the Habitats Directive for land use plans in the European Communities (Natural Habitats) Regulations, 1997 (see <http://curia.europa.eu/jurisp/cgi-bin/form.pl?lang=en>).

Article 6 (3) of the 'Habitats' Directive 92/43/EEC states that;

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 sites conservation objectives...

Article 6(3) therefore requires that an "appropriate assessment" be undertaken for any plan or project that is likely to have an impact on a Natura 2000 site *i.e.* a Special Area of Conservation (SAC) or a Special Protection Area for Birds (SPA). South Dublin County has two areas designated as SACs but has no designated SPAs. Both of the County's SACs are located in the Dublin Mountains, bordering with County Wicklow – Glenasmole Valley SAC and a portion of the larger Wicklow Mountains SAC.

In effect, the Commission's ruling requires a robust and thorough application by all consent authorities, including planning authorities, of the requirement to undertake an appropriate assessment of the ecological implications of any plan or project, whether within or outside of a designated site, which may impact upon its stated conservation objectives.

1.2 The process of appropriate assessment

The requirement to undertake an appropriate assessment involves a number of stages. This involves an initial screening of a plan or project to determine the likelihood of potential impacts arising from the plan and when necessary, the assessment proceeds to the subsequent stages of appropriate assessment, assessment of alternative solutions, and an assessment of compensatory measures where applicable.

The consequences of a negative result for the appropriate assessment, where proposed mitigation measures or other proposals are insufficient to avoid adverse impacts or potential impacts on the integrity of a Natura 2000 site, are set out in Article 6 of the Habitats Directive. Practically, this indicates that the plan in question cannot be approved unless the strict criteria as set down in Article 6(4) of the Habitats Directive are met.

These include (1) the option of not adopting that policy or part of the plan, (2) establishing that there are imperative reasons of overriding public interest, including those of a social or economic nature, if the plan or amendment is to be approved, (3) the provision of compensatory sites may also be proposed in some circumstances.

Stage 1

This involves screening of all land-use plans (county development plans, local area plans, regional planning guidelines, schemes for strategic development zones) or amendments/variations of such for any potential impacts, direct or indirect, to Natura 2000 sites. This screening should be informed by any scientific information available to the authority, an adequate description of the plan, and should aim to identify any potential environmental impacts arising from the plan. It must take into account any policies that will set the terms for future development.

The impacts assessed must also include the *cumulative* impacts of approving the plan, considered with any current or proposed activities impacting on the site. Impacts of activities *outside* of a Natura 2000

site but potentially impacting upon them (including Natura 2000 sites not situated in the area encompassed by the plan), must also be included in the assessment.

Stage 2

Where screening indicates that a plan may have an impact on a Natura 2000 site, or where an impact cannot be ruled out, an appropriate assessment must be carried out. This 2nd stage essentially requires an expert ecological assessment of the potential impacts of the plan on the Conservation Objectives of the protected site as listed by the National Parks and Wildlife Service (NPWS) of the Department of Environment, Heritage, and Local Government. Consultation with the National Parks and Wildlife Service is recommended for the scoping of Stage 2.

Stage 3

Alternative options of implementing a plan or project are investigated in order to avoid negative impacts on the integrity of the Natura 2000 site.

Stage 4

Where alternative solutions can not be determined, it must be established whether or not the plan or project can be considered to be necessary for imperative reasons of over-riding public interest. Where a plan or project may be considered to be such, all compensatory measures that are necessary to ensure the overall coherence of the Natura 2000 network must be put in place.

2 SOUTH DUBLIN COUNTY DEVELOPMENT PLAN AND NATURA 2000 NETWORK

2.1 Description of Plan

The *South Dublin County Council Development Plan 2010-2016* sets out a coherent spatial planning framework for the County within the context of national and regional policies. The Plan seeks to develop and improve in a sustainable manner the social, economic, cultural and environmental assets of the County. Within a wider context of the longer term requirements of the County, the Plan concentrates on a six year period of governance for the County.

Preparation for the new Plan commenced in November 2008 and the final Plan was adopted by Council in September 2010. The Plan has been prepared in accordance with the requirements of the *Planning and Development Acts 2000 – 2007* and it replaces the *South Dublin County Council Development Plan 2004-2010*.

The Plan covers the administrative area of South Dublin County, which is 223 sq. kilometres in extent and is located approximately 16 kilometres south-west of Dublin City Centre. The County extends from the Dublin Mountains to the River Liffey and includes Brittas, Clondalkin, Edmondstown, Lucan, Newcastle, Palmerstown, Rathcoole, Rathfarnham, Rockbrook, Saggart, Tallaght and Templeogue.

The County Development Plan is presented as a written statement with Appendices and with accompanying zoning maps which give a graphic representation of the proposals of the Plan, indicating land-use and other control standards together with various objectives of the Council.

In short, the core strategy of the Development Plan is to give direct, coherent effect to the central strategic spatial policy of the Regional Planning Guidelines which is to promote a more compact and sustainable urban form. This to be achieved by:

- the consolidation/strengthening of SDCC's designated town centres particularly the County Town of Tallaght;
- supporting SDCC's existing urban areas including the redevelopment of brownfield lands;
- the promotion of significant new economic development along defined economic corridors based on fixed and developing public transport corridors;
- supporting continued agricultural activity in the west of the County;
- identifying and maintaining the County's green infrastructure; and
- promoting and supporting more sustainable forms of transport, particularly public transport.

2.2 Development Plan Preparation Process

The Planning and Development Act 2000 provides for the preparation of a Development Plan in 3 stages:

- Stage 1: Pre-draft
- Stage 2: Preparation of Draft Plan
- Stage 3: Making of Development Plan

Inputs from a wide range of people, voluntary groups and statutory agencies are important at the start of the plan-making process, so that the Development Plan reflects public aspirations and concerns as well as Government policy, strategies and guidance. The draft County Development Plan 2010-2016 was displayed for public consultation between 22nd September 2009 to 2nd December 2009 and was accompanied by the Environmental Report and the initial Screening Report for Appropriate Assessment.

Proposed amendments to the draft Plan were displayed for public comment from 3rd June 2010 to 2nd July 2010. The proposed amendments to the written statement (including errata sheet) and maps of the Draft County Development Plan 2010-2016 were accompanied by the Environmental Report and a report that assessed relevant motions for their impact on the initial Appropriate Assessment Screening.

2.3 Adoption of County Development Plan

Following the public consultation period, final agreement was achieved on proposed amendments in conjunction with a number of final emergency motions and the County Development Plan for South Dublin County 2010-2016 was adopted on 8th September 2010.

3 SOUTH DUBLIN COUNTY AND NATURA 2000 SITES

3.1 *The County Development Plan and Management of Natura 2000 sites*

A requirement of the European Commission's guidance document: "*Assessment of plans and projects significantly affecting Natura 2000 sites (Methodological guidance on the provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC)*", is an assessment of whether or not the Plan in question is necessary to the management of Natura 2000 sites.

As described above in Section 2.1, the SDCC Development Plan is a strategic, over-arching document that sets out a coherent spatial planning framework for the County as a whole, within the context of national and regional policies. The Plan does not propose to directly manage Natura 2000 sites nor is it directly necessary to the management of the Natura 2000 sites in the Plan area. However, a positive element of the Plan in this context is that it contains a range of strong policies and objectives that aim to protect and appropriately manage the natural heritage resource of the County as a whole, including Natura 2000 sites.

3.2 *Characteristics of Natura 2000 sites in South Dublin County*

There are two SACs located within the boundary of South Dublin County: Glenasmole Valley SAC (Site Code 001209) and a northern portion of the Wicklow Mountains SAC (Site Code 002122). Both of these SACs occur in the Dublin Mountain range, at the border with County Wicklow (see Appendix for full site descriptions for these two SACs). There are currently no SPAs designated within the area of South Dublin County.

Glenasmole Valley SAC contains a high diversity of habitats and plant communities and lists three habitats listed on Annex I of the EU Habitats Directive: petrifying springs with tufa formation, semi-natural dry grassland and scrubland facies on calcareous substrate (*Festuco-Brometalia*) (important orchid sites), and *Molinia* meadows on calcareous, peaty, or clayey-silt-laden soils (*Molinion caeruleae*). Both petrifying springs and orchid-rich calcareous grasslands also qualify as Priority Habitats under the Habitats Directive. The presence of four Red Data Book plant species further enhances the value of the site as does the presence of populations of several mammal and bird species of conservation interest. The River Dodder flows through the valley and has been impounded here to form two reservoirs which supply water to south Dublin.

Wicklow Mountains SAC is an important complex, extensive, upland site covering much of the Wicklow Mountains and a portion of the Dublin Mountain range. Within the boundaries of South Dublin County, the SAC encompasses the mountains of Ballymorefinn, Corrig, Kilakee, and Cruagh, stretching south to the summit of Kippure Mountain at the border with County Wicklow. While the entire SAC lists ten habitats listed in Annex I of the EU Habitats Directive, the vegetation within the South Dublin County portion of the site mainly provides good examples of the typical upland habitats of heath, blanket bog and upland grassland. Several rare, protected plant and animal species also occur in this SAC.

3.3 *Natura 2000 sites located adjacent to or downstream of South Dublin County*

The Habitats Directive requires that an assessment also be undertaken to discern if any impacts are likely to arise on Natura 2000 sites in the proximity of the County by virtue of any plan or project implemented within the County. This is also taken to include potential downstream effects.

There are two SPAs in County Wicklow which are close to the borders of South Dublin County: the Wicklow Mountains SPA (Site Code 4040) and Poulaphouca Reservoir SPA (Site Code 4063).

All of the streams and rivers in South Dublin County, apart from the Brittas River (which flows southwards, exiting the County and draining into Poulaphouca Reservoir nearby in County Wicklow), drain either northwards into the River Liffey which forms the northern boundary of the County, or they flow north and eastwards through the County into the administrative areas of Dublin City and

Dun Laoghaire Rathdown before draining directly into Dublin Bay via the Ringsend Basin. The area of Dublin Bay is notable for its Natura 2000 sites.

3.3.1 County Wicklow sites

Wicklow Mountains SPA (Site Code 4040) is an extensive upland site, comprising a substantial part of the Wicklow Mountains (See Appendix for full site description). The site, which is within the Wicklow Mountains National Park, is fragmented into about twenty separate parcels of land. Much of the site is State-owned and managed for nature conservation based on traditional landuses for the uplands. The site is of high ornithological importance as it supports very good examples of upland and woodland bird communities, several of which are very rare at a national level. Two species, Ring Ouzel and Red Grouse, are Red-listed and their status is of high conservation concern.

Poulaphouca Reservoir SPA (Site Code 4063) is located in the western foothills of the Wicklow Mountains (See Appendix for full site description). The principal interest of the site is the Greylag Goose population, which is of international importance. The site provides the main roost for the birds, with feeding occurring mostly on improved grassland outside of the site. A range of other wildfowl species also occurs, including Whooper Swan, a species that is listed on Annex I of the E.U. Birds Directive. The site is also notable as a winter roost for gulls, especially Lesser Black-backed Gull.

3.3.2 Dublin Bay sites.

North Dublin Bay SAC (Site Code 00206) 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 (See Appendix for full site description). The North Bull Island is the focal point of this site. This SAC site is an excellent example of a coastal site with all the main habitats represented. It 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 wintering bird species have populations of international importance, while some invertebrates on the site are of national importance. The site also contains a numbers of rare and scarce plants including some which are legally protected.

South Dublin Bay SAC (Site Code 00210) lies south of the River Liffey and extends from the South Wall to the west pier at Dun Laoghaire (See Appendix for full site description). It is a fine example of a coastal system with extensive sand and mudflats. South Dublin Bay is also an internationally important bird site. One Annex I habitat of conservation interest is listed for the site: Mudflats and sandflats not covered by seawater at low tide.

North Bull Island SPA (Site Code 4006) 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 (See Appendix for full site description). A well-developed and dynamic dune system stretches along the seaward side of the island, supporting various types of dunes and a large dune slack with a rich flora. Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. 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 site is 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 and waterbirds.

South Dublin Bay and River Tolka Estuary SPA (Site Code 4024) comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and 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 (See Appendix for full site description).

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex. It is of international importance for Light-bellied Brent Goose and of national importance for nine other waterfowl species. As an autumn tern roost, it is also of

international importance. Furthermore, the site supports a nationally important colony of Common Tern. All of the tern species using the site are listed on Annex I of the E.U. Birds Directive, as are Bartailed Godwit and Mediterranean Gull.

4 ASSESSMENT OF PLANS AND PROJECTS

The objective of the screening stage of the appropriate assessment process is to determine whether there are any elements of the Plan that are likely (either on their own or in combination with other plans and projects) to give rise to negative impacts on Natura 2000 sites occurring within, adjacent to, or downstream of the County. Where necessary, measures to avoid or mitigate impacts must be indicated. Where there is doubt about potential effects, the “precautionary principle” applies and further research must be undertaken. If effects are found to be likely, the plan must be subjected to the next stage of the process and a full appropriate assessment must be undertaken.

4.1 Avoiding Impacts

The preparation of the South Dublin County Development Plan was an iterative process which worked to inform the development of appropriate policies and objectives from the earliest stages of the Plan’s preparation process. As a result, there is a significant number of Development Plan policies and objectives in place that relate to general environmental protection, protection of Natura 2000 sites, and the protection of the uplands area where the County’s two SACs are located. A number of planning constraints will also operate via standard conditions that will apply to individual applications assessed in this area. These policies and conditions, particularly in combination with one another, offer considerable protection specifically to this area of the County and hence, to the two Natura 2000 sites. In Policy LHA 9, in particular, the Council undertakes to implement Article 6(3).

4.1.1 Policies, Specific Objectives, Plans, and Zoning considerations

Both Glenasmole Valley and the South Dublin County’s portion of the Wicklow Mountains SAC are located in a zoning area governed by Objective H: *To protect and enhance the outstanding natural character of the Dublin Mountain Area*

In Section 4.3.6 of the Plan, *Natural Heritage and Biodiversity*, the Council undertakes to ‘*fulfill the requirements of the National Parks and Wildlife Service Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (December 2009) for projects and plans*’. In addition the following selected policies and objectives work together to provide a significant level of environmental protection throughout the County as a whole:

Policy LHA 1 Preservation of Landscape Character

It is the policy of the Council to protect the character of the landscape in the County in accordance with the policies and objectives of the Development Plan and with the “Draft Guidelines for Landscape and Landscape Assessment”, (2000) or any finalised Guidelines which may be issued.

Policy LHA 2 Views and Prospects

It is the policy of the Council to protect views and prospects of special amenity value or special interest.

Policy LHA 8 Special Areas of Conservation and proposed Natural Heritage Areas

It is the policy of the Council to protect and preserve areas designated or proposed as Special Areas of Conservation (E.U. Habitats Directive) and proposed Natural Heritage Areas.

Policy LHA 9 Impacts on Natura 2000 Sites

It is the policy of the Council that projects giving rise to significant direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall not be permitted on the basis of this Plan (either individually or in combination with other plans or projects); Except as provided for in Article 6(4) of the Habitats Directive,

Policy LHA 10 Dublin Mountains Area above 350m Contour

It is the policy of the Council that within the part of the Dublin Mountains area, which is generally above the 350m contour, the management of development will seek to protect the open natural character of mountain heaths and mountain blanket bogs.

Policy LHA 12 Outdoor Recreational Potential of the Mountain Area

It is the policy of the Council that Development shall be managed with the objective of enhancing the sustainable outdoor recreational potential of the area while protecting and sustaining the environmental capacity of the upland landscape.

Policy LHA 13 Development within Liffey Valley, High Amenity Areas or Mountain Areas

It is the policy of the Council that within Liffey Valley, High Amenity Areas or the Dublin Mountains Area, any new development not related directly to the area's amenity potential or to its use for agriculture, mountain or hill farming will not be permitted.

Policy LHA 14 Development below the 120m Contour in the Dublin Mountains Area

It is the policy of the Council to limit the development of residential, commercial or industrial clusters to areas below the 120m contour in the Dublin Mountains area, (except where 'A1' zones are shown in this Plan above the 120m contour and also where specific objectives so permit in this Plan), in the interest of pursuing the policy of sustainability in both high amenity and rural areas.

Policy LHA 15 Heritage and Biodiversity Plan

It is the policy of the Council to support the objectives and actions of the South Dublin County Heritage Plan and to prepare a County Biodiversity Plan following public consultation and within the lifetime of the plan. This Plan will be set within the context of the National Biodiversity Plan, (2002).

Policy LHA 16 Forestry

It is the policy of the Council to facilitate the sustainable development of forestry in areas of the County where it will not have an adverse environmental impact, and where it will not detract from the recreational potential or the character of the Dublin Mountains Area or other High Amenity Zones or character or landscape of Liffey Valley Zone.

Policy LHA 17 Trees and Woodlands

It is the policy of the Council that trees, groups of trees or woodlands, which form a significant feature in the landscape, or are important in setting the character of an area, will be preserved wherever possible.

Policy LHA 18 Hedgerows

It is the policy of the Council to protect hedgerows in the County from development which would impact adversely upon them and to enhance the County's hedgerows by increasing coverage, where possible, using locally native species.

Policy LHA 19 Flora and Fauna

It is the policy of the Council to protect the natural resources of the County and conserve the existing wide range of flora and fauna in the County through the protection of wildlife habitats and wildlife corridors wherever possible.

Policy LHA 20 Green City Guidelines

It is the policy of the Council to require that all Planning applications for medium and high density development utilise the 'Green City Guidelines' (UCD Urban Institute Ireland 2008) to effectively retain and incorporate biodiversity into development proposals.

Policy LHA 21 River and Stream Management

It is the policy of the Council to implement a strategy (prepared on a regional basis) for the management of rivers and streams throughout the County.

Policy LHA 22 Watercourses

It is the policy of the Council to protect, maintain, improve and enhance the natural and organic character of the watercourses in the County and to promote access, walkways and other recreational uses of their associated public open space, subject to a defined strategy of nature conservation and flood protection.

Policy LHA 23 Protection of the Grand Canal

It is the policy of the Council to protect and enhance the visual, recreational, environmental (flora/fauna/biodiversity) and amenity value of the Grand Canal (pNHA), its towpaths, adjacent wetlands, and associated habitats and to facilitate the provision of a cycle-way on one side in association with Waterways Ireland. All development proposals adjoining the Grand Canal should be accompanied by a Biodiversity Action Plan, including mitigation measures, where appropriate.

Policy LHA 25 Dublin Mountain Zones

It is the policy of the Council to conserve the character of the Dublin Mountain and High Amenity Zones in conjunction with the Dublin Mountains Partnership.

Policy LHA 26 Areas of Special Amenity

It is the policy of the Council to examine areas within the Dublin Mountains including the Bohernabreena Reservoirs and High Amenity Area and Liffey Valley Zones with a view to making Special Amenity Area Orders for all or part of them.

Policy LHA 28 National Park

It is the policy of the Council to assist and cooperate in the protection of the Wicklow Mountains National Park that adjoins the County at Glenasmole and Kippure and extends into the County at Glendoo and to promote the extension of the Park to areas adjoining the County.

Policy LHA 31 Green Structure

It is the policy of the Council to facilitate, where possible, the development of a Green Structure where heritage and landscape are afforded protection, management and enhancement and where there will be adequate opportunity for passive and active recreation.

A number of policies and objectives also relate to the maintenance of water quality in the County.

2.3.4 Strategy: The strategy of the Council for the development of Water Supply and Drainage in the County is as follows:

- *Continue the sustainable development and improvement of the water supply and foul drainage systems throughout the County to meet the anticipated water and drainage requirements of the area.*
- *Protect surface water catchments and manage catchment areas where appropriate to protect the surface water drainage infrastructure of the County.*
- *Implement the provisions of national policy and legislation in the control of water pollution.*
- *Ensure that existing and proposed developments are not subject to undue risk of flooding.*
- *Conserve treated water by active leakage detection, non-domestic metering and development of infrastructure.*
- *Actively pursue and resolve water leakage.*

Policy WD 1 Water Supply and Drainage

It is the policy of the Council to co-operate with adjoining authorities to continue the sustainable development and improvement of the water supply and drainage systems throughout the County to meet the anticipated water and drainage requirements of the area, in accordance with the recommendations set out in the 'Greater Dublin Strategic Water Supply Study' and the 'Greater Dublin Strategic Drainage Study', and the proposed 'Dublin Region Water Services Strategic Plan' when adopted.

Policy WD 2 Wastewater Treatment Plants and Wastewater Collection Systems

It is the policy of the Council that development shall be preceded by sufficient capacity in the public wastewater treatment plants and appropriate extensions in the existing public wastewater collection

systems.

Policy WD 3 Quality of Surface Water and Groundwater

It is the policy of the Council that the ongoing development of the County shall be undertaken in such a way as not to compromise the quality of surface water (and associated habitats and species) and groundwater.

Policy WD 4 Soil and Groundwater Contamination

It is the policy of the Council to require adequate and appropriate investigations to be carried out into the nature and extent of any soil and groundwater contamination and the risks associated with site development work, where brownfield development is proposed.

Policy WD 5 Water Quality Management Plans

It is the policy of the Council to promote the implementation of water quality management plans for ground and surface waters in the county as part of the implementation of the EU Water Framework Directive, and in accordance with the policies and objectives and programme of measures of the Eastern River Basin Management Plan and any further amendments.

Policy WD 6 Sustainable Urban Drainage Systems (SuDS)

It is the policy of the Council to ensure that all development proposals incorporate Sustainable Urban Drainage Systems (SuDS).

Policy WD 7 Storm Overflows

It is the policy of the Council to minimise the number and frequency of storm overflows of sewage to watercourses and to establish, in co-operation with the adjoining local authorities, a consistent approach to the design, improvement and management of these intermittent discharges to ensure that the needs of the Region's receiving waters are met in a cost effective manner.

Policy WD 8 Water Pollution Abatement Measures

It is the policy of the Council to implement the provisions of water pollution abatement measures in accordance with National and EU Directives and legislative requirements in conjunction with other agencies as appropriate.

Policy WD 9 Bohernabreena Reservoirs and Catchment Area

It is the policy of the Council to protect the Bohernabreena Reservoirs and catchment area, cSAC and buffer zone, in the interests of public health and to restrict development in the catchment.

Policy EE 15 Natural Features in Enterprise Priority Areas

It is the policy of the Council where existing streams, watercourses, are located on land zoned for Enterprise Priority One, Enterprise Priority Two and Enterprise Priority Three purposes they should be protected and incorporated within the overall design for the area, thereby contributing to and connecting into the overall green network policy for the County. Riparian corridors should be kept free from development and be used as amenity for workers and visitors on the site, taking due care to protect and enhance the corridor's native biodiversity resource.

Policy EE 33 Sustainable Development of Agricultural Diversification

It is the policy of the Council to support the sustainable development of agriculture and agriculture diversification, such as organic foods, rural tourism and small to medium-sized enterprises subject to the retention of the holding for primarily agricultural use and the proper planning and sustainable development of the area including protecting and maintaining biodiversity, wildlife habitats, water quality, rural landscape character, scenic amenities and nature conservation.

Policy EE 35 Rural Related Enterprises

It is the policy of the Council to facilitate the development of acceptable rural related enterprises, including equine enterprises, in accordance with the terms of Zoning Objective 'B' (to protect and improve rural amenity and to provide for the development of agriculture) and to minimise pollution

from agricultural sources by means of development management and water pollution legislation and regulations.

4.1.2 Additional Protection Measures - Planning Conditions

The Planning Authority has not granted permission for any development within the two SACs. However, in order to ensure that there are no direct, indirect, or cumulative impacts on the SACs and that their conservation status of the protected habitats are maintained and that their listed conservation objectives are adhered to, the following measures will be strictly applied for all planning applications within the sensitive areas above and adjacent to the County's two SACs in the Dublin Mountains.

- All planning applications received by the Planning Authority for these areas will be subject to rigorous Appropriate Assessment screening and full AA investigation where required. Where impacts are seen to be likely, or where reasonable doubt exists to potential for impact, no application will be allowed to proceed.
- Appropriate Assessments will be based upon contemporary scientific data regarding hydrology and ecology wherever appropriate.
- For any permitted development, strict conditions will apply regarding the type, installation, monitoring, and servicing of all newly-granted waste water treatment systems in the catchment area of the two SACs.

Policy H33 (see Section 4.1) which refers to one-off rural housing in this area, also reinforces the necessity to have due regard in any application in this sensitive area, to the requirements for assessment as demanded under the Habitats Directive.

4.2 Potential Source of Impacts arising from the Plan

As outlined above (Section 4.1) the location of the County's two Natura 2000 sites in the upland and mountain zones where a range of protective policies and objectives apply, provides considerable safeguard against impacts arising from plans or projects by virtue of their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, or decommissioning.

However, the proximity of the upland and mountain zones to the urban fringe has put this area of the County under increasing development pressure in recent years. The Council's policies in relation to rural and one-off housing are listed in Chapter 2 (Section 1.2.51) of the Plan.

In the South Dublin County Development Plan 1998 - 2004, the area of Glenasmole and Bohernabreena was identified as being in need of a special consultative study which would assess housing needs and provision for that area of the County, taking into account the sensitivity of its landscape.

A study was commissioned and in October 2002, the "Glenasmole/Bohernabreena Housing and Planning Study" was noted at a meeting of the Tallaght Area Committee and is included in Appendix 8 to the new County Development Plan. Glenasmole Valley SAC and some minor portions of the Wicklow Mountains SAC are included within the Glenasmole/Bohernabreena Study Area while both SACs also occur within the Bohernabreena Reservoir Catchment area.

The Study identified particular locations within the study area which were deemed suitable for development and other areas within which new development will generally be prohibited in accordance with the criteria and constraints as set out in the Glenasmole/Bohernabreena Housing and Planning Study itself (See Figure 1). Such restricted areas include: lands covered by the Special Areas of Conservation; 100 metres from streams; 200 metres around the reservoirs; lands above the 350 metre contour; and areas with slopes greater than 20%. Outside of these areas, the Study considers

that development is acceptable. This approach was indicated in the Study as being essential given the extreme vulnerability of the sensitive mountain area, and the potential impact of development on the water supply for Dublin City and County. Policy H36 in the Plan refers to the development criteria arising from the Study. This policy also gives due regard to requirements under Article 6(3).

Policy H36: Glenasmole/Bohernabreena Area

It is the policy of the Council that development is generally prohibited within the restricted areas as shown on Figure 6 of the Bohernabreena/Glenasmole Housing and Planning Study (2002, or as may be reviewed and amended from time to time) following consultation with local residents and Elected Representatives, in accordance with Development Plan Policy SCR2, Community Information and Consultation. This includes significant areas of the reservoir catchment which is used as a water supply for domestic use and human consumption. Any proposed development within the Study Area will be subject to criteria and constraints as set out in the Study, giving due regard to the assessment requirements of the Habitats Directive regarding the protection of the integrity of Natura 2000 sites. The area covered by the Study is outlined on the Development Plan maps. The full text of The Study is included in Appendix 8.

As described above (Section 4.1), the Development Plan contains strong policies and objectives for the protection of Natura 2000 sites and for the environment in general. However, the cumulative impacts of agreed additional and amended policies that relate to the upland and rural areas, in conjunction with the objectives of the Glenasmole/Bohernabreena Housing and Planning Study were required to be assessed.

Glenasmole Valley SAC in particular, would be considered to be more at risk from impact than Wicklow Mountains SAC by virtue of the fact that the latter is located at higher altitude above the general housing area where risk of impact is highly unlikely. Pressures for planning permission, however, are high along the eastern side of the valley, particularly in areas along the Glassamucky Road and the Piperstown Road where development is deemed to be possible under the Glenasmole/Bohernabreena Housing Study.

The Glenasmole/Bohernabreena Housing and Planning Study also identifies suitable areas for development in the northern portion of the SAC, where the River Dodder emerges from the lower lake of the reservoir. While the land in these areas adjacent to the SAC are significantly more gentle in slope or even flat, possible impacts from development in these areas could also be anticipated.

The Glassamucky and Piperstown Roads are located at altitude above the Glenasmole Valley. A loosening of constraints on rural housing policies in these areas could pose a potential risk to the conservation objectives of the SAC. This threat arises from the possibility that the installation of higher numbers of waste water treatment systems for one-off rural housing in these areas poses a higher risk of ground water contamination of the SAC. Both petrifying springs and *Molinia* meadows are listed as qualifying interests for the SAC, and as both habitats rely on good water quality, the avoidance of impacts arising from water borne contamination must be achieved at all times.

While the potential for negative impact is therefore recognised, it is believed that the Plan's Policies and Objectives as listed in Section 4.1.1, in conjunction with the implementation of planning conditions as described in Section 4.1.2, provide a strong safeguard for both SACs and no direct or indirect impacts will be permitted.

5 SCREENING ASSESSMENT

In the light of the discussion above (see Section 4.2), the Plan was screened in relation to the Natura 2000 sites occurring within South Dublin County. Possible impacts arising from the Plan on Natura 2000 sites adjacent to and downstream of the County were also assessed as part of the screening process.

5.1 Screening of Natura 2000 sites within South Dublin County Glenasmole Valley SAC (Site Code 1209)

Table 1 provides a summary of the screening process for Glenasmole Valley SAC. The qualifying interests for the site, as listed by National Parks and Wildlife Service, are listed in Column 2 and relate to the reasons why the site is designated an SAC. Column 3 lists the specific conservation objectives of the site, again as listed by National Parks and Wildlife Service. It is noted that these are draft generic objectives and that in time, site-specific quantitative objectives for each qualifying interest will be set.

In Column 4, the County Development Plan was screened to assess whether the Plan is likely to impact upon any of the 3 listed conservation objectives for the site. The Development Plan does not propose any development or transport projects for this area and has a range of protective policies and objectives for this area as listed above (Section 4.1).

There is no project in the County Development Plan that will give rise to significant adverse direct, indirect, or secondary impacts on the integrity of the Glenasmole Valley SAC (Column 5).

Possible 'in combination' impacts were assessed for potential cumulative impact on the SAC. Column 6 lists two possible projects/policies which could result in an impact -. Glenasmole/Bohernabreena Housing and Planning Study 2002 and possible future development works relating to the Reservoir.

In order to completely avoid the risk of impact on the integrity of the Glenasmole Valley SAC, rigorous assessment of any housing/development application adjacent to the SAC, most especially in the more upland areas overlooking the SAC (see Section 4.1.2), will need to be undertaken to ensure that impacts are completely avoided (Column 8). Where impacts cannot be avoided, permission for development will not be granted.

Dublin City Council holds responsibility for the maintenance and workings of the waterworks located along the floor of Glenasmole Valley SAC. Recent upgrading works of the dam and weir systems at the reservoir have been completed by DCC. An ecological impact assessment, including recommendations for mitigation measures, was undertaken as part of that project. Any future plan for this area will be subject to an appropriate assessment to determine possible impacts on the SAC (Column 8).

With these mitigation measures in place, no impacts on the conservation objectives for Glenasmole Valley were therefore deemed likely to result from the cumulative effect of the County Development Plan and other plans or projects (Column 9).

Wicklow Mountain SAC (Site Code 2122)

Table 2 provides a summary of the screening process for Wicklow Mountains SAC. The qualifying interests for the site, as listed by National Parks and Wildlife Service, are listed in Column 2 and relate to the reasons why the site is designated an SAC. Column 3 lists the specific conservation objectives of the site, again as listed by National Parks and Wildlife Service. It is noted that these are draft generic objectives and that in time, site-specific quantitative objectives for each qualifying interest will be set.

In Column 4, the County Development Plan was screened to assess whether the Plan is likely to impact upon any of the 3 listed conservation objectives for the site. The Development Plan does not

propose any development or transport projects for this area and has a range of protective policies and objectives for this area as listed above (Section 4.1).

There is no project or plan in the County Development Plan that will give rise to significant adverse direct, indirect, or secondary impacts on the integrity of the Wicklow Mountains SAC (Column 5).

Possible ‘in combination’ impacts were also investigated by assessing other current or likely projects for this area which could have a cumulative impact on the SAC. Column 6 lists the Glenasmole/Bohernabreena Housing and Planning Strategy as a policy guiding rural development in this area. However, as the SAC is located above the areas identified by this report as being suitable for housing development, no impact is deemed to result from this plan on the integrity of the Wicklow Mountains SAC.

There is no project in the County Development Plan that will give rise to significant adverse direct, indirect, or secondary impacts on the integrity of the Wicklow Mountains SAC (either individually or in combination with other plans or projects) (Column 7).

5.2 Screening of Natura 2000 sites outside the area of South Dublin County

5.2.1 County Wicklow sites

The Wicklow Mountains SPA

The main conservation objective for the Wicklow Mountains SPA is to maintain the special conservation interests for the site at a favourable conservation status: Merlin and Peregrine. The County Development Plan does not propose any development or transport projects for the area within South Dublin County that is adjacent to this SPA. In addition, the Plan has a range of protective policies and objectives for the general area of the mountain zone (Section 4.1).

There is no project in the County Development Plan that will give rise to significant adverse direct, indirect, or secondary impacts on the integrity of the Wicklow Mountains SPA (either individually or in combination with other plans or projects).

Poulaphouca Reservoir SPA

The main conservation objective for the Poulaphouca Reservoir SPA is to maintain the special conservation interests for this SPA at favourable conservation status: Greylag Goose, Lesser Black-backed Gull, and Wetland & Waterbirds.

Although the SPA is located at some distance away from the boundary of South Dublin County, it is known from the NPWS Conservation Ranger for this area that Greylag Geese feed in an area of South Dublin County close to the County boundary in the vicinity of the village of Brittas, primarily in the townlands of Gortlum and Aghfarrell.

In order to ensure that there is no impact on the populations of protected species originating in the Poulaphouca Reservoir SPA by virtue of any plan or project within the South Dublin County Development Plan, any proposed development in the area of Brittas and the known feeding areas of the geese will be subject to rigorous examination. All applications will be subject to screening for Appropriate Assessment and full Appropriate Assessment where required. No development will occur if impacts cannot be mitigated for. This undertaking is highlighted in Section 4.3 of the County development Plan: *In conjunction with the National Parks and Wildlife Service, the Council will require impact assessment of proposed development in Brittas and Aghfarrell on the feeding areas of protected Greylag Geese. The Council will help ensure that any E.U and Nationally protected species are not placed under further risk of reduction in population size.*

There is no project in the County Development Plan that will give rise to significant adverse direct, indirect, or secondary impacts on the integrity of the Poulaphouca Reservoir SPA (either individually or in combination with other plans or projects).

5.2.2 Dublin Bay sites.

Any potential impact on any or all of the 4 Dublin Bay Natura 2000 sites relevant to this screening process are deemed to arise from water input into the Bay, all four sites will be assessed together following a brief description of their conservation interests and conservation objectives.

North Dublin Bay SAC (Site Code 00206)

There are 9 qualifying interests listed for the site: 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 maritima*); 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.

The site has four listed conservation objectives:

1. To maintain the Annex I habitats for which the cSAC has been selected at favourable conservation status (see qualifying interests):
2. To maintain the Annex II species for which the cSAC has been selected at favourable conservation status: *Petalophyllum ralfsii*.
3. To maintain the extent, species richness and biodiversity of the entire site
4. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

South Dublin Bay SAC (Site Code 00210)

There are three conservation objectives listed as follows:

1. To maintain the Annex I habitat for which the cSAC has been selected at favourable conservation status:
2. To maintain the extent, species richness and biodiversity of the entire site.
3. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

North Bull Island SPA (Site Code 4006)

The main conservation objective for this SPA is to maintain the special conservation interests for the site at favourable conservation status: Light-bellied Brent Goose, Shelduck, Pintail, Shoveler, Oystercatcher, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Redshank, Turnstone, 20,000 wintering waterbirds, Teal, Ringed Plover, Golden Plover, Sanderling, Curlew, Black-headed Gull, Wetland & Waterbirds

South Dublin Bay and River Tolka Estuary SPA (Site Code 4024)

The main conservation objective for this SPA is to maintain the special conservation interests for the site at favourable conservation status: Light-bellied Brent Goose, Knot, Sanderling, Bar-tailed Godwit, Redshank, Roseate Tern, Common Tern, Arctic Tern, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Dunlin, Black-headed Gull, Wetland & Waterbirds.

5.2.2.1 Assessment of impact on Dublin Bay

Poor water quality originating within South Dublin County and entering Dublin Bay is deemed to be the County's principal potential threat to the conservation objectives of the Dublin Bay Natura 2000 sites. In conjunction with the inputs from the three other Dublin Local Authorities of Fingal, Dublin City, and Dun Laoghaire-Rathdown, in addition to that from Kildare, this includes both the direct run-off into the streams and rivers that eventually empty into the Bay and also the volume of waste water requiring treatment in Dublin City prior to discharge into the Bay. The Dublin City water treatment facilities are subject to separate operational consent and licensing procedures which are themselves required to be compliant with all applicable environmental Regulations and Directives, including the Water Framework and Habitats Directive.

The draft South Dublin County Development Plan contains a number of objectives relating to water quality and waste water treatment, all of which aim to eliminate or reduce the potential for deterioration of water quality (see Section 4.1.1). Many of these policies involve the co-operation of

adjoining Counties in a broader, strategic approach to dealing with water quality issues. As a body, these policies and strategies will facilitate protection and monitoring of changes in water quality and aquatic habitats, and assist in the preparation of landscape improvement schemes for existing rivers and streams.

With the implementation of these and other related policies and mitigation measures, any current downstream impact on the Dublin Bay Natura 2000 sites will continue to diminish and any future plans will be rigorously assessed to ensure that there will be no additional negative impacts on water quality leaving the County.

6 CONCLUSIONS

The function of undertaking the screening process for an Appropriate Assessment of a Development Plan is to establish whether the Plan's provisions could affect the conservation objectives of any Natura 2000 site.

The screening process finds that the South Dublin County Development Plan has generally been formulated to ensure that uses, developments, and effects arising from permissions based upon the Plan (either individually or in combination with other plans or projects) shall not give rise to significant adverse impacts on the integrity of any Natura 2000 sites¹.

This conclusion is based on consultations with the relevant and most up-to-date scientific expertise to attempt to establish the presence of relevant environmental sensitivities (Qualifying Interests) likely to be affected by the Plan.

This conclusion of the assessment also takes account of the existence and presumed implementation of other relevant plans and policies² regulations, standards, and guidelines for water and ecology – not under the jurisdiction of South Dublin County Council – as enforced by other relevant regulatory agencies and authorities – principally, but not exclusively, the EPA and Departments of Environment, Heritage and Local Government; Agriculture, Fisheries and Food; Communications Energy, and Natural resources.

The appropriate assessment procedure for this Plan is therefore concluded at this screening stage and a detailed (stage 2) appropriate assessment is not required.

¹ Except as provided for in Article 6(4) of the Habitats Directive, viz there must be
(a) no alternative solution available
(b) imperative reasons of overriding public interest for the plan to proceed
(c) adequate compensatory measures to ensure the overall coherence of Natura 2000

² Particularly those flowing from the European Communities (Water policy) Regulations 2003 SI 722, (2003) – the Water Framework Directive

Table 1. Habitats Directive Assessment of Glenasmole Valley cSAC (001209)

European site	Qualifying Interests	Key environmental conditions to support site integrity (Conservation Objectives)	Possible impacts from draft County Development Plan	Risk of impact?	Possible 'in combination' impacts (cumulative impacts in conjunction with other plans)	Risk of impact from combination effects?	Avoidance and (then) mitigation measures	Residual Risk of Impact
Glenasmole Valley cSAC (001209)	<p>*Petrifying springs with tufa formation</p> <p>Semi-natural dry grassland and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (*important orchid sites)</p> <p><i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)</p> <p>(* denotes 'Priority' Habitat')</p>	<p>To maintain the Annex I habitats for which the cSAC has been selected at favourable conservation status (see Qualifying Interests column).</p>	<p>No.</p> <p>The Plan lists a range of policies and objectives to protect Natura 2000 sites, the upland and mountain zones, and environment in general (see Section 4.1).</p>	<p>No.</p>	<p>Possible impacts arising from the Glenasmole/Bohernabreena Housing and Planning Study 2002.</p>	<p>Potential risk.</p>	<p>Refuse development within or adjacent to the SAC which could result in habitat loss, deterioration, fragmentation, or ground water contamination.</p> <p>Apply Article 6 (3) rigorously to all planning applications and implement measures listed in Section 4.1.2.</p>	<p>No</p>
					<p>Possible impacts from further future plans of DCC in the Bohernabreena Reservoir and Waterworks.</p>	<p>Unlikely, DCC have recently completed planned upgrades to Waterworks.</p>	<p>Ensure that any future plan for the waterworks will be subject to Appropriate Assessment Screening.</p>	<p>No</p>

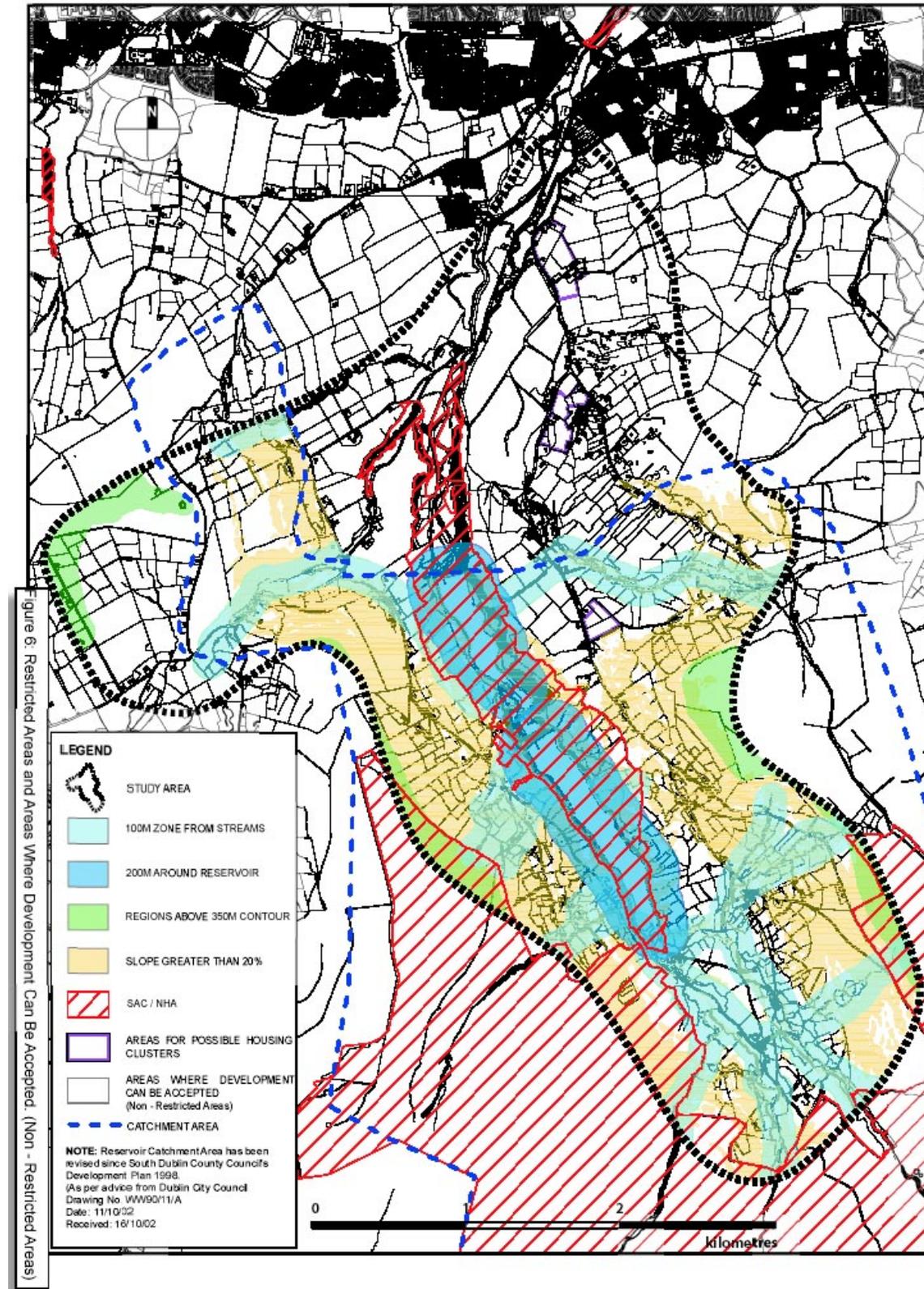
		Key environmental conditions to support site integrity (Conservation Objectives)	Possible impacts from draft County Development Plan	Risk of impact?	Possible 'in combination' impacts (cumulative impacts in conjunction with other plans)	Risk of Significant impact from combination effects?	Avoidance and (then) mitigation measures	Residual Risk of Impact
		To maintain the extent, species richness and biodiversity of the entire site.	No. The Plan lists a range of policies and objectives to protect Natura 2000 sites, the upland and mountain zones, and environment in general (see Section 4.1).	No.	Possible impacts arising from the Glenasmole/Bohernabreena Housing and Planning Study 2002.	Possible risk.	Refuse development within or adjacent to the SAC which could result in habitat loss, deterioration, fragmentation, or ground water contamination. Apply Article 6 (3) rigorously to all planning applications and implement measures listed in Section 4.1.2.	No
					Possible future plans of DCC in the Bohernabreena Reservoir and Waterworks.	Unlikely, DCC have completed planned upgrades to Waterworks.	Ensure that any future plan for the waterworks will be subject to appropriate assessment.	

Table 2. Habitats Directive Assessment of Wicklow Mountains cSAC (002122)

European site	Qualifying interests	Key environmental conditions to support site integrity (Conservation Objectives)	Possible impacts from plan	Risk of significant impact?	Possible 'in combination' impacts	Risk of significant impact?	Avoidance and (then) mitigation measures
<p>Wicklow Mountains cSAC (002122)</p>	<p>Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea</p> <p>Natural dystrophic lakes and ponds</p>	<p>To maintain the Annex I habitats for which the cSAC has been selected at favourable conservation status (see Qualifying Interests column).</p>	<p>No.</p> <p>The Plan lists a range of policies and objectives to protect Natura 2000 sites, the upland and mountain zones, and environment in general (see Section 4.1).</p>	<p>No.</p>	<p>Possible impacts arising from the Glenasmole/Bohernabreena Housing and Planning Study 2002.</p>	<p>No. SAC is located above the zone of highest housing pressure and in areas mostly deemed not to be suitable for development</p>	
	<p>Northern Atlantic wet heaths with <i>Erica tetralix</i></p> <p>European dry heaths; Alpine and Boreal heaths</p> <p>Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)</p>	<p>To maintain the Annex II species for which the cSAC has been selected at favourable conservation status: <i>Lutra lutra</i>.</p>	<p>No.</p> <p>The Plan lists a range of policies and objectives to protect Natura 2000 sites, the upland and mountain zones, and environment in general (see Section 4.1).</p>	<p>No.</p>	<p>Possible impacts arising from the Glenasmole/Bohernabreena Housing and Planning Study 2002.</p>	<p>No. SAC is located above the zone of highest housing pressure and in areas mostly deemed not to be suitable for development</p>	
	<p>Blanket bog</p> <p>Siliceous scree of the montane to snow levels</p>	<p>To maintain the extent, species richness and biodiversity of the entire site.</p>	<p>No.</p> <p>The Plan lists a range of policies and objectives to protect Natura 2000 sites, the upland and mountain zones, and</p>	<p>No.</p>	<p>Possible impacts arising from the Glenasmole/Bohernabreena Housing and Planning Study</p>	<p>No. SAC is located above the zone of highest housing pressure and in areas mostly</p>	

	(<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>)		environment in general (see Section 4.1).		2002.	deemed not to be suitable for development No.	
	Calcareous rocky slopes with chasmophytic vegetation	To establish effective liaison and co-operation with landowners, legal users and relevant authorities.	No.	No.	No.	No.	
	Siliceous rocky slopes with chasmophytic vegetation						
	Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in British Isles.						

Figure 1. Map of restricted and permitted development areas as proposed in the Glenasmole/Bohernabreena Housing and Planning Strategy.



SITE SYNOPSIS

SITE NAME: GLENASMOLE VALLEY

SITE CODE: 001209

Glenasmole Valley in south Co. Dublin lies on the edge of the Wicklow uplands, approximately 5 km from Tallaght. The River Dodder flows through the valley and has been impounded here to form two reservoirs which supply water to south Dublin. The non-calcareous bedrock of the Glenasmole Valley has been overlain by deep drift deposits which now line the valley sides. They are partly covered by scrub and woodland, and on the less precipitous parts, by a herb-rich grassland. There is much seepage through the deposits, which brings to the surface water rich in bases, which induces local patches of calcareous fen and, in places, petrifying springs, a priority habitat listed on Annex I of the EU Habitats Directive.

Examples of calcareous fen and flush areas occur between the two reservoirs, where sedges (*Carex flacca* and *Carex panicea*) are joined by such species as Grass of Parnassus (*Parnassia palustris*), Few-flowered Spike-rush (*Eleocharis quinqueflora*), Zig-zag clover (*Trifolium medium*) and the scarce Fen Bedstraw (*Galium uliginosum*).

Orchid-rich grassland occurs in the drier parts of this site and in places grades into *Molinia* meadow, both of these habitats are listed on Annex I of the EU Habitats Directive. Species recorded in these habitats include Frog Orchid (*Coeloglossum viride*), Northern Marsh-orchid (*Dactylorhiza purpurella*), Fragrant Orchid (*Gymnadenia conopsea*), Marsh Helleborine (*Epipactis palustris*), Early-purple Orchid (*Orchis mascula*) and Greater Butterfly Orchid (*Platanthera chlorantha*).

Two Red Data Book species have also been found here, Green-winged Orchid (*Orchis morio*) and Small-white Orchid (*Pseudorchis albida*). The sward includes Sweet Vernal-grass (*Anthoxanthum odoratum*), Creeping Bent (*Agrostis stolonifera*) and Crested Dog's-tail (*Cynosurus cristatus*). Other species which occur are Common Bird's-foot-trefoil (*Lotus corniculatus*), Kidney Vetch (*Anthyllis vulneraria*), Common Restharrow (*Ononis repens*), Yellow-wort (*Blackstonia perfoliata*) and Autumn Gentian (*Gentianella amarella*).

Woodland occurs in patches around the site. On the east side of the valley, below the northern lake, a Hazel (*Corylus avellana*) wood has developed on the unstable calcareous slopes and includes Ash (*Fraxinus excelsior*), Downy Birch (*Betula pubescens*), Goat Willow (*Salix caprea*) and (Irish) Whitebeam (*Sorbus hibernica*). Spring Wood-rush (*Luzula pilosa*), Wood Speedwell (*Veronica montana*) and Brambles (*Rubus fruticosus* agg.) are included in the ground flora.

Wet semi-natural broad-leaved woodland is also found around the reservoirs and includes Alder (*Alnus glutinosa*) and Willow (*Salix* spp.) with Yellow Iris (*Iris pseudacorus*), Horsetail (*Equisetum* spp.), Brambles and localised patches of Japanese Knotweed (*Reynoutria japonica*), an introduced species.

The lake shore vegetation is not well developed, which is typical of a reservoir. There are occasional patches of Canary-grass (*Phalaris arundinacea*) and Purple-loosestrife

(*Lythrum salicaria*), which are more extensive around the western shore of the northern lake, along with Common Marsh-bedstraw (*Galium palustre*) and Water Mint (*Mentha aquatica*). Other vegetation includes Shoreweed (*Littorella uniflora*) and the scarce Water Sedge (*Carex aquatilis*).

As well as the Green-winged Orchid and Small-white Orchid, two other threatened species which are listed in the Irish Red Data Book also occur in the site, Yellow Archangel (*Lamiastrum galeobdolon*) and Yellow Bird's-nest (*Monotropa hypopitys*). The site provides excellent habitat for bat species, with at least four species recorded: Pipistrelle, Leisler's, Daubenton's and Brown Long-eared Bat. Otter occurs along the river and reservoirs. These habitats also support Kingfisher, an Annex I species under the EU Birds Directive.

Glenasmole Valley contains a high diversity of habitats and plant communities, including three habitats listed on Annex I of the EU Habitats Directive. The presence of four Red Data Book plant species further enhances the value of the site as does the presence of populations of several mammal and bird species of conservation interest.

03.09.2001

SITE SYNOPSIS

SITE NAME: WICKLOW MOUNTAINS

SITE CODE: 002122

This site is a complex of upland areas in Counties Wicklow and Dublin, flanked by Blessington Reservoir to the west and Vartry Reservoir in the east, Cruagh Mt. in the north and Lybagh Mt. in the south. Most of the site is over 300m, with much ground over 600m and the highest peak of Lugnaquilla at 925m.

The Wicklow Uplands comprise a core of granites flanked by Ordovician schists, mudstones and volcanics. The form of the Wicklow Glens is due to glacial erosion. The Wicklow Mountains are drained by several major rivers including the Dargle, Liffey, Dodder, Slaney and Avonmore. The river water in the mountain areas is often peaty, especially during floods.

The topography is typical of a mountain chain, showing the effects of more than one cycle of erosion. The massive granite has weathered characteristically into broad domes. Most of the western part of the site consists of an elevated moorland, covered by peat. The surrounding schists have assumed more diverse outlines, forming prominent peaks and rocky foothills with deep glens. The dominant topographical features are the products of glaciation. High corrie lakes, deep valleys and moraines are common features of this area. The substrate over much of the area is peat, usually less than 2m deep. Poor mineral soil covers the slopes and rock outcrops are frequent

The vegetation over most of the site is a mosaic of heath, blanket bog and upland grassland (mostly on peaty soil, though some on mineral soil), with stands of dense Bracken (*Pteridium aquilinum*) and small woodlands mainly along the rivers.

Mountain loughs and corrie lakes are scattered throughout the site. The site supports many habitats that are listed on Annex I of the E.U. Habitats Directive.

The two dominant vegetation communities in the area are heath and blanket bog. Heath vegetation, with both wet and dry heath well represented, occurs in association with blanket bog, upland acid grassland and rocky habitats. The wet heath is characterised by species such as Ling (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Cottongrasses (*Eriophorum* spp.), Tormentil (*Potentilla erecta*), Mat-grass (*Nardus stricta*), Bent grasses (*Agrostis* spp.) and bog mosses (*Sphagnum* spp.). In places the wet heath occurs in conjunction with flush communities and streamside vegetation, and here species such as Heath Rush (*Juncus squarrosus*) and *Carex* spp. are found. Dry heath at this site is confined to shallow peaty soils on steep slopes where drainage is better and particularly in sheltered conditions. It is characterised by species such as Ling, Gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). In places the heath grades into upland grassland on mineral soil, some examples of which correspond to the E.U. Habitats Directive Annex I priority habitat species-rich *Nardus* grassland.

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

Due to the underlying rock strata, the water of the rivers and streams tends towards acidity. The water is generally oligotrophic and free from enrichment. The lakes within the area range from the high altitude lakes of Lough Firrib and Three Lakes, to the lower pater-noster lakes of Glendalough, Lough Tay and Lough Dan. Spectacular corrie lakes (such as Loughs Bray (Upper and Lower), Ouler, Cleevaun, Arts, Kellys and Nahanagan) exhibit fine sequences of moraine stages. The deep lakes are characteristically species poor, but hold some interesting plants including an unusual form of Quillwort (*Isoetes lacustris* var. *morei*), a Stonewort (*Nitella* sp.) and Floating Bur-reed (*Sparganium angustifolium*). The Red Data Book fish species Arctic Char has been recorded from Lough Dan, but this population may now have died out. Alpine vegetation occurs on some of the mountain tops, notably in the Lugnaquilla area, and also on exposed cliffs and scree slopes elsewhere in the site. Here alpine heath vegetation is represented with species such as Crowberry (*Empetrum nigrum*), Cowberry, Dwarf Willow (*Salix herbacea*), the grey-green moss *Racomitrium*

lanuginosum and scarce species such as Mountain Clubmoss (*Diphasiastrum alpinum*), Firmoss (*Huperzia selago*), and Starry Saxifrage (*Saxifraga stellaris*). Some rare arctic-alpine species have been recorded, including Alpine Lady's-mantle (*Alchemilla alpina*) and Alpine Saw-wort (*Saussurea alpina*).

Small areas of old oakwood (Blechno-Quercetum petraeae type) occur on the slopes of Glendalough and Glenmalure, near L. Tay and L. Dan, with native Sessile Oak (*Quercus petraea*) 100-120 years old. On wetter areas, wet broadleaved semi-natural woodlands occur, which are dominated by Downy Birch (*Betula pubescens*). Mixed woodland with non-native tree species also occurs.

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

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

Large areas of the site are owned by NPWS, and managed for nature conservation based on traditional landuses for the uplands. The most common landuse is traditional sheep grazing. Other land uses include turf-cutting, mostly hand-cutting but some machine-cutting occurs. These activities are largely confined to the Military Road, where there is easy access. Large areas which had been previously hand-cut and are now abandoned, are regenerating. In the last 40 years, forestry has become an important landuse in the uplands, and has affected both the wildlife and the hydrology of the area. Amenity use is very high, with Dublin city close to the site.

Wicklow Mountains is important as a complex, extensive upland site. It shows great diversity from a geomorphological and a topographical point of view. The vegetation provides examples of the typical upland habitats with heath, blanket bog and upland grassland covering large, relatively undisturbed areas. In all ten habitats listed on Annex I of the EU Habitats Directive are found within the site. Several rare, protected plant and animal species occur.

12.10.2001

SITE SYNOPSIS

SITE NAME: WICKLOW MOUNTAINS SPA

SITE CODE: 004040

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

The dominant habitats present are blanket bog, heaths and upland grassland. The bog habitat is usually dominated by Ling (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*), Deergrass (*Scirpus cespitosus*) and Bog Asphodel (*Narthecium ossifragum*). Bog mosses (*Sphagnum* spp.) are well represented. On shallower peats, dry heath is represented by such species as Ling, Gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). Fine examples of native Oak woodlands are found in the Glendalough area, and include Sessile Oak (*Quercus petraea*) trees of 100-120 years old. Glendalough Lake is a good example of an oligotrophic system.

The site supports good examples of both upland and woodland bird communities. The open peatlands provide excellent foraging habitat for Merlin (5-10 pairs) and Peregrine (c. 10 pairs). The Merlins nest in old crows nests, whilst the Peregrines nest on cliffs and crags. Other birds of the open peatlands and scree slopes include Ring Ouzel, now a very rare bird in Ireland, and Red Grouse. The Wicklow uplands are the only regular location in Ireland where Goosander breeds, with the Glendalough lakes being a regular site. This species was proved to be breeding only as recently as 1994 and it is now well established. Whinchat, a localised species in Ireland, breeds within the site.

The Glendalough Oak woods are a regular location for several rare breeding passerines. Redstart is recorded most years and 1-2 pairs probably breed. Wood Warbler is another annual visitor, with perhaps up to 5 pairs in some years. Recently, Garden Warbler has been recorded, whilst Blackcap has a very strong breeding population.

The site, which is within the Wicklow Mountains National Park, is fragmented into about twenty separate parcels of land. Much of the site is State-owned and managed for nature conservation based on traditional landuses for the uplands. The most common landuse is traditional sheep grazing. Other land uses include turf-cutting, mostly by hand though some machine-cutting also occurs. Grazing by sheep and deer in the woodlands can be damaging as it prevents or reduces regeneration. Dublin City is close to the site and amenity use is very high; if not properly controlled, recreational activities could cause disturbance to some bird species.

This site is of high ornithological importance as it supports very good examples of upland and woodland bird communities. Several of the species which occur are very rare at a national level.

Two species, Ring Ouzel and Red Grouse, are Red-listed and their status is of high conservation concern. Also of note is that Merlin and Peregrine are both listed on Annex I of the E.U. Birds Directive.

25.8.2004

SITE SYNOPSIS

SITE NAME: POULAPHOUCA RESERVOIR SPA

SITE CODE: 004063

Poulaphouca Reservoir SPA, located in the western foothills of the Wicklow Mountains, was created in 1944 by damming of the River Liffey for the purpose of generating electricity from hydropower. The reservoir covers an area of approximately 20 square kilometres and is the largest inland water body in the mid-east and south-east regions. The reservoir receives water from two main sources, the River Liffey at the northern end, and the Kings River at the southern end. The exit is into the River Liffey gorge at the western end. Underlying the reservoir are sands and gravels deposited during the last glaciation. The shores of the lake are mostly sandy.

When water levels are low the exposed lake muds are colonised by an ephemeral flora of annual plant species. Wet grassland areas occur in sheltered bays around the lake but especially in the northern part. Reed Canary-grass (*Phalaris arundinacea*) is the main grass species present, but other plant species characteristic of wet grasslands occur, including Creeping Bent (*Agrostis stolonifera*), Meadowsweet (*Filipendula ulmaria*), Yellow Iris (*Iris pseudacorus*) and Water Mint (*Mentha aquatica*). Sedges (*Carex* spp.) are locally common, while Rusty Willow (*Salix cinerea* subsp. *oleifolia*) scrub is often found associated with the wet grassland. In some places the water washes against grassy banks which are generally less than a metre high, and in a few places there are steep sand and clay cliffs, up to 15 m high - these are remnants of the old River Liffey channel. In many places the banks are actively eroding, and a strip of conifers has been planted around much of the perimeter of the reservoir in an attempt to stabilize the banks.

Poulaphouca Reservoir is of international importance for its Greylag Goose population, which is one of the largest in the country. The site provides the main roost for the birds, with feeding occurring mostly on improved grassland outside of the site. An average peak of 1,058 individuals occurred during the five seasons 1995/96 to 1999/00. A range of other waterfowl species occur in relatively low numbers, including Whooper Swan (34), Wigeon (262), Teal (136), Mallard (283), Goldeneye (36), Cormorant (16), Great Crested Grebe (11), Curlew (118) and Mute Swan (17). The site is also used by Grey Heron (12).

The reservoir attracts roosting gulls during winter, most notably a large population of Lesser Black-backed Gull (1,116), which in Ireland is rare in winter away from the south coast. Black-headed Gull (1,245) and Common Gull (229) also occur. Breeding birds at the site include Great Crested Grebe (several pairs), which is

localised in its distribution in eastern Ireland, as well as Snipe and Lapwing. The principal interest of the site is the Greylag Goose population, which is of international importance. A range of other wildfowl species also occurs, including Whooper Swan, a species that is listed on Annex I of the E.U. Birds Directive. The site is also notable as a winter roost for gulls, especially Lesser Black-backed Gull.

2.3.2005

SITE SYNOPSIS

SITE NAME: NORTH BULL ISLAND SPA

SITE CODE: 004006

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

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

The site formerly had an important colony of Little Tern but breeding has not occurred

in recent years. Several pairs of Ringed Plover breed, along with Shelduck in some years. Breeding passerines include Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to 5 present in some winters.

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

The main landuses 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.

22.5.2008

SITE SYNOPSIS

SITE NAME : NORTH DUBLIN BAY SAC

SITE CODE : 000206

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).

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. It 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 number 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.

23.11.1999

SITE SYNOPSIS

SITE NAME: SOUTH DUBLIN BAY

SITE CODE: 000210

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, a habitat listed on Annex I of the E.U. Habitats Directive. The sediments are predominantly sands but grade to sandy muds near the shore at Merrion gates. The main channel which drains the area is Cockle Lake.

The main channel which drains the area is Cockle Lake.

There is a bed of Eelgrass (*Zostera noltii*) below Merrion Gates which is the largest

stand on the east coast. 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. Species include *Fucus spiralis*, *F. vesiculosus*, *F. serratus*, *Ascophyllum nodosum* and *Pelvetia canaliculata*.

Lugworm (*Arenicola marina*) and Cockles (*Cerastoderma edule*) and other annelids and bivalves are frequent throughout the site. The small gastropod *Hydrobia ulvae* occurs on the muddy sands off Merrion Gates.

South Dublin Bay is an important site for waterfowl. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. The principal species are Oystercatcher (1215), Ringed Plover (120), Sanderling (344) and Dunlin (2628), Redshank (356) (average winter peaks 1996/97 and 1997/98). Up to 100 Turnstones are usual in the south bay during winter. Brent Geese regularly occur in numbers of international importance (average peak 299). Bar-tailed Godwit (565), a species listed on Annex I of the EU Birds Directive, also occur.

Large numbers of gulls roost in South Dublin Bay, e.g. 4,500 Black-headed Gulls in February 1990; 500 Common Gulls in February 1991. It is also an important tern roost in the autumn, regularly holding 2000-3000 terns including Roseate Terns, a species listed on Annex I of the E.U. Birds Directive. South Dublin Bay is largely protected as a Special Protection Area.

At low tide the inner parts of the south bay are used for amenity purposes. Baitdigging is a regular activity on the sandy flats. At high tide some areas have windsurfing and jet-skiing.

This site is a fine example of a coastal system with extensive sand and mudflats, a habitat listed on Annex I of the E.U. Habitats Directive. South Dublin Bay is also an internationally important bird site.

25.2.2000

SITE SYNOPSIS

SITE NAME: SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA

SITE CODE: 004024

The South Dublin Bay and River Tolka Estuary SPA comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and 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.

In the south bay, the intertidal flats extend for almost 3 km at their widest. The sediments are predominantly well-aerated sands. Several permanent channels exist, the largest being Cackle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. The landward boundary is now almost entirely artificially embanked. There is a bed of Dwarf Eelgrass (*Zostera noltii*) below Merrion Gates which is the largest stand on the east coast. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are distributed throughout the area at a low density. The macro-invertebrate fauna is well-developed, and is characterised by annelids such as Lugworm (*Arenicola marina*), *Nephtys* spp. and Sand Mason (*Lanice conchilega*), and bivalves, especially Cackle (*Cerastoderma edule*) and Baltic

Tellin (*Macoma balthica*). The small gastropod Spire Shell (*Hydrobia ulvae*) occurs on the muddy sands off Merrion Gates, along with the crustacean *Corophium volutator*. Sediments in the Tolka Estuary vary from soft thixotropic muds with a high organic content in the inner estuary to exposed, well-aerated sands off the Bull Wall. The site includes Booterstown Marsh, an enclosed area of saltmarsh and muds that is cut off from the sea by the Dublin/Wexford railway line, being linked only by a channel to the east, the Nutley stream. Sea water incursions into the marsh occur along this stream at high tide. An area of grassland at Poolbeg, north of Irishtown Nature Park, is also included in the site.

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, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Redshank, Black-headed Gull, Roseate Tern, Common Tern and Arctic Tern. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of the SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex – all counts for wintering waterbirds are mean peaks for the five year period 1995/96-99/2000. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. An internationally important population of Light-bellied Brent Goose (525) occurs regularly and newly arrived birds in the autumn feed on the Eelgrass bed at Merrion. Light-bellied Brent Goose is also known to feed on the grassland at Poolbeg. The site supports nationally important numbers of a further nine species: Oystercatcher (1,263), Ringed Plover (161), Golden Plover (1,452), Grey Plover (183), Knot (1,151), Sanderling (349), Dunlin (2,753), Bar-tailed Godwit (866) and Redshank (713). Other species occurring in smaller numbers include Great Crested Grebe (21), Curlew (397) and Turnstone (75).

South Dublin Bay is a significant site for wintering gulls, especially Black-headed Gull (3,040), but also Common Gull (330) and Herring Gull (348). Mediterranean Gull is also recorded from here, occurring through much of the year, but especially in late winter/spring and again in late summer into winter.

Both Common Tern and Arctic Tern breed in Dublin Docks, on a man-made mooring structure known as the E.S.B. dolphin – this is included within the site. Small numbers of Common Tern and Arctic Tern were recorded nesting on this dolphin in the 1980s. A survey of the dolphin in 1999 recorded Common Tern nesting here in nationally important numbers (194 pairs). This increase was largely due to the ongoing management of the site for breeding terns. More recent data highlights this site as one of the most important Common Tern sites in the country with over 400 pairs recorded here in 2007.

The south bay is an important tern roost in the autumn (mostly late July to September). Birds also use the Dalkey Islands to the south. The origin of many of the birds is likely to be the Dublin breeding sites (Rockabill and the Dublin Docks) though numbers suggest that the site is also used by birds from other sites, perhaps outside the state. More than 10,000 terns have been recorded, consisting of Common, Arctic and Roseate terns.

The wintering birds within this site are now well-monitored. More survey, however, is required on the wintering gulls and the autumn terns.

Boosterstown Marsh supports an important population of Borrer's Saltmarsh-grass (*Puccinellia fasciculata*), a rare, Red Data Book species that is listed on the Flora (Protection) Order, 1999.

The South Dublin Bay and River Tolka Estuary SPA is of international importance for Light-bellied Brent Goose and of national importance for nine other waterfowl species. As an autumn tern roost, it is also of international importance. Furthermore, the site supports a nationally important colony of Common Tern. All of the tern species using the site are listed on Annex I of the E.U. Birds Directive, as are Bartailed Godwit and Mediterranean Gull.

1.5.2008