

Appendix A11.2 Botanical Survey at Portmarnock



Greater Dublin Drainage

Walkover survey of proposed site compound - Portmarnock

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1 INTRODUCTION

RPS has been retained to provide specialist ecological services with regards the planning and implementation of the Greater Dublin Drainage Scheme. It is proposed that a tunnel boring machine will facilitate the installation of the proposed marine outfall pipeline. A number of access shafts are required for the project, the last of which is located at Portmarnock dunes in an area of public land that sits between the two golf courses.

1.1 NATURE DESIGNATIONS IN THE AREA

Much of the coastal areas in north county Dublin are considered to be ecologically important in terms of species and habitats. For this reason a number of nature conservation designations pertaining to the area, often overlapping.

Although the site is highly accessible and heavily utilised in terms of recreation, considerable parts of the dune system at Portmarnock is designated as a nature reserve and is a Corine Biotope site as well as a RAMSAR site owing to the wetland birds which are known frequent parts of the area. From a national perspective, Portmarnock dunes are designated as a proposed Natural Heritage Area (pNHA000199). In terms of their significance in the wider European Natura 2000 network of sites, Baldoyle Bay Special Area of Conservation (SAC 0001999) is designated for its assemblage Saltmarsh Habitats - Mudflats and sandflats not covered by seawater at low tide; Salicornia and other annuals colonising mud and sand; Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) & Mediterranean salt meadows (*Juncetalia maritimi*). However, the spit does contain some fine sand-dune habitat assignable to Annex I status as mapped by Ryle *et al.* (2009) particularly towards the southern end of the spit. Two species listed on the Flora Protection Order 2015 legislation namely Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*) have been recorded from Mayne Marsh. Neither were searched for as the survey site did not have suitable habitat.

The inner or estuarine part of Portmarnock spit – Baldoyle Bay proper supports internationally important bird species, specifically Light-bellied Brent Goose (*Branta bernicla hrota*); Shelduck (*Tadorna tadorna*); Ringed Plover (*Charadrius hiaticula*); Golden Plover (*Pluvialis apricaria*); Grey Plover (*Pluvialis squatarola*); Bar-tailed Godwit (*Limosa lapponica*) and Wetland and Waterbirds. It has been designated as a Special Protection Area SPA 004016).

The golf-courses and the piece of land for which the proposed temporary compound are proposed have been excluded from the SAC owing to the modification of the habitat.

1.2 LOCATION

The site of the proposed temporary works compound is located along the inner side of Portmarnock spit, just off a public road (Golf Links Road) that leads towards *Portmarnock Championship Course* golf club. It is proposed, with the consent of the appropriate authorities, to make use of a small piece of public land which is adjacent to the public carpark on the spit.

The survey lands are located within a triangular piece of publically accessible land that is bounded along both sides by the perimeter fencing of the long established golf courses. A number of trails exist leading from the carpark across the land towards its narrowest point, where a boardwalk leads pedestrians towards the dunes.

1.3 PURPOSE OF THIS REPORT

This technical note details the findings of the requested walkover survey to briefly characterise the habitats within the footprint of the proposed temporary compound. A considerable part of the coastal area in which the proposed pipeline will travel under is designated for conservation purposes – specifically as European Sites. It is proposed that the final access shaft be located in a temporary compound in close proximity to the designated sites and its habitats, particularly the priority Annex 1 habitats – Fixed grey dunes.



Image 1.1 – West-facing view of the site (from dunes towards public car park)

2 METHODOLOGY

2.1 BACKGROUND

The detailed assessments made of the Portmarnock sand dune system have been subject to some detailed surveys in the past. Indeed, the sand dunes at Portmarnock are well known to the author having been involved in the original NPWS funded baseline survey of national sand dune systems carried out between 2004 and 2006 (Ryle *et al.* 2009).

A later assessment of the sand-dunes included Portmarnock system suggested that there had been a decrease in the extent of some habitats as defined from field mapping, but an increase in other sand dune habitats owing to a revised interpretation of total national resource which could include areas previously excluded from the designation or the 2004—2006 survey (Delaney *et al.* 2013). Separately, the dunes at Portmarnock are recognised in the current Fingal County Development Plan as supporting a number of Annex I habitats including the priority Fixed dune habitat.

2.2 SURVEY

The site was visited on the morning of Friday 20th May 2016. The lands for which the proposed temporary compound is planned were walked to become familiar with the current ecology and to confirm the presence of any rarities, invasive species or Annex I habitat, which are listed as qualifying features of the SAC.

Thereafter a number of 2metre by 2 metre quadrats were taken to describe the vegetation. The size and shape of the quadrats corresponds with what is acceptable for such habitats to encompass the diversity and structural complexity and biodiversity of such habitats.

3 RESULTS

3.1 QUADRATS

Three quadrats or vegetation descriptions were made of the small site, each measuring 2metre by 2 metres. These form the basis for the subsequent habitat characterisation presented in section 3.3. The results are presented as percentage ground cover. The symbol + indicates a small number of plants but less than 0.5% ground cover. The results of the three quadrats are summarised below:

3.1.1 Quadrat 1

Grid reference 242314 N, 432374 E. 100% cover. Maximum height 30cm. Mean Height 10cm.

This habitat is located at the eastern most point of the survey area, at sward that is typically drier in terms of species assemblage. This is related to the proximity to the landward extension of sand-dominated habitat where Marram (*Ammophila arenaria*) makes an appearance on undulating ground.

Scientific Name	Common Name	% cover
<i>Poa trivialis</i>	Roug Meadow Grass	60
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	30
<i>Festuca rubra</i>	Red Fescue	5
<i>Dactylis glomeratus</i>	Cocksfoot Grass	5
<i>Ranunculus acris</i>	Meadow Buttercup	1
<i>Plantago lanceolata</i>	Ribwort Plantain	0.75
<i>Taraxacum officinale</i> agg	Dandelion	0.5
<i>Poa annua</i>	Annual Poa Grass	+
<i>Veronica chamaedrys</i>	Germander speedwell	+
<i>Hypochaeris radicata</i>	Cats Ears	+
<i>Vicia sepium</i>	Bush Vetch	+

3.1.2 Quadrat 2

Grid reference 242335 N, 324705 E . 100% cover. Maximum Height 50cm, Mean Height 25cm

This quadrat describes the central part of the proposed site compound. It is dominated by a single grass, Timothy but throughout there is reasonable diversity although Silverweed is the most prominent of these species. The assemblage is indicative of occasional wet conditions and the sward is obviously managed with thatching throughout the sward indicative of mowing.

Scientific Name	Common Name	% cover
<i>Phleum pratense</i>	Timothy	90
<i>Potentilla anserina</i>	Silverweed	15
<i>Poa trivialis</i>	Rough Meadow Grass	6
<i>Dactylis glomeratus</i>	Cocksfoot grass	1.5
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	1
<i>Ranunculus acris</i>	Meadow Buttercup	1
<i>Lathyrus pratensis</i>	Meadow vetchling	1
<i>Plantago lanceolata</i>	Ribwort Plantain	0.5
<i>Vicia sepium</i>	Bush Vetch	+
<i>Cardamine pratensis</i>	Cuckoo flower	+

3.1.3 Quadrat 3

Grid reference 242254 N, 324617 E. 100% cover. Maximum height-65cm, Mean Height- 20cm

The final quadrat describes a typical area of lush sward development. Despite its proximity to a pedestrian trail, there is little disturbance of this area other than dogs and signs of occasional mowing.

Scientific Name	Common Name	% cover
<i>Phleum pratense</i>	Timothy	85
<i>Agrostis capillaris</i>	Common Bent Grass	10
<i>Poa trivialis</i>	Rough Meadow Grass	5
<i>Potentilla anserina</i>	Silverweed	5
<i>Ranunculus acris</i>	Meadow Buttercup	2
<i>Rhinanthus minor</i>	Yellow Rattle	+
<i>Lathyrus pratensis</i>	Meadow vetchling	+
<i>Dactylis glomeratus</i>	Cocksfoot grass	+

3.2 SPECIES

None of the species that were recorded in the three quadrats not indeed around the perimeter of the study area are considered rare. Plant rarities which have been previously recorded at Portmarnock did not occur in the site.

Additional species recorded from the site are included in Appendix A.

3.3 HABITAT CHARACTERISATION

The habitats described herein correspond with categories included in the Heritage Council's publication, *A Guide to Habitats in Ireland* (Fossitt 2000). The walkover survey does not purport to be a full characterisation of the dune system, rather a specific area and its immediate environs.

The site of the proposed temporary works compound is located is not designated for conservation nor indeed is the managed vegetation analogous with any of the sand dune habitats for which the SAC is designated for.

The area around the car park and indeed the revegetating overflow carpark are characterised as *Improved amenity grassland GA2*. Floristically, there is little merit to this habitat which is managed regularly through mowing etc. The carpark with its hard surfaces is classified as *Buildings and Artificial surfaces BL3* and is separated from the footprint of the proposed temporary compound by a linear feature comprising partially buried wooden poles.

The footprint of the proposed temporary compound is relatively level. The managed vegetation largely corresponds with *Dry Meadows and Grassy Verges GS2*. There is evidence of occasional mowing - decaying thatch among the grass sward but no signs of grazing. Floristically, and unlike the typical Fossitt habitat, the area is not species-rich. Although ascribed to the Meadow habitat, the species assemblage in no way reflects the typical diversity that might be expected from such a diminishing habitat. Instead, a small number of consistently occurring grasses dominate the habitat with herbaceous species are scattered throughout. There are subtle variations within the sward, which relate to drier areas where pedestrian activity has left distinct trails characterised by low growing sward. Elsewhere, the wetland influence is apparent, and the graminoid component becomes rather lush and is accompanied by Silverweed. This is indicative of the groundwater influence which occasionally affects the area. Quadrats 1-3 are typical of the study site and their species assemblage accounts for the majority of the variation noted. Other species that are included in Appendix A were less common or else locally abundant, often along raised banks alongside the hedges, which were left unmown. Species such as Nettles (*Urtica dioica*) and Hogweed (*Heracleum sphondylium*) were the key components in these areas but others included Perennial ryegrass (*Lolium perenne*) and patchily distributed Brambles (*Rubus fruticosus* agg.).

The transition to sand dune vegetation, although gradual, is apparent towards the eastern tip of the site, where the pedestrian trails lead onto the boardwalk and focus the walkers through a narrow access section between the two golf-courses. The vegetation, although not included within the SAC, is assignable to Fixed Dunes habitats (CD3). Dominated by Marram (*Ammophila arenaria*), Patches of Gorse (*Ulex europeus*) dominated scrub are locally common. Other species typical of the habitat are recorded including Kidney vetch (*Anthyllis vulneraria*), Bird foot trefoil (*Lotus corniculatus*), Red fescue (*Festuca rubra*) but are not as abundant as Marram and Gorse. Locally abundant patches of Burnet Rose (*Rosa pimpinellifolia*) are indicative of an aging system, where the habitat is starved of a suitable supply of fresh sand resulting in the gradual lowering of the pH facilitating the spread of the Burnet Rose. Although Gorse is the predominant shrub here, some Sea Buckthorn (*Hippophae rhamnoides*) was noted inside the fence of one golf club.

Both golf courses are well established and support a number of managed habitats. Originally they would have supported fixed dune habitats but have long since been altered and as such are excluded from the SAC. They are separated from the survey area on either side of the survey area by a boundary fence along which Hawthorn (*Crataegus monogyna*) is the main component. These planted linear features are classified as Hedgerows WL1 although they do not replicate the diversity or structural with native hedgerows.

It is apparent that the managed hedges are well maintained, to encourage growth and so prevent potential weak spots and unwanted access onto the greens.

4 SUMMARY CONCLUSION

The territory within the study site has long been excluded from the SAC owing to the presence of the two golf-courses which lie on either side as well as the public carpark and right of way onto the strand on the eastern side of Portmarnock. Despite the proximity to and indeed the obvious presence of sand within the soil matrix in places, the lands within the study site share no similarities with fixed dune vegetation. The composition of the vegetation within the immediate study area has long since lost any resemblance to fixed dune habitat owing to the management of the area.

The development of the temporary site compound to facilitate an access shaft for the Tunnel Boring Machine would impact the vegetation in terms of disturbance. However, the vegetation does not qualify in any way with fixed dunes habitats and indeed has been managed. Undoubtedly the project will cause disturbance, but in terms of the habitat assessment, there will be no discernible loss to fixed dune habitats and no discernible impact on its extent or condition or functioning as a result of the boring under the habitat as part of the installation of the pipeline.

5 REFERENCES

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Fossit, J (2000). *A guide to Habitats in Ireland.* The Heritage Council, Kilkenny.

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APPENDIX A

Species List from area of proposed compound

Scientific Name	Common Name	Scientific Name	Common Name
<i>Agrostis capillaris</i>	Common Bent Grass	<i>Olearia macrodonta</i>	Daisy Bush
<i>Agrostis stolonifera</i>	Creeping Bent	<i>Ononis repens</i>	Restharrow
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	<i>Phleum pratense</i>	Timothy
<i>Anthyllis vulneraria</i>	Kidney Vetch	<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Arrhenatherum elatius</i>	False oat grass	<i>Poa Annua</i>	Annual Poa Grass
<i>Bellis perennis</i>	Daisy	<i>Poa pratensis</i>	Smooth Meadow Grass
<i>Campanula rotundifolia</i>	Harebell	<i>Poa trivialis</i>	Rough Meadow Grass
<i>Cardamine pratensis</i>	Cuckooflower.	<i>Potentilla anserina</i>	Silverweed
<i>Cirsium arvense</i>	Creeping Thistle	<i>Ranunculus acris</i>	Meadow Buttercup
<i>Crataegus monogyna</i>	Hawthorn	<i>Ranunculus repens</i>	Creeping Buttercup
<i>Dactylis glomeratus</i>	Cocksfoot grass	<i>Rhinanthus minor</i>	Yellow Rattle
<i>Epilobium hirsutum</i>	Great Willowherb	<i>Rubus fruticosus</i> agg.	Bramble
<i>Equisetum arvense</i>	Common Horsetail	<i>Rumex acetosella</i>	Sheeps sorrel
<i>Escallonia marantha</i>	Escallonia	<i>Rumex crispus</i>	Curled Dock
<i>Festuca rubra</i>	Red fescue	<i>Salix repens</i>	Creeping Willow
<i>Galium aparine</i>	Cleavers	<i>Senecio jacobaea</i>	Ragwort
<i>Heracleum sphondylium</i>	Hogweed	<i>Taraxacum officinale</i> agg.	Dandelion
<i>Hippophae rhamnoides</i>	Sea Buckthorn	<i>Trifolium repens</i>	White Clover
<i>Holcus lanatus</i>	Yorkshire Fog	<i>Trifolium pratense</i>	Red Clover
<i>Hypochaeris radicata</i>	Cats Ears	<i>Ulex europeas</i>	Gorse
<i>Lathyrus pratensis</i>	Meadow vetchling	<i>Urtica dioica</i>	Nettles
<i>Lolium perenne</i>	Perennial ryegrass	<i>Veronica chamaedrys</i>	Germander speedwell
<i>Lotus corniculatus</i>	Birds Foot trefoil	<i>Vicia sepium</i>	Bush Vetch