

Chapter	Appendix	Title
14	Appendix 14.1	Terrestrial Ecology

**ELSAM DUBLIN WASTE TO ENERGY PLANT:
ECOLOGICAL ASSESSMENT**

**FINAL REPORT
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Prepared for

ARUP CONSULTING ENGINEERS

by

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Appendix 14.1 Report on Irishtown Nature Park

Figure 1. Habitat and landuse map of survey area

Plates 1-6. Views of survey area

14.0 TERRESTRIAL ECOLOGY

14.1 INTRODUCTION

The site for the proposed waste to energy plant is on the southern side of Pigeon House Road and immediately west of the new sewage treatment works. To the west of the site there is an ESB electricity station and complex. Recently cleared ground lies to the south. The Irishtown Nature Park is located to the east-southeast of the site. Cooling water pipes will cross the Pigeon House Road and run north in a narrow corridor to the river. Suggest change this para to standard site description text that can be used for the introduction for each chapter.

Add – The terrestrial ecology assessment was completed by Biosphere Environmental Services.

All of this area of Dublin Port is reclaimed land and much of it was used as a municipal landfill in the past. The reclaimed land of the former landfill is a rich hunting ground for casual and alien plant species and in the Flora of County Dublin (Doogue et al. 1999), it is noted that some 200 different kinds of plants were recorded in this area during field surveys.

The present study provides a baseline assessment of the flora and fauna species within and around the site for the waste to energy plant. A specific assessment was made of the Irishtown Nature Reserve owing to its close proximity to the site. While important areas of conservation value exist in the immediate vicinity, these are estuarine and/or ornithological in character and are described and evaluated elsewhere. Impacts on terrestrial ecology by the proposed development are assessed and mitigation measures recommended as considered necessary. The assessment is carried out in compliance with the European Communities (Environmental Impact Assessment) Regulations, 1989-2000, and follows the Environmental Protection Agency's Guidelines on the information to be contained in Environmental Impact Statements (EPA, 2002).

14.2 METHODOLOGY

As part of the study methodology, two visits were made to the site – one in late-May, 2003 and one in mid-August 2003. These were timed so as to provide the maximum amount of information on plants and breeding birds. In August 2004, a specific survey of the vegetation and flora of the Irishtown Nature Park was carried out. A further visit was made to the site in early April 2006 to assess any significant changes since the 2003 work.

The survey methodology consisted of systematically walking the site area and recording habitats, plant species and vegetation types present. Habitat classification is according to Fossitt (2000). Notes were made on bird species present within and around the site. Presence of mammals is indicated principally by their signs, such as dwellings, feeding signs or droppings - though direct observations are also occasionally made.

During the survey, particular attention was given to the possible presence of habitats and/or species which are legally protected under Irish or European legislation (especially the Flora Protection Order 1999; Wildlife Act 1976; Wildlife Amendment Act 2000; EU Habitats Directive; EU Birds Directive).

The standard literature was checked for references to the site and locality. The main source of information for the area is the Flora of County Dublin. A 1998 report on Irishtown Nature Park and Sandymount Strand by J. O'Neill was also consulted.

14.3 DESCRIPTION OF THE BASELINE ENVIRONMENT

14.3.1 Habitats, vegetation and flora within site

The main part of the site [need to agree terminology with Elsam] -comprises two principal habitats: Buildings and artificial surfaces (BL3) and Recolonising bare ground (ED3). In addition, there is a small patch of Amenity grassland (GA2) at the entrance to the Hibernian Mollasses complex. The habitats are described below with reference to the accompanying map (Fig. 1). Both English and scientific names are given for plant species following Scannell and Synnott (1987).

Buildings and artificial surfaces (BL3)

The majority of the site is classified as built ground. Included are the Hammond Lane industrial complex and the Hibernian Mollasses complex. The survey was concentrated in the southern part of the site where some plants would be expected on the open tarmac surfaces. Much of this area, which is a former car-park, still has a smooth surface though some breaks and cracks are appearing which provide a niche for plant species. The southernmost strip, approximately 15 m in width, comprises a rough gravel surface and here plants have been able to colonise, with greatest growth alongside the fence line. These are typical ruderal species (i.e. weed-like) and include the following:

Groundsel *Senecio vulgaris*
Colt's-foot *Tussilago farfara*
Yarrow *Achillea millefolium*
Robin-run-the-hedge *Galium aparine*
Scentless mayweed *Tripleurospermum inodorum*
Nettles *Urtica dioica*
Red clover *Trifolium repens*
Wild teasel *Dipsacus fullonum*
Fennel *Foeniculum vulgare*

Butterfly-bush *Buddleja davidii*
Common mallow *Malva sylvestris*
Red Valerian *Centranthus ruber*

The presence of rue-leaved saxifrage *Saxifraga tridactylites* on gravel within the disused carpark is of some interest as this plant has a somewhat localised distribution in Co. Dublin though has been recorded –on/vicinity of? Ringsend Dump in the past.

Some gorse *Ulex europaeus* and sycamore *Acer pseudoplatanus* (some in excess of 5 m high) is established along the fenceline, along with brambles *Rubus fruticosus* and wild rose (*Rosa* spp.).

Recolonising bare ground (ED3)

A small, mostly enclosed area of unmanaged ground that is partly vegetated occurs in the mid eastern sector of the site. This habitat also occurs at the northern boundary of the site (strip of c.20 m in width along the Pigeon House Road), along the track at the eastern boundary of the site adjacent to the sewage treatment works (strip of c.5 m in width) and at the southern boundary of the site (area up to 30 m in width which continues southwards). It also occurs scattered along the Shellybanks Road. A wide range of ruderal species occur, with rank grasses well-established in some parts. The following were recorded:

Wild teasel *Dipsacus fullonum*
Butterfly-bush *Buddleja davidii*
Colt's-foot *Tussilago farfara*
Fennel *Foeniculum vulgare*
Bastard cabbage *Rapistrum rugosum*
Mugwort *Artemisia vulgaris*
Japanese knotweed *Fallopia japonica*
Thistles *Cirsium* spp.
Groundsel *Senecio vulgaris*
Scentless mayweed *Tripleurospermum inodorum*
Common mallow *Malva sylvestris*
Red dead-nettle *Lamium purpureum*
Purple toadflax *Linaria purpurea*
Yarrow *Achillea millefolium*
Nettles *Urtica dioica*
Red clover *Trifolium repens*
Meadow vetchling *Lathyrus pratensis*
Common vetch *Vicia cracca*
Black medick *Medicago lupulina*
Robin-run-the-hedge *Galium aparine*
Dove's-foot cranesbill *Geranium molle*
Dock *Rumex obtusifolius*,
Spear-leaved Orache *Atriplex prostrata*
Cock's-foot *Dactylis glomerata*

Scutch *Elymus repens*
Yorkshire fog *Holcus lanatus*
Common bent *Agrostis stolonifera*

In areas which have not been recently disturbed, brambles and young sycamore are becoming established.

Recolonising bare ground also occurs along the route of the cooling water pipes to the north of the Pigeon House Road.

Amenity grassland (improved) (GA2)

A small patch of amenity grassland occurs at the entrance to the Hibernian Mollasses complex. This is a typical mown sward of grasses such as rye grass *Lolium perenne* and meadow grasses *Poa spp.*, along with such species as creeping buttercup *Ranunculus repens*, speedwell *Veronica serpyllifolia*, and narrow-leaved plantain *Plantago lanceolata*.

14.3.2 Habitats, vegetation and flora around site

The site is surrounded by developed land to the north, east and west. These areas include buildings, hard surfaces and some ground with a weedy vegetation (Recolonising bare ground). Some bare ground and spoil heaps (ED2) also occurs to the south of the site, along with further Recolonising bare ground. The Shellybanks Road skirts the western boundary of the site and associated with this is a line of planted sycamore trees and a strip of shrubbery (WS3).

The sycamore trees can be classified as a low **Treeline WL2**. There is approximately 26 trees, all sycamore, which were planted along the eastern side of the Shellybanks Road. These are in the region of 7-8 m in height. A strip of shrubbery (**Ornamental/non-native shrub WS3**) has been planted along the western side of the road. This is dense and predominantly of Escallonia (*Escallonia spp.*), with brambles and such species as butterfly bush. Some trees also occur, with cypress (*Cypressus spp.*), white poplar (*Populus alba*) and sycamore.

14.3.3 Fauna

14.3.3.1 Mammals, amphibians and reptiles

Brown rat *Rattus norvegicus* was the only mammal species recorded within the site. House mouse *Mus domesticus* would also be expected, and probably the ubiquitous pygmy shrew *Sorex minutus*. The low number of species reflects the low diversity of habitats present.

Signs of fox *Vulpes vulpes* were found near the boundary fence of the Irishtown Nature Park and this species, which has a permanent presence in the port area, could pass through

the site at times. Long-tailed field mouse *Apodemus sylvaticus* may also occur, and possibly rabbits *Oryctolagus cuniculus*. The site does not have suitable roost sites for bats.

The habitats on site or in the immediate vicinity are not suitable for amphibians such as the common frog *Rana temporaria* or for the common lizard *Lacerta vivepara*.

14.3.3.2 Birds

Few bird species occur within the site owing to the low diversity of habitats present. Only two species, wren *Troglodytes troglodytes* and dunnock *Prunella modularis*, were considered to nest within the site, and these were confined to the strip of vegetation along the southern and south-west boundary lines. Starlings *Sturnus vulgaris* and pied wagtail *Motacilla alba* were noted in the vicinity of the buildings on site and could breed in suitable holes or gaps within the buildings.

A small number of other species were recorded in the shrubbery along the Shellybanks Road, with robin *Erithacus rubecula*, blackbird *Turdus merula*, great tit *Parus major*, blue tit *Parus caerulea*, greenfinch *Carduelis chloris* and chaffinch *Fringilla coelebs* all nesting. A single reed bunting *Emberiza schoeniclus* was recorded in August in the rough vegetation to the south of the site and could nest locally. At least one pair of skylarks was present in the recently cleared ground south of the site. Other birds which nest in the general vicinity include woodpigeon *Columba palumbus*), jackdaws *Corvus monedula*, hooded crow *Corvus corone cornix* and magpie *Pica pica*.

A flock of c.30 linnets *Carduelis cannabina* was present on the rough ground to the south of the south in August, along with a small number of goldfinches *Carduelis carduelis*.

Recently planted grassland within the adjacent sewage works, and also to the south of it, supports brent geese *Branta bernicla horta* during winter. Gulls, mostly black-headed *Larus ridibundus*, are common in the vicinity of the sewage works during winter.

14.3.4 Irishtown Nature Park

The Irishtown Nature Park physically consists of an elevated central plateau of land which slopes down to the sea on its southern side and is bounded on its northern edge by amenity grassland adjacent to the sewage works. Its eastern boundary contains a small area of sand dune in front of the main road whilst its western edge culminates in a path linking the Park with the road at Sandymount. A full description of the habitats and vegetation is given in Appendix 14.1.

The vegetation and plant species complement reflect the past use of the site together with its current management as a park and amenity area. Most of the southern side is under the influence of the sea and especially salt spray and this has allowed coastal vegetation to develop in places. As might be expected from the past use of the area and from the planting that has been carried out, there is little in the way of natural or semi-natural habitats to be found within the Park. The only piece, which has not been directly

influenced in its development by humans, lies on the eastern side in the corner between the Park proper and the main road. Here a small area of sand dune occurs.

Over most of the Park a habitat of coarse grassland is found which mostly corresponds to the category **Amenity Grassland GA2**. Species such as perennial rye grass *Lolium perenne*, red fescue *Festuca rubra*, creeping bent *Agrostis stolonifera* and creeping thistle *Cirsium arvense* are present. Blackberry *Rubus fruticosus* is invading this in parts. Also invading this grassland are stretches of scrub consisting mostly of native species such as blackthorn *Prunus spinosa*, elder *Sambucus nigra* and ash *Fraxinus excelsior*. However, two exotic species, sycamore *Acer pseudoplatanus* and Japanese knotweed *Reynoutria japonica*, are acting invasively here. This habitat can be broadly accommodated within the category of **Scrub WS1**.

Non-native, planted shrubs have formed a scrub of sorts, and includes escallonia *Escallonia macrantha*, butterfly bush *Buddleja davidii*, field maple *Acer campestre* and 2 species of Cotoneaster. Trees are present in the form of evergreen oak *Quercus ilex*, sessile oak *Quercus petraea* and Italian alder *Alnus cordata*. This habitat is that of **Ornamental, non-native shrubs WS3**.

The stony, rock and boulder-dominated areas adjacent to the sea, reflect the infilled nature of the area and the species cover is sparse and very scattered. Weedy species such as teasel, *Dipsacus fullonum*, mugwort *Artemisia vulgaris*, red valerian *Centranthus ruber* and common mallow *Malva sylvestris* are found here. This habitat can be included within **Buildings and artificial surfaces BL3** and nearer the sea, the influence of salt spray has allowed the growth of a number of coastal species notably sea beet *Beta maritima* and sea mayweed *Matricaria maritima*.

The habitat **Re-colonizing bare ground ED3** is common throughout and the principal species here is coltsfoot *Tussilago farfara* and hoary mustard *Hirschfeldia incana*.

In summary, the Park, whilst not of significant conservation importance, is rich in plant species as they have come from a number of sources.

14.3.5 Assessment of scientific importance of survey area

The site for the waste to energy plant represents ground that has been entirely modified by man for industrial purposes. All habitats present within and immediately around the site are classified in the broad categories of built land and disturbed ground – such habitats are not of conservation value. There are no flora or fauna species of significant conservation value in this area. However, the disturbed areas within and around the site support a wide range of plant species, many alien in origin, including such localised plants as bastard cabbage *Rapistrum rugosum* and wild teasel *Dipsacus fullonum*.

The presence of skylarks on waste ground to the south of the south is of some note as skylark is listed as a species of moderate conservation concern owing to a moderate decline in the breeding population in Ireland in the last 25 years (Newton et al. 1999). The

occurrence in winter of brent geese on the grasslands associated with the sewage treatment works is of note as these are part of the Dublin Bay internationally important population.

The Irishtown Nature Park, to the south-east of the site, has local ecological interest. However, the issue of invasive species requires attention, especially Japanese knotweed and hedge bindweed *Calystegia sepium*, as the dominance of these will lower the diversity of plant species in the Park. Also, the issue of allowing native scrub of elder, blackthorn and hawthorn to spread into the grassland areas should be addressed.

The site is located within Dublin Bay, much of the estuarine/marine component being of high conservation importance for habitat and ornithological interests (see elsewhere for review of various designations). From the terrestrial perspective, the closest designated sites are as follows:

- Booterstown Marsh proposed Natural Heritage Area (code: 01205), situated almost 3 km south of the site and of interest for its salt marsh and the presence of the legally protected species Borrer's Saltmarsh-grass *Puccinellia fasciculata*.
- Grand Canal proposed Natural Heritage Area (code: 02104), situated approximately 2 km east of the site, and of interest for aquatic habitats.

14.4 IMPACTS ON SITE AND IMMEDIATE SURROUNDINGS

The proposed development will involve clearance of all the existing habitats within the site. As the existing habitats are not of conservation importance, and as there are no associated rare or even scarce species of flora and fauna, the impact by site clearance is not considered of significance. Further, some of the existing species will continue to occur in the newly created habitats within the site. Overall, the replacement of the existing habitats with further, highly modified or artificial habitats is rated as a Neutral impact.

The construction activities could have a disturbance effect on the brent geese which feed during winter on the grassland to the south-east of the site. However, the geese within Dublin Bay are well used to high levels of disturbance and background noise and are unlikely to be much affected by construction activities. Even if disturbed, which would be temporarily, they have many other sites in the Dublin Bay area to retreat to.

The construction activities would not be expected to have any adverse impacts on the flora and fauna of the Irishtown Nature Park.

Once operational, the plant would not be expected to have any impacts on the terrestrial ecological interests of the immediate area.

14.5 IMPACTS ON DESIGNATED SITES

The proposed development will not have any impacts, direct or indirect, on the ecological interests of the Booterstown Marsh or Grand Canal proposed Natural Heritage Areas, as these sites are separated from the development area by distances of 3 km and 2 km respectively.

Potential impacts on the estuarine and marine designated sites are dealt with elsewhere. Reference has already been made to the possible impact on the brent geese in the area, which are part of the qualifying interests of the North Bull Island and Sandymount Strand/Tolka Basin Special Protection Areas. None of the other wetland bird species of Dublin Bay frequent the area of the proposed development.

14.6 MITIGATION MEASURES

Owing to the low ecological interests at this site, and considering that there are no significant adverse impacts, specific mitigation measures are not required.

The landscaping plan for the site should include some native trees and shrubs as these would be useful for local wildlife. Taking into account the exposed nature of the site, suitable species are limited but could include ash, native alder, willows and rowan. (Cross ref with landscape and visual section.)

14.7 RESIDUAL IMPACTS

The redevelopment of this site would not have any residual ecological impacts as the existing ecological interests within the site and in immediate surrounding areas are negligible.

14.8 REFERENCES

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