

4 ECOLOGY

4.1 INTRODUCTION

This chapter presents an Ecological Impact Assessment (EcIA) of the proposed development and should be read in conjunction with the site layout plans and project description section (Chapters 1 and 2) of this Environmental Impact Statement (EIS).

The MBT Facility site (29ha) is located in the townlands of Coolcarrigan and Drummond, Carbury, Co. Kildare within a larger Bord na Móna landholding, which comprises 2,544 hectares (ha) consisting largely of cutover bog. The assessment to date has been an iterative process with the aim being to minimise/ avoid ecological impacts as far as possible. The project has considered alternative site location options within the landholding as described in Chapter 1 of this EIS and detailed information available from previous EIS' and other data sources for this landholding.

Key ecological receptors have been avoided as far as possible, given other non-ecological constraints.

The site selected was determined as favourable from an ecology standpoint when compared to other alternatives as;

- It will result in less fragmentation of surrounding habitats as it is located in a centroid of development within the overall landholding;
- It will be located adjacent to the existing access road in a relatively more disturbed area than other potential sites considered; and
- It avoids relatively wetter habitat in the landholding which are more significant for breeding birds, otter, badger and developing wetland habitats.

The southern section of the overall landholding, in which the MBT Facility site is located, consists largely of former industrially cutover bog and includes a distinct linear raised area which was previously used as a railway for accessing the bog.

In general, the habitats present within the site of the MBT Facility consist of cutover bog which has been undisturbed in recent years (i.e. no peat harvesting within last 22 years). A mosaic of bare peat and re-vegetated areas occur with scrub, woodland, heath and grassland communities present. A relatively small portion of the landholding has already been developed by Bord na Móna as a waste management facility (i.e. the Drehid Waste Management Facility).

No significant aquatic habitats occur on site and in the immediate local area. Proposed mitigation measures for downstream aquatic receptors are considered in Chapter 6, Water and also in the Screening for Appropriate Assessment Statement, Appendix 4.1.

4.1.1 Methodology

The following legislation has been considered for this ecological assessment:

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna, commonly known as the Habitats Directive;
- Council Directive 2009/147/EC on the conservation of wild birds, commonly known as the Birds Directive (codified version of Council Directive 79/409/EEC);
- European Communities (Natural Habitats) Regulations 1997, S.I. No. 94 of 1997, as amended by S.I. No. 233 of 1998 and S.I. No. 378 of 2005;
- European Communities (Birds and Natural Habitats) Regulations 2011;
- Wildlife Act, 1976 [Wildlife (Amendment) Act, 2000]; and
- Flora Protection Order 1999 (SI No. 94 of 1999).

The potential for impacts on nature conservation interests has been assessed in light of habitats and the species that are likely to be affected by the proposed development. The approach included consideration and review (as appropriate) of the following guidance:

- A Guide to Habitats in Ireland (Fossitt - The Heritage Council, 2000);
- Guidelines on the Information to be contained in Environmental Impact Statements (EPA, 2002);
- Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (EPA, 2003);
- Habitat Survey Guidelines: A Standard Methodology for Habitat Survey and Mapping in Ireland (The Heritage Council, 2005);
- Best Practice Guidelines for habitat survey and mapping in Ireland (The Heritage Council 2009);
- Guidelines for the Crossing of Watercourses During the Construction of National Road Schemes (NRA, 2005);
- Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes (NRA, 2006);
- Guidelines for the Treatment of Otters prior to the Construction of National Roads Schemes; (NRA, 2006);
- Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes; (NRA, 2006);
- Guidelines for the Treatment of Bats during the Construction of National Roads Schemes (NRA, 2006);

- Guidelines for Ecological Impact Assessment (Institute of Ecology and Environmental Management (IEEM, 2006);
- Requirement for the Protection of Fisheries Habitat During the Construction and Development Works at River Sites (Eastern Regional Fisheries Board); and
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009).

Consultation

Consultation letters were sent to relevant authorities (including NPWS, BirdWatch Ireland, Inland Fisheries Ireland, Kildare County Council Conservation Officer, Irish Wildlife Trust, Irish Forestry Board (Coillte Teoranta), Irish Native Woodland Trust and Irish Peatland Conservation Council) on the 24th January 2012.

All project consultation is detailed in Chapter 1 of this EIS and all responses received are presented in Appendix 1.5. All relevant consultation responses are fully considered in this chapter.

Desk Study

The ecological desk study for this project comprised of the following elements:

- Identification of all sites designated for nature conservation within 15 kilometres of the proposed development (refer to Figure 4-1 Designated Conservation Areas);
- A review of the NPWS site synopsis for designated sites within 15 kilometres of the proposed development as relevant regarding potential impacts;
- A plant species list for the Ordnance Survey National Grid 10 kilometres square N73 in which the study area is located, was generated from the CD-Rom version of the New Atlas of British and Irish Flora (Preston *et al.*, 2002). This list was then compared to the list of species protected under the Flora (Protection) Order, 1999 and those which are included in the Irish Red Data Book (Curtis and McGough, 1988) in order to determine if any rare or protected flora had been recorded in this area and its likelihood of being present on site;
- Review of Ordnance Survey maps and aerial photography in order to determine broad habitats that occur within the existing site; and

Review of relevant ecological reports, Environmental Impact Statements and literature.

Field Survey

TOBIN Consulting Engineers undertook site visits to carry out habitat, breeding and wintering bird and general mammal assessments over the following periods:

- March 2011;
- April 2011;
- July 2011; and
- January 2012.

The habitat assessment was conducted in accordance with The Heritage Council's Draft methodology, *A Standard Methodology for Habitat Survey and Mapping in Ireland* (Natura Environmental Consultants, 2002) and habitats were classified according to The Heritage Council's *A Guide to Habitats in Ireland* (Fossitt, 2000). Aerial photography assisted habitat delineation and interpretation. Plant identification and nomenclature principally follows Webb *et al.* (1996). Grass and fern identification and nomenclature was further assisted by Rose (1989). The predominant plant species for each habitat type were recorded in order to accurately determine habitats present on the site. Habitats were evaluated according to the Site Evaluation Scheme contained in the Source: Guidelines for Assessment of Ecological Impacts in National Road Schemes (NRA, 2009).

Breeding and Wintering bird surveys were conducted at the MBT Facility site and in the overall Bord na Móna landholding so as to consider species with potential links to the site. While all birds were recorded; the focus was to determine species of conservation concern including species listed on Annex 1 of the EU Birds Directive; and Red and Amber listed species of High and Moderate conservation concern (Bird Watch Ireland Conservation evaluation criteria).

The general mammal survey primarily involved searching the site for evidence/signs of mammals (e.g. tracks, scats, dwellings and occasionally direct sightings). An assessment of the habitats in terms of their importance for mammals was also undertaken. Checks for protected fauna including Marsh Fritillary, Frogs and Smooth Newt were also conducted.

4.2 EXISTING ENVIRONMENT

4.2.1 *Baseline Evaluation Criteria*

The existing ecological conditions are described and evaluated in accordance with standard guidelines. Table 4.1 overleaf details the NRA evaluation scheme (NRA, 2009).

Table 4-1 Site Evaluation Criteria

Ecological Valuation	
Internationally Important	<p>Sites designated (or qualifying for designation) as an SAC or SPA under the EU Habitats or Birds Directives;</p> <p>Undesignated sites that fulfil criteria for designation as a European Site;</p> <p>Features essential to maintaining the coherence of the Natura 2000 network;</p> <p>Sites containing ‘best examples’ of the habitat types listed in Annex I of the Habitats Directive;</p> <p>Resident or regularly occurring populations of birds listed in Annex I of the Birds Directive and species listed in Annex II and/or Annex IV of the Habitats Directive;</p> <p>Ramsar Site;</p> <p>World Heritage Site;</p> <p>Biosphere Reserve;</p> <p>Site hosting significant species populations under the Bonn Convention;</p> <p>Site hosting significant populations under the Berne Convention;</p> <p>Biogenetic Reserve;</p> <p>European Diploma Site;</p> <p>Salmonid water.</p>
Nationally Important	<p>Sites or waters designated or proposed as an NHA*;</p> <p>Statutory Nature Reserve;</p> <p>Refuge for fauna and flora protected under the Wildlife Acts;</p> <p>National Park;</p> <p>Undesignated sites fulfilling criteria for designation as a NHA; Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act and/or a National Park;</p> <p>Resident or regularly occurring populations (assessed to be important at the national level) of species protected under the Wildlife Acts and/or species listed on the relevant Red Data list;</p> <p>Site containing viable areas of the habitat types listed in Annex I of the Habitats Directive.</p>
County Importance	<p>Areas of Special Amenity;</p> <p>Area subject to a Tree Preservation Order;</p> <p>Area of High Amenity, or equivalent, designated under the County Development Plan;</p> <p>Resident or regularly occurring populations (assessed to be important at the County level) of species of birds listed in Annex I of the Birds Directive, species</p>

Ecological Valuation	
	<p>listed in Annex II and/or IV of the Habitats Directive, species protected under the Wildlife Acts and/or species listed on the relevant Red Data list;</p> <p>Site containing area(s) of the habitat types listed in Annex I of the Habitats Directive that do not fulfil criteria for valuation as of International or National Importance;</p> <p>County important populations of species, or viable area of semi-natural habitats or natural heritage features identified in the National of local BAP;</p> <p>Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county;</p> <p>Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.</p>
<p>Local Importance (higher value)</p>	<p>Locally important populations of priority species or habitats or natural heritage features identified in the Local Biodiversity Action Plan (BAP);</p> <p>Resident or regularly occurring populations (assessed to be important at the Local level) of species of birds listed in Annex I of the Birds Directive, species listed in Annex II and/or IV of the Habitats Directive, species protected under the Wildlife Acts and/or species listed in the relevant Red Data list;</p> <p>Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality.</p> <p>Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.</p>
<p>Local Importance (lower value)</p>	<p>Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</p> <p>Sites of features containing non-native species that are of some importance in maintaining habitat links.</p>

Source: Guidelines for Assessment of Ecological Impacts in National Road Schemes (NRA, 2009)

4.2.2 Designated Conservation Sites

There are no sites designated under the EU Habitats Directive and EU Birds Directive, i.e. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) located within the footprint of the proposed MBT development. The nearest designated site is Hodgestown Bog (NHA). The Grand Canal (pNHA) is not currently designated but for planning purposes is treated as a designated site.

A Screening for Appropriate Assessment statement (as per EU Habitat Directive requirements) was completed and the report is detailed in Appendix 4.1.

Figure 4.1 Designated Conservation Areas, illustrates the location of designated conservation sites within 15 kilometres of the proposed development. Distances from each designated conservation site to the site boundary of the proposed MBT development are provided in Table 4.2.

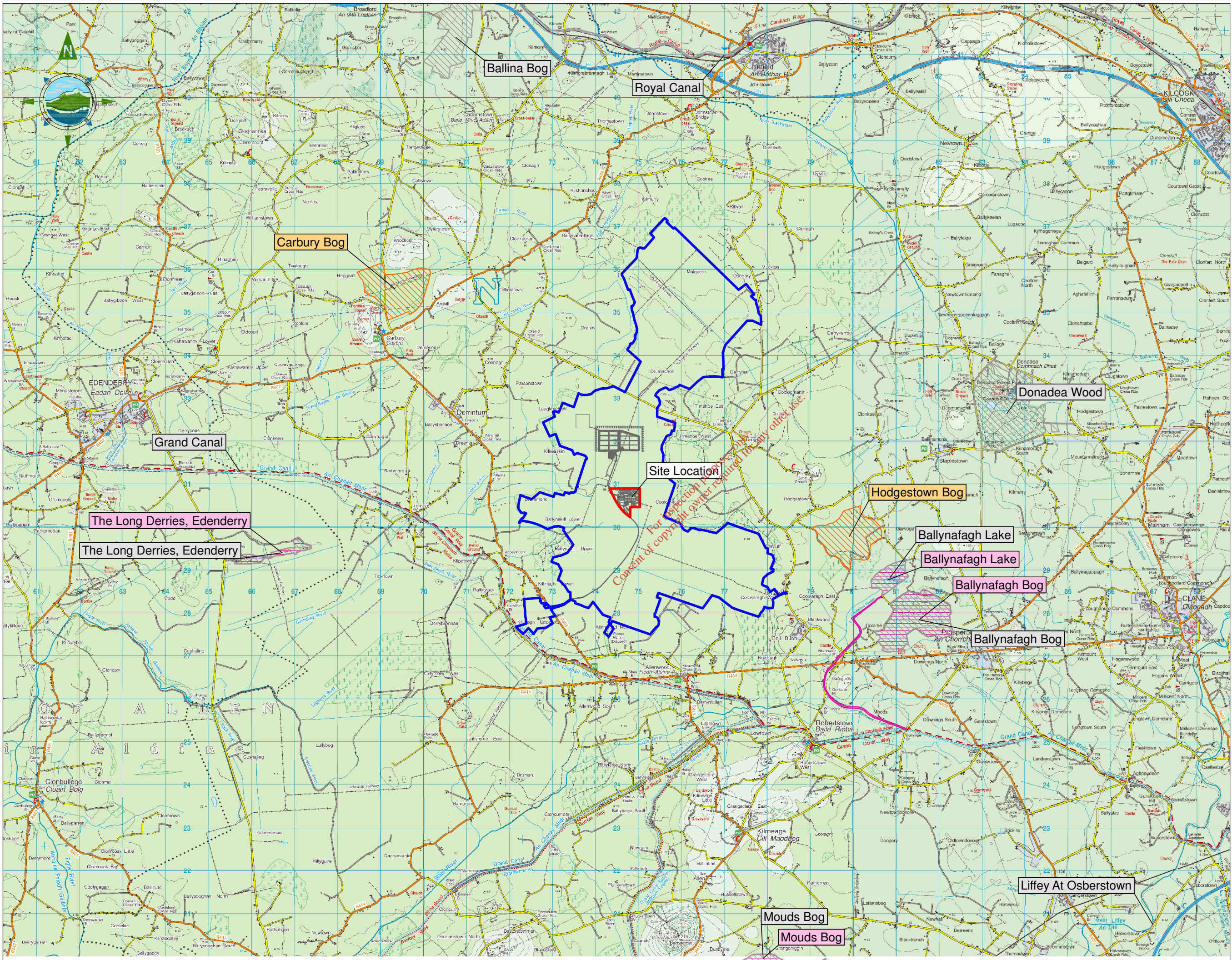
Table 4-2 Designated conservation areas located within 10km of the site

Name	Site Code	Designation	Approximate distance from site/activity boundary
Ballina Bog	000390	pNHA	10.5 km
Ballynafagh Bog	000391	pNHA/SAC	6.4 km
Ballynafagh Lake	001387	pNHA/SAC	5.8 km
Carbury Bog	001388	NHA	6.0 km
Donadea Woods	001391	pNHA	8.3 km
Grand Canal	002104	pNHA	3.3 km
Hodgestown Bog	001393	NHA	4.0 km
Long Derries, Edenderry	000925	pNHA/SAC	7.2 km
Royal Canal	0002103	pNHA	10.1 km
Mouds Bog	000395	pNHA/SAC	11 km
Pollardstown Fen	000396	SAC	13.2km
Liffey at Osberstown	001395	pNHA	14.2 km

NHA = Natural Heritage Area (Nationally Designated Site)

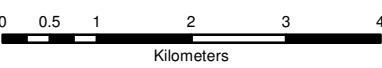
pNHA = proposed Natural Heritage Area (not currently designated but recognised in County Development Plans)

SAC = Special Area of Conservation (European Designated Site)



Legend

- Site Location
- Landownership Boundary
- Natural Heritage Areas
- Proposed Natural Heritage Areas
- Special Area of Conservation
- Special Protection Areas



- NOTES**
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
 2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

A	05.06.12	Issued for Waste License	G.F. S.T.
Issue	Date	Description	By Chkd.

Client:

BORD NA MÓNA

Project:

**DREHID
MECHANICAL BIOLOGICAL
TREATMENT (MBT) FACILITY**

Title:

**DESIGNATED CONSERVATION
AREAS**

Scale @ A3: 1:80,000

Prepared by: G.Fil Checked: S.Tinnelly Date: May 2012

Project Director: D.Grehan

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Figure 4.1

4.2.3 Rare and Protected Flora

The development site is located in the Ordnance Survey National Grid 10km square N73. A plant species list for this 10km square was generated from the CD-Rom version of the “New Atlas of British and Irish Flora”(Preston *et al.*, 2002). This list was then compared to the list of species protected under the Flora (Protection) Order, 1999 and those that are included in the Irish Red Data Book (Curtis and McGough, 1988). Table 4-3 presents the protected or rare species with records occurring in this grid square.

Table 4-3 Rare and Protected Flora present in National Grid 10km square N73.

Species	Status	Category
Bog Orchid, (<i>Hammarbya paludosa</i>)	Protected	Rare
Bog Rosemary, (<i>Andromeda polifolia</i>)	Not Protected	Species not Considered Threatened in the Republic of Ireland but protected in NI
Cowslip (<i>Primula veris</i>)	Not Protected	Species not Considered Threatened in the Republic of Ireland but protected in NI

In addition Blue fleabane *Erigeron acer* (Protected species) may possibly occur. This was checked for during an appropriate flowering period and none was noted.

Habitats on the site are not suitable for Bog Orchid and none were noted during site surveys. No other protected flora are likely to occur.

Conditions on site are possible for bog rosemary, but neither this nor any of the other species mentioned above were recorded on the proposed MBT development site during the field visits.

4.2.4 Habitats within the proposed MBT development site

The proposed MBT development site comprises re-vegetating cutover bog beside an existing private access road which leads to the existing Drehid Waste Management facility located approximately 1km north of the proposed location of the MBT facility. This area was previously used by Bord na Móna up to approximately twenty two years ago for production of sod peat for energy generation. In general, the habitats present on site are typical of re-vegetating cutover bog on a relatively well drained portion of the overall Bord na Móna landholding. Habitats consist of a mosaic of habitats ranging in succession state from small areas of bare peat, scrub, immature

birch woodland, heath, more developed bog woodland and grassland communities (along a former railway embankment).

Habitats were classified in accordance with Fossitt (2000). Six habitat classes and habitat mosaics (habitat consists of a mix of habitat classes) were determined within the proposed MBT Facility site including;

- Drainage Ditches (FW4);
- Dry Meadows and Grassy Verges (GS2);
- Immature Woodland (WS2) / Bog Woodland (WN7);
- Dry siliceous heath (HH1);
- Dry siliceous heath (HH1) / Scrub (WS1) mosaic; and
- Building and Artificial Surfaces (BL3).

Habitats classes and their extents are presented in Figure 4.2 and described in subsequent sections.

Drainage Ditches (FW4)

There are three drainage ditches within the development site. They have relatively steep banks and little in the way of aquatic fringing vegetation, although bulrush (*Typha latifolia*) does occur at the foot of the bank at scattered locations along the ditches. The water in the ditches is turbid and does not allow much vegetation to grow although occasional patches of duckweed (*Lemna minor*) do occur.

The banks alongside these ditches have scrub development with the main species being willow (*Salix cinerea*), bramble (*Rubus fruticosus* agg.) and birch (*Betula pubescens*).

Dry Meadows and Grassy Verges (GS2)

This habitat type has formed on the man-made former railway line, which has subsequently been re-colonised by vegetation. It is found along the old railway line clearance that runs diagonally across the proposed MBT development site. The banks of the old railway line are dominated by rank coarse vegetation, chiefly cocksfoot grass (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), wild strawberry, willowherb, cow parsley, sweet vernal grass (*Anthoxanthum odoratum*), nettle (*Urtica dioica*), Angelica (*Angelica sylvestris*) and bramble. Plants such as hedge woundwort (*Stachys sylvatica*), selfheal (*Prunella vulgaris*) and centaury (*Centaurium erythraea*) are occasional. Some growth of birch and willow is also occurring from the adjoining woodland habitat.

Immature Woodland (WS2) / Bog Woodland (WN7)

This habitat type is scattered throughout the overall landholding including the proposed MBT development site. The tree species are dominated by birch and willow with small patches of Scot's pine (*Pinus sylvestris*).

The understorey is dominated by ling heather (*Calluna vulgaris*), bramble, raspberry, willowherb and bracken (*Pteridium aquilinum*).

The vegetation is semi-natural and shows a moderate degree of diversity.

Dry Siliceous Heath (HH1)

This habitat occurs to the centre of the proposed MBT development site and is dominated by ling heather with some dwarf shrubs, grasses, occasional bog cotton (*Eriophorum* spp.) and broadleaved herbs.

Dry Siliceous Heath (HH1)/ Scrub (WS1) mosaic

This habitat mosaic occurs within the proposed MBT development site on relatively dry soils. The main species is ling heather with bracken, *Molinia* (grass), bramble and occasional gorse (*Ulex sp.*).

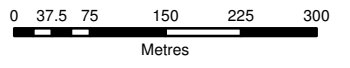
Building and Artificial Surfaces (BL3)

This habitat is used to describe the existing access road which runs along the western site boundary. It has no ecological value.



Legend

- Site Boundary
- - - FW4 Drainage
- BL3 Buildings and artificial surfaces
- GS2 Dry meadows and grassy verges
- HH1 Dry siliceous heath
- HH1/WS1 Dry siliceous heath/ Scrub Mosaic
- WS2/WN7 Immature woodland/ Bog woodland



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Issue	Date	Description	By	Chkd.
A	05.06.12	Issued for Waste License	G.F.	S.T.

Client:
BORD NA MÓNA

Project:
 DREHID
 MECHANICAL BIOLOGICAL
 TREATMENT (MBT) FACILITY

Title:
 HABITAT MAP

Scale @ A3: 1:7,500

Prepared by: G.Fil	Checked by: S.Tinnelly	Date: May 2012
Project Director: D.Grehan		

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4.2.5 Fauna

Mammals

Badger foraging signs were recorded during the survey visits at several locations around the MBT development site. They are likely to forage on the site though no signs were noted. An outlier sett was determined approximately 400m north of the MBT site boundary. This area will not be disturbed.

No evidence of otter spraints (droppings) or holts (breeding site) were noted within the development site. Otter slides were noted on existing drains and it is likely that this species ventures into the area as there is abundant suitable prey (frogs etc).

Signs of fox (*Vulpes vulpes*) and Irish hare (*Lepus timidus hibernicus*) were noted including several sightings of Irish Hare and fox territorial marking.

No evidence of the occurrence of bats was found within the study area. No mature deciduous trees (suitable roost sites) were found, nor any ruined or old buildings suitable as summer roosts for bats. As a result, it is unlikely that bats roost on the site. The extensive scrub and developing woodland areas in the wider landholding area, provide extensive suitable foraging habitat for bats.

Birds

No possible/ probable or confirmed breeding species listed on Annex 1 of the Birds Directive were recorded on the site. In addition none were recorded in the wider environs of the site.

No species of high (red listed) or moderate (amber listed) conservation concern were noted on the site.

The site consists of extensive suitable breeding habitat for a range of common species with minimum numbers of territorial males noted as follows:

- White throat (>3)
- Willow Warbler (>5)
- Lesser Redpoll (> 5)
- Blackcap (>2)
- Blackbird (1)
- Coal Tit (1)
- Wren (1)
- Bullfinch (1)
- Long Tailed Tit (1)

The following amber listed species were recorded in habitats in the wider landholding. It is important to note that habitats at the MBT Facility site are largely unsuitable for all of these species.

- Sand Marten – colony (> 20 apparently occupied nests) located at the sand and gravel borrow area;
- Mute Swan – Breeding Pair noted around existing settlement ponds;
- Linnet – several pairs noted in cutover bog habitat;
- House Marten - > 5 nest sites on existing buildings at Drehid Waste Management Facility;
- Snipe - > 3 males holding territory. Common wintering species on more open cutover bog (>50 noted);
- Grasshopper Warbler – several males holding territory;
- Dabchick – Pair noted;
- Water Rail. Located in wetter cutover bog > 500m north of MBT site;
- Cuckoo – A male noted over the wider cutover bog; and
- Kestrel – Several noted foraging at different times over the wider landholding area.

All birds and their nesting places are protected under the Irish Wildlife Act (1976), and under the Irish Wildlife Amendment Act, (2000) (except for excluded species).

Other Fauna

Numerous sightings of common frog (*Rana temporaria*) were made. Conditions for breeding in drains on site are suitable for both frog and smooth newt (*Triturus vulgaris*). Viviparous lizard (*Lacerta vivipara*) is common and is found in areas of heath.

These species are protected under the Irish Wildlife Act (1976) and under the Irish Wildlife Amendment Act, (2000). The frog is common and widespread in Ireland, but considered vulnerable in the rest of Europe (Whilde, 1993).

Marsh Fritillary surveys were conducted as possible habitat exists on the MBT Facility site edges - areas with Devils Bit Scabious (*Succisa pratensis*) food plant. This species of butterfly is listed on Annex 2 of the Habitat Directive. No signs of this species were found.

Other records of common butterfly and Odonata were observed at the MBT site. These included; Orange tip, Common Blue, Speckled Wood, Brown hawker (*Aeshna grandis*), Common darter (*Sympetrum striolatum*), Blue-tailed damselfly (*Ischnura elegans*) and other unidentified blue damselflies.

4.2.6 Ecological Evaluation

No International, National or County significant habitats/ species occur at the MBT site. No protected plants were recorded and no protected mammal sites exist within the site boundary.

The proposed MBT development site consists of cutover bog habitat which includes a mosaic of six habitat types which are evaluated as a discreet unit of developing semi natural habitat. Habitats are detailed in Table 4-4 below together with their evaluation rating.

Table 4-4 Habitat Evaluation

Habitat Classification	Evaluation
Drainage Ditch (FW 4)	Local Importance (Higher Value)
Dry Siliceous Heath (HH1)	
Dry Siliceous Heath (HH1)/ Scrub Mosaic (WS1)	
Immature Woodland (WS2) / Bog Woodland (WN7)	
Dry Meadows and Grassy Verges (GS2)	Local Importance (Lower Value)
Buildings and Artificial Surfaces (BL3)	Not evaluated

Key ecological receptors requiring consideration of mitigation are summarised as follows;

- Site habitats listed (above) – Local Importance (Higher Value);
- Common breeding bird species; and
- Frogs, Viviparous Lizard and Common Lizard.

4.3 POTENTIAL IMPACTS

Impact Assessment Criteria

The criteria used in the ecological impact assessment are outlined overleaf. Mitigation measures are proposed to avoid, reduce or compensate for the impacts identified and any residual impacts are discussed.

Table 4-5 Criteria used in Ecological Impact Assessment (EPA, 2002, IEEM 2006)

<p><i>Positive or Negative:</i></p> <p>Is the impact likely to be positive or negative? International and national policy now pushes for projects to deliver positive outcomes for biodiversity.</p>
<p><i>Context (Magnitude and extent):</i></p> <p>A scheme may effect only a small part of a site but the area of habitat affected in that location (in hectares) should be given in the context of the total area of such habitat available (e.g. 1 ha of a woodland which measures 30ha in total.)</p>
<p><i>Character:</i></p> <p>The type of habitat (e.g. natural or highly modified woodland; mature or recently established, wet or dry) is important, as is the quality of the site (e.g. undamaged active blanket bog).</p>
<p><i>Significance:</i></p> <p>State whether a site has a designation, such as a SAC or NHA, or contains a listed (Annex I) habitat. The ecological value of a site can be assigned a rating using an evaluation scheme (e.g. undesignated areas of semi-natural broadleaved woodland are normally rated as high value, locally important).</p>
<p><i>Sensitivity:</i></p> <p>Indicate changes that would significantly alter the character of an aspect of the environment (e.g. changes in hydrology of a wetland due to construction of access road).</p>
<p><i>Duration:</i></p> <p>Indicate the time for which the impact is expected to last prior to recovery or reinstatement of impacted habitats and/or species.</p> <p>The duration of an activity may differ from the duration of the resulting impact caused by the activity (e.g. short-term construction activities may cause disturbance to birds during the breeding season, however, there may be longer – term impacts due to a failure to reproduce in the disturbed area during that season).</p>
<p><i>Reversibility:</i></p> <p>Identify whether an ecological impact is permanent (non-reversible) or temporary (reversible – with or without mitigation).</p>
<p><i>Timing and Frequency:</i></p> <p>Some changes may only cause an impact if they happened to coincide with critical life-stages or seasons (for example, the bird nesting season). This may be avoided by careful scheduling of the relevant activities.</p>

4.3.1 *Potential Impacts of Configuration A (MBT with Composting)*

4.3.1.1 Construction Phase

Designated Conservation Areas

The proposed development does not lie within or adjacent to any site designated for nature conservation.

No direct or indirect impacts on any site designated for conservation will arise through the development of the facility (also refer to Screening Statement (re Natura 2000 sites) in Appendix 4.1).

No adverse impacts are likely to designated sites.

Rare and Protected Flora

No species of rare or protected flora were found within the proposed MBT Facility development site. There will be no direct or indirect impact to rare or protected flora by the proposed MBT Facility development.

No adverse impacts are likely to rare and protected flora

Key Habitat (Ecological) receptors within the proposed MBT Facility site

Key habitats of Local Importance (Higher Value) that require consideration are detailed in Table 4-4. Permanent removal of most of these habitats will be required for construction of the facility within the development site boundary. The site clearance works will involve the permanent removal of approximately 24.4ha of these habitats within the 29ha MBT Facility site. There will be scope for retaining existing habitat particularly at the site boundaries. In addition, replanting, semi natural grasslands and natural re-vegetation will occur on specific sections of the site post construction. A number of settlement ponds will also be created which will be designed with an ecological focus.

The post construction Landscape Plan (Drawing 6301-2321, Volume 3 of this EIS) will therefore reduce the overall impact as a significant proportion of the site (approximately 14.5ha or c.a. 50%) will have retained habitats or new habitats created based on ecological design.

There is potential for impacts to occur, during the construction phase, to adjacent off site intact habitats through damage and disturbance arising from vehicular activities and storage of excavated material. There is also potential for increased siltation and fuel/oil contamination of drainage ditches. Mitigation measures for minimising risks to downstream water sources and associated aquatic ecology are detailed in Chapter 6 of this EIS (Water Chapter).

Impacts should be considered in the context of the wider landholding as the MBT Facility site consists of a relatively small portion of a much larger area of discrete semi natural habitats. Impacts from the development are considered to be a permanent minor adverse impact. This impact will likely affect <5% of similar habitats within the overall Bord na Móna landholding. As detailed above, the Landscape Plan fully recognises habitats on site and replanting and retention of vegetation will reduce this impact further post construction.

Fauna - Mammals

No significant impacts are expected to protected mammal species e.g. badger, otter and bats as abundant alternative habitat surrounds the proposed MBT Facility site and no breeding sites were determined. Therefore, no significant impacts are expected but given the protected status of the mammals, mitigation (monitoring) is detailed below.

Fauna - Birds

The removal of scrub, bog woodland and cutover bog will reduce potential areas of nesting and foraging habitat for common breeding birds locally. Removal of these habitats during construction could obviously lead to a direct impact on common bird populations at a localised scale within the site boundary.

Impacts from the development are considered to be a permanent minor adverse impact as available nesting and foraging areas will be permanently reduced within a relatively small localised area.

Mitigation measures are proposed which, when fully implemented, will ensure that impacts on birds will be minimised.

Other Fauna

Removal of the cutover bog, scrub and drainage ditch habitats will reduce the areas available for breeding common frog, lizard and newt. Abundant alternative sites exist across the remainder of the landholding so it is unlikely that there will be a significant reduction in populations of these fauna. Given the protected status of frog breeding sites, precautionary monitoring is recommended to determine status and appropriate actions immediately prior to site clearance works as detailed in the mitigation section below.

4.3.1.2 Operational Phase

Depending on the final lighting requirements there is a potential to impact foraging bats as excessive lighting and “spill over” of light into surrounding habitats can alter foraging routes and areas utilised. Some bat species require dark conditions for effective foraging.

The nature of the materials processed at the MBT Facility may attract wildlife including pest species (e.g. rodents) to the facility which may require pest control activities. Indirect impacts from possible control procedures to predator species (e.g. birds of prey and protected mammals) will require consideration to minimise indirect impacts to species in the wider local area.

No collision or other impacts with any structures at the MBT Facility are expected to bird species of conservation significance in the wider local area including designated sites.

4.3.2 *Potential Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)*

The potential impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting) are the same as for Configuration A (MBT with Composting) as detailed in section 4.3.1 above.

4.4 MITIGATION MEASURES

4.4.1 *Mitigation Measures for Configuration A (MBT with Composting)*

Mitigation measures outlined in this Report will seek to limit and reduce the direct and indirect impacts of the proposed development on local ecology during the construction and operational phases.

Site Clearance/ Construction Phase

The following mitigation measures are recommended to limit the direct and indirect impacts of the proposed site clearance/ construction phases on the local ecological environment:

- All construction works on site will be guided by best ecological practice guidance such as those listed in Section 4.1.1 above.
- As frogs breed on the site, pre-site clearance surveys of drainage ditches will be implemented to inform best practice during the site clearance phase. If froglets are present then it is recommended that all works in the vicinity of the drainage ditch take place between August and late September before frogs go into hibernation. During site clearance an ecologist will be present to remove frogs and / or Viviparous Lizard to an alternative safe location.
- The works area will be clearly marked and fenced off to minimise impacts to any surrounding habitats of ecological significance.
- There will be no soil storage outside the site area thereby avoiding impacts to adjacent habitats.
- Where possible tree vegetation (birch and willow growth) within the site boundary will be retained for landscaping so as to reduce ecological impact, also refer to the Landscape Plan (Chapter 10).
- Adjacent tree, scrub and heath vegetation that is to be retained will be clearly marked and fenced off to avoid accidental damage during excavations and site

preparation. No materials will be stored within five metres of retained trees and scrub. Materials, especially soil and stones, can prevent air and water circulating to the roots of trees and shrubs.

- The site clearance phase of the proposed development will only take place during daylight hours to minimise potential disturbance risks to nocturnal mammal species.
- Where possible, scrub, tree or heath removal will be undertaken outside of the bird nesting period, which begins on March 1st and continues until August 31st, in order to protect nesting birds. All birds and their nesting places are protected under the Irish Wildlife Act 1976 (as amended 2000).
- As an extended period of time may arise prior to site clearance works, pre-site clearance ecological survey checks will be conducted to update baseline ecology and to determine any site specific recommendations for minimising impacts to potential key ecological receptors.
- Extensive site works such as site excavation will not take place during extended periods of heavy rain in order to minimise soil and silt water run off to silt traps.
- Soil storage will be in a manner which avoids impacts to surface waters and instability issues.
- Bund areas created will be replanted with native vegetation similar to species currently growing on the site.
- Two new ponds will be created within the site and designed based on ecological principles and having regard for species such as frog as these ponds will provide suitable breeding habitat.
- During the excavation and removal of soil for construction works, fuel / oil interceptors and silt traps or sedimentation ponds will intercept surface water run-off. The Contractor will establish a maintenance schedule and operational procedure for silt and pollution control measures during the construction period.
- Oil, petrol and other contaminants will be stored in bunded containers. Bund specification will conform to the current best practice for oil storage such as Enterprise Ireland's Best Practice Guide BPGCS005 Oil Storage Guidelines. All waste oil, empty oil containers and other hazardous wastes will be disposed of in conjunction with the requirements of the Waste Management Acts 1996 to 2008, as amended.
- Spill kits will be retained on site during the construction phase. These kits will be equipped with suitable materials for the appropriate cleanup and storage of any contaminants which are accidentally released into the environment.
- Pouring of concrete will only take place in designated areas. Washings will not be discharged to surface water and poured concrete will be allowed to cure for a minimum 48 hours in dry weather.

Operational Phase

- External lighting will be minimised as far as possible particularly its usage at night, so as to minimise disturbance to foraging bats. Where feasible, external lights will be cowed and limited only to areas where lighting is strictly required (as per Health and Safety minimum requirements).
- Vermin control measures will be implemented and an ecological expert will be consulted to determine suitability and control (e.g. spread of poisons) in the context of protected species in the wider landholding.

No other significant impacts are likely to arise to ecological receptors during the operational phase of the project.

4.4.2 *Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)*

Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting) are the same as for Configuration A (MBT with Composting) as detailed in section 4.4.1.

4.5 CONCLUSION

The proposed Drehid MBT Facility will occupy a 29ha site within an overall 2,544ha Bord na Mona landholding in Co. Kildare. The proposed MBT Facility development site is located beside the existing private access road which leads to the permitted waste management facility approximately 1km north of the MBT Facility site boundary. This access road will also serve the proposed MBT Facility.

The MBT Facility site has previously been disturbed by the construction of a railway line and for the production of sod peat for energy generation. It currently consists of cutover bog and contains a mosaic of habitats unique to the local area although larger undisturbed areas of these habitats are present within the wider landholding. The majority of the site area of cutover bog / habitat mosaic will be permanently removed for the development though the final design will retain at least some of the existing site habitats. This is fully recognised and reflected in the Landscape Plan. In addition, areas will be replanted around the perimeter of the site which will further reduce overall habitat loss and allow creation of some woodland type habitat.

The proposed MBT Facility will not have any impacts on any sites designated for conservation, protected flora, scarcer breeding birds or protected mammals. In general local populations of common breeding bird species, common frog, lizard, newt and dragonflies will not be significantly impacted as larger areas of similar alternative habitat are present surrounding the proposed MBT Facility site within the local area.

Proposed mitigation measures outlined in this Report will seek to reduce any impacts of the proposed MBT Facility development during the construction and operational phases on the ecological environment within the wider landholding.

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