

Attachment 17

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Molaisín Compost Ltd
Waste Licence Application

Attachment I.7 Assesment of Ecological Impacts and Mitigation Measures

White Young Green, Environmental Consultants were commissioned by Molaisín Compost Ltd. to undertake an Ecological Assessment at the site in Cappoquin. The report from White Young Green is attached.

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White
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Green

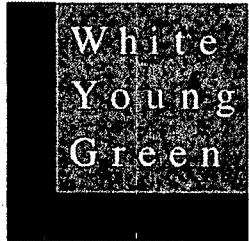
Ecological Assessment

**Ecological Assessment of a Composting
Facility at Cappoquin, Co. Waterford.**

**for
Molaisín Composting Ltd**

May 2008

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Ecological Assessment

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Molaisín Composting Ltd

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Reference: Molaisín Composting Ltd - Ecological Assessment of a Composting Facility at Cappoquin, Co. Waterford			
Issue	Prepared by	Checked by	Verified by
V1	23.04.08		
V2	16.05.08		
V3	-		
V4	Joanne Allen-Hamilton	Eleanor Ballard	Teri Hayes
V5	Senior Ecologist	Senior Ecologist	Director
File Ref: CE06688			
White Young Green Environmental (Ireland) Limited, Unit 2, University Technology Centre, Curraheen Road, Cork. Telephone: +353 21 4933 200 Facsimile: +353 21 4933 250 E-Mail: cork@wyg.com			

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1 INTRODUCTION

White Young Green was commissioned to carry out an ecological assessment of the lands at the Molaisin Composting Ltd. composting facility at Kilmolash, Co. Waterford. The ecological assessment is part of a waste licence application for the site. The aim of this study is identify any likely significant impacts of the facility on the ecology of the site and adjacent habitats.

The composting facility currently operates under a Waterford County Council issued waste permit. The facility is now required to operate under an EPA issued waste licence. The composting facility was operational on the day of site visit.

The ecological assessment was prepared in accordance with legislative requirements including the European Directive (85/226/EEC) amended by the Council Directive 97/11/EC and effected by the Statutory Regulations in Ireland (including S.I. No. 349 of 1989 and SI Nos. 92 & 93 of 1999) and Schedule 1 of the 1999 Regulations, (S.I. No. 93 of 1999). This assessment was additionally carried out in accordance with the Draft Guidelines on the Information to be contained in Environmental Impact Statements (Environmental Protection Agency, 2002) and also Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (Environmental Protection Agency, 2003).

1.1 Brief Site Description

The 6.5 acre site is located approximately 11km west of Dungarvan, Co, Waterford and approximately 4km north of Aglish. The study site consists in the main of agricultural and landscaped land. The main access road runs southwest from a local third class road and the site can be accessed from an additional entrance at the southwest site boundary. The study site is located within an agricultural landscape and the SW area of the site has been excavated to allow construction of the composting facility. A sharp escarpment now exists.

2 METHODOLOGY

The study comprised both desk and field study elements. The desk study also encompassed a wider area of up to 10km from the site boundary. The area investigated during the field survey is the area contained within the site boundary and the lands immediately surrounding the site. The baseline ecological conditions are described, including the nature conservation status of habitats and species present. The results from the surveys were used to produce an informed assessment of the potential impacts on ecology and nature conservation interests. Consequently, appropriate mitigation measures are proposed to avoid, minimise or compensate for the potential negative effects identified.

The desk study involved consultation with relevant statutory and non-statutory bodies including:

- Dept. of Environment Heritage & Local Government
- National Parks and Wildlife Service
- Southern Regional Fisheries
- Waterford County Council Heritage Officer
- BirdWatch Ireland

To date, no comments have been received from any of the bodies.

2.1 Field Survey

The field surveys were carried out on the 16 April 2008. Weather conditions were overcast, with sunny spells. Weather conditions in the week prior to field work were overcast with sunny spells and showers.

2.1.1 Survey Limitations

The field surveys was conducted within the botanic growing season which is generally considered to be May to August. The habitat mapping of the site is considered to be accurate given the identification of the species present and abiotic features. Confirmation of mammal species (including badgers, otters, hares and bats) using the site would require a detailed mammal survey. Confirmation of breeding bird species using the site would require a breeding season survey (between April and June).

2.1.2 Flora

Habitats present were classified according to Fossitt (2000) in accordance with *Draft Habitat Survey Guidelines: a Standard Methodology for Habitat Survey and Mapping in Ireland* (Heritage Council, 2005). Habitats were mapped with Target Notes used to describe features of interest; these are represented in Appendix A. Botanical nomenclature follows Webb *et al.*, (1996).

2.1.3 Fauna

Mammals

The survey for vertebrate fauna was carried out by means of a search within the site and the immediate locality. The presence of mammals is indicated principally by their signs, such as dwellings, feeding signs or droppings - though direct observations are also occasionally made.

A number of mammalian species, including bats, Irish hare and badgers, are protected under the Wildlife Act (1976, and Amendment, 2000) and it is an offence to wilfully interfere with or destroy the breeding or resting place of these species, although there are exemptions. Surveys were undertaken to identify those species listed under Schedule 5 of the Wildlife Act 1976 which would be expected to occur on the site. These potentially include bats and badger and hare.

Birds

Most bird species are protected under the Wildlife Act (1976), except those regarded as pest species and those considered as game species (where they may be hunted under specified conditions). Bird species listed under Annex I of the EU Birds Directive (79/409/EU) are of particular concern. It is an offence to interfere with the breeding place of protected species, though there are exemptions for developments, such as road construction and building works. For the generally common species, best practice provision is made to limit the removal of vegetation and nesting habitat during the breeding season. Bird species observed during the survey were recorded and an assessment of the ornithological interest of the site is included with probable species of conservation interest, if any, likely to be breeding.

Reptiles and Amphibians

The common lizard, the common frog and the smooth newt are all protected species under the Wildlife Act (1976). It is standard good practice to ensure protection of breeding sites where these have been identified and to make provision for maintenance of the species if possible. An assessment of any habitat that may have the potential to support reptiles and amphibians was undertaken.

2.2 Conservation Evaluation of Habitats and Species

The habitats within the site were evaluated in terms of their conservation value and assigned an evaluation rating based on the criteria outlined in Table 1 in accordance with standard guidelines (IEEM, 2006).

Table 1: Site Conservation Evaluation: Rating Qualifying Criteria

Rating	Qualifying Criteria
A	Internationally Important Sites designated (or qualifying for designation) as an SAC* or SPA* under the EU Habitats or Birds Directives. Undesignated sites containing good examples of Annex I priority habitats under the EU Habitats Directive. Major salmon river fisheries. Major Salmonid (salmon, trout or char) lake fisheries.
B	Nationally Important Sites or waters designated or proposed as an NHA* or Statutory Nature Reserve. Undesignated sites containing good examples of Annex I habitats (under EU Habitats Directive). Undesignated sites containing significant numbers of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000. Major trout river fisheries. Water bodies with major amenity fishery value. Commercially important coarse fisheries.
C	High Value, Locally Important Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or significant populations of locally rare species. Sites containing any resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive. Large water bodies with some coarse fisheries.
D	Moderate Value, Locally Important Sites containing some semi-natural habitat or locally important for wildlife. Small water-bodies with some coarse fisheries value or some potential salmonid habitat. Any water body with unpolluted water (Q-value 4-5).
E	Low Value, Locally Important Artificial or highly modified habitats with low species diversity and low wildlife value. Water bodies with no current fisheries and no significant potential fisheries value.

(after Natura Site Evaluation Scheme, NRA, 2006).

SAC = Special Area of Conservation; SPA = Special Protection Area; NHA = Natural Heritage Area.

2.3 Impact Assessment

The significance of the potential impacts of the proposed works were assessed using the criteria outlined in Table 2.

Table 2: Impact Assessment Matrix

Impact Level	A Sites Internationally Important	B Sites Nationally Important	C Sites High Value, Locally important	D Sites Moderate value, Locally important.	E Sites Low Value, Locally Important
Severe Negative	Any permanent impacts	Permanent impacts on a large part of a site.			
Major Negative	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site		
Moderate Negative	Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site	
Minor Negative		Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site
Neutral	No Impacts	No Impacts	No Impacts	No Impacts	Permanent impacts on a small part of a site
Minor Positive				Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site
Moderate Positive			Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site	
Major Positive		Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site		

(After Natura Site Evaluation Scheme, NRA, 2006).

2.4 Receiving Environment

2.4.1 Consultation Responses

A review of the National Parks and Wildlife Service (NPWS) database (www.heritagedata.ie) revealed that the site is not contained within or contains a designated site of ecological interest. The application of a 10km buffer to the site boundary revealed one Natural Heritage Areas, one Special Areas of Conservation and one Special Protection Area as detailed in Table 3 below and Appendix B.

Table 3: Nature Conservation Designations in proximity to the study site

Designation	Site Code	Site Name	Distance from Study Area (km)	Direction
NHA	72	Blackwater River and Estuary	Ca.2km	North west
SAC	2170	Blackwater River (Cork & Waterford)	Ca.0.5km	North
SPA	4028	Blackwater Estuary	Ca.8km	South west

The available site synopsis for the SAC and NHAs are provided in Appendix C with a list of protected flora and fauna species found within a 10km grid of the study site, none of which were found onsite during the field survey.

2.4.2 Field survey results

2.4.2.1 Flora

The location of habitats and associated Target Notes are illustrated in the habitat map in Appendix A. The results of the botanical survey and habitat assessment carried out for the purposes of this study are described below with conservation evaluation ratings (refer to Table 1). Nomenclature for each species is given at first mention. The following habitat types were identified on the site (Fossitt, 2000):

Grassland and marsh

- Improved agricultural grassland (GA1)

Woodland and scrub

- Hedgerows (WL1)
- Treelines (WL2)
- Scrub (WS1)

Cultivated and built land

- Buildings and artificial surfaces (BL3)
- Tilled land (BC3)
- Stone walls and other stonework (BL1)

Exposed rock and disturbed ground

- Spoil and bare ground (ED2)
- Exposed calcareous rock (ER2)

Improved grassland (GA1)

The composting plant is contained within an agricultural landscape. Fields of improved agricultural grassland adjoins the study site along the north and north eastern boundaries, as shown in appendix A. This habitat type was found to be of low species diversity as the sward is generally homogenous and regularly fertilised (granules of fertiliser evident on ground surface). Species composition identified during this study includes perennial rye grass *Lolium perenne*, yorkshire fog *Holcus lanatus*, clover *Trifolium* spp., daisy *Bellis perennis* and broadleaved dock *Rumex obtusifolius*. These species are typical of this habitat in Ireland. No rare or protected flora was recorded. It is believed (using aerial photography) that the study site itself was agricultural grassland prior to the construction of the composting facility.

Ecological Evaluation

This is a species-poor habitat of low conservation value. It is widespread throughout Ireland and is evaluated as E.

Hedgerows (WL1)

Field boundaries included hedgerows and often over grown hedgerows forming treelines. Hedgerows bordering agricultural fields (outside the site boundary but form important wildlife corridors leading from treelines lining the site) were dominated by hawthorn *Crataegus monogyna* and were most likely maintained on an annual basis. The species composition was very uniform and well managed. The understorey consisted of bramble *Rubus fruticosus* agg., ivy *Hedera helix*, primrose *Primula vulgaris*, broadleaved dock *Rumex obtusifolius*, common nettle *Urtica dioica* L, cleavers *Galium aparine* and moss spp.. Along the entranceway running in a north easterly direction, young tree species have been planted (target note A, Appendix A). Species include hawthorn and cherry *Prunus avium*.

Ecological Evaluation

This habitat is important for wildlife including avian fauna and as foraging routes for bats and other mammal species. The habitat has moderate species richness. Both the habitat and the species recorded are common within the wider landscape. Overall, this habitat is considered to be of moderate local conservation value and is evaluated as D.

Treelines (WL2)

Unmanaged overgrown hedgerows containing mature trees delimit the site boundary. Dominant tree species include hawthorn hedgerows with intermittent ash *Fraxinus excelsior*, elder *Sambucus nigra*, sycamore *Acer pseudoplatanus*, Holly *Ilex aquifolium* and Horse-chestnut *Aesculus hippocastanum*. Ground flora included ivy, brambles, honey suckle *Lonicera periclymenum*, bracken, Lesser celandine *Ranunculus ficaria*, primrose, barren strawberry *Potentilla sterilis*, violet *Viola spp.*, red dead nettle *Lamium purpureum*, harts tongue *Phyllitis scolopendrium*, Male fern *Dryopteris filix-mas*, broadleaved dock, cleavers, moss spp., common nettles, dandelion *Taraxacum officinale agg.*, dog rose *Rosa canina* and herb-robert *Geranium robertianum*. The western boundary along a roadside has a well developed understory with a stone wall and efforts should be made to maintain this area. This treeline maintains connectivity with a mixed broadleaved woodland (WD1) to the south west of the site. An area of scrub descends from this treeline and planting of a variety of tree species (such as rowan *Sorbus aucuparia*) has increased the age structure of the trees, species diversity thereby adding to the ecological value of the area.

Ecological Evaluation

Trees and treelines are important for breeding birds and as commuting, roosting and foraging sites for bats and other wildlife. Owing to their extent and utilisation as corridors for wildlife and this habitat is evaluated as D.

Scrub (WS1)

Gorse *Ulex europaeus* lines the roadway entering the site from a south west direction. An earth bank surrounds the composting building on which gorse is encroaching forming a vegetative boundary.

Ecological Evaluation

This habitat is important for wildlife including avian fauna and as foraging routes for bats and other mammal species. This habitat is considered to be of moderate local conservation value and is evaluated as D.

Buildings and artificial surfaces (BL3)

This category includes all artificial surfaces including tarmac roadways, pathways, bridges (non-stone) and buildings (including the composting facility).

Ecological Evaluation

Such artificial habitats are of low ecological value and are evaluated as E. It should be noted however that prior to the renovation or removal of any buildings a bat survey is required.

Tilled land (BC3)

The field adjoining the north east boundary of the site has been prepared for planting with arable crops.

Ecological Evaluation

Agricultural land is an artificial habitat although the verges and field margins can house a variety of foraging. Such artificial habitats are of low ecological value and are evaluated as E.

Stonewalls and other stonework (BL1)

A stonewall marking the boundary of the site to the west along a roadway underneath a mature treeline. Stone walls are important for wildlife and this stonewall is an historic land boundary and supports a diversity of flora including lichens, mosses, ferns and flowering plants and should be maintained.

Ecological Evaluation

Stonewalls are important for wildlife (corridors and resources). Owing to its age it is evaluated as D.

Spoil and bare ground (ED2)

The laneway leading running in a north east to south west of the site is surfaced with a layer of mixed gravel. The laneway leading from the composting building up gradient to the (south westerly direction) is less disturbed and contains a small proportion of recolonising plants, mainly grasses and herbs.

Ecological Evaluation

This habitat is has low diversity and is evaluated as E.

Exposed calcareous rock (ER2)

An area of bedrock has been excavated for the composting facility leaving a escarpment of exposed bedrock facing north east as the south western area of the site. This area has been excavated relatively recently (less than 10 years) and therefore little recolonisation of flora has occurred.

Ecological Evaluation

This habitat is has low diversity and is evaluated as E. Overtime this could be increased to D.

Adjacent Habitats

An assessment of the habitats adjacent to the proposed site was undertaken as part of the overall habitat assessment. The lands immediately surrounding the study site have little semi-natural habitat, apart from hedgerows and are intensively managed for agriculture. To the south west perimeter of the site an area of mixed broadleaved woodland is dissected from the site by a small roadway. This is an important area for

wildlife and connectivity with this patch of woodland should be maintained through the treelines and area of scrub. These areas are of low to moderate ecological value.

Overall Assessment - Flora

The site predominantly consists of highly modified, managed habitats, with low species diversity. The treelines and hedgerows are locally important providing cover and forage for flora and fauna. No protected or rare species were recorded from the site during this survey.

2.4.2.2 Fauna

Common species

Typical common rodent species including house mouse *Mus (musculus) domesticus*, brown rat *Rattus norvegicus* and wood mouse *Apodemus sylvaticus* will use the site. Rabbit *Oryctolagus cuniculus* burrows were evident along the main roadway with fox *Vulpes vulpes* and pygmy shrew *Sorex minutus* are also likely to also be present in the locality. The hedgehog *Erinaceus europaeus* probably also occurs.

Protected Species

Badgers: During the habitat survey, attention was paid to hedgerows, treelines and grassland for the presence of badger *Meles meles* setts, refuges, tracks or latrines. Badgers are protected at all times under the Wildlife Act 1976 and 2000. Signs of badger activity (snuffle holes) were identified during the survey in the agricultural field, to the south east of the main entrance way (outside the site boundary) at target note A). A potential badger sett was located approximately 50m to the north west of the site entrance (target note B).

Irish Hare: No hares *Lepus timidus hibernicus* were noted during the survey however it is considered likely that hares use the grassland habitats on the site.

Bats: All bat species are protected under the Irish Wildlife Act (1976) and Amendment Act (2000). Bat species are also protected under the Habitats Directive (92/43/EEC) in which member states are encouraged to conserve landscape features such as field boundaries, woodlands and river corridors. Ireland ratified the Berne and Bonn conventions and is therefore obliged to promote bat conservation, identification and protection of habitats utilised by bats.

Although a dusk/dawn emergence survey was not carried out, the potential of the site to support bats was assessed. The mature treelines running along the site boundary and the presence of buildings provide potential roost spaces for a number of bat species. Species expected to be using the site would include

Pipistrelles *Pipistrellus sp.* and Leisler's *Nyctalus leisleri* that may use the treelines to forage for insects and as commuter routes.

Common (Smooth) Newt and Common Frog: No newts were recorded from the site. A drainage channel crosses the main entrance and tadpoles were noted within this stream to the north of the site.

Common Lizard: No common lizards *Lacerta vivipara* were witnessed during the walkover and the site is not considered suitable for this species.

Otter: Otters occur close to major water bodies and the site does not support suitable habitat for this species.

Birds: A walkover survey was carried out during the habitat survey. Species noted that are common in the Irish countryside and gardens include rooks *Corvus frugilegus*, magpie *Pica pica*, blackbird *Turdus merula*, woodpigeon *Columba palumbus*, wren *Troglodytes troglodytes*, thrush *Turdus philomelos*, robin *Erithacus rubecula*, chaffinch *Finfukka coelebs* and Sparrowhawk *Accipiter nisus*.

Overall Assessment - Fauna

The treelines, hedgerows and scrub present in the study area are important wildlife corridors for bats, breeding birds, rabbits and other mammals. The treelines and buildings within and in proximity to the study area could provide suitable roosting and forage for a number of bat species. If destruction or alteration (outside of normal management practices) of any of these habitats is required for construction works, verification of bat usage of the study area will be required by means of a detailed survey during the appropriate season and mitigated for appropriately.

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3 IMPACT ASSESSMENT

3.1 Potential Impacts

Potential impacts associated with the development at the site include:

- Heavy machinery movement and maintenance
- On-site material storage
- Fuel storage
- Increased noise and dust
- Increased traffic flow
- Increased lighting

3.2 Ecological Impact Assessment

Operational activities will result in direct and indirect impacts on the site including:

- Disturbance in the form of ground tremors caused by traffic flow and noise
- Odour
- Increased lighting
- On a temporary level, activities on the site will lead to certain species, such as bat, bird and mammal species avoiding the operation area of the plant, with a potential for the pollution of surface water and of groundwater. Fauna may return to the site and with the implementation of effective mitigation, potential exists for the fauna to increase long term usage of the site.

4 MITIGATION MEASURES

Based on this assessment the following mitigation measures are recommended for the site:

- All operation works shall be carried out as per best industry standards and guidelines.
- Silt traps, if required, should be constructed at locations that will intercept run-off to drainage ditches.
- The extent of the hedgerows and treelines within the site provides a semi-natural habitat that is used by avian fauna and mammals. Mature treelines and hedgerows should be maintained during operation of the facility and continue to be incorporated into the landscape design where possible, to maintain the linearity and connectivity of these wildlife corridors.
- Any necessary impacts to trees should take place outside the spring and summer period (March 1st and August 31st), unless authorisation is received from NPWS. Any ivy covered trees, which require felling, should be left to lie for 48 hours after cutting to allow for bats, possibly present beneath the cover, to escape.

- Any further landscaping to minimise the visual impact of the development must utilise native tree species and be in character with the existing treelines and hedgerows i.e. planting of hawthorn, oak and ash.
- It is recommended that bat and bird boxes should be installed in suitable locations to encourage the use of the site by these species. Recommendations for the installation of these will be made by a bat and bird specialists.
- Owing to badgers nocturnal ecology it is WYG opinion that traffic using the site will not pose any threat to the badgers unless traffic activity runs into the night. If this is the situation a full detailed mammal survey would be required to accurately determine the extent of the sites use by mammals, in particular badgers.
- An emergency plan should be developed for implementation at the site in the event of an accidental spillage or discharge of fuels or chemicals. The plan should include features such as upside-down water tight containers and high absorbency mats will be positioned at strategic points around the site to be used to temporarily store and soak up contaminated material in the event of a spill.
- All vehicles and machinery shall be kept in good working order and free from any leaks or defects. On-site refuelling, maintenance (if required) and any long term parking of vehicles should only take place on hard stand areas. All waste oil, empty containers and other hazardous wastes are disposed of in conjunction with the requirements of the Waste Management Act 1996.

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5 RESIDUAL IMPACTS

The habitats and fauna on the site which are directly impacted by the composting facility are of low local ecological value to moderate local ecological importance. The activities of the composting facility will have minor to negligible impacts on the flora and habitats in the immediate local area.

Overall, the significance of these impacts (Table 2) are expected to be *Minor Negative to Neutral* based on the baseline ecological conditions; the scale of the operation; the loss of habitats during the construction of the facility (prior to survey); the species affected and the implementation of mitigation measures.

6 CONCLUSIONS

The operation works at Cappoquin composting facility, should follow best construction practices. The semi-natural habitats on and surrounding the site provide suitable habitat for birds and mammals. Any future landscaping of the area should incorporate species such as hawthorn, ash and oak.

The greatest potential to negatively impact the habitats onsite is the destruction of existing hedgerows and treelines, disturbance of fauna through increased lighting, noise and traffic flow and contamination of surface and ground water.

Any mitigation measures adopted during the operation phase should be subject to ongoing monitoring and maintenance during all phases of activity to determine their efficacy.

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Appendix A

Habitat Map with Target Notes

Appendix B

Designated Sites of Conservation Interest

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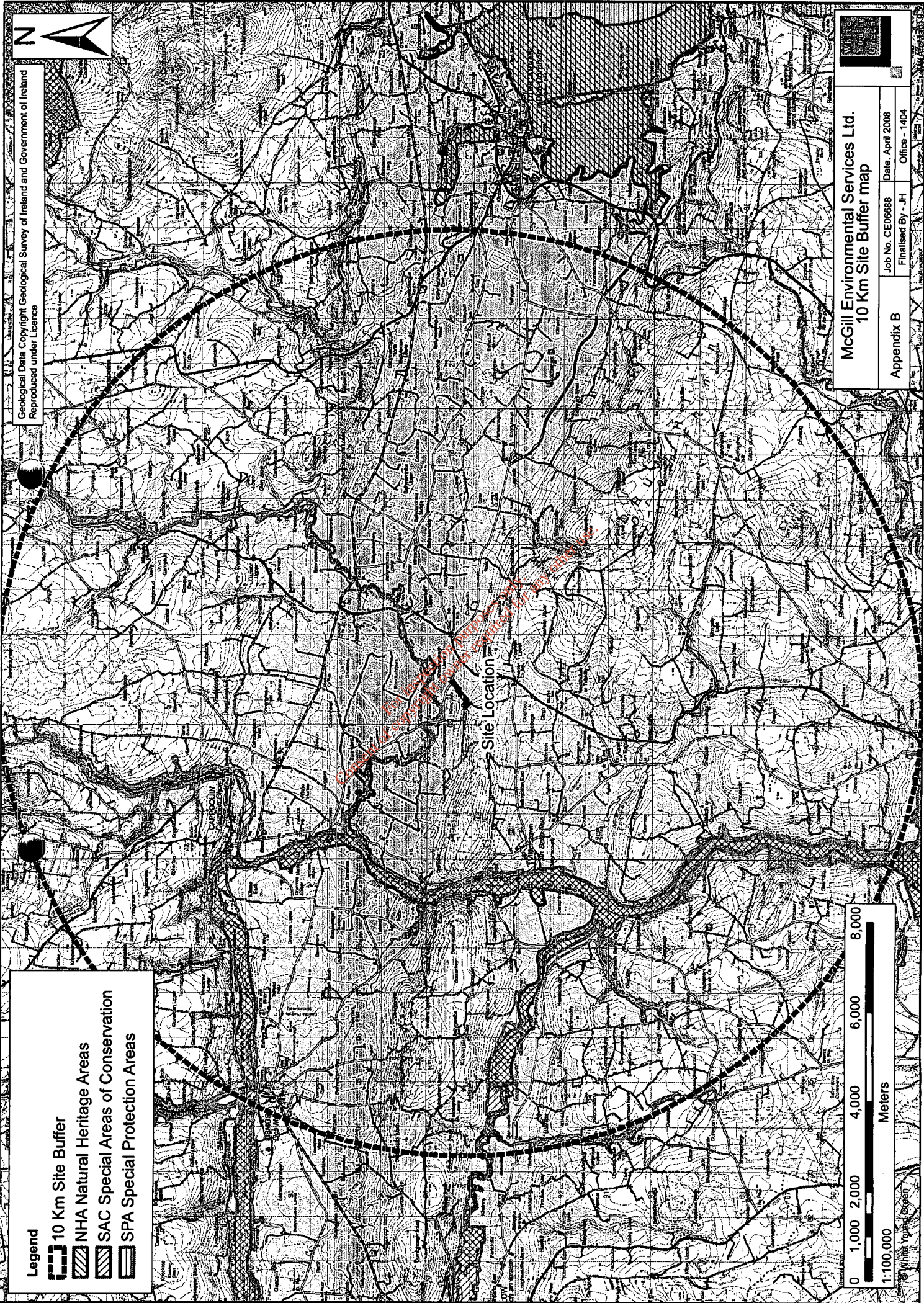
McGill Environmental Services Ltd.
10 Km Site Buffer map

Appendix B
Job No. CE06888
Finalised By - JH
Date, April 2008
Office - 1404

Legend

-  10 Km Site Buffer
-  NHA Natural Heritage Areas
-  SAC Special Areas of Conservation
-  SPA Special Protection Areas

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1:100,000
Meters
White Vector Screen



Appendix C

Site Synopses and Protected Flora and Fauna

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SITE SYNOPSIS

SITE NAME: BLACKWATER ESTUARY SPA

SITE CODE: 004028

The Blackwater Estuary SPA is a moderately-sized, sheltered south-facing estuary, which extends from Youghal New Bridge to the Ferry Point peninsula, close to where the river enters the sea. It comprises a section of the main channel of the River Blackwater. At low tide, intertidal flats are exposed on both sides of the channel. On the eastern side the intertidal channel is included as far as Kinsalebeg and Moord Cross Roads is included, while on the west side the site includes part of the estuary of the Tourig River as far as Rincrew Bridge.

The intertidal sediments are mostly muds or sandy muds reflecting the sheltered conditions of the estuary. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are frequent on the mudflats during summer, and Bladder Wrack (*Fucus vesiculosus*) occurs on the upper more stony shorelines. The sediments have a macrofauna typical of muddy sands, with polychaete worms such as Lugworm (*Arenicola marina*), Ragworm (*Hediste diversicolor*) and the marine bristle worm *Nephtys hombergii* being common. Bivalves are also well represented, especially Peppery Furrow-shell (*Scrobicularia plana*), but also Sand Gaper (*Mya arenaria*), Baltic Tellin (*Macoma balthica*) and Common Cockle (*Cerastoderma edule*). Among the brown seaweed on the shoreline, the Shore Crab (*Carcinus maenus*) and the Rough Periwinkle (*Littorina saxatilis*) are found. Salt marshes fringe the estuarine channels, especially in the sheltered creeks.

The Blackwater Estuary is of high ornithological importance for wintering waterfowl, providing good quality feeding areas for an excellent diversity of waterfowl species.

At high tide, the birds roost along the shoreline and salt marsh fringe, especially in the Kinsalebeg area. Some birds may leave the site to roost in fields above the shoreline.

The site supports an internationally important population of Black-tailed Godwit (934), and has a further eight species with nationally important populations (all figures are average peaks for the five winters 1995/96 to 1999/2000): Shelduck (151), Wigeon (1,232), Golden Plover (2,947), Lapwing (3,988), Dunlin (2,016), Curlew (1,194), Redshank (634) and Greenshank (30). A population of Bar-tailed Godwit (172) is very close to the threshold for national importance. Other species which occur in significant numbers include Grey Heron (27), Teal (527), Mallard (148), Oystercatcher (508), Grey Plover (53), Knot (50) and Turnstone (56). The site also supports Brent Goose (19), Red-breasted Merganser (8), Shoveler (23), Ringed Plover (29) and Cormorant (60). The site is also notable for supporting large concentrations of gulls in autumn and winter, including Black-headed Gull (549), Common Gull (253), Lesser Black-backed Gull (602), Great Black-backed Gull (227) and Herring Gull (86).

Little Egret uses the site regularly during the year as there is a breeding colony upstream. The estuary provides an important feeding area for these birds (15, with a maximum of 26).

The Blackwater Estuary SPA is an internationally important wetland site on account of the population of Black-tailed Godwit it supports. It is also of high importance in a national context, with eight species having populations which exceed the thresholds for national importance. The occurrence of Little Egret, Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive. The site has been well-studied, with detailed monthly counts extending back to 1974.

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SITE SYNOPSIS

SITE NAME: BLACKWATER RIVER (CORK/WATERFORD)

SITE CODE: 002170

The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which includes the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The extent of the Blackwater and its tributaries in this site, flows through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. Towns along, but not in the site, include Rathmore, Millstreet, Kanturk, Banteer, Mallow, Buttevant, Doneraile, Castletownroche, Fermoy, Ballyduff, Rathcormac, Tallow, Lismore, Cappoquin and Youghal.

The Blackwater rises in boggy land of east Kerry, where Namurian grits and shales build the low heather-covered plateaux. Near Kanturk the plateaux enclose a basin of productive Coal Measures. On leaving the Namurian rocks the Blackwater turns eastwards along the northern slopes of the Boggeraghs before entering the narrow limestone strike vale at Mallow. The valley deepens as first the Nagles Mountains and then the Knockmealdowns impinge upon it. Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves near the villages and small towns of Killavullen and Ballyhooly, the Killavullen caves contain fossil material from the end of the glacial period. The associated basic soils in this area support the growth of plant communities which are rare in Cork because in general the county's rocks are acidic. At Cappoquin the river suddenly turns south and cuts through high ridges of Old Red Sandstone. The Araglin valley is predominantly underlain by sandstone, with limestone occurring in the lower reaches near Fermoy.

The site is a candidate SAC selected for alluvial wet woodlands and Yew wood, both priority habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for floating river vegetation, estuaries, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, perennial vegetation of stony banks and old Oak woodlands, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter and the plant, Killarney Fern.

Wet woodlands are found where river embankments, particularly on the River Bride, have broken down and where the channel edges in the steep-sided valley between Cappoquin and Youghal are subject to daily inundation. The river side of the embankments was often used for willow growing in the past (most recently at Cappoquin) so that the channel is lined by narrow woods of White and

Almond-leaved Willow (*Salix alba* and *S. triandra*) with isolated Crack Willow (*S. fragilis*) and Osier (*S. viminalis*). Grey Willow (*S. cinerea*) spreads naturally into the sites and occasionally, as at Villierstown on the Blackwater and Sapperton on the Bride, forms woods with a distinctive mix of woodland and marsh plants, including Gypsywort (*Lycopus europaeus*), Guelder Rose (*Viburnum opulus*), Bittersweet (*Solanum dulcamara*) and various mosses and algae. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country.

A small stand of Yew (*Taxus baccata*) woodland, a rare habitat in Ireland and the EU, occurs within the site. This is on a limestone ridge at Dromana, near Villierstown. While there are some patches of the wood with a canopy of Yew and some very old trees, the quality is generally poor due to the dominance of non-native and invasive species such as Sycamore, Beech and Douglas Fir (*Pseudotsuga menziesii*). However, the future prospect for this Yew wood is good as the site is proposed for restoration under a Coillte EU Life Programme. Owing to its rarity, Yew woodland is listed with priority status on Annex I of the EU Habitats Directive.

Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Common Reed (*Phragmites australis*) is ubiquitous and is harvested for thatching. There is also much Marsh Marigold (*Caltha palustris*) and, at the edges of the reeds, the Greater and Lesser Pond-sedge (*Carex riparia* and *C. acutiformis*), Hemlock Water-dropwort (*Oenanthe crocata*), Wild Angelica (*Angelica sylvestris*), Reed Canary-grass (*Phalaris arundinacea*), Meadowsweet (*Filipendula ulmaria*), Nettle (*Urtica dioica*), Purple Loosestrife (*Lythrum salicaria*), Marsh Valerian (*Valeriana officinalis*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*).

At Banteer there are a number of hollows in the sediments of the floodplain where subsidence and subterranean drainage have created isolated wetlands, sunk below the level of the surrounding fields. The water rises and falls in these holes depending on the watertable and several different communities have developed on the acidic or neutral sediments. Many of the ponds are ringed about with Grey Willows, rooted in the mineral soils but sometimes collapsed into the water. Beneath the densest stands are woodland herbs like Yellow Pimpernel (*Lysimachia nemorum*) with locally abundant Starwort (*Callitriche stagnalis*) and Marsh Ragwort (*Senecio palustris*).

One of the depressions has Silver Birch (*Betula pendula*), Ash (*Fraxinus excelsior*), Crab Apple (*Malus sylvestris*) and a little Oak (*Quercus robur*) in addition to the willows.

Floating river vegetation is found along much of the freshwater stretches within the site. The species list is quite extensive and includes Pond Water-crowfoot (*Ranunculus peltatus*), Water-crowfoot (*Ranunculus* spp.), Canadian Pondweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*), Pondweed (*Potamogeton* spp.), Water Milfoil (*Myriophyllum* spp.), Common Club-rush (*Scirpus lacustris*), Water-starwort (*Callitriche* spp.), Lesser Water-parsnip (*Berula erecta*) particularly on the Awbeg, Water-cress (*Nasturtium officinale*), Hemlock Waterdropwort, Fine-leaved

Water-dropwort (*O. aquatica*), Common Duckweed (*Lemna minor*), Yellow Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium emersum*) and the moss *Fontinalis antipyretica*.

The grassland adjacent to the rivers of the site is generally heavily improved, although liable to flooding in many places. However, fields of more species-rich wet grassland with species such as Yellow-flag (*Iris pseudacorus*), Meadow-sweet, Meadow Buttercup (*Ranunculus acris*) and rushes (*Juncus* spp.) occur occasionally. Extensive fields of wet grassland also occur at Annagh Bog on the Awbeg. These fields are dominated by Tufted Hair-grass (*Deschampsia cespitosa*) and rushes.

The Blackwater Valley has a number of dry woodlands; these have mostly been managed by the estates in which they occur, frequently with the introduction of Beech (*Fagus sylvatica*) and a few conifers, and sometimes of Rhododendron (*Rhododendron ponticum*) and Laurel. Oak woodland is well developed on sandstone about Ballinatrav, with the acid Oak woodland community of Holly (*Ilex aquifolium*), Bilberry (*Vaccinium myrtillus*), Greater Woodrush (*Luzula sylvatica*) and Buckler Ferns (*Dryopteris affinis*, *D. aemula*) occurring in one place. Irish Spurge (*Euphorbia hyberna*) continues eastwards on acid rocks from its headquarters to the west but there are many plants of richer soils, for example Wood Violet (*Viola reichenbachiana*), Goldilocks (*Ranunculus auricomus*), Broad-leaved Helleborine (*Epipactis helleborine*) and Red Campion (*Silene dioica*). Oak woodland is also found in Rincrew, Carrigane, Glendine, Newport and Dromana. The spread of Rhododendron is locally a problem, as is over-grazing. A few limestone rocks stand over the river in places showing traces of a less acidic woodland type with Ash, False Brome (*Brachypodium sylvaticum*) and Early-purple Orchid (*Orchis mascula*).

In the vicinity of Lismore, two deep valleys cut in Old Red Sandstone join to form the Owenashad River before flowing into the Blackwater at Lismore. These valleys retain something close to their original cover of Oak with Downy Birch (*Betula pubescens*), Holly and Hazel (*Corylus avellana*) also occurring. There has been much planting of Beech (as well as some of coniferous species) among the Oak on the shallower slopes and here both Rhododendron and Cherry Laurel (*Prunus laurocerasus*) have invaded the woodland.

The Oak wood community in the Lismore and Glenmore valleys is of the classical upland type, in which some Rowan (*Sorbus aucuparia*) and Downy Birch occur.

Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) cover many of the trees while Greater Woodrush, Bluebell (*Hyacinthoides non-scripta*), Wood Sorrel (*Oxalis acetosella*) and, locally, Bilberry dominate the ground flora. Ferns present on the site include Hard Fern (*Blechnum spicant*), Male Fern (*Dryopteris filix-mas*), Buckler Ferns (*D. dilatata*, *D. aemula*) and Lady Fern (*Athyrium filix-femina*). There are many mosses present and large species such as *Rhytidiadelphus* spp., *Polytrichum formosum*, *Mnium hornum* and *Dicranum* spp. are noticeable. The lichen flora is important and

includes 'old forest' species which imply a continuity of woodland here since ancient times. Tree Lungwort (*Lobaria* spp.) is the most conspicuous and is widespread.

The Araglin valley consists predominantly of broadleaved woodland. Oak and Beech are joined by Hazel, Wild Cherry (*Prunus avium*) and Goat Willow (*Salix caprea*). The ground flora is relatively rich with Pignut (*Conopodium majus*), Wild Garlic (*Allium ursinum*), Garlic Mustard (*Alliaria petiolata*) and Wild Strawberry (*Fragaria vesca*). The presence of Ivy Broomrape (*Orobanche hederæ*), a local species within Ireland, suggests that the woodland, along with its attendant Ivy is long established.

Along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin. The dominant species is Beech, although a range of other species are also present, e.g. Sycamore (*Acer pseudoplatanus*), Ash and Horse-chestnut (*Aesculus hippocastanum*). In places the alien invasive species, Cherry Laurel, dominates the understorey. Parts of the woodlands are more semi-natural in composition, being dominated by Ash with Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaea*) also present.

However, the most natural areas of woodland appear to be the wet areas dominated by Alder and willows (*Salix* spp.). The ground flora of the dry woodland areas features species such as Pignut, Wood Avens (*Geum urbanum*), Ivy and Soft Shield-fern (*Polystichum setiferum*), while the ground flora of the wet woodland areas contains characteristic species such as Remote Sedge (*Carex remota*) and Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*).

In places along the upper Bride, scrubby, semi-natural deciduous woodland of Willow, Oak and Rowan occurs with abundant Great Woodrush in the ground flora. The Bunaglanna River passes down a very steep valley, flowing in a north-south direction to meet the Bride River. It flows through blanket bog to heath and then scattered woodland. The higher levels of moisture here enable a vigorous moss and fern community to flourish, along with a well-developed epiphyte community on the tree trunks and branches.

At Banteer a type of wetland occurs near the railway line which offers a complete contrast to the others. Old turf banks are colonised by Royal Fern (*Osmunda regalis*) and Eared Willow (*Salix aurita*) and between them there is a sheet of Bottle Sedge (*Carex rostrata*), Marsh Cinquefoil (*Potentilla palustris*), Bogbean (*Menyanthes trifoliata*), Marsh St. John's-wort (*Hypericum elodes*) and the mosses *Sphagnum auriculatum* and *Aulacomnium palustre*. The cover is a scraw with characteristic species like Marsh Willowherb (*Epilobium palustre*) and Marsh Orchid (*Dactylorhiza incarnata*).

The soil high up the Lismore valleys and in rocky places is poor in nutrients but it becomes richer where streams enter and also along the valley bottoms. In such sites Wood Speedwell (*Veronica montana*), Wood Anemone (*Anemone nemorosa*), Enchanter's Nightshade (*Circaea lutetiana*), Barren Strawberry (*Potentilla sterilis*) and Shield Fern occur. There is some Wild Garlic, Three-nerved

Sandwort (*Moehringia trinervia*) and Early-purple Orchid (*Orchis mascula*) locally, with Opposite-leaved Golden-saxifrage, Meadowsweet and Bugle in wet places. A Hazel stand at the base of the Glenakeeffe valley shows this community well.

The area has been subject to much tree felling in the recent past and re-sprouting stumps have given rise to areas of bushy Hazel, Holly, Rusty Willow (*Salix cinerea* subsp. *oleifolia*) and Downy Birch. The ground in the clearings is heathy with Heather (*Calluna vulgaris*), Slender St John's-wort (*Hypericum pulchrum*) and the occasional Broom (*Cytisus scoparius*) occurring.

The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. The main expanses occur at the southern end of the site with the best examples at Kinsalebeg in Co. Waterford and between Youghal and the main bridge north of it across the river in Co. Cork. Other areas occur along the tributaries of the Licky in east Co. Waterford and Glendine, Newport, Bride and Killahaly Rivers in Waterford west of the Blackwater and large tracts along the Tourig River in Co. Cork. There are narrow bands of intertidal flats along the main river as far north as Camphire Island. Patches of green algae (filamentous, *Ulva* species and *Enteromorpha* sp.) occur in places, while fucoid algae are common on the more stony flats even as high upstream as Glenassy or Coneen.

The area of saltmarsh within the site is small. The best examples occur at the mouths of the tributaries and in the townlands of Foxhole and Blackbog. Those found are generally characteristic of Atlantic salt meadows. The species list at Foxhole consists of Common Saltmarsh-grass (*Puccinellia maritima*), small amounts of Greater Seaspurrey (*Spergularia media*), Glasswort (*Salicornia* sp.), Sea Arrowgrass (*Triglochin maritima*), Annual Sea-blite (*Suaeda maritima*) and Sea Purslane (*Halimione portulacoides*) - the latter a very recent coloniser - at the edges. Some Sea Aster (*Aster tripolium*) occurs, generally with Creeping Bent (*Agrostis stolonifera*). Sea Couchgrass (*Elymus pycnanthus*) and small isolated clumps of Sea Club-rush (*Scirpus maritimus*) are also seen. On the Tourig River additional saltmarsh species found include Lavender (*Limonium* spp.), Sea Thrift (*Armeria maritima*), Red Fescue (*Festuca rubra*), Common Scurvy-grass (*Cochlearia officinalis*) and Sea Plantain (*Plantago maritima*). Oraches (*Atriplex* spp.) are found on channel edges.

The shingle spit at Ferrypoint supports a good example of perennial vegetation of stony banks. The spit is composed of small stones and cobbles and has a well developed and diverse flora. At the lowest part, Sea Beet (*Beta vulgaris*), Curled Dock (*Rumex crispus*) and Yellow-horned Poppy (*Glaucium flavum*) occur with at a slightly higher level Sea Mayweed (*Tripleurospermum maritimum*), Cleavers (*Galium aparine*), Rock Samphire (*Crithmum maritimum*), Sandwort (*Honkenya peploides*), Spear-leaved Orache (*Atriplex prostrata*) and Babington's Orache (*A. glabriuscula*).

Other species present include Sea Rocket (*Cakile maritima*), Herb Robert (*Geranium robertianum*), Red Fescue (*Festuca rubra*) and Kidney Vetch (*Anthyllis vulneraria*).

The top of the spit is more vegetated and includes lichens and bryophytes (including *Tortula ruraliformis* and *Rhytidiadelphus squarrosus*). The site supports several Red Data Book plant species, i.e. Starved Wood Sedge (*Carex depauperata*), Killarney Fern (*Trichomanes speciosum*), Pennyroyal (*Mentha pulegium*), Bird's-nest Orchid (*Neottia nidus-avis*), Golden Dock (*Rumex maritimus*) and Bird Cherry (*Prunus padus*). The first three of these are also protected under the Flora (Protection) Order 1999. The following plants, relatively rare nationally, are also found within the site: Toothwort (*Lathraea squamaria*) associated with woodlands on the Awbeg and Blackwater; Summer Snowflake (*Leucojum aestivum*) and Flowering Rush (*Butomus umbellatus*) on the Blackwater; Common Calamint (*Calamintha ascendens*), Red Campion (*Silene dioica*), Sand Leek (*Allium scorodoprasum*) and Wood Club-rush (*Scirpus sylvaticus*) on the Awbeg.

The site is also important for the presence of several Habitats Directive Annex II animal species, including Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*L. fluviatilis*), Twaité Shad (*Alosa fallax fallax*), Freshwater Pearl-mussel (*Margaritifera margaritifera*), Otter (*Lutra lutra*) and Salmon (*Salmo salar*). The Awbeg supports a population of White-clawed Crayfish (*Austropotamobius pallipes*). This threatened species has been recorded from a number of locations and its remains are also frequently found in Otter spraints, particularly in the lower reaches of the river. The freshwater stretches of the Blackwater and Bride Rivers are designated salmonid rivers.

The Blackwater is noted for its enormous run of salmon over the years. The river is characterised by mighty pools, lovely streams, glides and generally, a good push of water coming through except in very low water. Spring salmon fishing can be carried out as far upstream as Fermoy and is very highly regarded especially at Careysville. The Bride, main Blackwater upstream of Fermoy and some of the tributaries are more associated with grilse fishing.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, are to be seen feeding along the river, roosting under the old bridges and in old buildings.

Common Frog, a Red Data Book species that is also legally protected (Wildlife Act, 1976), occurs throughout the site. The rare bush cricket, *Metrioptera rosellii* (Orthoptera: Tettigoniidae), has been recorded in the reed/willow vegetation of the river embankment on the Lower Blackwater River. The Swan Mussel (*Anodonta cygnea*), a scarce species nationally, occurs at a few sites along the freshwater stretches of the Blackwater.

Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95- 95/96) and nationally important numbers Bewick's Swan (average peak 35, 1994/95- 95/96) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater Estuary (average peak 885, 1984/85-86/87) and on the River Bride (absolute max. 2141, 1994/95). Staging Terns visit the site annually (Sandwich Tern (>300) and Arctic/Common Tern (>200), average peak 1974-1994).

The site also supports populations of the following: Red Throated Diver, Great Northern Diver, Barnacle Goose, Ruff, Wood Sandpiper and Greenland White-fronted Goose. Three breeding territories for Peregrine Falcon are known along the Blackwater Valley. This, the Awbeg and the Bride River are also thought to support at least 30 pairs of Kingfisher. Little Egret now breed at the site (12 pairs in 1997, 19 pairs in 1998) and this represents about 90% of the breeding population in Ireland.

The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95- 95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The Blackwater Callows also hold Wigeon (average peak 2752), Teal (average peak 1316), Mallard (average peak 427), Shoveler (average peak 28), Lapwing (average peak 880), Curlew (average peak 416) and Black-headed Gull (average peak 396) (counts from 1994/95-95/96). Numbers of birds using the Blackwater Estuary, given as the mean of the highest monthly maxima over 20 years (1974-94), are Shelduck (137 + 10 breeding pairs), Wigeon (780), Teal (280), Mallard (320 + 10 breeding pairs), Goldeneye (11-97), Oystercatcher (340), Ringed Plover (50 + 4 breeding pairs), Grey Plover (36), Lapwing (1680), Knot (150), Dunlin (2293), Snipe (272), Black-tailed Godwit (845), Bar-tailed Godwit (130), Curlew (920), Redshank (340), Turnstone (130), Blackheaded Gull (4000) and Lesser Black-backed Gull (172). The greatest numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig Estuary on the Co. Cork side.

The river and river margins also support many Heron, non-breeding Cormorant and Mute Swan (average peak 53, 1994/95-95/96 in the Blackwater Callows). Heron occurs all along the Bride and Blackwater Rivers - 2 or 3 pairs at Dromana Rock; c. 25 pairs in the woodland opposite; 8 pairs at Ardsallagh Wood and c. 20 pairs at Rincrew Wood have been recorded. Some of these are quite large and significant heronries. Significant numbers of Cormorant are found north of the bridge at Youghal and there are some important roosts present at Ardsallagh Wood, downstream of Strancally Castle and at the mouth of the Newport River. Of note are the high numbers of wintering Pochard (e.g. 275 individuals in 1997) found at Ballyhay quarry on the Awbeg, the best site for Pochard in County Cork. Other important species found within the site include Long-eared Owl, which occurs all along the Blackwater River, and Barn Owl, a Red Data Book species, which is found in some old buildings and in Castlehyde west of Fermoy. Reed Warbler, a scarce breeding species in Ireland, was found for the

first time in the site in 1998 at two locations. It is not known whether or not this species breeds on the site, although it is known to nearby to the south of Youghal. Dipper occurs on the rivers.

Landuse at the site is mainly centred on agricultural activities. The banks of much of the site and the callows, which extend almost from Fermoy to Cappoquin, are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area. Arable crops are grown. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Habitats Directive Annex II animal species within it. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the Blackwater and its tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. Other recreational activities such as boating, golfing and walking are also popular. Water skiing is carried out at Villierstown. Parts of Doneraile Park and Anne's Grove are included in the site: both areas are primarily managed for amenity purposes. There is some hunting of game birds and Mink within the site. Ballyhay quarry is still actively quarried for sand and gravel. Several industrial developments, which discharge into the river, border the site.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, overgrazing within the woodland areas, and invasion by nonnative species, for example Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively; furthermore it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

13.09.2006