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Cork County Council

Youghal Main Drainage

Ecological Report & 'Article 6' Appropriate Assessment Screening Report

August 2009

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Executive Summary

Youghal Town Council successfully applied for planning approval for the construction of a waste water treatment plant and associated pipe network on the Mudlands, north of Youghal, Co. Cork. Atkins is currently acting on behalf of the Local Authority to procure its construction as a Design Build Operate & Maintain (DBOM) project. In support of the planning application Atkins McCarthy undertook an Environmental Impact Assessment of the proposed development in 2001; as part of this process an Ecological Impact Assessment (EclA) was undertaken and potential impacts on adjoining Natura 2000 sites were considered.

In 2008 the Department of Environment, Heritage and Local Government issued guidance on undertaking Appropriate Assessments under Article 6 of the EU Habitats Directive (92/43/EEC) to Local Authorities. Given the proximity of the proposed development to the Blackwater River Special Area of Conservation (SAC) (Site Code 2170) and the Blackwater Estuary Special Protection Area for Birds (SPA) (Site Code 4028) it was necessary to revisit the ecological impact assessment that was undertaken in 2001 in order to ensure compliance with the new guidance.

In addition to a re-examination of the ecology survey work undertaken in 2001 the site was visited to confirm the current accuracy of the habitat data. Furthermore a detailed and targeted wintering bird survey was undertaken by Atkins Ecology in January and March 2009 in order to examine the potential for negative impacts on the Blackwater Estuary Special Protection Area for birds or the species for which it is designated. The marine ecology data collected in 2001 was also reviewed.

Using the data available an Appropriate Assessment *Screening* process was applied to the proposed development. The site of the WWTP, access road and pipeline to the public road are not located within a Natura 2000 site, nor are any habitats for which the Blackwater River cSAC is designated located within the development area. Furthermore, apart from disturbance during the construction period, it is not envisaged that there should be any significant negative impacts on animals species for which the cSAC (e.g. Otter) or SPA (wintering birds) is designated.

In general, the littoral and sublittoral biotopes recorded in the inner part of the estuary along the line of the proposed outfall pipe are commonly found along the Irish coast and no species or habitats of conservation importance were recorded. While the full effects of the reduction in nutrient loading in Youghal Harbour are difficult to quantify, it is considered that the WWTP development will have a positive impact on water quality within the estuary in the long term.

1. Introduction

- 1.1 Youghal Town Council successfully applied for planning approval for the construction of a waste water treatment plant and associated pipe network on the Mudlands, north of Youghal, Co. Cork. Atkins is currently acting on behalf of the Local Authority to procure its construction as a Design Build Operate & Maintain (DBOM) project.
- 1.2 This report relates to the proposed Waste Water Treatment Plant (WWTP) and associated pipeline to the proposed discharge point, part of the Youghal Main Drainage Scheme, which is proposed to deal with sewage collected at Youghal, Co. Cork (site location shown on Figure 1.1). This report provides a review of the ecological significance of the Youghal Mudlands, and adjoining coastal areas, and an assessment to determine the likely impact of the proposed works on an adjacent site of European conservation importance. It updates the ecological assessment provided in the original Environmental Impact Statement published in 2001 (Atkins McCarthy, 2001).
- 1.3 In accordance with Article 6(3) and 6(4) of the EU Habitats Directive (92/43/EEC) the potential impacts of any project(s) on the conservation objectives of a Natura 2000 site (i.e. a site of European conservation importance) are to be assessed by means of an 'Appropriate Assessment'. In the case of Youghal WWTP an Appropriate Assessment would be required if the proposed plan contains proposals that are likely to have an impact on sites of European conservation importance on or in the immediate environs of the proposed works; specifically, the Blackwater River Special Area of Conservation (SAC) (Site Code 2170) or the Blackwater Estuary Special Protection Area for Birds (SPA) (Site Code 4028); Figure 1.1 & 1.2.
- 1.4 The purpose of an Appropriate Assessment is to assess the impacts of a land-use plan in combination with the effects of projects against the conservation objectives of a Natura 2000 site and to ascertain whether it would adversely affect the integrity of that site(s).
- 1.5 Appropriate Assessment is approached as follows:
- Initially screening is undertaken to determine the need for Appropriate Assessment and if it should be undertaken, how it would be undertaken;
 - If the assessment is to proceed, scoping is then undertaken to determine the likely significant effects of the proposal on the Natura 2000 sites;
 - Site integrity tests are carried out to determine the likely impacts of the proposal on the integrity and conservation objectives of Natura 2000 sites;
 - Where necessary, alternative solutions to potentially damaging development plans or elements within them are identified and;
 - Compensation measures are identified and agreed if necessary.
- 1.6 This study is somewhat different in that an Environmental Impact Statement, including a full Ecological Impact Assessment (EclA), was published in 2001. This included consideration of terrestrial and marine ecology. A habitat / botanical survey of the site was undertaken by *Roger Goodwillie & Associates* in April 2001; this included some consideration of fauna, including terrestrial mammals and birds. A marine ecology assessment of the coastal areas adjacent to Youghal was undertaken by *Ecological Consultancy Services Ltd. (EcoServe)* in May 2001. Whilst predating the Government Guidance on *Appropriate Assessment* (L8/08; DoEHLG, 2008) the EIS

did consider the potential for negative impacts on adjoining NATURA 2000 sites. Best practice guidance at the time stated that “Where an assessment for the purposes of Article 6(3) takes the form of an assessment under Directive 85/337/EEC (i.e. the EIS Directive), this will provide obvious assurances in terms of records and transparency”.

1.7 Thus an appropriate ecological assessment undertaken during the preparation of an EIS under Directive 85/337/EEC and published as part of the planning process, as was the case for Youghal WWTP (Atkins McCarthy, 2001), sufficed as an Appropriate Assessment when the EIS was published in 2001 (EC, 2000). However, given that 8 years have elapsed, and given the recent Government Circular (L8/08) it was deemed appropriate to revisit the ecological assessment of the proposed development. The objectives of the 2009 study were three fold:-

- a) Determine if ecological data (e.g. habitat / botanical data) collated in 2001 still accurately describes the site and the potential ecological impacts associated with the proposed development;
- b) Undertake targeted wintering bird surveys to determine if the site or its immediate environs are of ecological importance for species for which the neighbouring Special Protection Area for birds has been designated; and finally
- c) Using the updated data undertake a *Screening Exercise* as defined by best practice guidance for undertaking Appropriate Assessments under Article 6(3) and 6(4) of the EU Habitats Directive (92/43/EEC).

1.8 This report has been prepared in accordance with documents produced by the European Commission. Namely these are:

- “Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC” (2001);
- “Managing Natura 2000 Sites: The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC (2000) and;
- “Guidance document on Article 6(4) of the ‘Habitats Directive’ 92/43/EEC: Clarification of the concepts of alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission” (2007).

1.9 This Article 6 Screening Report assesses the proposed development under all relevant categories given in the above documentation. Relevance was determined based upon the nature of the designated site under consideration.

Brief description of the project

1.10 Following an appraisal of a number of sites in the vicinity of Youghal, the Mudlands area to the north of the town was selected as the most suitable site for the location of the proposed WWTP for the town with a discharge of the final treated effluent to the estuary (Atkins McCarthy, 2001).

- 1.11 The WWTP will be procured using a Design Build Operate & Maintain contract. Thus all design proposals herein are subject to confirmation at detailed design stage. However, the proposed development comprises the following elements: -
- Site on the Youghal Mudlands for the proposed waste water treatment plant to be located in the western side of Field R3 as referenced in the ecology assessment (see Figure 3.1);
 - An inflow & outflow pipe with an associated maintenance way-leave servicing the plant will run south from the plant to the public road, along the western side of fields R1 & R2 (see Figure 3.1);
 - An pipeline will also run west from the plant through L3 to the public road (see Figure 3.1);
- 1.12 Secondary treatment is proposed with nutrient reduction for nitrogen and possibly phosphorous. Provision will be made for phosphorus removal should it be required at a future date if studies indicate that it would be beneficial.
- 1.13 The proposed outfall will be located approximately 300m offshore and will consist of a 600mm diameter pipe. Further dispersal modelling is underway to inform the selection of the final location of the proposed outfall, and the design of the diffuser. The pipeline will be buried throughout its length.
- 1.14 The Construction period for the entire collection network upgrade works is estimated to be 12-18 months – including the construction of the WWTP and outfall pipeline. Details of the construction programme for individual project elements will not become available until the Design & Build contract has been awarded.

Structure of the Report

- 1.15 In undertaking this assessment due consideration was given to the Environmental Protection Agency's *Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)* (EPA, 2003) and *Guidelines on the Information to be contained in Environmental Impact Statements* (EPA, 2002) and also to the National Road Authority's *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (2006).
- 1.16 The document is divided up as follows: -
- Section 2 – Flora
 - Section 3 – Birds
 - Section 4 – Other Fauna
 - Section 5 – Marine Ecology
 - Section 6 – Appropriate Assessment

2. Flora

- 2.1 The Youghal Mudlands is largely artificial in origin having been reclaimed from the estuary of the River Blackwater (Youghal Harbour) in the 1800s with the building of a sea wall (known as the Slob Bank). The area consists of flat fields, mostly below high tide level although the northern tip has been raised by the landfill. The study area is shown in Figures 1.1.

2001 Survey

- 2.2 A habitat survey was carried out as part of the Original EIS in April 2001. The access laneway, which enters the Mudlands from the south, was lined by hedges and ditches; these extended along most of the field boundaries and become smaller towards the sea. The hedges represent high species diversity with those present on each side of the access laneway being the richest. Limited grazing took place and was mainly concentrated on the western fields. Many of the other fields were overgrown by dense rushes, particularly so in the north-eastern corner of the site.
- 2.3 The soil was described as containing sediments from the estuary and had obvious shell content when turned. It was found to be heavy, poorly drained and waterlogged. The main habitat present was wet grassland (GS4) although there was also dry grassland (GA1, GS2), hedgerows (WL1) and drainage ditches (FW4) present (Figure 2.1). The following is an extract from the original EIS which described these habitats: -

Wet grassland (GS4)

- 2.4 "The vegetation in the fields on each side of the access lane consists of grasses, rushes and species such as meadow foxtail, and Yorkshire fog and ryegrass varying in frequency depending on the intensity of management. Brown sedge and hard rush are characteristic where water accumulates seasonally. Grazed fields have a selection of broad-leaved species, such as creeping and field buttercup, daisy, creeping thistle, white and red clover.
- 2.5 Seaward the fields usually become wetter and grass growth less vigorous. As well as brown sedge and hard rush there is meadowsweet, silverweed, knapweed, the moss *Brachythecium rutabulum*, woodrush, ribwort plantain and at the very eastern edge, fleabane. Small relics of winter ponds contain reed grass, jointed rush, curled dock and sweet grass which become frequent towards the east, along with reed fescue, glaucous sedge etc. This eastern part borders a designated SAC under the EU Habitats Directive (92/43/EEC).
- 2.6 The fields that are overgrown by soft rush *Juncus effusus* – mostly north of the UDC boundary and east of the lane – have a slightly different flora, with additional species such as ragwort, meadow vetchling and meadow foxtail.
- 2.7 One of the fields, directly south of the coal depot, has a ditch line running W-E across it from a spring. On this ditch fool's watercress, sweet grass, willowherbs, fox sedge and lady's smock are present" [Goodwillie, 2001 in Atkins McCarthy, 2001].

Dry grassland (GA1 and GS2)

- 2.8 "A single field [L4] north of the UDC boundary and west of the lane has been reseeded recently and consists of a stand of ryegrass, white clover, rough-stalked and annual meadow grass. It is mown for silage and is typical of improved agricultural grassland (GA1).

- 2.9 North of it in Foxhole the fields are abandoned but dry and consist of ragwort, docks *Rumex obtusifolius*, *R. conglomeratus* and *R. crispus*, tussocky cocksfoot and meadow foxtail. This area may be categorised as GS2 (dry meadows and grassy verges). A similar community occupies the southern end of the Mudlands. Although below sea level it is rarely exposed to salt water which is restricted to the marginal stream. Here sea clubrush, sea aster and scutch form a fringe. The latter species spreads widely into the field along with the tall grasses false oat, cocksfoot, reed fescue and red fescue. Some glaucous sedge and fleabane also occur. There is a central rushy section in which hard rush, soft rush and field buttercup are found" [Goodwillie, 2001 in Atkins McCarthy, 2001].

Hedgerows (WL1)

- 2.10 "The oldest and best developed hedges follow the access lane and were presumably planted when the intake was created. Grey willow, wych elm, sycamore, blackthorn, privet, hawthorn, dog rose and bramble are the main woody species present, with some honeysuckle, holly and field rose. Gorse is occasional becoming more frequent on the eastern side in field hedges and at the northern end. A large number of associated herbs are found here including false broom, hogweed, cow parsley, bush vetch, meadowsweet and cinquefoil. The townland boundary around Foxhole contains a hedge on a stone-faced bank with black spleenwort, bittercress and violet present here. Larger hedges on the western side of the lane consist of willows, with some ash and occasional poplar" [Goodwillie, 2001 in Atkins McCarthy, 2001].

Drainage ditches (FW4)

- 2.11 "The field ditches generally lie at the base of open hedges in which gorse and hawthorn is the main species. Rushes *Juncus inflexus*, *J. effusus*, sweet grass and wild angelica are ubiquitous with reed fescue, fleabane, reed and coltsfoot in places. Green algae are not uncommon in the seaward parts and also around the few streams that flow east to form the UDC boundary. Such waters appear to be enriched and their sides are generally overgrown by brambles, nettles and goose grass. The stream just referred to also contains celandine *Ranunculus ficaria* which is not otherwise widespread" [Goodwillie, 2001 in Atkins McCarthy, 2001].

2009 Survey

Grassland Habitats

- 2.12 The findings of the Original EIS are largely still valid. Wet grassland may have become more overgrown in the intervening eight years. Fields L1, L2 and L3 are now completely overgrown with a dense growth of rushes (*Juncus* sp.). Field number L4 had been reseeded prior to the 2001 survey and was described as being typical of improved grassland (GA1). This field is now semi-improved pasture with low patches of rushes, and it looks like it might have been mown some months ago. Field L4 has potential as a feeding site for wading birds. Although none of the fields had grazing animals, there was evidence of horses and cattle having been in some of them in past months.
- 2.13 To the east of the access track the fields are larger and extend to a lagoon near the seawall. Fields R1 and R2 are now completely overgrown with rushes, field R3 is less overgrown. Grazing by horses, was noted during the 2009 survey, ten horses were present during the January survey in R3 and during the March survey in R2. Field R4 consists of semi-improved pasture, rather like field L4. Field R5 is now also very overgrown with rushes. There was evidence of cattle grazing in fields R4 and R5 in past months. Each of these fields has drainage ditches along each side.

Hedgerows

- 2.14 Since the 2001 survey, hedges appear to have received little management. There are now good hedges around most of these fields, the main shrub species being Bramble, Hawthorn and Ivy. Occasional Ash, Alder, Holly and Sallow are also present, and some Gorse was in the hedges around R5. While most of the hedges were in an unmanaged state, they had been cut back beneath ESB wires.

Conclusion

- 2.15 The proposed development within the Mudlands lies entirely outside the boundary of the Blackwater Estuary SPA and the Blackwater River (Cork / Waterford) cSAC. The plant proper will be located in the western side of Field R3 (refer to Figure 3.1 for field classification), with the access lane running south from here to the main road. The proposed site of the plant does adjoin the Blackwater River (Cork / Waterford) cSAC; in this location the eastern side of R3 is rush dominated GA1.
- 2.16 Goodwillie (2001) concluded that the site was made up of *“typical habitats for land that has been reclaimed from an estuary as an intake and is little managed. Its vegetation consists for the most part of common plants though these become more specialised as the salt water is approached to the east. Again, however no rare species were observed. The hedges represent high species diversity with those present on each side of the access laneway being the richest”*.
- 2.17 The 2009 assessment concurs with these findings. We would however recommend that when constructing the access road to the plant that the existing track would not be used if this would require removal of the existing hedgerow. If this is not possible then appropriate mitigation in the form of development of a species rich hedge would be required. Due care must also be taken in not exceeding the lands made available where these adjoin the cSAC.

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3. Birds

Original EIS

- 3.1 The original EIS (Atkins McCarthy, 2001) stated that the study area is “occasionally used for feeding by waders, e.g. black tailed godwits (up to 150) and lapwing (50) but these are irregular visitors and more likely to be seen within the SAC”. The pond provides “regular feeding for little egret, heron, red-breasted merganser, teal, and a few other ducks, as well as curlew, redshank, dunlin and snipe”. The report says that there is no regular use of the site by shorebirds associated with the SAC as there are other more attractive habitats available.
- 3.2 Small passerines included skylark and meadow pipit, which were seen in the open fields and reed bunting, linnet, goldfinch, greenfinch, blackbird, robin, great tit and blue tit which were associated with the hedges. The rush-filled fields appeared to be suitable habitat for short eared owls which would occur in winter with kestrels hunting there more regularly. The bird species found at Youghal Mudlands during site visit in April 2001 as part of the Original EIS are shown in Table 3.1.

Table 3.1 - Bird species found at Youghal Mudlands during site visit in April 2001.

Common Name	Preferred habitat
Black-tailed godwit	Wetland
Lapwing	Wetland
Little egret	Wetland
Heron	Wetland
Red-breasted merganser	Wetland
Teal	Wetland
Curlew	Wetland
Redshank	Wetland
Dunlin	Wetland
Snipe	Wetland
Skylark	Grassland
Meadow pipit	Grassland
Reed bunting	Hedgerows
Linnet	Hedgerows
Goldfinch	Hedgerows
Greenfinch	Hedgerows
Blackbird	Hedgerows
Robin	Hedgerows
Great tit	Hedgerows
Blue tit	Hedgerows
Short-eared owl	Wet grassland
Kestrel	Wet grassland

After 'Youghal Main Drainage Scheme, EIS Volume 2, Atkins McCarthy (2001)

- 3.3 Of the above species Little Egret and Short-eared Owl are listed on Annex I of the EU Birds Directive (79/409/EEC). In its evaluation, the 2001 EIS stated that no fauna of nature conservation were found in the area although some parts of the area are occasionally used in winter by shorebirds from the estuary. It stated that the use of the area by shore birds was probably more intensive when it was managed intensively as farmland in the past and that the general avifauna is characteristic of open coastal lands and is of amenity rather than heritage value.

2009 Bird Survey

- 3.4 In order to provide a thorough analysis on the importance of Youghal Mudlands to birds, and to assess the impact of the proposed development on the Blackwater Estuary SPA, a targeted bird survey was carried out. Bird counts were carried out in both January and March of 2009. These counts were carried out by Mr. Pat Smiddy to a standard agreed with Dr. O'Donoghue, Ornithologist and Principal Ecologist with Atkins (Ecology) Ireland. A track runs from south to north between these fields (parallel with the old N25), and reasonably good views can be had of each of them. To the left (or west) of the track the fields are small and each is easily viewed.
- 3.5 It should be noted that during the March survey the wetland bird counts of both the fields and pools at Youghal Mudlands were carried out from the Slob Bank, rather than from the track that runs from south to north between the fields. This did not interfere with the accuracy of these counts. In fact, a better view was possible of the fields R1 to R5 than was the case when walking on the track. The advantage of counting from the Slob Bank was threefold; (1) the elevation of the bank gave a better view of the fields, (2) walking on the bank did not disturb birds as they are habituated to walkers here, and (3) the pools could be counted at the same time. One disadvantage was that the fields to the west of the track (L1 to L4) were not visible. However, this was not really a serious problem since little or nothing (apart from Snipe) occurred in these fields.

Bird Count 15th & 16th January 2009

Weather Conditions

- 3.6 The weather on 15th of January was dry, cold and with a strong wind from the southwest. However, the site of the counts on that day was sheltered and low-lying; therefore, the weather conditions on the day are not considered to have influenced the count. There was heavy rainfall on the previous day which made the fields concerned even wetter than they normally would be, and there were standing pools of water in some that might not be there if the heavy rainfall had not been so recent. The weather on 16th began with rain, but since the forecast was for a clearance to occur later, the counts went ahead. With a brief exception, the day remained essentially dry with one or two light showers that did not affect effect the count. The first half of the day was quite windy from the southwest, but in the afternoon the wind dropped to nothing, giving near ideal conditions. Again, it is not thought that the weather on the day affected the counts in any material way.

The fields at Youghal Mudlands

- 3.7 The results of the counts recorded in field numbers L1, L2, L3, L4, R1, R2, R3, R4 and R5 at different stages of the tidal cycle are shown in Tables 3.2 to 3.7; refer to **Figure 3.1** for field locations. Most birds occurred in fields R3 and R4, and none at all in some fields, especially so in L1 to L4 (apart from Snipe, see later). However, both Little Egrets and Black-tailed Godwits have previously been recorded using field L4 (P. Smiddy, pers. comm.). Lapwing was the most common species recorded, but Black-tailed Godwit also occurred in good numbers, while gulls occasionally visited the pools and the fields to bathe and preen their feathers (note the proximity

of the landfill). Most birds were present around the time of high tide and up to about half ebb. Few birds were present in these fields near the time of low tide. Most birds were also found to be concentrated very close to the pools near the seawall, and the fields with fewest (or no) birds were the ones most overgrown with rushes.

- 3.8 At high tide, on commencement of the count the central saltmarsh on the nearby Tourig Estuary was covered, and many wading birds, especially Lapwings, were in the air seeking new places to roost. Flocks of Lapwings and smaller numbers of Black-tailed Godwits were seen to come directly from the area of the Tourig Estuary to the fields and pools at Youghal Mudlands. No direct movement between Youghal Mudlands and Foxhole field was apparent. At Youghal Mudlands these Lapwings settled in the fields near the pools, and sometimes at the edge of the pools, but as the species is wont to do, they were often in the air over fields R1 to R3 and Pool 1 to Pool 3. The tide height was 4.1m on the morning of 15th January and 4.0m on the morning of 16th January. On a lower tide, when the Tourig Estuary saltmarsh would not be covered, it would be reasonable to expect fewer Lapwings to visit Youghal Mudlands.
- 3.9 All Kingfisher sightings were in the drainage ditches between the fields. On Christmas Day 2008, at dusk, two Kingfishers were heard calling from a drain at the entrance to the landfill close to the site of this survey (P. Smiddy, pers. comm.).
- 3.10 On the second day of the survey (16th January) a large flock of gulls arrived from the landfill at 12:10 and settled for a very short time in the middle section of field number R4. The flock included at least 1500 Black-headed Gulls, 200 Common Gulls, 100 Herring Gulls, 500 Lesser Black-backed Gulls and 50 Great Black-backed Gulls. They left again quickly, without being disturbed, before they could be adequately counted. A short-term stay within the study area is probably normal behaviour for gulls originating at the landfill.

Table 3.2 - The number of wetland birds using fields at Youghal Mudlands at High Tide (08.27) on 15th January 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Water Rail									1
Lapwing							198	1	
Curlew							7		
Black-headed Gull							1		

Table 3.3 - The number of wetland birds using fields at Youghal Mudlands one hour after High Tide (09.27) on 15th January 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Grey Heron							1		
Lapwing							950	220	
Curlew							8		
Black-tailed Godwit							360		
Black-headed Gull							350		
Common Gull							30		
Herring Gull							20		
Kingfisher							1		

Table 3.4 - The number of wetland birds using fields at Youghal Mudlands two hours after High Tide (10.27) on 15th January 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Grey Heron					1		1	3	1
Water Rail									1
Lapwing								150	
Kingfisher							1		

Table 3.5 - The number of wetland birds using fields at Youghal Mudlands three hours after High Tide (11.27) on 15th January 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Teal							21		
Oystercatcher								6	
Lapwing							550	160	
Curlew							4		
Redshank							1	4	

Table 3.6 - The number of wetland birds using fields at Youghal Mudlands four hours after High Tide (12.27) on 15th January 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Lapwing								37	
Black-tailed Godwit							17		
Kingfisher							1		

Table 3.7 - The number of wetland birds using fields at Youghal Mudlands five hours after High Tide (13.27) on 15th January 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Moorhen							1		
Curlew							19		
Black-tailed Godwit							13		
Kingfisher						1	1		

- 3.11 During the January survey the main areas used by birds within the wetlands are fields R3 and R4 (in that order of importance); birds seemed to favour the eastern side of these fields (refer to 3.14 for discussion of associated pools).

The Snipe (*Gallinago gallinago*) at Youghal Mudlands

- 3.12 A special effort was made to record Snipe in fields L1 to L4 and in R1 to R5. Since this is a skulking species a different method to that used for surveying most other wading birds was used. The survey method involved walking transects across each field. Many Snipe flushed at quite some distance from the observer, so a special effort to flush all birds in each field was made. At least four transects across each field were made, and hand-clapping was used to flush those that sat tightest. The drainage ditches around these fields were also checked for birds such as Moorhen and Kingfisher.

3.13 The results of the Snipe survey are shown in Table 3.8. The minimum total recorded was 277 birds. Since the observer could survey only one field at a time, it is possible that some Snipe settled in other (yet to be surveyed) fields. Therefore, the probability of counting some of the same birds twice is high. One flock of 65 very 'flighty' birds was flushed in field R3. It seemed likely that these were birds already flushed, and in an effort to 'correct' for double counting this flock has been excluded from the total. Snipe were present in almost all fields, even those with the tallest and densest growths of rushes.

Table 3.8 - The number of Snipe (minimum total 277) using fields at Youghal Mudlands on 15th January 2009.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Snipe	0	4	14	10	8	99	9	46	87

3.14 While large numbers of Snipe were recorded, especially in R2, field R3, the site of the proposed plant, did not support significant numbers of Snipe in January 2009.

The pools at Youghal Mudlands

3.15 Three counts were carried out at the pools on 16th January (alternating with Foxhole field) (Tables 3.9 to 3.11). The Lapwing was the commonest wading bird, and they often came down in recently disturbed mud within Pool 1 and Pool 2. Snipe often flushed up from the vegetation around the pools. The most common duck was the Teal. Apart from gulls, which occurred in variable numbers due to the proximity of the landfill, other species occurred in negligible numbers. Little in the way of a pattern of occurrence related to the tide cycle could be detected. Pool 3 to Pool 5 tended to be used by more species and more birds than Pool 1 and Pool 2. This is probably because Pool 3 to Pool 5 has a larger area of water with better shoreline cover.

Table 3.9 - The number of wetland birds using pools at Youghal Mudlands one hour after High Tide (10.10) on 16th January 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Little Grebe				1		1
Cormorant		1		1		2
Little Egret	1					1
Grey Heron						0
Wigeon				2	3	5
Teal				66	1	67
Mallard				6	4	10
Lapwing	235	13				248
Snipe		34				34
Curlew	2	1	1			4
Redshank		3		9		12
Mediterranean Gull						0
Black-headed Gull				36	195	231
Common Gull				8		8
Herring Gull				14		14
Lesser Black-backed Gull				4		4

Table 3.10 - The number of wetland birds using pools at Youghal Mudlands three hours after High Tide (12.10) on 16th January 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Little Grebe			1			1
Cormorant	2					2
Little Egret					1	1
Grey Heron					1	1
Wigeon					5	5
Teal			47	1	26	74
Mallard				4	9	13
Lapwing	2		3			5
Snipe				4		4
Curlew						0
Redshank			6		1	7
Mediterranean Gull				1		1
Black-headed Gull				355	45	400
Common Gull				12	7	19
Herring Gull				24		24
Lesser Black-backed Gull						0

Table 3.11 - The number of wetland birds using pools at Youghal Mudlands five hours after High Tide (14.10) on 16th January 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Little Grebe						0
Cormorant						0
Little Egret	1	1			1	3
Grey Heron						0
Wigeon					5	5
Teal	10	1	73		5	89
Mallard				2	2	4
Lapwing			150		2	152
Snipe			2	7		9
Curlew						0
Redshank			4	1	1	6
Mediterranean Gull						0
Black-headed Gull			24	19	1	44
Common Gull				2	1	3
Herring Gull				4		4
Lesser Black-backed Gull						0

Foxhole field

3.16 Three counts of the wetland birds were carried out at Foxhole field on 16th January (Table 3.12). These counts clearly show that birds quickly leave this area once the mudflats in the wider estuary become exposed. There are clearly limited feeding possibilities within Foxhole field, and for most species and individuals it is used as a high tide roost site. No movements between Foxhole field and the fields and pools at Youghal Mudlands were evident.

Table 3.12 - Counts of wetland birds using Foxhole field at high tide, two hours after high tide and four hours after high tide on 16th January 2009.

Time		09.10		11.10		13.10
Tide state		High		2 hrs after		4 hrs after
Little Egret				1		
Shelduck		12				
Wigeon		21				
Teal		68		48		
Oystercatcher		3				
Lapwing				2		
Knot		16		2		
Black-tailed Godwit		134				
Bar-tailed Godwit		23				
Curlew		37		1		
Redshank		6		6		2
Black-headed Gull		104		86		
Common Gull		2		2		
Herring Gull		52		31		
Lesser Black-backed Gull		171		177		
Great Black-backed Gull		23		10		

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The Main mudflat and the East Mudflat

3.17 A single count at low tide was carried out at these mudflats on 16th January 2009 (Table 3.13). The counts at these mudflats were dominated by gull species. Youghal landfill has been a major attraction to gulls in recent years. This may possibly be due to the closing down and capping of other landfill sites along the south coast (Tramore and Dungarvan, for example).

Table 3.13 - Counts of wetland birds using the Main mudflat and the East mudflat near Youghal landfill at low tide on 16th January 2009.

Site	Main flat	East flat	Total
Time	15.10	15.40	
Cormorant	1	2	3
Little Egret	1		1
Grey Heron	2		2
Shelduck	12		12
Wigeon	23		23
Teal	114		114
Oystercatcher	6	7	13
Black-tailed Godwit	19		19
Curlew	18	4	22
Redshank	17	2	19
Black-headed Gull	2600	610	3210
Common Gull	145	65	210
Herring Gull	220	56	276
Lesser Black-backed Gull	1450	955	2405
Great Black-backed Gull	260	55	315

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Land birds

3.18 While land birds were not specifically targeted during the wetland bird survey work all species encountered in fields L1 to L4 and R1 to R5 were recorded. The species recorded are given in Table 3.14.

Table 3.14 - Land birds recorded using fields at Youghal Mudlands on 15th January 2009. Species flying over the site were not recorded. No birds of prey were seen.

Species	L1	L2	L3	L4	R1	R2	R3	R4	R5
Pheasant		√					√	√	√
Woodpigeon					√	√	√	√	√
Meadow Pipit		√	√	√	√	√	√	√	√
Pied Wagtail				√			√	√	√
Wren	√				√	√	√	√	√
Dunnock	√	√		√				√	√
Robin	√	√	√	√	√	√		√	√
Stonechat					√		√		
Blackbird	√	√	√	√	√		√	√	√
Song Thrush	√	√	√	√	√		√	√	√
Redwing		√					√		√
Goldcrest					√	√			√
Coal Tit								√	
Blue Tit	√				√	√			√
Great Tit		√				√	√		
Magpie			√	√	√		√	√	√
Hooded Crow		√		√	√			√	√
Starling			√				√	√	√
Chaffinch	√					√	√		
Greenfinch			√	√	√				√
Goldfinch								√	
Siskin	√	√							
Redpoll				√	√				√
Bullfinch					√			√	√
Reed Bunting		√			√	√	√		

3.19 BirdWatch Ireland in conjunction with the Royal Society for the Protection of Birds published a review of birds of conservation concern in Ireland in 2007 (*The status of birds in Ireland: an analysis of conservation concern 2008-2013*; Lynas *et al.*, 2007). This presents an assessment of the population status of birds on the island as a whole; each species is placed on a Green, Amber or Red list depending on current conservation status. All species, bar Starling are on the Green list – not at risk. The Starling is on the Amber list as a species of European conservation concern (SPEC3) whose status is unfavourable but whose population is not concentrated in Europe.

Bird Count 2nd & 3rd March 2009

Weather Conditions

3.20 The weather on 2nd March was dry, cold and with only a light breeze backing from northwest to southwest. In fact the weather conditions were ideal. Conditions on 3rd March during the first count (high tide) were quite good, it being cold and windy from the southwest with an overcast sky and a threat of rain. There was light but steady rain during the second count (two hours after high tide) which turned persistent before the end. It was not possible to carry out the third scheduled count (four hours after high tide) because of very heavy rain accompanied by strong winds. However, the rain passed in the afternoon to give clear conditions with a strong breeze from the southwest. A count was then carried out at low tide during good weather conditions. The weather conditions on the survey days did not affect the accuracy of any of the counts, but caused the cancellation of one count, as described. This did not affect the quality of the survey undertaken.

The fields at Youghal Mudlands: -

3.21 The results of the counts recorded in field numbers L1, L2, L3, L4, R1, R2, R3, R4 and R5 at different stages of the tidal cycle are shown in Tables 3.15 to 3.20. Most birds occurred in fields R1 to R3, and none at all occurred in some fields (but note earlier comments on fields L1 to L4). Note that the Lapwing was absent at all sites. There was also a dearth of gulls and gull activity. Based on I-WeBS¹ counts it is apparent that gull numbers in and around the landfill had decreased considerably since the January survey, and this was reflected in the almost complete lack of birds visiting fields and the pools. Little Egret was the most regularly recorded species, and most sightings of birds were from areas close to drainage ditches along the edges of the fields.

3.22 As described above, the fields L1 to L4 were not possible to survey from the Slob Bank. During the Snipe survey (carried out between 14.00 and 17.00) two Little Egrets were seen feeding in a drain along the southern edge of field L4. No other wetland birds (apart from Snipe) were observed in fields L1 to L4.

3.23 At high tide, on commencement of the counts on both the survey days (2nd & 3rd March 2009) the central saltmarsh on the nearby Tourig Estuary was not covered by the tide. Therefore, the March survey was carried out on a somewhat lower tide than the January survey, and there was no obvious movement of birds between sites around the high tide period. The one observed movement involved a flock of Black-tailed Godwits arriving at the pools apparently from the Tourig Estuary direction (Table 3.27), but this took place five hours after high tide.

- Tide height 4.1m morning of 15th January
- Tide height 4.0m morning of 16th January
- Tide height 3.9m morning of 2nd March
- Tide height 3.7m morning of 3rd March

3.24 Most Kingfisher sightings were in the drainage ditches between the fields, and at least two birds were involved (two seen together on one occasion at R3 during the Snipe survey between 14.00 and 17.00).

¹ Irish Wetland Bird Surveys co-ordinated by BirdWatch Ireland.

Table 3.15 - The number of wetland birds using fields at Youghal Mudlands at High Tide (08.29) on 2nd March 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Little Egret					3		1		
Teal						4			
Mallard					3				
Curlew							2		

Table 3.16 - The number of wetland birds using fields at Youghal Mudlands one hour after High Tide (09.29) on 2nd March 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Little Egret					3				1
Kingfisher							1		

Table 3.17 - The number of wetland birds using fields at Youghal Mudlands two hours after High Tide (10.29) on 2nd March 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
No wetland birds									

Table 3.18 - The number of wetland birds using fields at Youghal Mudlands three hours after High Tide (11.29) on 2nd March 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Little Egret					2				

Table 3.19 - The number of wetland birds using fields at Youghal Mudlands four hours after High Tide (12.29) on 2nd March 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Little Egret					1				
Kingfisher					1				

Note: The Kingfisher was seen to fly to here from Pool 1.

Table 3.20 - The number of wetland birds using fields at Youghal Mudlands five hours after High Tide (13.29) on 2nd March 2009. Snipe are excluded.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Little Egret					1				1

The Snipe at Youghal Mudlands

- 3.25 A special effort was made to record Snipe in fields L1 to L4 and in R1 to R5. Many Snipe flushed at quite some distance from the observer, so (as in January 2009), a special effort to flush all birds in each field was made. At least four transects across each field were made, hand-clapping was also used to flush those birds that sat tightest. The drainage ditches around these fields were also checked for birds such as Moorhen and Kingfisher during the Snipe survey.
- 3.26 The results of the Snipe survey are shown in Table 3.21 (see Figure 3.1 for field classification). The total recorded was 145 birds. Again, it was possible that some Snipe settled in other (as yet unsurveyed) fields. Nevertheless, even if some double-counting did take place the real total present in Youghal Mudlands is probably very close to 145 as a small number would have actually been missed at the margins of the pools during the specific Snipe survey. Snipe were present in almost all fields, even those with the tallest and densest growths of rushes. However, again only small numbers were recorded in R3.

Table 3.21 - The number of Snipe (total 145) using fields at Youghal Mudlands on 2nd March 2009.

Fields	L1	L2	L3	L4	R1	R2	R3	R4	R5
Snipe	5	2	12	2	37	11	4	8	64

The pools at Youghal Mudlands

- 3.27 Six counts were carried out at the pools on 2nd March 2009 (Tables 3.22 to 3.27). The commonest species recorded was the Teal. The number of gulls was negligible and Lapwings were absent. Pools 3 and 4 tended to be used by more species and more birds than Pools 1, 2 and 5; as noted above this is related to their size and amount of vegetation offering cover.

Table 3.22 - The number of wetland birds using pools at Youghal Mudlands at High Tide (08.29) on 2nd March 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Cormorant						0
Little Egret			1		1	2
Shelduck			4			4
Wigeon		4		2		6
Teal	2	4	7	13		26
Mallard			2			2
Snipe			6			6
Black-tailed Godwit						0
Redshank			9			9
Black-headed Gull				4		4
Common Gull				7		7
Herring Gull						0
Kingfisher						0

Table 3.23 - The number of wetland birds using pools at Youghal Mudlands one hour after High Tide (09.29) on 2nd March 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Cormorant						0
Little Egret			1			1
Shelduck			4			4
Wigeon		4		2		6
Teal	2	5	6	16		29
Mallard			2			2
Snipe			7			7
Black-tailed Godwit						0
Redshank			10			10
Black-headed Gull			14			14
Common Gull			11			11
Herring Gull			1	1		2
Kingfisher						0

Table 3.24 - The number of wetland birds using pools at Youghal Mudlands two hours after High Tide (10.29) on 2nd March 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Cormorant						0
Little Egret	1		1	1		3
Shelduck			4			4
Wigeon			4	2		6
Teal	2	2	5	32		41
Mallard	2		4	2		8
Snipe						0
Black-tailed Godwit			1			1
Redshank			11			11
Black-headed Gull						0
Common Gull						0
Herring Gull				2		2
Kingfisher						0

Table 3.25 - The number of wetland birds using pools at Youghal Mudlands three hours after High Tide (11.29) on 2nd March 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Cormorant		1				1
Little Egret	1		1	1		3
Shelduck			4			4
Wigeon		3		2		5
Teal		6	9	31		46
Mallard	2		4	2		8
Snipe			2			2
Black-tailed Godwit			1			1
Redshank			11			11
Black-headed Gull						0
Common Gull						0
Herring Gull			2			2
Kingfisher						0

Table 3.26 - The number of wetland birds using pools at Youghal Mudlands four hours after High Tide (12.29) on 2nd March 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Cormorant						0
Little Egret		1	1	1	1	4
Shelduck			4			4
Wigeon				6		6
Teal		4	7	26	6	43
Mallard			3	2		5
Snipe						0
Black-tailed Godwit						0
Redshank						0
Black-headed Gull						0
Common Gull						0
Herring Gull						0
Kingfisher	1					1

Note: The Kingfisher was seen fly from the sluice in Pool 1 to R1.

Table 3.27 - The number of wetland birds using pools at Youghal Mudlands five hours after High Tide (13.29) on 2nd March 2009.

Species	Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Total
Cormorant						0
Little Egret				1		1
Shelduck			4			4
Wigeon				6		6
Teal			5	19	7	31
Mallard			2	2		4
Snipe						0
Black-tailed Godwit			23	1		24
Redshank			2			2
Black-headed Gull						0
Common Gull						0
Herring Gull						0
Kingfisher						0

Note: The Black-tailed Godwits were seen flying in here from the direction of Rincrew Bridge.

Tourig Estuary

- 3.28 In addition to the study area shown in Figure 3.1, for completeness additional counts were carried out at the Tourig Estuary on 3rd March 2009. These counts included the whole estuary upstream of the new N25 road-bridge. As discussed, there had been a drier spell of weather before the March 2009 survey; therefore the fields had little standing water.
- 3.29 Three counts of the wetland birds of the Tourig Estuary were carried out at high tide, two hours after high tide and at low tide (Table 3.28). The situation observed at high tide was typical, with most wading birds (especially Redshank) roosting on saltmarsh islands, but with some species (especially Black-tailed Godwit) feeding in the shallow and exposed muddy parts. In fact many of the Black-tailed Godwits were commuting back and forth to the large grass field immediately south of the estuary (Ellis's). However, the number of gulls present was exceptionally high at this location, and possibly this was related to the impending break in the weather. High gull numbers can be seen on the Tourig Estuary during gale force winds and stormy conditions. Some of the Black-headed and Common Gulls were commuting to a section of the large grass field (Ellis's) where slurry had recently been spread.
- 3.30 During the count at two hours after high tide the numbers of most species had not changed in any significant way, apart from the fact most of the Black-tailed Godwits had left. There was no sign of them at this time in Ellis's field, nor could they be found in any field north of the estuary. The most likely explanation is that birds were in fact feeding inland during this time. The number of black-tailed godwits at the main mudflat at Youghal Bridge had actually dropped during this time (Table 3.30) (but see low tide numbers at this site, and their use of nearby fields). Based on the experience of 2nd March, it is most unlikely if many (or any) black-tailed godwits went to either the Youghal Mudlands fields or pools.

- 3.31 During the count at low tide there was significant change in the numbers of birds at the Tourig Estuary. All species were now present in much lower numbers than earlier. Wigeon numbers had halved, and no Teal were seen (although at low tide ducks can be hidden in deep channels). However, there were no Black-tailed Godwits or gulls (this was real), but the most remarkable thing is that there were so few Redshanks left. Tourig Estuary is a very good site for Redshanks at all tidal states, and there is little evidence of commuting very far out of the estuary at low tide. It is just possible that the Peregrines (see below) were having some effect, and the Redshanks may have been huddled together in a low tide roost flock in one of the deep channels.
- 3.32 During the high tide count two Peregrines were perched on top of the Tourig chimney, and a female Merlin was seen fly across the fields just to the north of the estuary (it briefly perched in an Ash). One Peregrine was still on the chimney during the count at two hours after high tide, and it was there also at low tide.

Table 3.28 - Counts of wetland birds using the Tourig Estuary at high tide, two hours after high tide and at low tide on 3rd March 2009.

Time		09.13		11.13		15.13
Tide state		High		2 hrs after		Low
Little Egret		2		1		2
Shelduck		6		4		2
Wigeon		86		79		31
Teal		38		33		
Mallard				2		3
Oystercatcher						3
Black-tailed Godwit		317		13		
Curlew		34		24		37
Redshank		158		149		3
Greenshank		10		6		1
Black-headed Gull		85		105		
Common Gull		75		65		
Herring Gull		370		355		
Lesser Black-backed Gull		340		285		
Great Black-backed Gull		22		24		

Note: At high tide one of the two Little Egrets emerged from the pond beside the Tourig chimney, and one of the two seen at low tide was feeding in a field immediately north of the estuary.

Foxhole field

3.33 Three counts of the wetland birds of Foxhole field were carried out at high tide, two hours after high tide and at low tide (Table 3.29). The lower tide during this survey, compared with the January survey, probably explains why so few birds were present here.

Table 3.29 - Counts of wetland birds using Foxhole field at high tide, two hours after high tide and at low tide on 3rd March 2009.

Time		09.13		11.13		15.13
Tide state		High		2 hrs after		Low
Little Egret		1		1		0
Teal		23		0		0
Mallard		0		2		0
Curlew		20		0		0

The Main mudflat and the East mudflat

3.34 Three counts of the wetland birds of the Main mudflat (Table 3.30) and of the East mudflat (Table 3.31) were carried out at high tide, two hours after high tide and at low tide. The counts at the main mudflat showed some variation in gull numbers throughout the day, but little overall change (presumably some birds kept moving back and forth to the landfill to feed and roost). Note the feeding in fields by Black-tailed Godwits at low tide. Note also the low numbers of Redshanks at low tide, strongly indicating that none of the Tourig Estuary birds had moved here (see discussion above under 'Tourig Estuary'). The East mudflat was used by birds only at low tide, and then mainly by gulls (Table 3.31).

Table 3.30 - Counts of wetland birds using the Main mudflat at high tide, two hours after high tide and at low tide on 3rd March 2009.

Time		09.13		11.13		15.13
Tide state		High		2 hrs after		Low
Great Crested Grebe		1		1		
Cormorant		8		2		14
Shelduck		11		9		4
Teal		39		54		31
Mallard		2				
Oystercatcher		7		11		14
Knot		2				
Black-tailed Godwit		151		88		264
Bar-tailed Godwit						1
Curlew		5		26		27
Redshank				18		8
Greenshank		1		2		1
Black-headed Gull		250		275		260
Common Gull		35		55		55
Herring Gull		220		190		315
Lesser Black-backed Gull		304		260		510
Great Black-backed Gull		64		50		65
Glaucous Gull		2		1		4
Iceland Gull		2				2

Note 1: 63 Black-tailed Godwits may have flown in from the Tourig Estuary during the high tide count.

Note 2: At low tide many of the Black-tailed Godwits were commuting to fields (Hunt's) just north of this mudflat.

Table 3.31 - Counts of wetland birds using the East mudflat at high tide, two hours after high tide and at low tide on 3rd March 2009.

Time		09.13		11.13		15.13
Tide state		High		2 hrs after		Low
Cormorant		0		0		2
Wigeon		0		0		6
Mallard		0		0		2
Curlew		0		0		4
Redshank		0		0		3
Black-headed Gull		0		0		120
Common Gull		0		0		45
Herring Gull		0		0		106
Lesser Black-backed Gull		0		0		205
Great Black-backed Gull		0		0		24
Glaucous Gull		0		0		1

Note 1: Counts at the East mudflat ended at 11.00, 12.50 and 16.50 respectively.

Note 2: No birds were present here at high tide and at two hours after high tide because no mud was exposed at these times.

Land birds

3.35 Land birds were recorded in the fields L1 to L4 and R1 to R5 as they were encountered. No special effort at counting them was made. The species encountered are given in Table 3.32.

Table 3.32 - Land birds recorded using fields at Youghal Mudlands on 2nd March 2009. Species flying over the site were not recorded.

Species	L1	L2	L3	L4	R1	R2	R3	R4	R5
Pheasant	√				√				√
Woodpigeon		√			√	√		√	√
Meadow Pipit				√	√	√	√	√	√
Grey Wagtail				√					
Pied Wagtail					√				
Wren	√	√	√	√	√	√	√	√	√
Duncock	√	√			√				√
Robin	√		√		√	√	√		√
Stonechat					√	√		√	
Blackbird	√	√	√	√	√	√		√	√
Song Thrush	√	√			√		√		√
Redwing				√		√			√
Goldcrest			√						√
Long-tailed Tit			√						
Blue Tit	√	√							
Great Tit		√	√						
Magpie	√	√	√				√	√	√
Hooded Crow				√	√	√	√		√
Starling						√			√
House Sparrow			√						
Chaffinch	√				√				
Greenfinch	√			√	√	√	√	√	√
Goldfinch		√			√		√		
Linnet					√				
Reed Bunting				√	√	√			√

Note: No birds of prey were recorded (although two fresh passerine kills were found, but see section on 'Tourig Estuary', above).

- 3.36 Additional species recorded in March included Grey Wagtail, Long-tailed Tit and House Sparrow, which are on the Green List and Linnet which is Amber listed (Lynas *et al.*, 2007). Linnet is on the Amber list as a species of conservation concern in Europe – a species of unfavourable status whose population is concentrated in Europe.

Breeding birds

- 3.37 As a result of the timing of this survey it was not possible to conclude how important the site is for breeding bird species. However, Skylarks were breeding in one of the fields to the right of the track (R1 to R5) approximately 15 years prior to this survey (P. Smiddy, pers. comm.). During the March 2009 surveys, many of the common passerine (and some non-passerine) species of hedgerows and fields were in song, and it was obvious that many of these are likely to breed at the site. It is perhaps worth noting that Skylark was not recorded in either the January or March 2009 surveys. Meadow Pipits were particularly common in field R1, which looks very good habitat for breeding. The nest of a pair of Hooded Crows was seen at field R1, and both birds were close by the nest all day.

Addenda

- Turnstone: Seven on outside of seawall on 2nd March.
- Rock Pipit: Two on outside of seawall on 2nd March.
- Glaucous Gull: Three at East mudflat at 4 hours after high tide on 2nd March.
- Glaucous Gull: One over the landfill at 4 hours after high tide on 2nd March.
- Siskin: Seven flew over Youghal Mudlands on 2nd March.

Conclusion

- 3.38 The bird survey was designed in such a way as to evaluate usage of the site across the full tidal cycle in order to determine whether birds might be moving in and out of the Mudlands from elsewhere within the SPA. Consideration was given to the species, number and conservation status of birds observed. By targeting different tidal heights in January and March the survey also attempted to determine whether patterns of site use would alter depending on how much of the saltmarsh in the Tourig Estuary was exposed (as roosting areas) during high tide. Furthermore consideration was also given to use of the Foxhole (to the north), adjoining mudflats in the Blackwater Estuary and the pools inside the seawall. In this way the relationship between the Mudlands and the adjoining Blackwater Estuary SPA could be examined in full.
- 3.39 The data indicate that Fields R3 and R4 host the greatest diversity and number of birds; key species include Lapwing and Black-tailed godwit; maximum counts of 950 and 360, respectively. The national threshold for Lapwing is 2,100, while that of Black-tailed godwit is 140 (Boland & Crowe, 2007). The 5-year average for Black-tailed godwit in the Blackwater Estuary / Tourig Estuary is 634 (1996-2000); Crowe (2005). These birds were generally recorded close to high tide and concentrated very close to the pools along the sea wall away from the area proposed for development.
- 3.40 No land birds of conservation concern were noted within the study area. The bird survey data therefore supports the findings of the 2001 EIS with respect to the site. Broadly speaking development of the plant at the western side of field R3 (and associated access track) should not result in a significant impact on bird species for which the Blackwater Estuary has been designated provided appropriate mitigation measures are put in place and the plant is adequately screened. The successful Contractor shall be required to seek the advice of an appropriately qualified ecologist when finalising the timing of works and nature of screening in order to minimise impacts on waders and wildfowl using the site.

4. Other Fauna

Mammals

- 4.1 The Original EIS (Atkins McCarthy, 2001) found that the area has a reduced mammal fauna because of the prevailing damp conditions. Hares and rabbits were found to occur at low density and there were rabbits in the north-west corner along the townland boundary. The EIS said that otters may be assumed to use the pond under the seawall at times but would be unlikely to use the site under discussion. The EIS said that small mammals are likely to include bank vole, wood mouse and pygmy shrew. The study found that most of the site would be of little value to bats which rely on hedges and taller trees to create foraging areas and communication routes, however the south-west corner is likely to be visited by these animals as there are tree lines in the hedges close enough to potential roosting areas.
- 4.2 The results of the 2009 surveys have not changed the original assessment significantly. No mammals were seen during the 2009 surveys. The only mammal evidence seen was that of the Otter and Common Rat. Otter spraint was seen at four locations. Footprints of Common Rat were seen at a number of points along the track between the fields L1 to L4 and R1 to R5. Several small mammal species might be expected to be present, but a trapping programme would be necessary to prove which ones. Fox might also be expected, but the many tracks of dogs probably obscured any signs of the Fox that might be present. Rabbit could also be expected, but no evidence was seen (perhaps the ground was too wet), and Irish Hare, Irish Stoat and Hedgehog may also be present. Badgers may also visit from outside the site, but the fast growth of housing in the area may have eliminated them locally, and the fields in the study area are possibly too wet for permanent residence by Badgers.
- 4.3 While no mammals were seen during the survey, evidence indicating the presence of several species was also noted during the bird surveys:
- Otter: Evidence (spraint) was seen at four locations, (1) by the pool in R1, (2) by the sluice at Pool 1, (3) on the bank at Pool 4 and (4) on the bank at Pool 5.
 - Fox: Droppings were seen on a field boundary bank in field R5.
 - Rabbit: Droppings were noted in field R1.
 - Common Rat: Footprints were seen at a number of points along the track between the fields L1 to L4 and R1 to R5.

Amphibians

- 4.4 The Original EIS (Atkins McCarthy, 2001) stated that frog is likely to occur around the lane area and breed in transitory puddles and ditches and that it would not be favoured by the eutrophic condition of the more permanent streams where there would also be fish predators e.g. stickleback.
- 4.5 The 2009 survey found that because of the wet nature of the site it would appear to be ideal as a habitat for Common Frog. During the survey on 2nd March 2009 spawn was found at locations in L1, L3, R4 and R5. No evidence of amphibians was found in R3.

Conclusion

- 4.6 The 2001 EIS concluded that no fauna of nature conservation importance were found in the area. While true for the area of field R3 proposed for development, there is evidence that the wider Mudlands is used by Otter (on Annex II of the EU Habitats Directive) and by spawning Common Frog. As noted above, the successful Contractor shall be required to seek the advice of an appropriately qualified ecologist when finalising the timing / nature of works and nature of screening in order to minimise impacts on animals of conservation importance using the wider site. This shall include preparation of a Method Statement demonstrating how direct and indirect impacts associated with the proposed development shall be avoided (e.g. indirect impacts on the pools through escapement of surface water runoff from the construction site). For example, Common Frog is protected under the Wildlife Act, 1976 (as amended, 2000) and any frog spawn encountered with areas of the proposed construction site must be translocated under licence from National Parks & Wildlife Service (DEHLG) to a suitable agreed receptor site.
- 4.7 Should the final design solution include hedgerow removal then the Contractor must consider the need for a mammal and/or breeding bird survey² to be undertaken by an appropriately qualified ecologist.

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² Nesting birds are protected under the Wildlife Act, 1976 (as amended, 2000).

5. Marine Ecology

- 5.1 A detailed marine survey was carried out for the 2001 EIS on the 10th and 11th May 2001. Marine surveys were outside the scope of the current survey.
- 5.2 The 2001 EIS presents the results of littoral and sublittoral studies undertaken by EcoServe in 2001. Figure 5.1 is extracted from the 2001 EIS and illustrates the extent / location of survey areas for each study. The development site is on the shore immediately west of the label D3 on Figure 5.1; while the proposed discharge pipe is located in the area opposite Ferry Point (near label – Option 1).
- 5.3 Littoral sites were sampled from the shore, at low water spring tides, whilst sublittoral sites were sampled from a boat using a biological dredge. The biotopes present on the western shore of the Blackwater Estuary were mapped using biotope classification (Connor *et al.* 1997).
- 5.4 Twenty biotopes were recorded from the littoral survey. The majority of these biotopes occurred on the narrow sea wall, vertical harbour walls and bedrock which back the shore along the western coast of the estuary. The wall along the Youghal Mudlands was found to support a range of biotopes. At the site of the proposed outfall (referred to as Option 1 in the Original EIS) the vertical wall was covered by barnacles and limpets (ELR.BPat) with mussels and barnacles (ELR.MytB) in the zone below. The lower shore was dominated by serrated wrack (*Fucus serratus*) with mussels and green algae (*Enteromorpha* sp.) and red algae (*Chondrus crispus* and *Ceramium* sp.) on mixed gravel, boulders and mud (MLR.Myt.FR).
- 5.5 A total of nine dredges were taken in the Blackwater Estuary (see Figure 5.1). Twenty four species of higher taxa were recorded. The fauna was dominated by hydroids, polychaetes, crustaceans and molluscs. Opposite Youghal Town and adjacent to the north and centre of the Youghal Mudlands, the substratum was very soft anoxic mud with some sand, organic matter and shell debris. Few macrofauna species were recorded from these sites, although polychaetes, in particular tube worms were characteristic. To the north, south and opposite Ferry point the substratum was very coarse shell debris with sand. At the mouth of the harbour the substrata again changed and consisted of cobbles, pebbles and rocks and with a different macro-faunal community, characterised by hydroids, crustaceans and seaweeds.

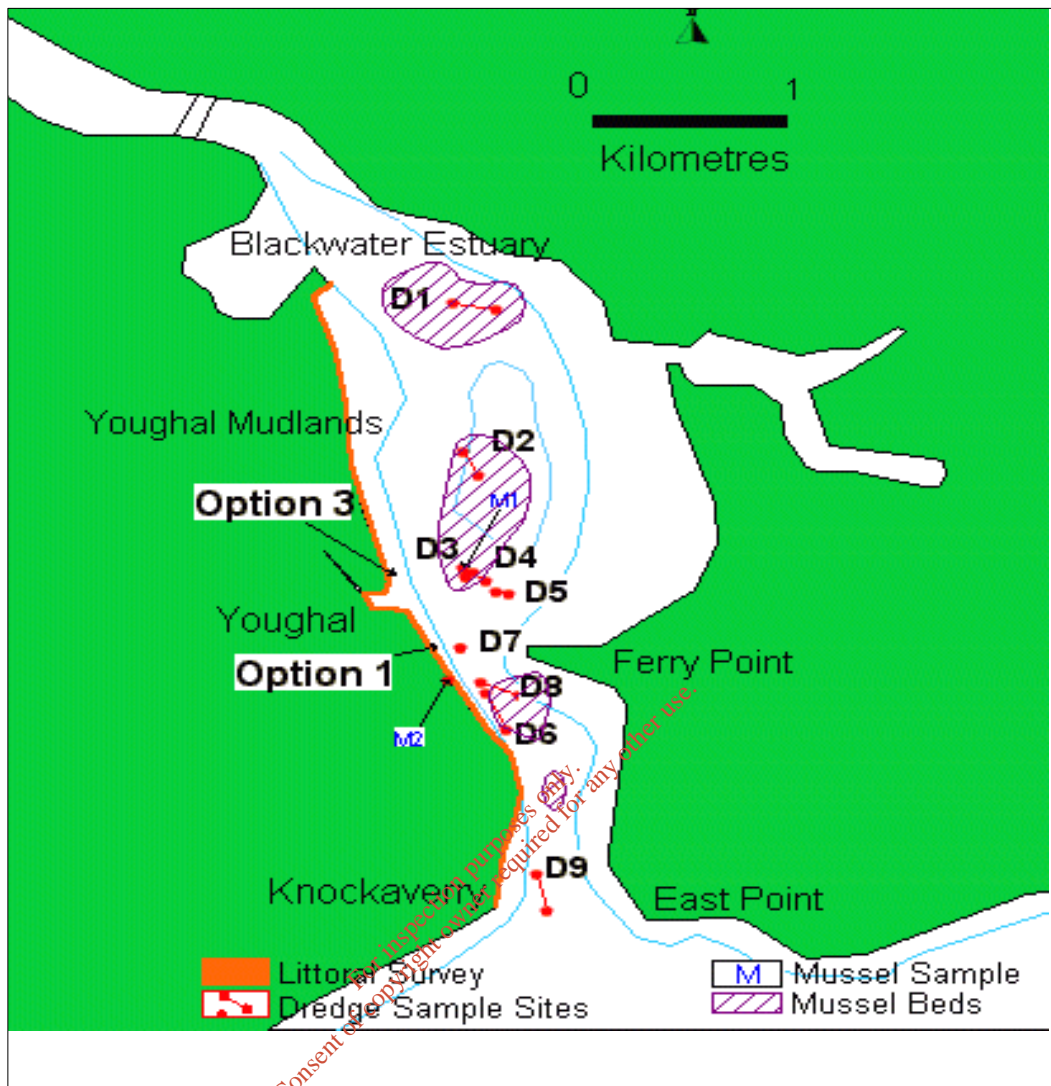


Figure 5.1 – Map showing locations of sampling sites (extracted from the 2001 EIS).

- 5.6 Mussels were collected from a mussel-bed north of Ferry Point (M1) and also from a pier wall in the town (M2). Faecal coliform levels were low in the sample collected in the mussel bed (130 FC/100g), well below the level required under the shellfish production regulations. Levels were relatively high in the mussels collected on the pier wall (5,400 FC/100g) but within the specified limits under the regulations (although mussels would not be harvested from here).
- 5.7 In general, the littoral biotopes recorded along the inner part of the estuary are typical of more wave sheltered locations than those recorded along the outer estuary. The biotopes recorded are commonly found along the Irish coast and no species or habitats of conservation importance were recorded.
- 5.8 The sublittoral species recorded in the survey area are commonly found in estuaries on the south coast of Ireland. No habitats or species of conservation importance were recorded. Typically species abundance and diversity was low. The sites with the highest number of species were recorded from the middle and outer estuary where the substrate consisted of coarse sand, gravel and shell cobbles (D3, D6, D7 and D9). It is likely that the final location of the proposed outfall pipeline will be close to site D7.

- 5.9 The 2001 EIS found that Youghal Harbour was previously a shellfish production area, although harvesting had not been undertaken for a number of years prior to the 2001 report and is not nor has been a designated shellfish production area under the *European Communities (Live Bivalve Molluscs) (Health Conditions for the Production and Placing on the Market) Regulations, 1996* (S.I. No. 147 of 1996). Prior to 2001 the area between Knockadoon and Knockaverry outside the harbour was designated as a Category B in the regulations. However, in the 2001 Live Bivalve Molluscs (Production Areas) Designation, 2001 (No.1) Youghal was not designated as a shellfish production area. A review of EPA mapping shows no current shellfish areas in Youghal Estuary (<http://maps.epa.ie/InternetMapView/MapView.aspx>; accessed 24th August 2009).

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6. 'Appropriate Assessment', Article 6, EU Habitats Directive (92/43/EEC)

Brief description of the Natura 2000 site

- 6.1 The proposed development of a waste water treatment plant (WWTP) and associated network at the Mudlands, north of Youghal is not located within a site designated as being of conservation importance; however it does adjoin a section of the Blackwater River cSAC which in this location is characterised as rush dominated improved agricultural grassland (GA1). However, the proposed outflow from the WWTP will occur in an area which has been designated as a candidate Special Area of Conservation (cSAC) under the EU 'Habitats' Directive 92/43/EEC (Blackwater River cSAC, Site Code 2170). The area is also designated as a Special Protection Area for birds (SPA) under the EU Birds Directive 79/409/EEC (Blackwater Estuary SPA, Site Code 4028) (see Appendix A). Both these designations form part of the Natura 2000 network.
- 6.2 The River Blackwater is of considerable conservation significance and is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. The peaty nature of the upper reaches of the river and some of its tributaries give the water a pronounced dark colour. The mouth of the river occurs at Youghal Harbour, where the river empties into the Atlantic Ocean.
- 6.3 The site is a candidate Special Area of Conservation for alluvial wet woodlands and yew wood (both priority habitats listed on Annex 1 of the EU Habitats Directive). The site is also selected as a cSAC for the following habitats which are listed on Annex 1 of the EU 'Habitats' Directive. floating river vegetation, estuaries, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadow, perennial vegetation of stony banks and old oak woodlands. A number of species are also found on the site that are listed under Annex II of the same Directive. These include lamprey species (*Lampetra spp.*) freshwater pearl mussel (*Margaritifera margaritifera*), White-clawed crayfish (*Austropotamobius pallipes*), Atlantic salmon (*Salmo salar*) and otter (*Lutra lutra*).
- 6.4 The Blackwater Estuary (SPA) is of high ornithological importance for wintering waterfowl and provides 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. A low-lying field at Blackbog, east of the Mudlands across the Blackwater River, is a favoured roost. The site supports an internationally important population on Black-tailed godwit (634), and has a further seven species with nationally important population of Wigeon (834), Golden Plover (3,098), Lapwing (3988), Dunlin (1,430), Curlew (1,041), Redshank (489) and Greenshank (25); Crowe (2005; 5 year average counts from 1994/95 to 2000/01). A population of Bar-tailed godwit (peak count of 286) has also on occasion exceeded the threshold for national importance. This site has been well studied, with detailed monthly counts extending back to 1974. Boland *et al.* (2008) report a summed annual maxima of each species (excluding gulls and terns) of 7,739 birds counted during I-WeBS bird counts within the Blackwater Estuary. Totals are derived from across all months September – March inclusive in each year (Boland *et al.*, 2008). Under IWeBS the Blackwater Estuary site includes the Tourig Estuary.

Appropriate Assessment Screening Matrix

[Following Article 6(3) of the European Union Habitats Directive (92/43/EEC) and Article 30 of the European Communities (Natural Habitats) Regulations, 1997.

1. Description of the project or plan	
<i>Location</i>	Youghal Mudlands, Youghal, Co. Cork (refer to Figure 1.1)
<i>Distance from designated site</i>	Work on mudlands is outside but adjacent to Blackwater River Special Area of Conservation (SAC) (Site Code 2170) or the Blackwater Estuary Special Protection Area for Birds (SPA) (Site Code 4028); Figure 1.1 & 1.2. Proposed discharge would run through the Natura 2000 sites close to Ferry Point (exact location / extent to be confirmed at detailed design).
<i>Brief Description of the project or plan</i>	The proposed development comprises the following elements: - <ul style="list-style-type: none"> • Site on the Youghal Mudlands for the proposed waste water treatment plant to be located in the western side of Field R3 as referenced in the ecology assessment (see Figure 3.1); • An inflow & outflow pipe with an associated maintenance way-leave servicing the plant will run south from the plant to the public road, along the western side of fields R1 & R2 (see Figure 3.1); • A pipeline will also run west from the plant through L3 to the public road (see Figure 3.1).
<i>Is the plan directly connected with or necessary to the site management for nature conservation</i>	No.

2. Brief Description of the Natura 2000 site(s)	
<i>Name</i>	Blackwater River Special Area of Conservation (SAC) (Site Code 2170) Blackwater Estuary Special Protection Area for Birds (SPA) (Site Code 4028)
<i>Site Designation Status</i>	Blackwater River Special Area of Conservation candidate Special Area of Conservation Blackwater Estuary Special Protection Area for Birds Blackwater River & Estuary proposed Natural Heritage Area
<i>Site Description</i>	Refer to Appendix A1 & A2.
<i>Qualifying Interest</i>	[Refer to also to paragraph 6.1-6.4] 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; refer to Appendix A1. 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; refer to Appendix A2.
<i>Non Qualifying Interest</i>	Various – refer to Appendix A1 & A2 and to main report for proposed site.
<i>Unit Size</i>	Various.
<i>Condition</i>	Various; refer to Appendix A1 & A2.

3. Assessment Criteria	
<p>3.1 Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 sites.</p>	<p>The Youghal Main Drainage Scheme will see the closure of a number of existing outfalls which currently discharge untreated waste to Youghal Harbour. Instead sewage will receive primary and secondary treatment as well as nutrient reduction for nitrogen.</p> <p>A site on the Youghal Mudlands has been chosen for the proposed Waste Water Treatment Plant (WWTP) (Figure 1.1). An access roads & pipeline, with an associated maintenance way-leave servicing the plant, will run south from the plant to the public road through R1 & R2 to the public road (see Figure 3.1). A pipeline will also run west through field L3 to the public road.</p> <p>The proposed discharge pipeline would be installed to convey treated effluent to Youghal Harbour. While the exact pipeline location remains to be determined (pending award of the Design and Build contract), it is likely that some of this pipeline would be located within the Natura 2000 site; most likely in the environs of Ferry Point (see Figure 5.1).</p>
<p>3.2 Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:</p>	<p><u>Land-take / Distance from Natura 2000 Site:</u> The land take for the proposed WWTP is not located within a Natura 2000 site. Thus work on the Mudlands will be entirely outside the SAC / SPA boundaries. Habitats within the Mudlands which would be impacted include e.g. wet grassland (GS4), dry grassland (GA1, GS2) and hedgerows (WL1) - none of these are comparable to habitats of European importance (Annex I of the EU Habitats Directive), nor are they habitats for which the Natura 2000 sites have been designated.</p> <p>In order to lay the outfall a pipe will be laid in a buried trench through the Natura 2000 site. A trench will be dug for the pipeline during the construction phase. Once the pipeline is installed, this will be backfilled and it is expected that the habitat will return to its natural state in the short to medium term. Littoral and sublittoral habitats that would be impacted are discussed in paragraphs 5.3-5.5, above and in the 2001 EIS. None of these habitats are of marine conservation importance; nor are they habitats for which the Natura 2000 sites have been designated. Furthermore, they do not represent areas of intertidal or sub-tidal habitat of significance for foraging waders / wildfowl for which the Special Protection Area for birds has been designated.</p> <p><u>Disturbance / Excavations:</u> The use of the Mudlands and pools adjoining the sea wall by wintering birds is discussed at length in Chapter 3. As timing of works outside the winter months to effectively avoid disturbance of wintering birds is unlikely to be possible some level of disturbance on wintering birds using the Mudlands is likely during construction. However, as noted in Chapter 3 the Mudlands are not within the Blackwater Estuary SPA nor do they support significant concentrations of waders / wildfowl. The site is likely to be visually screened by a flood protection wall or berm (to be finalised at detailed design stage).</p> <p><u>Emissions:</u> Currently sewage is discharged untreated into Youghal Harbour from a number of locations. Following completion of works effluent would be treated effectively prior to discharge at a single sub-tidal outfall likely to be located opposite Ferry Point.</p> <p>During the course of works best practice must be followed with respect to site works and in particular how surface water runoff from the site is addressed. The successful Contractor will be required to prepare a Construction / Mitigation Method Statement (with input from an appropriately qualified ecologist) to be agreed with Cork County Council and National Parks & Wildlife Service in order to prevent any negative impacts on adjoining Natura 2000 sites.</p>
<p>3.3 Describe any likely changes to the Natura 2000 site arising as a result of:</p>	<p><u>Reduction of habitat area:</u> Temporary habitat loss will occur during the installation of the proposed outfall pipeline. Following back-filling of the trench accommodating the discharge pipe it is envisaged that natural estuarine behaviour is such that areas of disturbed sub-tidal habitat will be rapidly recolonised and revert to natural condition. As noted above none of these habitats are of marine conservation importance; nor are they habitats for which the Natura 2000 sites have been designated. No significant changes to the Natura 2000 are therefore envisaged in this regard.</p> <p>None of the works within the Mudlands are within the Natura 2000 sites.</p> <p><u>Disturbance of key species:</u> The proposed WWTP is located in close proximity to the SAC boundary. With the possible exception of otter, no disturbance of the key species for which the SAC was designated is expected. Disturbance of key species within the Natura 2000 site will occur during the installation of the proposed pipeline. This will particularly affect bird species in the area which are typically sensitive to disturbance; though as noted this area does not support significant populations of birds for which the SPA has been designated.</p> <p>No significant loss of feeding grounds for avifauna in the vicinity of the pipeline laying works is likely to occur.</p> <p>During the installation of the proposed pipeline within the estuary, there will be an increase in turbidity of the water during the construction of the pipeline trench due to release of sediment from the works area. However estuarine environments are typically sedimentary and species living in these environments have adapted to these conditions².</p>

	<p><u>Reduction in species density:</u> Some reduction in avian species density is likely to occur during the construction phase due to disturbance. If the works are carried out during the summer period when the bird species for which the SPA was designated are absent then impacts on the qualifying interests of the SPA will be minimal.</p> <p><u>Changes in key indicators of conservation value:</u> No changes in the key indicators of conservation value are expected as a result of this project.</p> <p><u>Climate change:</u> None predicted.</p>
<p>3.4 Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p>	<p><u>Interference with the key relationships that define the structure & function of the site:</u> In the medium term is envisaged that there would be a reduced level of nutrient enrichment within the estuary as a whole due to more efficient treatment of discharge from Youghal and an related water quality improvement as required under the Water Framework Directive in watercourses contributing to the estuary. This may have medium to long term impacts on the carrying capacity of the estuary / SPA for species for which it has been designated. However, any such changes would arise from compliance with a number of EU Directives.</p>
<p>3.5 Provide indicators of significance as a result of the identification of effects set out above in terms of:</p>	<p><u>Loss:</u> Apart from a minimal amount of habitat loss in the immediate vicinity of the outflow, no permanent habitat loss will occur within the Natura 2000 site as a result of this development.</p> <p><u>Fragmentation:</u> No habitat fragmentation will occur within the Natura 2000 site as a result of this development.</p> <p><u>Disruption:</u> Disruption in the Natura 2000 site is likely to be limited to the Construction Phase. No disruption to the Natura 2000 site is expected during the Operational Phase. The site is likely to be visually screened by a flood protection wall or berm (to be finalised at detailed design stage).</p> <p><u>Disturbance:</u> Disturbance in the Natura 2000 site is likely to be limited to the Construction Phase. No disturbance to the Natura 2000 site is expected during the Operation Phase. The EIS states that "the physical presence of the proposed WWTP will have very little effect on the (limited) ecological value of the area". The site is likely to be visually screened by a flood protection wall or berm (to be finalised at detailed design stage).</p> <p><u>Change to key elements of the site:</u> Bird counts should be undertaken as part of any ecological monitoring proposals with data gathered compared to existing baseline data in order to allow early identification of any significant disturbance issues.</p>
<p>3.6 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale of magnitude of impacts is not known:</p>	<p>It is not envisaged that there would be any significant negative impacts on Natura 2000 sites arising from the proposed works, provided the following steps be implemented; i.e. that the successful Contractor be required to prepare a Method Statement, with the assistance of an appropriately qualified ecologist and following consultation with Cork County Council, National Parks & Wildlife Service and Southern Regional Fisheries Board, to outline the nature of proposed works and appropriate mitigation measures to avoid impacts on Natura 2000 sites, water quality, disturbance of birds & protected animals etc.</p>

Prepared in accordance with: -

- European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC
- European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/49/EEC; clarification of the concepts of: Alternative solutions, Imperative reasons of overriding public interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.

Appropriate Assessment – Finding of No Significant Effects Report

[Following Article 6(3) of the European Union Habitats Directive (92/43/EEC) and Article 30 of the European Communities (Natural Habitats) Regulations, 1997.

[Name of Project/Plan] – Youghal Main Drainage	
Name and location of Natura site(s)	Blackwater River Special Area of Conservation (SAC) (Site Code 2170) Blackwater Estuary Special Protection Area for Birds (SPA) (Site Code 4028)
Brief Description of the Plan	See above.
Is the plan directly connected with or necessary to the site management for nature conservation	No.
Are there other projects or plans that together with the project or plan being assessed could affect the site	No.

[Name of Project/Plan] – Youghal Main Drainage	
Describe how the project (either alone or in combination with other plans or projects) is likely to affect the Natura 2000 site.	The project is not anticipated to affect any of the Natura 2000 sites referenced above.
Explain why the effects are not considered significant	Refer to paragraphs 2.15-2.17, Habitats; 3.38-3.40; Birds; 4.6-4.7; other fauna and 5.1-5.9 for marine ecology – these paragraphs summarise findings of the ecological assessment for each group considered. The proposed WWTP, access road and pipe to public road are not located with a Natura 2000 site. It is not envisaged that there would be any significant negative impacts on Natura 2000 sites arising from the proposed works. While the full effects of the reduction in nutrient loading in Youghal Harbour are difficult to quantify, it is considered that this will have a positive impact on water quality within the estuary in the long term. The lands proposed for development do not host significant number of birds for which the SPA has been designated and adoption of best practice on site should help to minimise disturbance of birds using surrounding areas (refer to paragraph 3.38 – 3.40).
List of Agencies Consulted	Statutory consultation was undertaken in preparing the 2001 EIS (Atkins McCarthy, 2001).

Data collected to carry out the assessment			
Who carried out the assessment	Sources of data	Level of Assessment	Where can the results be viewed
Dr. Paul O'Donoghue Atkins, Unit 2B, 2200 Cork Airport Business Park, Cork	Field survey, desktop review, local knowledge & consultation	Ecological Assessment from 2001; follow-up review of ecological work and detailed Bird Study	Refer to main document; or Atkins, Unit 2B, 2200 Cork Airport Business Park, Cork

Overall Conclusions
As long as the successful Contractor follows best practice; engages an appropriately qualified ecologist to advise and prepares the necessary Method Statements in consultation with statutory bodies such as National Parks & Wildlife Service, the proposed development should not result in significant adverse affects, direct or indirect, on any Natura 2000 sites.

Prepared in accordance with: -

- European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC
- European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/49/EEC; clarification of the concepts of: Alternative solutions, Imperative reasons of overriding public interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.

7. Recommendations

- 7.1 It is not envisaged that there would be any significant negative impacts on Natura 2000 sites arising from the proposed works. While the full effects of the reduction in nutrient loading in Youghal Harbour are difficult to quantify, it is considered that this will have a positive impact on water quality within the estuary in the long term.
- 7.2 It is recommended that the successful Contractor be required to prepare a Method Statement, with the assistance of an appropriately qualified ecologist and following consultation with Cork County Council, National Parks & Wildlife Service and Southern Regional Fisheries Board, to outline the nature of proposed works and appropriate mitigation measures to avoid / minimise negative impacts associated with the proposed development. The Method Statement must detail the operational practices to be used and how best practice is to be followed at all time to minimise ecological impacts.
- 7.3 Impacts to be avoided, and specifically addressed in the Method Statement, include, but are not limited to: -
- Damage to semi-natural habitats outside of lands made available (e.g. within the adjoining Blackwater River cSAC);
 - Damage to hedges & appropriate mitigation;
 - Impacts during laying of the outfall pipe;
 - Discharge of silt laden surface waters to adjoining waterbodies;
 - Disturbance of wintering waders / wildfowl using the Mudlands;
 - Disturbance of protected species such as Otter and Common Frog;
- 7.4 As mentioned above, a number of reports have already been prepared in relation to this project and there is a significant body of information available on the ecology of the site, and indeed targeted surveys are on-going. In particular there is much information available on birds, which are the primary interest in this Natura 2000 site.
- 7.5 In addition, alternatives to the proposal have already been considered in full in the Environmental Impact Statement.
- 7.6 Provided best practice is adhered to no significant effects on the Natura 2000 site are expected as a result of this development.
- 7.7 Due to these factors it is recommended that the 'Appropriate Assessment' process need not continue any further.

8. References

- Atkins McCarthy (2001). *Youghal Main Drainage Scheme – Environmental Impact Statement*. EIS prepared for Cork County Council.
- Crowe, O. (2005). *Ireland's Wetlands and their Waterbirds: Status and Distribution*. BirdWatch Ireland, Newcastle, Co. Wicklow.
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- European Commission (2000). *Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*.
- European Commission (2007). *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC: Clarification of the concepts of alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission*.
- Environmental Protection Agency (2002) *Guidelines on the Information to be Contained in Environmental Impact Statements*. EPA, Wexford.
- Environmental Protection Agency (2003) *Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)*. EPA, Wexford.
- Lynas, P., Newton, S.F. & Robinson, J.A. (2007). The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds* 8: 149-167.
- National Road Authority (2006) *Guidelines for Assessment of Ecological Impacts on National Road Schemes*.

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Appendix A

National Parks and Wildlife Service Designated Site Synopses

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A.1 Blackwater Estuary SPA (004028)

- A.1.1 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 extending as far as Kinsalebeg and Moord Cross Roads is included, while on the west side the site includes the estuary of the Tourig River.
- A.1.2 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.
- A.1.3 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. A low-lying field at Blackbog is a favoured roost. 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.
- A.1.4 Other species which occur in significant numbers include Grey Heron (27), Teal (527), Mallard (148), Oystercatcher (508), Grey Plover (2,947), Knot (50) and Turnstone (56). The site is also notable for supporting large concentrations of gulls in autumn and winter. Principal species are Black-headed Gull (549), Common Gull (253), Lesser Black-backed Gull (602) and Great Black-backed Gull (227).
- A.1.5 Little Egrets are a feature of the site throughout the year as there is a breeding colony upstream. The estuary provides an important feeding area for these birds (often more than 10).
- A.1.6 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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A.2 Blackwater River (Cork/Waterford) SAC (002170)

- A.2.1 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.
- A.2.2 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.
- A.2.3 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 Killarney Fern.
- A.2.4 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.2.5 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.

- A.2.6 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*).
- A.2.7 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.
- A.2.8 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 Water-dropwort, 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*.
- A.2.9 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.
- A.2.10 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 Ballinatray, 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*).
- A.2.11 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.

- A.2.12 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 dominates 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.
- A.2.13 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 hederaceae*), a local species within Ireland, suggests that the woodland, along with its attendant Ivy is long established.
- A.2.14 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*).
- A.2.15 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.
- A.2.16 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.
- A.2.17 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*).
- A.2.18 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.
- A.2.19 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.

- A.2.20 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.
- A.2.21 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 Sea-spurrey (*Spergularia media*), Glasswort (*Salicornia* sp.), Sea Arrowgrass (*Triglochin maritima*), Annual Sea-bite (*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 Couch-grass (*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.
- A.2.22 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*).
- A.2.23 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.
- A.2.24 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*), Twaite 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.
- A.2.25 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.

- A.2.26 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.
- A.2.27 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.
- A.2.28 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 5, 1996/97-2000/01) 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.
- A.2.29 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), Black-headed 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.
- A.2.30 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.
- A.2.31 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.

- A.2.32 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.
- A.2.33 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 non-native species, for example Cherry Laurel.
- A.2.34 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.

07.02.2007.

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Appendix B

Scientific names of bird species mentioned in the text

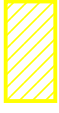
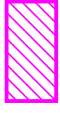



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B.1 Scientific names of bird species mentioned in the text.

Common name	Scientific name
Bar-tailed Godwit	<i>Limosa lapponica</i>
Blackbird	<i>Turdus merula</i>
Black-headed Gull	<i>Larus ridibundus</i>
Black-tailed godwit	<i>Limosa limosa</i>
Blue tit	<i>Cyanistes caeruleus</i>
Bullfinch	<i>Pyrrhula pyrrhula</i>
Chaffinch	<i>Fringilla coelebs</i>
Coal Tit	<i>Parus ater</i>
Common Gull	<i>Larus canus</i>
Cormorant	<i>Phalacrocorax carbo</i>
Curlew	<i>Numenius arquata</i>
Dunlin	<i>Calidris alpina</i>
Dunnock	<i>Prunella modularis</i>
Glaucous Gull	<i>Larus hyperboreus</i>
Goldcrest	<i>Regulus regulus</i>
Goldfinch	<i>Carduelis carduelis</i>
Great Black-backed Gull	<i>Larus marinus</i>
Great Crested Grebe	<i>Podiceps cristatus</i>
Great tit	<i>Parus major</i>
Greenfinch	<i>Carduelis chloris</i>
Greenshank	<i>Tringa nebularia</i>
Grey Heron	<i>Ardea cinerea</i>
Grey Wagtail	<i>Motacilla cinerea</i>
Herring Gull	<i>Larus argentatus</i>
Hooded Crow	<i>Corvus cornix</i>
House Sparrow	<i>Passer domesticus</i>
Iceland Gull	<i>Larus glaucoides</i>
Kestrel	<i>Falco tinnunculus</i>
Kingfisher	<i>Alcedo atthis</i>
Knot	<i>Calidris canuta</i>
Lapwing	<i>Vanellus vanellus</i>
Lesser Black-backed Gull	<i>Larus fuscus</i>

Lesser Redpoll	<i>Carduelis cabaret</i>
Linnet	<i>Carduelis cannabina</i>
Little egret	<i>Egretta garzetta</i>
Little Grebe	<i>Tachybaptus ruficollis</i>
Long-tailed Tit	<i>Aegithalos caudatus</i>
Magpie	<i>Pica pica</i>
Meadow pipit	<i>Anthus pratensis</i>
Mediterranean Gull	<i>Larus melanocephalus</i>
Moorhen	<i>Gallinula chloropus</i>
Oystercatcher	<i>Haematopus ostralegus</i>
Pheasant	<i>Phasianus colchicus</i>
Pied Wagtail	<i>Motacilla alba yarelli</i>
Red-breasted merganser	<i>Mergus serrator</i>
Redshank	<i>Tringa totanus</i>
Redwing	<i>Turdus iliacus</i>
Reed bunting	<i>Emberiza schoeniclus</i>
Robin	<i>Erithacus rubecula</i>
Rock Pipit	<i>Anthus petrosus</i>
Shelduck	<i>Tadorna tadorna</i>
Short-eared owl	<i>Asio flammeus</i>
Siskin	<i>Carduelis spinus</i>
Skylark	<i>Alauda arvensis</i>
Snipe	<i>Gallinago gallinago</i>
Song Thrush	<i>Turdus philomelos</i>
Starling	<i>Sturnus vulgaris</i>
Stonechat	<i>Saxicola rubicola</i>
Teal	<i>Anas crecca</i>
Turnstone	<i>Arenaria interpres</i>
Water Rail	<i>Rallus aquaticus</i>
Wigeon	<i>Anas penelope</i>
Woodpigeon	<i>Columba palumbus</i>
Wren	<i>Troglodytes troglodytes</i>

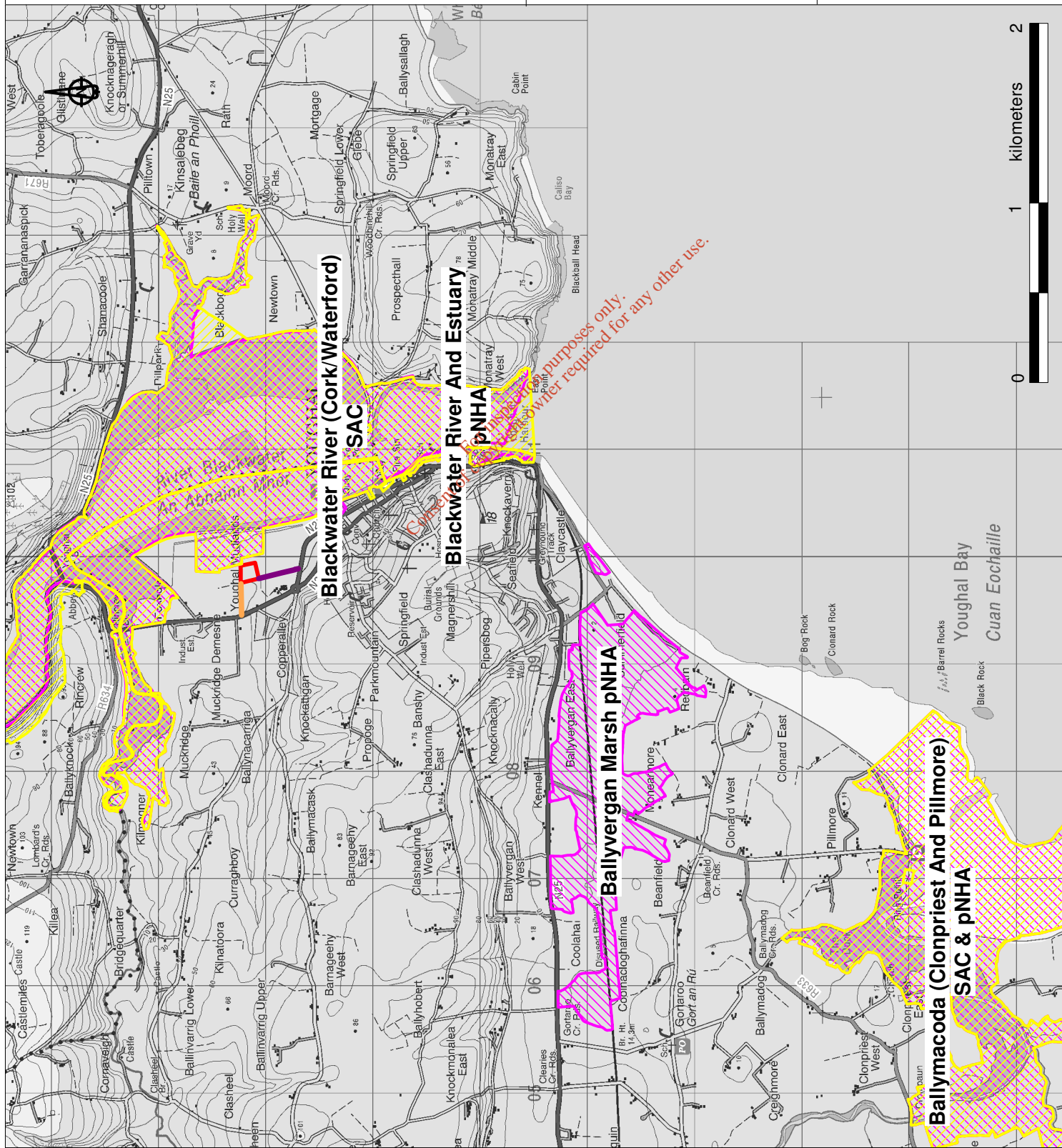
Legend

-  Special Area of Conservation (SAC)
-  Proposed National Heritage Area (pNHA)
-  Site Boundary
-  Proposed Route of Pipeline
-  Proposed Access Road & Route of Pipeline

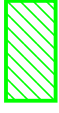



Project Name: Youghal Main Drainage
Project Number: 2794
Figure No: 1.1
Title: Special Areas of Conservation & Natural Heritage Areas
Issue Number: 1
Date: 27.08.09

Mapping in Irish National Grid

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Legend

-  Special Protection Area for Birds (SPA)
-  Site Boundary
-  Proposed Route of Pipeline
-  Proposed Access Road & Route of Pipeline

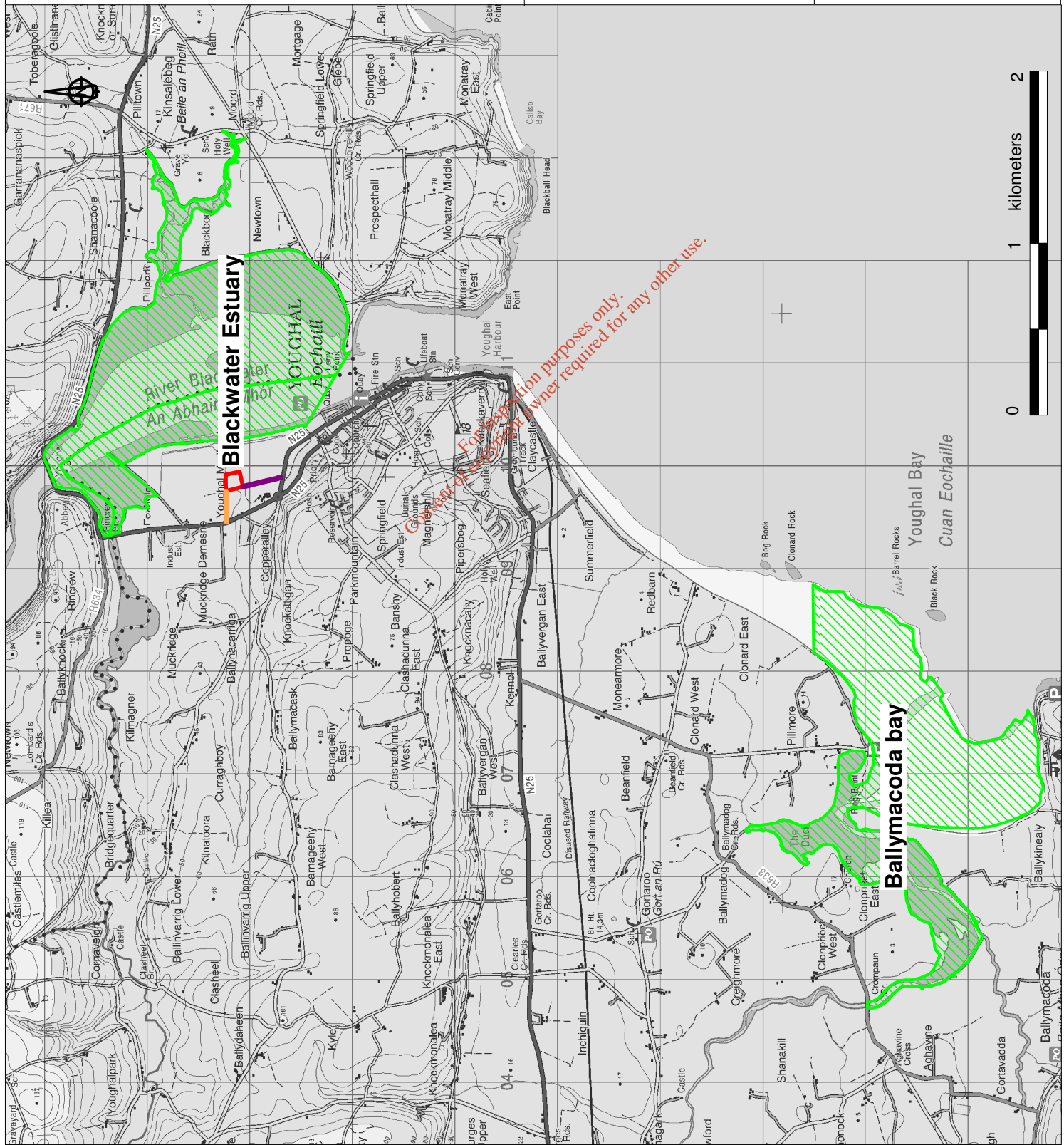
Project Name: Youghal Main Drainage
Project Number: 2794
Figure No: 1.2
Title: Special Protection Areas for Birds
Issue Number: 1
Date: 27.08.09

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






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Habitat map following Fossitt (2000)

-  CW1 Lagoons and saline lakes
-  FS1 Reed and large sedge swamps
-  FW4 Drainage ditch
-  GA1 Improved agricultural grassland
-  GS4 Wet grassland

 Site Boundary

 Proposed Route of Pipeline

 Proposed Access Road & Route of Pipeline

Project Name: Youghal Main Drainage

Project Number: 2794

Figure No: 2.1

Title: Habitat Map

Issue Number: 1

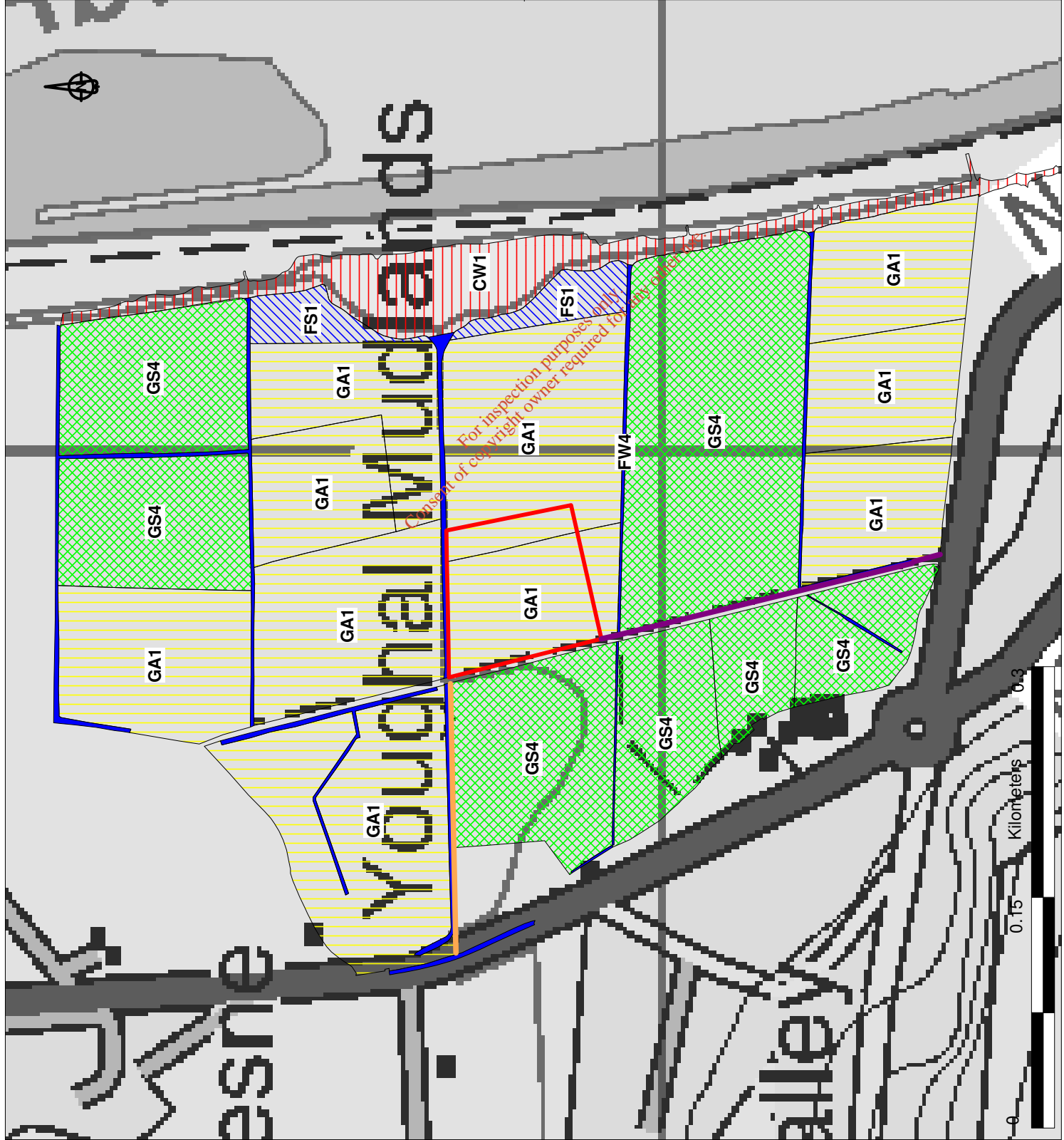
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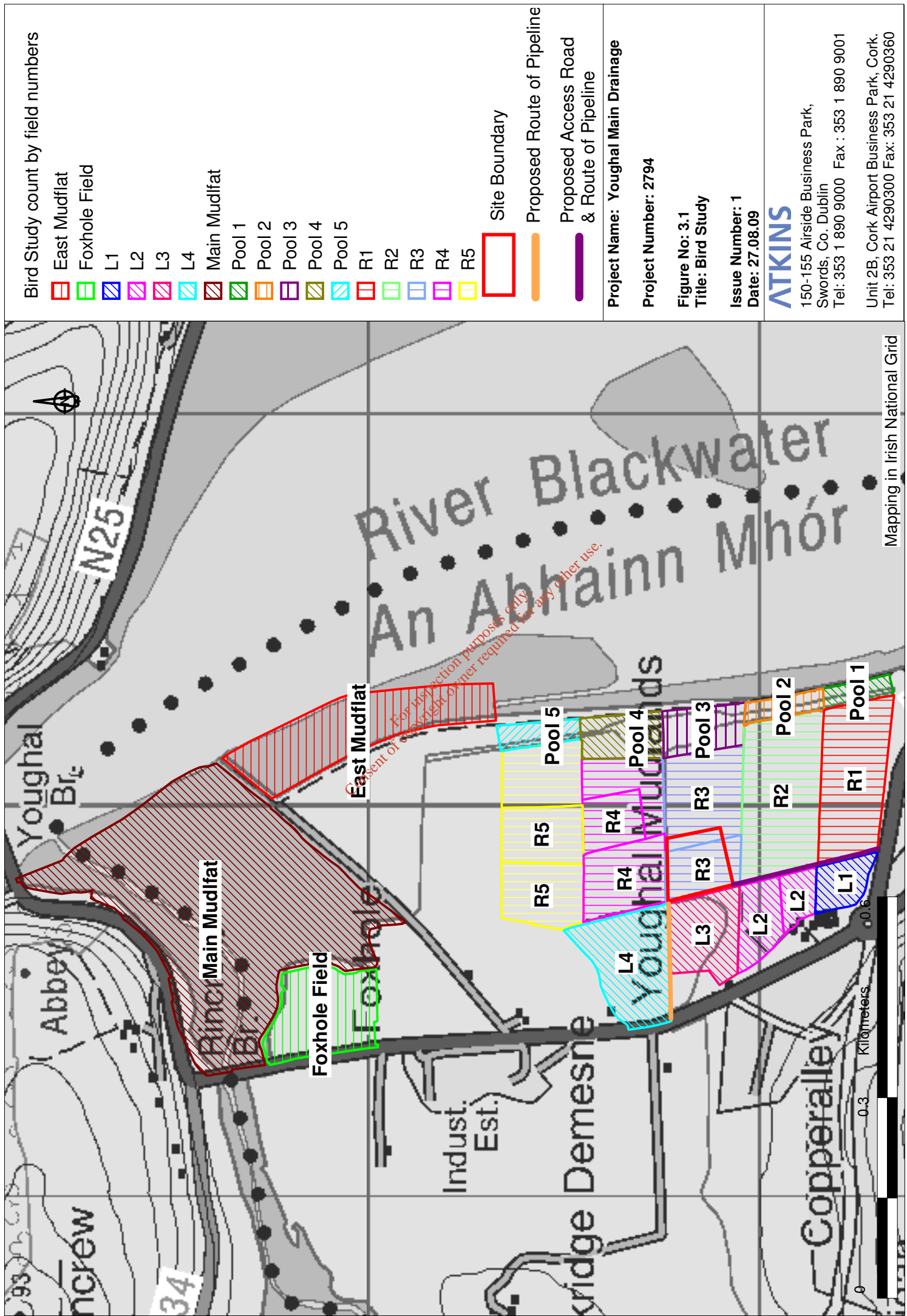
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Bird Study count by field numbers

- East Mudflat
- Foxhole Field
- L1
- L2
- L3
- L4
- Main Mudflat
- Pool 1
- Pool 2
- Pool 3
- Pool 4
- Pool 5
- R1
- R2
- R3
- R4
- R5
- Site Boundary
- Proposed Route of Pipeline
- Proposed Access Road & Route of Pipeline

Project Name: Youghal Main Drainage

Project Number: 2794

Figure No: 3.1

Title: Bird Study

Issue Number: 1

Date: 27.08.09

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