

**Mullinavat Local Area Plan  
Flora and Fauna Survey**

**Kilkenny County Council**

**June 2005**

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## 1 INTRODUCTION

The aim of the survey was to examine the ecological value of the study area of Mullinavat, Co. Kilkenny and to assess the likely significant impacts of implementing the proposed Local Area Plan. The assessment comprised a desk study and field survey.

The desk study comprised the following elements:

- Identification of all designated sites of nature conservation interest within the study area.
- Consultation with the Heritage Division, Dept. of Environment, Heritage and Local Government.
- Consultation with the Southern Regional Fisheries Board.
- Assessment of fisheries/aquatic value of surface water bodies.
- Review of Ordnance Survey maps and aerial photos where available.
- Review of relevant reports and literature for the areas.

The field survey comprised a habitat assessment of the study area. Habitats were mapped according to *A Guide to Habitats in Ireland* (Fossitt, 2000) and in general accordance with *Draft Habitat Survey Guidelines: a Standard Methodology for Habitat Survey and Mapping in Ireland* (Heritage Council, 2002).

Signs of vertebrate fauna were noted if found however a specific search for fauna was not made. The presence of mammals is indicated principally by their signs, such as dwellings, feeding signs or droppings - though direct observations are also occasionally made. Bird species observed during the survey were recorded. Watercourses within the vicinity of the proposed development were identified and an assessment of the fisheries potential was made.

Plant nomenclature follows Webb *et al.*, (1996) for vascular plants excluding grasses, Hubbard (1984) for grasses, Mullarney *et al.*, (1999) for birds and Hayden & Harrington (2000) for mammals. The site visit was conducted on May 4<sup>ed</sup> 2005. The weather conditions were good with long periods of sunshine and no rainfall. There were no seasonal restraints with regards to the survey.

For the purpose of assessing and describing the conservation value of habitats found within the study area, habitats have been categorised into three categories;

- (i) Habitats of high conservation value are those that are designated as being of international, national or regional importance or semi-natural habitats of high biodiversity value.
- (ii) Habitats of moderate conservation value are those which are locally important in maintaining biodiversity.

- (iii) Habitats of low conservation value are those which have a limited or poor contribution to local biodiversity.

## **2 DESCRIPTION OF STUDY AREA**

Mullinavat is situated approximately 34km south of Kilkenny on the N10 (Grid Ref S566 245). The Pollanassa and Blackwater Rivers flow south through the study site and merge with the River Suir cSAC approximately 9km south of the study area. The surrounding land use is predominantly lowland agricultural grassland.

## **3 DESIGNATED AREAS OF NATURE CONSERVATION**

A review of the Heritage Divisions datasets indicates that there are no designations within the boundary of the study area or within the immediate vicinity. The Pollanassa and Blackwater Rivers flow south from the study area and merge with the river Suir (cSAC) approximately 9km to the south.

## **4 CONSULTATION**

The Heritage Division, Dept. of Environment Heritage and Local Government, was consulted with respect to the Local Area Plan implementation (April, 2005). The Pollanassa and Blackwater Rivers merge with the river Suir (cSAC) to the south. There are a number of species protected under the E.U. Habitats Directive (Annex II) associated with both rivers including otter, kingfisher, white-clawed crayfish, dipper, salmon and lamprey. The Heritage Division state that in order to fully protect the habitats and species associated with the rivers it will be important to zone the river corridors for open space and agricultural land.

The Southern Regional Fisheries Board (SRFB) was consulted with respect to the Local Area Plan implementation (May, 2005). The SRFB state that the Pollanassa and Blackwater Rivers are not designated as Salmonid Rivers but they are important salmonid waters which feed into the Suir which is designated Salmonid water (Environmental Officer pers. comm.). In addition they hold significant crayfish populations.

Copy of any correspondence is contained in Appendix 2.

## 5 HABITAT ASSESSMENT

The Pollanassa and Blackwater Rivers merge with the The Suir cSAC (002162), an area of national and international ecological significance. These rivers are of ecological importance in their own right and for the potential impact that they may have on the Suir cSAC. These habitats and the associated bankside woodland vegetation are therefore of **high conservation value** and are described in section 5.1.

Hedgerows within the area are of **moderate conservation value** are described in section 5.2.

Other habitats of **low conservation value** occurring within the Mullinavat area are described in section 5.3. Figure 1 presents all the habitats found within the study area.

### 5.1 Habitats of high conservation value

#### ▪ Lowland/Depositing Rivers (FW2)

The Pollanassa River and Black Water River are important watercourses within the study area. The Blackwater River enters the study area to the north and is largely bounded on both sides by Improved agricultural grassland (GA1) along the length of its course within the study area. The Pollanassa River flows along the western boundary of the study area and joins the Blackwater at the most southern point of the study area. Sections of these rivers are heavily treelined and frequently support species-rich bankside vegetation. Where the rivers are not treelined, the herbaceous bankside vegetation is mostly species-poor and dominated by typical agricultural grasses, nettles (*Urtica dioica*), docks (*Rumex* spp.) and thistles (*Cirsium* spp.). A tributary of the Blackwater flows west and southwest through the village. The banks of this stream are largely treelined by broadleaved species and species-rich groundflora.

#### ▪ Treeline (WL2)

The treelined sections of the Blackwater and the adjoining stream are dominated by ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*) while willow (*Salix* spp.) and alder (*Alnus glutinosa*) occur frequently. Hawthorn (*Crataegus monogyna*) and elder occur abundantly as scrub beneath the treeline canopy. Hazel (*Corylus avellana*), gorse (*Ulex europaeus*) and blackthorn (*Prunus spinosa*) are occasional and holly (*Ilex aquifolium*) occurs rarely. Scrambling and climbing species occur frequently including ivy (*Hedera helix*), bramble (*Rubus fruticosus*) and honeysuckle (*Lonicera periclymenum*). The ground flora typically comprises a diversity of common species including lesser celandine (*Ranunculus ficaria*), primrose (*Primula vulgaris*), yarrow (*Achillea millefolium*), germander speedwell (*Veronica chamaedrys*), thyme-leaved speedwell (*Veronica serpyllifolia*), sorrel (*Rumex acetosa*), bluebell (*Hyacinthoides non-scriptus*), pignut (*Conopodium majus*), sweet vernal

grass (*Anthoxanthum odoratum*), woodrush (*Luzula* spp), mouse-ear chickweed (*Cerastium fontanum*) and bush vetch (*Vicia sepium*).

- **Mixed broadleaved/ conifer woodland (WD2)**

Two areas of Mixed broadleaved/ conifer woodland (WD2) and small patches of gorse scrub occur along the banks of the Blackwater and in-stream islands. One area located to the south of the study area along the eastern bank has a species-rich ground flora indicative of woodland conditions. Herb species included water avens (*Geum riviania*), hart's tongue fern (*Phyllittus schoelopendrium*), lords and ladies (*Arum maculatum*), ransoms (*Allium ursinum*) and primrose (*Primula vulgaris*).

## 5.2 Habitats of moderate conservation value

- **Hedgerows (WL1)**

Individual hedgerows were not mapped for the purposes of this study. Hedgerow habitats are widespread within the area and define the boundary of most field parcels. The dominant species are hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and elder (*Sambucus nigra*). Gorse (*Ulex europaeus*) occurs occasionally. Most are maintained as dense, stock-proof hedges that support semi-mature and mature tree standards of ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*) along their length and a number have drainage ditches at their base. These linear support a high diversity of plant and animal species in the area and are of local ecological value.

## 5.3 Habitats of low conservation value

- **Wet grassland (GS4)**

A very small areas of rush dominated wet grassland occur within the study area. The dominant species include meadow fox-tail (*Alopecurus pratensis*), tufted hair-grass (*Deschampsia caespitosa*), scutch (*Elymus repens*), common rush (*Juncus effusus*) and *Juncus articulatus/acutifloris*. The broadleaved component of the sward is composed of meadowsweet (*Filipendula ulmaria*), marsh cinquefoil (*Potentilla palustris*), greater bird's foot trefoils (*Lotus uliginosus*), meadow buttercup (*Ranunculus acris*), cuckoo-flower (*Cardamine pratensis*) and brooklime (*Veronica beccabunga*).

- **Dry Calcareous and Neutral Grassland (GS1)**

A very small area of this habitat is located within the grounds of a local school. The sward comprises sweet vernal grass (*Anthoxanthum odoratum*), creeping bent (*Agrostis stolonifera*), Yorkshire fog (*Holcus lanatus*) and woodrush (*Luzula* spp.), which occur abundantly. Broadleaved herbs occurred frequently including lesser plantain (*Plantago lanceolata*), lesser stitchwort (*Stellaria graminea*), bird's-foot trefoil (*Lotus corniculatus*), mouse-ear chickweed

(*Cerastium fontanum*), yellow rattle (*Rhinanthus minor*), dandelion (*Taraxacum officinale* agg.), creeping buttercup (*Ranunculus repens*) and white clover (*Trifolium repens*).

▪ **Improved agricultural grassland (GA1)**

The species composition of Improved Agricultural Grassland (GA1) is dominated by grass species including perennial ryegrass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), cock's-foot (*Dactylis glomerata*), meadow-grasses (*Poa* spp.), meadow fox-tail (*Alopecurus pratensis*) and timothy (*Phleum pratensis*). Sedges (*Carex* spp.) and rushes (*Juncus* spp.) occur occasionally. Broadleaved herbs include creeping buttercups (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), ribwort plantain (*Plantago lanceolata*), mouse-ear chickweed (*Cerastium fontanum*), daisy (*Bellis perennis*), creeping cinquefoil (*Potentilla reptans*), willowherb (*Epilobium* sp.), cuckoo-flower (*Cardamine pratensis*), germander speedwell (*Veronica chamaedrys*), sorrel (*Rumex acetosa*), nettle (*Urtica dioica*) and thistles (*Cirsium* spp.).

▪ **Amenity grassland (improved) (GA2)**

The Amenity grasslands comprise a low diversity of grass and herbs, which are similar to the composition of Improved agricultural grassland (GA1). The dominant species are creeping bent (*Agrostis stolonifera*), perennial rye-grass (*Lolium perenne*), meadow-grasses (*Poa* spp), Yorkshire fog (*Holcus lanatus*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), creeping buttercup (*Ranunculus repens*), daisy (*Bellis perennis*), dandelion (*Taraxacum officinale* agg.) and ribwort plantain (*Plantago lanceolata*). The sward is maintained at a low height by frequent mowing suitable for recreational and amenity purposes.

▪ **Buildings and developments (BL3)**

A parcel of land is classified as Buildings and artificial surfaces (BL3) where building has already been initiated on a site. Patches of spoil and bare ground (ED2), Exposed sand gravel or till (ED1) and grassland types are sometimes incorporated into these areas. However, only the dominant habitat type or land use has been mapped in these areas.

## 6 OTHER PROTECTED SPECIES

### Freshwater invertebrates

The Pollanassa and Blackwater Rivers hold significant populations of the white-clawed crayfish (*Austopotamobius pallipes*). This species is listed in the EU Habitats Directive (Annex II and V) and is protected under the Irish Wildlife Act, 1976 and the Wildlife (Amendment) Act, 2000. Its distribution is restricted to calcium-rich waters, primarily from chalk- and limestone-bearing substrata. They usually occur where water quality is good, and are particularly intolerant of heavy metal pollution. They are also sensitive to physical changes to their environment, such as dredging, draining and channelisation.

## Mammals

A number of mammalian species, including bats, badgers and otter are protected under the Wildlife Act 1976, and the Wildlife (Amendment) Act, 2000 and it is therefore an offence to wilfully interfere with or destroy the breeding or resting place of these species, though there are exemptions under the Wildlife Act for road and housing developments and other works. The otter is also listed under Annex II and IV of the E.U. Habitats Directive. All bat species are also protected under the E.U. Habitats Directive (Annex IV).

Bats are likely to roost and forage in the area especially at sites close to water. Favourite roosting areas include built structures such as bridges and buildings, particularly those with concealed crevices and cavities. Mature trees also provide good roosting potential.

No signs of badger (*Meles meles*) were noted during the visit i.e. no setts, latrines, feeding or rooting signs were found. However, a number of mammal paths were observed and the species is likely to occur within the study area. The main areas for sett construction are patches of woodland and along hedgerows.

Ireland is the European stronghold for otters. They are found along most rivers and streams and they are known to be present along the River Suir cSAC.

A number of other mammal species found throughout the Irish agricultural landscapes are also likely to occur within the area including house mouse (*Mus (musculus) domesticus*), brown rat (*Rattus norvegicus*), wood mouse (*Apodemus sylvaticus*), red fox (*Vulpes vulpes*), pygmy shrew (*Sorex minutus*), hedgehog (*Erinaceus europaeus*), rabbits (*Oryctolagus cuniculus*) and the Irish hare (*Lepus timidus hibernicus*).

## Birds

Most bird species are protected under the Wildlife Act (1976), except those regarded as pest species, and those considered as game species (where they may be hunted under conditions). It is an offence to interfere with the breeding place of protected species, though there are exemptions for developments such as road construction and building works. For the generally common species, best practice provision is made to limit season of removal of vegetation and nesting habitat. Provisions of section 46 of the Wildlife (Amendment) Act, 2000 require that disturbance to vegetation is excluded during the period 1st March to 31st August (with exemptions as above).

Several common bird species were observed on site. These included magpie (*Pica pica*), rooks (*Corvus frugilegus*), jackdaw (*Corvus monedula*), woodpigeon (*Columba palumbus*), starlings (*Sturnus vulgaris*), blackbird (*Turdus merula*), wagtail (*Motacilla cinerea*), coal tit (*Parus ater*



*hiberbicus*), robin (*Erithacus rubecula*), chaffinch (*Fringilla coelebs*), house sparrow (*Passer domesticus*) and swallow (*Hirundo rustica*).

### **Amphibians and Reptiles**

The common frog (*Rana temporaria*), the smooth newt (*Triturus vulgaris*) and the common lizard (*Lacerta vivipara*) are all protected species under the Wildlife Act, 1976 and have a widespread distribution in Ireland. Pools, ponds, drainage ditches and wet grasslands provide good habitat for amphibians. The common lizard can be found in a wide range of habitat types. In general it favours open, sunny, undisturbed and well drained habitats (Irish Wildlife Trust, 2005).

## **7 FISHERIES AND WATER QUALITY**

Data obtained from the EPA website ([www.epa.ie/rivermap/data/rivmaptop.html](http://www.epa.ie/rivermap/data/rivmaptop.html)) was examined in relation to the main waterbodies within the study area. The Pollanassa River is considered to be moderately polluted at the test point within the site. Further downstream, where the Pollanassa River merges with the Blackwater, the test point on the Blackwater is considered to be unpolluted for the period 1987 to 1998.

Correspondence with the Southern Regional Fisheries Board has indicated that the Pollanassa and Blackwater Rivers are not designated as Salmonid Rivers but they are important salmonid waters which feed into the Suir, a designated Salmonid water.

Salmonids require a very high quality environment. In terms of the Local Area Plan, the three principle issues of concern are that:

- water quality is not adversely impacted as a consequence of development,
- development does not constitute a threat or barrier to the free movement of fish and fish life, and
- river flows and levels are maintained to ensure that all currently wetted areas remain so and that there is adequate dilution for such effluent and waste water discharges as are made.

## **8 OVERALL EVALUATION**

Though the Pollanassa and Blackwater Rivers are not designated salmonid rivers, they contain important populations of salmonids. Furthermore, the Blackwater merges with the Suir c. 9km downstream of the study area, which is designated for salmonids, white-clawed crayfish, lamprey, kingfisher, dipper and otter. The rivers found on site impact directly on a site of

international and national importance and provide a significant ecological recourse within the locality.

Broadleaved treelines occur extensively along the watercourses on site and the groundflora beneath is generally species-rich. The treeline adjacent to the west bank of the Pollanassa River adjoins semi-natural broadleaved woodland growing on a steep slope adjacent to the west bank of the river. This woodland is outside the study area and was not investigated. The ecological importance of the treeline and bankside vegetation in this area is increased by its connection with the woodland area which effectively increases the overall size of this habitat and its potential to support a diversity of local wildlife.

The extensive network of dense hedgerows is also considered to be of moderate ecological importance. Hedgerows provide habitat for a number of woodland plant species that are otherwise limited to small isolated woodland patches in the landscape. They also provide habitat and commuting routes for animal species.

The wet grassland and the dry calcareous and neutral grasslands found on site are very small and have a low to moderate species-richness for their types. They are therefore considered to be of low conservation value

## 9 POTENTIAL IMPACTS AND RECOMMENDATIONS

### 9.1 Potential Impacts

Impacts on ecology arising from the implementation of the local area plan can be broadly categorised into 3 headings:

(i) **Direct habitat loss:** the removal/destruction of habitats.

(ii) **Indirect habitat changes.** This occurs when a habitat not directly affected through development is altered as a consequence of the development through effects such as disturbance, drainage or pollution. The quality or character of a habitat may change as a result of these activities. Example of potential impacts include disturbance from road improvement may cause animals in adjacent habitats to leave. Alteration of drainage can result in significant habitat changes to adjacent wetland habitats and streams. Construction can have potentially negative impacts through the discharge of contaminated water to adjacent surface waters. This can have knock-on effects on associated flora and fauna, such as the protected white-clawed crayfish. Discharges of cement or the washings of tools and equipment can result in dramatic increases in pH of receiving waters, with lethal effects on fish and fish life.

(iii) **Habitat fragmentation.** This involves the break up of a habitat by a development, resulting in one or more smaller habitat areas. A reduction in the size of a habitat may cause a decline in species numbers where the habitat area becomes too small to support viable populations. Species with large ranges and short-lived species such as migratory insects are particularly susceptible. Species that use linear features such as hedgerows for movement are also highly susceptible to the effects of habitat fragmentation. In this respect, bat species are particularly vulnerable to removal of hedgerows and treelines.

These impacts are relevant to all habitats within the study area but should be regarded as significant for the areas of high conservation value.

## 9.2 Recommendations

### Protected habitats

The Heritage Division state that in order to fully protect the habitats and species associated with the Pollanassa and Blackwater Rivers it will be important to zone the river corridors for open space and agricultural land. It is recommended that the potential impacts listed above are completely avoided in these areas also.

The SRFB suggest that the Local Area Plan recommend that developers make contact with the Regional Fisheries Board when carrying out any works in the vicinity of rivers. Issues of particular importance are as follows:

- It is an offence to interfere with the bed, bank or soil of any river, regardless of size, during the annual close season. This is to afford protection to adult spawning fish and to the young of such fish.
- People conducting construction works adjacent to waters should be made aware of the high pH of cement. Discharges of cement or washings of tools and equipment in waters can result in the dramatic increase of the pH of the receiving waters with lethal effects on fish and fish life.
- The Fisheries Board should be consulted where works such as the laying of pipelines across, including under the river bed level, are being carried out. Developers should be aware that no construction should be carried out which, particularly during low flow situations, might interfere with the free movement of fish and fish life.

It is favourable that wide strips (approx. 2m) of bankside vegetation (e.g. trees, tall grass and herb vegetation) are maintained in the vicinity of watercourses where possible. This will help filter run-off surface water from the surrounding land and help maintain good water quality in the watercourse. The use of herbicides should be avoided near all watercourses.

The Pollanassa and Blackwater Rivers flow south from the study area and merge with the river Suir (cSAC). The Heritage Division state that in order to fully protect the habitats and species associated with the rivers it will be important to zone the river corridors for open space and agricultural land.

### **Protected species**

There are a number of species protected under the E.U. Habitats Directive (Annex II) associated with both rivers including otter, kingfisher, white-clawed crayfish, dipper, salmon and lamprey. Protective measures for these species are the same as those described above for their freshwater habitat.

Mature trees, especially those showing crevices and hollows, should be checked by a bat specialist immediately prior to felling and should be felled during the spring months of March, April, May or autumn months of September, October or November. Large mature trees should be felled carefully, essentially by gradually dismantling the tree. Bats should be removed by a specialist under licence form NPWS. Branches should not be immediately mulched as bats may be in torpor in the branches.

Specialised bat surveys should be carried out on buildings and structures such as bridges with high bat potential which are to be greatly altered or demolished. Surveys may also be required in area where there is likely to be tree and hedgerow removal due to development. This will establish if bats utilise the site and the areas. Seasonal constraints apply and bat surveys are best conducted from late April to late September.

If works are carried out near a badger sett, professional advice should be sought on protecting the sett. If badger setts are found during the development of an area, a suitably qualified specialist should be employed to evacuate and destroy the sett under licence form NPWS. A badger survey should be carried out where areas of hedgerow and woodland patches are to be altered. Seasonal constraints apply and badger surveys should preferably be carried out between November and March.

Works carried out along watercourses should employ a suitably qualified specialist to assess the area for the presence of otters and the potential impacts on the species through any development.

Cutting of hedgerows and site clearance should take place outside the bird-nesting period which starts on March 1<sup>st</sup> and ends 31<sup>st</sup> of August.

Where amphibians or reptiles are found on site, it is standard good practice to ensure protection of breeding sites and to make provision for maintenance of the species if possible.

**General recommendations**

Native trees should be used in planting schemes for new developments. Tree species planted should reflect the local native species composition.

Networks of hedgerows and treelines should be maintained and incorporated into new developments where possible. Maintaining an unbroken linear corridor is importance for animal species movement in the landscape. Hedgerows should be trimmed so that they are wider at the base and narrower at the top and established hedges should be trimmed every second or third year. The use of herbicide should be avoided within 1.5m of hedgerows.

New developments provide an opportunity to establish wildflower areas which improves the amenity and biodiversity value of the site. Seed stocks should be sourced from locally or regionally grown seed where possible.

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