

# Laois - Kilkenny Reinforcement Project Environmental Reports

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## Study Area Constraints Report – Flora and Fauna

**Submission to:** ESB International

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## **1. Introduction**

This section identifies the constraints associated with Flora and Fauna that exist in the project study area defined for the Laois-Kilkenny Reinforcement Project. The project study area extends from its southern boundary about 6km below Ballyragget, Co. Kilkenny to its northern boundary at Stradbally, Co. Laois, and from its eastern boundary about 2km from Athy, Kildare to its western boundary 4km from Durrow, Co. Laois. This report has been prepared by Mark McCorry, Consulting Ecologist, PHD, MIEEM.

This report describes the ecological constraints within the study area. Ecological constraints include areas designated by National Parks and Wildlife Service (NPWS), such as Special Areas of Conservation<sup>1</sup> (SACs), Natural Heritage Areas (NHAs), proposed Natural Heritage Areas (pNHAs) and Nature Reserves (NRs), and known sites with species of conservation interest. Ecological constraints also include wetlands listed as important for waterbirds by Birdwatch Ireland (Crowe 2005) and rivers with important fisheries.

The purpose of this report is to provide an assessment for the lead consultant ESBI, of the constraints found within the overall project study area.

## **2. Methodology and Information Sources**

This report follows guidelines recommended by the EPA (2002, 2003) and IEEM (2006) on the information to be contained in ecological surveys. Habitats are classified according to Fossitt (2000). The report is based on a desk study of the area. Sources of information such as National Parks and Wildlife Service (NPWS), site synopses of sites of conservation interest ([www.npws.ie](http://www.npws.ie)) and records of rare plant and animal species ([www.npws.ie](http://www.npws.ie)) were consulted.

Direct consultation was also carried out with regional NPWS staff regarding the site area. Consultation was also carried out with the Southern Regional Fisheries Board regarding the fisheries in the study area and with Birdwatch Ireland regarding bird counts and Important Bird Areas in the area. Other useful sources of information include Environmental Protection Agency web-based maps of water-courses, land-use and soil-types ([www.epa.ie](http://www.epa.ie)), The National Biodiversity Data Centre web-based distribution maps of species and Coillte web-based maps of forestry ([www.coillte.ie](http://www.coillte.ie)).

Ecological constraints were identified from the above sources and from other information supplied by the consultees.

## **3. Study Area**

The study area extends from south of Ballyragget Co. Kilkenny north to Stradbally, Co. Laois and east of Castlecomer, Co. Kilkenny. This is a rural area and is characterised by farmland

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<sup>1</sup> Note for the purposes of this study, candidate Special Areas of Conservation are considered as Special Areas of Conservation.

interspersed with towns, villages and small settlements that are connected by a complex road network.

The landscape of the study area is mainly characterised by lowlands through which flows the River Nore and some higher ground underlain by the Castlecomer Plateau. The lowlands in the western section are underlain by limestone and are generally quite flat and have fertile soils. This area is dominated by farmland, with a network of fields containing improved grassland and tillage and connected by hedgerows.

The Castlecomer Plateau area contains higher ground extending up to 330m and is underlain by shales and sandstones. This area has an undulating hilly landscape with some low peaks and also has some low-lying valleys that are drained by tributaries of the Nore. This geology and environment means that soils are less fertile with impeded drainage and wet grassland is a much more prominent feature of these hillsides. Conifer plantations managed by Coillte are also much more regularly found in this area. Elevation in the study area ranges from 60m along the River Nore channel to 326m near Fossy Mountain.

The majority of this area is found within the River Nore catchment and the proposed site of the substation at Ballyragget is positioned near to this river. A small section of the study area along the eastern side lies within the River Barrow catchment. The proposed area for the new 400/110kV substation also lies within this catchment.

## **4. Ecological Constraints**

### **4.1 Sites of Conservation Interest**

The study area contains several sites of conservation interest that have been designated by NPWS as candidate Special Areas of Conservation (SAC), Natural Heritage Areas (NHAs) or proposed Natural Heritage Areas (pNHA) (*Table 4.1*). The study area also includes one Nature Reserve that is owned by the state (Timahoe Eskers). Some of these designated areas overlap with each other and some of the pNHAs are sub-sites of the larger SACs. Appendix I contains full site synopses for these designated areas.

Candidate Special Areas of Conservation in the study area protect important habitats such as old Oak woodlands, alluvial woodland, orchid-rich grassland and *Cladium* fen. (Alluvial woodlands, orchid-rich grassland and *Cladium* fen are priority habitats listed on Annex I of the EU Habitats Directive). The extent of these Annex I habitats is particularly restricted in a European context. The SACs in the study area also protect habitats that support rare and notable species of conservation interest such as Nore Freshwater Pearl Mussel (*Margaritifera margaritifera durrovensis*), Otter (*Lutra lutra*), Desmoulin's Whorl Snail (*Vertigo moulinsiana*) and Atlantic Salmon (*Salmo salar*) (examples of Annex II species listed in the EU Habitats Directive that are present in the study area).

Natural Heritage Areas and proposed Natural Heritage Areas protect sites that have national importance and also can contain Annex I habitats and Annex II species such as raised bog. These sites also support habitats such as Ash woodland and species such as Natterer's Bat (*Myotis nattereri*) (Red Data Book Species) that are rare and notable in a national context. Some of the SACs, NHAs and pNHAs also support bird species that have conservation interest, such as Greenland White-fronted Geese (*Anser albifrons*), Whooper Swan (*Cygnus*

*cygnus*), Kingfisher (*Alcedo atthis*), (bird species listed on Annex I of the EU Birds Directive) and other wintering bird species such as Golden Plover (*Pluvialis apricaria*). Some of these sites hold nationally important populations of these species.

The largest and the most ecologically significant designated site in the study area is the River Nore and Barrow SAC. This large SAC includes the main River Nore channel, the majority of the main tributaries of this river (Rivers Gully, Erkina, Owenbeg (Oueg), Glashagal, Ironmills, Gloshna, Dinin) and some adjacent habitats.

Type	NPWS site code	NPWS Name	County	Notes
cSAC	000859	Lisbigney Bog	La	
cSAC	002256	Ballyprior Grassland	La	
cSAC	002162	River Barrow & Nore	La/Kk	
NHA	002382	Coan Bogs	Kk	
pNHA	000860	Clopook Wood	La	
pNHA	002076	River Nore/Abbeyleix Woods	La/Kk	overlaps with SAC 2162
pNHA	000869	Lisbigney Bog	La	overlaps with SAC 859
pNHA	001923	Shanahoe Marsh	La	overlaps with SAC 2162
pNHA	001800	Stradbally Hills	La	
pNHA	000420	The Curragh and Goal River	La	overlaps with SAC 2162
pNHA	000421	Timahoe Esker	La	also a nature reserve
pNHA	000876	Ridge of Portlaoise	La	
pNHA	000836	Inchbeg	Kk	overlaps with SAC 2162
pNHA	000408	Mathel Church, Coolcullen	Kk	
pNHA	000832	Esker Pits	Kk	

**Table 4.1** Sites of conservation interest in the study area.

## 4.2 Important Bird Areas

The Birdlife Important Bird Area Programme has identified 140 sites in Ireland that are important for the long-term viability of naturally occurring bird populations (Birdlife International 2001). The Important Bird Area (IBA) designation is a non-statutory designation, and therefore offers no legal conservation protection in Ireland. However, many of these sites overlap with Special Protection Areas for birds and sites in the RAMSAR programme and indicate sites of specific conservation value. There is only one IBA close to the study area. This IBA is known as the Upper Barrow flood-plain (IE 108) and is listed in Crowe (2005) as River Barrow (Cloney). It extends from Monesterevin to Athy on the north Kildare/Laois border, adjacent to the study area. This area attracts wintering Bewick's

(*Cygnus columbarius*) and Whooper Swans (141) (peak count) as well as Mute Swans (*Cygnus olor*) (42).

Crowe (2005) lists several important sites for waterbirds in the study area (*Table 4.3*). Crushell (2010) examined wetland bird usage at these sites at several dates in spring 2010. These sites have attracted various wetland species of conservation interest including species listed on Annex I of the EU Birds Directive and other species listed on the Amber and Red lists of Birds of Conservation Concern in Ireland (BoCCI) (Lynas *et al.* 2007) (*Table 4.2*).

The most important wetlands have been designated as pNHAs for their wetland bird value and have been described in the above section.

The study area also contains a number of small lakes and ponds. Some of these additional sites were surveyed by Crushell (2010) and attracted small numbers of wetland bird species such as Mallard (*Anas platyrhynchos*), Wigeon (*Anas penelope*), Mute Swan, Moorhen (*Gallinula chloropus*), Coot (*Fulica atra*) and some gull species.

Species	EU Birds	BoCCI	1% National Threshold
Berwick's Swan ( <i>Cygnus berwickii</i> )	Annex I	Red list	20
Whooper Swan ( <i>Cygnus cygnus</i> )	Annex I	Amber list	130
Greenland White-fronted Goose <i>Anser albifrons flavirostris</i> )	Annex I	Amber list	110
Golden Plover ( <i>Pluvialis apricaria</i> )	Annex I	Red list	1700
Curlew ( <i>Numenius arquata</i> )		Red list	550
Lapwing ( <i>Vanellus vanellus</i> )		Red list	2100

**Table 4.2.** Wintering bird species of conservation interest that use sites within the study area.

Site	County	Grid Ref	Notes
Avonmore Ponds, Ballyragget	Kilkenny	S432719	Inside study area - Small constructed wetland and ponds close to River Nore (Crowe 2005)
Inchbeg	Kilkenny	S440658	Wetland area along River Nore (SAC, pNHA) – outside - south of study area (Crowe 2005)
River Nore floodplain at Grange	Kilkenny	S442698	Inside study area – south of Ballyraggett – part of SAC (Crushell 2010)

Site	County	Grid Ref	Notes
Grantstown Lake	Laois	S334800	Adjacent to study area in Grantstown Nature Reserve (Crowe 2005)
River Nore	Laois	S402888	In study area. Adjacent to Shanahoe Marsh pNHA (Crowe 2005)
Durrow Curragh	Laois	S3778	In study area (part of Curragh and Goul River pNHA) (Crowe 2005)
Ballycolla	Laois	S386827	In study area – floodplain of Guilly River (Crowe 2005)
River Barrow (Cloney)	Laois	S641009	Outside study area (IBA IE108) (Crowe 2005)
Lisbigney Pond	Laois	S447799	Small lake (Crushell 2010)
Mass Lough (Ballinakill)	Laois	S473808	Inside study area – small lake (Crushell 2010)
Ballinakill Lake (Ballinakill)	Laois	S467810	Inside study area – small lake (Crushell 2010)
Coolderry (Ballycolla)	Laois	S382810	Inside study area – small wetland (Crushell 2010)

**Table 4.3.** *Summary of important wetlands for birds in and adjacent to the survey area listed by Crowe (2005) and counted during the Irish Wetlands Bird Survey. Additional sites surveyed by Crushell (2010) also listed.*

Durrow Curragh in Co. Laois is listed as a site of national importance for waders and wildfowl (this site is called The Curragh and Goul River pNHA by NPWS). The site is important for Bewick's (national importance) (47) (peak count) and Whooper Swans (108) (Annex I Birds Directive species). It formerly supported significant numbers of Greenland White-Fronted Geese but numbers have dwindled in recent years (peak of 17 counted). Other species recorded at the site with peak counts include Wigeon (1000), Mallard (50), Golden Plover (3000), Lapwing (*Vanellus vanellus*) (500), Curlew (*Numenius arquata*) (100) and Black-headed Gull (*Larus ridibundus*) (50).

Avonmore Ponds near Ballyragget have supported nationally important numbers of Golden Plover and Lapwing in the 1980's but numbers have declined considerably. Species recorded at this site with peak counts include Whooper Swan (1), Golden Plover (1400), Lapwing (280), Black-tailed Godwit (*Limosa limosa*) (48) and Black-headed Gull (53) (Crowe 2005).

Initial results for the study area (Crushell 2010) show that the overall area has a relatively low importance to wintering wetland birds, including for species of particular conservation interest. Sites like Durrow Curragh, Coolderry (Ballycolla) and Avonmore Ponds, Ballyragget

still attract some wetland birds but overall numbers seem to have declined. A significant population of Whooper Swans (close to the threshold to be considered of national interest) was recorded moving between Durrow Curragh and Coolderry (Ballycolla). Small numbers of Whooper Swans were also recorded at Avonmore Ponds. Small populations of Golden Plover were also recorded at several of the wetlands in the study area (Coolderry-Ballycolla, Durrow Curragh). Other species recorded included Mallard, Teal (*Anas crecca*), Lapwing, Little Egret (*Egretta garzetta*), Curlew, Mute Swan and Wigeon.

NPWS Regional staff have also indicated that there are several other wetland sites in the River Nore floodplain in Co. Laois within the study area that are important for waders and wildfowl and remain undesignated. However, the exact location of these areas remains unknown.

### **4.3 Fisheries and Protected Aquatic Species**

The study area contains several important rivers, of which the River Nore is the most significant. The majority of the study area is within the Nore catchment. There are several important tributaries of the Nore that flow through the study area, Rivers Gully, Erkina, Owenbeg (Oueg), Glashagal, Ironmills, Gloshna, Dinin and other streams, of which Rivers Gully, Erkina, Owenbeg and Dinin are major tributaries. The major sections of all these tributaries are also designated in part as part of the River Barrow and Nore SAC.

Tributaries of the River Barrow in the study area include Timahoe River, Douglas River, Foyle River and minor streams.

Most of the freshwater streams and rivers in the Nore and Barrow catchment are important nursery waters for salmonid species such as Atlantic Salmon (Annex II species) and Brown Trout (*Salmo trutta*). The conservation and fisheries value of the main rivers in the area are summarised in *Table 4.4*. Consultations with the Southern Regional Fisheries Board have also highlighted the importance of smaller streams to fisheries, which is sometimes overlooked.

#### ***River Nore***

This river rises in Co. Tipperary and flows in south Laois and Kilkenny where it eventually meets the Barrow River. It is tidal below Inistioge in Co. Kilkenny. About 26km of the main channel is found within the study area. It is designated as a Salmonid River under the EU Freshwater Fish Directive and the section within the study area is mainly a grilse fishery. Further south in the Thomastown section there are good runs of spring Atlantic Salmon. Recently Salmon fishing is said to be patchy with the main fishery confined to the section below where the Dinin River meets the Nore (outside the study area).

The upper reaches of the Nore are important for spawning. The River Nore also has good stocks of Brown Trout in patches. Salmonid fish occur in all the main watercourses in the study area. The Nore also has coarse species such as Pike (*Esox lucius*). Coarse fish species such as Pike, Perch (*Perca fluviatilis*) and Rudd (*Scardinius erythrophthalmus*) colonise the larger channels. Minnow (*Phoxinus phoxinus*), Gudgeon (*Gobio gobio*), Eel (*Anguilla anguilla*) and Lamprey species are widespread.

The river also contains several other aquatic species listed on Annex II of the EU Habitats Directive including White-clawed Crayfish (*Astacus pallipes*), Brook Lamprey (*Lampetra*

*planeri*), Sea Lamprey (*Petromyzon marinus*), River Lamprey (*Lampetra fluviatilis*) and Twaite Shad (*Alosa fallax fallax*). Sea Lamprey usually spawn downstream of Thomastown but occasionally they spawn as far upstream as Ballyragget. Unspecified ammocoetes (lamprey larvae) have been observed in the upper and middle reaches of the Nore main channel and in the lower reaches of the Dinin River (Kurz and Costello 1998). There are records of White-clawed Crayfish from within the study area (Reynolds, 1998). Twaite Shad have been recorded in the Nore as far as Inistioge (Doherty *et al.* 2004).

The study area also contains the only site in the world for the hardwater form of the Freshwater Pearl Mussel (*M. m. durrovensis*). This is an Annex II species requiring strict protection. This species has evolved in a stretch of the river that flows over limestone, so the water is hard, in comparison to other rivers containing Freshwater Pearl Mussel. Its distribution is currently limited to a stretch of the River Nore between Poormansbridge (upstream of Abbeyleix - northern limit) and Ballyragget. The numbers of *M. durrovensis* in the River Nore have fallen to very low levels in recent years and the population is threatened with extinction. Other parts of the Nore and its tributaries contain the more common form of the Freshwater Pearl Mussel (*Margaritifera margaritifera*), which is found in streams and rivers flowing over more acid bedrocks. Both species are only known from the Nore above Ballyragget.

The River Barrow and River Nore SAC also contains Otter, a legally protected species listed in Annex II of the EU Habitats Directive. Bailey & Rochford (2006) recorded Otter at several sites in Laois and Kilkenny (Nore, Owenbeg, Dinin Rivers). Otter are likely to be widespread along most rivers in the study area. The Kingfisher is an Annex I bird species (EU Birds Directive) that is also likely to occur along most of the main rivers.

Name	Conservation/fisheries value	Rating
<b>Nore catchment</b>		
Nore	SAC Designated Salmonid River. Atlantic salmon. Good stocks of brown trout. Important Salmonid nursery. Brook and sea lamprey common. Records of white-clawed crayfish and freshwater pearl mussel. Only known site in world for <i>M. m. durrovensis</i> .	A
Erkina	SAC. Good stocks of brown trout. Important Salmonid nursery. Records of white-clawed crayfish and freshwater pearl mussel. Brook lamprey	A
Goul	SAC Tributary of Erkina. Good stocks of brown trout. Important Salmonid nursery. Records of white-clawed crayfish	A
Gully	SAC Good stocks of brown trout. Important Salmonid nursery. Records of white-clawed crayfish	A
Owenbeg (Ovbeg)	SAC Good stocks of brown trout. Important Salmonid nursery. Lamprey (unspec.) in the lower reaches.	A
Ironmills	SAC Tributary of Owenbeg Good stocks of brown trout. Important Salmonid nursery.	A
Glashagal	Salmonid nursery.	C
Gloreen	Salmonid nursery.	C



Name	Conservation/fisheries value	Rating
Dinin	SAC Important for salmonids. Lamprey (unspec.) in the lower reaches.	A
Gloshia	SAC Tributary of Dinin River. Good stocks of brown trout. Important Salmonid nursery.	A
Kileen	Tributary of Dinin River. Salmonid nursery.	C
Clogh	Tributary of Dinin River. Salmonid nursery.	C
Moyadd Stream	Tributary of Dinin River. Salmonid nursery.	C
Monavea	Tributary of Dinin River. Salmonid nursery.	C
Mayo	Tributary of Dinin River. Salmonid nursery.	C
<b>Barrow Catchment</b>		
Timahoe	Salmonid nursery.	C
Timogue	Salmonid nursery.	C
Douglas River	Salmonid nursery.	C
Foyle	Salmonid nursery.	C
Blacktrench Stream	Salmonid nursery.	C
Fuer	Salmonid nursery.	C
Fusilioge	Salmonid nursery.	C

**Table 4.4.** Summary of conservation/fisheries value of rivers in the study area. Sources include the Southern Regional Fisheries Board, Doherty *et al.* 2004, Igoe *et al.* 2004, Kurz & Costello 1999, Moorkens 1999, Reynolds 1988. See Appendix II for explanation of rating.

#### 4.4 Other Rare and Notable Species

In addition to the rare and notable species of conservation interest described above, there are a number of records of other rare plant and animal species or species with restricted distributions (listed in *Table 4.5*) within the study area. Some of these records are associated with sites of conservation interest or rivers in the study area. Several records of rare plant species such as Yellow Marsh Saxifrage (*Saxifraga hirculus*) are quite old and have not been verified in 100 years.

There are a small number of rare and scarce plant species occurring within the study area that are listed on the NPWS database ([www.npws.ie](http://www.npws.ie)) (*Table 4.3*). Opposite-leaved Pondweed (*Groenlandia densa*) is the only species recorded recently and has been recorded along the River Goul. This species is listed in the Red Data Book (Curtis & McGough 1988) and is also protected by the Flora Protection Order.

Mammal species listed in the Red Data Book (Marnell *et al.* 2009) that are present in the study area include Badger (*Meles meles*), Stoat (*Mustela erminea*), Hedgehog (*Erinaceus europaeus*) and Red Squirrel (*Sciurus vulgaris*) ([www.npws.ie](http://www.npws.ie)). While the NPWS database (*Table 4.3*) does have several records of some notable species such as Red Squirrel and Otter (also Annex II), these species are likely to be much more widespread than indicated

from this list. Other Red Data mammal species known to be found in the area include Pine Marten (*Martes martes*) and Irish Hare (*Lepus timidus hibernicus*) (Cullenagh Mountain) (MacGowan 2009). These mammal species are legally protected under the Wildlife (Amendment) Act 2000. Fallow Deer (*Dama dama*) and the less common Sika Deer (*Cervus nippon*) (Natura 2003) are also present in the area. Most of these mammal species are likely to be widespread in the study area.

Several Bat species are also found in the study area. Harrington and Harrington (2000) report that Brown Long-eared Bat (*Plecotus auritus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Common Pipistrelle (*Pipistrellus pipistrellus*), Leisler's Bat (*Nyctalus leisler*), Daubenton's Bat (*Myotis daubentonii*), Natterer's Bat and Whiskered Bat are found in the Laois/Kilkenny area. All species of bat occurring in Ireland are protected under the EU Habitats Directive, listed under Annex IV. Daubenton's Bat and Brown Long-eared Bat have been recorded near Ballyragget ([www.npws.ie](http://www.npws.ie)). Natura (2003) identified Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat and Daubenton's Bat along the route of the N7/N8 motorway, the route of which is adjacent to west side of the study area. Daubenton's Bat has been found distributed through Laois and Kilkenny recently and are associated with waterways (Aughney *et al.* 2009).

Bats are widespread in Ireland and can generally be found in areas where suitable roost sites (trees, disused buildings, old stone walls and bridges, or caves) occur in close proximity to areas of suitable foraging habitat (woodland, scrub, hedgerows, wetland areas and open water). Several Bat species are likely to be present in the study area where there is suitable habitat.

Species	Common Name	Location	Ten KM Square	Full grid	Recorded date	Listed in Annex II	Listed in Annex IV	Listed in Annex V	Red Data Book
<i>Groenlandia densa</i>	Opposite-leaved Pondweed	River Goul Ballyboodin Bridge	S37	S3677	04/08/1991				V
<i>Groenlandia densa</i>	Opposite-leaved Pondweed	River Goul Ballyboodin Bridge	S37	S3677	1975				V
<i>Saxifraga hirculus</i>	Yellow Marsh Saxifrage		S39		1872	II	IV		E
<i>Erinaceus europaeus</i>	Hedgehog	Lisdowney (E of Ballyragget)	S47		05/06/1991				II
<i>Lutra lutra</i>	Otter	Lisdowney (E of Ballyragget)	S47		05/06/1991	II	IV		II
<i>Mustela erminea</i>	Stoat	Lisdowney (E of Ballyragget)	S47	S4070	05/06/1991				
<i>Mustela erminea</i>	Stoat	Lisdowney (E of Ballyragget)	S47		05/06/1991				
<i>Myotis daubentonii</i>	Daubenton's bat	Lisdowney (E of Ballyragget)	S47		05/06/1991		IV		II
<i>Plecotus auritus</i>	Brown long-eared bat	Lisdowney (E of Ballyragget)	S47		05/06/1991		IV		II
<i>Sciurus vulgaris</i>	Red Squirrel	Lisdowney (E of Ballyragget)	S47		05/06/1991				

Species	Common Name	Location	Ten KM Square	Full grid	Recorded date	Listed in Annex II	Listed in Annex IV	Listed in Annex V	Red Data Book
<i>Sorex minutus</i>	Pygmy Shrew	Lisdowney (E of Ballyragget)	S47		05/06/1991				
<i>Galeopsis angustifolia</i>	Red Hemp Nettle	Abbeyleix	S48	S4080	1898				V
<i>Lutra lutra</i>	Otter	Moyne (NW of Durrow)	S57		05/04/1990	II	IV		II
<i>Mustela erminea</i>	Stoat	Moyne (NW of Durrow)	S57	S5070	05/04/1990				
<i>Mustela erminea</i>	Stoat	Moyne (NW of Durrow)	S57		05/04/1990				
<i>Sciurus vulgaris</i>	Red Squirrel	Moyne (NW of Durrow)	S57		05/04/1990				
<i>Sorex minutus</i>	Pygmy Shrew	Moyne (NW of Durrow)	S57		05/04/1990				
<i>Acinos arvensis</i>	Basil Thyme	Wolfhill	S58	S5080	1945				V
<i>Pseudorchis albida</i>	Small-white Orchid	Cullenagh to Stradbally	S59	S5090	1806				V
<i>Erinaceus europaeus</i>	Hedgehog	Coan (SE of Castlecomer)	S67		10/13/91				II
<i>Lutra lutra</i>	Otter	Coan (SE of Castlecomer)	S67		10/13/91	II	IV		II
<i>Mustela erminea</i>	Stoat	Coan (SE of Castlecomer)	S67		10/13/91				
<i>Sciurus vulgaris</i>	Red Squirrel	Coan (SE of Castlecomer)	S67		10/13/91				
<i>Galeopsis angustifolia</i>	Red Hemp Nettle	Portlaoise	S49	S4080	1933			1	V
<i>Acinos arvensis</i>	Basil Thyme	Portlaoise	S49	S4080	1896			1	V
<i>Viola hirta</i>	Hairy Violet	Unknown	S68	S6080					V

**Table 4.5.** List of species of conservation interest found in the study area (taken from NPWS database [www.npws.ie](http://www.npws.ie)).

## 5. Conclusions

The study area contains a range of different ecological constraints. There are 3 SACs, 1 NHA and 10 pNHAs within the study area, which contain many habitats and species of conservation interest (*Table 4.1*). Other sites of importance include those containing rare plant species, wetlands of importance for wintering waterbirds and bat roosts.

The most significant and largest zone of constraint is along the River Nore, associated lowlands and its tributaries, where the river and associated habitats such as woodlands and wetlands are protected by several different designations. Several protected aquatic species of particular conservation interest including the Freshwater Pearl Mussel are found in this part of the River Nore catchment. The study area is dissected by this large SAC that also takes in the network of the major rivers in the River Nore catchment. These rivers also have significant fisheries value for salmonids. The Southern Regional Fisheries Board also highlighted the importance of smaller streams and headwaters (which may not be included within designated areas) to fisheries such as salmonids, as they provide spawning and

nursery areas. Wintering wetland birds of conservation interest use some known wetland sites along this zone and are likely to move around some particular sites and also use other lowland 'calow-type' sites along the River Nore and associated tributaries, particularly during flooding.

Other smaller sites designated for nature conservation are scattered around the study area.

It should be noted that many notable and rare species of conservation importance are not just confined to designated areas or sites of importance. For example, species such as Pine Marten, Badger, Hare and some bat species are likely to be widely distributed throughout the study area and are likely to be present where ever there is suitable habitat. Other rare and notable species that have large territories such as Kingfisher (Annex I species, EU Birds Directive) and Otter (Annex II species, EU Habitats Directive) have been regularly recorded outside designated areas and along some relatively minor riparian corridors. Most recording squares (10km grid squares, National Biodiversity Data Centre – [www.nbdc.ie](http://www.nbdc.ie)) in the study area have Kingfisher and/or Otter records. Species such as Hen Harrier (*Circus cyaneus*) and Peregrine (*Falco peregrinus*) (Annex I species, EU Birds Directive) are occasionally recorded within the study area and non-breeding birds may move over very large areas, larger than the study area. NPWS Regional staff also raised various issues related to protected species that are likely to occupy the study area and use habitats within the study area that may not be part of designated sites. These issues include impacts on wetland bird species including waders and wildfowl that use and move around various (non-designated) wetland sites in Co. Laois.

The proposed extension to the existing substation at Ballyragget is located adjacent to the River Nore and this section of the river is highly sensitive and of considerable ecological importance because of the presence of the Nore Freshwater Pearl Mussel and other species of conservation importance.

### **5.1 Desktop survey constraints**

It is important to note that NPWS state that their datasets may be incomplete so that absence of records in a particular area should not be taken as an indicator of low biodiversity. Other useful datasets that may have valuable information are not generally available or distribution data is only available at a low resolution (e.g. 10km grid squares – National Biodiversity Data Centres). Useful data such as records of particular rare and protected species at particular sites may be available in a variety of other publications such as EIS's and ecological surveys within the study area, but these records are also difficult to access.

This report describes the major ecological constraints within the study area based on available desk-top data. However, field-based ecological surveys during the EIS stage are likely to provide more detailed data on the ecological value of some sites along a particular route.

## **Appendix I**

### ***River Barrow & Nore SAC (NPWS site code 0002162)***

This large SAC includes the Rivers Nore and Barrow and many of the major tributaries of these rivers, as well as habitats of scientific importance found adjacent to the rivers. The site extends from headwaters in the Slieve Bloom Mountains to the tidal section and estuary in Waterford and contains many good examples of Annex I habitats as well as containing rare plant and animal species.

The section of SAC within the study area includes a corridor along the River Nore and major tributaries such as the Dinin River. Other sites within the SAC include Abbeyleix Wood, Shanahoe marsh, The Curragh and Goul Marsh (and these sites are described as individual pNHAs).

Annex I habitats found within the study area include Alluvial Forest (Abbeyleix Woods), Eutrophic tall herb vegetation and old Oak Woodlands (Abbeyleix Woods).

Red Data Book species found in the study area include Opposite-leaved Pondweed (*Groenlandia densa*), Autumn Crocus (*Colchicum autumnale*), Nettle-leaved Bellflower (*Campanula trachelium*), Bird Cherry (*Prunus padus*), Blue Fleabane (*Erigeron acer*) and Broomrape (*Orobanche hederæ*). Other rare species include Thin-spiked Wood-sedge (*Carex strigosa*), Field Garlic (*Allium oleraceum*) and Summer Snowflake (*Leucojum aestivum*).

The section of SAC within the study area is very important for the presence of a number of EU Habitats Directive Annex II animal species including Freshwater Pearl Mussel (*Margaritifera margaritifera* and *M. m. durrovensis*), Freshwater Crayfish (*Austropotamobius pallipes*), Salmon (*Salmo salar*), Twaite Shad (*Alosa fallax fallax*), three Lamprey species - Sea (*Petromyzon marinus*), Brook (*Lampetra planeri*) and River (*Lampetra fluviatilis*) and Otter (*Lutra lutra*). This is the only site in the world for the hard water form of the Pearl Mussel (*M. m. durrovensis*). Other Red Data Book species that are found in the study area include Daubenton's Bat (*Myotis daubentonii*), Badger (*Meles meles*), Irish Hare (*Lepus timidus hibernicus*) and Frog (*Rana temporaria*).

The section of SAC within the study area is of ornithological importance for a number of E.U. Birds Directive Annex I species including Greenland White-fronted Goose, Whooper Swan, Bewick's Swan, Bartailed Godwit, Peregrine and Kingfisher. Nationally important numbers of Golden Plover and Bar-tailed Godwit are found during the winter. Wintering flocks of migratory birds are seen in Shanahoe Marsh and the Curragh and Goul Marsh.

***Lisbigney Bog SAC & pNHA (NPWS site code 000869)***

This small diverse wetland is located 5 km north-east of Durrow in Co. Laois. It contains fen communities (*Cladium* fen, a priority habitat that is listed on Annex I of the E.U. Habitats Directive) some raised bog, Reedbeds and other habitats. It is criss-crossed by streams. The rare snail Desmoulin's whorl snail was recorded at the site in 1998. This species is a glacial relict with a fragmented European population that is considered to be vulnerable due to loss of habitat, in particular, drainage to wetlands. For this reason it is listed on Annex II of the E.U. Habitats Directive. The site also contains suitable habitat for wintering waders.

***Ballyprior Grassland SAC (NPWS site code 0002256)***

This site is located 3 km south of Stradbally in County Laois. The site contains orchid-rich calcareous grassland, a priority habitat listed on Annex I of the EU Habitats Directive. The old grassland habitat is of high quality and the site is important due to the loss of similar habitat in surrounding areas. The site has an exceptionally rich mycoflora which is a good indication of grassland quality (in terms of continuity, lack of disturbance and low nutrient status).

***Coan Bogs NHA (NPWS Site code 002382)***

This small NHA is located several kilometres east of Castlecomer. The site consists of two small patches of upland blanket bog. This site, although small, is undisturbed and shows good characteristics of blanket bog with some raised bog indicator species. This site is of importance due to its location on the Castlecomer Plateau and is the only protected blanket bog in this area.

***Clopook Wood pNHA (NPWS site code 000860)***

This small site is located several kilometres south of Stradbally, Co. Laois. A small Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*) woodland occurs on the steep, rocky slopes of a prominent limestone hill, which is a typical example of Tertiary karst limestone landscape in Laois. The ground flora contains a good diversity of calcicole species and a rich bryophyte flora has also been recorded. Clopook is reported to contain many long, narrow passages that have archaeological importance but at present many of the openings have been blocked off or are overgrown.

***River Nore/Abbeyleix Woods pNHA (NPWS site code 0002076)***

This pNHA is located along the River Nore and extends from Shanahoe in Co. Laois to Ballyragget in Co. Kilkenny. This site overlaps with the River Barrow and Nore SAC, although the pNHA designation is more extensive and takes in more of the woodland around Abbeyleix. It contains many features of scientific importance. Between the Abbeyleix estate and Attagh Bridge, the River Nore contains a large population of the Irish Freshwater Pearl Mussel (*Margaritifera durrovensis*). This mussel is only found in the Nore river catchment and because of its rarity, it is of international importance. Several species listed in the Red Data Book, Summer Snowflake (*Leucojum aestivum*) and Meadow Saffron (*Colchicum*

*autumnale*), also a legally protected Irish Red Data Book species (Flora Protection Order 1989), are locally common in damp meadows and on the river banks in the pNHA.

Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland and is comparable to only two other sites in Ireland. Historical records show that an area called Park Hill has been continuously wooded since the sixteenth century and has the most complete written record of any woodland in the country. It contains several woodland habitats including a large area of WN2 type woodland dominated by Pedunculate Oak and some alluvial woodland along the river. Large parts of the woodland have been replanted with conifers in the past and have been disturbed, although some of this habitat is currently being restored as part of the Native Woodland Scheme.

The Nettle-Leaved Bellflower (*Campanula trachelium*), a legally protected species which only occurs in Ireland along the River Nore and River Barrow, and a rare moss *Leucodon sciuroides* have also been recorded here. This woodland also contains several other rare species such as Bird Cherry (*Prunus padus*), a threatened species which is listed in the Red Data Book, Small Water Pepper (*Polygonum minus*) which is very rare in the southern half of the country; and Rough Horsetail (*Equisetum hyemale*) which mainly occurs in the east and is also rather rare. Six rare lichens, indicators of ancient woodland, are found including *Lobaria laetevirens* and *L. pulmonaria*.

#### ***Shanahoe Marsh pNHA (NPWS site code 0001923)***

This pNHA is located several kilometres north-east of Abbeyleix and also overlaps with the River Barrow and Nore SAC. Shanahoe Marsh is an area of wet grassland, hay meadow and freshwater marsh. Other habitats of interest within the site are Gorse (*Ulex europaeus*) scrub, river, drainage ditches and a small area of fen. The main ecological interest of this site is that it is a major roost and feeding ground for a small flock of Greenland White-fronted Geese during the winter, a species listed on Annex I of the EU Birds Directive.

#### ***Stradbally Hills pNHA (NPWS site code 0001800)***

This site is located on several limestone hills located 2 km east and south of Stradbally, Co. Laois. The site is divided into four separate sections. These hills contain broad-leaved woodland that can mainly be classified as WN2 Oak-Ash-Hazel type woodland and includes some mixed woodland and conifer plantation. These woodlands have a well-developed structure and good flora in places and parts are currently being managed as part of the Native Woodland Scheme. Woodlands with mature Pedunculate Oak on mineral soil are rare in Laois.

#### ***The Curragh and Goul River pNHA (NPWS site code 000420)***

This site is located along the floodplain of the Erkina River and overlaps with the River Barrow and Nore SAC. It is mainly a stretch of flat wet meadowland through which flows the River Erkina and its tributary, River Goul. The substratum is predominantly calcareous

peat on which has developed diverse wet grassland communities. Some fen and freshwater marsh habitat is also present. The rare and legally protected Pondweed (*Groelandia densa*) (Flora Protection Order 1989) has been recorded in extensive beds of marsh plants along the River Goul. The meadowland is an important winter feeding site for Greenland White-fronted Geese, a species listed on Annex I of the EU Birds Directive.

***Timahoe Esker (NPWS site code 000421)***

This pNHA (also a NNR) is divided into four sections and is located around Timahoe Village in Co. Laois. Eskers are raised ridges of sand and gravel that were deposited under the ice mass, during the last period of glaciation. The esker ridges at this site support broad-leaved woodland dominated by multi-stemmed Hazel (*Corylus avellana*). The Timahoe Eskers are important as among the best of the few intact eskers remaining in Co. Laois.

***Ridge of Portlaoise (NPWS site code 000876)***

The ridge of Portlaoise is an esker that runs through the east side of Portlaoise. It contains some mature broad-leaved woodland and species-rich calcareous grassland. Some gravel pits in the pNHA contain the rare Red Data Book plant species Blue Fleabane (*Erigeron acer*). Nettle-leaved Bellflower (*Campanula trachelium*) is another rare species that has been recorded on the site. This species is legally protected under the Flora Protection Order.

***Inchbeg (NPWS Site Code 000836)***

Inchbeg is a pNHA located in the floodplain of the River Nore several kilometres south of Ballyragget. This site overlaps with the larger River Barrow and Nore SAC. The main habitat of interest here is lowland wet grassland, with some ponds, streams, freshwater marshes, semi-natural deciduous woodland, hedges and scrub. Much of the site is under water during the winter and it provides a habitat for bird species not commonly seen in this area. Golden Plover and Lapwing occur in large numbers; Whooper Swans and Bewick's Swans also use the site in the winter. This site is primarily of ornithological interest because of its value to birdlife. It is also of local importance for its flora because it represents one of the few places in this area which has not been intensively farmed and thus the vegetation still remains relatively undisturbed.

***Mathel Church, Coolcullen (NPWS Site code 000408)***

This small pNHA is a nursery colony of Natterer's Bats located in the loft of the Church of Ireland, Mothel, Coolcullen, Co. Kilkenny. Over 100 bats were counted at the site in 1993 making it one of the biggest in the country. As the national population of Natterer's bats is estimated to be only several thousand, this nursery roost is of national importance and also of international importance.

***Esker Pits (NPWS Site code 000832)***

This small pNHA is located near near Gragara, County Kilkenny. It is a lightly worked gravel quarry supporting a range of vegetation types, most notably areas of species-rich calcareous



grassland. Of particular significance is the presence of a large population of a rare Red Data Book plant species, Blue Fleabane (*Erigeron acer*).

## Appendix II

Table 4.5. Site evaluation scheme is taken from NRA (2006).

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

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