APPROPRIATE ASSESSMENT SCREENING REPORT IN RELATION TO ESSENTIAL REPAIR WORKS AT BOLEYBEG BRIDGE NORTH AND LISBIGNEY BRIDGE, CO. LAOIS

Article 6 Screening Report
River Barrow and River Nore SAC (Site Code 002162)

Boleybeg Bridge North

Prepared for
LAOIS COUNTY COUNCIL

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1. INTRODUCTION

Kilkenny County Council contracted me to survey Boleybeg Bridge North spanning the Owenbeg River, 6.5 km east of Abbeyleix, and Lisbigney Bridge, 1 km west of Ballinakill, Co. Laois. Boleybeg Bridge spans the Owenbeg River which is a component river of River Barrow and River Nore SAC (Site code 002162). Lisbigney Bridge spans a small watercourse (Ballymaddock Stream) situated approximately 2.5 km upstream of River Barrow and River Nore SAC and River Nore SPA.

The proposed works must be subjected to the Appropriate Assessment Screening process to assess if works on either of these bridges could have the potential to impact negatively on this protected site.

Ecological assessments were conducted at both bridges to include surveys for the presence of bats, birds, otter, lamprey, white-clawed-crayfish, freshwater pearl mussel as appropriate.

2. PROTECTED SITES

In accordance with the Guidance of Planning Authorities, it is suggested that Appropriate Assessment screening takes into consideration the likely effects on any protected site (SACs or SPAs) within 15km of the proposed works site. A 15 km zone of impact was assessed for the proposed bridge repair works.

Appropriate Assessment screening takes into consideration the likely effects on any protected site (SAC or SPA) within 15km of the proposed works site.

There are 4 protected sites in the European NATURA network within 15 km of Boleybeg Bridge North Bridge. These sites are listed in Table 1.

There are 4 protected sites in the European NATURA network within 15 km of Lisbigney Bridge. These sites are listed in Table 1.

BRIDGE	PROTECTED SITE	SITE CODE	DISTANCE FROM SITE
Boleybeg Bridge North	River Barrow and River Nore SAC	002162	Bridge spans SAC
	River Nore SPA	004233	c. 8.66 km downstream to south west (7.16km SLD)
	Lisbigney Bog SAC	000869	6.92km to south west

	Ballyprior Grassland SAC	002256	11.57 km to north east
Lisbigney Bridge	River Barrow and River Nore SAC	002162	2.46 km downstream to south
	River Nore SPA	004233	2.64 km downstream to south
	Lisbigney Bog SAC	000869	1.28km to south west
	Cullahill Mountain SAC	000831	14.33 km to south west

Table 1 – Protected Natura 2000 sites within 15km of Boleybeg Bridge North and Lisbigney Bridge

Only River Barrow and River Nore SAC and River Nore SPA will be considered further in detail as they are the only sites with hydrological links to the work sites at Boleybeg Bridge North and Lisbigney Bridge.

SITE	SITE CODE	DISTANCE FROM SITE	QUALIFYING FEATURES (Qualifying Interests or Special Conservation Interests)	SITE DESCRIPTION AND VULNERABILITY/THREATS
River Barrow and River Nore SAC	002162	Boleybeg Bridge North spans the site Lisbigney Bridge is situated 2.46 km upstream of SAC boundary	[1130] Estuaries [1140] Tidal Mudflats and Sandflats [1310] *Salicornia* Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [3260] Floating River Vegetation [4030] Dry Heath [6430] Hydrophilous Tall Herb Communities [7220] Petrifying Springs* [91A0] Old Oak Woodlands [91E0] Alluvial Forests* [1016] Desmoulin's Whorl snail (*Vertigo moulinsiana*) [1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1092] White-clawed Crayfish	River Barrow and River Nore SAC (Site Code 002162) consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow, and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. The site is very important for the presence of a number of E.U. Habitats Directive Annex II animal species including Freshwater Pearl Mussel (both *Margaritifera margaritifera* and *M. m. durrovensis*), White-clawed Crayfish, Salmon, Twaite Shad, three lamprey species – Sea Lamprey, Brook Lamprey and River Lamprey, the tiny whorl snail *Vertigo moulinsiana* and Otter. This is the only site in the world for the hard water form of the Freshwater Pearl Mussel, *M. m. durrovensis,* and one of only a handful of spawning grounds in the country for the Twaite Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning. The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat, Badger, Irish Hare and Common Frog. The rare Red Data Book fish species Smelt (*Osmerus eperlanus*) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater

			(*Austropotamobius pallipes*) [1095] Sea Lamprey (*Petromyzon marinus*) [1096] Brook Lamprey (*Lampetra planeri*) [1099] River Lamprey (*Lampetra fluviatilis*) [1103] Twaite Shad (*Alosa fallax*) [1106] Atlantic Salmon (*Salmo salar*) [1355] Otter (*Lutra lutra*) [1421] Killarney Fern (*Trichomanes speciosum*) [1990] Nore Freshwater Pearl Mussel (*Margaritifera durrovensis*)	mussel species, *Anodonta anatina* and *A. cygnea*. Three rare invertebrates have been recorded in alluvial woodland at Murphy's of the River. These are: *Neoascia obliqua* (Order Diptera: Syrphidae), *Tetanocera freyi* (Order Diptera: Sciomyzidae) and *Dictya umbrarum* (Order Diptera: Sciomyzidae). The rare invertebrate, *Mitostoma chrysomelas* (Order Arachnida), occurs in the old oak woodland at Abbeyleix and only two other sites in the country. Two flies (Order Diptera) *Chrysogaster virescens* and *Hybomitra muhlfeldi* also occur at this woodland. The site 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, Bar-tailed 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, both in Co. Laois, and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country. The old oak woodland at Abbeyleix has a typical bird fauna including Jay, Long-eared Owl and Raven. The reedbed at Woodstown supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail. <u>Threats</u> Land use at the site consists mainly of agricultural activities – mostly intensive in nature and principally grazing and silage production. Slurry is spread over much of the area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of E.U. Habitats Directive Annex II animal species within the site. 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 main rivers and their

				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. There is net fishing in the estuary and a mussel bed also. Other recreational activities such as boating, golfing and walking, particularly along the Barrow towpath, are also popular. There is a golf course on the banks of the Nore at Mount Juliet and GAA pitches on the banks at Inistioge and Thomastown. There are active and disused sand and gravel pits throughout the site. Several industrial developments which discharge into the river border the site. New Ross is an important shipping port. Shipping to and from Waterford and Belview ports also passes through the estuary. 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, over-grazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel (*Prunus laurocerasus*) and Rhododendron (*Rhododendron ponticum*). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein. Overall, the site 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. Furthermore it is of high conservation value for the populations of bird species

				that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows and the population of the hard water form of the Freshwater Pearl Mussel, which is limited to a 10 km stretch of the Nore, add further interest to this site.
River Nore SPA	004233	Boleybeg Bridge North is 8.66 km upstream of SPA Lisbigney Bridge is 2.6 km upstream of SPA	Kingfisher	**River Nore SPA** The River Nore SPA is a long, linear site that includes the following river sections: the River Nore from the bridge at Townparks, (north-west of Borris in Ossory) to Coolnamuck (approximately 3 km south of Inistioge) in Co. Kilkenny; the Delour River from its junction with the River Nore to Derrynaseera bridge (west of Castletown) in Co. Laois; the Erkina River from its junction with the River Nore at Durrow Mills to Boston Bridge in Co. Laois; a 1.5 km stretch of the River Goul upstream of its junction with the Erkina River; the Kings River from its junction with the River Nore to a bridge at Mill Island, Co. Kilkenny. The site includes the river channel and marginal vegetation. The site is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the following species: **Kingfisher.** The River Nore SPA is designated for its breeding population of kingfishers *Alcedo atthis.*

River Barrow and River Nore SAC

The Habitats Directive protects important habitats and species within Special Areas of Conservation (SACs). It lists certain habitats (Annex I) and species (Annex II) for special protection. A second European Directive – the Birds Directive – seeks to protect birds of conservation importance by the designation of Special Protection Areas (SPA's).

European and national legislation places an obligation on Ireland to maintain at favourable conservation status sites designated as Special Areas of Conservation and Special Protection Areas.
Favourable conservation status of a habitat is achieved when:

- Its natural range, and the area it covers within that range, is stable or increasing, and
- The ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- Population data on the species concerned indicate that it is maintaining itself, and
- The natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and
- There is, and probably will continue to be a sufficiently large habitat to maintain its populations on a long-term basis.

River Nore SPA

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

Bird Code	Common Name	Scientific Name
A229	Kingfisher	Alcedo atthis

This report assesses the likely significant effects of the proposed rehabilitation works at Boleybeg Bridge North and Lisbigney Bridge on River Barrow and River Nore SAC (Site Code 002162). Article 6 assessments are required under the Habitat's Directive (92/43/EEC) where a project may have significant effects on a Natura 2000 site (a European compilation of Special Areas of Conservation - SAC's and Special Protection Areas – SPAs - for birds).

Currently a detailed conservation management plan has not been prepared by National Parks and Wildlife Service for River Barrow and River Nore SAC. A detailed document outlining the Conservation Objectives for the site was prepared in July 2011. A Site Synopsis for River Barrow and River Nore SAC was prepared in 2024.
A conservation management plan has not been prepared for River Nore SPA. A Conservation Objectives document was prepared in July 2024. A site synopsis was prepared in 2011.
These synopses are included in the Appendix of this report.

3. APPROPRIATE ASSESSMENT

This screening report examines whether the proposed rehabilitation works at Boleybeg Bridge North and Lisbigney Bridge will have a significant impact on River Barrow and River Nore SAC (Site Code 002162) or River Nore SPA (Site code 004233).

Appropriate Assessment

The assessment of a proposed project likely to affect a Natura 2000 site is a 4-stage process.

The relevant guidance documents for Appropriate Assessment set out a staged process for carrying out Appropriate Assessment, the first of which is referred to as screening.

Stage 1 - The screening stage identifies the likely impacts on Natura 2000 sites, if any, which would arise from a proposed plan or project, either alone, or in combination with other plans and projects, and further considers whether these impacts are likely to be significant.

If it can be concluded during the screening exercise that there is no likelihood of significant impacts occurring on any Natura 2000 sites, as a result of the proposed development either alone or in combination with other plans and projects, then there is no requirement to proceed to subsequent stages of Appropriate Assessment.

If it is not possible to conclusively rule out significant impacts on Natura 2000 sites, the assessment should proceed to Stage 2: Appropriate Assessment for which a Natura Impact Statement (NIS) must be prepared.

Stage 3 of the process is Assessment of Alternative Solutions which examines alternative ways of achieving the objectives of the plan or project that avoid adverse impacts on the integrity of the Natura 2000 site.

Stage 4 Assessment where Adverse Impacts Remain is an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

This report is comprised of the ecological impact assessment and testing required under the provisions of Article 6(3) by means of the first stage of Appropriate Assessment – **Stage 1 - the screening process**.

EU Guidance states:

"*This stage examines the likely effects of a project or plan, either alone or in combination with other projects or plans, upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant*".

This report also provides the information required for the Competent Authority to complete the Appropriate Assessment (Stage 2) should this be necessary in the opinion of the Competent Authority. Screening has been undertaken in accordance with the European Commission's Guidance on Appropriate Assessment (European Commission, 2001) which comprises the following:

1. Description of the Plan
2. Identification of Natura 2000 Sites potentially affected by the Plan
3. Identification and Description of Individual and Cumulative impacts likely to result from the Plan

4. Assessment of the Significance of the impacts identified on the Conservation Objectives of the site(s)
5. Exclusion of sites where it can be objectively concluded that there will be no significant impacts on conservation objectives

Following the guidelines set out by NPWS (2009), Appropriate Assessment Screening (Phase 1 - Appropriate Assessment) is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) of the EU Habitats Directive –

(1) Is the plan or project directly connected to or necessary for the management of the site?
(2) Is the plan or project, alone or in combination with other such plans or projects likely to have significant negative effects on a Natura 2000 site(s) in view of the conservation objectives of that site(s)?

The proposed rehabilitation works do not comply with the first screening test as the proposed development is not directly connected to, or necessary for the management of any Natura 2000 site. This screening exercise will therefore inform the Appropriate Assessment process in determining whether the proposed development, alone or in combination with other plans or projects, is likely to have significant effects on the Natura 2000 sites within the study area.

If effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overtly complicated, then the Appropriate Assessment process must proceed to Stage 2 Appropriate Assessment and the preparation of a Natura Impact Statement (NIS).

4. DESCRIPTION OF PROJECT

Kilkenny County Council propose to conduct essential rehabilitation works to Boleybeg Bridge North and Lisbigney Bridge. Works are planned to commence in 2025.

Boleybeg Bridge North

In the Principal Inspection and Structural Assessment Report Boleybeg Bridge North was given an Eirspan rating of 4 ie Damage is critical and it is necessary to execute repair works at once. Significant circumferential and diagonal parallel cracks and significant spandrel wall bulging was recorded to the two eastern arches. There are serious concerns with the stability of the structure. A 3-tonne weight limit restriction has been implemented at the bridge.

<u>Remedial Works</u>

- Remove all vegetation from the structure;
- Carry out masonry repairs to the arch barrels;
- Carry out repointing to the piers, cutwaters and abutments;
- Remove all fill material from above the arches;
- Take down and rebuild bulged sections of spandrel wall;
- Take down and rebuild damaged sections of parapet wall;

- Install tie-bars and pattress plates;
- Replace all fill material with a weak concrete;
- Relay the carriageway and seal at the edges;
- Consideration should be given to some silt removal from the overflow arches.

Lisbigney Bridge

In the Principal Inspection and Structural Assessment Report Lisbigney Bridge was given an Eirspan rating of 4 ie Damage is critical and it is necessary to execute repair works at once. Significant transverse and parallel longitudinal cracks and associated dropped stonework were noted to the north end of the arch barrel. A section of the north facing stones has collapsed. A large section of the north parapet has also collapsed. As an interim safety measure barriers have been installed at road level to prevent vehicles parking or traversing the north end of the bridge.

Remedial Works

- Remove all vegetation and trees from the structure
- Carry out masonry repairs to the arch barrel, this will include crack stitching and pressure pointing
- Carry out repointing to the abutments and spandrel wall
- Rebuild missing section of north parapet wall
- Install rubbing strips and flexi-bollards

5. SITE VISIT

Bridge Name: Boleybeg Bridge North
Watercourse: Owenbeg River
Irish Grid Reference: 52.908279, -7.2574512
Species Recorded: 2 Daubentons bats in separate crevices under arches, Otter
Survey Date: 19/03/25
Recommendations: A derogation licence is required from NPWS to allow works to the bridge. Resurvey the bridge immediately prior to works commencing.

Methodology: The bridge was surveyed for bats and birds using a high-powered torch (Ledlenser Rechargeable System). All crevices in the bridge arches and walls were thoroughly examined for roosting bats and nesting birds. Deep crevices were examined with a flexible endoscope. Otters were surveyed by searching for otter spraints deposited in prominent places on rocks/bridge ledges, otter tracks in mud or trails/slides on the river banks.

It was known from consultation with National Parks and Wildlife Service (NPWS) maps and National Biodiversity Data Centre (NBDC) maps that there is a population of Freshwater Pearl Mussels in the River Nore *Margaritifera durrovensis.* This population of Freshwater Pearl Mussels lies upstream of Kilkenny City. The Nore Freshwater Peal Mussel Margaritifera durrovensis are located in a 15.5km stretch of River Nore between

Poorman's Bridge S407 859 and Lismaine Bridge S442 660. The majority of the population is upstream of Ballyragget.
There are records of White-clawed Crayfish *Austropotamobius pallipes* from (NBDC maps).
In the field the presence of White-clawed crayfish can be confirmed by their presence in otter spraints or else direct sightings of the animals.

Boleybeg Bridge North was surveyed on 19th March 2025. It is a four span masonry arch bridge. It carries the L7797 over the Owenbeg River 6.5 km east of Abbeyleix in Co. Laois. The Owenbeg becomes the Ouveg River approximately 8km downstream of Boleybeg Bridge North. The Ouveg River joins the River Nore approximately 8.5 km further downstream. The confluence is 2.8 km north west of Ballyragget.
The arches are labelled 1-4 from west to each for the purpose of this report.
Arch 1 was dry on the date of the survey. There is heavy ivy growth under the arch. An old wren's nest was recorded in ivy under the arch. Otter spraints were recorded on a rock under the arch and otter prints were recorded in the sand
Arch 2 – watercourse flowing under this arch. A single Daubenton's bat was recorded roosting in a crevice midway under the arch. This crevice and two other crevices were marked for retention for bats.
Arch 3 – severe cracks running around the arch barrel within 1-2m of the downstream face. Single Daubenton's bat recorded in a crevice c. 1m in from the upstream face.
Arch 4 – dry arch. Marked one crevice for retention c. 1 m in from upstream face.

It was known from consultation with National Biodiversity Centre Data maps that Freshwater crayfish had not been previously recorded at Boleybeg Bridge North. However, they have been recorded approximately 4 km downstream in the Owenbeg River. No Freshwater Crayfish were recorded on the day of the survey but it is likely that there are present in the vicinity of the bridge.
It is also known from consultation with National Biodiversity Data Centre maps and maps contained in the Conservation Objectives document for River Barrow and River Nore SAC that there is a very important population of Nore Freshwater pearl Mussels in the River Nore. These mussels occur in the River Nore at the confluence of the Owenbeg River and the River Nore. Boleybeg Bridge is located approximately 16.5 km upstream of this population of mussels.

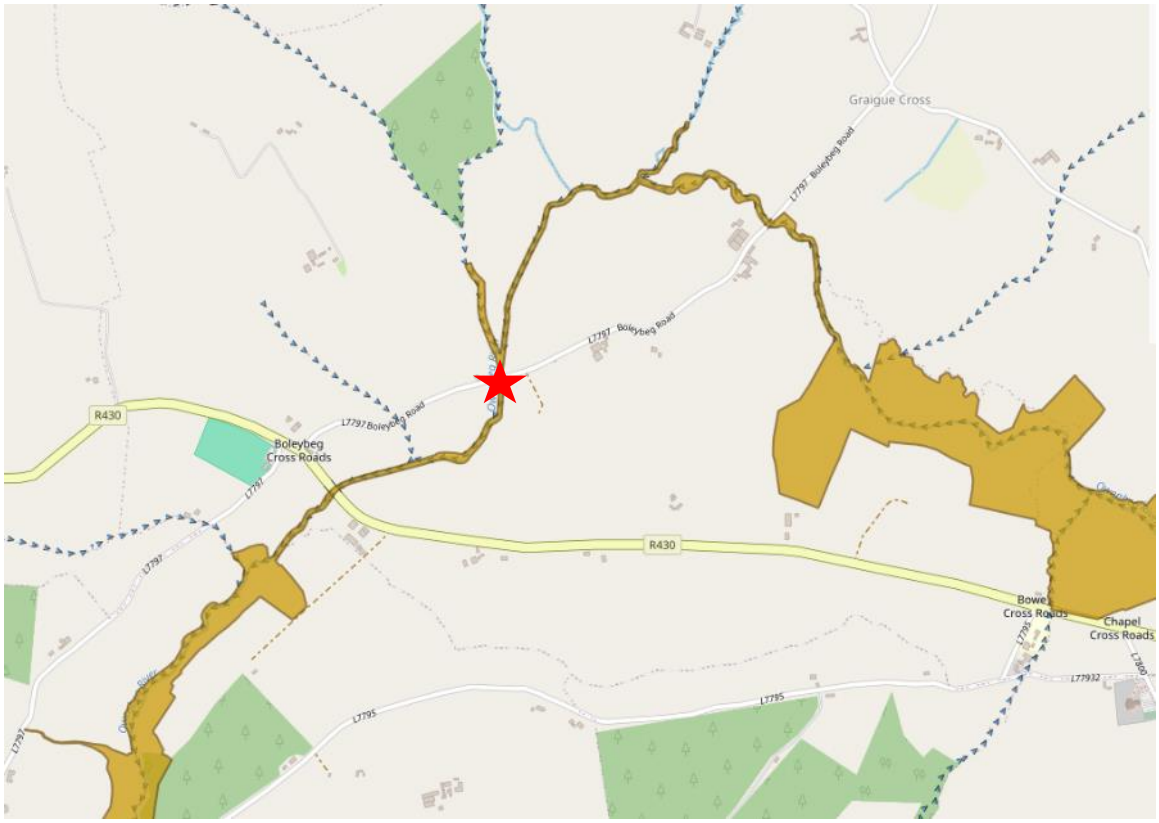

Figure 1 – showing location of Boleybeg Bridge North spanning River Barrow and River Nore SAC (brown shading)

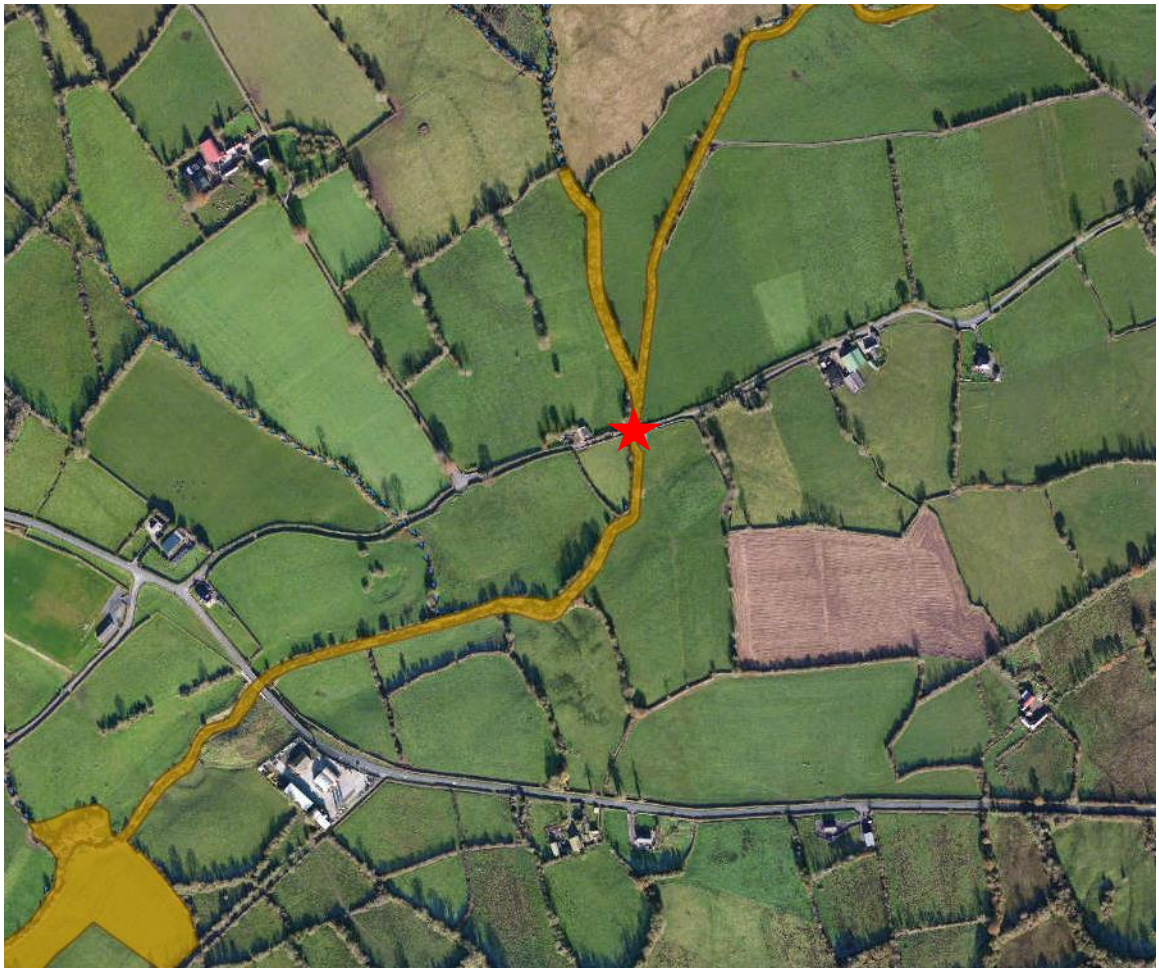

Figure 2 – aerial photo showing position of Boleybeg Bridge North in relation to River Barrow and Nore SAC (brown shading)

Photographs

Photo 1 – looking east across Boleybeg Bridge North

Photo 2 – Owenbeg River upstream of Boleybeg Bridge

Photo 3 – Owenbeg River downstream of Bolybeg Bridge North

Photo 4 – view across downstream face from eastern side of bridge

Photo 5 - section of parapet wall replaced with concrete blocks on eastern downstream side of bridge

Photo 6 – crack running around arch barrel of Arch 4

Photo 7 – fissure running under arch 4

Photo 8 – upstream elevation of bridge from eastern river bank

Photo 9 – damaged section of bridge parapet and spandrel wall above Arch 4 on upstream side

Photo 10 – view under Arch 3 showing large fissure running around arch barrel

Photo 11 - close up of fissure under Arch 3

Photo 12 – ivy growth at downstream face of Arch 2

Photo 13 – heavy ivy growth under Arch 1. Old bird's nest in ivy

Photo 14 – otter prints in mud under Arch 1

Photo 15 – three crevices marked for retention under Arch. A single Daubenton's bat was recorded in the crevice indicated approx. mid way under arch

Bridge Name: Lisbigney Bridge
Watercourse: Ballymaddock Stream
Irish Grid Reference: 52.874240, -7.3227345
Species Recorded: Brown long-eared bat
Survey Date: 19/03/25
Recommendations: Lisbigney Bridge is situated approximately 8.35km upstream of a very important population of Nore Freshwater pearl mussels. It is essential that NPWS are contacted in relation to the contractor's method statement prior to works commencing.
A derogation licence will be required from NPWS to allow works to be conducted on this bridge which has been confirmed as a bat roosting site.
Lisbigney Bridge should be resurveyed for bats immediately prior to works commencing.

Lisbigney Bridge was surveyed on 19th March 2025. It is a single span masonry bridge. It is situated 1km west of Ballinakill in Co. Laois and carries the L5735 local road over the Ballymaddock stream.
The stream flows in a southerly direction under the arch and joins the Disheen River approximately 1.44km downstream. The Disheen River joins the Ouveg River a further 1.28km downstream.
The Ouveg River joins the River Nore 5.65km downstream. The total distance from Lisbigney Bridge to the confluence of the River Nore is 8.35km. Nore Freshwater pearl mussels are present in the River Nore at this location.
A single Brown long-eared bat was recorded in a crevice mid way under the arch. This crevice and x other crevices were marked with red paint for retention.
There are no records of Freshwater crayfish at Lisbigney Bridge but there are records downstream from the Ouveg River.
Otter spraints were recorded on rocks downstream of the bridge

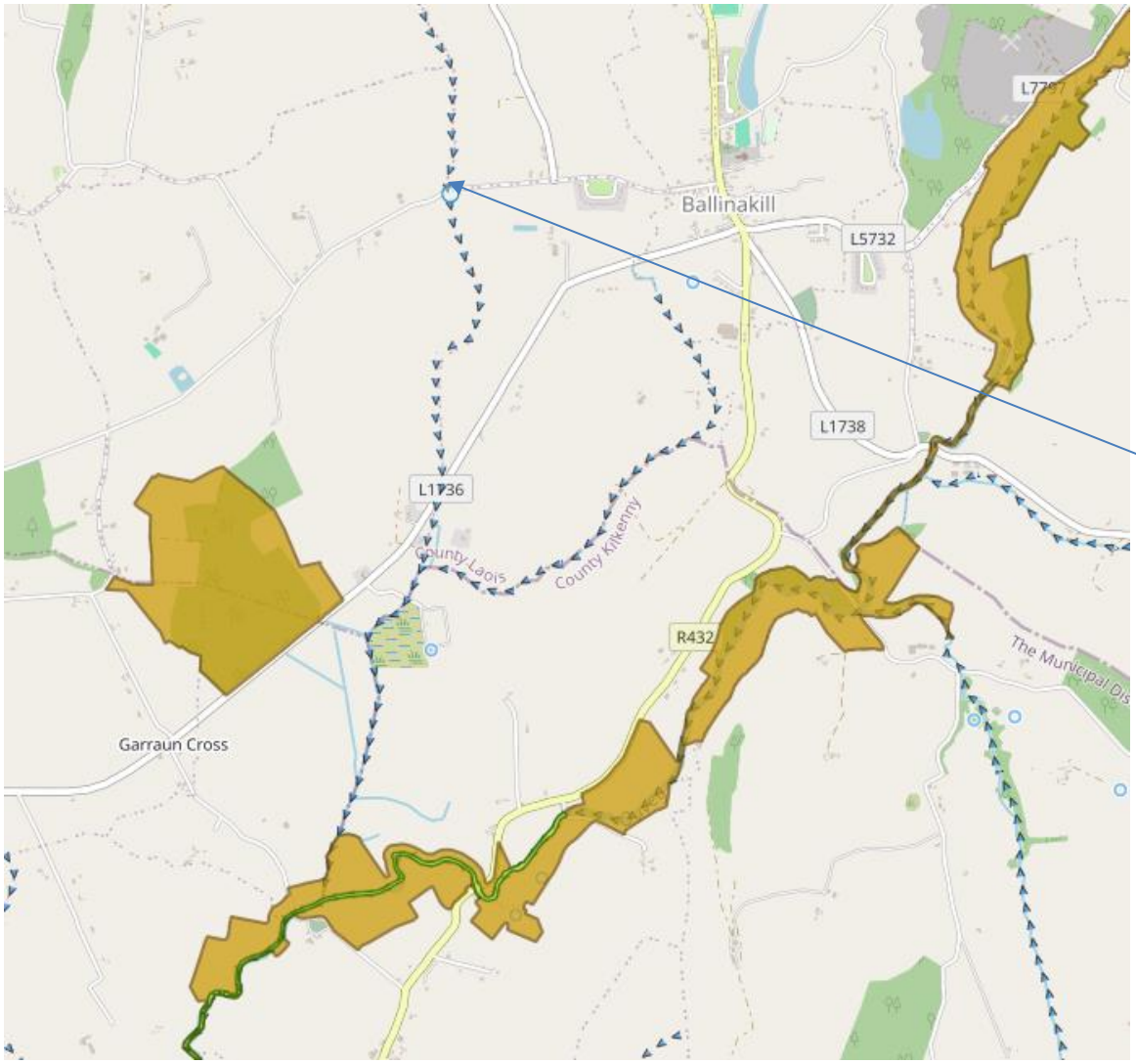

Figure 3 – showing location of Lisbigney Bridge in relation to River Barrow and River Nore SAC (brown shading)

Photographs

Photo 16 – downstream (southern parapet wall overgrown with vegetation

Photo 17 – bollards on upstream (northern) side of road to prevent traffic driving too close to damaged section

Photo 18 – mature ash tree with severe ash die-back growing very close to downstream side of bridge. A second mature ash has fallen beside this tree

Photo 19 – downstream elevation of arch with damage to apex of arch

Photo 20 – close up of damage to stonework at apex of arch on downstream side

Photo 21 – otter spraints on rocks at downstream face of arch

Photo 22 – view under arch from downstream elevation. High concrete plinth at the base of both abutments

Photo 23 – previous repointing with cement under arch

Photo 24 – extension joint midway under arch where bridge was effectively doubled in width in the past

Photo 25 – single Brown long-eared bat in crevice midway under arch

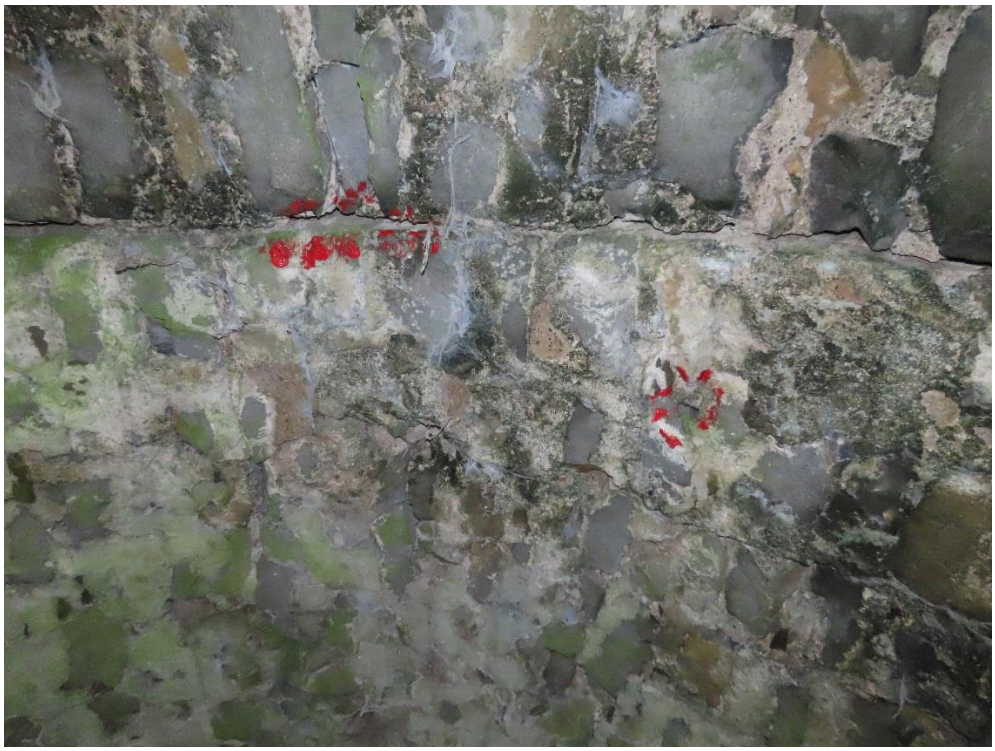

Photo 27 – section of expansion joint and another crevice marked for retention for bats

Photo 28 – two crevices marked for retention for bats under the arch

Photo 29 – otter spraints on rock in watercourse downstream of bridge

Photo 30 – fallen ash tree beside standing ash with advanced die back disease

6. DESCRIPTION OF THE RECEIVING ENVIRONMENT

Appropriate Assessment screening is required by National Parks and Wildlife Service (NPWS) to determine the potential for significant effects on any Natura 2000 site (SAC – Special Area of Conservation or SPA – Special Protection Area) or its conservation objectives as a result of this silt removal project.
The only Natura 2000 sites which may be adversely affected by the works are River Barrow and River Nore SAC Site Code: 002162 and River Nore SPA Site Code: 004233

River Barrow and River Nore SAC (Site Code 002162)
River Barrow and River Nore SAC (Site Code 002162) consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow, and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains before passing through a band of Carboniferous shales and sandstones. The Nore, for a large part of its course, traverses limestone plains and then Old Red Sandstone for a short stretch below Thomastown. Before joining the Barrow it runs over intrusive rocks poor in silica.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[1130] Estuaries
[1140] Tidal Mudflats and Sandflats
[1310] *Salicornia* Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[3260] Floating River Vegetation
[4030] Dry Heath
[6430] Hydrophilous Tall Herb Communities
[7220] Petrifying Springs*
[91A0] Old Oak Woodlands
[91E0] Alluvial Forests*
[1016] Desmoulin's Whorl snail (*Vertigo moulinsiana*)
[1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*)
[1092] White-clawed Crayfish (*Austropotamobius pallipes*)
[1095] Sea Lamprey (*Petromyzon marinus*)
[1096] Brook Lamprey (*Lampetra planeri*)
[1099] River Lamprey (*Lampetra fluviatilis*)
[1103] Twaite Shad (*Alosa fallax*)
[1106] Atlantic Salmon (*Salmo salar*)
[1355] Otter (*Lutra lutra*)
[1421] Killarney Fern (*Trichomanes speciosum*)
[1990] Nore Freshwater Pearl Mussel (*Margaritifera durrovensis*)

The site is very important for the presence of a number of E.U. Habitats Directive Annex II animal species including Freshwater Pearl Mussel (both *Margaritifera margaritifera* and *M. m. durrovensis*), White-clawed Crayfish, Salmon, Twaite Shad, three lamprey species – Sea Lamprey, Brook Lamprey and River Lamprey, the tiny whorl snail *Vertigo moulinsiana* and Otter. This is the only site in the world for the hard water form of the Freshwater Pearl Mussel, *M. m. durrovensis,* and one of only a handful of spawning grounds in the country for the Twaite Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning.
The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat, Badger, Irish Hare and Common Frog. The rare Red Data Book fish species Smelt (*Osmerus eperlanus*) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater mussel species, *Anodonta anatina* and *A. cygnea*.
Three rare invertebrates have been recorded in alluvial woodland at Murphy's of the River. These are: *Neoascia obliqua* (Order Diptera: Syrphidae), *Tetanocera freyi* (Order Diptera: Sciomyzidae) and *Dictya umbrarum* (Order Diptera: Sciomyzidae). The rare invertebrate, *Mitostoma chrysomelas* (Order Arachnida), occurs in the old oak woodland at Abbeyleix and only two other sites in the country. Two flies (Order Diptera) *Chrysogaster virescens* and *Hybomitra muhlfeldi* also occur at this woodland.

The site 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, Bar-tailed 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, both in Co. Laois, and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country. The old oak woodland at Abbeyleix has a typical bird fauna including Jay, Long-eared Owl and Raven. The reedbed at Woodstown supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail.
Land use at the site consists mainly of agricultural activities – mostly intensive in nature and principally grazing and silage production. Slurry is spread over much of the area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of E.U. Habitats Directive Annex II animal species within the site. 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 main rivers and their 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. There is net fishing in the estuary and a mussel bed also. Other recreational activities such as boating, golfing and walking, particularly along the

Barrow towpath, are also popular. There is a golf course on the banks of the Nore at Mount Juliet and GAA pitches on the banks at Inistioge and Thomastown. There are active and disused sand and gravel pits throughout the site. Several industrial developments which discharge into the river border the site. New Ross is an important shipping port. Shipping to and from Waterford and Belview ports also passes through the estuary.

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, over-grazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel (*Prunus laurocerasus*) and Rhododendron (*Rhododendron ponticum*). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein.

Overall, the site 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. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows and the population of the hard water form of the Freshwater Pearl Mussel, which is limited to a 10 km stretch of the Nore, add further interest to this site.

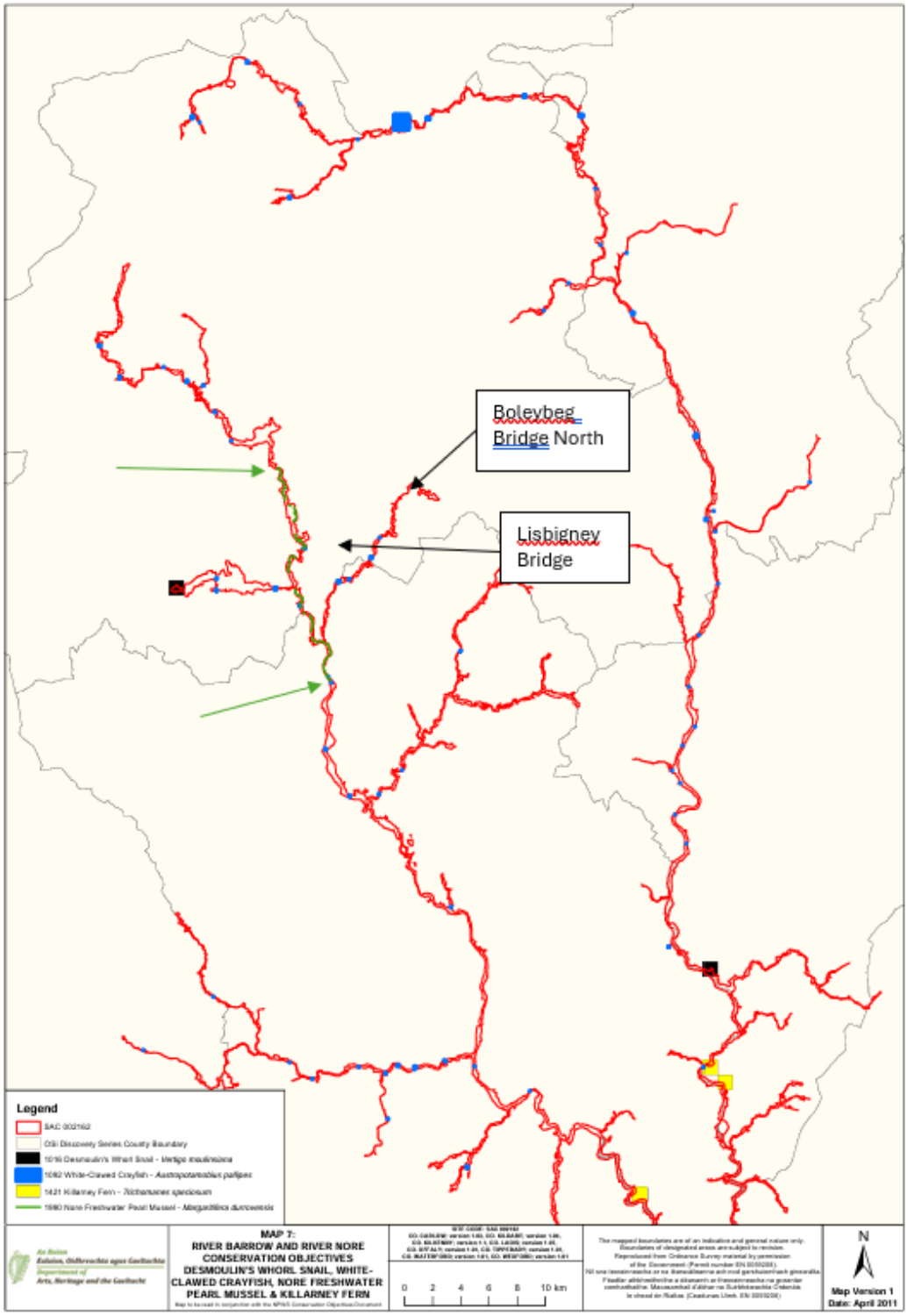

Figure 4 – showing distribution of Nore Freshwater pearl mussels (in green) in relation to Boleybeg Bridge and Lisbigney Bridge

7. DESCRIPTION OF POTENTIAL IMPACTS

Boleybeg Bridge North spans the Owenbeg River which feeds into the Ouveg River. Both are component Rivers of River Barrow and River Nore SAC.
Lisbigney Bridge spans a tributary of the Ouveg River and is situated 2.75 km upstream of the SAC boundary.
Kilkenny County Council are proposing to conduct essential repair works to both bridges.

Potential Habitats Affected

The following habitats are listed as Qualifying Interests for River Barrow and River Nore SAC – Estuaries, Tidal Mudflats and Sandflats, *Salicornia* Mud, Atlantic Salt Meadows, Mediterranean Salt Meadows, Floating River Vegetation, Dry Heath, Hydrophilous Tall Herb Communities, Petrifying Springs, Old Oak Woodlands and Alluvial Forests.
None of these habitats are present at the bridge sites.

Habitats - Sediment Control:

Instream works will result in direct disturbance to the riverbed. The work will necessitate workmen entering the water in the immediate vicinity of the bridge. Any silt entering the river system could have detrimental effects on the watercourse downstream of the bridge.

Potential Species affected:

Bats: It is often possible to retain relatively small crevices under the arch of a masonry bridge without compromising on bridge stability and safety. Most crevices used by bats measure no more than 25 cm deep with narrow slit like entrances to the crevice. Five crevices were marked for retention for bats under the arches of Boleybeg Bridge. Five crevices were also marked for retention under the arch of Lisbigney Bridge.

Otters: Otters have been allocated a "Near Threatened" status in Ireland (Marnell et al., (2009). Their European and Global status is also considered to be "Near Threatened". Otters are protected under the EU Habitat's Directive [92/43/EEC] Annex II & IV. Nine special Areas of Conservation are listed for otter in Northern Ireland and 47 listed in Republic of Ireland. They are protected under the Wildlife Act (1976); Wildlife (Amendment) Act 2000, Wildlife (N.I.) Order of 1985 and CITES Appendix I.
Otters are a native Irish species which has suffered a 20 – 25% decline between 1980-2006. Otters are found throughout Ireland in freshwater and coastal habitats, including off shore islands. The population is estimated to be between 16,000 and 22,000 animals.
The otter is an opportunistic predator feeding on stickleback, salmon, trout, eels and crayfish in freshwater rivers, lakes and canals. Rockling and wrasse make up much of the diet in coastal areas.
Many otters are killed on roads each year and small numbers drown in fishing nets and lobster pots. They are threatened by severe water pollution incidents leading to fish kills, removal of riparian habitat which reduces habitat suitability for otters. The decline in eel numbers may have played a significant role in recent otter declines.

Otters are territorial with adults living singly, except when a female is rearing cubs. Otter births occur predominantly between May and August but cubs may be born at any time of the year. 2-3 cubs per litter is usual.
Otters were recorded in the vicinity of both bridges.
Otters will not be adversely affected by the works. They are mostly nocturnal and will continue to commute along the watercourses after works are completed each evening.

Birds: No active birds' nests were recorded in the structures.

White-clawed/Freshwater crayfish *Austropotamobius pallipes*: There are records of White-clawed freshwater crayfish from the National Biodiversity Data Centre (NBDC) from the Ouveg River. Crayfish are found almost throughout the River Barrow and River Nore SAC.

There are seven species of crayfish in Europe including the white-clawed crayfish *Austropotamobius pallipes*. However, this is the only species which occurs naturally in Ireland. It is protected under Annex II and Annex IV of the E.U. Habitat's Directive and by the Irish Wildlife Acts of 1976 and 2000. It is classified as Vulnerable and Rare in the IUCN Red List of Threatened Animals.
It is widespread in Ireland and considered to be a native species. Ireland holds some of the best European stocks of this species and therefore the Irish population is of substantial conservation importance.
They occur in waterbodies where carboniferous limestone is present. They require good quality hard water (above 50% oxygen saturation and BOD below 3ppm), a PH of 7 or above and calcium concentrate of at least 5mg/l. They require moderate summer water temperatures (below 20C) – they only feed actively and moult above 10C. They prefer a hard substrate on the river bed with stones and rocks they can shelter under, They are sensitive to acidity and heavy metals but may tolerate disturbance and recolonize affected areas.
Junenile crayfish are preyed upon by dragonfly nymphs and other larger crayfish, They are also taken by herons, salmonids, eels, perch and pipe. They are also important in the diet of the otter.
White-clawed Crayfish are highly susceptible to crayfish plague caused by the fungus *Aphanomyces astaci.* Invasive non-native crayfish are the main carrier of this disease and every effort must be made to keep them out of Irish waterbodies.
Threats to crayfish include drought and floods, pollution (industrial, domestic and agricultural), habitat modification (dams, draining, dredging) and competition from wild exotic species of crayfish – directly or indirectly as vectors of plague.
Manual searching should not be conducted between the end of May and July when females are carrying eggs/young and are most susceptible to disturbance, Survey methods should be restricted to night time torch surveys during this period.
Freshwater crayfish may be present at both bridges.

Nore freshwater pearl Mussel Margaritifera durrovensis: The entire population of Nore Freshwater peal mussel is confined to a 15.5km stretch of the river Nore between Poorman's Bridge (S407 859) to Lismaine Bridge (S442 660), with most of the

population between Poorman's Bridge and the Avonmore Creamery above Ballyragget (S440 722).The extant wild population of Nore freshwater pearl mussel is estimated at 300 adult individuals (Moorkens, 2009). The conservation objective aims to restore the population to 5,000 adult mussels. This species is not known to have reproduced successfully in the River Nore since 1970 (Moorkens, 2006). The target is to restore suitable habitat in the length of the river corresponding to their distribution (15.5km) and any additional stretches necessary for salmonid spawning. The availability of mussel habitat, fish spawning and nursery habitat is determined by river flow rates and substratum conditions.
The habitat for the species is currently unsuitable for the survival of adult mussels or the recruitment of juveniles. The mussels require high water quality with very low nutrient concentration (oligotrophic conditions). Recruitment of juvenile mussels is being prevented by the poor quality of the river substrate. The substratum needs to be restored to stable cobble and gravel substrate with very little fine material and no artificially elevated levels of fine sediment.
The habitat for the species is currently unsuitable for the survival of adult mussels or the recruitment of juneniles owing to sedimentation of the substratum. Significant sedimentation has been recorded during all recent mussel monitoring surveys.
The availability of suitable Nore freshwater pearl mussel habitat is largely determined by flow. In order to restore the habitat for the species, flow variability over the annual cycle must be that 1) high flow rates can wash fine sediments from the substratum, 2) low flows do not exercerbate the deposition of fines and 3) low flow rates do not cause stress to mussels in terms of exposure, water temperature, food availability or aspects of the reproductive cycle.
Salmonid fish are host to the larval form of freshwater pearl mussels and thus they are essential to the completion of the life cycle. A sufficient population level of juvenile salmonids must be maintained. Native brown trout *Salmo trutta* appear to be favoured by the Nore freshwater pearl mussel. It is particularly important that they are not out-competed by stocked fish.
Margaritifera durrovensis occurs in the River Nore approximately 16.5 km downstream of Boleybeg Bridge North. Lisbigney Bridge lies 8.35 km upstream of the population of Nore pearl mussels. It is essential that absolutely no silt is allowed to enter the watercouse at Lisbigney Bridge during bridge repair works.

The River Nore is currently exceeding its conservation limit for Atlantic salmon (the spawning stock level that produces long-term average maximum sustainable yield).
It is likely that Atlantic salmon use the Ouveg River for spawning. Salmon spawn in clean gravel beds. Therefore, it is essential to prevent any foreign material from entering the watercourse and also essential not to disturb the natural river bed.
Salmon fishing on the River Nore is considered to be patchy.

The River Nore SPA is designated for its population of Kingfisher. Kingfishers will not be adversely affected by works at either bridge.

7.2. Cumulative effects

Article 6(3) of the habitat's Directive requires an assessment of a plan/project to consider other plans/projects that might, in combination with the proposed plan/project, have the potential to adversely impact upon Natura 2000 sites.

Kilkenny County Council have confirmed that there are no additional works planned for bridges on the Ouveg River. Therefore, there is no significant potential for cumulative impacts associated with these works.

7.3 Gauging the impacts on Natura 2000 sites - Integrity of site check list

The potential impacts of the proposed works on Natura 2000 sites are gauged using a checklist, which aids in determining whether the development has the potential to have a significant negative impact on any Natura 2000 site. The checklist contains a number of pertinent questions as set out below

Does the Plan have the potential to:	YES/NO
Cause delays in progress towards achieving the conservation objectives of the Natura 2000 site?	NO
Interrupt progress toward achieving the conservation objectives of the Natura 2000 site?	NO
Disrupt those factors helping to maintain the favourable conditions at the Natura 2000 site?	NO
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the Natura 2000 site?	NO
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the Natura 2000 site functions as a habitat or ecosystem?	NO
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the Natura 2000 site?	NO
Interfere with predicted or expected natural changes to the Natura 2000 site (such as water dynamics or chemical composition)?	NO
Reduce the area of key habitats within the Natura 2000 site?	NO
Reduce the population of key species of the Natura 2000 site?	NO
Alter the balance between key species of the Natura 2000 site?	NO
Reduce the biodiversity of the Natura 2000 site?	NO
Result in disturbance that could affect population size or density or the balance between key species within the Natura 2000 site?	NO
Result in fragmentation?	NO
Result in the loss or reduction of key features of Natura 2000 sites?	NO

8. RECOMMENDATIONS

These measures will provide effective means to reduce or eliminate potential impacts of the proposed works affecting the Owenbeg and Ouveg rivers

- Kilkenny County Council must liaise with its Inland Fisheries Ireland prior to works commencing to ensure there will be no negative impact on the watercourses and to establish the correct timing of the works

- Kilkenny County Council must liaise with National Parks and Wildlife prior to works commencing as the site is within a Special Area of Conservation.

- Kilkenny County Council must produce a detailed **Construction Method Statement** in relation to the proposed repairs at Boleybeg Bridge North and Lisbigney Bridge. Kilkenny County Council must adhere strictly to this Construction Method Statement.
  This statement must detail the exact methodology being employed, the timing and duration of works and measures used to protect water quality.
  In their method statement Kilkenny County Council will clearly outline the measures they will take to prevent sediment entering the watercourse during work processes scheduled for the bridges.

  Access to the river should be restricted to single access points upstream and downstream of the bridges to avoid unnecessary damage to the river banks and bank vegetation

- Removal of vegetation on river banks adjacent to bridges should be kept to a minimum. Only trees with root systems which may be undermining the bridge structure to be removed.

- The use of bat boxes is not recommended at these sites as it is always preferable to retain some of the natural crevices in the structure rather than provide a new artificial one.

- Any equipment or machinery which will enter the water bodies during works must be fully treated to prevent the spread of non-native invasive species of plant or animal.

- Preparation of lime-based grout and cement based grout should be conducted well away from the river to prevent leaching or run off. Any excess grouting materials should be removed from site.

- On completion of the works there is to be no spotlighting of the bridges or the rivers as lighting is known to cause disturbance to wildlife, especially bats.

8. SIGNIFICANCE OF EFFECTS

From an evaluation of the proposed repair works to Boleybeg Bridge North and Lisbigney Bridge it is considered that the impacts to River Barrow and River Nore SAC will not result in significant negative impacts to the SAC or its component rivers nor to the qualifying interests for which the site was designated as a Special Area of Conservation.

Reference to the evaluation of ecological impact significance table as provided in the document "Assessment of Plans and Projects significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitat's Directive 92/43/EEC" would indicate that the repair works will have an Imperceptible Negative Impact (A change in the ecology of the affected site, the consequences of which are strictly limited to within the development boundaries). This evaluation is contingent upon recommendations outlined in this report being strictly adhered to.

9. REFERENCES

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Site Name: River Barrow and River Nore SAC
Site Code: 002162
This site consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains, and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties – Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford. Major towns along the edge of the site include Mountmellick, Portarlington, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrow. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow, and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains before passing through a band of Carboniferous shales and sandstones. The Nore, for a large part of its course, traverses limestone plains and then Old Red Sandstone for a short stretch below Thomastown. Before joining the Barrow it runs over intrusive rocks poor in silica. The upper reaches of the Barrow also run through limestone. The middle reaches and many of the eastern tributaries, sourced in the Blackstairs Mountains, run through Leinster Granite. The southern end, like the Nore runs over intrusive rocks poor in silica. Waterford Harbour is a deep valley excavated by glacial floodwaters when the sea level was lower than today. The coast shelves quite rapidly along much of the shore.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[1130] Estuaries
[1140] Tidal Mudflats and Sandflats
[1170] Reefs
[1310] Salicornia Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[3260] Floating River Vegetation
[4030] Dry Heath
[6430] Hydrophilous Tall Herb Communities
[7220] Petrifying Springs*
[91A0] Old Oak Woodlands
[91E0] Alluvial Forests*
[1016] Desmoulin's Whorl Snail (Vertigo moulinsiana)
[1029] Freshwater Pearl Mussel (Margaritifera margaritifera)
[1092] White-clawed Crayfish (Austropotamobius pallipes)
[1095] Sea Lamprey (Petromyzon marinus)
[1096] Brook Lamprey (Lampetra planeri)
[1099] River Lamprey (Lampetra fluviatilis)
[1103] Twaite Shad (Alosa fallax)
[1106] Atlantic Salmon (Salmo salar)
[1355] Otter (Lutra lutra)

[1421] Killarney Fern (Trichomanes speciosum)

Good examples of alluvial forest (a priority habitat on Annex I of the E.U. Habitats Directive) are seen at Rathsnagadan, Murphy's of the River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species seen include Almond Willow (Salix triandra), White Willow (S. alba), Rusty Willow (S. cinerea subsp. oleifolia), Crack Willow (S. fragilis) and Osier (S. viminalis), along with Iris (Iris pseudacorus), Hemlock Water-dropwort (Oenanthe crocata), Wild Angelica (Angelica sylvestris), Thin-spiked Wood-sedge (Carex strigosa), Pendulous Sedge (C. pendula), Meadowsweet (Filipendula ulmaria), Common Valerian (Valeriana officinalis) and the Red Data Book species Nettle-leaved Bellflower (Campanula trachelium).
A good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the E.U. Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, Palustriella commutata and Eucladium verticillatum, have been recorded. The best examples of old oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadohir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that Park Hill has been continuously wooded since the 16th century and has the most complete written record of any woodland in the country. It supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, 44 bryophytes and 92 lichens. It also contains eight indicator species of ancient woodlands. Park Hill is also the site of two rare plants, Nettle-leaved Bellflower and the moss Leucodon sciuroides. The rare Myxomycete fungus, Licea minima has been recorded from woodland at Abbeyleix.
Oak woodland covers parts of the valley side south of Woodstock and is well developed at Brownsford where the Nore takes several sharp bends. The steep valley side is covered by oak (Quercus spp.), Holly (Ilex aquifolium), Hazel (Corylus avellana) and Downy Birch (Betula pubescens), with some Beech (Fagus sylvatica) and Ash (Fraxinus excelsior). All the trees are regenerating through a cover of Bramble (Rubus fruticosus agg.), Foxglove (Digitalis purpurea), Great Wood-rush (Luzula sylvatica) and Broad Buckler-fern (Dryopteris dilatata). On the steeply sloping banks of the River Nore, about 5 km west of New Ross, in Co. Kilkenny, Kylecorragh Woods form a prominent feature in the landscape. This is an excellent example of relatively undisturbed, relict oak woodland with a very good tree canopy. The wood is quite damp and there is a rich and varied ground flora. At Brownstown, a small, mature oak dominated woodland occurs on a steep slope. There is younger woodland to the north and east of it. Regeneration throughout is evident. The understorey is similar to the woods at Brownsford. The ground flora of this woodland is developed on acidic, brown earth type soil and comprises a thick carpet of Bilberry (Vaccinium myrtillus), Heather (Calluna vulgaris), Hard Fern (Blechnum spicant), Common Cow-wheat (Melampyrum pratense) and Bracken

(Pteridium aquilinum). Borris Demesne contains a very good example of a semi-natural broadleaved woodland in very good condition. There is quite a high degree of natural re generation of oak and Ash through the woodland. At the northern end of the estate oak species predominate. Drummond Wood, also on the Barrow, consists of three blocks of deciduous woods situated on steep slopes above the river. The deciduous trees are mostly oak species. The woods have a well-established understorey of Holly, and the herb layer is varied, with Bramble abundant. The whitebeam Sorbus devoniensis has also been recorded here.

Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the floodplain of the river is intact. Characteristic species of the habitat include Meadowsweet, Purple Loosestrife (Lythrum salicaria), Marsh Ragwort (Senecio aquaticus), Ground Ivy (Glechoma hederacea) and Hedge Bindweed (Calystegia sepium). Indian Balsam (Impatiens glandulifera), an introduced and invasive species, is abundant in places. Floating river vegetation is well represented in the Barrow and in the many tributaries of the site. In the Barrow the species found include water-starworts (Callitriche spp.), Canadian Pondweed (Elodea canadensis), Bulbous Rush (Juncus bulbosus), water-milfoils (Myriophyllum spp.), the pondweed Potamogeton x nitens, Broad-leaved Pondweed (P. natans), Fennel Pondweed (P. pectinatus), Perfoliated Pondweed (P. perfoliatus) and crowfoots (Ranunculus spp.).

The water quality of the Barrow has improved since the vegetation survey was carried out (EPA, 1996).

Dry heath at the site occurs in pockets along the steep valley sides of the rivers especially in the Barrow Valley and along the Barrow tributaries where they occur in the foothills of the Blackstairs Mountains. The dry heath vegetation along the slopes of the river bank consists of Bracken and Gorse (Ulex europaeus) with patches of acidic grassland vegetation. Additional typical species include Heath Bedstraw (Galium saxatile), Foxglove, Common Sorrel (Rumex acetosa) and Creeping Bent (Agrostis stolonifera). On the steep slopes above New Ross the Red Data Book species Greater Broomrape (Orobanche rapum-genistae) has been recorded. Where rocky outcrops are shown on the maps Bilberry and Great Wood-rush are present. At Ballyhack a small area of dry heath is interspersed with patches of lowland dry grassland. These support a number of clover species, including the legally protected Clustered Clover (Trifolium glomeratum) - a species known from only one other site in Ireland. This grassland community is especially well developed on the west side of the mud-capped walls by the road. On the east of the cliffs a group of rock-dwelling species occur, i.e. English Stonecrop (Sedum anglicum), Sheep's-bit (Jasione montana) and Wild Madder (Rubia peregrina). These rocks also support good lichen and moss assemblages with Ramalina subfarinacea and Hedwigia ciliata. Dry heath at the site generally grades into wet woodland or wet swamp vegetation lower down the slopes on the river bank. Close to the Blackstairs Mountains, in the foothills associated with the Aughnabrisky, Aughavaud and Mountain Rivers there are small patches of wet heath dominated by Purple Moor-grass (Molinia caerulea) with Heather, Tormentil (Potentilla erecta), Carnation Sedge (Carex panicea) and Bell Heather (Erica cinerea).

Salt meadows occur at the southern section of the site in old meadows where the embankment has been breached, along the tidal stretches of in-flowing rivers below Stokestown House, in a narrow band on the channel side of Common Reed (Phragmites

australis) beds and in narrow fragmented strips along the open shoreline. In the larger areas of salt meadow, notably at Carrickcloney, Ballinlaw Ferry and Rochestown on the west bank; Fisherstown, Alderton and Great Island to Dunbrody on the east bank, the Atlantic and Mediterranean sub types are generally intermixed. At the upper edge of the salt meadow in the narrow ecotonal areas bordering the grasslands where there is significant percolation of salt water, the legally protected species Borrer's Saltmarsh-grass (Puccinellia fasciculata) and Meadow Barley (Hordeum secalinum) are found. The very rare and also legally protected Divided Sedge (Carex divisa) is also found. Sea Rush (Juncus maritimus) is also present. Other plants recorded and associated with salt meadows include Sea Aster (Aster tripolium), Thrift (Armeria maritima), Sea Couch (Elymus pycnanthus), Spear-leaved Orache (Atriplex prostrata), Lesser Sea-spurrey (Spergularia marina), Sea Arrowgrass (Triglochin maritima) and Sea Plantain (Plantago maritima). Glassworts (Salicornia spp.) and other annuals colonising mud and sand are found in the creeks of the saltmarshes and at the seaward edges of them. The habitat also occurs in small amounts on some stretches of the shore free of stones.

The estuary and the other E.U. Habitats Directive Annex I habitats within it form a large component of the site. Extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and Creadaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves. Common species include Arenicola marina, Nephtys hombergii, Scoloplos armiger, Lanice conchilega and Cerastoderma edule. An extensive area of honey-comb worm biogenic reef occurs adjacent to Duncannon, Co. Wexford on the eastern shore of the estuary. It is formed by the polychaete worm Sabellaria alveolata. This intertidal Sabellaria alveolata reef is formed as a sheet of interlocking tubes over a considerable area of exposed bedrock. This polychaete species constructs tubes, composed of aggregated sand grains, in tightly packed masses with a distinctive honeycomb-like appearance. These can be up to 25cm proud of the substrate and form hummocks, sheets or more massive formations. A range of species are reported from these reefs including: Enteromorpha sp.; Ulva sp.; Fucus vesiculosus; Fucus serratus; Polysiphonia sp.; Chondrus crispus; Palmaria palmate; Coralinus officialis; Nemertea sp.; Actinia equine; Patella vulgate; Littorina littorea; Littorina obtusata and Mytilus edulis. The western shore of the harbour is generally stony and backed by low cliffs of glacial drift.

At Woodstown there is a sandy beach, now much influenced by recreation pressure and erosion. Behind it a lagoonal marsh has been impounded which runs westwards from Gaultiere Lodge along the course of a slow stream. An extensive reedbed occurs here. At the edges is a tall fen dominated by sedges (Carex spp.), Meadowsweet, willowherbs (Epilobium spp.) and rushes (Juncus spp.). Wet woodland also occurs. The dunes which fringe the strand at Duncannon are dominated by Marram (Ammophila arenaria) towards the sea. Other species present include Wild Clary/Sage (Salvia verbenaca), a rare Red Data Book species.

The rocks around Duncannon ford have a rich flora of seaweeds typical of a moderately exposed shore and the cliffs themselves support a number of coastal species on ledges,

including Thrift, Rock Samphire (Crithmum maritimum) and Buck's-horn Plantain (Plantago coronopus).
Other habitats which occur throughout the site include wet grassland, marsh, reedswamp, improved grassland, arable land, quarries, coniferous plantations, deciduous woodland, scrub and ponds. Seventeen Red Data Book plant species have been recorded within the site, most in the recent past. These are Killarney Fern (Trichomanes speciosum), Divided Sedge, Clustered Clover, Basil Thyme (Acinos arvensis), Red Hemp-nettle (Galeopsis angustifolia), Borrer's Saltmarsh-grass, Meadow Barley, Opposite-leaved Pondweed (Groenlandia densa), Meadow Saffron/Autumn Crocus (Colchicum autumnale), Wild Clary/Sage, Nettle-leaved Bellflower, Saw-wort (Serratula tinctoria), Bird Cherry (Prunus padus), Blue Fleabane (Erigeron acer), Fly Orchid (Ophrys insectifera), Ivy Broomrape (Orobanche hederae) and Greater Broomrape. Of these, the first nine are protected under the Flora (Protection) Order, 2015. Divided Sedge was thought to be extinct but has been found in a few locations in the site since 1990. In addition plants which do not have a very wide distribution in the country are found in the site including Thin-spiked Wood-sedge, Field Garlic (Allium oleraceum) and Summer Snowflake. Six rare lichens, indicators of ancient woodland, are found including Lobaria laetevirens and L. pulmonaria. The rare moss Leucodon sciuroides also occurs.
The site is very important for the presence of a number of E.U. Habitats Directive Annex II animal species including Freshwater Pearl Mussel (Margaritifera margaritifera), White-clawed Crayfish, Salmon, Twaite Shad, three lamprey species – Sea Lamprey, Brook Lamprey and River Lamprey, the tiny whorl snail Vertigo moulinsiana and Otter. This is one of only a handful of spawning grounds in the country for Twaite Shad.
The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning.
The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat, Badger, Irish Hare and Common Frog. The rare Red Data Book fish species Smelt (Osmerus eperlanus) occurs in estuarine stretches of the site.
In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater mussel species, Anodonta anatina and A. cygnea.
Three rare invertebrates have been recorded in alluvial woodland at Murphy's of the River. These are: Neoascia obliqua (Order Diptera: Syrphidae), Tetanocera freyi (Order Diptera: Sciomyzidae) and Dictya umbrarum (Order Diptera: Sciomyzidae). The rare invertebrate, Mitostoma chrysomelas (Order Arachnida), occurs in the old oak woodland at Abbeyleix and only two other sites in the country. Two flies (Order Diptera) Chrysogaster virescens and Hybomitra muhlfeldi also occur at this woodland.
The site 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, Bar-tailed 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, both in Co. Laois, and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before

they leave the country. The old oak woodland at Abbeyleix has a typical bird fauna including Jay, Long-eared Owl and Raven. The reedbed at Woodstown supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail.

Land use at the site consists mainly of agricultural activities – mostly intensive in nature and principally grazing and silage production. Slurry is spread over much of the area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of E.U. Habitats Directive Annex II animal species within the site. 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 main rivers and their 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. There is net fishing in the estuary and a mussel bed also. Other recreational activities such as boating, golfing and walking, particularly along the Barrow towpath, are also popular. There is a golf course on the banks of the Nore at Mount Juliet and GAA pitches on the banks at Inistioge and Thomastown.

There are active and disused sand and gravel pits throughout the site. Several industrial developments, which discharge into the river, border the site. New Ross is an important shipping port. Shipping to and from Waterford and Belview ports also passes through the estuary.

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, over-grazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel (Prunus laurocerasus) and Rhododendron (Rhododendron ponticum). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein.

Overall, the site 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. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows add further interest to this site.

2024

SITE SYNOPSIS
SITE NAME: RIVER NORE SPA
SITE CODE: 004233
The River Nore SPA is a long, linear site that includes the following river sections: the River Nore from the bridge at Townparks, (north-west of Borris in Ossory) to Coolnamuck (approximately 3 km south of Inistioge) in Co. Kilkenny; the Delour River from its junction with the River Nore to Derrynaseera bridge (west of Castletown) in Co. Laois; the Erkina River from its junction with the River Nore at Durrow Mills to Boston Bridge in Co. Laois; a 1.5 km stretch of the River Goul upstream of its junction with the Erkina River; the Kings River from its junction with the River Nore to a bridge at Mill Island, Co. Kilkenny. The site includes the river channel and marginal vegetation.
For a large part of its course the River Nore traverses Carboniferous limestone plains; it passes over a narrow band of Old Red Sandstone rocks below Thomastown.
The site is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the following species:
Kingfisher.
A survey in 2010 recorded 22 pairs of Kingfisher (based on 16 probable and 6 possible territories) within the SPA. Other species which occur within the site include Mute Swan (35), Mallard (267), Cormorant (14), Grey Heron (45), Moorhen (14), Snipe (17) and Sand Martin (1,029) – all figures are peak counts recorded during the 2010 survey. The River Nore SPA is of high ornithological importance as it supports a nationally important population of Kingfisher, a species that is listed on Annex I of the E.U. Birds Directive.
2011