

# Callan Local Area Plan

## Screening of Callan Local Area Plan for Appropriate Assessment

Kilkenny County Council

July 2008

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# 1. Introduction

1.1.1 Biodiversity or 'biological diversity' describes the enormous variability in species, habitats that exist on Earth. A recent study by the Department of Environment, Heritage and Local Government placed the economic value of biodiversity to Ireland at €2.6 billion annually (Bullock et al., 2008) for 'ecosystem services including food, building materials, fuel and clothing while maintaining clean air, water, soil fertility and the pollination of crops.

1.1.2 Current global decline in levels of biodiversity is a major challenge and in 1992, this challenge was recognised by the international community through the ratification of the Convention on Biological Diversity. Now reflected in policy and targets at European level, the central objective of the convention is to slow down the loss in biodiversity.

## 1.2 The Habitats Directive

1.2.1 The 1992 Habitats Directive, one of the main policy instruments for meeting this objective, requires member states to designate areas of their territory containing a representative sample of important habitats and species. These areas are known as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

1.2.2 Unlike traditional nature reserves or national parks, SACs are not 'fenced-off' from human activity and are frequently in private ownership. It is the responsibility of the competent national authority to ensure that 'good conservation status' exists for their SACs and specifically that Article 6(3) and (4) of the Directive is met. Article 6(3) and (4) require that an Appropriate Assessment be carried out for these sites where projects, plans or proposals are likely to have an effect. In some cases this is obvious from the start, for instance where a road is to pass through a designated site. However, where this is not the case, a preliminary screening must first be carried out to determine whether or not the full Appropriate Assessment is required.

## 1.3 Screening Methodology

1.3.1 The methodology for this screening statement is clearly set out in a document prepared for the Environment DG of the European Commission entitled 'Assessment of plans and projects significantly affecting Natura 2000 sites Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' (Oxford Brookes University, 2001). Chapter 3, part 1, of this document deals specifically with screening while Annex 2 provides the template for the screening matrix to be used.

1.3.2 In accordance with this guidance, the following methodology has been used to produce this screening statement:

### ***Step 1: Management of the Site***

1.3.3 This determines whether the plan is necessary for the conservation management of the site in question.

### ***Step 2: Description of the Plan***

1.3.4 This step describes the aspects of the plan that may have an impact on the Natura 2000 site. GIS is particularly useful in this regard and it is proposed that this technique be employed for mapping the aspects of the plans with regard to the designated site. OPENFIELD uses ArcView 9.2 for this purpose.

### **Step 3: Characteristics of the Site**

- 1.3.5 This process identifies the conservation aspects of the site and determines whether negative impacts can be expected as a result of the plan. This is done through a literature survey and consultation with relevant stakeholders – particularly the National Parks and Wildlife Service and the Southern Regional Fisheries Board. All potential impacts are identified including those that are direct, indirect and cumulative.
- 1.3.6 Using the precautionary principle, and through consultation and a review of published data, it is normally possible to conclude at this point whether potential impacts are likely. It is therefore not proposed to carry out any field work at this stage.

### **Step 4: Assessment of Significance**

- 1.3.7 Assessing whether an impact is significant or not is dependant on the ecological receptors in question in combination with the scale of the predicted impact. Guidance in this regard is available through the National Road Authority's 'Guidelines for Assessment of Ecological Impacts of National Road Schemes' (NRA, 2006) and is best done in consultation with key stakeholders.
- 1.3.8 The steps are compiled into a screening matrix, a template of which is provided in Appendix II of the EU methodology. To better demonstrate the potential impacts of the plan on the sites, figure 1 uses digital mapping technology (ArcView 9.2 GIS software) to overlay the zoning designations with conservation aspects.
- 1.3.9 Since no field work was carried out to inform this screening study, the analysis is based on a combination of literature review and consultation.

### **Literature Review:**

- 1.3.10 A full list of literature sources that have been consulted for this study is given in the References section to this report.

## 1.4 Consultation

- 1.4.1 The following bodies/agencies were contacted as part of the consultation process:
- National Parks and Wildlife Service (NPWS) (letter dated 14<sup>th</sup> May 2008)
  - Southern Regional Fisheries Board (letter dated 14<sup>th</sup> May 2008)
  - Environmental Protection Agency Regional Inspectorate, Kilkenny (letter dated 13<sup>th</sup> May 2008).
- 1.4.2 Discussions with the Mr Jimi Conroy, Wildlife Ranger with NPWS, highlighted the potential threat to river water quality from surface run-off from additional paved surfaces. Mr Conroy's site visit to the area of SAC within the town, confirmed that islands within the river are pasture grassland and do not represent important wetland habitats. The response verified that the content of this screening document was comprehensive and recommended that the full appropriate assessment be carried out for the LAP.
- 1.4.3 The EPA did not have additional information and no response was received from the SRFB (as of July 1<sup>st</sup>).

## 2. Screening Template as per Appendix II of EU methodology

2.1.1 This plan is not necessary for the management of the site and so Step 1 as outlined above is not relevant.

### 2.2 Brief description of the plan

2.2.1 The Callan Local Area Plan (LAP) will provide for the proper and sustainable development of the town of Callan, Co. Kilkenny. The area covered by the plan is approximately 191 ha with the bulk of this land to be zoned for built development (residential, industrial, general business or community facilities) and open space.

### 2.3 Brief description of the SAC

2.3.1 This very large SAC encompasses the main channels of the rivers Barrow and Nore and a number of their tributaries. Aside from the rivers and their associated aquatic species, a number of important habitats are to be found along the riparian margins and as islands within the rivers. Of particular note is the presence in this site of the only population of the Nore freshwater pearl mussel in the world. It is one of Ireland's most endangered species, as although it lives to ages of up to 120 years, it has stopped breeding due to a decline in water quality.

2.3.2 There is little site-specific information available for the SAC except what is available from the NPWS as a 'site synopsis' (from 2003). Specific conservation aspects are listed in this report and are detailed in Table 1 below. Since only a small part of the River Barrow and River Nore SAC is within the boundary of the LAP, not all of the listed conservation aspects will be relevant. Through a literature review it has been possible to 'scope out' those aspects considered not applicable and where this has been possible is indicated in **Table 2.1**. The potential for significant impacts on conservation aspects is also highlighted.

2.3.3 Table 2.1 shows a number of potential impacts of the LAP on Habitats Directive listed habitats (Alluvial wet woodland, petrifying springs with tufa formation, old oak woodlands, floating river vegetation, dry heath and eutrophic tall herbs) and species (Sea lamprey, Brook lamprey, River lamprey, Freshwater pearl mussel, Freshwater crayfish, Twaité shad, Atlantic salmon, Otter, Daubenton's bat, Brown long-eared bat, Irish hare, and Common frog); the Flora Protection Order plants Autumn crocus and Nettle-leaved bellflower; Birds Directive listed species (Golden plover, Peregrine and Kingfisher) and Wildlife (Amendment) Act, 2000 listed species (Badger, Hedgehog, Stoat and Red squirrel).

**Table 1 – Conservation aspects of the River Barrow and River Nore SAC**

Aspect	Level of Protection	Relevant <sup>1</sup>	Likelihood of potential impacts <sup>2</sup>	Aspect of LAP likely to cause impact
Alluvial wet woodland (code: 91E0)	Habitats Directive Annex I priority	Possible	Possible	Habitat loss/disturbance due to 'Open space' zoning
Petrifying springs with tufa formation (code: 7220)		Possible	Possible	
Atlantic salt meadows (code: 1330)	Habitats Directive Annex I	No	None	-
Mediterranean salt meadows (code: 1410)		No	None	-
Old oak woodlands (code: 91A0)		Possible	Possible	Habitat loss/disturbance due to 'Open space' zoning
Eutrophic tall herbs (code: 6430)		Possible	Possible	
Floating river vegetation (code: 3260)		Possible	Possible	water pollution from increased population
Estuary (code: 1130)		No	None	-
Salicornia mudflats (code: 1310)		No	None	-
Dry heath (code: 4030)		Possible	Possible	Habitat loss/disturbance due to 'Open space' zoning
Tidal mudflats (code: 1140)		No	None	-
Sea Lamprey <i>Petromyzon marinus</i>		Habitats Directive Annex II	Yes	Possible
Brook Lamprey <i>Lampetra planeri</i>	Yes		Possible	

<sup>1</sup> Relevance is interpreted as meaning the likely presence of the habitat/species in the study area and is taken from relevant literature sources

<sup>2</sup> The likelihood of impact is based on the potential presence of habitats from aerial photography and presence of suitable habitats for different species

Aspect	Level of Protection	Relevant <sup>3</sup>	Likelihood of potential impacts <sup>4</sup>	Aspect of LAP likely to cause impact
Semi-aquatic snail <i>Vertigo moulinsiana</i>	Habitats Directive Annex II	No	None	-
River Lamprey <i>Lampetra fluviatilis</i>	Habitats Directive Annex II, V	Yes	Possible	water pollution from increased population
Freshwater Pearl Mussel <i>Margaritifera margaritifera</i>		Yes - downstream	Possible	
Freshwater Crayfish <i>Austropotamobium pallipes</i>		Yes	Possible	
Twaite Shad <i>Alosa fallax fallax</i>		Yes	Possible	
Atlantic Salmon <i>Salmo salar</i>		Yes	Possible	
Otter <i>Lutra lutra</i>	Habitats Directive Annex II, IV	Yes	Possible	Habitat loss/disturbance due to 'Open space' zoning 'Residential' zoning along hedgerows & river corridor
Killarney fern <i>Trichomanes speciosum</i>	Habitats Directive Annex II, IV; Flora Protection Order, 1999	No	None	-
Daubenton's bat <i>Myotis daubentoni</i>	Habitats Directive Annex IV; Wildlife Act, 2000	Yes	Possible	Habitat loss/disturbance due to 'Open space' zoning 'Residential' zoning along hedgerows & river corridor
Brown long-eared bat <i>Plecotus auritus</i>		Yes	Possible	
Irish hare <i>Lepus timidus hibernicus</i>	Habitats Directive Annex V; Wildlife Act, 2000	Yes	Possible	

<sup>3</sup> Relevance is interpreted as meaning the likely presence of the habitat/species in the study area and is taken from relevant literature sources

<sup>4</sup> The likelihood of impact is based on the potential presence of habitats from aerial photography and presence of suitable habitats for different species



Aspect	Level of Protection	Relevant <sup>5</sup>	Likelihood of potential impacts <sup>6</sup>	Aspect of LAP likely to cause impact
Common frog <i>Rana temporaria</i>	Habitats Directive Annex V; Wildlife Act, 2000	Yes	Possible	Habitat loss/disturbance due to 'Open space' zoning 'Residential' zoning along hedgerows & river corridor
Badger <i>Meles meles</i>	Wildlife Act, 2000	Yes	Possible	
Hedgehog <i>Erinaceus europaeus</i>		Yes	Possible	
Stoat <i>Mustela erminea hibernica</i>		Yes	Possible	
Red squirrel <i>Sciurus vulgaris</i>		Yes	Possible	
Greenland white-fronted goose <i>Anser albifrons flavirostris</i>	Birds Directive Annex I; Wildlife Act 2000	No	None	-
Whooper swan <i>Cygnus cygnus</i>		No	None	-
Golden plover <i>Pluvialis apricaria</i>		Possible	Possible	Habitat loss/disturbance due to 'Open space' zoning 'Residential' zoning along hedgerows & river corridor
Kingfisher <i>Alcedo atthis</i>		Possible	Possible	
Perigrine <i>Falco perigrinus</i>		Possible	Unlikely	-
Bewick's swan <i>Cygnus columbianus bewickii</i>		No	None	-
Bar-tailed godwit <i>Limosa lapponica</i>	-	No	None	-
Smelt <i>Osmerus eperlanus</i>	-	Yes	Possible	water pollution from increased population

<sup>5</sup> Relevance is interpreted as meaning the likely presence of the habitat/species in the study area and is taken from relevant literature sources

<sup>6</sup> The likelihood of impact is based on the potential presence of habitats from aerial photography and presence of suitable habitats for different species

Aspect	Level of Protection	Relevant <sup>7</sup>	Likelihood of potential impacts <sup>8</sup>	Aspect of LAP likely to cause impact
Meadow Barley <i>Hordeum secalinum</i>	Flora Protection Order, 1999	No	None	-
Divided sedge <i>Carex divisa</i>		No	None	-
Clustered clover <i>Trifolium glomeratum</i>		No	None	-
Basil-thyme <i>Acinos arvensis</i>		No	None	-
Narrow-leaved hemp nettle <i>Galeopsis angustifolia</i>		No	None	-
Borrer's saltmarsh-grass <i>Puccinellia fasciculata</i>		No	None	-
Opposite-leaved pondweed <i>Groenlandia densa</i>		No	None	-
Autumn crocus <i>Colchicum autumnale</i>		Possible	Possible	Habitat loss/disturbance due to 'Open space' zoning
Nettle-leaved bellflower <i>Campanula trachelium</i>		Possible	Possible	
Rare lichens		unknown	unknown	
Wild sage <i>Salvia verbenaca</i>		No	None	-
Blue fleabane <i>Erigeron acer</i>		No	None	-
Greater broomrape <i>Orobanche rapum-genistae</i>		No	None	-
Bog orchid <i>Hammarbya paludosa</i>		No	None	-

<sup>7</sup> Relevance is interpreted as meaning the likely presence of the habitat/species in the study area and is taken from relevant literature sources

<sup>8</sup> The likelihood of impact is based on the potential presence of habitats from aerial photography and presence of suitable habitats for different species

<b>Aspect</b>	<b>Level of Protection</b>	<b>Relevant<sup>9</sup></b>	<b>Likelihood of potential impacts<sup>10</sup></b>	<b>Aspect of LAP likely to cause impact</b>
Bird cherry <i>Prunus padus</i>	-	No	None	-
Saw-wort <i>Serratula tinctoria</i>	-	No	None	-
Fly orchid <i>Orphys insectifera</i>	-	No	None	-
Thin-spiked wood-sedge <i>Carex strigosa</i>	-	No	None	-
Field garlic <i>Allium oleraceum</i>	-	No	None	-
Summer snowflake <i>Leucojum aestivum</i>	-	No	None	-
Duck mussel <i>Anodonta anatina</i>	-	No	None	-
Swan mussel <i>Anodonta cygnea</i>	-	No	None	-

<sup>9</sup> Relevance is interpreted as meaning the likely presence of the habitat/species in the study area and is taken from relevant literature sources

<sup>10</sup> The likelihood of impact is based on the potential presence of habitats from aerial photography and presence of suitable habitats for different species

### 3. Assessment Criteria

3.1 Describe the individual elements of the plan (either alone or in combination with other plans or projects) likely to give rise to impacts on the SAC

1. It is proposed to develop an area within the SAC for amenity purposes. Specific plans as to what this might entail are not yet available.
2. An number of areas will be zoned for built development (e.g. residential) as shown in figure 1. This area includes a stream that runs along the northern boundary of the LAP. The stream ultimately joins the King's river approximately 3 km further downstream. Also included are a number of hedgerows.
3. The projected increase in population of the town will result in added pressure on water resources and wastewater treatment facilities. Wastewater will be discharged into the King's river.

3.2 Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the SAC

***Direct habitat loss and disturbance.***

- 3.2.2 There are two large, open green areas to the north of the town centre that are sandwiched between two channels of the river. It is unclear as to the precise reason for these areas' inclusion in the SAC but it must be assumed that it is due to the presence of an important habitat or species. The LAP proposes opening up the larger of these two areas to the public as an amenity area.
- 3.2.3 A stream runs to the north of the LAP boundary and joins the King's river approximately 3 km further downstream. The area around the stream has been zoned 'residential' and no buffer zone has been marked in to protect riparian vegetation. The loss of this habitat, even along a short stretch of waterway, can disrupt ecological corridors and in doing so can break the connectivity of the SAC with associated habitats.
- 3.2.4 Similarly, an area of agricultural grassland to the south east of the town currently contains approximately 3 km of hedgerow. It is proposed to zone the area in the LAP as a combination of residential, industrial and mixed use. The loss of this hedgerow would further remove ecological corridors in the region and may serve to isolate the SAC from the surrounding countryside.
- 3.2.5 These habitats are also important in regulating surface water flows, attenuating pollutants before entering rivers and in preventing soil erosion.
- 3.2.6 Changes in land use within the catchment area can impact negatively on water quality in three ways: ① Increased direct discharges of industrial and domestic wastewater that are inadequately treated; ② increased abstraction of river water for domestic and industrial use; and ③ increased surface water run-off from paved surfaces. Each of these activities have the potential to increase the concentration of pollutants in the receiving waters if they are not adequately addressed at source.

- 3.2.7 This impact can act in combination with the development of other towns in the Nore catchment area such as Castlecomer, Kilkenny and Thomastown. A 'Programme of Works' by the South Eastern River Basin District Management Plan will be published in 2008. This project is part of the EU's Water Framework Directive which requires 'good ecological status' for all waters by 2016.
- 3.2.8 Sufficient buffer zones have been zoned as 'open space' along waterways to ensure that habitat loss will not occur through the removal of riparian vegetation. However, it is believed that this zoning designation does not adequately communicate the importance of these features to the ecological integrity of the SAC and an alternative title, such as 'biodiversity conservation', would be more appropriate. This would avoid ambiguity where future planning applications for 'amenity' may be made.
- 3.3 Describe any changes to the site arising as a result of the potential impact.
- 3.3.1 Development of an area of the site for amenity purposes has the potential to directly remove habitat through the construction of pathways or other facilities. There is also the potential of disturbance to the ecology of the area, both temporarily through the construction of infrastructure, and permanently through greater human and pet presence (particularly dogs). Indirect habitat loss may also occur whereby the areas adjacent to pathways become degraded as a result of increased traffic through the area.
- 3.3.2 The SAC must not be seen in isolation as its important ecological features are dependant upon its connectivity with other habitats in the surrounding countryside. This is particularly relevant where small tributary streams are concerned. Such a stream runs to the north of the LAP boundary and joins the King's river approximately 3 km further downstream. The area around the stream has been zoned 'residential' and no buffer zone has been marked in to protect riparian vegetation. The loss of this habitat, even along a short stretch of waterway, can disrupt ecological corridors and in doing so can break the connectivity of the SAC with associated habitats.
- 3.3.3 Similarly, an area of agricultural grassland to the south east of the town currently contains approximately 3 km of hedgerow. It is proposed to zone the area in the LAP as a combination of residential, industrial and mixed use. The loss of this hedgerow would further remove ecological corridors in the region and serve to isolate the SAC from the surrounding countryside.
- 3.3.4 While in isolation, the aforementioned impacts may be small, they have a larger 'in-combination', or cumulative impact. The continual loss, or degradation of these seemingly unimportant habitats can accumulate to result in significant deterioration to water quality and the integrity of ecological corridors, upon which important conservation areas like the SAC depend. This results in an overall lowering of the SAC's 'ecosystem function', in other words, its ability to sustain the resources within the system that provide the habitat for a diversity of species.
- 3.3.5 Water quality plays a crucial role in maintaining the ecological resources upon which species and habitats in this SAC depend. Further deterioration of water quality, which is already below standard, would contravene the conservation aims of the SAC, as exemplified by the plight of the Nore freshwater pearl mussel.
- 3.3.6 The lack of an overtly 'pro-biodiversity' zoning could lead to misinterpretation of the function of a site and consequently allow amenity development to take place in ecologically sensitive areas.

***Provide indicators of significance as a result of the identification of effects set out above.***

- 3.3.7 The loss and disturbance of habitat within the SAC could lead to reduced populations of species of conservation importance, particularly Otter, Daubenton's bat, Brown long-eared bat, Irish hare, Common frog, Autumn crocus, Nettle-leaved bellflower, Golden plover, Peregrine, Kingfisher, Badger, Hedgehog, Stoat and Red squirrel. However due to the lack of data, it is not possible to quantify this impact, or even to determine if an impact is likely. Important habitats may also be reduced in area but again, there is insufficient data to determine the extent, or nature of this loss.
- 3.3.8 Loss of riparian buffer zones and ecological corridors in the LAP area can lead to a deterioration of water quality and a reduction in species populations (see figure 1). This is difficult to quantify. The Environmental Protection Agency (EPA) maintains monitoring stations along the King's river however these are confined to the main channel and there is only one within the LAP boundary. Therefore insufficient data is available to quantify the impact on water quality.
- 3.3.9 Data is not available on the current or projected status of water discharges to the King's river. The EPA maintains a monitoring station both within the town as down-stream of it where the quality is described as 'poor' and 'moderate' respectively. It is not possible to quantify the projected impact on water quality as a result of this plan.
- 3.3.10 Areas that have been zoned for 'open space' may be subject to future development pressure but this is not predetermined. The impact therefore cannot be quantified.
- 3.4 Describe from the above those elements of the plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.
- 3.4.1 The potential loss and disturbance of habitat on the open green area within the SAC could result in the removal of important habitats, or the loss of habitat for important species. This is therefore a potentially significant impact.
- 3.4.2 The loss of ecological corridors, particularly hedgerows and vegetation along a tributary of the King's river, have the potential to significantly impact on the functioning of ecosystems within the SAC when taken cumulatively.
- 3.4.3 There is insufficient data projected status of water quality along the relevant stretch of the King's river as population increased under the LAP. It must therefore be concluded that this impact is potentially significant.
- 3.5 Conclusion and Recommendation
- 3.5.1 Significant impacts arising from the LAP are expected from three sources;
- Direct habitat loss and disturbance arising from the 'open space' designation within the SAC.
  - Cumulative, indirect impacts arising from the lack of zoning around hedgerows and all river corridors that could lead to a loss of ecosystem function within the SAC.
- 3.5.2 The projected increase in population and business/industrial activity that will place further pressure on wastewater treatment facilities in the town. Additional

paved surfaces will also increase surface water run-off and add to pollution loadings in the river. The resultant deterioration in water quality will impact negatively on populations of important aquatic species in the SAC.

- 3.5.3 It is therefore recommended, in consultation with NPWS personnel, to proceed to the full Appropriate Assessment stage in order to fully assess the nature of these impacts, and to establish avoidance or mitigation measures as appropriate.

Figure 1 - Callan LAP Area

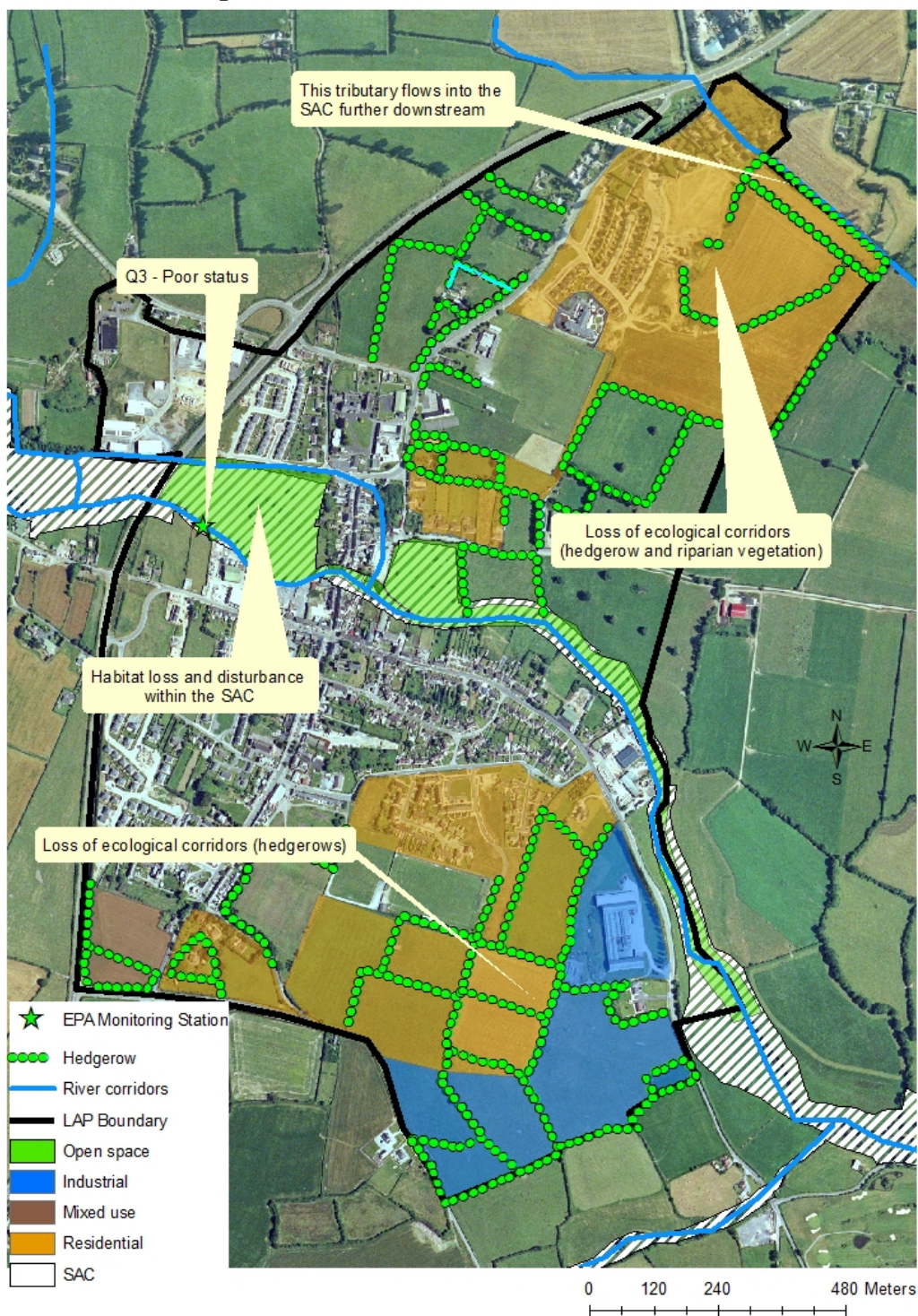


Figure 3.1: Potential Impact of the Callan Local Area Plan



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