



## Ecological Impact Assessment

Outdoor recreation Infrastructure Scheme (ORIS),  
Baylin, Co. Westmeath

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**For:** Westmeath County Council

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## 1. Introduction

This report comprises information regarding the ecological status of the proposed site of works, including an assessment of the potential impacts of the proposed works on the ecology of the surrounding area.

The project area is on Carn Park Bog, Baylin, Co. Westmeath, where it is proposed to develop a recreational trail and boardwalk linking Carn Park Forest Walk and the Baylin Bog Trail, across a section of cutover bog that lies within Carn Park Bog SAC.

In addition to the present assessment, an Appropriate Assessment Screening Report was also created as per the requirements of Article 6(3) of the Habitats Directive, in order to establish the potential for significant impact on any of the qualifying interests of the nearby Natura 2000 sites. The screening assessment concluded that there was no likelihood of significant effect on any European Site, and recommended that the project not proceed to Stage 2 AA.

The following definitions are used for the terms “impact” and “effect”:

**Impact** – Actions resulting in changes to an ecological feature, e.g. the construction activities of a development removing a hedgerow.

**Effect** – Outcome to an ecological feature from an impact, e.g. the effects on an animal population from loss of a hedgerow.

## 2. Methodology

### 2.1. Desk Study

A desktop study was carried out as part of this assessment to gain an understanding of the surrounding human and natural environments. This included a review of available data from a range of sources on the site and its immediate environs.

The following sources of data were employed:

- Environmental Protection Agency (EPA) Appropriate Assessment Tool;
- EPA Maps (to identify watercourses, hydrology and Natura 2000 site boundaries);
- NPWS protected species database and online mapping;
- The Geological Survey of Ireland hydrological and lidar data and map viewer;
- The National Biodiversity Data Centre archives;
- Inland Fisheries Ireland, and;

- An Bord Pleanála’s online database

## 2.2. Field Survey

The field survey was carried out by Erin McCrudden, Flynn Furney Environmental Consultants on 16<sup>th</sup> August 2023. Baseline ecological conditions were assessed. Habitats were classified according to A Guide to Habitats in Ireland (Fossitt, 2000). Where applicable, the habitat types and species usage were recorded (Smith et al. 2011; Scannell and Synnott, 1987; Wyse Jackson et al. 2016). Habitats were classified and dominant plant species noted according to the guidelines given by the JNCC (2010) with reference to best practice guidance for habitat survey and mapping (Smith et al., 2011) and Census Catalogue of the Flora of Ireland (Scannell & Synnott, 1987).

## 2.3. Criteria for the assessment of the value of ecological features

The impacts which may be expected from the proposed works at Baylin, Co. Westmeath, are assessed in Chapter 4 below. These possible impacts have been assessed under the CIEEM (2018) and the National Roads Authority guidelines (NRA, 2009). Criteria for assessment of duration of impacts used according to EPA guidelines (EPA, 2002). These provide guidance on assessing impact significance upon features of sites proposed for works. Impact significance must be given in context of the ecological value of the site and features under study.

The ‘ecological value’ of an area or feature thereof is defined with reference to geographical context. That is, whether it is of value locally, regionally, nationally, or internationally. This is assessed by ecologists on reviewing survey outcomes. Key criteria are the presence of designated sites, the site or feature containing protected species or areas of high biodiversity. The criteria for ecological value are given in Table 1 below.

*Table 1 Ecological Value Criteria*

Ecological Value	Criteria
International	<ul style="list-style-type: none"> <li>▪ ‘European Sites’ including Special Areas of Conservation (SAC) &amp; Special Protection Areas (SPA).</li> <li>▪ Sites that satisfy the criteria for designation as a ‘European Site’ (see Annex III of the Habitats Directive, as amended).</li> <li>▪ Features essential to maintaining the coherence of the Natura 2000 Network.</li> <li>▪ Sites containing ‘best examples’ of the habitat types listed in Annex I of the Habitats Directive.</li> <li>▪ Resident or regularly occurring populations (assessed to be important at the national level) of the following:                         <ul style="list-style-type: none"> <li>▪ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or</li> <li>▪ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive.</li> </ul> </li> <li>▪ Ramsar Sites</li> <li>▪ World Heritage Sites (Convention for the Protection of World Cultural &amp; Natural Heritage, 1972).</li> </ul>

Ecological Value	Criteria
	<ul style="list-style-type: none"> <li>▪ Sites hosting significant species populations under the Bonn Convention</li> <li>▪ Sites hosting significant populations under the Berne Convention</li> </ul>
National	<ul style="list-style-type: none"> <li>▪ Areas of Special Scientific Interest (ASSI) or Natural Heritage Area (NHA).</li> <li>▪ National Nature Reserves (NNR).</li> <li>▪ Marine Nature Reserves (MNR).</li> <li>▪ Area of Outstanding Natural Beauty (AONB).</li> <li>▪ Refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended).</li> <li>▪ Undesignated sites fulfilling the criteria for designation as an ASSI; NNR; MNR; and/or refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended).</li> <li>▪ Resident or regularly occurring populations (important at the national level) of the following:</li> <li>▪ Species protected under Wildlife (Northern Ireland) Order 1985 or Wildlife Act 1976, as amended); and/or</li> <li>▪ Species listed on the relevant Red Data list.</li> <li>▪ Sites containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.</li> </ul>
Regional	<ul style="list-style-type: none"> <li>▪ Sites of Local Nature Conservation Importance (SLNCI).</li> <li>▪ Areas subject to a Tree Preservation Order.</li> <li>▪ Resident or regularly occurring populations (assessed to be important at the Regional level) of the following:                             <ul style="list-style-type: none"> <li>▪ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</li> <li>▪ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</li> <li>▪ Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or</li> <li>▪ Species listed on the relevant Red Data list.</li> </ul> </li> <li>▪ Sites containing areas of the habitat types listed in Annex I of the Habitats Directive that do not satisfy the criteria for valuation as of International or National importance.</li> <li>▪ Regionally important populations of species or viable areas of semi-natural habitats or natural heritage features identified in the National or Local Biodiversity Action Plan (BAP), if this have been prepared.</li> <li>▪ Sites containing semi-natural habitat types with high biodiversity in a regional context and a high degree of naturalness, or populations of species that are uncommon within the region.</li> <li>▪ Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.</li> </ul>
Local	<ul style="list-style-type: none"> <li>▪ Locally important populations of priority species or habitats or features of natural heritage importance identified in the Local BAP, if this has been prepared;</li> <li>▪ Resident or regularly occurring populations (assessed to be important at the Local level) of the following:                             <ul style="list-style-type: none"> <li>▪ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</li> <li>▪ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</li> <li>▪ Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or</li> <li>▪ Species listed on the relevant Red Data list.</li> </ul> </li> <li>▪ Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality;</li> <li>▪ Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value</li> <li>▪ Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</li> </ul>

Ecological Value	Criteria
	<ul style="list-style-type: none"> <li>▪ Sites or features containing non-native species that are of some importance in maintaining habitat links.</li> </ul>

Ecological Impact Assessment must also consider the significance of effects that may be expected arising from a proposed development. CIEEM guidelines (2018) define a significant effect as:

*“...an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’...or for biodiversity in general. Conservation objectives may be specific (e.g., for a designated site) or broad (e.g., national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.*

It also states that:

*“...an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. A significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorise a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring.”*

The criteria for assessment of significance of effects is given in the following table (Table 2). It should be noted that significant effects may also include beneficial effects.

*Table 2 Criteria for assessing significance of effects.*

Impact Significance		Criteria
Significant Negative Effect	Major Adverse	<ul style="list-style-type: none"> <li>▪ Loss of, permanent damage to or adverse impact on any part of a site of international or national importance;</li> <li>▪ Loss of a substantial part or key feature of a site of regional importance;</li> <li>▪ Loss of favourable conservation status (FCS) of a legally protected species;</li> <li>▪ Loss of or moderate damage to a population of nationally rare or scarce species.</li> </ul>
	Moderate Adverse	<ul style="list-style-type: none"> <li>▪ Temporary disturbance to a site of international or national importance, but no permanent damage;</li> <li>▪ Loss of or permanent damage to any part of a site of regional importance;</li> <li>▪ Loss of a key feature of local importance;</li> </ul>

Impact Significance		Criteria
		<ul style="list-style-type: none"> <li>▪ A substantial reduction in the numbers of legally protected species such that there is no loss of FCS but the population is significantly more vulnerable;</li> <li>▪ Reduction in the amount of habitat available for a nationally rare or scarce species, or species that are notable at a regional or county level.</li> </ul>
No Significant Effect	Minor Adverse	<ul style="list-style-type: none"> <li>▪ Temporary disturbance to a site of regional value, but no permanent damage;</li> <li>▪ Loss of, or permanent damage to, a feature with some ecological value in a local context but that has no nature conservation designation;</li> <li>▪ A minor impact on legally protected species but no significant habitat loss or reduction in FCS;</li> <li>▪ A minor impact on populations of nationally rare or scarce species or species that are notable at a regional or county level.</li> </ul>
	Negligible	<ul style="list-style-type: none"> <li>▪ No impacts on sites of international, national or county importance;</li> <li>▪ Temporary disturbance or damage to a small part of a feature of local importance;</li> <li>▪ Loss of or damage to land of negligible nature conservation value;</li> <li>▪ No reduction in the population of legally protected, nationally rare, nationally scarce or notable (regional level) species on the site or its immediate vicinity.</li> <li>▪ Beneficial and adverse impacts balance such that resulting impact has no overall affect upon feature.</li> </ul>
	Minor Beneficial	<ul style="list-style-type: none"> <li>▪ A small but clear and measurable gain in general wildlife interest, e.g., small-scale new habitats of wildlife value created where none existed before or where the new habitats exceeds in area that habitats lost.</li> </ul>
Significant Positive Effect	Moderate Beneficial	<ul style="list-style-type: none"> <li>▪ Larger new scale habitats (e.g., net gains over 1 ha in area) created leading to significant measurable gains in relation to the objectives of biodiversity action plans.</li> </ul>
	Major Beneficial	<ul style="list-style-type: none"> <li>▪ Major gains in new habitats (net gains of at least 10 ha) of high significance for biodiversity being those habitats, or habitats supporting viable species populations, of national or international importance cited in Annexes I and II of the habitats Directive or Annex I of the Birds Directive.</li> </ul>

The duration of impact must also be considered when assessing overall ecological impacts. The EPA have set out criteria for assessment of duration of impacts, with the following terms defined when quantifying duration (EPA, 2002).

- Temporary – up to 1 year
- Short-term – from 1-7 years
- Medium-term – 7-15 years
- Long-term – 15-60 years
- Permanent – over 60 years

Finally, the likelihood of impacts should also be defined. Assessment of likely impact followed CIEEM guidelines. These assess likelihood as follows:

- Almost Certain – probability estimated at greater than 95%
- Probably or Likely – probability estimated at between 50% and 95%
- Unlikely – probability estimated at between 5% and 50%
- Extremely Unlikely – probability estimated at less than 5%



### 3. Receiving Environment

#### 3.1. Site Location

The project is proposed to take place just southeast of Baylin, Co. Westmeath, where it is proposed to create a new recreational trail linking two existing routes, Baylin Bog Walk and Carn Park Forest Trail. The project is part of a wider scheme of upgrades to the latter routes. The proposed works consist of the creation of a gravel trail on an existing disused forest trail surface and the construction of a boardwalk across a section of Carn Park Bog which was previously cutover. The project lies entirely within the boundary of *Carn Park Bog SAC 002336*.

The village of Baylin lies ca 400m to the northwest; the wider landscape is composed predominately of a mosaic of improved agricultural grassland with some conifer plantations. *Crosswood Bog SAC 002337* lies ca 2.4km southwest. The project lies within Upper Shannon 26E WFD catchment, Breensford\_SC\_010 subcatchment.

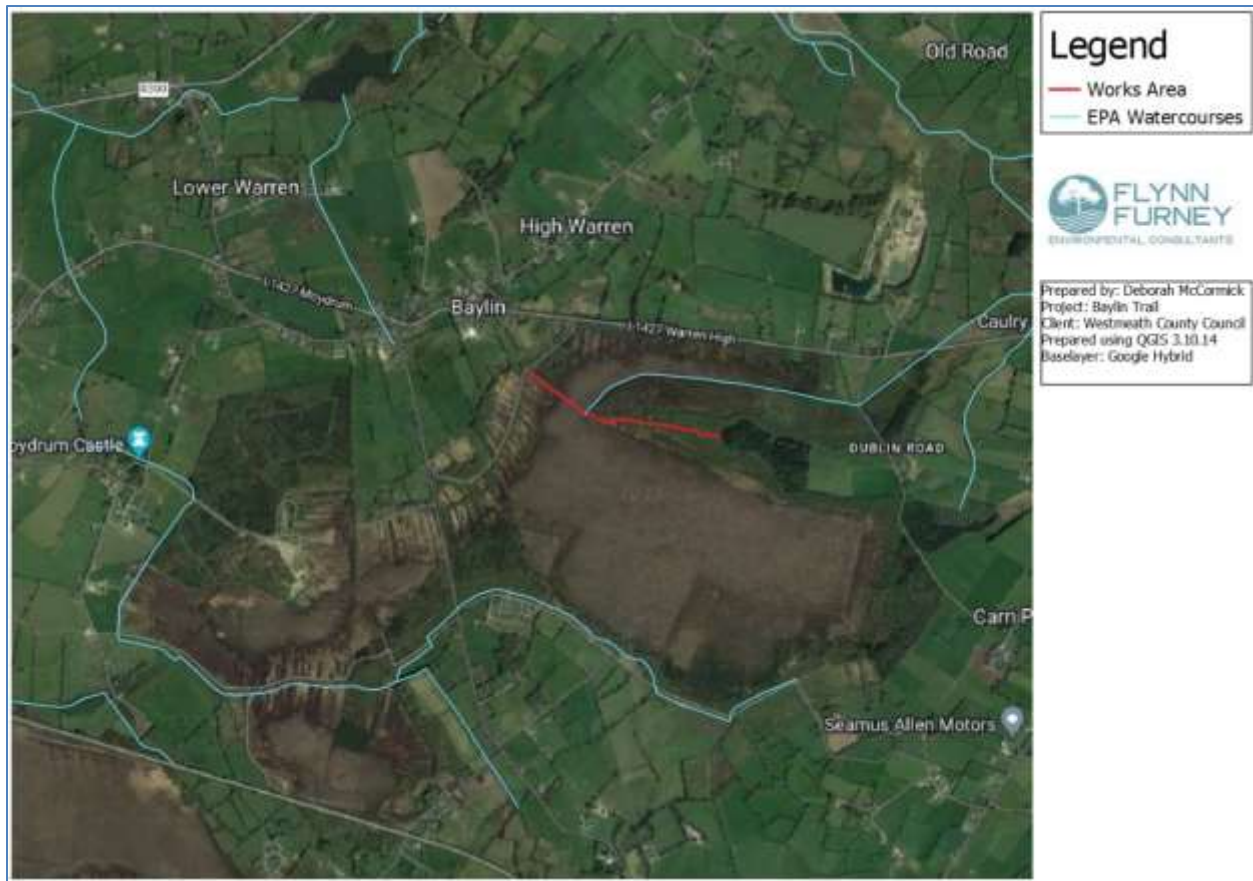


Figure 1 Overview of the works area

### 3.2. Receiving Environment

A description of the habitats of significant ecological value that were observed within the immediate surroundings of the works area are listed below, with descriptions adapted from “A Guide to Habitats in Ireland” by Julie A. Fossitt, 2000 (Figure 2

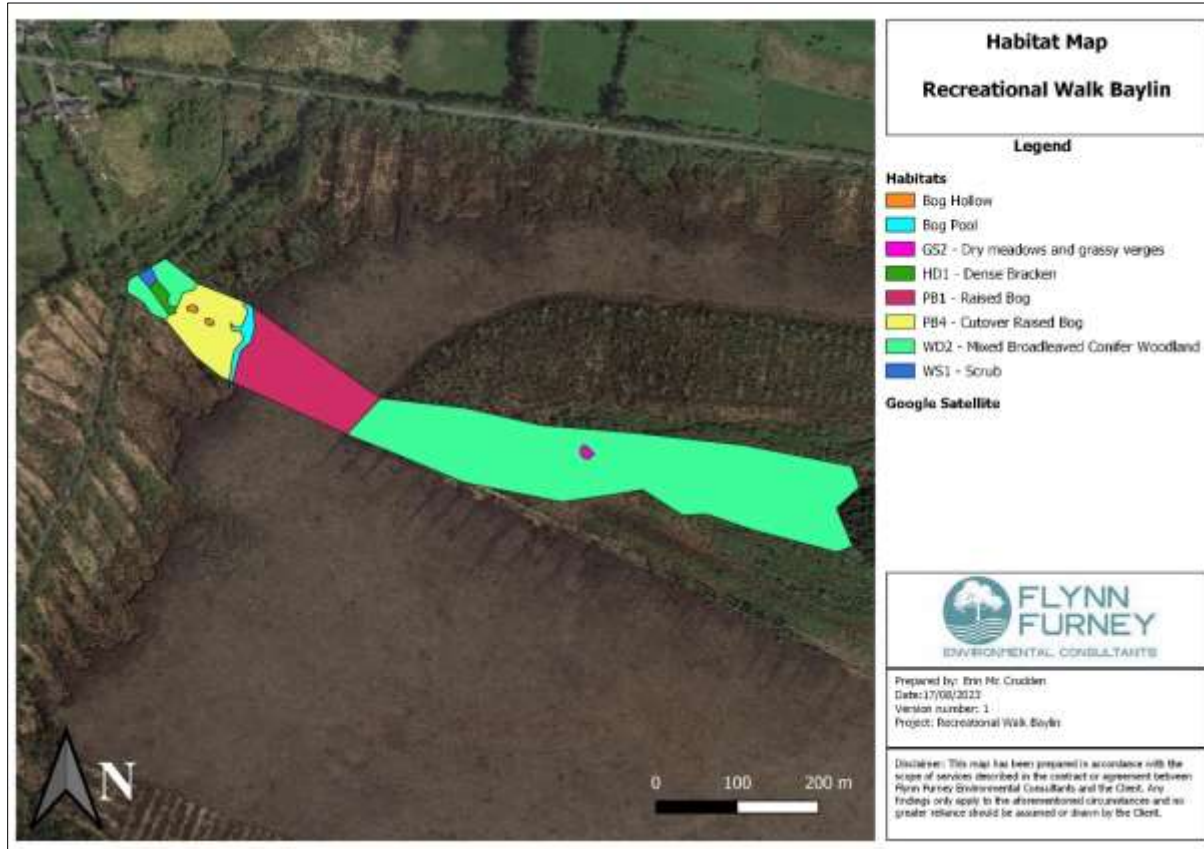


Figure 2 Habitat Map of the proposed works

### **WS1 Scrub**



The first habitat encountered was WS1 off the walking path of the Baylin Bog Trail. A small stream runs parallel to the path. This habitat was dominated by Nettle. Cleavers were abundant and Hoary Willowherb were frequent. Marsh Woundwort and Bramble were noted as frequent also. Bracken and Ivy were occasional. Bush Vetch, Angelica and Creeping Buttercup were rare.

### **WD2 Mixed broadleaved/conifer woodland (Next to Baylin Walk)**



WD2 was surrounding the scrub habitat, trees that were frequent included Downy Birch and Willow sp. Lodge Pole Pine was occasional but toward the outskirts of the woodland became frequent. Ash was occasional at the outskirts of the woodland boundary. A 4m x 5m patch of Rhododendron was noted in this habitat. Large patches of dead wood were observed. Dog wood was also noted as present on the outskirts of the proposed route. Chaffinches and Siskins were heard in this area.

### HD1 Dense bracken



The scrub habitat then transitioned into an open area of dense bracken habitat with a height of up to 6 ft. Greater Willowherb was occasional.

### PB4 – Cutover Bog (Adjacent to Woodland/Baylin Walking Trail)



This habitat was encountered after leaving the WD2 habitat. Ling heather was abundant with Lodgepole Pine occasional encroaching as saplings throughout this section of the bog. Birch and Gorse were rare. Sphagnum species observed were dry, but patches of healthier sphagnum were scattered around the area showing more water uptake and saturated zones. Purple Moore grass was frequent in the bog area adjacent to the woodland. Bell Heather was also noted to be rare. The surrounding woodland is encroaching on this cutover area with various saplings and shrubs.

However, there were patches of the degraded raised bog that were saturated (but shallow) and multiple frogs were observed adjacent to these areas. In these hollows Sphagnum species (*S. papillosum* and *S. cuspidatum*) appeared healthier regarding water uptake and density. This area had moderate Sphagnum cover. Bog Cotton sp. and Bog Asphodel were occasional around these



hollows. Round-leaved Sundew was rare and found within the damp areas of the hollows. Molinia was frequent adjacent to the hollows. Compact Rush was occasional. One of these areas had a water level testing pipe which would be from previous research on monitoring the water table. There were a few small patches scattered around the area.

Buzzards, Barn Swallows and Siskins were heard/seen in this area. Otter spraint was noted. Large Marsh Grasshopper observed. Frogs were frequent.





An extensive pool area was observed at the foot of a high ridge leading onto the high bog. This habitat was dominated by *Molinia* and was deeper compared to the hollows. This area was quite saturated and had a high coverage of *Sphagnum* sp. Bog Asphodel was frequent in this area and Ling Heather was occasional. Round Leaved Sundew was occasional. This pool was adjacent to a shelf of peat (1m) from previous cuttings which then led onto the high bog section which was more open.



### Degraded Raised Bog (High Bog)



After the 1m shelf, the area is more open. Ling heather was abundant in this area and the peat was quite dry. Lodgepole Pine Willow sp. and Birch saplings were rare. British Soldier lichen was occasional. Bell heather was also rare. Molinia was occasional whilst Lichen was frequent. Bog Asphodel was more frequent closer to the woodland on the other side. The peat became slightly more saturated on the outskirts of the woodland on the other side. Multiple drains were noted around the forestry.

### WD2 Mixed Broadleaved Conifer Woodland (Carn Park Forest)



In this habitat Lodgepole Pine was frequent on the outskirts and became more occasional deeper in the woodland habitat. Bog Bilberry was frequent throughout the forest. Ling heather was noted to be occasional. Saplings of Ash and Holly were rare with Bracken occasional. Purple Moore Grass was frequent throughout the woodland. Willow and Birch trees were frequent. Tormentil and Knapweed was occasional throughout the ground flora of the forest. Lady's Bedstraw, Bush Vetch, Pignut and Common Twayblade were rare. Two patches of Rhododendron were observed along the route. These were 4m x 5m and 6m x 4m.

## Dry meadows and grassy verges GS2



The informal pathway transitions into an open area of neutral grassland. In this habitat species such as St. John's Wort, Ragwort, Knapweed, Willowherb are occasional. Red Clover was frequent. A patch of Knapweed was frequented by many butterflies (Peacock, Small Tortoiseshell and Green Veined butterflies).

### 4.2.1. Surface water

A small stream leaves Carn Park Bog, draining into the Breensford River and then into Lough Ree some 12km downstream from the proposed works. The Breensford is currently classified as Not at Risk under the latest WFD characterisation, with Good water quality; the latest Q-value assessment returned a value of Q4 downstream where it crosses the R390 in 2020. There was no evidence of the stream on the surface in the vicinity of the works area during the survey; it likely collects diffusely before leaving the bog to the east.

### 4.2.2. Breeding Birds

All species of wild bird that occur naturally in Ireland are fully protected at all times by the Wildlife Act and relevant amending legislation. Similarly, all birds naturally occurring in the wild state are afforded a measure of protection by the EU Birds Directive, but derogations may reduce protection for specific reasons. As such, any vegetation clearance must be carried out outside of the bird nesting season (March 1st - August 31st).



No dedicated bird survey was carried out as part of this investigation. There is ample habitat for both ground- and tree-nesting bird species along the route and were vegetation to be disturbed (which should not be the case) a pre-works nesting survey is recommended. A number of species were noted during the survey; chaffinch, siskin, barn swallow and buzzard were seen and/or heard on the day.

#### 4.2.3. Amphibians

The cutover bog provides ample habitat for both common frog *Rana temporaria* and smooth newt *Lissotriton vulgaris*; common frog was frequently observed in the cutover bog habitat during the survey.

#### 4.2.4. Mammals

The habitat along the route provides habitat for many mammal species, both in the bog area and the woodland. A dedicated survey was not carried out as part of the present study, but otter spraint was noted within the cutover bog habitat, and Article 17 reporting recorded otter in 2017 2km to the northwest on the Breensford river. Many of the trees within the mixed woodland could provide habitat for bats and were they to be disturbed during the proposed works, a dedicated survey is recommended.

#### 4.2.5. Invasive Species

The Wildlife Acts, 1976 and 2000, contain a number of provisions relating to invasive non-native species (INNS), covering several sections and subsections of the Acts. It is prohibited, without licence, to plant or otherwise cause to grow in a wild state, in any place in the State, any species of flora, or the flowers, roots, seeds or spores of invasive flora listed on the Third Schedule. Articles 49 and 50 of the aforementioned Acts set out the legal implications associated with alien invasive species and Schedule 3 (the Third Schedule) of the regulations lists non-native species subject to the restrictions of Articles 49 and 50, which make it an offence to plant, disperse, allow dispersal or cause the spread of invasive species.

One 3<sup>rd</sup> schedule species, *Rhododendron ponticum*, was noted in several patches during survey within the mixed conifer woodland adjacent to the existing Carn Park Forest. The proposed works should not interfere with these, but a management plan should be drawn up to remove them as part of the works in order to prevent their further spread.

### 3.3. Proposed Works

The proposed works involve the creation of a boardwalk and gravel trail connecting the existing Baylin Bog Walk and Carn Park Forest (Figure 3). It has been proposed that this link would consist of a 975 m walking route, including an upgraded and extended gravel road (625m, Section 7 - 8) and a new raised boardwalk (350m Section 8 - 9). The envisaged widths are 2.0m for the gravel road and 1.8m for the Boardwalk. The 625 m proposed gravel road section will be constructed on a natural trail that has fallen into disuse in recent years.



Figure 3 Baylin Area Amenity Map

The boardwalk is proposed to consist of timber deck planks on timber joists spanning c.4m between timber 'goalposts.' The goal posts would be 2 No. 150x150mm timber posts, driven into the bog, with a timber cross head between the top of the posts supporting the joists. With the proposed length of the boardwalk spanning c.350m and the timber goal posts positioned at 4m increments, it would amount to 88 posts on either side of the boardwalk (as pairs) which would be driven into the bog to support the structure of the boardwalk. The total of 88 pairs (resulting in 176 150x150 timber posts) will allow pedestrians utilising the trail to safely cross the Bog by the newly constructed boardwalk as opposed to walking directly on the Bog. It is further envisaged that this will be constructed from the western side linearly towards the east to not require the construction material or vehicles to encroach over the SAC.

### 3.4. Nearby Designated Sites

All sites within 15km of the proposed works (and beyond) were initially considered as part of this screening (Figure 4). After the initial consideration, three European sites were considered to have a reasonable pathway for impact (Table 3).



Figure 4 Natura 2000 sites in the vicinity of the proposed works

Table 3 Assessment of Natura 2000 sites within the zone of influence of the proposed works

Site	Distance (km)	Screening Assessment
Carn Park Bog SAC 002336	0	Proposed works lie entirely within the European Site. Further consideration is necessary.
Lough Ree SAC 000440	13	Proposed works lie ca 12km from the European Site with only a tenuous hydrological connection – the bog is drained by a small stream which eventually connects to Lough Ree, but the Breensford River passes through several small lakes before entering the European Site. No reasonable pathway for impact

		exists given the nature and scale of the work and the distance to the site.
Lough Ree SPA 004064	13	As above, no reasonable pathway for impact exists given the nature and scale of the work and the distance to the site. Furthermore, the proposed works lie 13km from the SPA, well outside the core foraging range for any of the SCI species for which the site is designated.

After the initial screening exercise, only one site, *Carn Park Bog SAC 002336*, was considered to have the potential to be significantly impacted by the proposed works. This site is considered in further detail below.

#### 4.4.1 Carn Park Bog SAC

This European Site lies 8km west of Athlone, comprising a raised bog that includes both areas of high bog and cutover bog. The bog has developed in a basin, which is almost divided in two by a ridge of mineral material; the majority of the bog is to the south of this. Areas of active raised bog, a priority habitat, have been mapped throughout the site, most of it in the southern section – a further 9ha of the high bog area has been identified as having the potential for restoration through e.g., drain blocking (Figure 5).

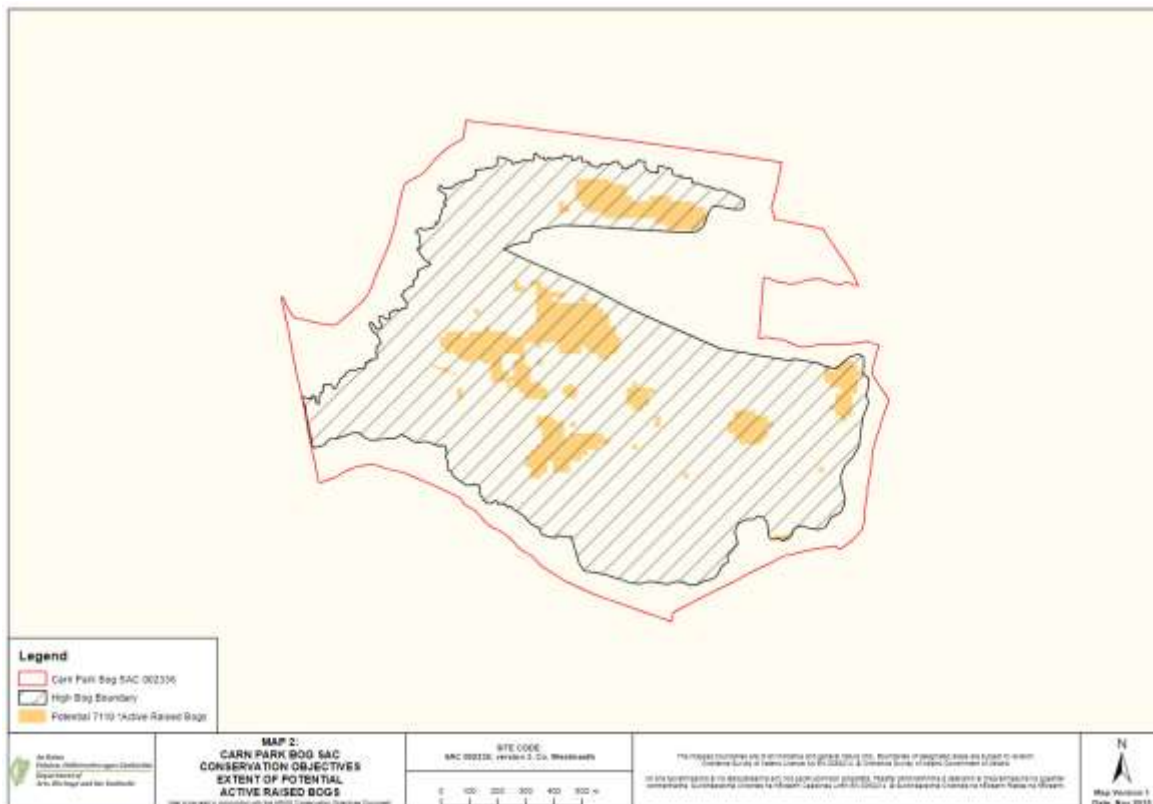


Figure 5 Habitats within Carn Park Bog SAC

The proposed boardwalk will cross the high bog at its narrowest point, along the ridge of mineral till in the northern half of the Site.

## 4. ECOLOGICAL IMPACT ASSESSMENT

The site evaluation scheme of the guidelines outlined above in Chapter 2 would characterise the area within the immediate zone of influence of the works as being of *International Importance*, given its designation as *Carn Park Bog SAC 002336*, and the presence of the priority habitats Active Raised Bogs and Degraded Raised Bogs still capable of natural regeneration in the wider vicinity of the proposed works.

### 4.1. Ecological Features

#### 4.1.1. Mixed woodland (WD2)

There are two areas of mixed woodland within the works area, at either end of the proposed boardwalk. The area to the west adjacent to the existing Baylin Bog walk is broadleaf dominated, whereas the eastern end is adjacent to the conifer plantation and is dominated by lodgepole pine. Taken outside the context of the European Site, both these areas would be of *Local Importance*, given the lack of other woodland habitat for biodiversity within an otherwise intensive grassland-dominated landscape. The works proposed to use the existing disused trail on the eastern end; vegetation clearance can therefore be kept to a minimum. The woodland areas are of significance in the context of the wider landscape; should significant vegetation disturbance be necessary, or the removal of adjacent trees, then dedicated surveys for nesting birds and bats are recommended, depending on the season. Of note also are the two patches of *Rhododendron ponticum* within the eastern woodland area; a plan should certainly be drawn up to remove these and prevent their further spread, particularly given that increased foot traffic through the area and into the bog increases the risk of spread into the priority habitat. The works as designed are considered to constitute a *probable, short-term, negligible* impact on the feature.

#### 4.1.2. Cutover Bog (PB4)

The bog habitats are situated within the SAC and are of *International Importance*, given the presence of priority habitat within the area (though not within the works footprint), the scarcity of the habitat within a landscape context, and the presence of pools and large areas of *Sphagnum* sp., and the presence of significant amounts of *Eriophorum* sp., indicative of reasonable habitat quality. At present, the habitat is under threat of succession from encroachment of conifer saplings from the west, and the removal of these as part of the works might be considered. The works as designed propose construction of the boardwalk from the eastern edge of the habitat, across the high bog and will remove the need for heavy traffic on

the surface of the habitat. Properly constructed boardwalks have been shown in many wetland sites in Ireland to have a positive effect by removing foot traffic from the sensitive surface of the bog and allowing vegetation to recover and grow naturally; neither do they interfere with the hydrological dynamics of the habitat, being raised on wooden stakes driven into the ground. The works as designed are considered to constitute an *almost certain, negligible, long-term* impact on the feature.

#### 4.1.3. Degraded Raised Bog (PB1)

As above, this feature is of *International Importance*, and given the presence of potential Active Raised Bog within the area, and the potential of further habitat within the area for rehabilitation given the right hydrological measures, makes it of extreme significance within the landscape. Encroachment by tree saplings is minimal in this area. As discussed, properly designed boardwalks will not negatively impact the habitat, and can in fact positively affect the wetland by removing the potential for foot traffic on the surface, particularly an issue in wetter areas. Surveys noted the presence of several historical drains in the area; NPWS noted that a further 9ha of this habitat has the potential to be restored to actively forming via drain blocking, and any program of works could consider incorporating drain removal/blocking in the vicinity of the boardwalk as an additional measure. The works as designed are considered to constitute an *almost certain, negligible, long-term* impact on the feature.

## 4.2. Other plans and projects

A search of the planning database for Westmeath County Council showed no developments that could impact the proposed works area and therefore contribute to a cumulative or in-combination impact with the works. The project falls within the scope of sustainable tourism development, natural heritage tourism and biodiversity awareness as laid out in the Westmeath County Development Plan 2021-2027 as part of the wider proposal to create a set of linked trails with Carn Park Bog SAC at their heart.

## 4.3 Mitigation and Ecological Enhancement

As noted here and also in the Appropriate Assessment Screening Report (Flynn-Furney, 2023), the project as designed is not considered to present a risk of impact to the works area, and therefore mitigation is not strictly required. However, there are a number of opportunities to further reduce any potential risk and also for net biodiversity gain in the area, and these might be considered as part of the works.

- The woodland areas should be left as undisturbed as possible during the creation of the new walking trail; should any vegetation clearance be necessary, then the area should be properly surveyed for nesting habitat/bat roosting potential prior to any works. Works outside the nesting season for birds should be considered to remove the potential for disturbance in the woodland.

- A detailed CEMP should be drawn up regarding the construction of the boardwalk, particularly around the area of materials stockpiling/storage, protection of the bog surface and any fuels/lubricant storage and management. It is suggested that a suitably qualified ecologist be present at least during the initial stages of setup and boardwalk construction.
- An Invasive Species Management Plan should be drawn up to remove the *Rhododendron* present within the mixed woodland area, and any other seedlings/saplings noted during works.
- Any 'easy wins' in terms of drain blocking in the vicinity of the proposed works might be considered in conjunction with NPWS, which might enhance the restoration potential of the habitat in the area, and hence both the tourism and biodiversity potential of the project.

## 4.2. Conclusions

The landscape in the vicinity of the proposed works is highly significant, lying within a European Site and comprising largely of priority habitat in the context of the Habitats Directive. The works as designed however do not present a risk of significant ecological impact due to their location, scale and nature and may in fact provide minor positive benefit to the area that at least outweighs any negligible negative impact. All works need to be undertaken with extreme care however to ensure that the environment is protected due to its sensitive nature.

No significant ecological impacts are predicted from the proposed works.

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