
NATIONAL TOURISM MONITORING PROGRAMME 2021-2025

ANNUAL RESULTS FOR 2021

PORTUMNA FOREST PARK

for:

Fáilte Ireland

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Portumna Forest Park – Interesting Finds

ECOLOGICAL HIGHLIGHTS

There is a white-tailed eagle which is resident in the area – the site has a bird hide positioned with a good view of the nest used by the breeding pair.



Portumna Forest Park is home to one of the more elusive mammals in Ireland, the pine marten, and is protected under the Wildlife Act.

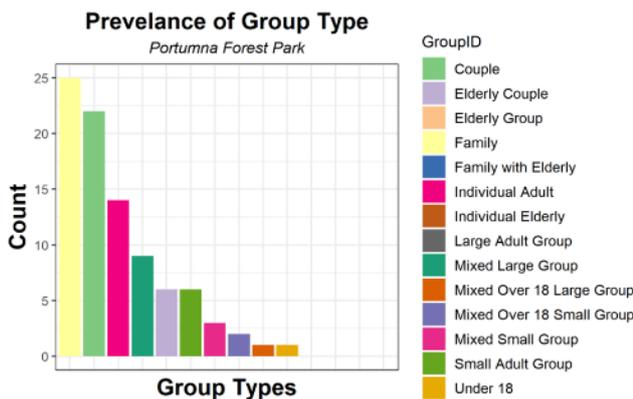
Among other mammals such as squirrels and bats, the site is also home to a number of bird species like swallows, swifts and mallards thanks to the habitats in the area.

KEY RECOMMENDATIONS

- Management practices to support strong invertebrate populations should be explored as a foraging resource for bats on site. This could include stabilising standing dead wood (for safety) while leaving them upright. Placing piles of various sizes of deadwood along the woodland edge. Construction of banks and berms for invertebrate nesting and basking etc.
- Increasing roost availability through the installation of bat boxes – and potentially a bespoke lesser horseshoe bat roost structures accompanied by an attraction protocol if the species is confirmed to be present.
- The site is well managed and ecologically diverse – there is an opportunity for higher rates of direct engagement at the site through biodiversity or nature related education events.
- Increased signage related to biodiversity which is interactive in nature could increase visitor experiences at the site.

VISITOR NUMBERS AND DWELL TIME

- 284 people visited the site over 8 hours
- Average dwell time of 53 minutes



VISITOR INTERACTION & MANAGEMENT

- Visitor interactions on site well controlled with strong management practices in place.
- Over 80% of activities recorded by visitors were deemed to be of low level such as picnicking and dog walking.
- No observable impacts were recorded on site.
- Most of the visitors to the site stayed for at least 53 minutes –given the nature of the site itself as a woodland park.
- Vast majority of visitors did not read available signage on site.



1 Portumna Forest Park

1.1 Purpose & Outputs of the Programme

Building on the success of the Wild Atlantic Way (WAW) environmental monitoring programme which ran from 2015-2019 – Fáilte Ireland has decided to expand the programme to a national level. The programme will monitor 19 individual sites located in all of Fáilte Irelands regional areas; The Wild Atlantic Way, Irelands Hidden Heartlands, Irelands Ancient East and Dublin. The programme will run for 5 years from 2021-2025.

The sites that are included in the programme vary in type from inland forest parks, to coastal sites, to privately owned attractions and diverse urban locations; a map of all sites for the 2021 – 2025 programme can be seen below.



The purpose of the programme is as follows:

- To gain more insight from an environmental perspective as to what is happening at a variety of sites where we encourage visitors to frequent,
- To gather information (visitor behaviour, movement, path and trail conditions, surveys for birds, flora etc) for each site over the course of 5 years,
- To understand if there are observable trends and/or observable variations amongst site types over a 5-year period,
- To note good & bad practice at sites in order to make recommendations where appropriate for site management which is intended will have sustainable benefits for the site, the visitor

and the natural environment.

The Wild Atlantic Way Environmental Monitoring Programme allowed us to monitor the behaviour & movement of over 26,000 visitors, identify where there were stresses on the environment or potential future risks as well as good and bad practice.

This culminated in our ability to make useful recommendations to site owners and managers and ultimately to develop a practical set of Guidelines for Visitor management (from Planning thorough to Site Operation).

It is hoped that we can build on the learnings of this previous programme and by engaging with site managers, to knowledge share, can enhance the information that we gather for each site chosen nationally for this new programme.

The key areas of focus within the data being gathered is to answer the following questions:

- How do the learning outcomes from the WAW monitoring compare when using repeat measures at fixed locations over a long period? Hence, what are the predictors of impact occurrence and severity?
- Following on from the WAW monitoring data – with the refined methods we aim to understand what activities cause which impact; and what are the factors which influence these activity choices in visitors?
- Understanding visitor movement patterns with respect to ranging behaviours – i.e., is there a distance threshold where impacts are less severe or negligible?
- Undertake pathway condition assessments to understand the relative sensitivities or tolerances of path types to visitor movements – taking note of habitat type and visitor numbers/load capacity.

These questions will be answered upon completion of the full suite of surveys and data collected annually over the course of the monitoring programme. However, each year will have annual interim reports to enable emerging findings and management recommendation to be identified and shared with the relevant stakeholders to support progressive management practices.

1.2 Methods & Surveys

The following surveys were undertaken at Portumna Forest Park:

1.2.1 Visitor Characterisation Survey

Visitor characterisation surveys were undertaken at each of the monitoring sites during the weekend period between June-August. The survey at Portumna Forest Park was undertaken on the 22nd of August 2021, with max temperatures reaching approximately 20.7° C, no rainfall and low levels of wind on the day¹. These surveys followed an 8-hour time period recording samples of visitor behaviour of as many visitors on site as possible. Visitor movement patterns, demographic data and activities undertaken were recorded for all sampled visitors. Where activities had associated impacts, these were also recorded and the relevant severity was recorded using the same coding system as with the WAW monitoring (see Appendix I for details). It is important to note that the visitor characterisation surveys are indiscriminate between visitors and local amenity use.

1.2.2 Ecological & Path Assessments

In addition to the visitor movement and behavioural records an ecological assessment and path network assessment was undertaken at each site. This consisted of mapping all tracks and trails – with records of hazards, notable damage etc. In addition to this, all habitats were mapped according to the Fossitt Habitat coding system while information on bird populations was gathered from National Biodiversity Centre Data.

¹ Weather data gathered from: <https://www.met.ie/climate/available-data/historical-data>

1.2.3 Other Surveys

Additional sample surveys were undertaken to identify the species presence of breeding birds, mammals and bats. This information can inform potential management actions related to amenity services such as lighting which could conflict with sensitive species on site.

1.3 Site Description of Portumna Forest Park

Portumna Forest Park, a Coillte managed site, hosts a peaceful forest walk which leads to a calming, far-reaching view of Lough Derg in south eastern County Galway, close to the town of Portumna. The park itself offers multiple different walking trails available for leisure activities. As Portumna Forest Park borders Lough Derg, it also borders the Lough Derg, North-east Shannon SAC and Lough Derg (Shannon) SPA and hosts forested habitats such as mixed broadleaved/conifer woodland and yew woodland.



Figure 1.1 Portumna Forest Park

Lough Derg, North-East Shore SAC

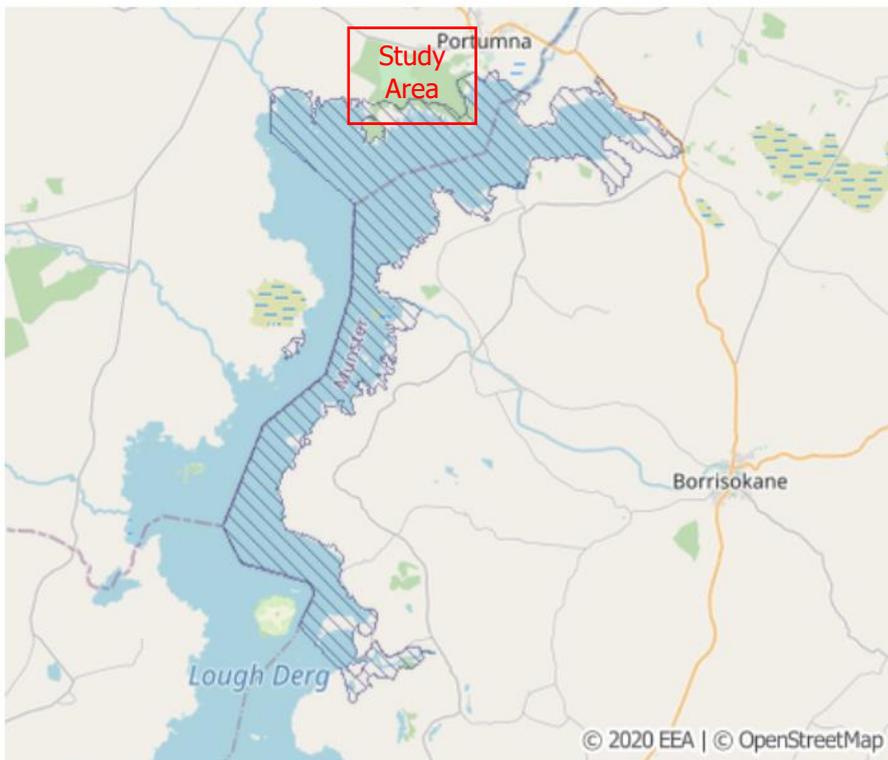


Figure 1.2 Study Area within Lough Derg, North-East Shore SAC

1.4 Pathways and Features Condition Results

1.4.1 Pathway Condition

The paths at Portumna Forest Park consist of a range of types and sized of managed and soft trails and pathways (Figure 1.4). There is little evidence of damage or erosion along the pathways.

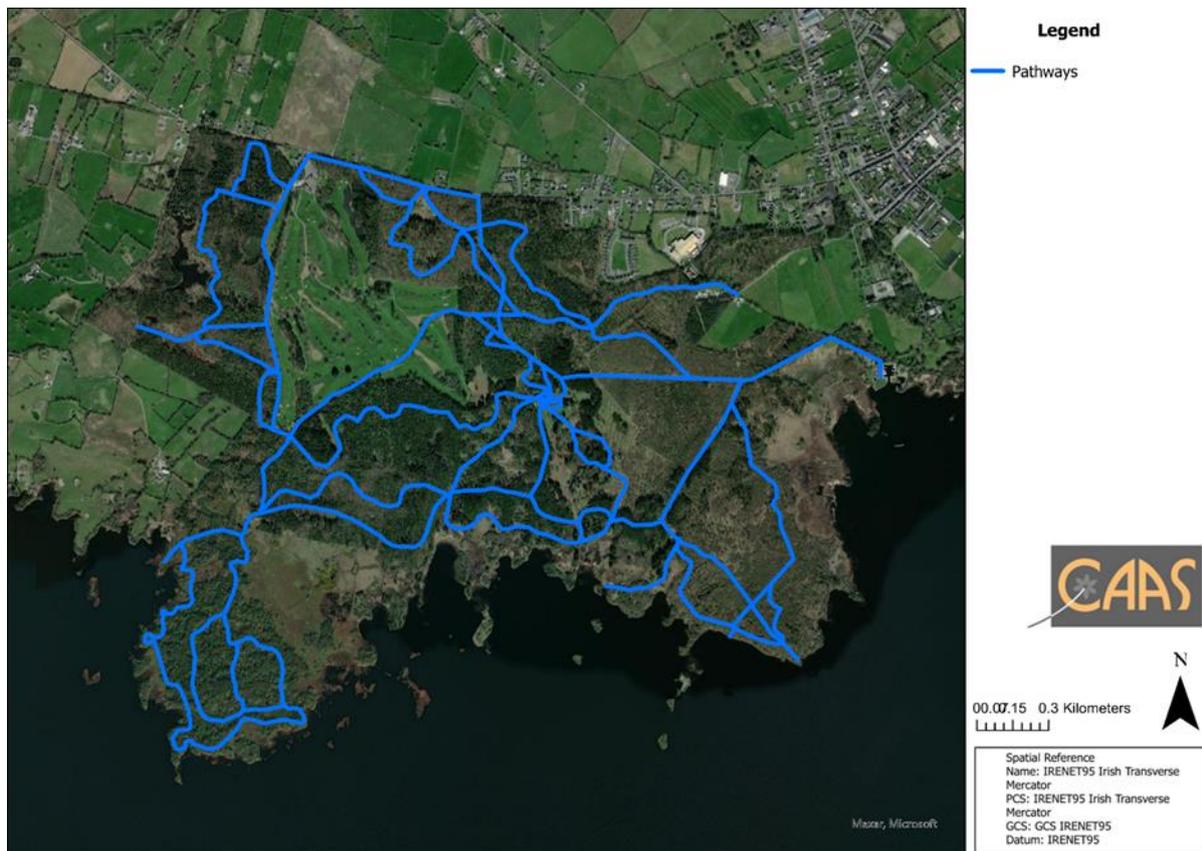


Figure 1.3 Pathways identified at Portumna Forest Park



Figure 1.4 Pathways at Portumna Forest Park

1.4.2 Features Condition

There are trail maps and small signs which designate trees dotted around Portumna. Along with these there are numerous trail markers which guide visitors through the designated trails and pathways.



Figure 1.5 Features recorded at Portumna Forest Park



Figure 1.6 Features at Portumna Forest Park

1.4.3 Hazards

No hazards were recorded at Portumna Forest Park.

1.5 Visitor Characterisation Survey

The visitor monitoring surveys resulted in a total of 284 visitors (which represent 89 group observations). The site is most popular amongst the Family group with the dominant mode of transport being car. The average dwell time for the site was 53 minutes; with the following activities undertaken during the survey (listed in order of occurrence rate):

Activity Type
Picnicking
Dog walking (on lead)
Cycling

Activity Type
Coffee
Dog walking (off lead)
Sitting
Reading
Jogging
Birdwatching
Drinking
Flower picking
Photographing
Smoking

Dwell Time

Portumna Forest Park

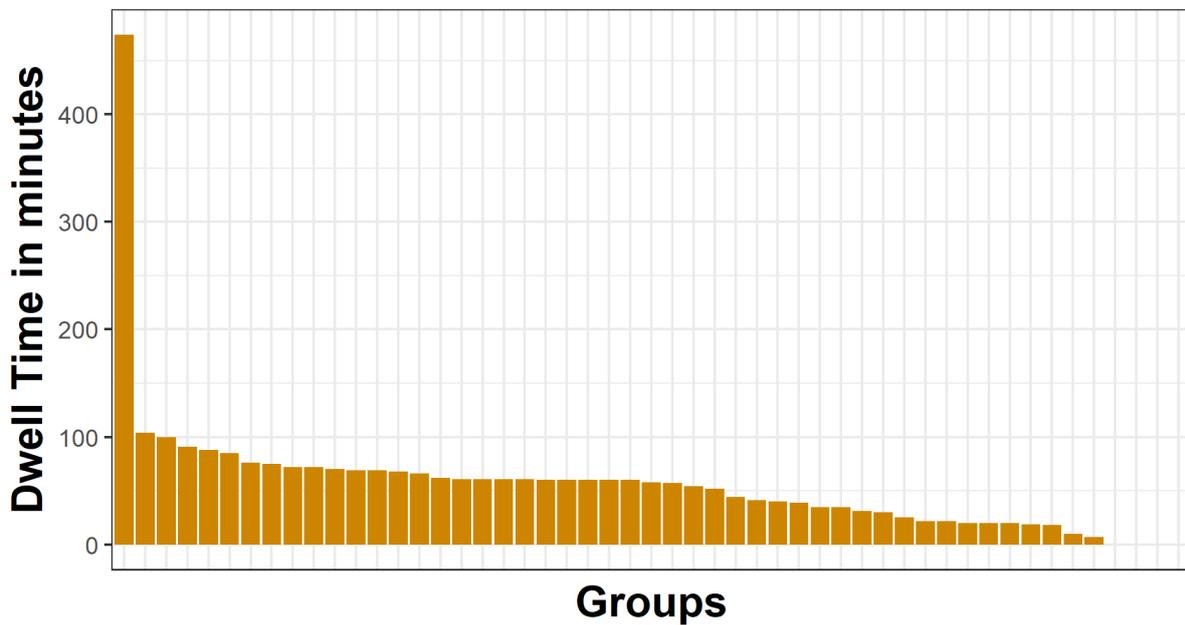


Figure 1.7 Duration of Time Spent at Portumna Forest Park

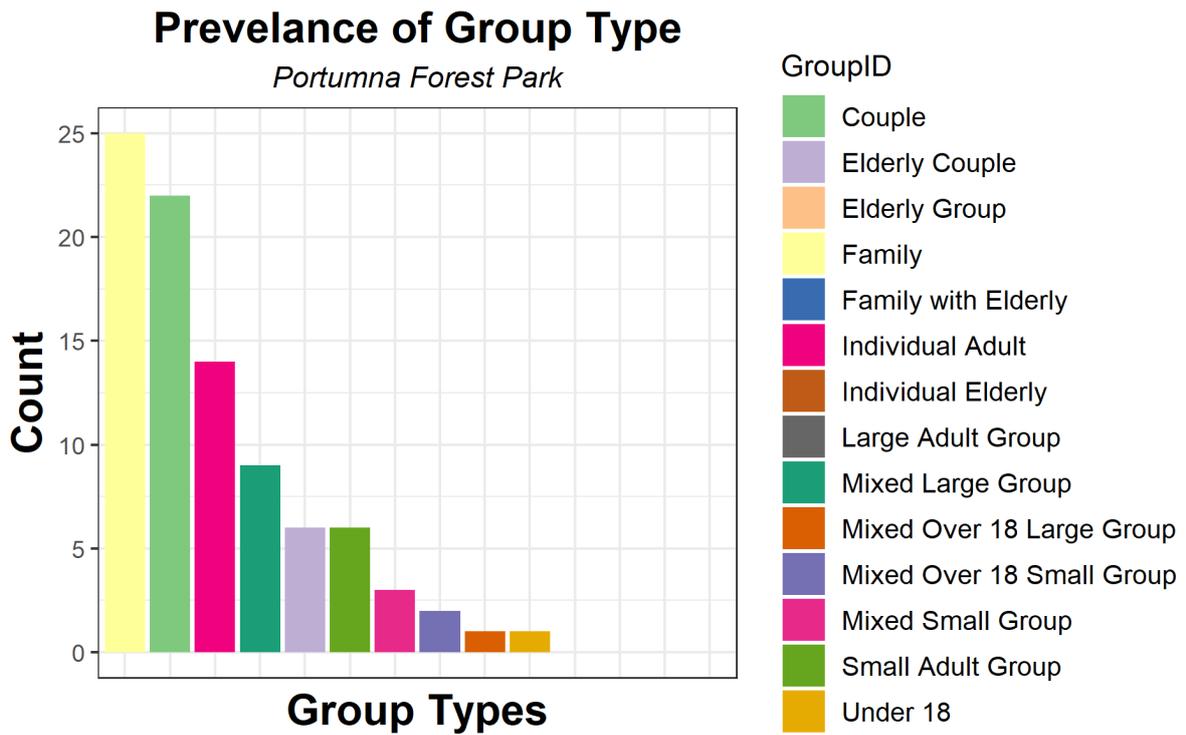


Figure 1.8 Groups of visitors that visited Portumna Forest Park

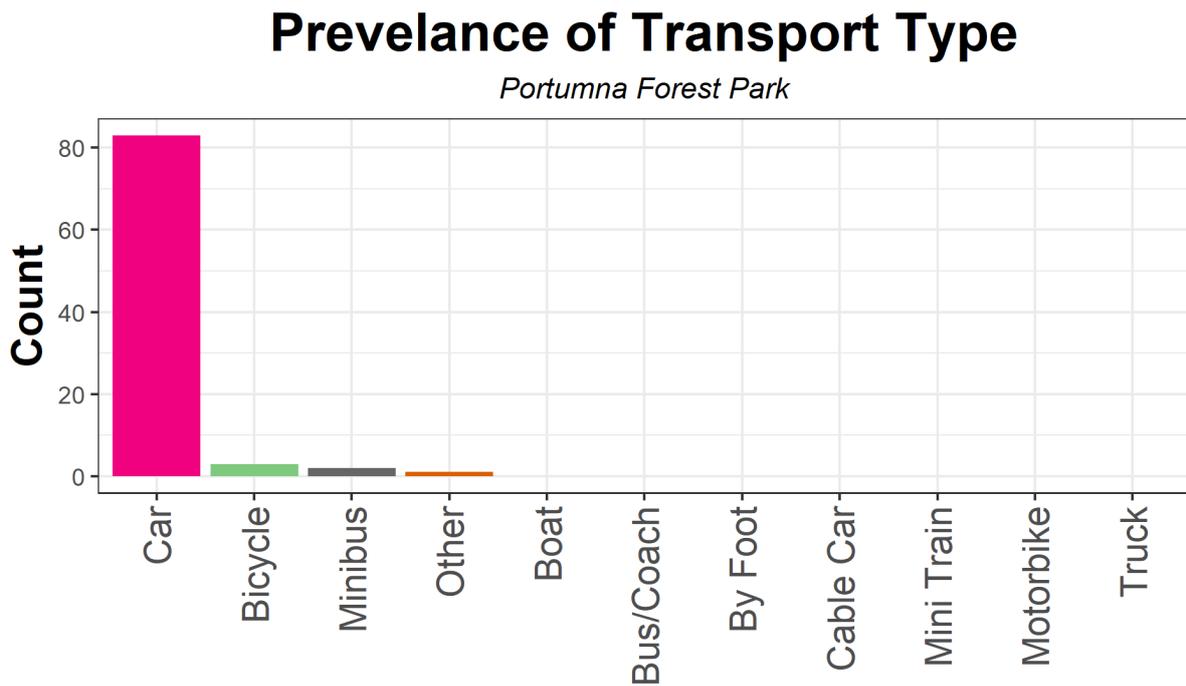


Figure 1.9 Mode of transport used to visit Portumna Forest Park

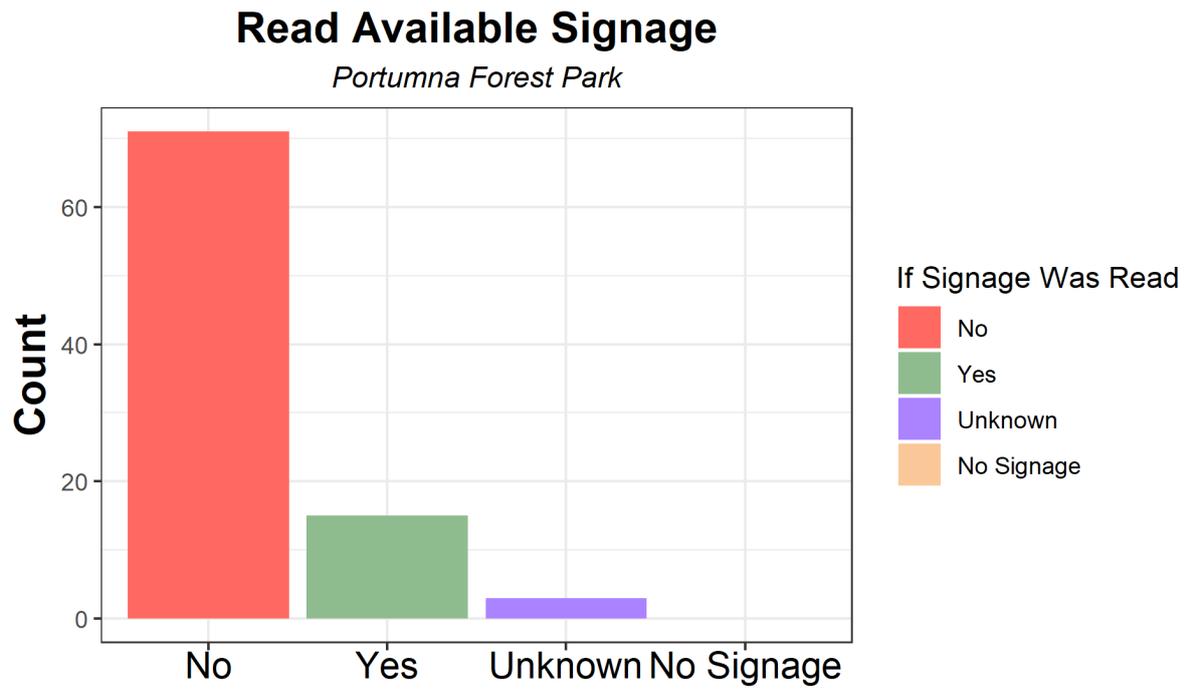


Figure 1.10 Use of Interpretive Material at Portumna Forest Park

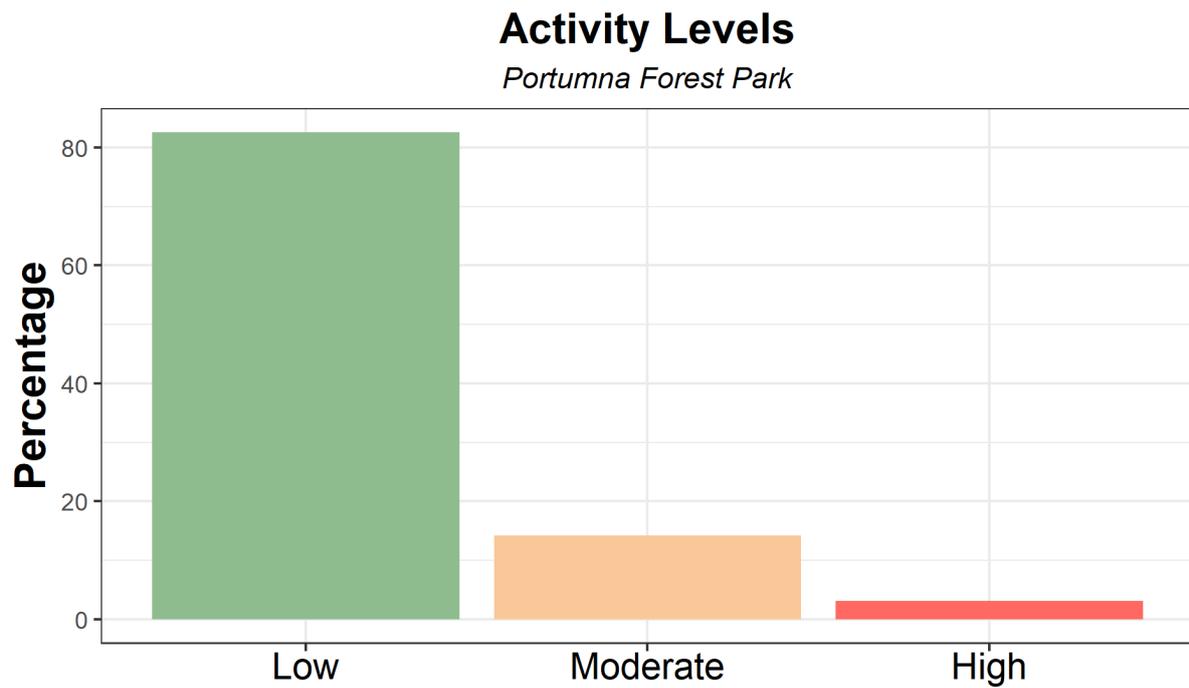


Figure 1.11 Categories of Activity Levels Observed at Portumna Forest Park

Activity Undertaken Other Than Walking

Portumna Forest Park

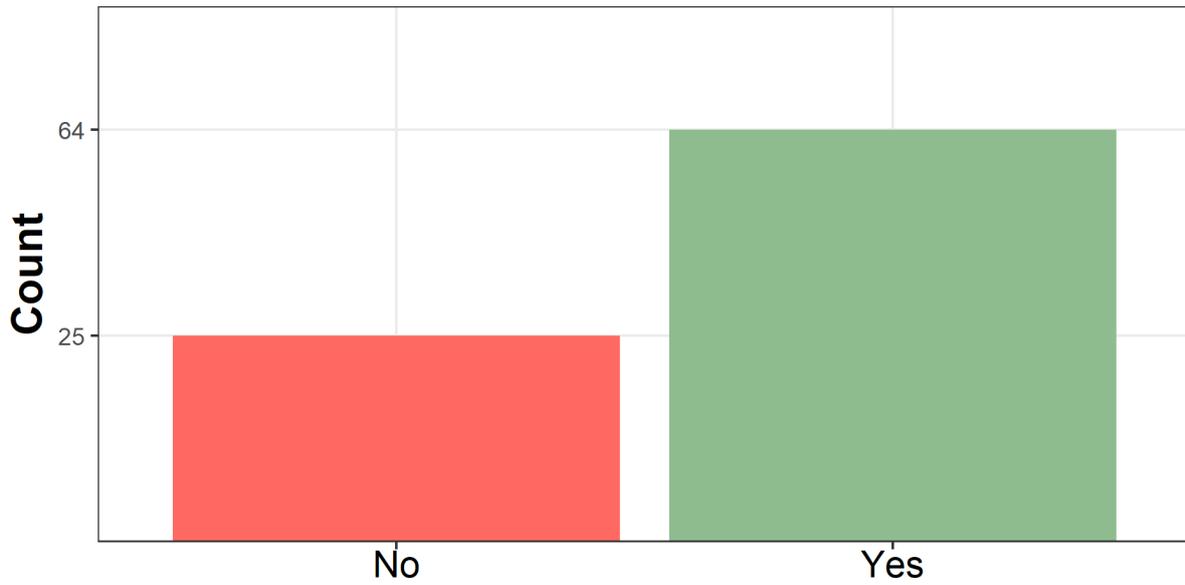


Figure 1.12 Activities undertaken other than walking

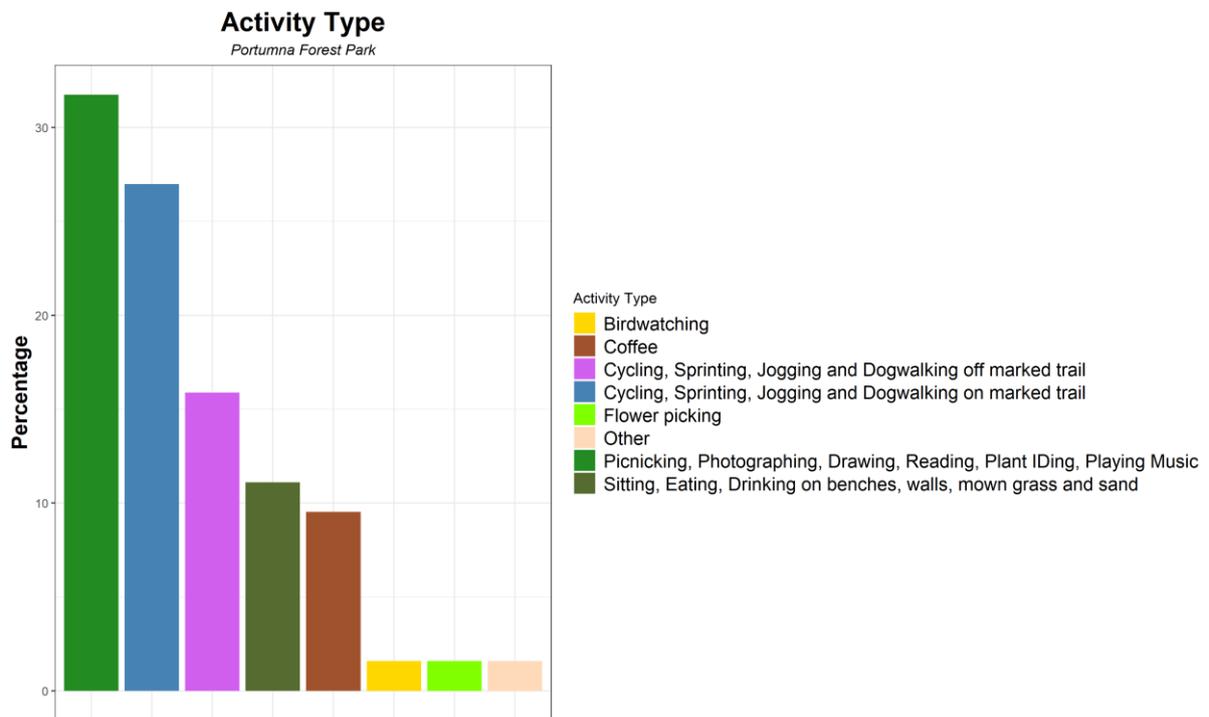


Figure 1.13 Range of Visitor Activities Observed at Portumna Forest Park



Figure 1.14 Visitor movement patterns at Portumna Forest Park

Of the 89 sample groups recorded on site, 72% of them undertook activities other than walking. These activities (identified above) resulted in no observable impact on the environment.

1.6 Ecological Monitoring Results

1.6.1 Ecological Constraints

Habitats within 2km of Portumna Forest Park are known to be sensitive to hydrological changes, land use management, overgrazing, alien species while the species that use these habitats are sensitive to aquaculture, pollution, invasive species, land use management, hunting and hydrological changes.

Table 1.1 Designated sites within 2km of Portumna Forest Park and relevant ecological receptors

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[000011]	Lough Derg pNHA	0.01	pNHA	
[004058]	Lough Derg (Shannon) SPA	0.04	SPA	Tufted Duck (<i>Aythya fuligula</i>) [A061], Cormorant (<i>Phalacrocorax carbo</i>) [A017], Goldeneye (<i>Bucephala clangula</i>) [A067], Wetland and Waterbirds [A999], Common tern (<i>Sterna hirundo</i>) [A193]
[002241]	Lough Derg, North-East Shore SAC	0.05	SAC	Limestone pavements [8240], Alkaline fens [7230], <i>Taxus baccata</i> woods of the British Isles [91J0], Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210], Juniperus communis formations on heaths or calcareous grasslands [5130], Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0]

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[000216]	River Shannon Callows SAC	0.57	SAC	Otter (<i>Lutra lutra</i>) [1355], Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0], Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>) [6510], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410], Limestone pavements [8240], Alkaline fens [7230]
[004096]	Middle Shannon Callows SPA	0.57	SPA	Black-tailed Godwit (<i>Limosa limosa</i>) [A156], Whooper Swan (<i>Cygnus cygnus</i>) [A038], Golden Plover (<i>Pluvialis apricaria</i>) [A140], Wigeon (<i>Anas penelope</i>) [A050], Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179], Corncrake (<i>Crex crex</i>) [A122], Wetland and Waterbirds [A999], Lapwing (<i>Vanellus vanellus</i>) [A142]
[000216]	River Shannon Callows pNHA	1.12	pNHA	

1.6.2 Habitat Descriptions

Portumna Forest Park contains mainly various woodland habitats with the majority of the area being covered by mixed broadleaved/conifer woodland (Fossitt Code WD2) and yew woodland (Fossitt Code WD3). There are also other, more managed, habitats such as scattered trees and parkland (Fossitt Code WD5).

The site is well managed with a network of trails. There are no obvious impacts from tourism on the natural features of the site.

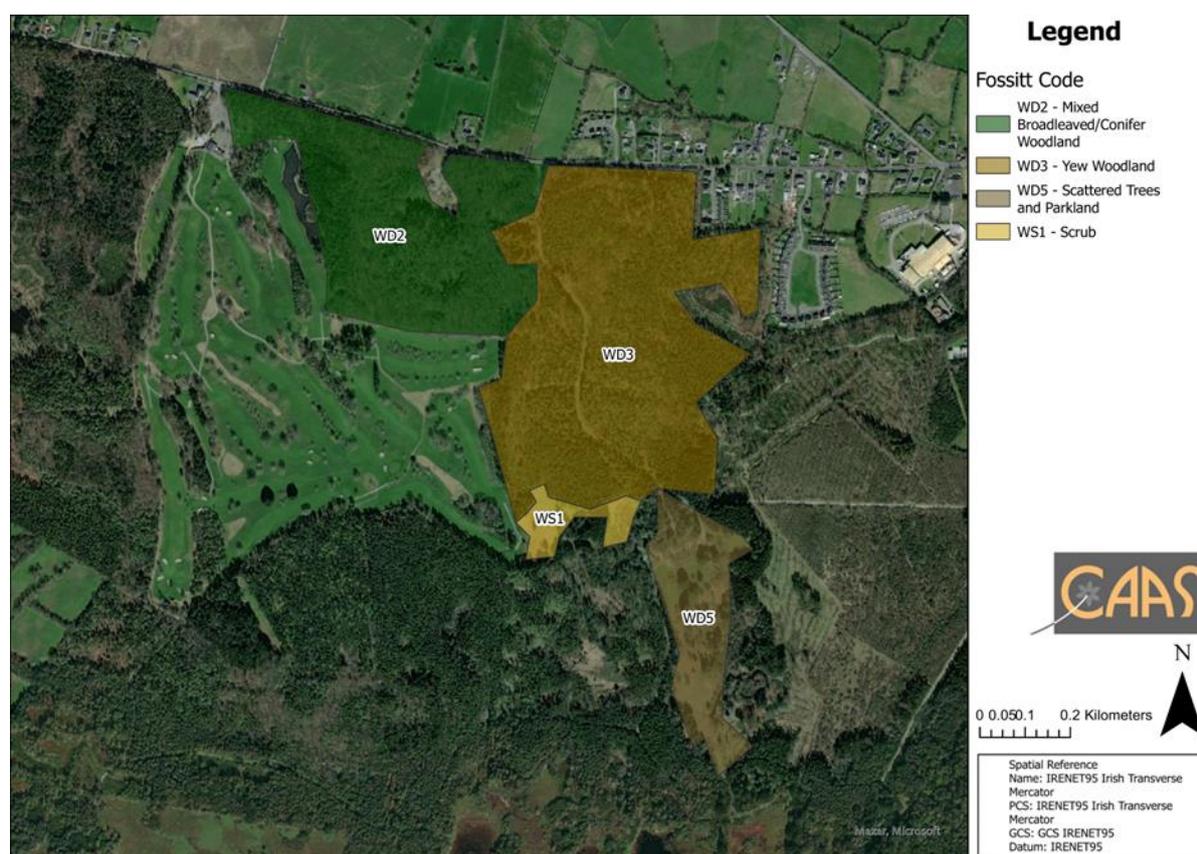


Figure 1.15 Habitats present at Portumna Forest Park

1.6.3 Condition Assessment

There are a range of habitats present on site, the assessment of habitat condition identified that the overall habitat quality² following the assessment scale was "1" which means the majority of the habitats have no evidence of any negative impact on the habitats or other ecological features. There were 0 recorded incidents of damage to habitats occurring off the marked paths on site.

1.6.4 Breeding Bird Survey

Due to the woodland habitat of Portumna Forest Park and its proximity to Lough Derg, both passerines and waders were recorded in the area. A large number of mallards were recorded along with a small number of gull species and herons. Swallows and swifts were also recorded in high numbers along with other birds such as blackbirds, chaffinches and robins.

Table 1.2 Results of the breeding bird survey conducted at Portumna Forest Park

Common Name	Scientific Name	List Status	Number Recorded
Blackbird	<i>Turdus merula</i>	Green	9
Blackcap	<i>Sylvia atricapilla</i>	Green	8
Black-headed Gull	<i>Larus ridibundus</i>	Amber	2
Blue Tit	<i>Cyanistes caeruleus</i>	Green	3
Bullfinch	<i>Pyrrhula pyrrhula</i>	Green	4
Buzzard	<i>Buteo buteo</i>	Green	1
Chaffinch	<i>Fringilla coelebs</i>	Green	9
Chiffchaff	<i>Phylloscopus collybita</i>	Green	7
Coal Tit	<i>Parus ater</i>	Green	2
Coot	<i>Fulica atra</i>	Amber	1
Cormorant	<i>Phalacrocorax carbo</i>	Amber	6
Dunnock	<i>Prunella modularis</i>	Green	1
Goldcrest	<i>Regulus regulus</i>	Amber	4
Goldfinch	<i>Carduelis carduelis</i>	Green	4

² This value was calculated using the methods set out in Appendix II

Common Name	Scientific Name	List Status	Number Recorded
Great Black-backed Gull	<i>Larus marinus</i>	Green	2
Great Crested Grebe	<i>Podiceps cristatus</i>	Amber	1
Grey Heron	<i>Ardea cinerea</i>	Green	2
House Martin	<i>Delichon urbicum</i>	Amber	4
Jackdaw	<i>Corvus monedula</i>	Green	9
Little Grebe	<i>Tachybaptus ruficollis</i>	Green	1
Magpie	<i>Pica pica</i>	Green	1
Mallard	<i>Anas platyrhynchos</i>	Amber	47
Mistle Thrush	<i>Turdus viscivorus</i>	Green	4
Mute Swan	<i>Cygnus olor</i>	Amber	4
Pied Wagtail	<i>Motacilla alba yarrelli</i>	Green	7
Reed Bunting	<i>Emberiza schoeniclus</i>	Green	1
Robin	<i>Erithacus rubecula</i>	Green	7
Rook	<i>Corvus frugilegus</i>	Green	5
Siskin	<i>Spinus spinus</i>	Green	5
Song Thrush	<i>Turdus philomelos</i>	Green	5
Spotted Flycatcher	<i>Muscicapa striata</i>	Amber	2
Starling	<i>Sturnus vulgaris</i>	Amber	4
Stonechat	<i>Saxicola torquatus</i>	Green	1
Swallow	<i>Hirundo rustica</i>	Amber	19
Swift	<i>Apus apus</i>	Red	12
Treecreeper	<i>Certhia familiaris</i>	Green	1
Water Rail	<i>Rallus aquaticus</i>	Green	1
Willow Warbler	<i>Phyllocopus trochilus</i>	Amber	1
Woodpigeon	<i>Columba palumbus</i>	Green	6
Wren	<i>Troglodytes troglodytes</i>	Green	9

1.6.5 Mammals on Site

Badger, otter and pine marten scat samples were observed on site. Additionally, there was evidence of foraging red squirrels seen. Portumna Forest Park. The NBDC data shows that due to the habitat in the surrounding area, there are various different species of terrestrial mammals that have been observed and spotted in the area. Badgers, squirrels and different bat species have been recorded in high numbers in the area along with more uncommon species such as stoats and pygmy shrews.

Table 1.3 List of mammals that have been recorded at NBDC Hectad M80

Taxonomic group	Common name	Scientific name	Record count
Terrestrial mammal	American Mink	<i>Mustela vison</i>	2
Terrestrial mammal	Bank Vole	<i>Myodes glareolus</i>	2
Terrestrial mammal	Brown Long-eared Bat	<i>Plecotus auritus</i>	5
Terrestrial mammal	Daubenton's Bat	<i>Myotis daubentonii</i>	5
Terrestrial mammal	Eurasian Badger	<i>Meles meles</i>	31
Terrestrial mammal	Eurasian Pygmy Shrew	<i>Sorex minutus</i>	1
Terrestrial mammal	Eurasian Red Squirrel	<i>Sciurus vulgaris</i>	40
Terrestrial mammal	European Otter	<i>Lutra lutra</i>	5
Terrestrial mammal	European Rabbit	<i>Oryctolagus cuniculus</i>	1
Terrestrial mammal	Fallow Deer	<i>Dama dama</i>	8
Terrestrial mammal	Greater White-toothed Shrew	<i>Crocidura russula</i>	3
Terrestrial mammal	Irish Hare	<i>Lepus timidus subsp. hibernicus</i>	1
Terrestrial mammal	Irish Stoat	<i>Mustela erminea subsp. hibernica</i>	1
Terrestrial mammal	Lesser Noctule	<i>Nyctalus leisleri</i>	16
Terrestrial mammal	Natterer's Bat	<i>Myotis nattereri</i>	4
Terrestrial mammal	Pine Marten	<i>Martes martes</i>	17
Terrestrial mammal	Pipistrelle	<i>Pipistrellus pipistrellus</i>	27
Terrestrial mammal	Red Fox	<i>Vulpes vulpes</i>	4
Terrestrial mammal	Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	15
Terrestrial mammal	West European Hedgehog	<i>Erinaceus europaeus</i>	3
Terrestrial mammal	Whiskered Bat	<i>Myotis mystacinus</i>	1

Taxonomic group	Common name	Scientific name	Record count
Terrestrial mammal	Wood Mouse	<i>Apodemus sylvaticus</i>	1

1.6.6 Wintering Bird Survey

There were a range of wading species of birds observed on site. The resident white-tailed eagle was not observed during the survey but it is known to be present year-round.

Table 1.4 Results of the wintering bird survey conducted at Portumna Forest Park

Common name	Scientific name	Record count
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	2
Common Gull	<i>Larus canus</i>	4
Cormorant	<i>Phalacrocorax carbo</i>	3
Grey Heron	<i>Ardea cinerea</i>	1
Lesser Black-backed Gull	<i>Larus fuscus</i>	1
Little Egret	<i>Egretta garzetta</i>	17
Mallard	<i>Anas platyrhynchos</i>	15

Table 1.5 List of wintering birds that have been recorded at NBDC Hectad M80

Taxonomic group	Common name	Scientific name	Record count
Bird	Arctic Tern	<i>Sterna paradisaea</i>	1
Bird	Black-headed Gull	<i>Larus ridibundus</i>	15
Bird	Blue-winged Teal	<i>Anas discors</i>	1
Bird	Common Coot	<i>Fulica atra</i>	17
Bird	Common Goldeneye	<i>Bucephala clangula</i>	3
Bird	Common Kingfisher	<i>Alcedo atthis</i>	5
Bird	Common Moorhen	<i>Gallinula chloropus</i>	18
Bird	Common Pochard	<i>Aythya ferina</i>	2
Bird	Common Redshank	<i>Tringa totanus</i>	8
Bird	Common Sandpiper	<i>Actitis hypoleucos</i>	4
Bird	Common Snipe	<i>Gallinago gallinago</i>	12
Bird	Common Tern	<i>Sterna hirundo</i>	2
Bird	Eurasian Curlew	<i>Numenius arquata</i>	8
Bird	Eurasian Jackdaw	<i>Corvus monedula</i>	25
Bird	Eurasian Teal	<i>Anas crecca</i>	3
Bird	Eurasian Wigeon	<i>Anas penelope</i>	2
Bird	Eurasian Woodcock	<i>Scolopax rusticola</i>	5
Bird	European Golden Plover	<i>Pluvialis apricaria</i>	1
Bird	Gadwall	<i>Anas strepera</i>	1
Bird	Great Black-backed Gull	<i>Larus marinus</i>	2
Bird	Great Cormorant	<i>Phalacrocorax carbo</i>	16
Bird	Great Crested Grebe	<i>Podiceps cristatus</i>	12
Bird	Greater Scaup	<i>Aythya marila</i>	2
Bird	Greater White-fronted Goose	<i>Anser albifrons</i>	1
Bird	Grey Heron	<i>Ardea cinerea</i>	11
Bird	Greylag Goose	<i>Anser anser</i>	2
Bird	Herring Gull	<i>Larus argentatus</i>	1
Bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	5
Bird	Little Egret	<i>Egretta garzetta</i>	1
Bird	Little Grebe	<i>Tachybaptus ruficollis</i>	13
Bird	Mallard	<i>Anas platyrhynchos</i>	20
Bird	Mew Gull	<i>Larus canus</i>	4
Bird	Mute Swan	<i>Cygnus olor</i>	16
Bird	Northern Lapwing	<i>Vanellus vanellus</i>	12
Bird	Northern Pintail	<i>Anas acuta</i>	1
Bird	Northern Shoveler	<i>Anas clypeata</i>	2
Bird	Red-breasted Merganser	<i>Mergus serrator</i>	1
Bird	Tufted Duck	<i>Aythya fuligula</i>	13
Bird	Water Rail	<i>Rallus aquaticus</i>	11

Taxonomic group	Common name	Scientific name	Record count
Bird	Whooper Swan	<i>Cygnus cygnus</i>	1

1.6.7 Bat Survey

It is expected that further monitoring will result in high abundances of bats as the habitat on site is highly suited. Particularly with regard to complex woodland edge habitats and riparian areas.

Table 1.6 Locations of bats recorded at Portumna Forest Park

Common name	Scientific name	Record count
Brown Long-eared Bat	<i>Plecotus auritus</i>	6
Daubenton's Bat	<i>Myotis daubentonii</i>	6
Lesser Noctule	<i>Nyctalus leisleri</i>	2
Natterer's Bat	<i>Myotis nattereri</i>	2
Pipistrelle	<i>Pipistrellus pipistrellus</i>	15

Table 1.7 List of bats that have been recorded at NBDC Hectad M80

Taxonomic group	Common name	Scientific name	Record count
Terrestrial mammal	Brown Long-eared Bat	<i>Plecotus auritus</i>	5
Terrestrial mammal	Daubenton's Bat	<i>Myotis daubentonii</i>	5
Terrestrial mammal	Lesser Noctule	<i>Nyctalus leisleri</i>	16
Terrestrial mammal	Natterer's Bat	<i>Myotis nattereri</i>	4
Terrestrial mammal	Pipistrelle	<i>Pipistrellus pipistrellus</i>	27
Terrestrial mammal	Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	15
Terrestrial mammal	Whiskered Bat	<i>Myotis mystacinus</i>	1

1.7 Recommendations

- Management practices to support strong invertebrate populations should be explored as a foraging resource for bats on site. This could include stabilising standing dead wood (for safety) while leaving them upright. Placing piles of various sizes of deadwood along the woodland edge. Construction of banks and berms for invertebrate nesting and basking etc.
- The site is well managed and ecologically diverse – there is an opportunity for higher rates of direct engagement at the site through biodiversity or nature related education events.
- Increased signage related to biodiversity which is interactive in nature could increase visitor experiences at the site.

Appendix I

Activities		
Category 1 Low Level		
Walking, running or cycling on paths, marked trails or hard surfaces		LA 1
Walking, running, cycling or playing in mown grass, managed grassland or level sand		LA 2
Sitting on benches, walls, mown grass, sand		LA 3
Swimming, sailing, surfing, kayaking in water		LA 4
Resting, reading, looking, picnicking, sightseeing, painting, photographing		LA 5
Vehicular movement on roads and parking areas		LA 6
Watching nature in hedges, woods, streams, pools and intertidal areas		LA 7
Category 2 Medium Level		
Powered movement through water		MA 1
Any movement leaving an existing trail or marked path		MA 2
Any movement leaving a trail through leafy vegetation		MA 3
Any movement leaving a trail through woody vegetation		MA 4
Climbing on walls, loose stones, sand, soil etc.		MA 5
Fishing		MA 6
Category 3 High Level		
Walking through wet/muddy soil		HA 1
Scrambling on steep or loose slopes		HA 2
Off road vehicular movement		HA 3
Disturbance of wildlife		HA 4
Deliberate building or moving or knocking site materials - parts of monuments, walls, stones, sand etc.		HA 5
Picking herbaceous vegetation		HA 6

Appendix I Activity and impact code index used for recording visitor behaviours on site

Category 1 Low Impact		
No identifiable effect		LIE 1
Desire lines or trails visible on grass and leafy vegetation		LIE 2
Temporary disturbance (including chasing and feeding) of insects, fish, amphibian, reptiles, insects, birds and mammals		LIE 3
Temporary change of character - due to the appearance or nature of activities (noise, crowds, etc.)		LIE 4
General/light littering		LIE 5
Category 2 Medium Impact		
Desire lines or tracks visible outside of existing trail or marked path		MIE 1
Trampling of herbaceous vegetation		MIE 2
Damage to woody vegetation		MIE 3
Incidentally moving or knocking site materials - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.		MIE 4
Addition/alteration of site features, transient emissions, noise		MIE 5
Transient disturbance, emissions, noise		MIE 6
Disturbance of wildlife		MIE 7
Category 3 Severe Impact		
Direct interference with site material - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.		SIE 1
Removal of material - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.		SIE 2
Vandalism or graffiti		SIE 3
Destruction of structures, vegetation or fauna		SIE 4
Heavy littering or dumping quantities of waste		SIE 5
Burning materials or lighting a fire		SIE 6
Injuring, killing or taking wildlife		SIE 7

Appendix II

Habitat Condition Assessment Methodology

A rating scale has been designed for this monitoring programme as a standardised, repeatable measurement for assessing habitat condition across all sites³. For the purposes of this monitoring programme, habitat condition is assessed at every site by the surveyor examining four core criteria:

1. The extent to which habitat degradation (due to human activity), if any, is observed;
2. If habitat degradation is observed, the degree to which the impact is localised or widespread;
3. The potential ability for the habitat to recover (related to scale of degradation); and,
4. The requirement for intervention (related to the degree of the previous 3 elements).

For these assessments the term ‘degradation’ is taken to mean any change that reduces the long-term viability habitats and its qualifying interests [flora and fauna]. Degradation can include readily visible evidence of factors such as surface erosion or compaction, vegetation loss, crowd disturbance [noise], disturbance by pets, littering, burning or pollution.

Based on these four criteria, each site is walked along transects established by the principal pathways that are used for visitor access and movement through each site. At 100 metres intervals along the selected pathways, an assessment of habitat condition is made, using an established rating scale of 1 to 5; 1 being no impact and 5 being high impact. Each rating is then translated into a condition assessment, as displayed in Table II - 1 below.

These ratings are gathered for each site, and are then grouped; from which the mode is taken (i.e., the rating that occurs most frequently). This then recorded and reported as the resultant overall rating of the assessed habitat condition assessment for each site.

Table II-1 Habitat rating scale and condition assessment

Scale	Condition
1	No evidence of any habitat degradation observed.
2	Localised habitat degradation, but slight and capable of rapid recovery.
3	Widespread habitat degradation, but slight and capable of rapid recovery.
4	Localised habitat degradation, requiring intervention to allow full recovery.
5	Widespread habitat degradation, requiring intervention to allow full recovery.

³ Note: Where possible, the same surveyor is used across multiple sites – but in some instances, different surveyors survey different sites. This can lead to a human variation in the assigning of the rating scale for impact. However, there will be sufficient repetition of the data through the several years of the monitoring programme to account for any variations in human interpretation on this scale.