NATIONAL TOURISM MONITORING PROGRAMME 2021-2025

ANNUAL RESULTS FOR 2022

PORTUMNA FOREST PARK

for: **Fáilte Ireland**

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Portumna Forest Park – Interesting Finds

ECOLOGICAL HIGHLIGHTS

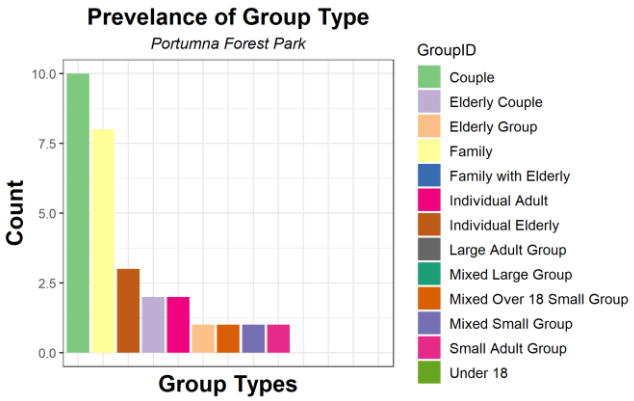
There is a white-tailed eagle which is resident in the area – the site has a bird hide positioned with a good view of the nest used by the breeding pair.

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.

VISITOR NUMBERS AND DWELL TIME

- 73 people visited the site over 8 hours
- Average dwell time of 62 minutes



KEY RECOMMENDATIONS

- Measures should be considered to support bats on site such as the construction of banks and berms for invertebrate nesting and basking, in order to support invertebrate populations on site.
- An increase in signage related to the ecology of the site could increase visitor engagement as there is an opportunity for higher direct engagement at site through signage or nature related education events.

VISITOR INTERACTION & MANAGEMENT

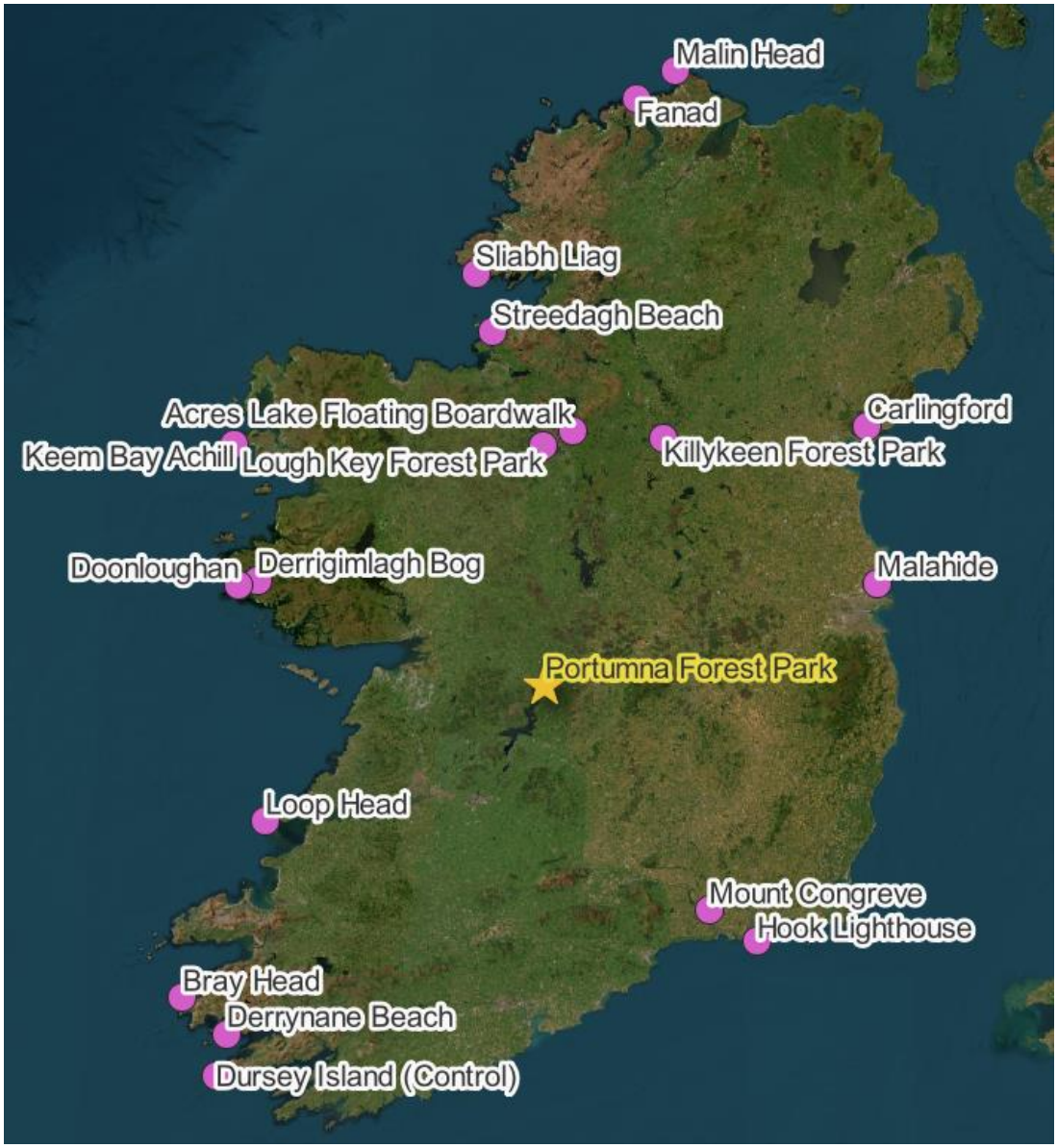
- Visitor interactions on site well controlled with strong management practices in place.
- Over 80% of activities recorded by visitors were deemed to be of low level such as picnicking and sitting on benches.
- Only two observable impacts were recorded on site.
- Majority of visitors did not read available signage on site.
- Large decrease in the number of visitors at the site when compared to the 2021 survey.

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 development 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.

1.1.1 Looking Ahead

The National Tourism Monitoring Programme aims to assess and characterise visitor movements and impacts in 19 popular Failte Ireland tourism sites across Ireland within a 5-year period. This will be achieved through building on the methodologies and findings of the Wild Atlantic Way Environmental Monitoring Programme (2015-2019), by monitoring yearly trends in visitor numbers and movements during the high tourism season at each site. In addition to the annual visitor trend monitoring; visitor impact assessments, which examine visitor activity levels relative to condition assessments, will also be taken every two years for each site. At the end of the 5-year period, the resultant extensive data set will be analysed for long term trends and correlations between visitor numbers, visitor activity, and site condition assessments, at each site across the 5 years of the programme.

This monitoring programme will allow an examination of year-on-year shifts in visitor impact and trends, across each of Fáilte Ireland's regional areas; The Wild Atlantic Way, Irelands Hidden Heartlands, Irelands Ancient East and Dublin, resulting in an annual interim report for each year - while also assessing visitors trends, and changes in the condition of the each of the sites' habitats in relation to visitor trends, over a the entire 5-year period of the programme.

The long-term aim of the Monitoring Programme will be to inform local authorities and stakeholders to help in the design and implementation of methods that will encourage the sustainable management of visitor numbers and tourism activities, while also aiming to protect vulnerabilities of the local area's habitats in order to reduce environmental impact and enable more effective local conservation of each site.

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 29th of July 2022, with max temperatures reaching approximately 21° C, low levels of rainfall and low levels of wind on the day[1]. These surveys followed an 8-hour time period recording samples of visitor behaviour of an 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. It is also important to note that there was a lack of interaction with the subject matter of the surveys to ensure that there is no influence of the surveyor at all on the resultant data.

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.

1.3 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.

There have been no significant changes in signage and features between the 2021 and 2022 surveys.

[1] Weather data gathered from closest available weather station: https://www.met.ie/climate/available-data/historical-data

Figure 1.1 Portumna Forest Park

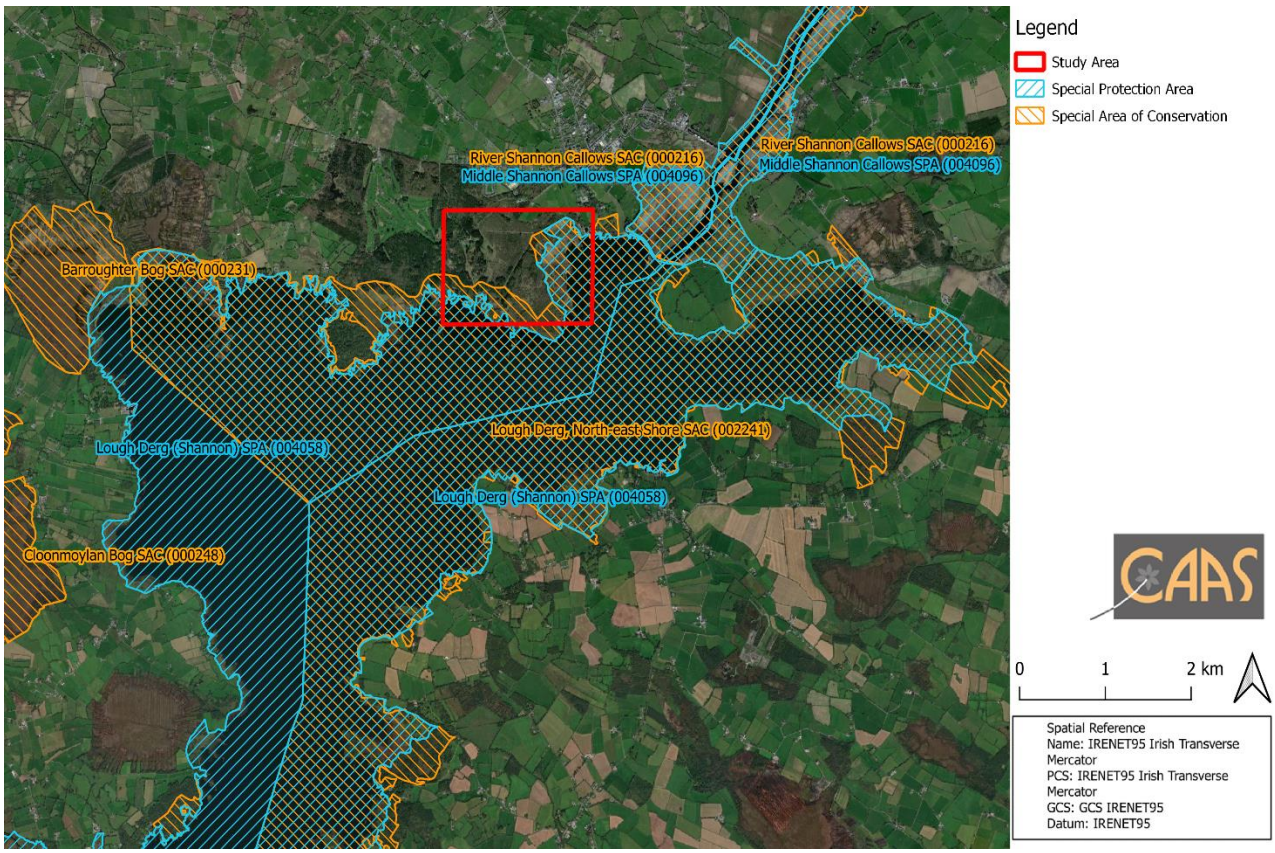


Figure 1.2 Study Area within Lough Derg, North-East Shore SAC

1.3.1 Critical Infrastructure

Table 1.1 Summary of Wastewater infrastructure at Portumna Forest Park

Wastewater Treatment Plant (WWTP)	Irish Water Indication of Capacity	Comment
Toilet facilities are available on site Nearest settlement with WWTP in Portumna (WWTP Reg #D0196)	Spare capacity available[2]	Current wastewater facilities are sufficient There is limited capacity available as stated in the Galway CDP 2023-2029[3]

Table 1.2 Summary of Drinking Water infrastructure at Portumna Forest Park

Drinking Water	Water Resource Name (WRZ)	Irish Water Indication of Capacity	Comment
Nearest serviced settlement to Portumna Forest Park is Portumna	Portumna PS	Capacity available – Level of service (LoS) improvement required[4]	Current water supply is sufficient There is limited capacity available as stated in the Galway CDP 2023-2029[5]

[2] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/galway/
[3] https://consult.galway.ie/sites/default/files/Chapter%207%20final.pdf
[4] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/galway/
[5] https://consult.galway.ie/sites/default/files/Chapter%207%20final.pdf

Table 1.3 Summary of Transport infrastructure at Portumna Forest Park

Nearest Settlement	Current Transport Infrastructure	Comment
Portumna	Portumna Forest Park is adjacent to Portumna on the northern shore of Lough Derg, accessible by road R352 There are parking facilities on site	Current transport infrastructure is sufficient

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 73 visitors (which represent 29 group observations), a significant decrease from 284 visitors in 2021. The site is most popular amongst the couple group, with the site being most popular among families in 2021, with the dominant mode of transport being car. The average dwell time for the site was 62 minutes, a slight increase from 53 minutes in 2021; with the following activities undertaken during the survey (listed in order of occurrence rate):

Activity Type
Sitting
Picnicking
Dogwalking (off lead)
Dogwalking (on lead)
Other
Photographing
Climbing
Cycling
Cycling, Sprinting, Jogging and Dogwalking on marked trail
Football, Frisbee/Catch, Tennis and other informal sports matches
Horse-riding
Reading
Sports Match (informal)

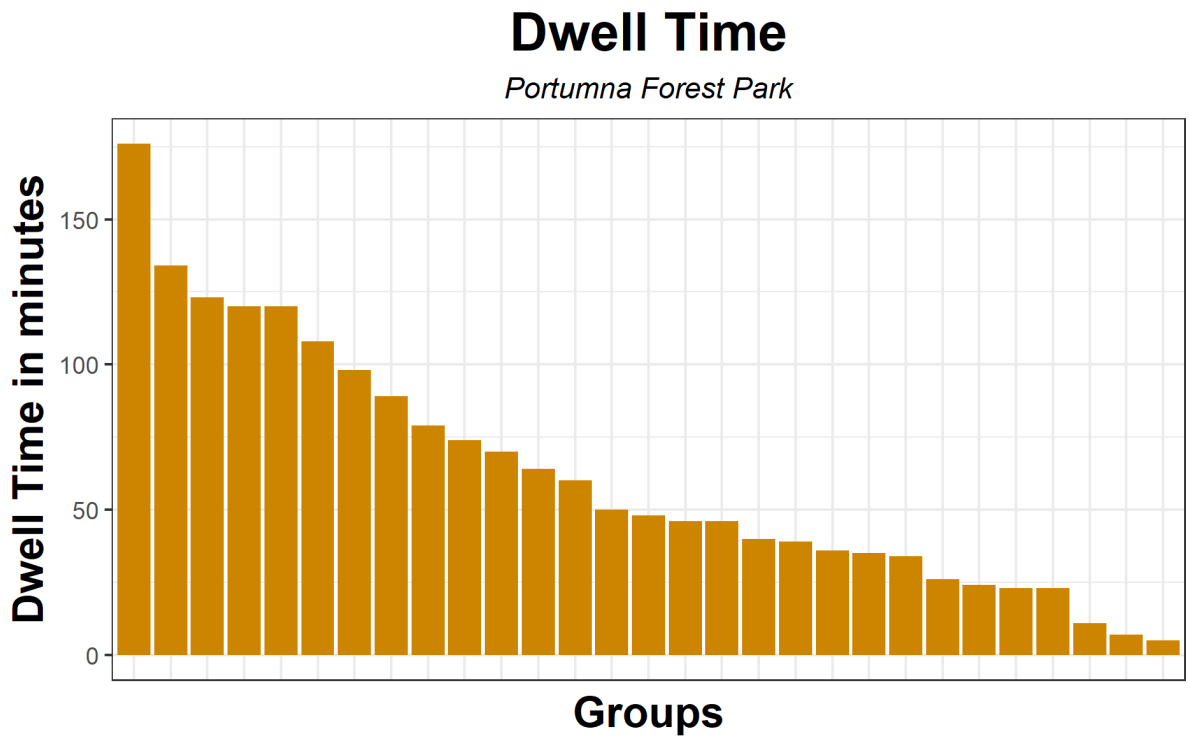


Figure 1.7 Duration of Time Spent at Portumna Forest Park

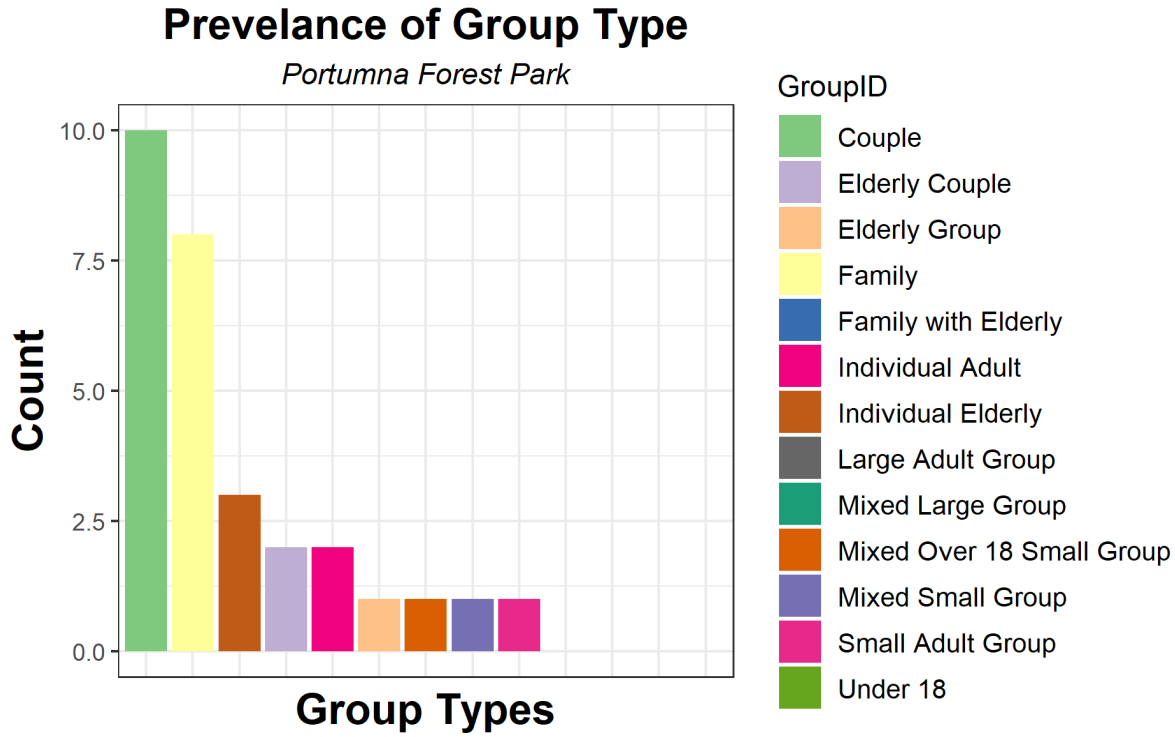


Figure 1.8 Groups of visitors that visited Portumna Forest Park

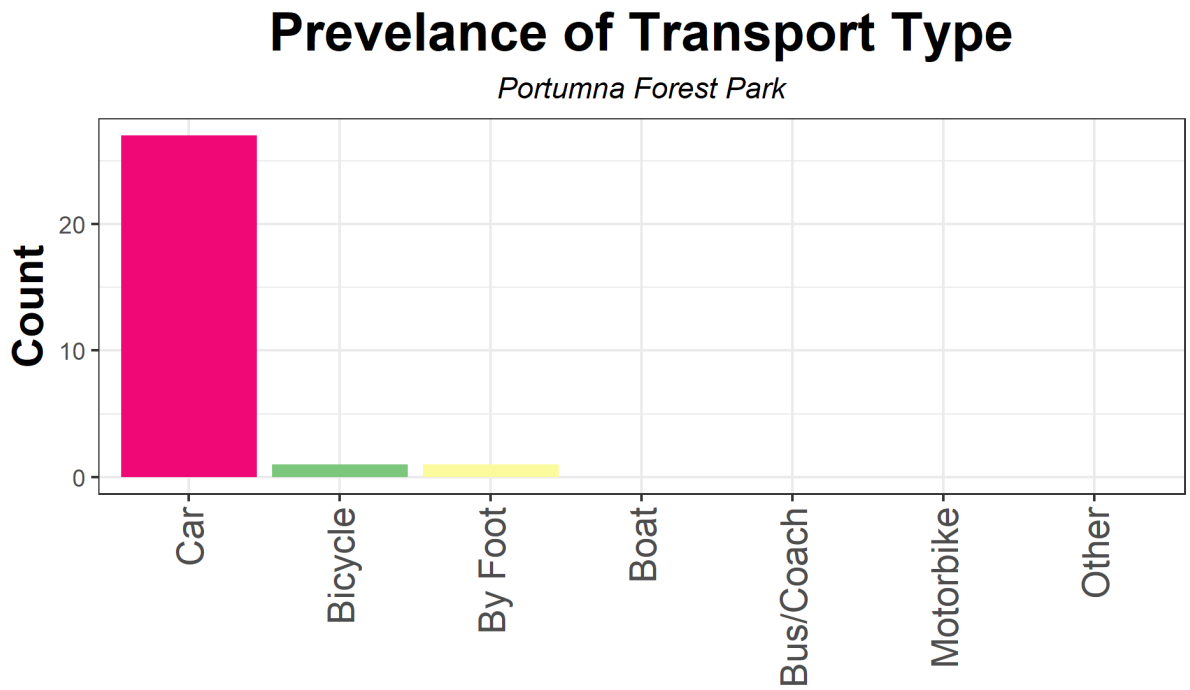


Figure 1.9 Mode of transport used to visit Portumna Forest Park

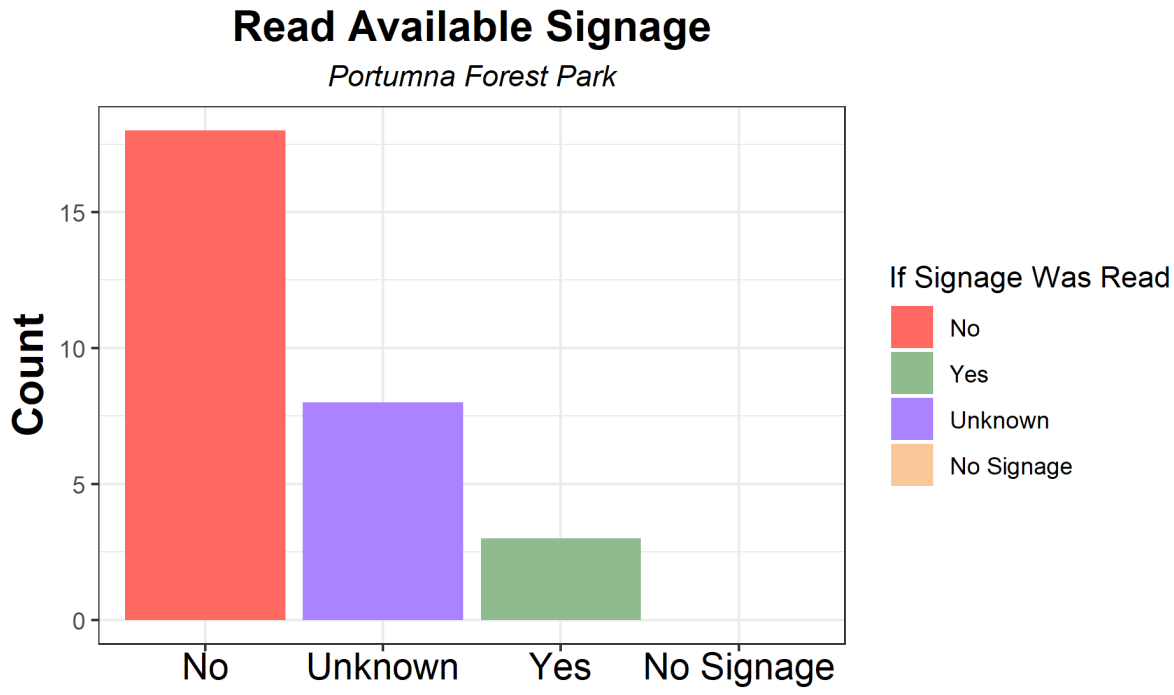


Figure 1.10 Use of Interpretive Material at Portumna Forest Park

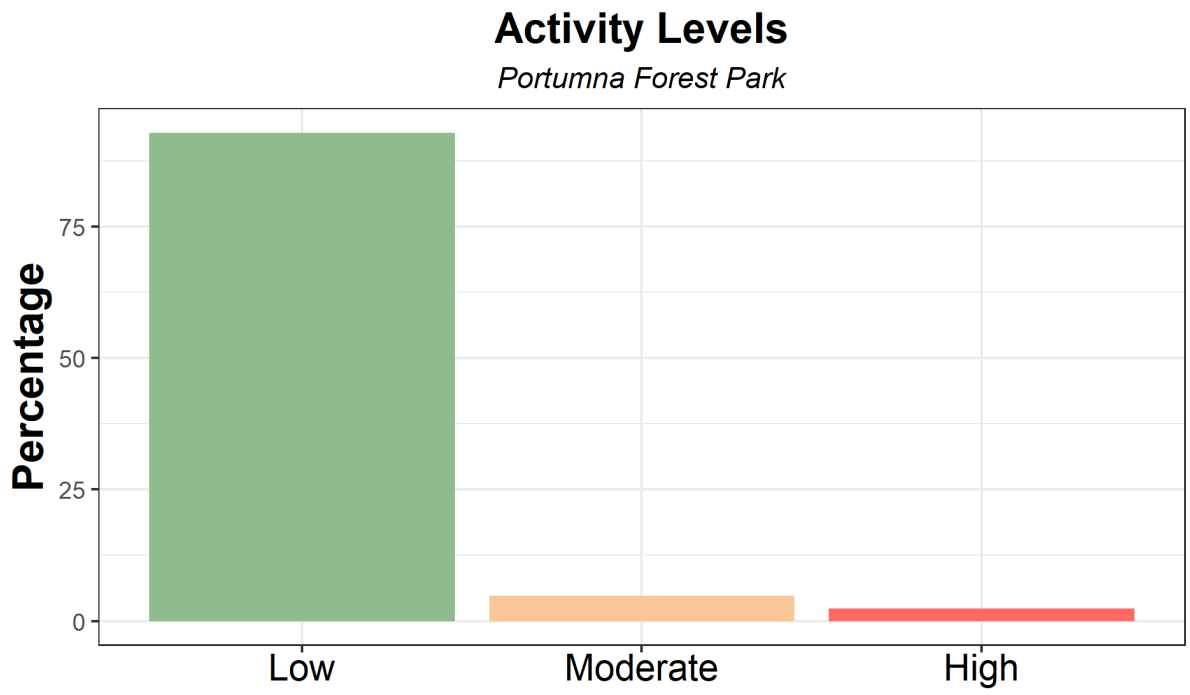


Figure 1.11 Categories of Activity Levels Observed at Portumna Forest Park

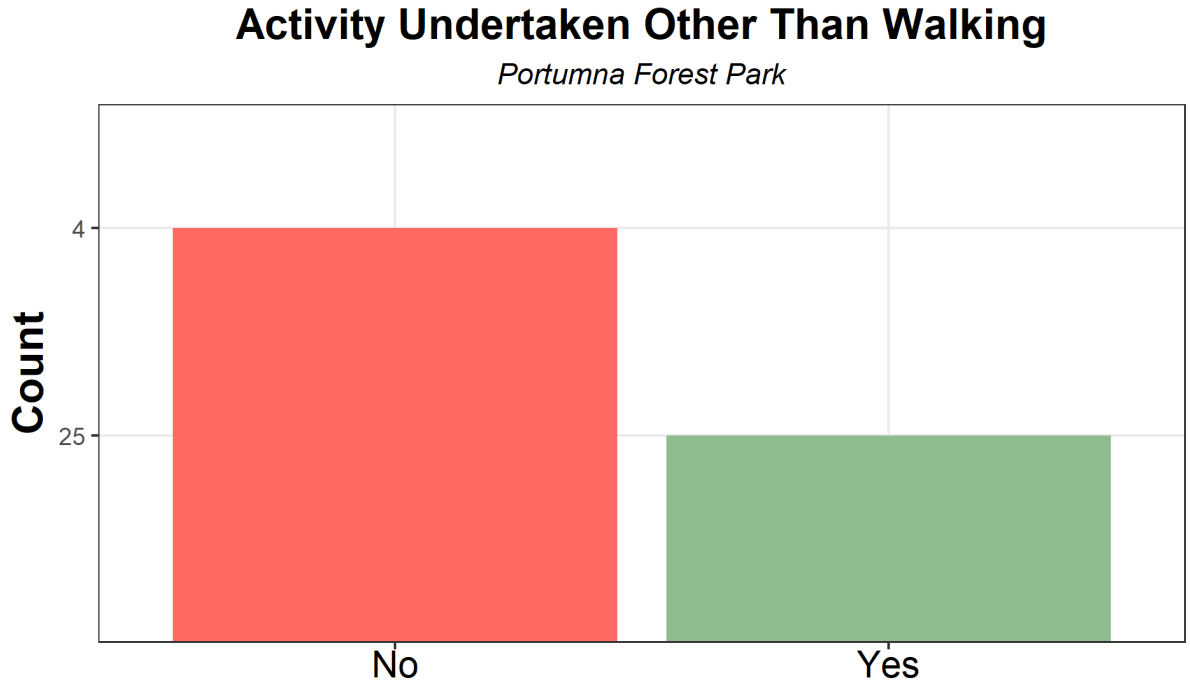


Figure 1.12 Activities undertaken other than walking

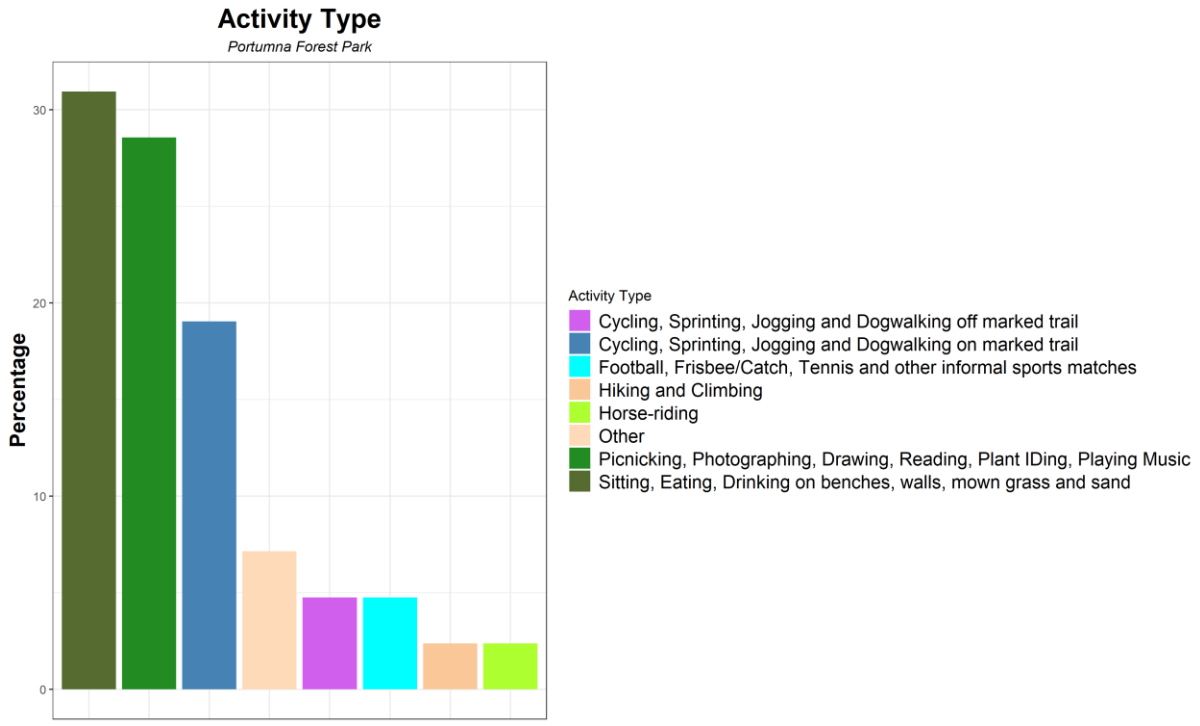


Figure 1.13 Range of Visitor Activities Observed at Portumna Forest Park

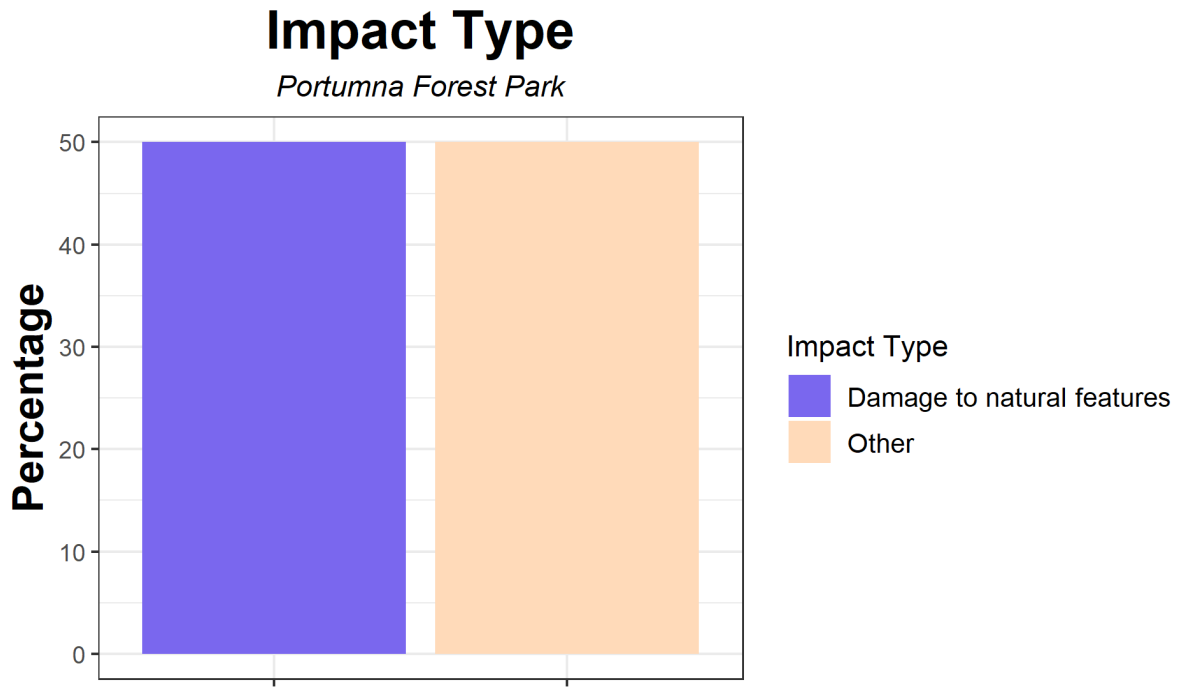


Figure 1.14 Range of Environmental Impacts Observed at Portumna Forest Park

The environmental impacts that were observed and recorded used the same coding system as the Wild Atlantic Way Monitoring[6]. These impacts were recorded if a visitor's activity or movement resulted in one of the defined impacts noted in said coding system, which were categorised by severity level to the environment, ranging from light desire lines to disturbance of wildlife to burning of materials.

[6] See Appendix I for more detail

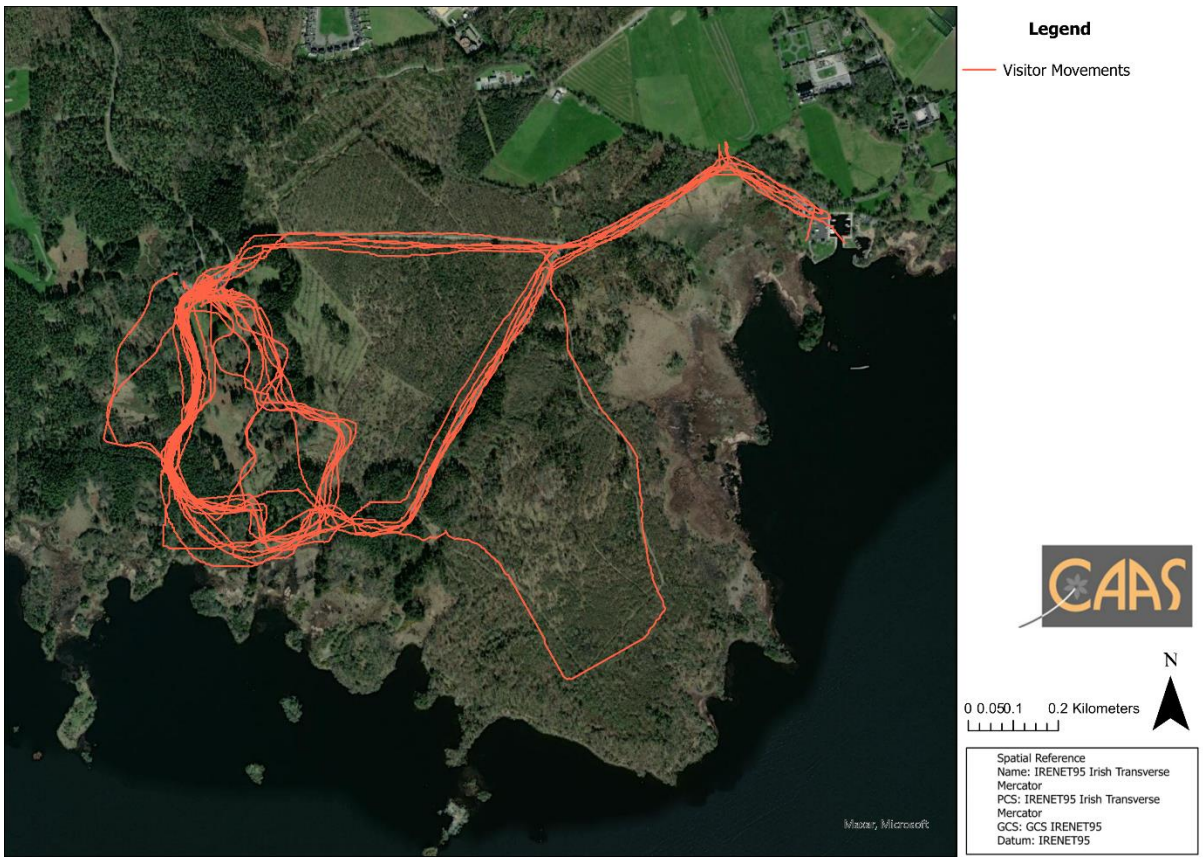


Figure 1.15 Visitor movement patterns at Portumna Forest Park

Of the 29 sample groups recorded on site, 86% of them undertook activities other than walking, while 72% of visitors undertook activities other than walking in 2021. These activities (identified above) resulted in 2 impacts being observed on site during the survey. Thus, 5% of activities on site resulted in impacts on the environment. The impact severity levels did not vary with 100% of the impacts being low, 0% of impacts being moderate, and 0% of impacts being high severity. The impacts identified for the site were:

Impact Type	Count
Damage to natural features	1
Other	1

1.6 Comparison with Previous Survey Results

The data obtained has provided an opportunity to compare significant changes results with previous years. Where this occurs, this will be noted in the relevant sections.

The 2022 Visitor Characterisation Survey in Portumna Forest Park produced a number of changes from the 2021 Visitor Characterisation Survey. Noted changes include;

- A slight increase was noted between the number of impacts observed from 2022 when compared to 2021;
- A decrease in percentage of visitors who undertook (cycling, dog walking, jogging etc.) both along and off; and,
- Reduction of visitors during the 8-hour survey by 74% to 73 visitors over 29 groups with average dwell time increasing by 17%.

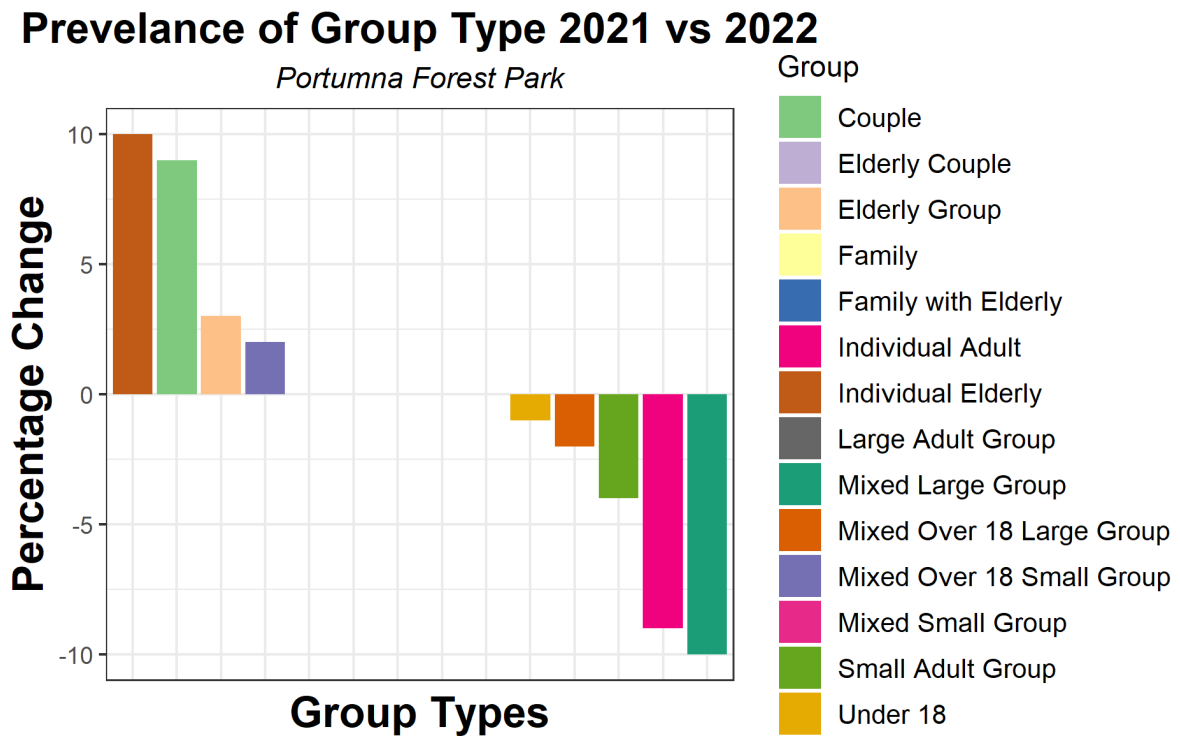


Figure 1.16 Percentage Change in groups of visitors that visited Portumna Forest Park between 2021 and 2022

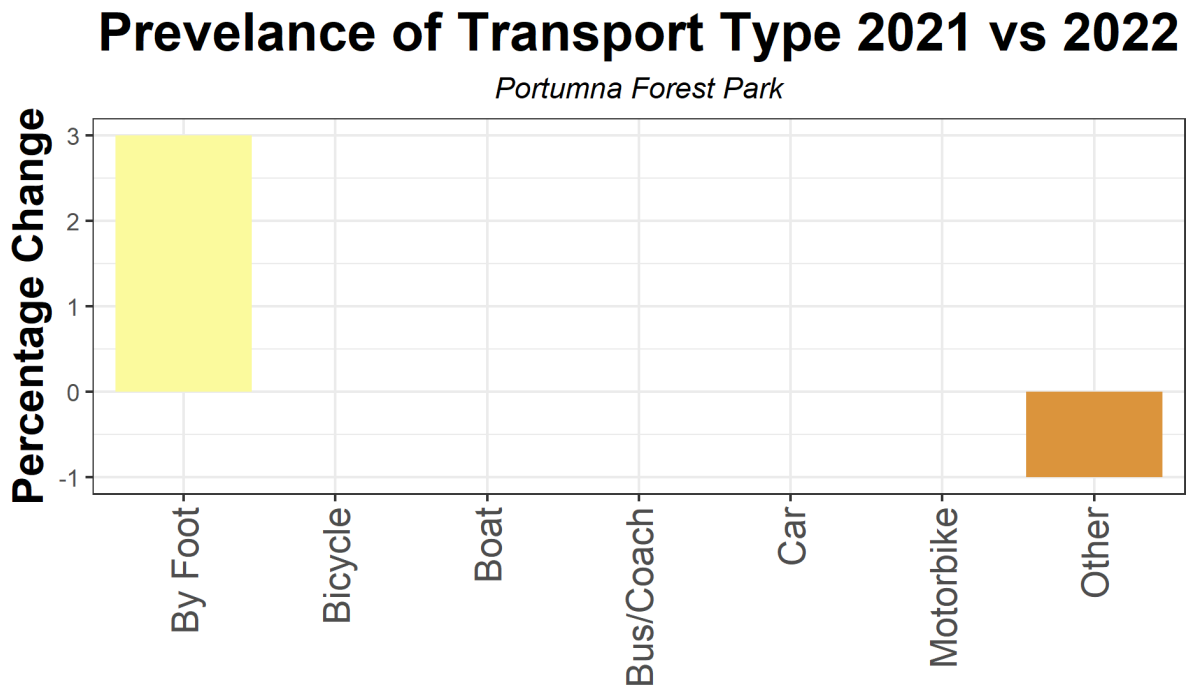


Figure 1.17 Percentage Change in mode of transport used to visit Portumna Forest Park between 2021 and 2022

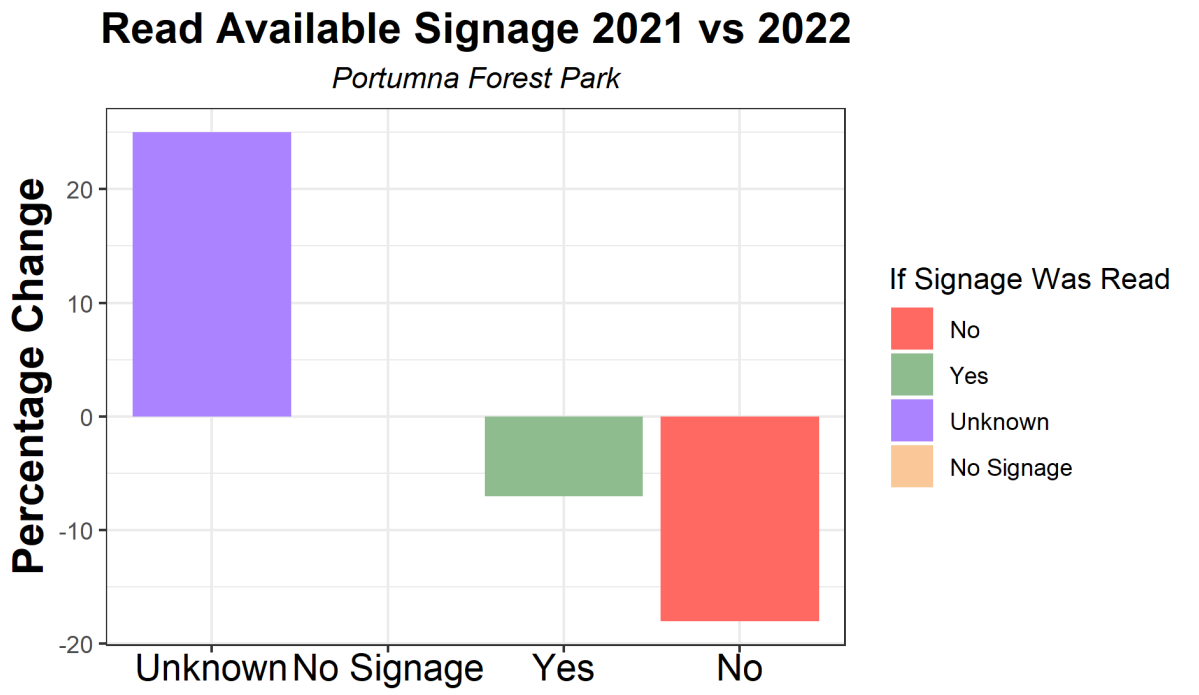


Figure 1.18 Percentage change in use of Interpretive Material at Portumna Forest Park between 2021 and 2022

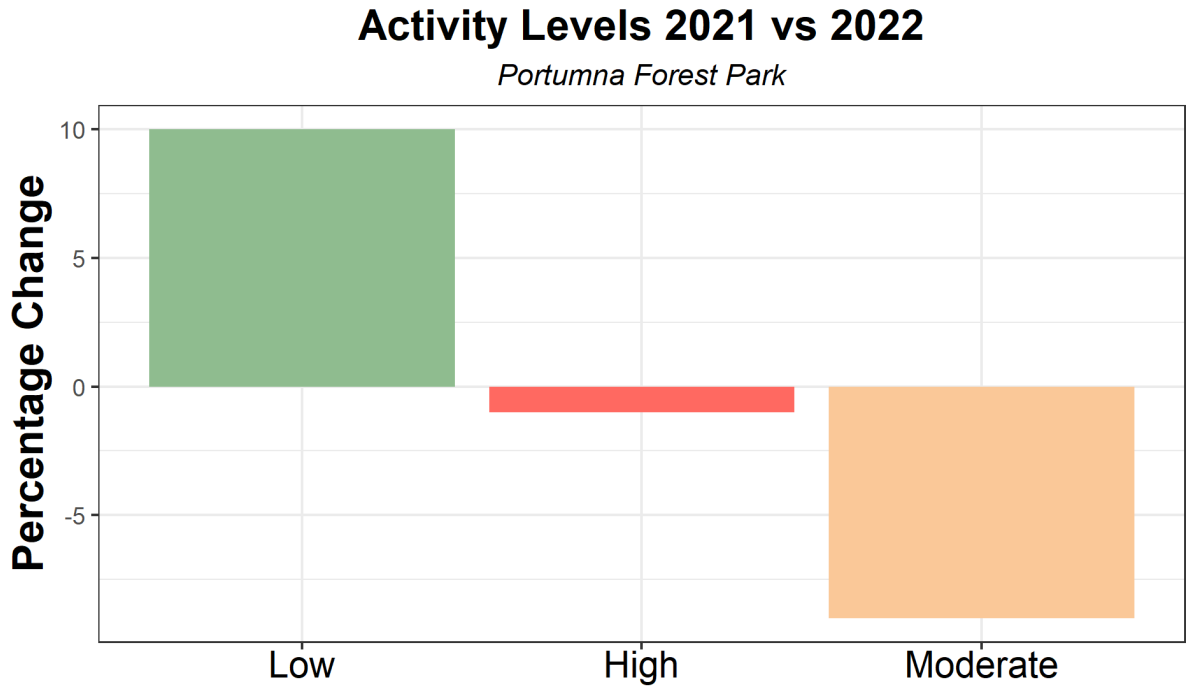


Figure 1.19 Percentage change in categories of Activity Levels Observed at Portumna Forest Park between 2021 and 2022

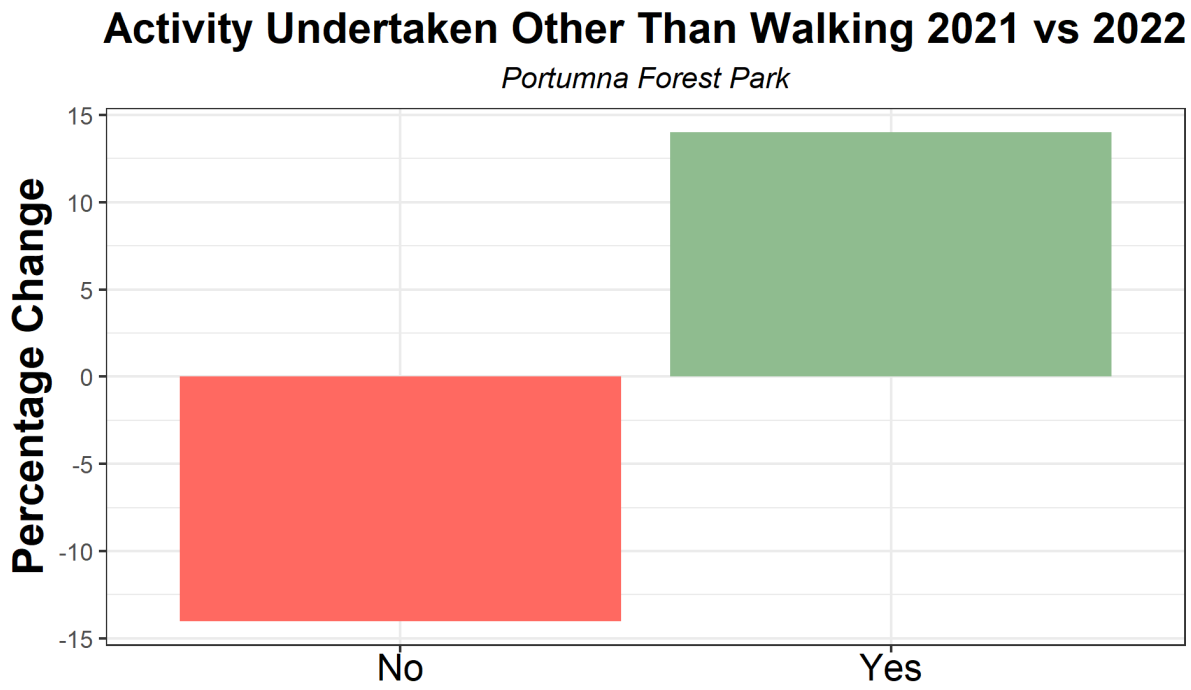


Figure 1.20 Percentage change in activities undertaken other than walking at Portumna Forest Park between 2021 and 2022

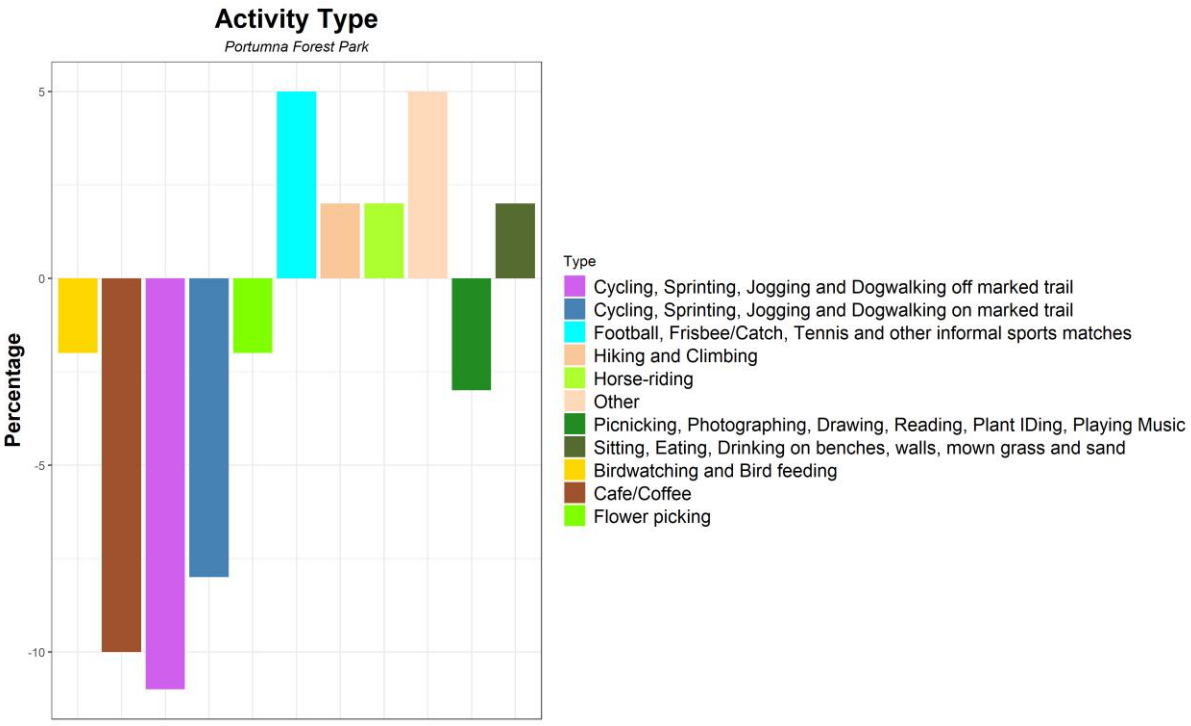


Figure 1.21 Percentage change in range of Visitor Activities Observed at Portumna Forest Park between 2021 and 2022

Table 1.4 Summary of changes with previous survey results

Survey	Notable Differences	Comment
Visitor Dwell Time	• Overall average dwell time increased by 17%	The increase in average dwell time could be attributed to the fact the survey took place earlier in the season when compared to 2021 and a severe decrease in the number of visitors observed on site
Prevalence of Group Type	• 10% increase in individual elderly • 9% increase in couples • 9% decrease in individual adult • 10% decrease in mixed large group	The changes seen in percentage of groups visiting the site could be due to the large decrease in the number of visitors recorded on site during the survey
Prevalence of Transport Type	• No notable differences	No significant changes observed
Read Available Signage	• Signage not read dropped by 18% • 7% decrease in signage read • Unknown increased by 25%	Decreases seen in the percentage of visitors who either read or didn't read available signage on site. However, this can be attributed to a large increase in percentage of unknown if signage was read
Activity Levels	• High activity levels decreased by 1% • Low activity levels increased by 10% • Moderate activity levels decreased by 9%	Increase in percentage of visitors undertaking low-level activities on site
Activity Undertaken Other Than Walking	• Activities undertaken other than walking increased by 14%	Increase in percentage of visitors who undertook activities other than walking
Activity Type	• Jogging, cycling and dog walking etc. off marked trails decreased by 11% • Jogging, cycling, and dog walking etc. on marked trails decreased by 8% • 20% increase in activities such as sitting on benches	Decrease in percentage of jogging etc., both on and off marked trails Noted increase in percentage of visitors undertaking stationary activities Changes in percentage of activity types could be due to a large decrease in number of visitors to the site
Impact Severity Level	• No impacts recorded during the 2021 survey	No impacts were recorded during the 2021 survey, however two were recorded during the 2022 survey with both being low level impacts
Impact Type	• No impacts recorded during the 2021 survey	No impacts were recorded during the 2021 survey. The two impacts recorded during the 2022 survey were damage to natural features and other (dog litter)

1.7 Ecological Monitoring Results

1.7.1 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 1.5 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 *(Aythya fuligula)* [A061], Cormorant *(Phalacrocorax carbo)* [A017], Goldeneye *(Bucephala clangula)* [A067], Wetland and Waterbirds [A999], Common tern *(Sterna hirundo)* [A193]
[002241]	Lough Derg, North-East Shore SAC	0.05	SAC	Limestone pavements [8240], Alkaline fens [7230], *Taxus baccata* woods of the British Isles [91J0], Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210], Juniperus communis formations on heaths or calcareous grasslands [5130], Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* [91E0]
[000216]	River Shannon Callows SAC	0.57	SAC	Otter *(Lutra lutra)* [1355], Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* [91E0], Lowland hay meadows *(Alopecurus pratensis, Sanguisorba officinalis)* [6510], Molinia meadows on calcareous, peaty or clayey-silt-laden soils *(Molinion caeruleae)* [6410], Limestone pavements [8240], Alkaline fens [7230]
[004096]	Middle Shannon Callows SPA	0.57	SPA	Black-tailed Godwit *(Limosa limosa)* [A156], Whooper Swan *(Cygnus cygnus)* [A038], Golden Plover *(Pluvialis apricaria)* [A140], Wigeon *(Anas penelope)* [A050], Black-headed Gull *(Chroicocephalus ridibundus)* [A179], Corncrake *(Crex crex)* [A122], Wetland and Waterbirds [A999], Lapwing *(Vanellus vanellus)* [A142]
[000216]	River Shannon Callows pNHA	1.12	pNHA	

1.7.2 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.

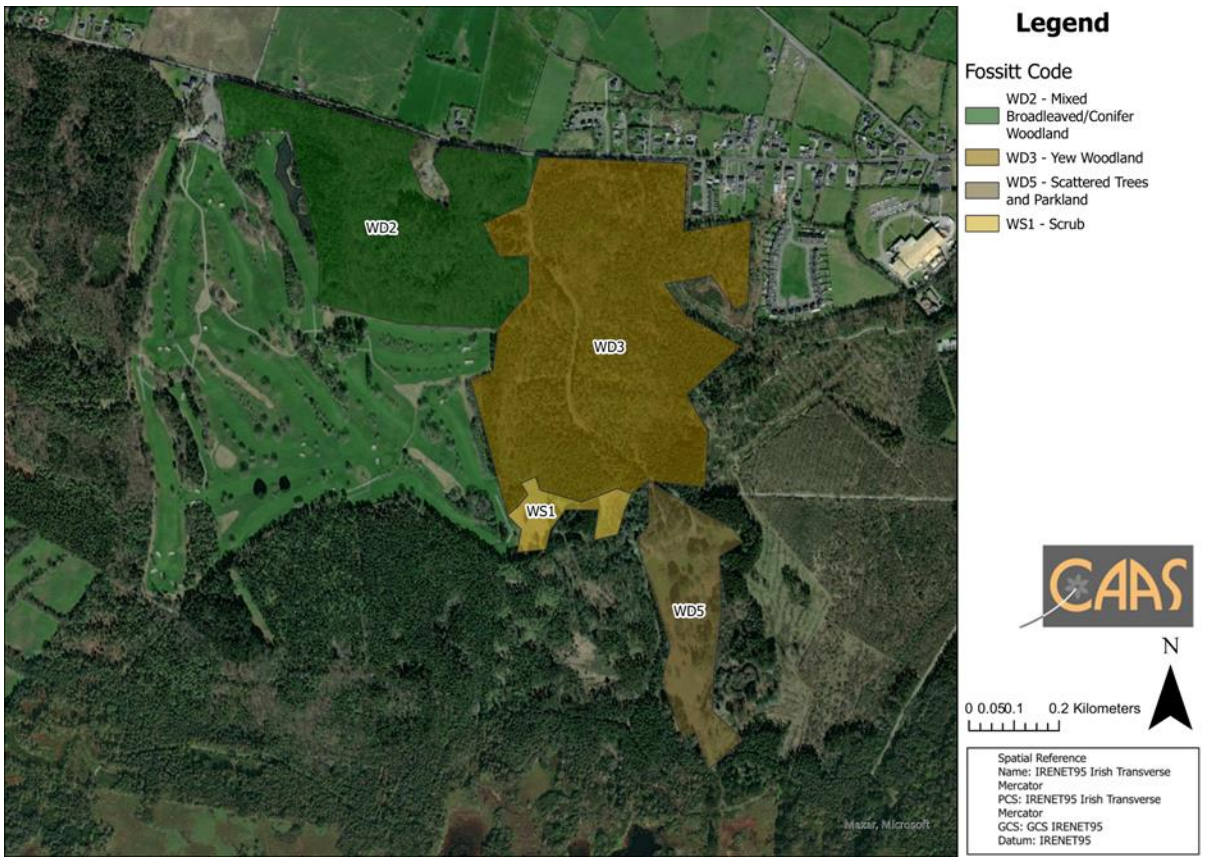


Figure 1.22 Habitats present at Portumna Forest Park

1.7.3 Condition Assessment

Habitat condition assessments are an integral part of the National Tourism Monitoring Programme. They will allow an assessment of how habitat degradation due to human disturbance may relate to visitor monitoring data gathered at each of the 19 Failte Ireland sites for the duration of the programme.

Each habitat condition assessment will follow a rating scale, that has been designed specifically for this monitoring programme as a standardised, repeatable measurement for assessing habitat condition across all Failte Ireland sites (details on the full methodology are supplied in Appendix II of this report). In order to adequately capture possible changes to habitat condition at each site in relation to tourism activities, the habitat condition assessments will be conducted every second year of the 5-year monitoring programme. Carrying out this condition assessment every second year, creates a sufficient timescale for changes in site condition in relation to visitor movements and activities on site to become apparent, and therefore to be reflected in the resultant data.

The initial habitat condition assessments that will form the baseline for the programme's condition assessments for each of the 19 sites, were carried out in the inaugural year of this programme in 2021. The next year of habitat condition assessment will be conducted in 2023. Each assessments results will be detailed within their relevant year's interim report, with the overall analysis of trends in habitat condition in relation to visitor movements for every site reported in the final year of the monitoring programme in 2025.

1.7.4 NBDC Records of Mammals

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 1.6 List of mammals that have been recorded at NBDC Hectad[7] M80

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

1.7.5 NBDC Records of Birds

Due to the woodland habitat of Portumna Forest Park and its proximity to Lough Derg, both passerines and waders were recorded in the area as shown in the NBDC data.

Table 1.7 List of birds that have been recorded at NBDC Hectad[8] M80

Group	Common name	Scientific name	Number recorded
Bird	Arctic Tern	*Sterna paradisaea*	1
Bird	Barn Owl	*Tyto alba*	7
Bird	Barn Swallow	*Hirundo rustica*	21
Bird	Black-billed Magpie	*Pica pica*	15
Bird	Black-headed Gull	*Larus ridibundus*	15
Bird	Blackcap	*Sylvia atricapilla*	9
Bird	Blue-winged Teal	*Anas discors*	1
Bird	Blue Tit	*Cyanistes caeruleus*	21
Bird	Brambling	*Fringilla montifringilla*	1
Bird	Chaffinch	*Fringilla coelebs*	25
Bird	Coal Tit	*Periparus ater*	16
Bird	Common Blackbird	*Turdus merula*	23
Bird	Common Bullfinch	*Pyrrhula pyrrhula*	17
Bird	Common Buzzard	*Buteo buteo*	10
Bird	Common Chiffchaff	*Phylloscopus collybita*	14
Bird	Common Coot	*Fulica atra*	17
Bird	Common Cuckoo	*Cuculus canorus*	10
Bird	Common Goldeneye	*Bucephala clangula*	3
Bird	Common Grasshopper Warbler	*Locustella naevia*	7
Bird	Common Kestrel	*Falco tinnunculus*	12
Bird	Common Kingfisher	*Alcedo atthis*	5
Bird	Common Linnet	*Carduelis cannabina*	13
Bird	Common Moorhen	*Gallinula chloropus*	18
Bird	Common Pheasant	*Phasianus colchicus*	16
Bird	Common Pochard	*Aythya ferina*	2
Bird	Common Raven	*Corvus corax*	6
Bird	Common Redshank	*Tringa totanus*	8
Bird	Common Sandpiper	*Actitis hypoleucos*	4
Bird	Common Snipe	*Gallinago gallinago*	12
Bird	Common Starling	*Sturnus vulgaris*	22
Bird	Common Swift	*Apus apus*	17

[7] 10km^2 grid
[8] 10km^2 grid

Group	Common name	Scientific name	Number recorded
Bird	Common Tern	*Sterna hirundo*	2
Bird	Common Whitethroat	*Sylvia communis*	11
Bird	Common Wood Pigeon	*Columba palumbus*	23
Bird	Corn Crake	*Crex crex*	1
Bird	Eurasian Collared Dove	*Streptopelia decaocto*	13
Bird	Eurasian Curlew	*Numenius arquata*	8
Bird	Eurasian Jackdaw	*Corvus monedula*	25
Bird	Eurasian Jay	*Garrulus glandarius*	11
Bird	Eurasian Siskin	*Carduelis spinus*	6
Bird	Eurasian Sparrowhawk	*Accipiter nisus*	10
Bird	Eurasian Teal	*Anas crecca*	3
Bird	Eurasian Treecreeper	*Certhia familiaris*	13
Bird	Eurasian Wigeon	*Anas penelope*	2
Bird	Eurasian Woodcock	*Scolopax rusticola*	5
Bird	European Golden Plover	*Pluvialis apricaria*	1
Bird	European Goldfinch	*Carduelis carduelis*	12
Bird	European Greenfinch	*Carduelis chloris*	14
Bird	European Robin	*Erithacus rubecula*	22
Bird	Fieldfare	*Turdus pilaris*	3
Bird	Gadwall	*Anas strepera*	1
Bird	Garden Warbler	*Sylvia borin*	2
Bird	Goldcrest	*Regulus regulus*	16
Bird	Great Black-backed Gull	*Larus marinus*	2
Bird	Great Cormorant	*Phalacrocorax carbo*	16
Bird	Great Crested Grebe	*Podiceps cristatus*	12
Bird	Great Spotted Woodpecker	*Dendrocopos major*	2
Bird	Great Tit	*Parus major*	16
Bird	Greater Scaup	*Aythya marila*	2
Bird	Greater White-fronted Goose	*Anser albifrons*	1
Bird	Grey Heron	*Ardea cinerea*	11
Bird	Grey Partridge	*Perdix perdix*	1
Bird	Grey Wagtail	*Motacilla cinerea*	11
Bird	Greylag Goose	*Anser anser*	2
Bird	Hedge Accentor	*Prunella modularis*	16
Bird	Hen Harrier	*Circus cyaneus*	3
Bird	Herring Gull	*Larus argentatus*	1
Bird	Hooded Crow	*Corvus cornix*	22
Bird	House Martin	*Delichon urbicum*	12
Bird	House Sparrow	*Passer domesticus*	15
Bird	Lesser Black-backed Gull	*Larus fuscus*	5
Bird	Lesser Redpoll	*Carduelis cabaret*	7
Bird	Little Egret	*Egretta garzetta*	1
Bird	Little Grebe	*Tachybaptus ruficollis*	13
Bird	Long-eared Owl	*Asio otus*	3
Bird	Long-tailed Tit	*Aegithalos caudatus*	11
Bird	Mallard	*Anas platyrhynchos*	20
Bird	Meadow Pipit	*Anthus pratensis*	14
Bird	Mew Gull	*Larus canus*	4
Bird	Mistle Thrush	*Turdus viscivorus*	17
Bird	Mute Swan	*Cygnus olor*	16
Bird	Northern Lapwing	*Vanellus vanellus*	12
Bird	Northern Pintail	*Anas acuta*	1
Bird	Northern Shoveler	*Anas clypeata*	2
Bird	Northern Wheatear	*Oenanthe oenanthe*	1
Bird	Pallas's Sandgrouse	*Syrrhaptes paradoxus*	1
Bird	Pied Wagtail	*Motacilla alba subsp. yarrellii*	1
Bird	Red-breasted Merganser	*Mergus serrator*	1
Bird	Redwing	*Turdus iliacus*	2
Bird	Reed Bunting	*Emberiza schoeniclus*	14
Bird	Rock Pigeon	*Columba livia*	1
Bird	Rook	*Corvus frugilegus*	21
Bird	Rosy Starling	*Sturnus roseus*	1
Bird	Sand Martin	*Riparia riparia*	4
Bird	Sedge Warbler	*Acrocephalus schoenobaenus*	13

Group	Common name	Scientific name	Number recorded
Bird	Sky Lark	*Alauda arvensis*	13
Bird	Song Thrush	*Turdus philomelos*	19
Bird	Spotted Flycatcher	*Muscicapa striata*	9
Bird	Stock Pigeon	*Columba oenas*	7
Bird	Stonechat	*Saxicola torquata*	6
Bird	Tufted Duck	*Aythya fuligula*	13
Bird	Water Rail	*Rallus aquaticus*	11
Bird	Whinchat	*Saxicola rubetra*	1
Bird	White-tailed Eagle	*Haliaeetus albicilla*	1
Bird	White Wagtail	*Motacilla alba*	18
Bird	Whooper Swan	*Cygnus cygnus*	1
Bird	Willow Warbler	*Phylloscopus trochilus*	15
Bird	Winter Wren	*Troglodytes troglodytes*	19
Bird	Yellowhammer	*Emberiza citrinella*	10

1.8 Recommendations

- Measures should be considered to support bats on site such as the construction of banks and berms for invertebrate nesting and basking, in order to support invertebrate populations on site.
- An increase in signage related to the ecology of the site could increase visitor engagement as there is an opportunity for higher direct engagement at site through signage or nature related education events.

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 sites[9]. 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.

[9] 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.