Environmental Surveying and Monitoring Programme

Bray Head 2023

Fáilte Ireland
Turasóireacht Náisúnta
An tÚdara Eorbartha
National Tourism
Development Authority

National Tourism and Environmental Monitoring Programme

Annual Report for Bray Head 2023

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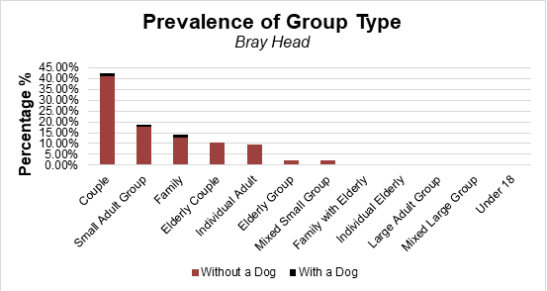
BRAY HEAD – INTERESTING FINDS

Chough – Rare Bird at Bray Head

Chough (*Pyrrhocorax pyrrhocorax*) is a rare bird which is present at Bray Head. It is listed in the EU Birds Directive as an Annex I Bird Species, and is amber-listed as a Bird of Conservation Concern. They nest in rocky coastal areas, which are commonplace on the west coast of Ireland. They can be recognized by their bright red bill and legs, and can sometimes be seen exhibiting elaborate flight patterns near cliffs, often swooping and flying upside down.

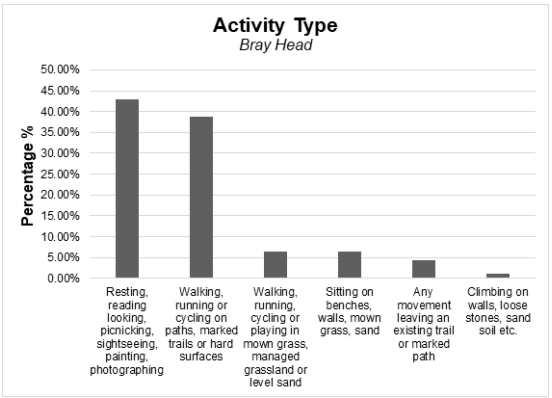
Visitors

- 155 visitor groups visited the site between an 8-hour period.
- The average dwell time for visitor groups was 47 minutes.



Visitor Interaction

- Almost 92% of visitor groups travelled to the site by car.
- Almost 95% of the activities observed were low-level activities.



Key Recommendations

- The main path between the car park and the Bray Head Tower is in good condition and no remedial works are required.
- There are a number of paths to the north of the main path. These are desire lines and there is some minor localised bare soil/ erosion. There is no need to formalise these paths at the moment.

1.0 INTRODUCTION

1.1 Background

Roughan & O'Donovan (ROD) Consulting Engineers were appointed by Fáilte Ireland to conduct Visitor and Environmental Surveys as part of the National Environmental Surveying & Monitoring Programme. Fáilte Ireland regularly engages with environmental research that is used to make informed management decisions and produce robust guidelines to facilitate the protection of the environment. From its inception in 2014, the Wild Atlantic Way (WAW) Operational Programme Monitoring Programme has been conducting research into the impacts of tourism on the receiving environment. To date the surveys have been monitoring 57 sites and recorded the activities and effects of over 26,000 visitors to WAW discovery points.

Building on the success of the Wild Atlantic Way (WAW) environmental monitoring programme which ran from 2015-2019 – Fáilte Ireland expanded the programme to a national level. From 2021 to 2022 the programme monitored 19 individual sites located in all of Fáilte Irelands regional areas; The Wild Atlantic Way, Irelands Hidden Heartlands, Irelands Ancient East, and Dublin. This 2023 National Monitoring reporting builds on environmental surveying and monitoring undertaken on behalf of Fáilte Ireland as far back as 2015.

Due to constraints with the timing of the ROD appointment in mid-2023 and the need to undertake the surveys before the end of peak summer season (i.e. end of August) it was decided that a reduced scope be implemented. Surveying was carried out at four of the sites, namely Bray Head (Valentia Island) in Co. Kerry, Malin Head in Co. Donegal, Dursey Island in Co. Cork and Keem Bay in Achill Island, Co. Mayo. Figure 1.1 below shows the locations of these sites.

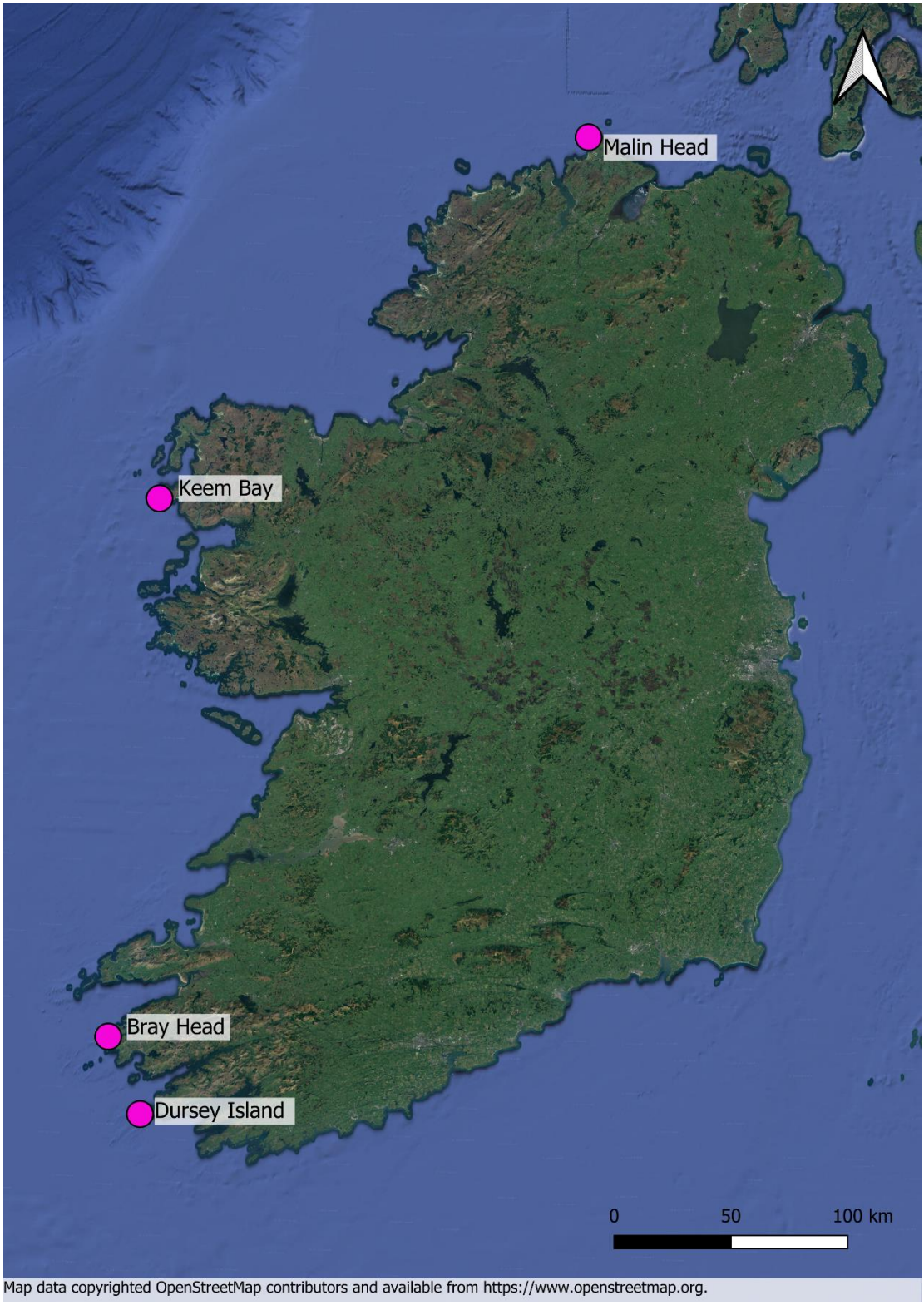


Figure 1.1 Environmental Monitoring Programme 2023 locations. Basemap provided by Google.

1.2 Aim of the Report

The purpose of the monitoring programme is as follows:

- To gain insight from an environmental perspective at popular tourism sites across Ireland;
- To obtain data on visitor numbers, visitor behaviour, path and trail conditions etc. for each site;
- To obtain data relating to habitats, flora and fauna for each site;
- To identify observable trends or variations among the sites;
- To identify favourable and unfavourable behaviour and practices at sites; and,
- To make recommendations where appropriate for site management for the benefit of the site, the visitor, and the natural environment.

The purpose of the visitor and environmental monitoring is to gather information on a select sample of visitors to Bray Head on a typical Saturday during the month of August, and to answer the following questions:

- How many people visit Bray Head?
- How long do visitors spend at Bray Head?
- What is the demographic spread of visitors to Bray Head?
- What modes of transport do visitors to Bray Head use?
- What habitats are found on Bray Head, and what condition are they in?
- What type of paths are present on Bray Head, and what condition are they in?
- How is tourism impacting on the ecological integrity of Bray Head?
- What can be done to reduce any impacts on the natural environment as a result of tourism?

1.3 Site Description of Bray Head

Bray Head is situated on the southern coast of Valentia Island, Co. Kerry. The Bray Head Walk, a way marked trail comprises a 4km linear walk (out and back) between the car park and the tower. The car park is situated on unbound granular material bordered by wooden fencing and can hold approximately forty cars. A pay and display machine, boot brush, picnic benches and informative signage on heritage features are available to visitors at the car park. There are no bins at the car park. The Bray Head Watchtower is 2km west of the car park and views of the Skellig Islands are available to visitors along the trail. Informative signage on heritage features is also available on the trail.

Bray Head is bordered by the Valencia Harbour/Portmagee Channel Special Area of Conservation (SAC) [002262] and overlaps with the Iveragh Peninsula Special Protection Area (SPA) [004154]. Bray Head is also located within the Valentia Island Cliffs proposed Natural Heritage Area (pNHA) [001382]. Puffin Sound-Horse Island Cliffs pNHA (001373) is approximately 90 m south of Bray Head. The Bray Head Watchtower and views of Puffin Island and the Skellig Islands are presented in Plates 1.1 and 1.2 below. An example of the pathway leading to the viewing point at the Bray Head Watchtower is presented in Plate 1.3 below.

Plate 1.1 **View of Bray Head Watchtower and viewpoint with Puffin Island and the Skellig's in the background.**

Plate 1.2 Bray Head Watchtower.

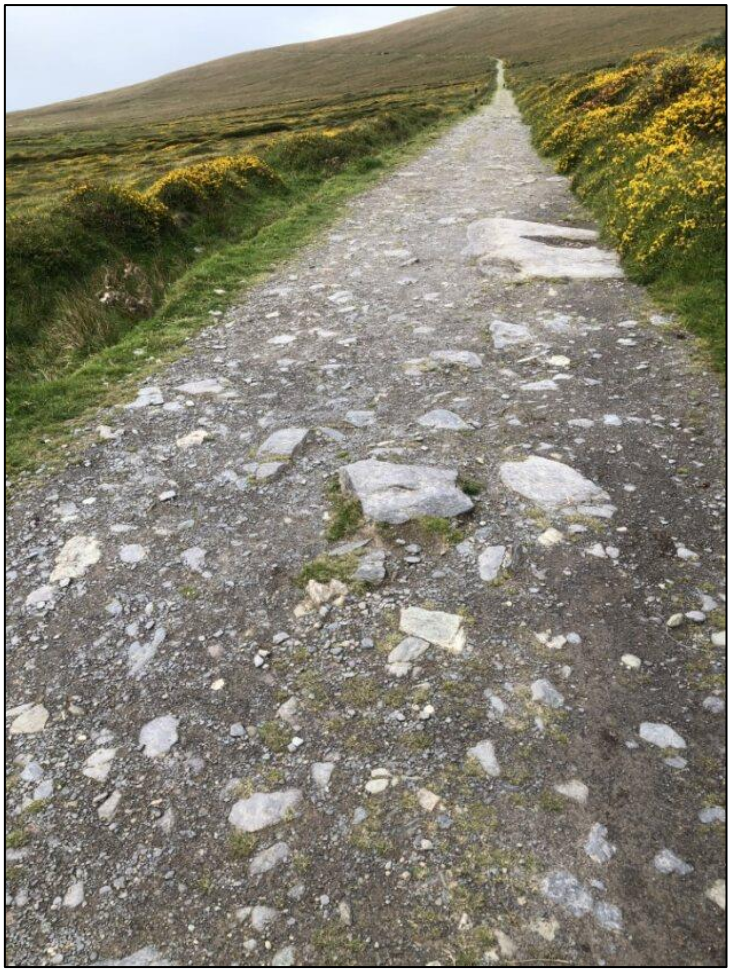


Plate 1.3 Trail to Bray Head viewpoint.

1.4 Critical Infrastructure

Tables 1.1 - 1.3 below provide information on the infrastructure at Bray Head. Uisce Éireann's website was used to access information on the Water Supply and Wastewater Treatment Capacity Registers for County Kerry (Uisce Éireann 2023a, b). The Kerry County Development Plan provided information on transport infrastructure at Bray Head (KCC 2022).

Table 1.1 Bray Head Wastewater Infrastructure

Wastewater Treatment Plant (WWTP)	Uisce Éireann Indication of Capacity	Comment
• No toilet facilities are available on this site. • No wastewater treatment plan (WWTP) on this site • The nearest WWTP settlement is Portmagee WWTP	No spare capacity	There is no capacity for implementation of wastewater treatment at this site to be treated by Portmagee WWTP.

Table 1.2 Summary of Drinking Water infrastructure at Bray Head

Drinking Water	Water Resource Name (WRZ)	Uisce Éireann Indication of Capacity	Comment
The nearest settlement to Bray Head is Portmagee	Emlaghpeasta/ Portmagee/ Maulin	Potential capacity available (Level of service (LoS) improvement required)	Service required for water supply.

Table 1.3 Summary of Transport infrastructure at Bray Head

Nearest Settlement	Current Transport Infrastructure	Comment
Portmagee	A road bridge and the Knightstown to Renard Ferry provide access to Bray Head and Valentia Island.	Current transport infrastructure is sufficient should visitor numbers increase.

2.0 METHODOLOGY

In line with the methodology used in 2021 and 2022, the following surveys were undertaken:

- Visitor Characterisation Surveys
- Ecological Surveys
- Pathway and Habitat Condition Surveys

The survey at Bray Head was undertaken on the 26th of August 2023. The survey was undertaken using two surveyors over an eight-hour period between 9am and 5pm. The weather conditions on the day were good, with temperatures between 13.8° C and 17.2° C, 0.3mm of rain and a mean wind speed of 9.6 knots (Met Éireann, 2023). The survey was undertaken on a Saturday and in reasonable weather conditions, to ensure that the data was comparable to previous years. The sub-sections below present the methodology used at each site.

2.1 Visitor Characterisation Survey

A 'visitor' refers to an individual, couple or group who arrive together. The following variables were recorded for each visitor:

- Activity Type
- Dwell Time
- Group Type
- Transport Type
- Use of Available Interpretive Signage

The visitor characterisation survey was undertaken continuously over an eight-hour period, between 9am and 5pm.

One surveyor was positioned at the car park and recorded each group as they arrived and left, recording the variables listed above. The second surveyor undertook the other surveys, including the survey of visitor behaviour, which was carried out by monitoring a sample of visitors across the site ('the site' refers to the car park, the pathway to the tower as well as the surrounding paths, as shown in Figure 3.10). This surveyor also undertook the ecological and pathway surveys, and habitat condition assessments. The activities and impacts were recorded following the conventions used in the 2021 and 2022 surveys and as outlined in this report.

2.2 Ecological, Pathway and Habitat Condition Surveys

The habitat condition survey was carried out following the methodology outlined in the 2021 report. All habitats were classified and mapped in accordance with *A Guide to Habitats in Ireland* (Fossitt, 2000) and *Best Practice Guidance for Habitat Surveying and Mapping* (Smith et al. 2011). Notes were taken on species composition, habitat condition and existing pressures. A desktop study was undertaken to identify rare and protected species and designated sites in the vicinity of each site. Incidental sightings of birds, mammals, reptiles etc. were also recorded during the survey.

The paths and desire lines at each site were surveyed and mapped, and notes were taken on substrate, details of any path construction, evidence of erosion such as braiding and path widening, and any changes in the condition when compared to

previous surveys. Notes were taken on whether the paths were accessible for wheelchairs, buggies, and less able-bodied people.

Pathways were mapped and colour-coded to show the path type (e.g., tarmac, grit, desire line etc.) and condition (good/ moderate/ poor) for each 100 m section. The path condition survey covered the areas on the site surveyed in 2021 and 2022, as well as any other paths on the sites. In addition to the pathway assessment, any features on site, including buildings, cairns, and dry-stone walls were documented. Notes and photographs were taken of these features to document their condition.

In addition to the information collected in 2021 and 2022, in 2023, the publicly available heatmaps (available at: <www.strava.com/heatmap>) were used to ascertain the routes being used by people with the online fitness app downloaded over the previous 2 year period. In addition to the pathway condition assessment, the heat maps provided valuable information on braiding and/or desire lines.

2.2.1 Habitat Condition Assessment Methodology

In line with previous national monitoring reports undertaken in 2021 and 2022 and as outlined in this report, a rating scale was used to assess habitat conditions across all sites. The following criteria were used to assess habitat condition:

- Extent of habitat degradation;
- Impact of habitat degradation (localised or widespread);
- Potential for the habitat to recover; and
- Whether or not intervention is required.

For the purpose of this report, as was the case with the 2021 and 2022 reports, degradation is defined as any change to a habitat which reduces its viability or the viability of the species which occur there in the long-term. An assessment of the habitat condition was made every 100m along the transect. Habitat conditions were rated on a scale of 1 to 5 with 1 indicating that there was no impact, and 5 indicating that there was a high impact on the habitat.

Table 2.1 Habitat Condition Assessment Rating Scale

Scale	Condition
1	No evidence of habitat degradation
2	Localised habitat degradation. Habitat capable of rapid recovery.
3	Widespread habitat degradation. Habitat capable of rapid recovery.
4	Localised habitat degradation. Intervention required for full recovery.
5	Widespread habitat degradation. Intervention required for full recovery.

3.0 RESULTS

3.1 Visitor Characterization Survey

The visitor monitoring surveys recorded a total of 155 visitor groups. This site was most popular amongst the couple group with cars being the most prevalent mode of transport. The average dwell time for the site was 47 minutes with the following activities undertaken during the survey (listed in order of occurrence rate):

- Walking, running, or cycling on paths, marked trails or hard surface.
- Walking, running, cycling, or playing in mown grass, managed grassland, or level sand.
- Sitting on benches, walls, mown grass, sand.
- Resting, reading, looking, picnicking, sightseeing, painting, photographing.
- Any movement leaving an existing trail or marked path.

3.1.1 Dwell Time

The average dwell time for visitor groups observed to the site was 47 minutes. The median dwell time of 22 minutes shows that 50% of the groups observed remained at the site for 22 minutes or less. Based on the distance to the tower from the car park and the expected time it would take an average person to complete the walk (50 minutes), 45% of groups completed the linear walk. 2% of groups did not leave their cars in the car park. Figure 3.1 presents the dwell time of visitor groups.

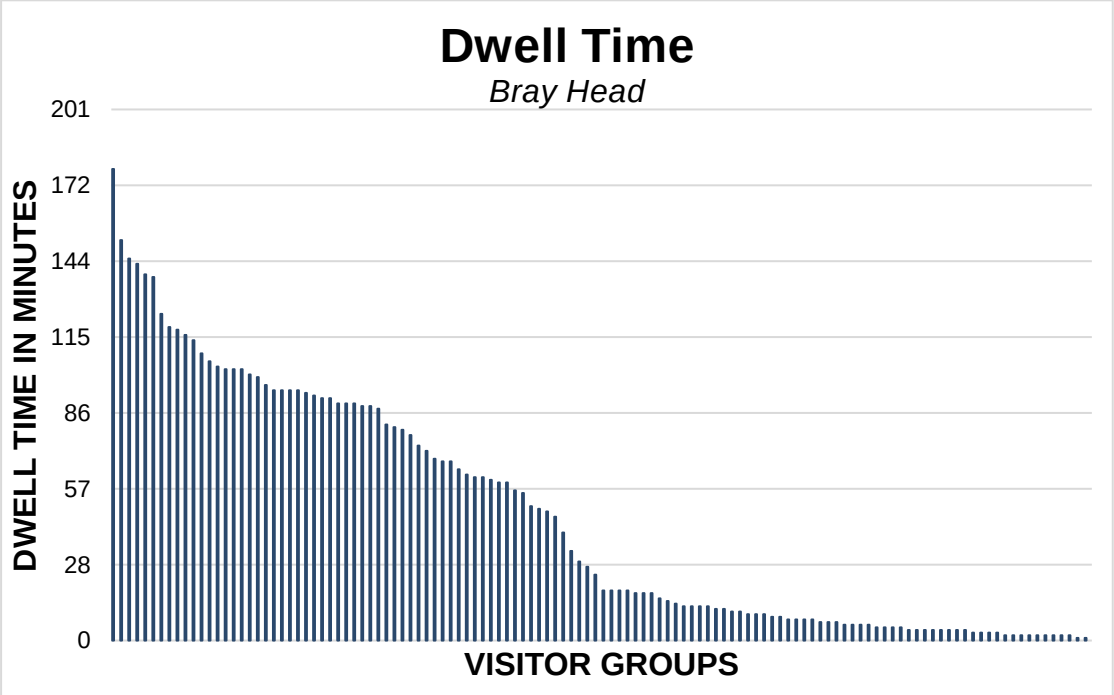


Figure 3.1 Dwell Time of Visitor Groups at Bray Head

3.1.2 Prevalence of Group Type

Figure 3.2 presents the prevalence of group types observed visiting the site, either without a dog or with a dog. 'Couples' made up the largest proportion of group type with over 42% of all 155 groups observed. The second largest group type was 'small adult group' with almost 19%. The third largest was the 'Family' group type with almost 14%. One group in each of the three most prevalent group types had a dog, with the family group having two dogs. All groups, when observed, kept their dogs on leads. The remaining group types observed in order of prevalence were 'elderly couple,' 'individual adult', 'elderly group' and 'mixed small group'. There were no records made for the following group types 'family with elderly,' 'individual elderly', 'large adult group', 'mixed adult group' and 'under 18'.

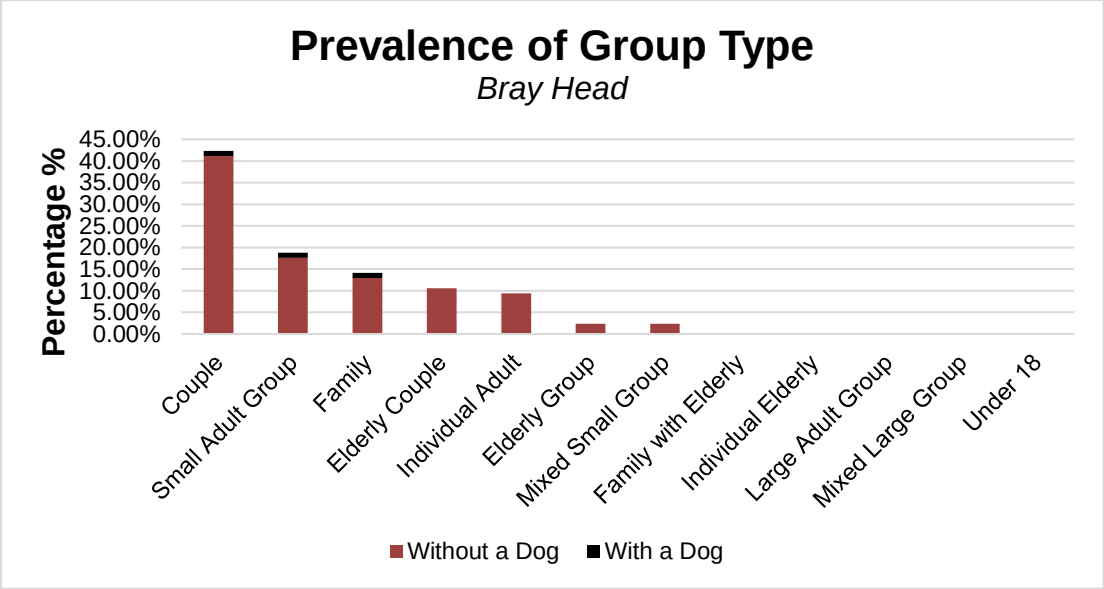


Figure 3.2 Group Type that Visited Bray Head

3.1.3 Prevalence of Transport Type

Figure 3.3 presents the prevalence of transport types used by visitor groups observed. Cars were the most prevalent mode of transport, with 142 of 155 visitor groups, or almost 92% of groups, using cars to get to the site. The second most prevalent type was camper vans with over 5% of all groups. The third most prevalent type was motorbike with almost 2% of all groups. The remaining were bicycles and walking both with only 0.65% of all groups using each.

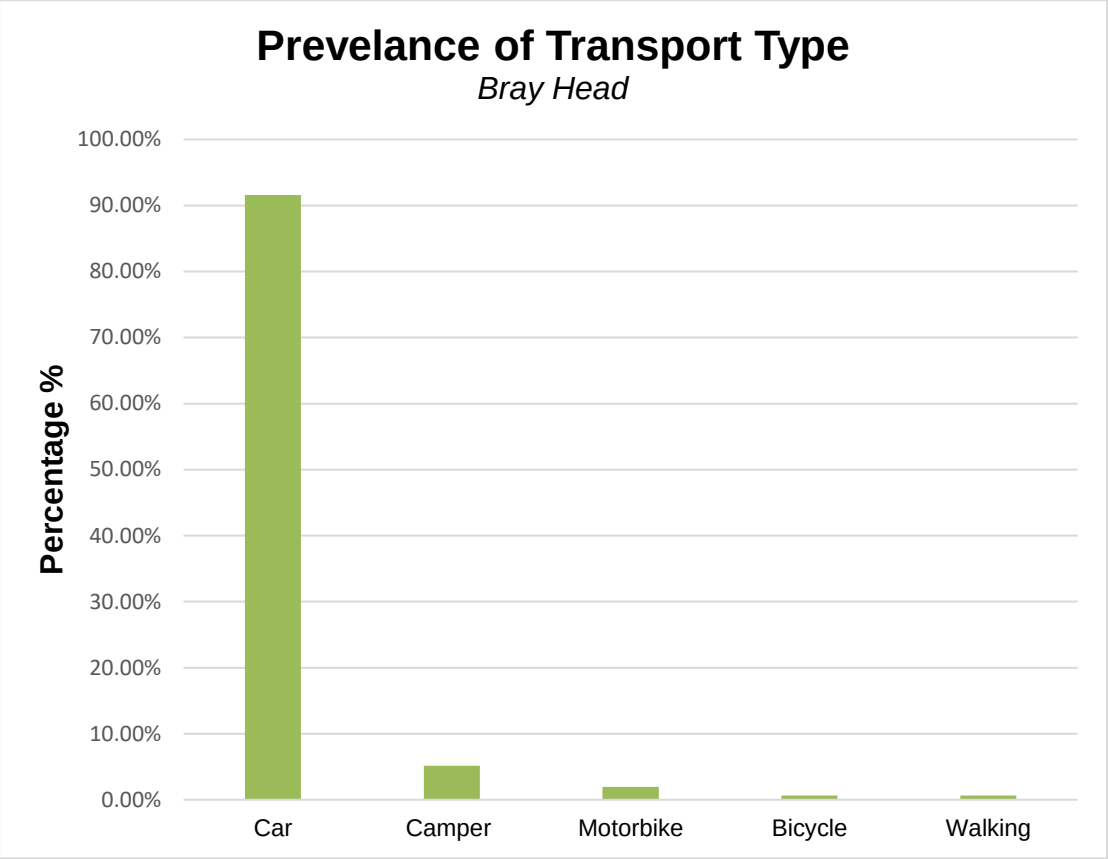


Figure 3.3 Mode of Transport Type Used to Visit Bray Head

3.1.4 Read Available Signage

Figure 3.4 presents the number of visitor groups observed reading the available signage at the car park. Signage included historic content (e.g., Atlantic telegraph) and Bray Head Tower Walk OS mapping, which also included leave no trace principles and 'dogs on lead' imagery. Signage also included reference to the 'National looped walk', which is incorrect as the trail is now considered a linear 'out and back' walk. A higher proportion of groups did not read the signage, with over 60% of groups not reading the signage, and only almost 40% of groups reading the signage. However, it should be considered that a proportion of the groups observed may be local to the area and may have previously read the sign on previous visits.

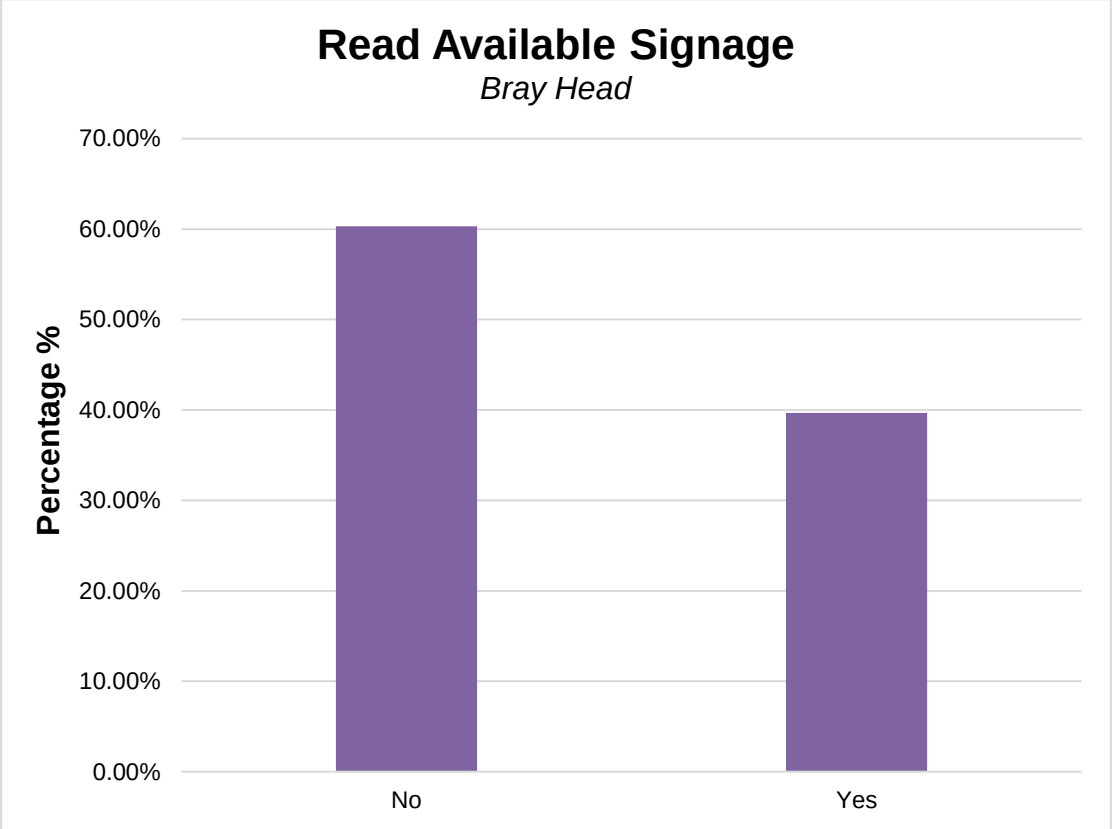


Figure 3.4 Use of Signage at Bray Head

3.1.5 Activity Levels

Figure 3.5 presents the activity levels at Bray head. A sample of forty visitor groups' activities were observed. The results are shown below with the activity categories as detailed in Appendix I. For example, walking on marked trails and hard surfaces is a low-level activity, whereas disturbing wildlife and picking herbaceous vegetation are considered high-level activities. Almost 95% of the activities observed at Bray Head were considered low-level activities. The low-level activities observed included walking, sitting, resting, sightseeing, photographing, and picnicking. Only over 5% of the activities observed were considered medium-level activities. The medium-level activities observed included walking off an existing trail or marked path and climbing features on site. No high-level activities were observed.

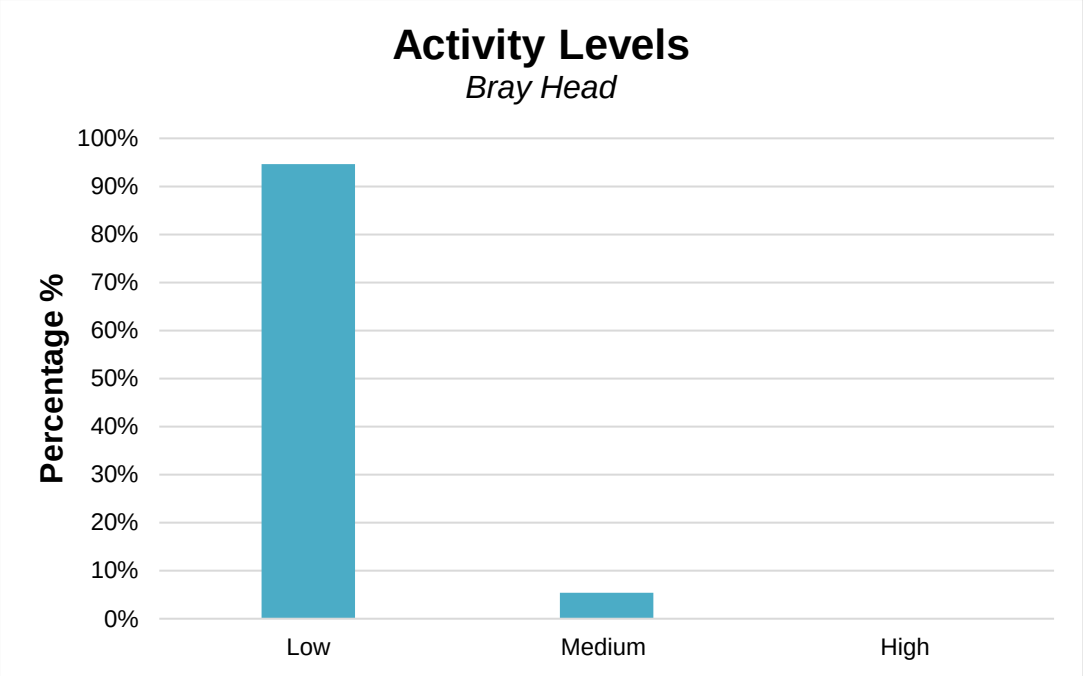


Figure 3.5 Categories of Activity Level at Bray Head

3.1.6 Impact Severity Levels

Figure 3.6 presents the impact severity level observed at the site. A sample of forty visitor groups' activities were observed. Impact severity levels related to the impact and severity of the activities undertaken at the site, this is shown and detailed in Appendix I. The survey found that over 90% of the activities observed had low level impact severity on the site, low level includes no effects, desire lines on grass and leafy vegetation, temporary disturbance of wildlife, temporary change of character and general littering. 8% had a medium level of impact severity, medium level includes desire lines outside the existing trail or marked oath and trampling of herbaceous vegetation. 2% (one individual) undertook an activity that is categorised as severe, as they were observed climbing on the signage.

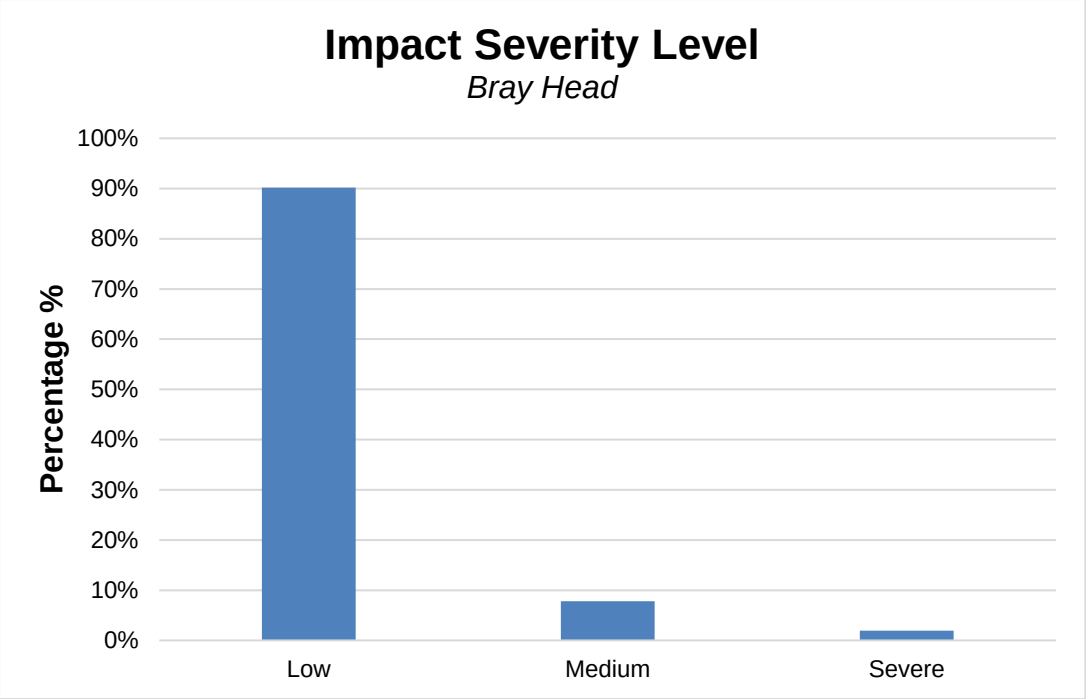


Figure 3.6 Impact Severity Level

3.1.7 Activities Undertaken Other than Walking

Figure 3.7 presents the number of visitor groups observed undertaking activities other than just walking. The majority of visitor groups did not undertake any other activities other than walking, representing almost 58% of groups. While over 42% of groups were observed undertaking other activities other than walking. Other activities observed other than walking include sitting, resting, sightseeing, photographing, and picnicking

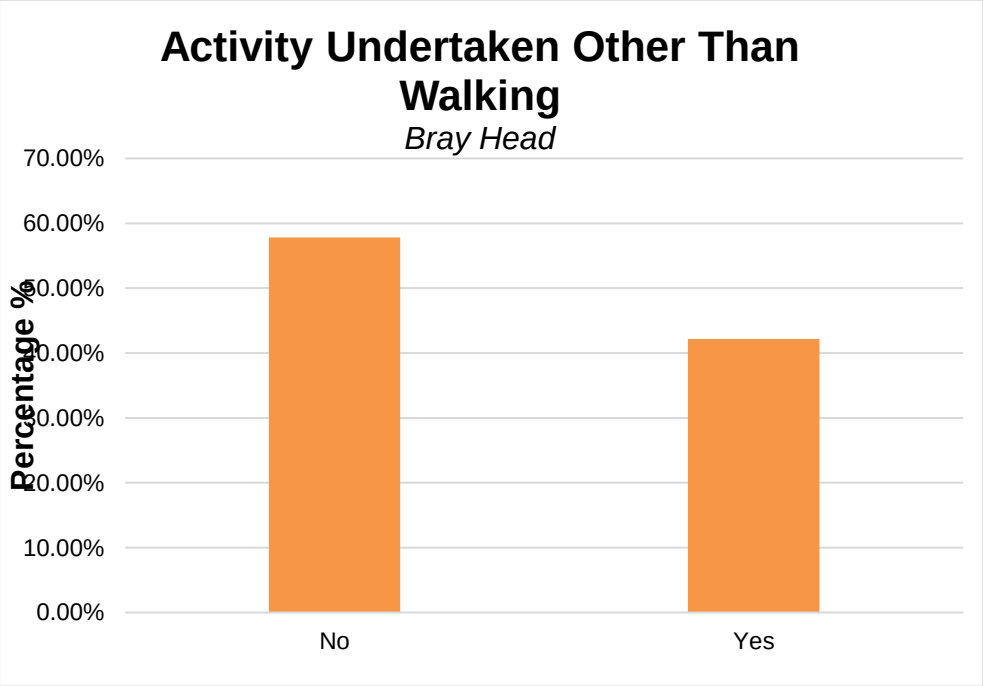


Figure 3.7 Activities Undertaken Other than Walking

3.1.8 Activity Type

Figure 3.8 presents the percentage of visitor groups' activity types observed. A sample of 40 visitor groups' activities were observed. The survey found that almost 95% of the activities observed were low-level activity types, as presented in the Figure 3.5. Low-level activity types observed included walking, sitting, resting, sightseeing, photographing, picnicking, etc. Approximately 5% of the activities observed were medium-level activity types which included 'any movement leaving an existing trail or marked path' and 'climbing on walls, loose stones, sand, soil etc.

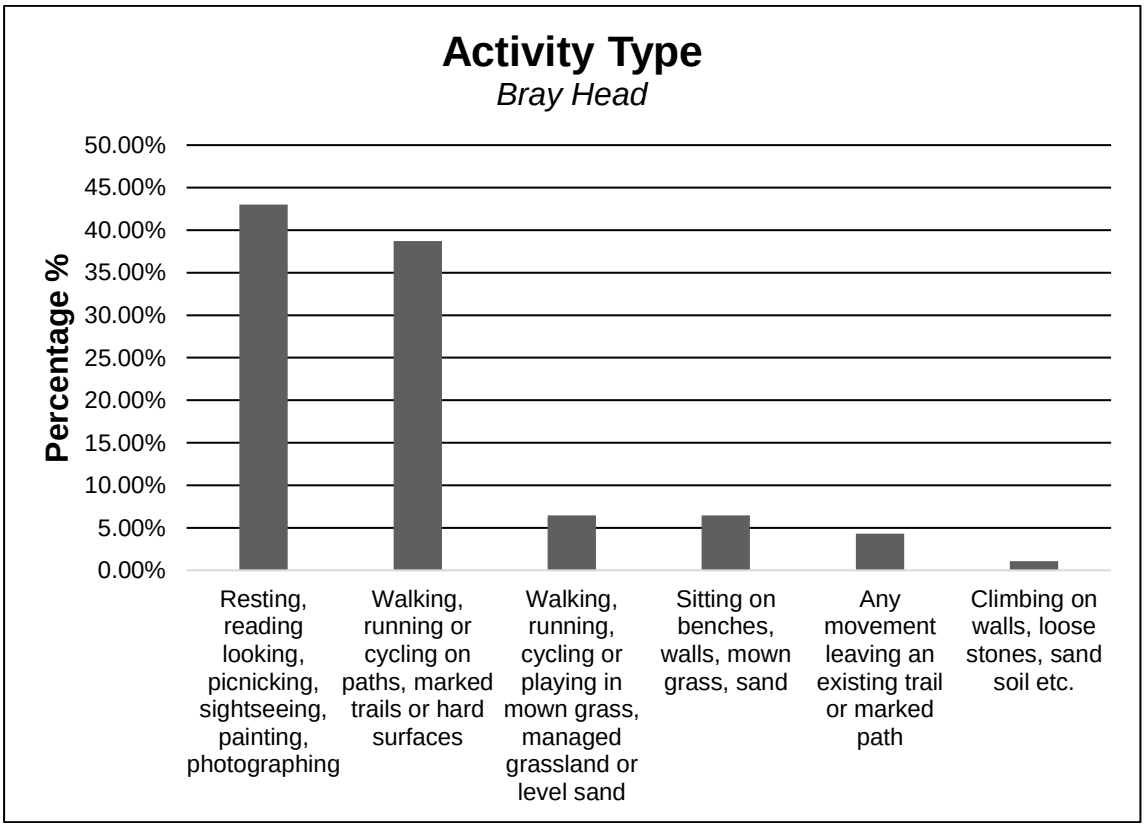


Figure 3.8 Activity Types at Bray Head

3.1.9 Heat Map

- Figure 3.9 presents a heat map of visitor movements at the site, provided by Strava. Strava aggregates data from users on its app who opt-in to share their activities and locations. The map shows that a high level of movement occurs between the car park and the tower, with some visitor access between the tower and the headland, and some use of desire lines/ rough paths that loop back to the car park to the north of the main path.

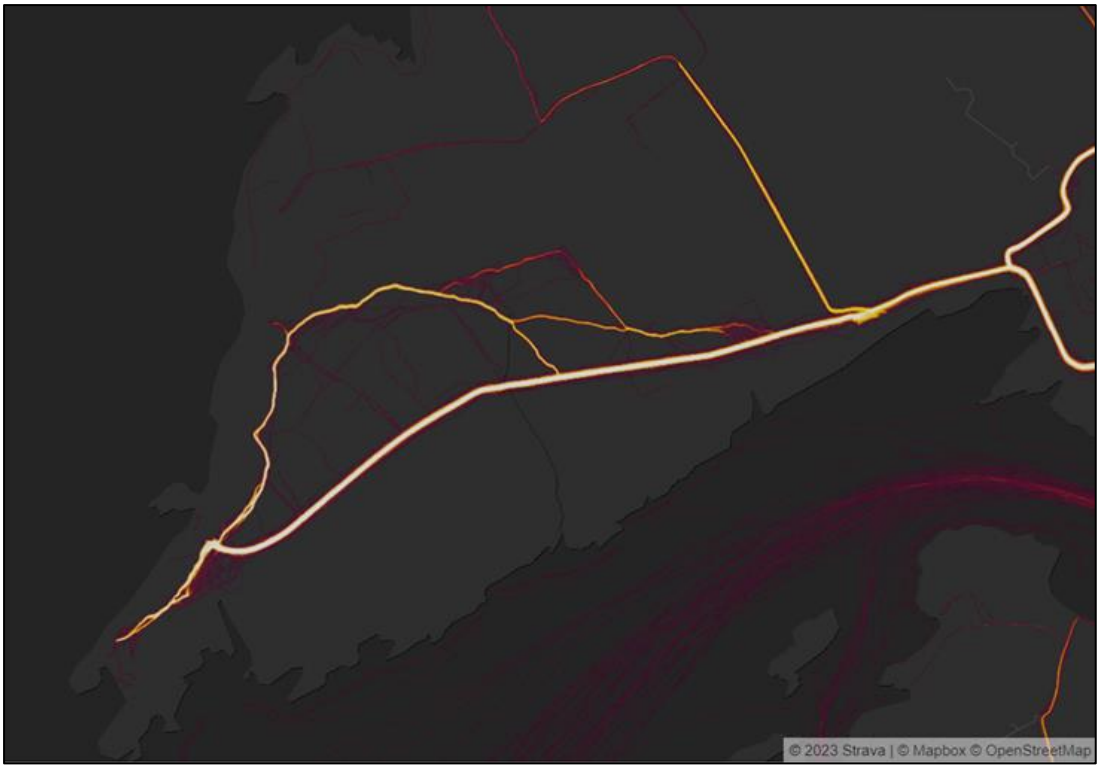


Figure 3.9 Heat map of visitor movements on Bray Head (Strava, 2023).

3.2 Pathways and Habitat Condition

3.2.1 Pathway Condition

The path includes a mixture of hard and soft trails, both of which lead from the car park to the primary viewing point which is the tower as shown in section 1.2 of this report labelled as Plate 1.2 Bray Head Tower. There are several desire lines and compaction areas at and around the site of the tower. Signs of site overuse are visible with areas of exposed and eroded soil. The trail that experiences the highest usage from the car park is bound by two deep ditches which confine activity.

At the highest point of the site is the northern trail which previously formed part of the Bray Head looped walk. The trail traverses through heathland habitat. Some localised signs of damage to the habitat are visible within the surroundings of the trail itself. Higher rates of erosion and exposed peat sub-strata have been noted in areas of steep topography. The main track was comprised predominantly of gravel substrate and showed signs of localised path widening. The northern track comprises desire lines with some localised erosion.

The condition (good, moderate, bad) of the main pathway types (gravel, desire line, other) are illustrated below in Figure 3.10. Examples of each of these pathway types are presented below in Plate 3.1. There was only one recorded 'other pathway' type during the survey, which is shown in Plate 3.1c.
Overall, the pathways were in good condition. Any formalisation of the desire lines would lead to greater habitat degradation and habitat loss than is currently occurring.

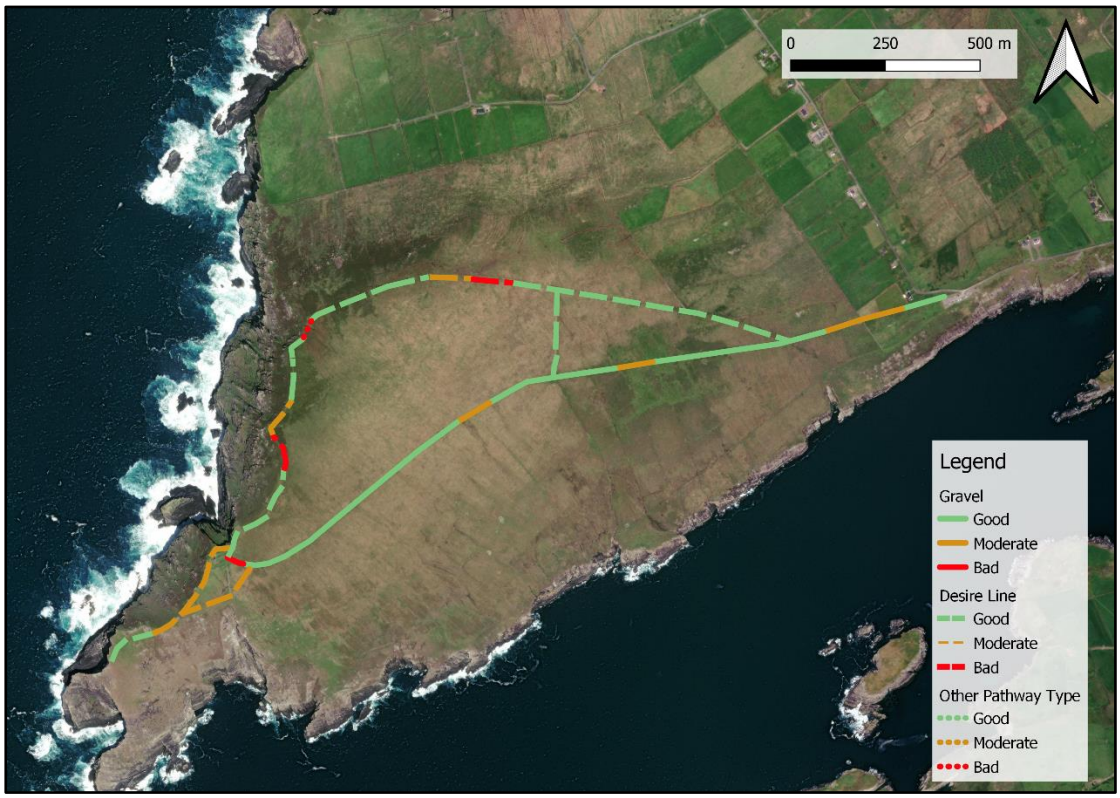


Figure 3.10 Colour-coded condition of the main pathway types recorded on the site.

Gravel pathway

Desire line

Other pathway

Plate 3.1 The main pathway types recorded on Bray Head.

3.2.2 Pathway Impact

Figure 3.11 represents the pathway impact type at the site. The types of impact observed was light desire lines at over 27%, trampling at almost 24%, braiding at over 20%, path widening at almost 14% and erosion at over 11%. Overgrazing by livestock only made up over 2% of the impact types observed and livestock poaching (damage to soil by many livestock standing in one location for prolonged periods of time) only made up over 1%.

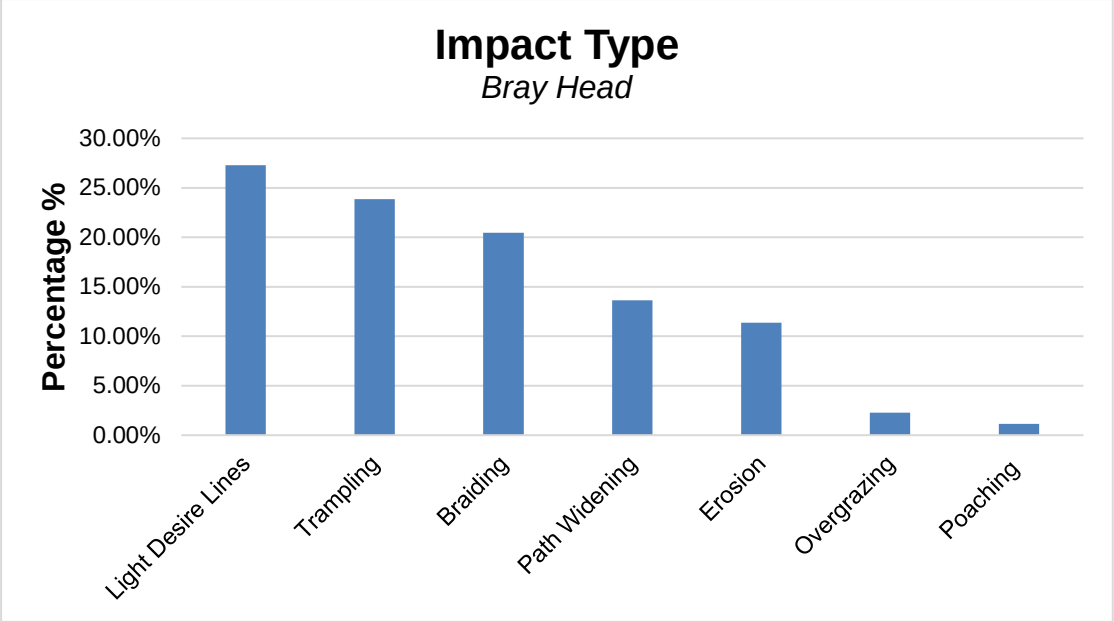


Figure 3.11 Impact Type Observed at Bray Head

3.2.3 Habitat Condition

Habitats were surveyed during the optimum habitat survey season i.e., April to September (Smith et al., 2011). Habitats were classified according to *A Guide to Habitats* in *Ireland* (Fossitt, 2000). Habitats identified on Bray Head are listed below and mapped in Figure 3.12:

- Buildings and Artificial Surfaces (BL3)
- Sedimentary Sea Cliffs (CS3)
- Dry-humid Acid Grassland (GS3)
- Wet Grassland (GS4)
- Dry Silicious Heath (HH1)
- Montane Heath (HH4)
- Scrub (WS1)

The habitat condition assessment follows a rating scale, that has been designed specifically for this monitoring programme as a standardised, repeatable measurement for assessing habitat condition across all Fáilte Ireland sites (details on the full methodology are supplied in Appendix II of this report).

There are a range of habitats present on site (see Figure 3.12). Habitat damage of varying degrees was reported on approximately 78% of the transect walked by surveyors. Damage percentage ranged from approximately 0% to 90% of the area damaged. Out of the 50 no. 100 m sample stations located along the habitat condition assessment, 38% of samples contained no evidence of any habitat degradation, 40% contained localised habitat degradation which was slight and capable of rapid recovery, and 22% contained widespread habitat degradation but was slight and capable of rapid recovery. No samples contained any levels of habitat degradation that would require intervention to allow full recovery. The causes of the damage were identified to be livestock poaching, overgrazing, path widening and desire lines from people leaving the existing trail.

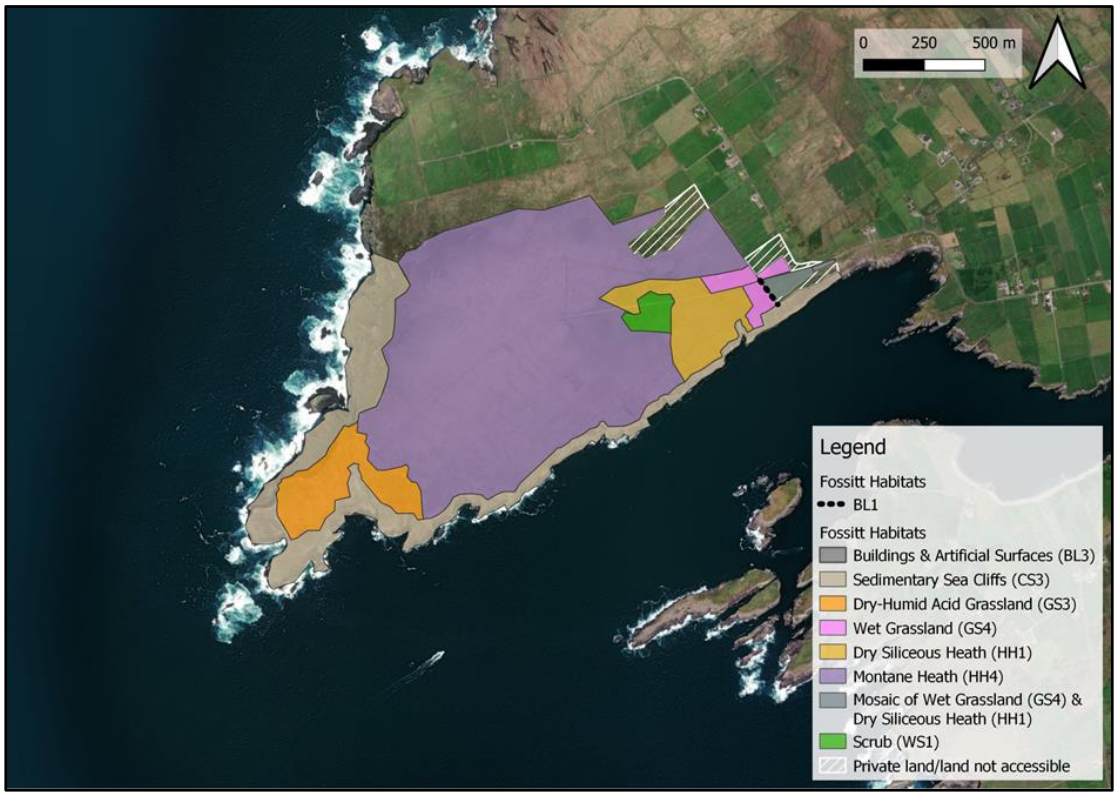


Figure 3.12 Habitat Map of Bray Head.

Bray Head supports a range of rare and protected habitats and species. Table 3.1 below presents the species recorded incidentally during the ecological surveys on Bray Head.

Table 3.1 Incidental Species Records

Scientific Name	Common Name
Corvus corax	Raven
Corvus monedula	Jackdaw
Delichon urbicum	House Martin
Hirundo rustica	Swallow
Morus bassanus	Gannet
Saxicola rubicola	Stonechat

3.2.4 Ecological Constraints

As previously discussed, there a number of European (SACs and SPAs) and Nationally (pNHAs) designated sites within or adjacent to Bray Head. Information on these sites was obtained from the NPWS website and their respective Natura 2000 Standard Data Forms (NPWS 2023). These sites are described in Table 3.2 below.

Table 3.2 Designated sites within 2 km of Bray Head

Site Name [Site Code]	Qualifying Interests	Distance (km) from Site	Pressures and Threats (those related to tourism are in bold)
European Designated Sites			
Iveragh Peninsula SPA [004154]	• Fulmar (*Fulmarus glacialis*) [A009] • Peregrine (*Falco peregrinus*) [A103] • Kittiwake (*Rissa tridactyla*) [A188] • Guillemot (*Uria aalge*) [A199] • Chough (*Pyrrhocorax pyrrhocorax*) [A346]	Overlaps with the site	• Competition (fauna) • Predation • Grazing • Fertilisation
Valencia Harbour / Portmagee Channel SAC [002262]	• Mudflats and sandflats not covered by seawater at low tide [1140] • Large shallow inlets and bays [1160] • Reefs [1170]	Borders the site	• Marine and freshwater aquaculture • Sea defence and coast protection works • Nautical sports • Other human intrusions and disturbances
National Designated Sites			
Valencia Island Cliffs pNHA [001382]	No site description available	Intersects with the site	• No site description available
Puffin Sound-Horse Island Cliffs pNHA [001373]	• Manx Shearwater • Storm Petrels • Puffin	*c*. 90m south of Bray Head	• No pressures or threats identified.

3.3 Records of Rare, Protected and Invasive Species

Records of rare, protected, and invasive species from the past ten years from Hectad V37 were obtained the National Biodiversity Data Centre (NBDC) online database. These records are presented in Table 3.3 below.

Table 3.3 Rare protected and invasive species recorded from Hectad V37 from NBDC database.

Scientific name	Common Name	Date of last record	Status*
Mammals			
Balaenoptera acutorostrata	Minke Whale	21/05/2019	Annex IV HD; WA
Delphinus delphis	Common Dolphin	10/05/2019	Annex IV HD; WA
Globicephala melas	Long-finned Pilot Whale	12/07/2020	Annex IV HD; WA
Grampus griseus	Risso's Dolphin	06/07/2018	Annex IV HD; WA
Halichoerus grypus	Grey Seal	26/08/2017	Annex II, V HD; WA
Lutra lutra	Otter	25/02/2021	Annex II, IV HD; WA
Megaptera novaeangliae	Humpback Whale	26/08/2018	Annex IV HD; WA
Phocoena phocoena	Common Porpoise	24/08/2019	Annex II, IV HD; WA
Phoca vitulina	Common Seal	05/11/2016	Annex II, V HD; WA
Tursiops truncatus	Bottle-nosed Dolphin	10/08/2020	Annex II, IV HD; WA
Birds			
Alauda arvensis	Sky Lark	11/06/2016	WA; Amber List
Alca torda	Razorbill	17/08/2013	WA; Amber List
Cepphus grylle	Black Guillemot	13/03/2021	WA; Amber List
Charadrius hiaticula	Ringed Plover	31/12/2016	WA; Amber List
Circus cyaneus	Hen Harrier	09/01/2021	Annex I BD; WA; Amber List
Egretta garzetta	Little Egret	19/12/2021	Annex I BD; WA
Falco peregrinus	Peregrine Falcon	20/03/2021	Annex I BD; WA
Falco tinnunculus	Kestrel	22/10/2022	WA; Amber List
Fratercula arctica	Atlantic Puffin	05/07/2017	WA; Amber List
Gavia immer	Great Northern Diver	16/04/2016	Annex I BD; WA

Scientific name	Common Name	Date of last record	Status*
Haematopus ostralegus	Oystercatcher	08/10/2017	WA; Amber List
Hirundo rustica	Barn Swallow	17/09/2017	WA; Amber List
Hydrobates pelagicus	Storm-petrel	17/08/2013	Annex I BD; WA; Amber List
Larus argentatus	Herring Gull	03/06/2018	WA; Red List
Larus canus	Mew Gull	17/08/2013	WA; Amber List
Larus fuscus	Lesser Black-backed Gull	07/07/2017	WA; Amber List
Larus marinus	Great Black-backed Gull	08/10/2017	WA; Amber List
Larus melanocephalus	Mediterranean Gull	05/07/2017	Annex I BD; WA; Amber List
Larus ridibundus	Black-headed Gull	08/10/2017	WA; Red List
Melanitta nigra	Scoter	16/04/2016	WA; Red List
Morus bassanus	Northern Gannet	23/09/2021	WA; Amber List
Numenius arquata	Curlew	19/12/2021	WA; Red List
Oenanthe oenanthe	Northern Wheatear	01/09/2021	WA; Amber List
Passer domesticus	House Sparrow	19/11/2021	WA; Amber List
Phalacrocorax aristotelis	Shag	12/11/2016	WA; Amber List
Phalacrocorax carbo	Cormorant	08/10/2017	WA; Amber List
Puffinus griseus	Sooty Shearwater	17/08/2013	WA; Red List
Puffinus puffinus	Manx Shearwater	16/04/2016	WA; Amber List
Pyrrhocorax pyrrhocorax	Red-billed Chough	05/12/2021	Annex I BD; WA; Amber List
Rissa tridactyla	Black-legged Kittiwake	17/08/2013	WA; Amber List
Stercorarius skua	Great Skua	17/08/2013	WA; Amber List
Sterna hirundo	Common Tern	17/08/2013	Annex I BD; WA; Amber List
Sterna paradisaea	Arctic Tern	17/08/2013	Annex I BD; WA; Amber List

Scientific name	Common Name	Date of last record	Status*
Sturnus vulgaris	Starling	31/12/2016	WA; Amber List
Tachybaptus ruficollis	Little Grebe	07/08/2014	WA; Amber List
Tringa nebularia	Greenshank	19/09/2015	WA; Amber List
Uria aalge	Guillemot	17/08/2013	WA; Amber List
Reptiles & Amphibians			
Dermochelys coriacea	Leathery Turtle	22/02/2015	Annex IV HD; WA
Zootoca vivipara	Common Lizard	16/08/2021	WA
Fish and Aquatic Fauna			
Cetorhinus maximus	Basking Shark	07/04/2019	WA
Invertebrates			
Euphydryas aurinia	Marsh Fritillary	27/08/2014	Annex II HD
Flora			
Phymatolithon calcareum	Common Maërl	24/07/2018	Annex V HD
Invasive Species			
Gunnera tinctoria	Giant-rhubarb	16/04/2017	Invasive species, S.I. 477/2011
Reynoutria japonica	Japanese Knotweed	03/06/2018	Invasive species, S.I. 477/2011
Sargassum muticum	Wireweed	18/03/2021	Invasive species, S.I. 477/2011

**Abbreviations: Annex II/IV/V (non-avian species) = Habitats Directive (HD); Annex I, II, III = Birds Directive (BD); Red/Amber List = Birds of Conservation Concern in Ireland 2020-2026 (BOCCI) (Gilbert et al., 2021).*

3.4 Features, Signage and Hazards

3.4.1 Features and Signage

There are various trail markings across the site. However, there is minimal signage relating to the ecological value of biodiversity at the site and this is considered to be a missed opportunity for environmental awareness. Informative signage on the heritage of Bray Head as a Wild Atlantic Way site would further highlight its historic importance. Examples of features and signage on the site are shown in Plate 3.2. A map illustrating the locations of these signs, features and hazards are presented in Figure 3.13.

Figure 3.13 Features, signage and hazards mapped at Bray Head.

Bray Head is identified as a significant archaeological landscape in the Kerry County Development Plan 2022-2028. This protects the site through policy, with an emphasis on the protection of its monuments and landscape. The Bray Head Watchtower, a former Napoleonic tower, is a protected structure (Record of Protected Structure (RPS) reference: RPS-KY-1241) constructed between 1804 – 1806. It is a derelict signal tower in a state of disrepair. Planning permission to upgrade and conserve the tower was granted by An Bord Pleanála in 2021, subject to conditions. The notice, installed by Kerry County Council is currently fixed to the outside of the tower, notifying the public of the intention to carry out upgrade works on the structure.

There are various signs near the car park leading towards the viewpoint, notifying the public of the local rules and recommendations. Plate 4.1 below presents signs notifying that dog owners should keep dogs on leads and the main farm access gate must be closed at all times.

Plate 3.2 Car park features and signage.

3.4.2 Hazards

Although the hazard assessment identified no obvious safety issues or hazards for the site, upon site visitation, there is a collapsed wall which is adjacent to the tower viewpoint as show in Plate 3.4. Surrounding walls are in need of urgent upgrade to improve the safety and visual aspect of the site. The locations of the hazards which were recorded are included in Figure 3.13 above.

Plate 3.3 Collapsed wall adjacent to Bray Head Watchtower at viewpoint.

3.5 Comparison with Previous Survey Results

Visitor Numbers

The 2023 survey recorded 155 visitor groups. This increased from 103 visitor groups recorded in 2022. Although this is a significant increase, it should be noted that the surveys were carried out over a single day, and there could be a number of variables leading to this change such as weather, the easing effects of the Covid-19 pandemic on travel and sporting or music events which could have led to this change.

Dwell Time

The average dwell time in the 2023 Survey was 47 minutes, whereas the average dwell time observed in the 2022 Survey was 64 minutes. This is a decrease of 31%. However, the reasons above could have affected the result.

Prevalence of Group Type

'Couples' made up the highest proportion of group types in both 2023 and 2022. However, 'small adult groups' was the second largest proportion in 2023 compared to being the fourth largest proportion in 2022. 'Family' dropped to the third largest proportion in 2023 compared the second largest proportion in 2022. 'Individual adult' which is the fourth largest proportion in 2022 dropped to the fifth largest proportion in 2023. The results are presented in Table 3.4.

Table 3.4 Prevalence of Group Type 2022 vs 2023

Group Type	2022	2023
Couple	54.37%	42.34%
Small Adult Group	10.68%	18.81%
Family	15.53%	14.10%
Elderly Couple	0.97%	10.59%
Individual Adult	15.53%	9.41%
Elderly Group	0%	2.35%
Mixed Small Group	0%	2.35%
Family with Elderly	0%	0%
Individual Elderly	0%	0%
Large Adult Group	0.97%	0%
Mixed Large Group	0.97%	0%
Under 18	0.97%	0%

Prevalence of Transport Type

Cars were the most popular type of transport in 2023 and 2022. In 2023, camper vans were the second most popular mode of transport. In 2022 the second most popular category was 'other', which presumably refers to motorised modes of transport other than cars. Motorbikes were the third most popular mode of transport in 2023, while in 2022 it was presumably included in the 'other' category. Travel by bicycle and on foot were the least popular modes of transport in both years. The results are presented in Table 3.5.

Table 3.5 Prevalence of Transport Type 2022 vs 2023

Transport Type	2022	2023
Car	74.76%	91.61%
Camper	0%	5.16%
Motorbike	0%	1.94%
Bicycle	3.88%	0.65%
Walking	8.74%	0.65%

Read Available Signage

The 2023 Survey found an increase in the proportion of visitor groups observed not reading the signage at over 60%, when compared to 2022 at 15%. However, it should be considered that the team that conducted the survey in 2022 included an 'unknown' variable in their graph.

Activity Levels

Low activity levels make up over 80% of the activity levels observed in 2022, while they make up almost 95% and 2023. Subsequently moderate or medium activity levels made up under 15% of the activity levels observed in 2022, while they only made up over 5% in 2023. However, it should be taken into account that as two different teams conducted the surveys in each year there is potential for discrepancies in the assigning of activity levels observed.

Activities Undertaken Other than Walking

The majority of visitor groups observed did not undertake any other activities other than walking in both 2022 and 2023. Activities other than walking included sitting, resting, sightseeing, photographing etc.

Activity Type

The 2023 and 2022 surveys noted similar activity types at varying proportions. However, the 2023 Survey included 'Sitting on benches, walls, mown grass and sand' and 'Climbing on walls, loose stones, sand, soil etc.' as activities which were not recorded in 2022.

Impact Severity Level

Impact severity levels relates to the impact and severity of the activities undertaken at the site. The 2023 survey found that over 90% of the groups' activities observed had low level impact severity on the site, almost 8% had a medium level of impact severity, and only almost 2% had a severe level of impact severity. Whereas in 2022 the low impact severity level was at 100%. Impact severity levels are presented in Appendix I.

Impact Type

The 2023 Survey noted various impact types including light desire lines, trampling, braiding, path widening, erosion, overgrazing and poaching, whereas the 2022 survey only recorded light desire lines, at 100% of impact types recorded. However, it should be taken into account that as two different teams conducted the surveys in each year there is potential for discrepancies in the assigning of impact types observed.

4.0 RECOMMENDATIONS

Based on the information discussed and displayed above, the following recommendations are made:

- The main path between the car park and the Bray Head Tower is in good condition and no remedial works are required.
- Beyond the tower, the path becomes a desire line. Localised erosion was recorded in this area, from visitors and sheep, but in general, the area was not affected by visitors.
- A Kerry County Council planning notice was recorded on the Bray Head Tower. Fáilte Ireland should continue to work with Kerry County Council to improve the visitor experience in an environmentally sustainable manner.
- There are a number of paths to the north of the main path. These are desire lines and there is minimal and localised bare soil/ erosion. There is no need to formalise these paths at the moment.
- A managed grazing regime is recommended to promote sustainable farming practices on Bray Head, specifically in relation to stocking levels. This would lead to improved habitat quality and resilience.
- Repair of the collapsing stone wall located adjacent to the Bray Head Tower. This currently poses a tripping hazard and/or falling/dislodged debris could cause injury.
- Access to the main path is currently via a style next to a field gate. It is recommended that access is improved to allow accessibility for visitors to Bray Head (Plate 4.1).

Plate 4.1 Field gate access to main path

5.0 REFERENCES

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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

Impacts		
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[1]. For the purposes of this monitoring programme, habitat condition is assessed at ever 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 that any change that reduces the long-term viability of habitats and their qualifying interest (i.e. 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 metre intervals along the selected pathways, an assessment of habitat condition is made, using an established rating scale of 1 to 5 with 1 being no impact and 5 being high impact. Each rating is then translated into a condition assessment, as displayed in Table 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 is then recorded and reported as the resultant overall rating of the assessed habitat condition for each site.

Scale	Condition
1	No evidence of habitat degradation
2	Localised habitat degradation. Habitat capable of rapid recovery.
3	Widespread habitat degradation. Habitat capable of rapid recovery.
4	Localised habitat degradation. Intervention required for full recovery.
5	Widespread habitat degradation. Intervention required for full recovery.

[1] 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.

Fáilte Ireland

Turasóireacht Náisúnta
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National Tourism
Development Authority