NATIONAL TOURISM MONITORING PROGRAMME 2021-2025

ANNUAL RESULTS FOR 2022

HOOK LIGHTHOUSE

for: **Fáilte Ireland**

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Hook Lighthouse – Interesting Finds

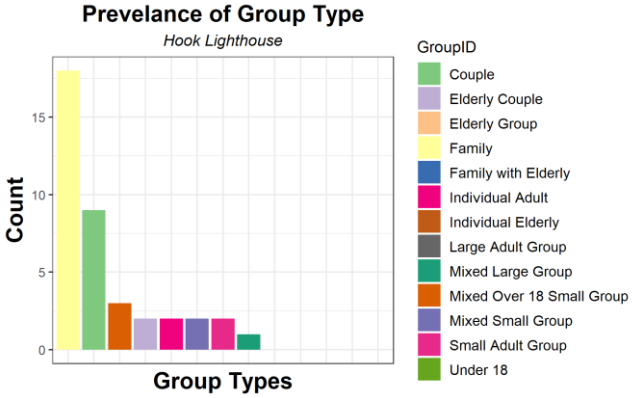
ECOLOGICAL HIGHLIGHTS

Due to the coastal nature of the site, there are a wide variety of marine mammals within the area of Hook Lighthouse including a large number of grey seals and various other sightings such as humpback whales.

The cliffs of Hook Lighthouse provide ample habitat to support a wide range of birds such as kittiwakes and northern gannets.

VISITOR NUMBERS AND DWELL TIME

- 126 people visited the site over 8 hours
- Average dwell time of 63 minutes



KEY RECOMMENDATIONS

- A trail management system should be considered as there is visible damage to paths in the area which have been caused by visitor impacts.
- Shore edge access management, including path provision needs to be addressed as amenity and safety issues.
- There is a lack of signage related to the ecology of the site, this is a missed opportunity and consideration should be given to increase the ecological site signage on site.

VISITOR INTERACTION & MANAGEMENT

- Increase in observable impacts such as desire lines and compaction. Impacts such as these have led to large percentages of the habitat surrounding pathways being damaged.
- Significant increase in the percentage of visitors that undertook activities other than walking.
- Most of the visitors to the site stayed for at least 63 minutes, an increase from 50 minutes in 2021.
- Majority of visitors read signage that was available on site.

Highlights:

- Insufficient parking on site.
- Site signage on ecology is limited – missed opportunity for wildlife and habitats.
- High increase in number of impacts observed on site.

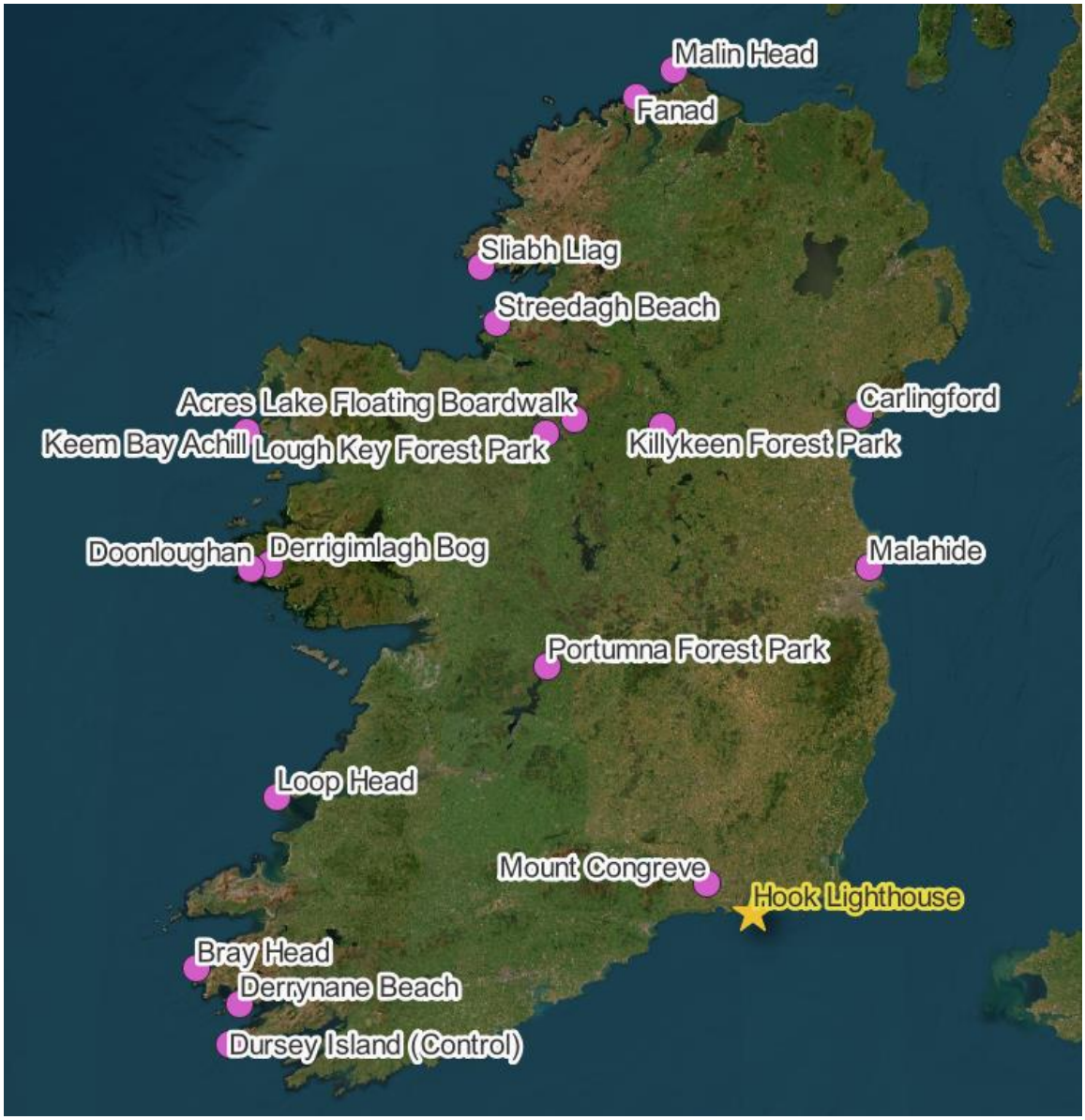


1 Hook Lighthouse

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 - 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 Hook Lighthouse:

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 Hook Lighthouse was undertaken on the 19th of August 2022, with max temperatures reaching approximately 19.3° C, low levels of rainfall and moderate to 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 Hook Lighthouse

Aside from the attraction of Hook Lighthouse (Figure 1.1) being the oldest operational lighthouse in the world, it is considered to host one of the most stunning views in County Wexford, located at the tip of Hook Head. Guided tours of the lighthouse are plentiful and various species of marine wildlife can be spotted from the area, particularly during the winter. The lighthouse is contained within the Hook Head SAC and includes a range of habitats such as dry meadows and grassy verges and rocky see cliffs.

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

Figure 1.1 Hook Lighthouse

Figure 1.2 Study Area within Hook Head SAC

1.3.1 Critical Infrastructure

Table 1.1 Summary of Wastewater infrastructure at Hook Lighthouse

Wastewater Treatment Plant (WWTP)	Irish Water Indication of Capacity	Comment
Toilet facilities are available on site at Hook Lighthouse Cafe No current WWTP on site at Hook Lighthouse Nearest settlement with WWTP in Fethard-On-Sea (WWTP Reg #D0241)	No spare capacity available at present[2]	Current wastewater facilities are sufficient No headroom available as per Wexford CDP 2022-2028[3]

Table 1.2 Summary of Drinking Water infrastructure at Hook Lighthouse

Drinking Water	Water Resource Name (WRZ)	Irish Water Indication of Capacity	Comment
Nearest serviced settlement to Hook Lighthouse is Fethard-On-Sea	South Regional (South East Wexford)	Capacity available – Level of service (LoS) improvement required[4].	Current water supply is sufficient

[2] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/wexford/
[3] https://consult.wexfordcoco.ie/en/system/files/materials/1281/Chapter%209.pdf
[4] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/wexford/

Table 1.3 Summary of Transport infrastructure at Hook Lighthouse

Nearest Settlement	Current Transport Infrastructure	Comment
Fethard-On-Sea	Hook Head is located at the tip of the Hook Peninsula in County Wexford, accessible via the R734 There are car park facilities on site	Current transport infrastructure is sufficient

1.4 Pathways and Features Condition Results

1.4.1 Pathway Condition

There are two sets of conditions at this site. Those within the lighthouse compound, which are well managed and those surrounding which are not. There are high levels of erosion and compaction especially between the road and sea with hardly any vegetation growth in places. Longer stay patterns caused by campervans and caravans are intensifying this issue. To the east of the lighthouse there is severe pathway erosion through grasslands above the shore. with a large percentage of the habitat surrounding these pathways being damaged.

Figure 1.3 Pathways identified at Hook Lighthouse

Figure 1.4 Pathway at Hook Lighthouse

1.4.2 Features Condition

The site itself contains numerous features such as Hook Lighthouse itself a long with a playground area (Figure 1.1). There is also a large sit-down area with benches along with a car park and set down areas for visitors to the site. The majority of the signage at Hook Lighthouse rightfully relates to warning signs that alert visitors of the potential of hazardous currents in the area. The remaining signage in the area are directional signage which guide visitors around Hook Lighthouse. There is a lack of signage in the area which relates to the ecology and wildlife of the surrounding area.

Figure 1.5 Features recorded at Hook Lighthouse

Figure 1.6 Features at Hook Lighthouse

1.4.3 Hazards

The hazard mapping identified multiple points at Hook Lighthouse where strong currents have been observed along the edge of the site (Figure 1.8) and cliff edges where there are no barriers.

Figure 1.7 Hazards recorded at Hook Lighthouse

Figure 1.8 Hazards at Hook Lighthouse

1.5 Visitor Characterisation Survey

The visitor monitoring surveys resulted in a total of 126 visitors (which represent 39 group observations), a decrease from 210 visitors in 2021. 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 63 minutes, a slight increase from 50 minutes in 2021; with the following activities undertaken during the survey (listed in order of occurrence rate):

Activity Type
Exploring off trail
Photographing
Tour
Picnicking
Sitting
Dogwalking (on lead)
Other
Cafe
Dogwalking (off lead)
Tour
Birdwatching
Camping
Littering
Reading
Sports Match (informal)
Sprinting

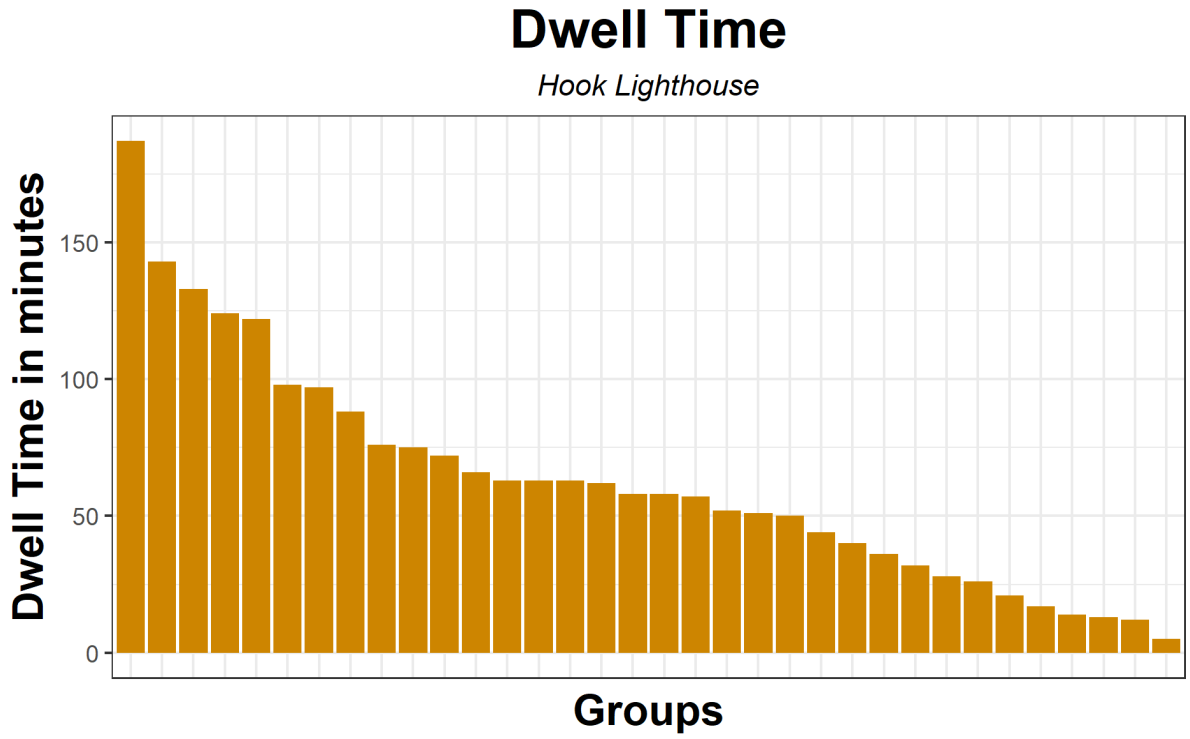


Figure 1.9 Duration of Time Spent at Hook Lighthouse

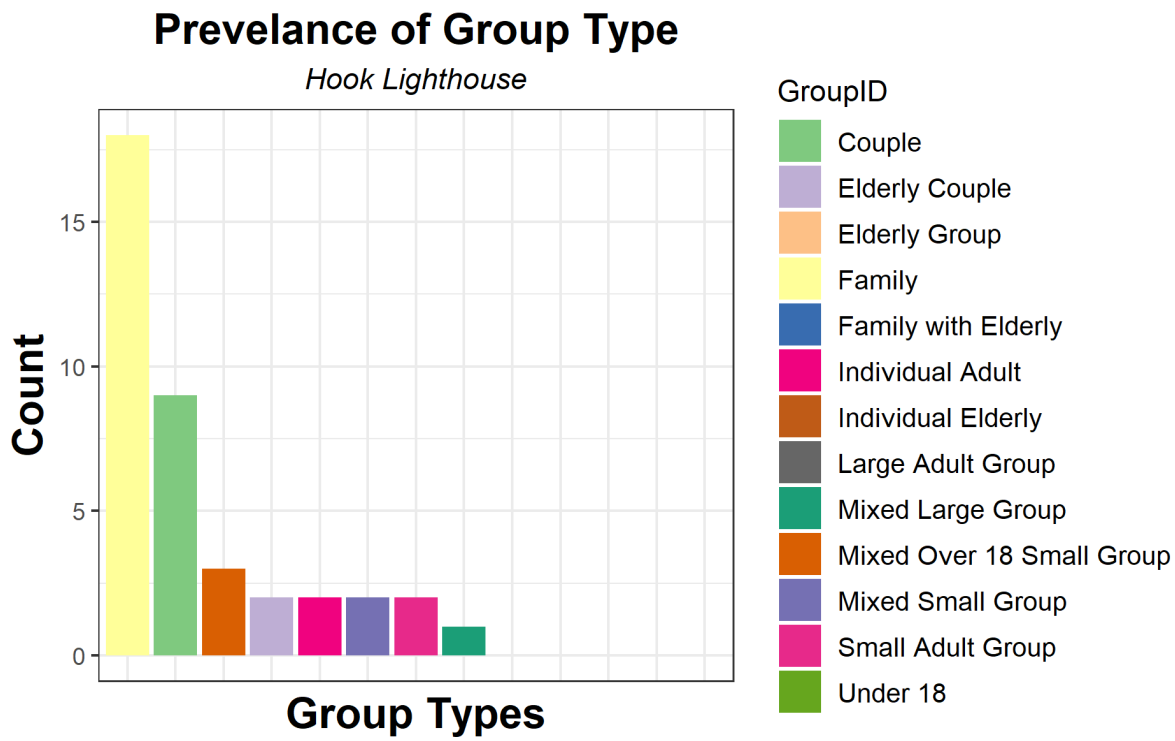


Figure 1.10 Groups of visitors that visited Hook Lighthouse

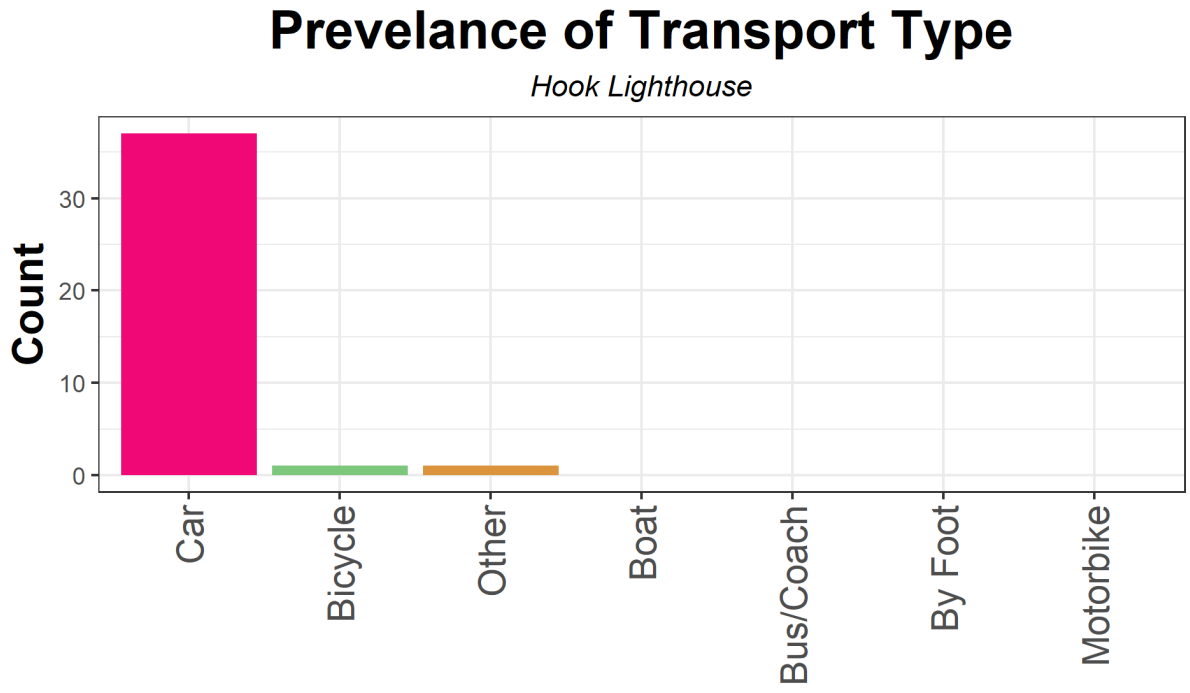


Figure 1.11 Mode of transport used to visit Hook Lighthouse

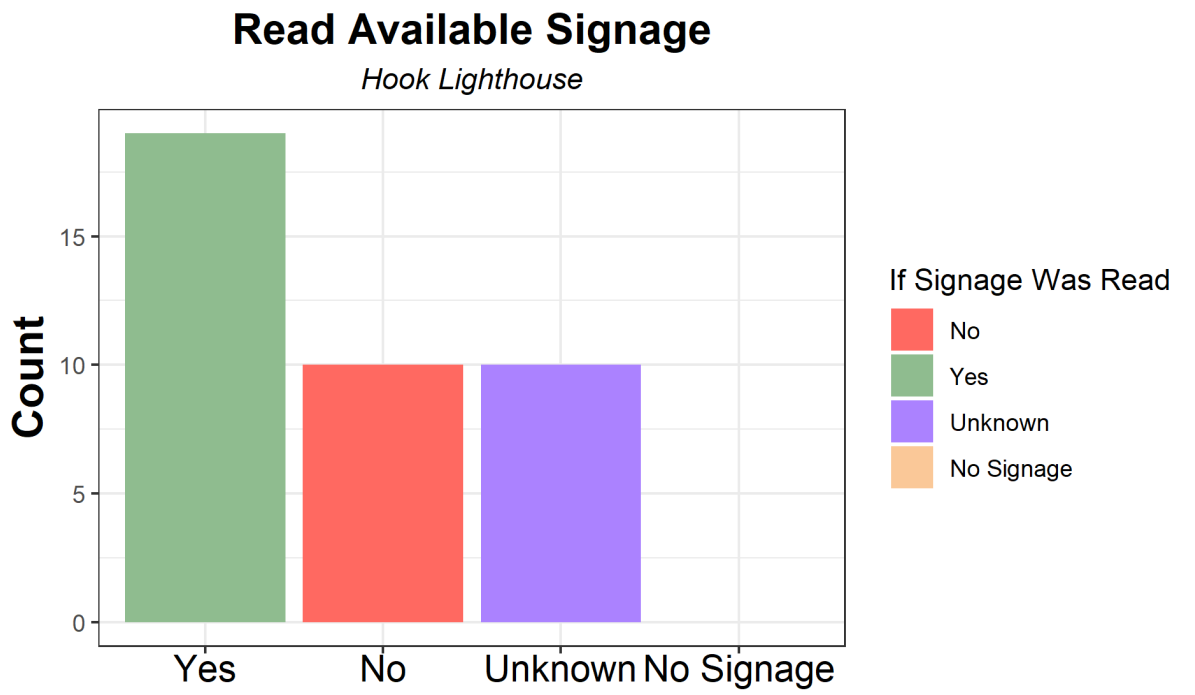


Figure 1.12 Use of Interpretive Material at Hook Lighthouse

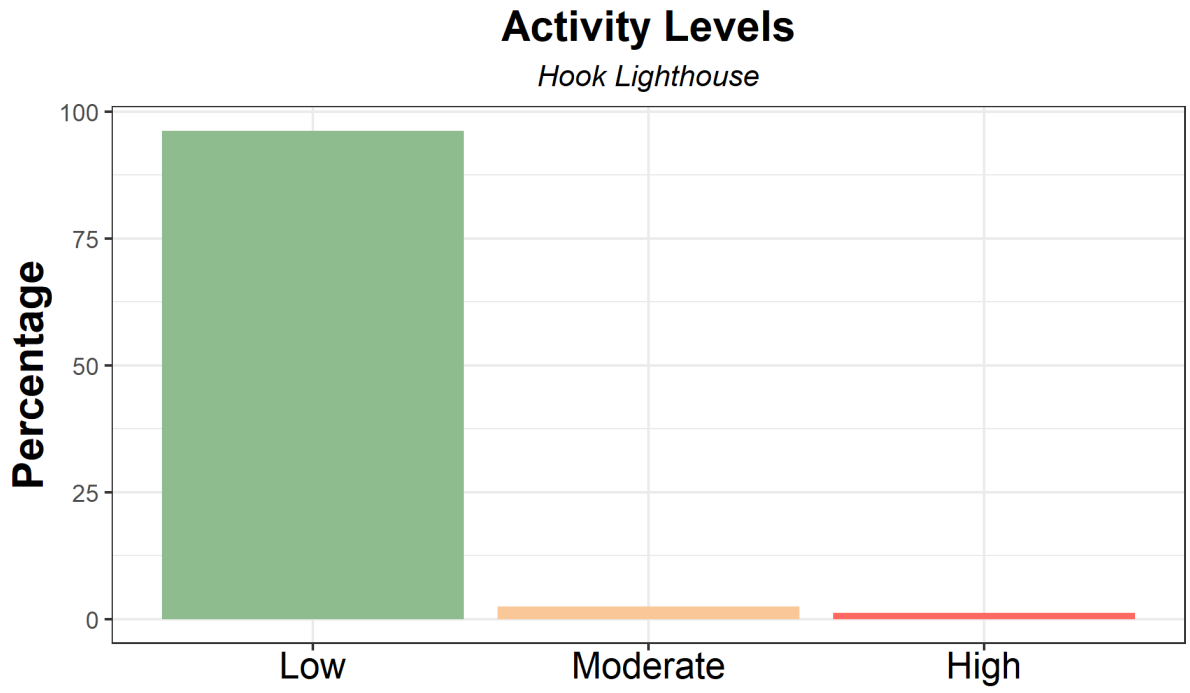


Figure 1.13 Categories of Activity Levels Observed at Hook Lighthouse

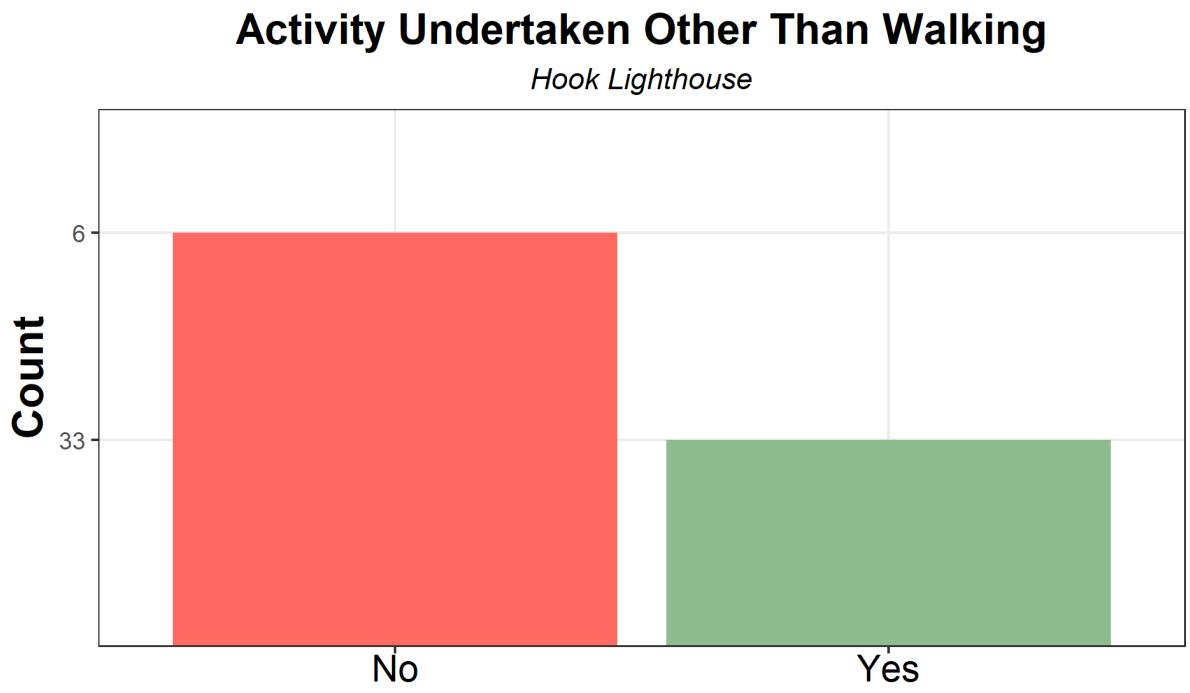


Figure 1.14 Activities undertaken other than walking

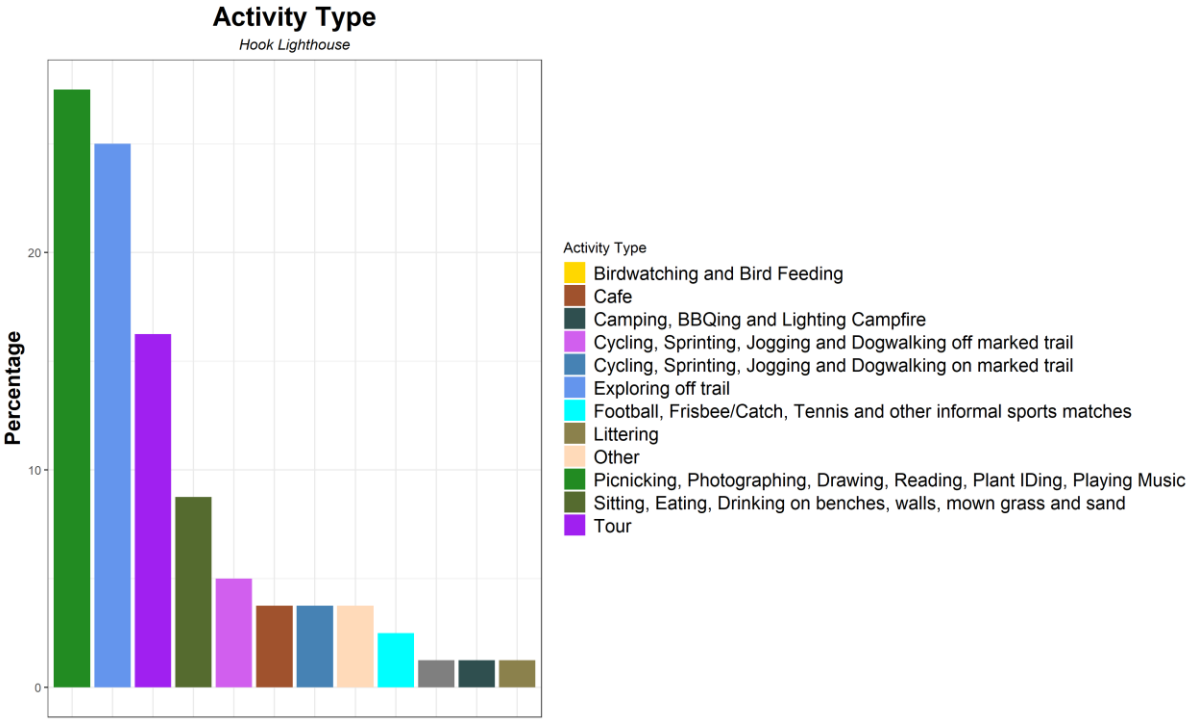


Figure 1.15 Range of Visitor Activities Observed at Hook Lighthouse

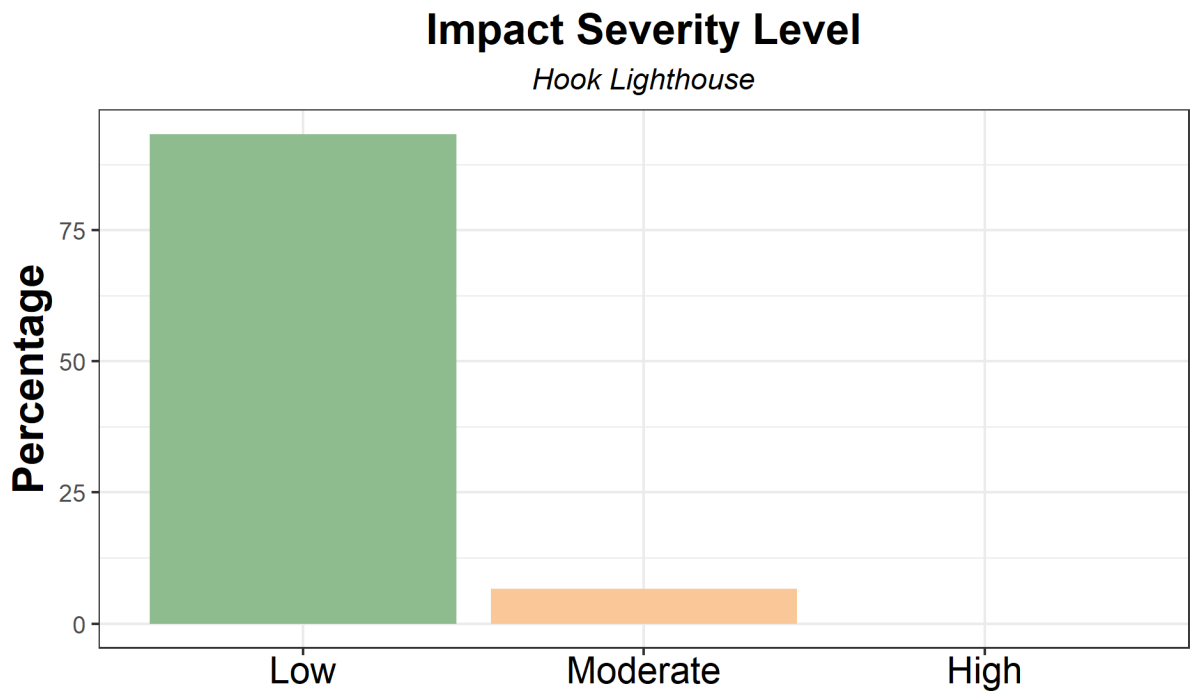


Figure 10.8 Categories of Environmental Impact Levels Observed at Hook Lighthouse as a result of Visitor Activities

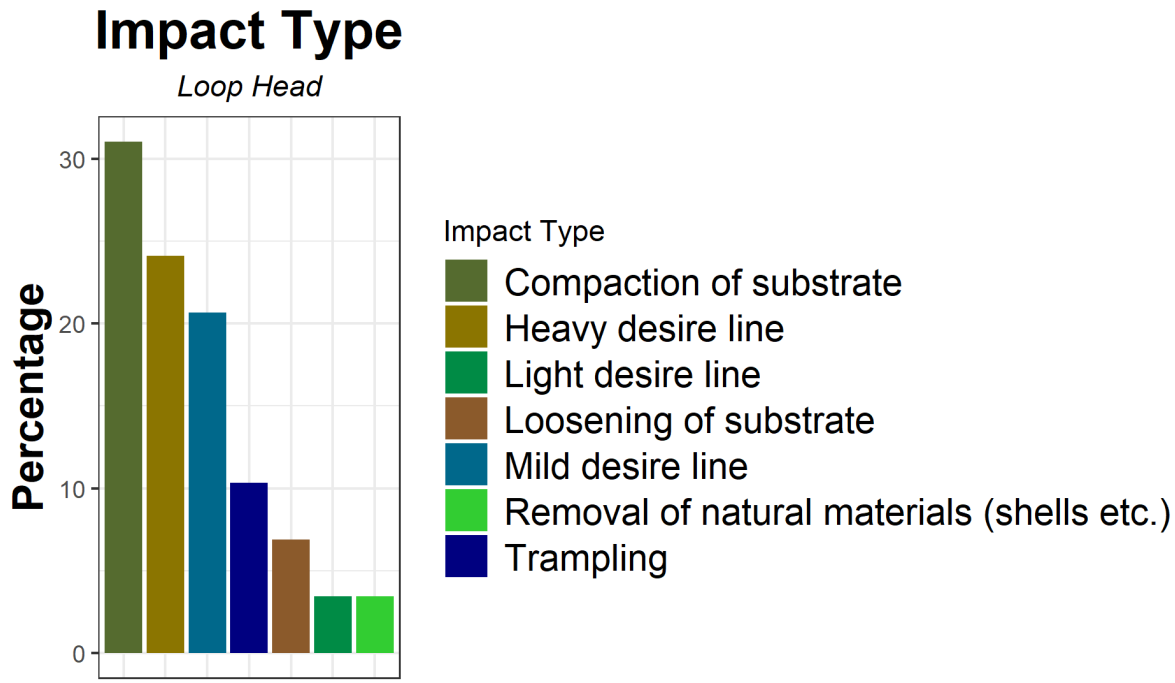


Figure 1.16 Range of Environmental Impacts Observed at Hook Lighthouse

The environmental impacts that were observed and recorded used the same coding system as the Wild Atlantic Way Monitoring[5]. 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.

[5] See Appendix I for more detail

Figure 1.17 Visitor movement patterns to the west of Hook Lighthouse

Of the 39 groups recorded on site 85% of them undertook activities other than walking, an increase from 45% in 2021. These activities (identified above) resulted in 15 impacts being observed on site during the survey. Thus, 19 % of activities on site resulted in impacts on the environment. The impact severity levels did not vary with 93% of the impacts being low, 7% of impacts being moderate, and 0% of impacts being high severity. The impacts identified for the site were:

Impact Type	Count
Compaction of substrate	3
Exposure of substrate	1
Heavy desire line	2
Littering	1
Loosening of substrate	6
Removal of natural materials (shells etc.)	1
Temporary disturbance to wildlife	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 Hook Lighthouse produced a number of changes from the 2021 Visitor Characterisation Survey. Noted changes include;

- A large increase was noted between the number of impacts observed from 2022 when compared to 2021 with no impacts being recorded in 2021;
- A severe reduction in the percentage of visitors who drove to the site and opted instead to walk to the site;
- An increase in the percentage of visitors who undertook activities other than walking; and,
- Reduction of visitors during the 8-hour survey by 40% to 126 visitors over 39 groups with average dwell time increasing by 26%.

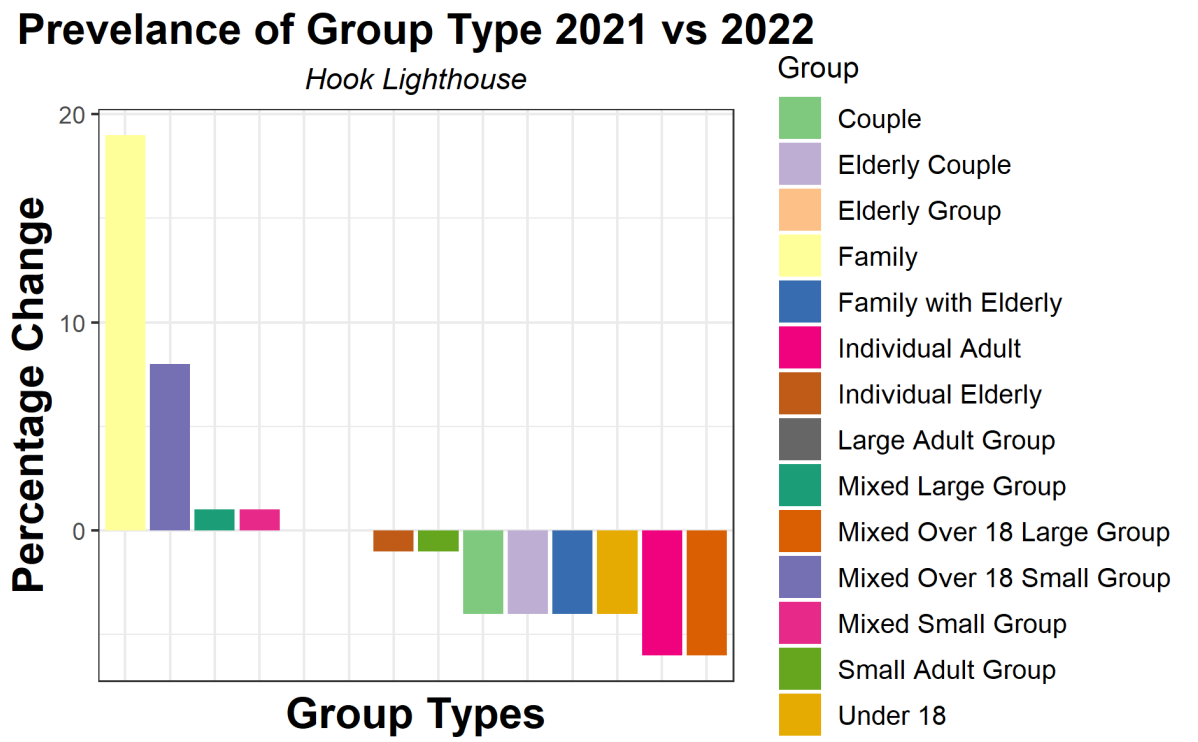


Figure 1.18 Percentage Change in groups of visitors that visited Hook Lighthouse between 2021 and 2022

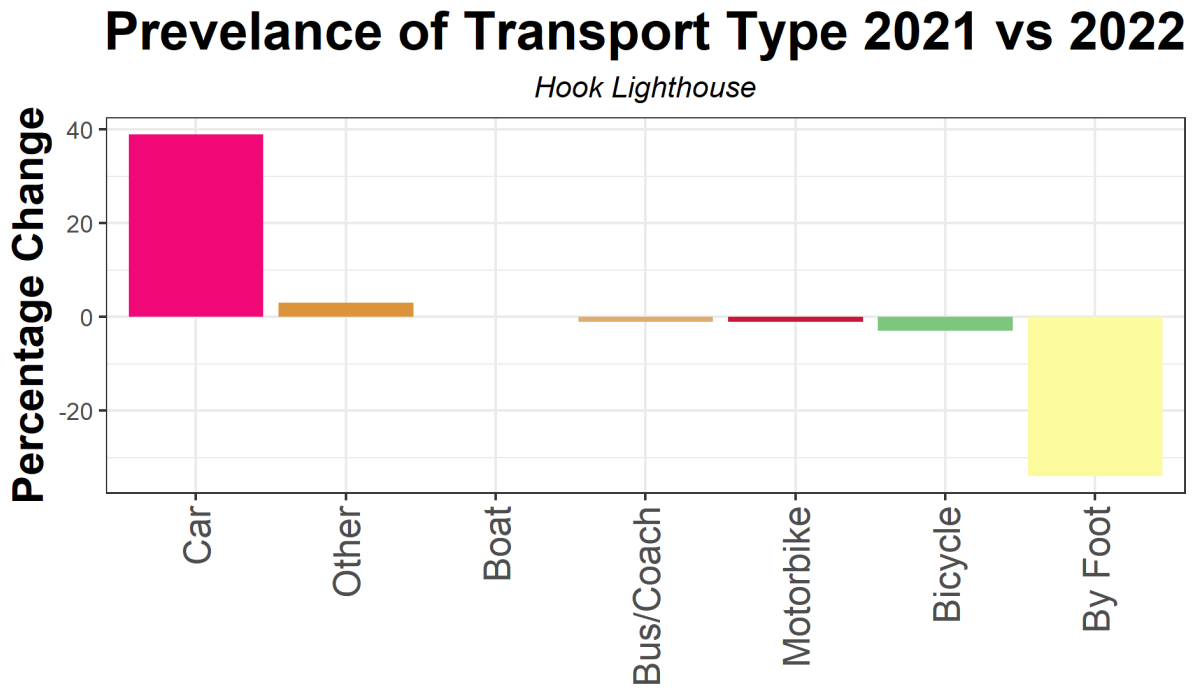


Figure 1.19 Percentage Change in mode of transport used to visit Hook Lighthouse between 2021 and 2022

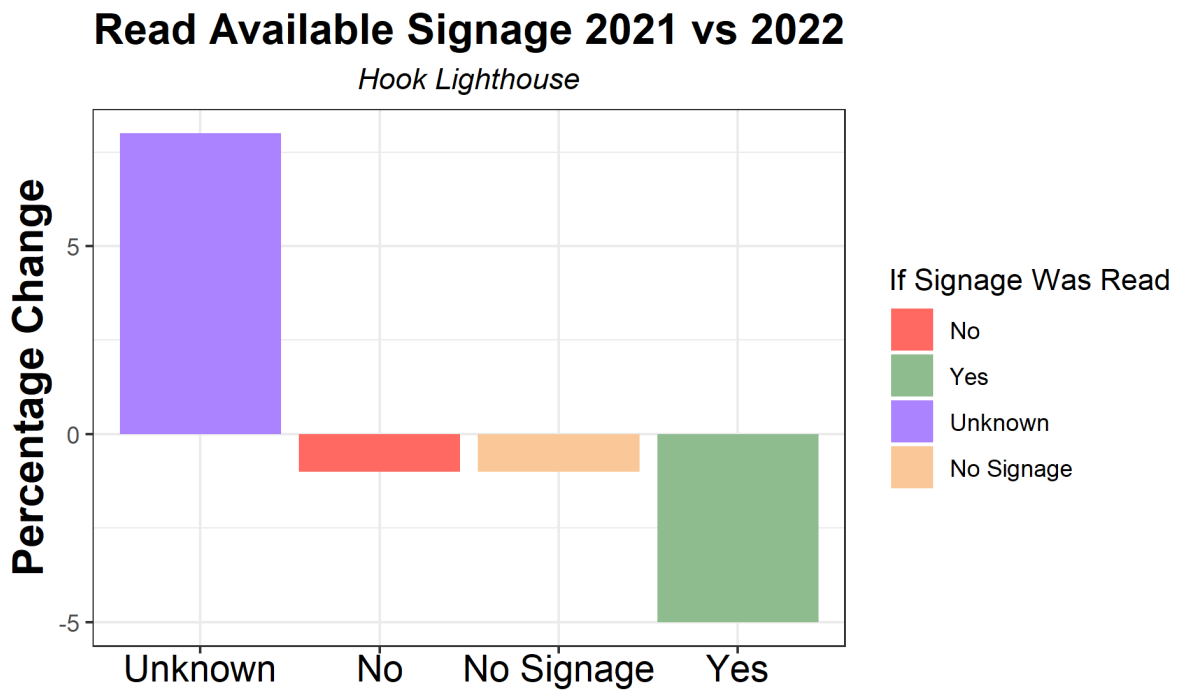


Figure 1.20 Percentage change in use of Interpretive Material at Hook Lighthouse between 2021 and 2022

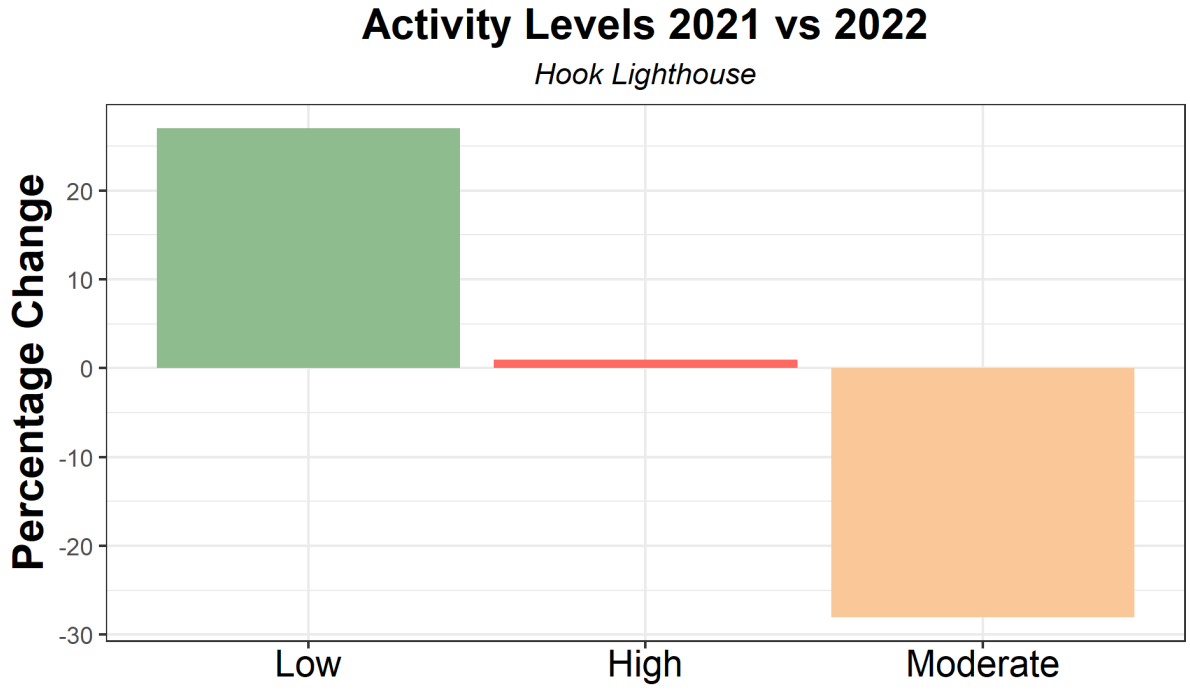


Figure 1.21 Percentage change in categories of Activity Levels Observed at Hook Lighthouse between 2021 and 2022

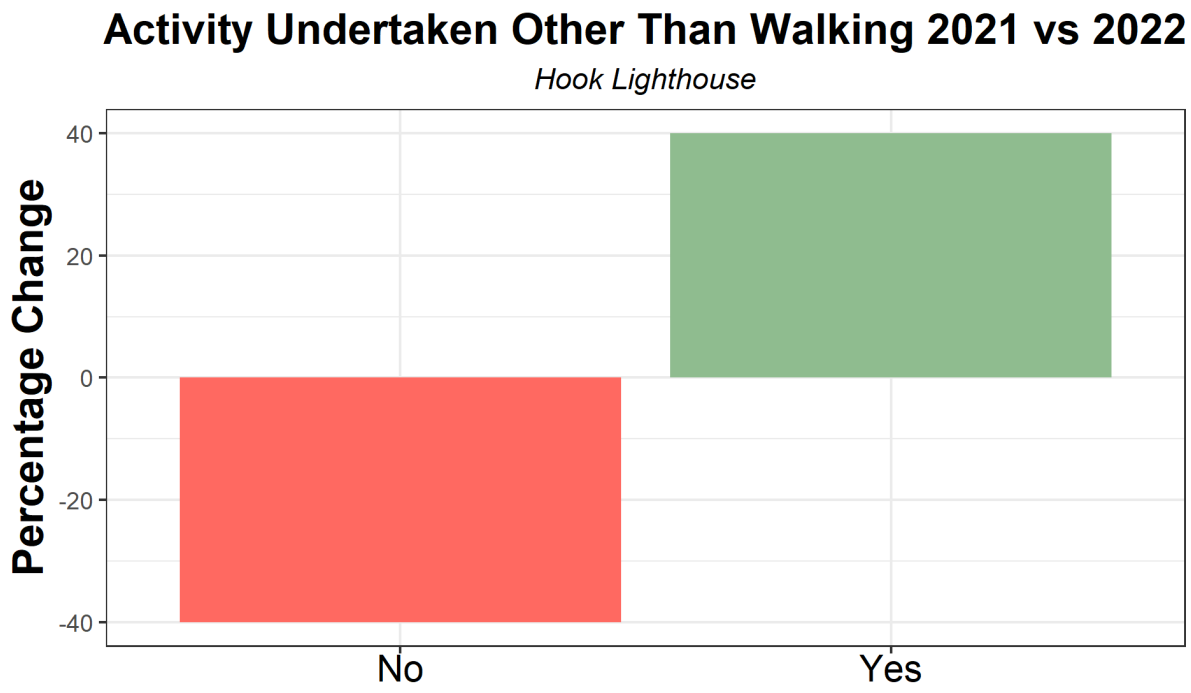


Figure 1.22 Percentage change in activities undertaken other than walking at Hook Lighthouse between 2021 and 2022

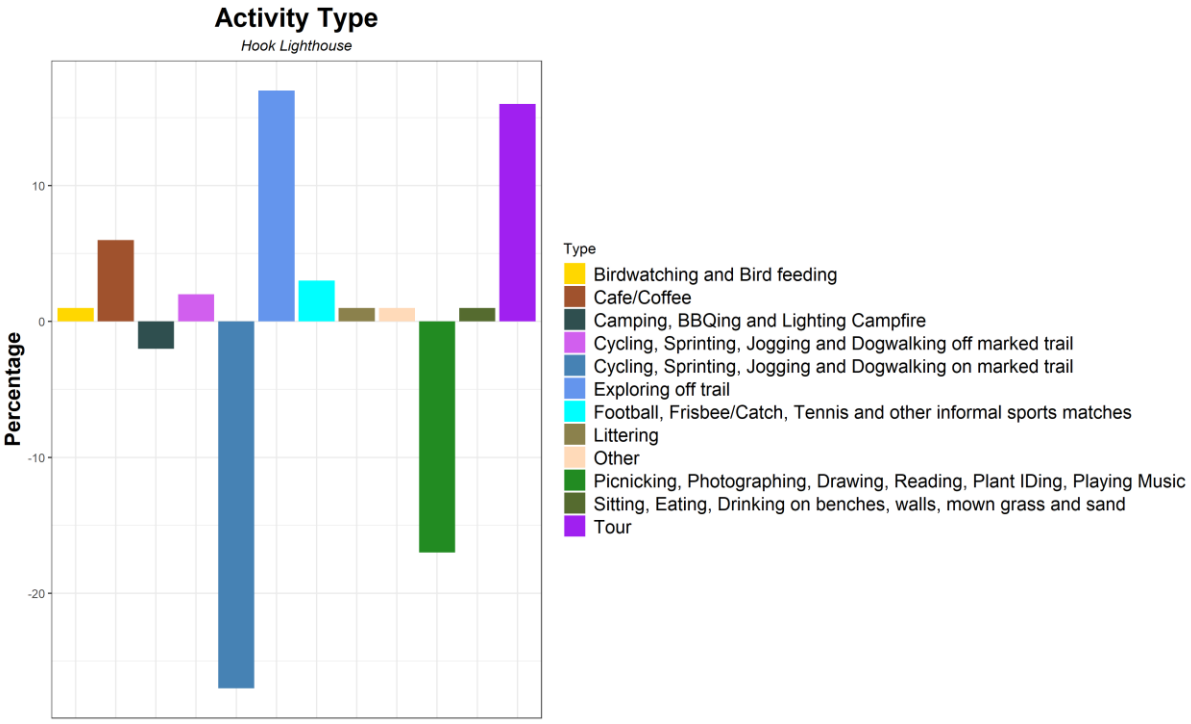


Figure 1.23 Percentage change in range of Visitor Activities Observed at Hook Lighthouse between 2021 and 2022

Table 1.4 Summary of changes with previous survey results

Survey	Notable Differences	Comment
Visitor Dwell Time	• Overall average dwell time increased by 26%	The survey was conducted later in the season compared to 2021 and less visitors were recorded which could lead an increase in average dwell time
Prevalence of Group Type	• 19% increase in families	Increase in percentage of visitors that visited the site in families No other significant differences were noted
Prevalence of Transport Type	• 34% decrease by foot • 39% increase by car	Large increase in percentage of visitors arriving by car and thus large decrease in percentage of visitors arriving by foot
Read Available Signage	• No significant differences noted	No significant differences were noted between the 2021 and 2022 survey
Activity Levels	• High activity levels increased by 1% • Low activity levels increased by 27% • Moderate activity levels decreased by 28%	Noted increase in the percentage of visitors undertaking low level activities
Activity Undertaken Other Than Walking	• Activities undertaken other than walking increased by 40%	Significant increase in the percentage of visitors undertaking in activities other than walking
Activity Type	• Exploring off trail increased by 17% • Jogging, cycling, and dog walking etc. on marked trails decreased by 27% • Activities such as picnicking etc., decreased by 17%	Noted decrease in percentage of visitors jogging etc., on marked trails along with an increase in the percentage of visitors exploring off trail
Impact Severity Level	• No impacts were recorded in the 2021 survey	While no impacts were observed in 2021, 15 were observed in 2021 with the majority being of low impacts level
Impact Type	• No impacts were recorded in the 2021 survey	15 impacts were recorded during the 2022 survey when compared to 0 in the 2021 survey, this is a severe increase Most impacts were related to desire lines and compaction and loosening of substrate

1.7 Ecological Monitoring Results

1.7.1 Ecological Constraints

The habitats around hook lighthouse are sensitive to land use management, pollution, alien species and anthropogenic disturbance.

Table 1.5 Designated sites within 2km of Hook Lighthouse and relevant ecological receptors

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[000764]	Hook Head pNHA	0	pNHA	
[000764]	Hook Head SAC	0	SAC	Reefs [1170], Large shallow inlets and bays [1160], Vegetated Sea cliffs of the Atlantic and Baltic Coasts [1230]

1.7.2 Habitat Descriptions

The majority of Hook Lighthouse is made up of rocky sea cliffs (Fossitt Code CS1), which align with the SAC, Hook Head, is designated (Vegetated Sea cliffs of the Atlantic and Baltic Coasts [1230]). The area surrounding Hook Lighthouse itself is made up of a more managed habitat in dry meadows and grassy verges (Fossitt Code GS2).

There is serious erosion and damage caused by carparking, vehicular movement and overuse/trampling from visitors on the grassland habitats on site. This has resulted in exposed areas and a poorly presented site – however, the affected habitats have negligible ecological value and therefore hard infrastructure carparking could be explored to improve the overall aesthetic of the site.

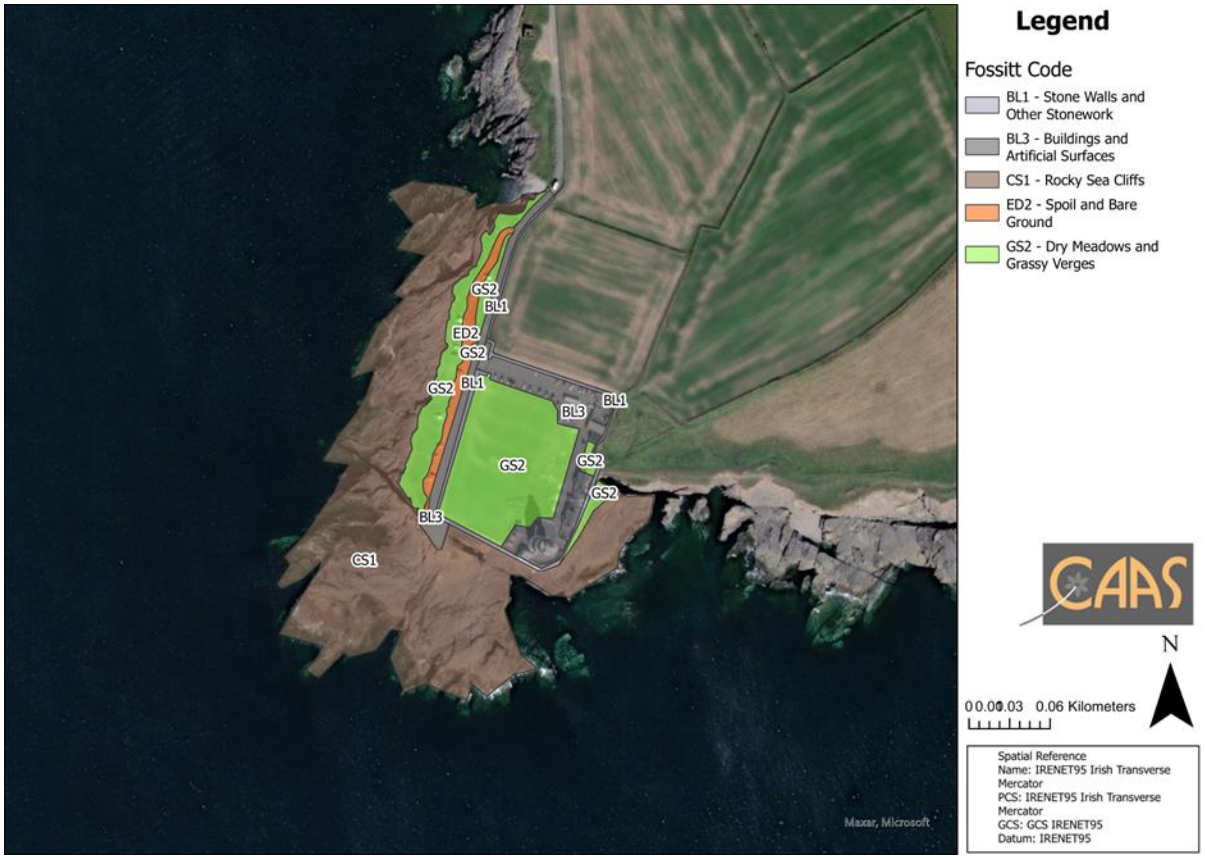


Figure 1.24 Habitats present at Hook Lighthouse

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 the majority of mammals observed in the area are marine mammals, especially whales due to the coastal nature of Hook Lighthouse. The terrestrial mammals in the area are made of species such as badgers and hares while fin whales and grey seals were the most observed marine mammals.

Table 1.6 List of mammals that have been recorded at NBDC Hectad[6] X79

Group	Common name	Scientific name	Number recorded
Marine mammal	Bottle-nosed Dolphin	*Tursiops truncatus*	3
Marine mammal	Common Dolphin	*Delphinus delphis*	18
Marine mammal	Common Porpoise	*Phocoena phocoena*	20
Marine mammal	Common Seal	*Phoca vitulina*	1
Marine mammal	Delphinidae	*Delphinidae*	2
Marine mammal	Fin Whale	*Balaenoptera physalus*	48
Marine mammal	Grey Seal	*Halichoerus grypus*	33
Marine mammal	Humpback Whale	*Megaptera novaeangliae*	23
Marine mammal	Minke Whale	*Balaenoptera acutorostrata*	5
Marine mammal	Phocidae	*Phocidae*	2
Marine mammal	Risso's Dolphin	*Grampus griseus*	3
Terrestrial mammal	Brown Rat	*Rattus norvegicus*	2
Terrestrial mammal	Eurasian Badger	*Meles meles*	5
Terrestrial mammal	European Otter	*Lutra lutra*	1
Terrestrial mammal	European Rabbit	*Oryctolagus cuniculus*	2
Terrestrial mammal	Irish Hare	*Lepus timidus subsp. hibernicus*	2
Terrestrial mammal	Pipistrelle	*Pipistrellus pipistrellus*	1
Terrestrial mammal	Red Fox	*Vulpes vulpes*	1
Terrestrial mammal	Soprano Pipistrelle	*Pipistrellus pygmaeus*	1
Terrestrial mammal	Wood Mouse	*Apodemus sylvaticus*	1

1.7.5 NBDC Records of Wintering Birds

Table 1.7 List of wintering birds that have been recorded at NBDC Hectad[7] X79

Group	Common name	Scientific name	Number recorded
Bird	Atlantic Puffin	*Fratercula arctica*	1
Bird	Black-headed Gull	*Larus ridibundus*	8
Bird	Black-legged Kittiwake	*Rissa tridactyla*	26
Bird	Brent Goose	*Branta bernicla*	1
Bird	Common Crane	*Grus grus*	2
Bird	Common Greenshank	*Tringa nebularia*	1
Bird	Common Guillemot	*Uria aalge*	9
Bird	Common Moorhen	*Gallinula chloropus*	9
Bird	Common Redshank	*Tringa totanus*	5
Bird	Common Shelduck	*Tadorna tadorna*	1
Bird	Common Snipe	*Gallinago gallinago*	4
Bird	Common Tern	*Sterna hirundo*	2
Bird	Dunlin	*Calidris alpina*	3
Bird	Eurasian Curlew	*Numenius arquata*	7
Bird	Eurasian Dotterel	*Charadrius morinellus*	5

[6] 10km^2 grid
[7] 10km^2 grid

Group	Common name	Scientific name	Number recorded
Bird	Eurasian Oystercatcher	*Haematopus ostralegus*	14
Bird	Eurasian Teal	*Anas crecca*	3
Bird	Eurasian Wigeon	*Anas penelope*	1
Bird	Eurasian Woodcock	*Scolopax rusticola*	1
Bird	European Golden Plover	*Pluvialis apricaria*	3
Bird	European Shag	*Phalacrocorax aristotelis*	10
Bird	European Storm-petrel	*Hydrobates pelagicus*	4
Bird	Fea's Petrel	*Pterodroma feae*	1
Bird	Glaucous Gull	*Larus hyperboreus*	1
Bird	Great Black-backed Gull	*Larus marinus*	16
Bird	Great Cormorant	*Phalacrocorax carbo*	13
Bird	Great Egret	*Ardea alba*	1
Bird	Great Northern Diver	*Gavia immer*	6
Bird	Great Skua	*Stercorarius skua*	1
Bird	Greater White-fronted Goose	*Anser albifrons*	1
Bird	Grey Heron	*Ardea cinerea*	5
Bird	Grey Plover	*Pluvialis squatarola*	4
Bird	Herring Gull	*Larus argentatus*	14
Bird	Iceland Gull	*Larus glaucoides*	2
Bird	Larus	*Larus*	4
Bird	Lesser Black-backed Gull	*Larus fuscus*	12
Bird	Little Auk	*Alle alle*	1
Bird	Little Plover	*Charadrius dubius*	1
Bird	Mallard	*Anas platyrhynchos*	9
Bird	Manx Shearwater	*Puffinus puffinus*	8
Bird	Mew Gull	*Larus canus*	8
Bird	Northern Fulmar	*Fulmarus glacialis*	16
Bird	Northern Gannet	*Morus bassanus*	31
Bird	Northern Lapwing	*Vanellus vanellus*	5
Bird	Purple Sandpiper	*Calidris maritima*	3
Bird	Razorbill	*Alca torda*	3
Bird	Red-throated Diver	*Gavia stellata*	5
Bird	Ringed Plover	*Charadrius hiaticula*	6
Bird	Ruddy Turnstone	*Arenaria interpres*	7
Bird	Sandwich Tern	*Sterna sandvicensis*	2
Bird	Upland Sandpiper	*Bartramia longicauda*	1
Bird	Water Rail	*Rallus aquaticus*	1
Bird	Whimbrel	*Numenius phaeopus*	5

1.8 Recommendations

- There is insufficient parking around the site and measures should be considered to create sufficient parking areas on site.
- A trail management system should be considered as there is visible damage to paths in the area which have been caused by visitor impacts.
- Shore edge access management, including path provision needs to be addressed as amenity and safety issues.
- There is a lack of signage related to the ecology of the site, this is a missed opportunity and consideration should be given to increase the ecological site signage on 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 sites[8]. 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.

[8] 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.