
NATIONAL TOURISM MONITORING PROGRAMME 2021-2025

ANNUAL RESULTS FOR 2021

KEEM BAY ACHILL

for:

Fáilte Ireland

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Keem Bay Achill – Interesting Finds

ECOLOGICAL HIGHLIGHTS

High quality heathland habitat which is protected under the EU Habitats Directive. Heathland is an important habitat for carbon storage.



The bay itself is known to host seasonal migratory species such as the basking shark. It also has highly important marine community compositions on the cold-water reefs.

The wider bay is used by a number of foraging sea birds such as gannets and herring gul.

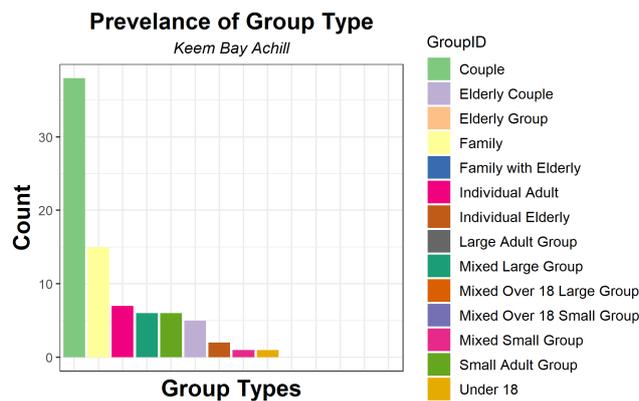
KEY RECOMMENDATIONS

- Given its remote nature there is evidence of high volumes of wild camping. Camping and site overuse are the recorded as the only known threats to the site related to tourism.
- These impacts are localised to the path's tracks and trails (or directly adjacent).
- A dynamic path management system could alleviate the pressures which are occurring.
- Consideration should be given to the appointment of a seasonal warden/ environmental awareness tourism engagement officer.



VISITOR NUMBERS AND DWELL TIME

- 220 people visited the site over 8 hours
- Average dwell time of 85 minutes



Highlights:

- Path management system is needed
- Camping and BBQ control measures are needed.
- Long site dwell time of at least 85 minutes.
- Site signage is limited – missed opportunity for wildlife and habitats.

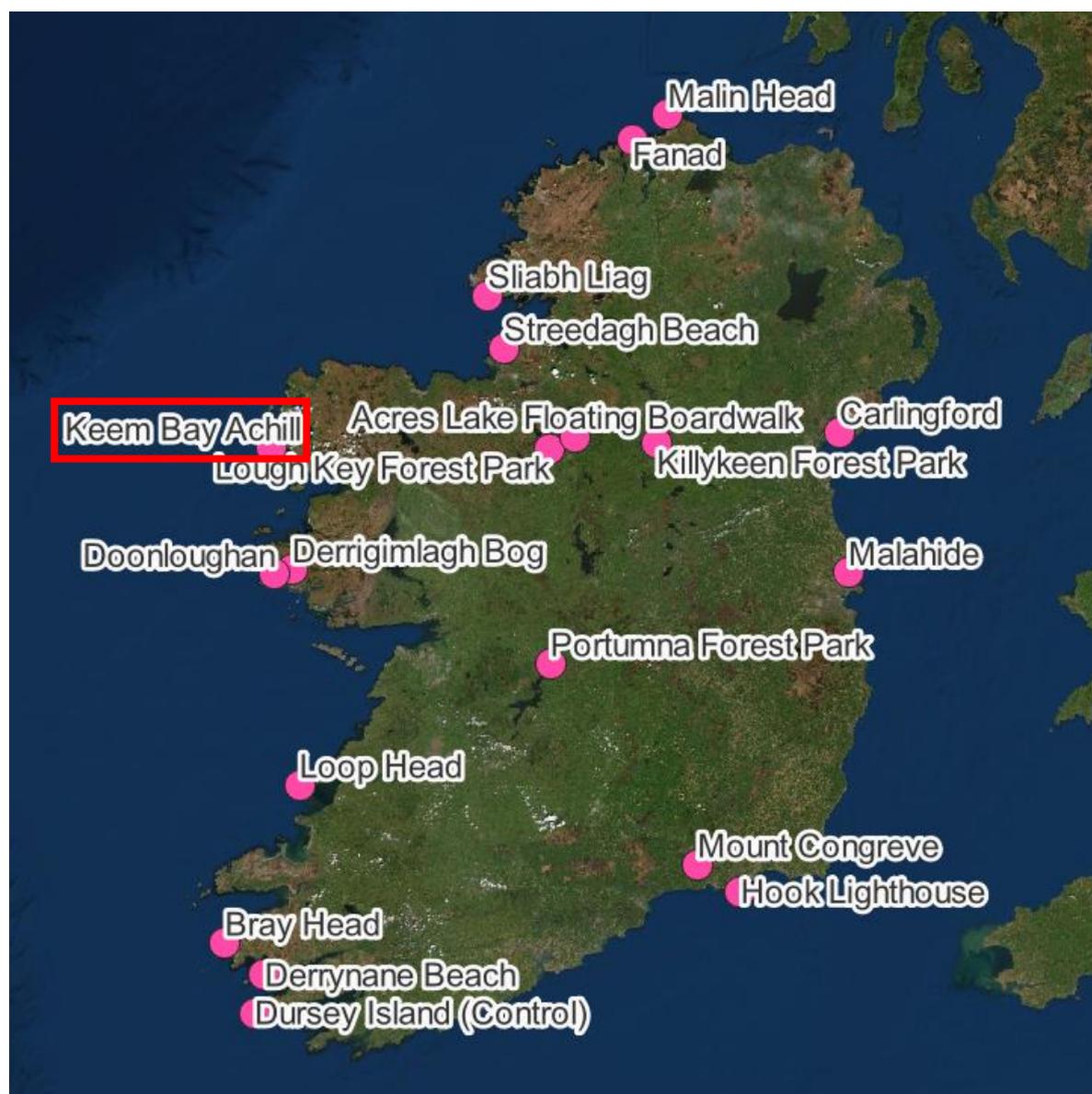


1 Keem Bay Achill

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 develop a practical set of Guidelines for Visitor management (from Planning through to Site Operation).

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

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

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

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

1.2 Methods & Surveys

The following surveys were undertaken at Keem Bay:

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 Keem Bay Achill was undertaken on the 26th of June 2021, with max temperatures reaching approximately 17.2° C, no rainfall and moderate levels of wind on the day¹. These surveys followed an 8-hour time period recording samples of visitor behaviour of as many visitors on site as possible. Visitor movement patterns, demographic data and activities undertaken were recorded for all sampled visitors. Where activities had associated impacts, these were also recorded and the relevant severity was recorded using the same coding system as with the WAW monitoring (see Appendix I for details). It is important to note that the visitor characterisation surveys are indiscriminate between visitors and local amenity use.

1.2.2 Ecological & Path Assessments

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

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

1.2.3 Other Surveys

Additional sample surveys were undertaken at Keem Bay to identify the species presence mammals and winter bird surveys. This information can inform potential management actions related to amenity services such as lighting which could conflict with sensitive species on site.

1.3 Site Description of Keem Bay Achill

Keem Bay is located on the west coast of Achill Island in County Mayo, just past the village of Dooagh. Keem Bay contains relatively isolated and protected beach (Figure 2.1) that is popular for various water sports. It is well managed with parking and visitor facilities. The area itself makes up part of both the Coraghuan/Slievemore and Achill Head Special Areas of Conservation and contains multiple habitats such as wet heath, sand shores and sedimentary sea cliffs. The site is used as one of the access points by walkers on the The Croaghuan Cliffs Walk. That lie to the west of the Bay.



Figure 1.1 Keem Bay Achill

Achill Head SAC



Figure 1.2 Study Area within Achill Head SAC

1.4 Pathways and Features Condition Results

1.4.1 Pathway Condition

The site has hard infrastructure access tracks to the beach – these have clear signs of being undersized with the edge habitats eroding with heavily compacted substrate. The trail to the cliff edge is a vegetated trail which is highly variable with a number of breakout points evident throughout. This path is up to 10m in width at its widest point. Erosion and damage to the path is most evident at the steep incline elements. Substrate exposure levels typically ranged from 15-30% showing the trail is over capacity.

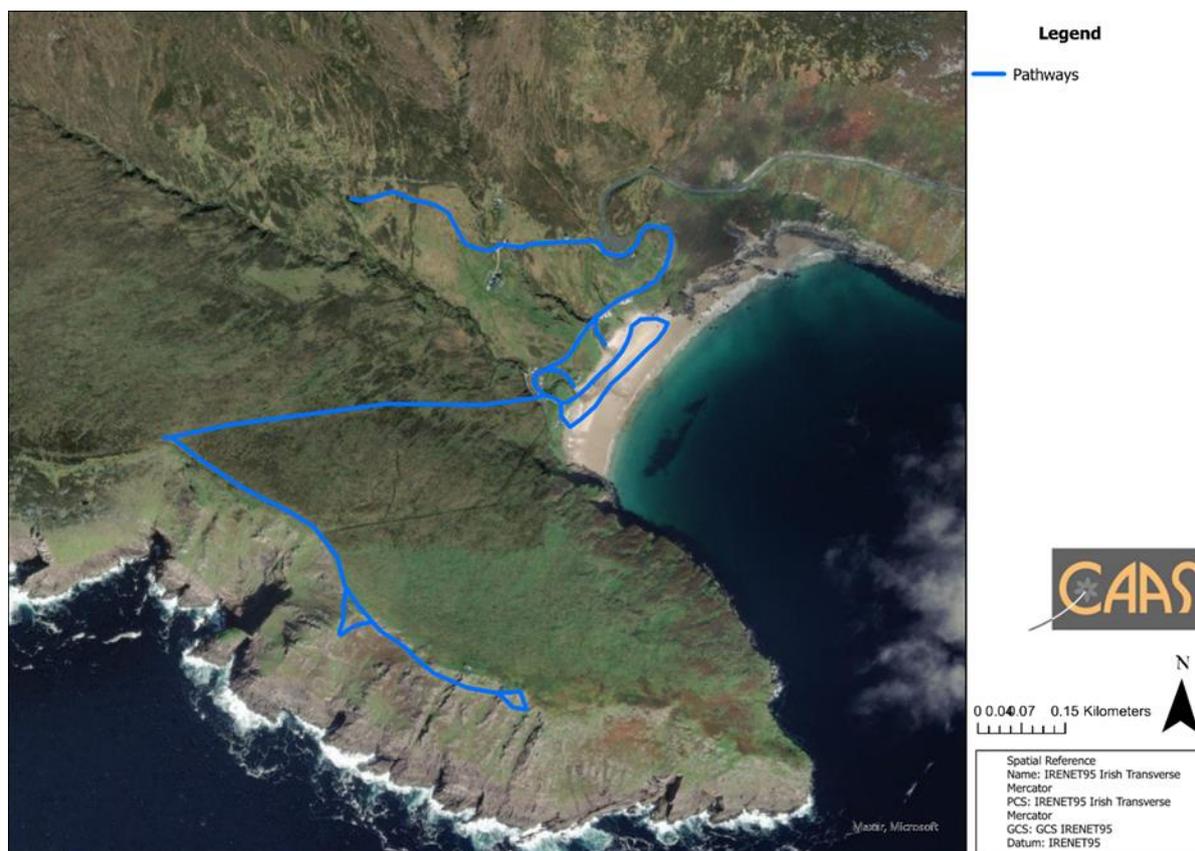


Figure 1.3 Pathways identified at Keem Bay Achill



Figure 1.4 Pathways at Keem Bay Achill

1.4.2 Features Condition

The signage at Keem Bay Achill contains information regarding wildlife which can be seen in the area, and trail maps (Figure 1.6). Also present are water safety signs with regard to safety when undertaking leisure and recreational activities and man-made signs prohibiting campfires. Also dotted around the area are bins, benches and a small number of disused buildings. Along with these, there are also facilities for lifeguards.



Figure 1.5 Features recorded at Keem Bay Achill



Figure 1.6 Signs at Keem Bay Achill

1.4.3 Hazards

Multiple impacts were noted at Keem Bay Achill including, a large number of fire pits and burned areas that were visible close to the beach area (Figure 1.7). Along with this, a number of desire lines were noted along with signs of camping. The cliff top paths to the west of the bay have very high unprotected exposure to high steep cliffs.



Figure 1.7 Hazards recorded at Keem Bay Achill



Figure 1.8 Remnants of a campfire at Keem Bay Achill

1.5 Visitor Characterisation Survey

The visitor monitoring surveys resulted in a total of 220 visitors (which represent 81 group observations). The site is most popular amongst the Couple group with the dominant mode of transport being Car. The average dwell time for the site was 85 minutes; with the following activities undertaken during the survey (listed in order of occurrence rate):

Activity Type
Swimming
Sitting
Cycling
Bodyboarding
Camping
Hiking
Other Aquatic Sport
Photographing
Picnicking
Scuba diving
Dog walking (on lead)
Exploring off trail
Frisbee/ Catch
Snorkeling
Surfing

Dwell Time

Keem Bay Achill

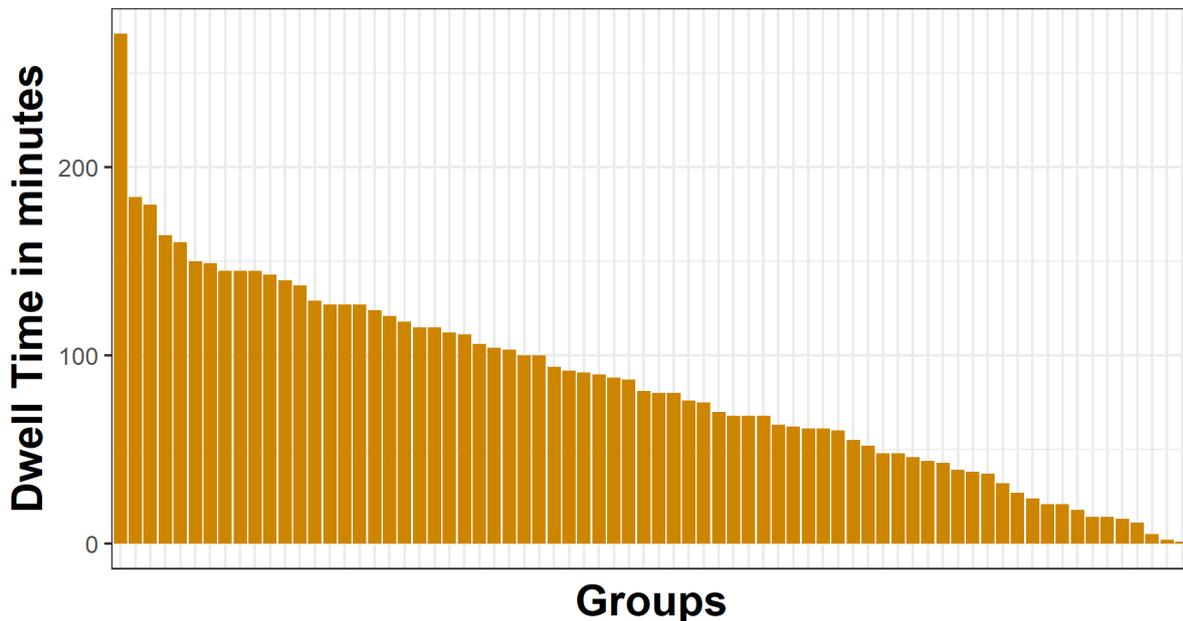


Figure 1.9 Duration of Time Spent at Keem Bay Achill

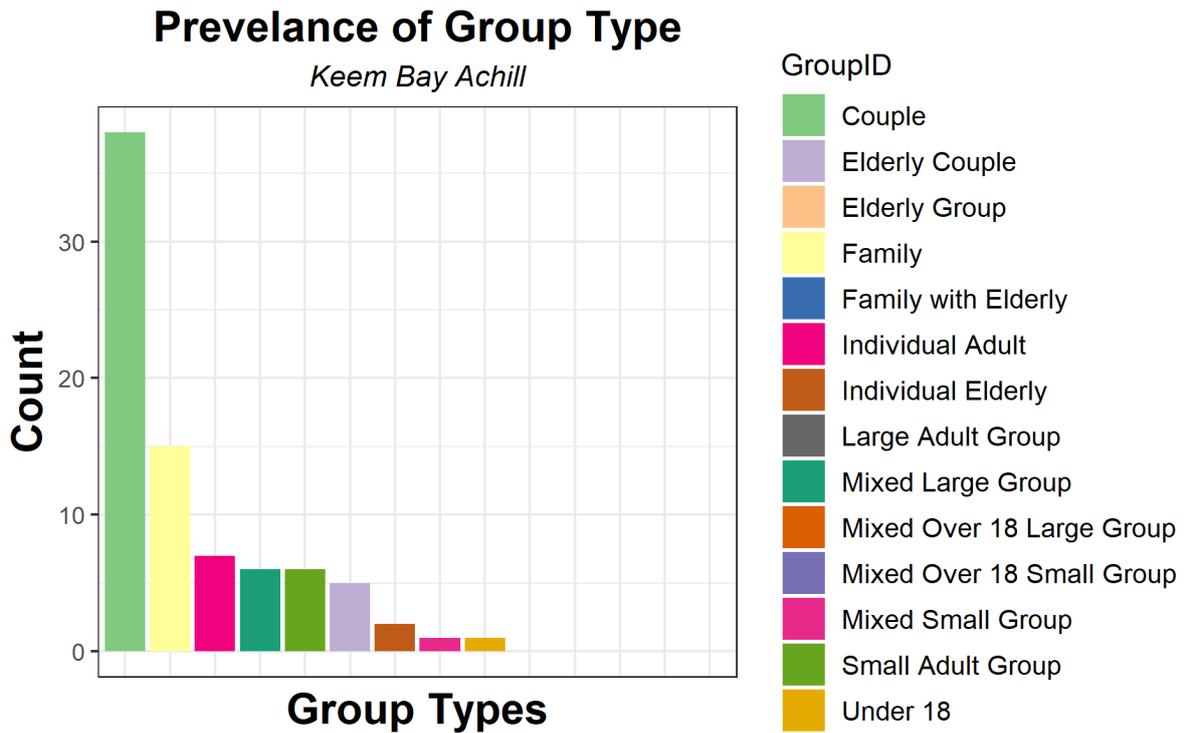


Figure 1.10 Groups of visitors that visited Keem Bay Achill

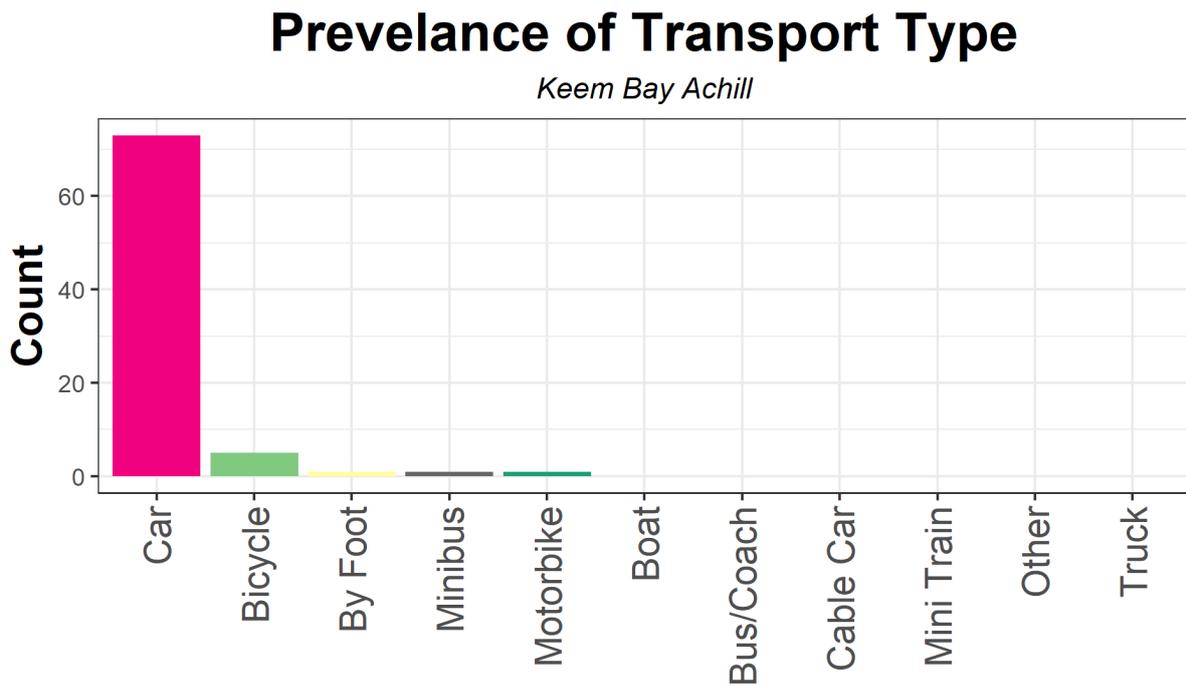


Figure 1.11 Mode of transport used to visit Keem Bay Achill

Read Available Signage

Keem Bay Achill

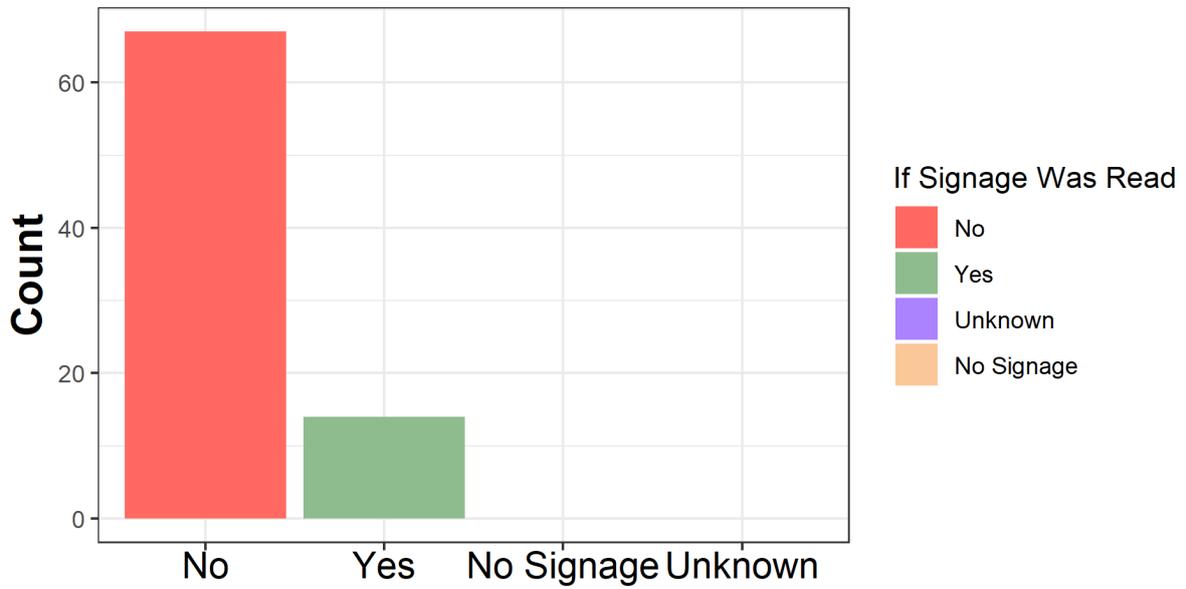


Figure 1.12 Use of Interpretive Material at Keem Bay Achill

Activity Levels

Keem Bay Achill

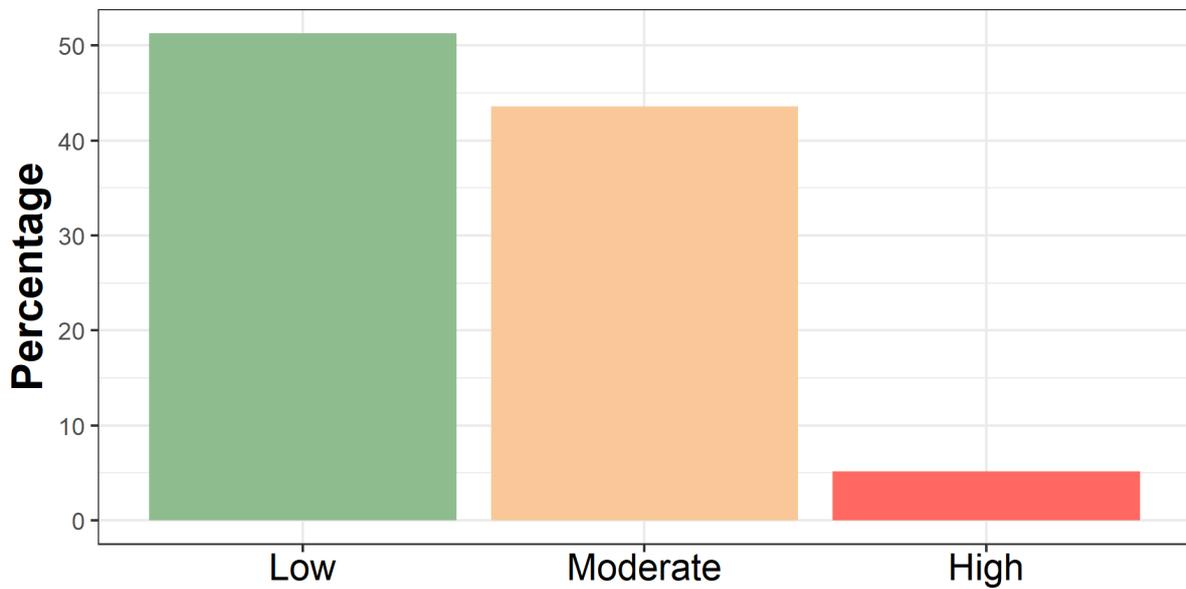


Figure 1.13 Categories of Activity Levels Observed at Keem Bay Achill

Activity Undertaken Other Than Walking

Keem Bay Achill

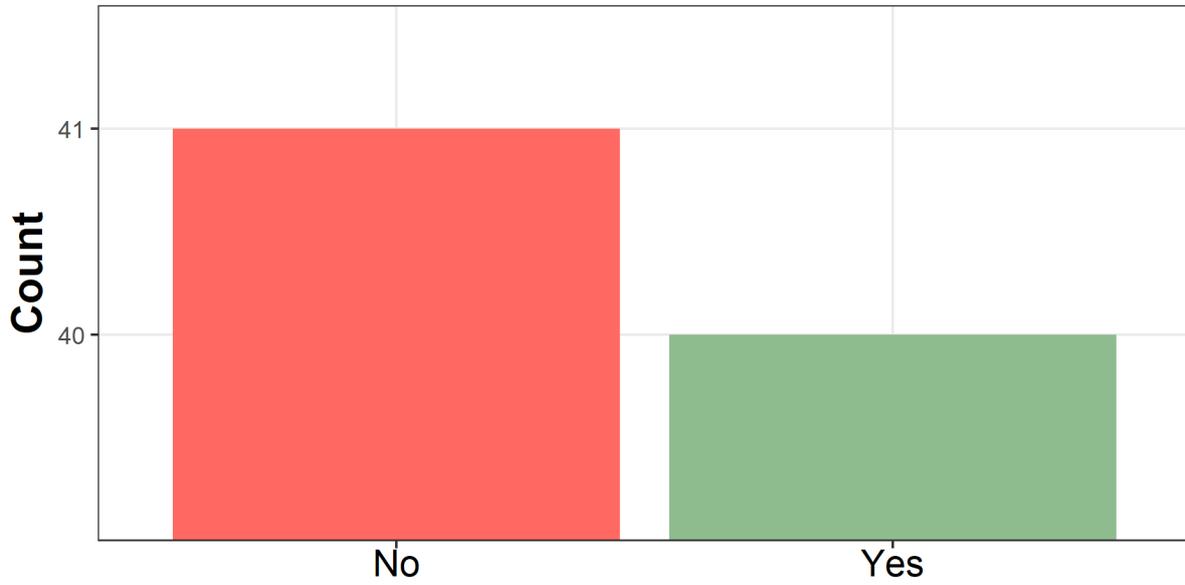


Figure 1.14 Activities undertaken other than walking

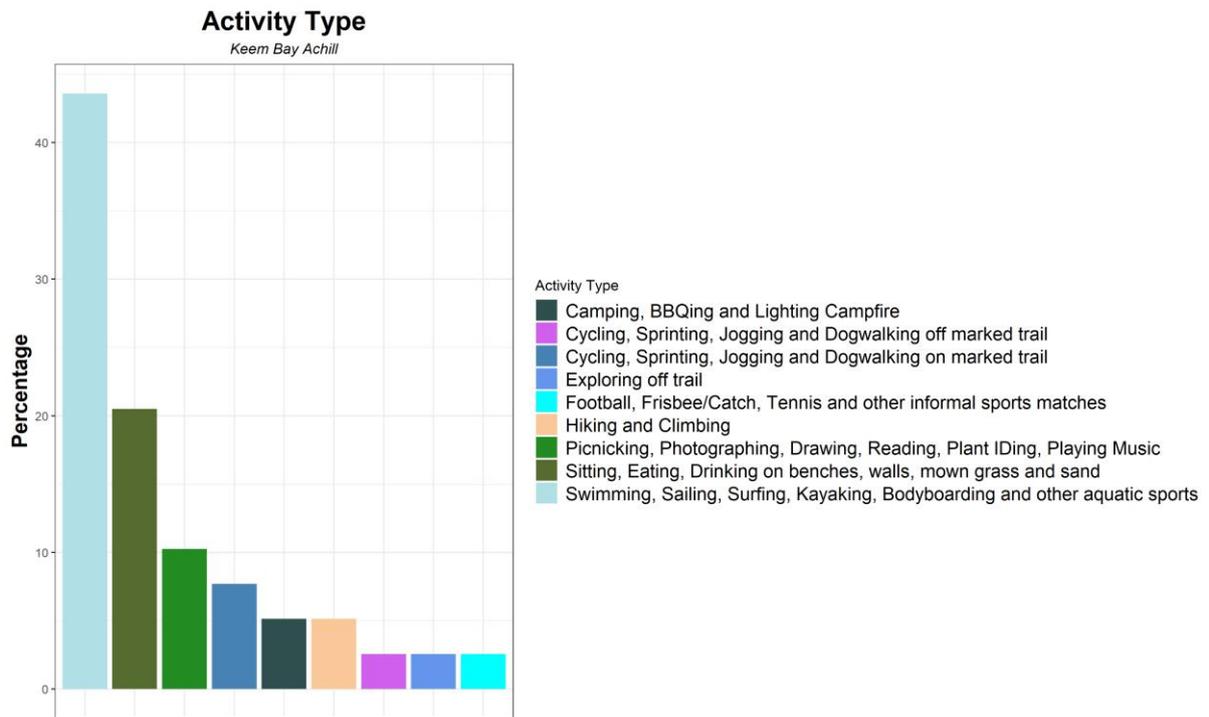


Figure 1.15 Range of Visitor Activities Observed at Keem Bay Achill

Impact Severity Level

Keem Bay Achill

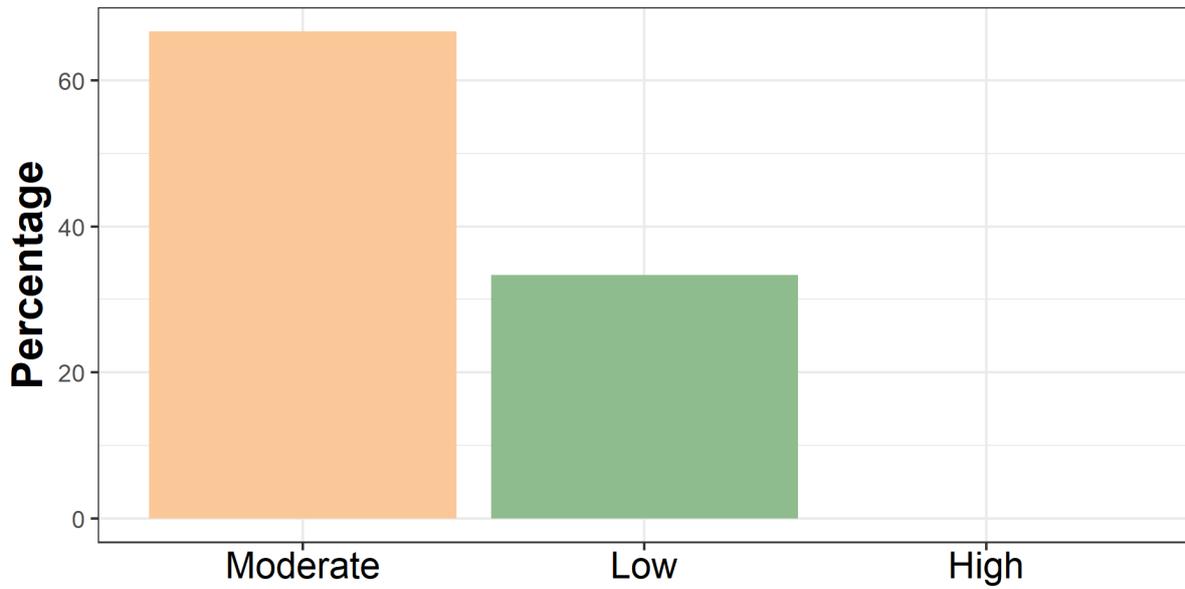


Figure 1.16 Categories of Environmental Impact Levels Observed at Keem Bay Achill as a result of Visitor Activities²

Impact Type

Keem Bay Achill

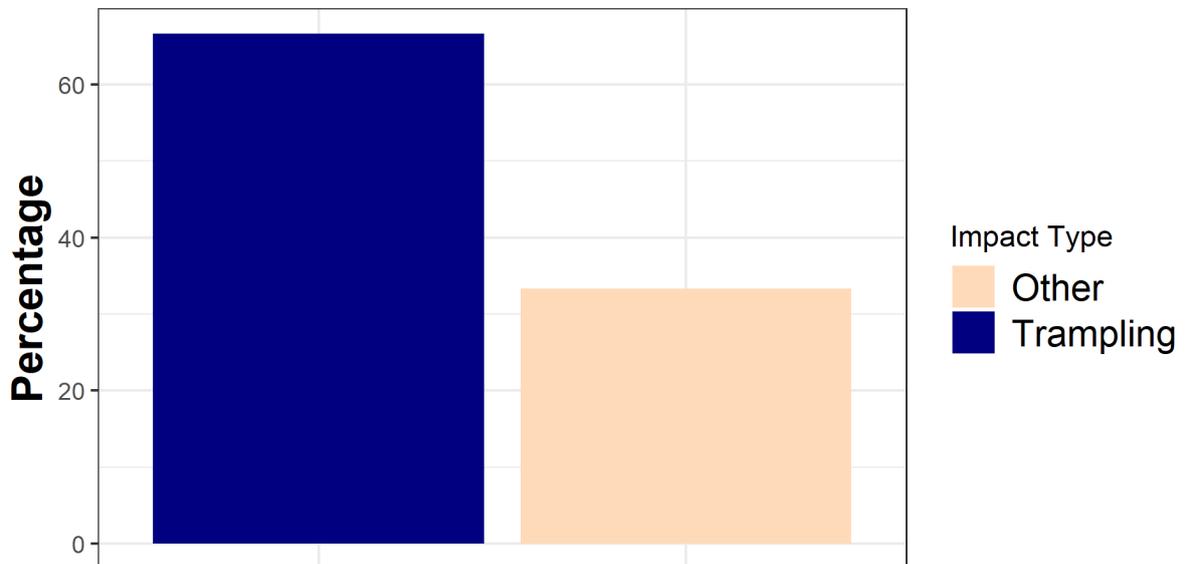


Figure 1.17 Range of Environmental Impacts Observed at Keem Bay Achill

² Impact severity was measured as a categorical variable which has a range of impact factors that are pre-determined; such as injuring, killing or taking wildlife as a severe impact (high) and temporary disturbance of wildlife being a low impact. These are explained fully in the method section above.

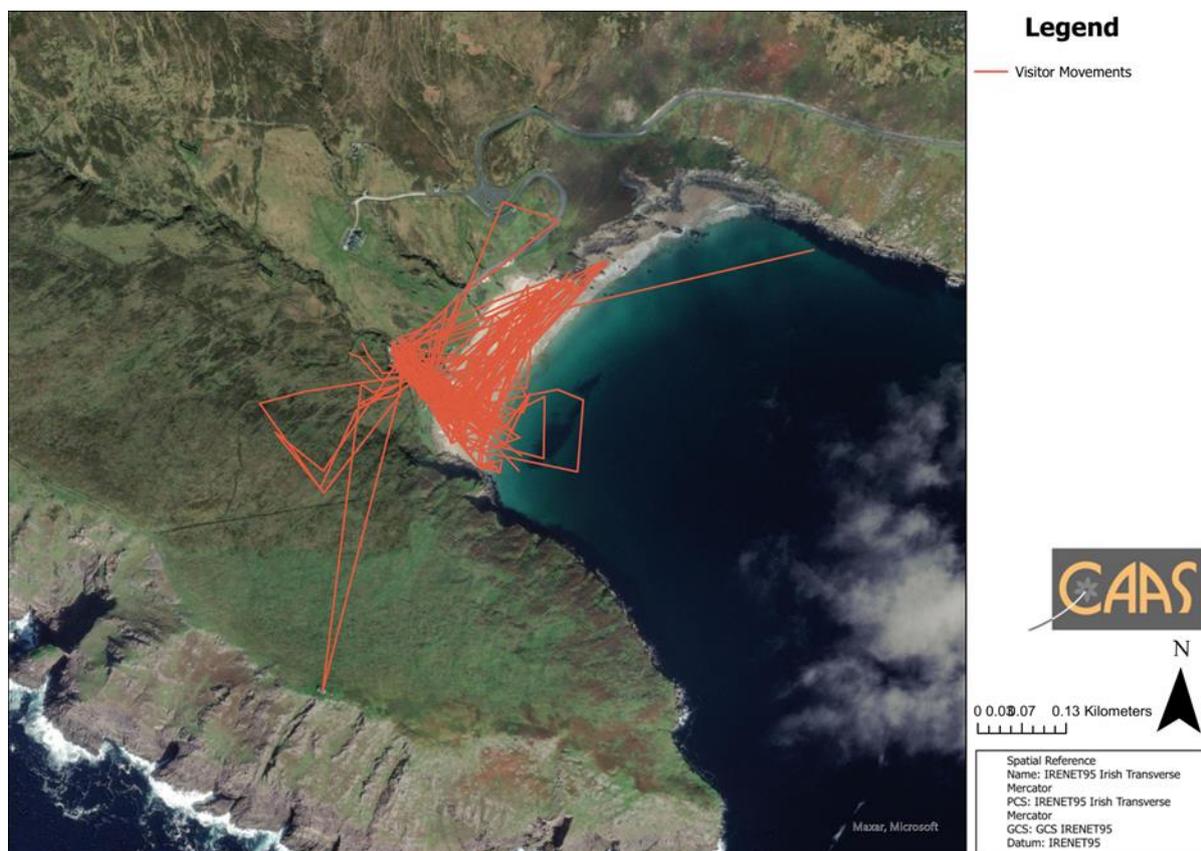


Figure 1.18 Visitor movement patterns at Keem Bay Achill

Of the 81 groups recorded on site 49% of them undertook activities other than walking. These activities (identified above) resulted in 3 impacts being observed on site during the survey. Thus, 8% of activities on site resulted in impacts on the environment. The impact severity levels varied with 33% of the impacts being low, 67% of impacts being moderate, and 0% of impacts being high severity. The impacts identified for the site were:

Impact Type	Count
Other	1
Trampling	2

1.6 Ecological Monitoring Results

1.6.1 Ecological Constraints

The habitats within 2km of Keem Bay Achill are sensitive to pollution, hydrological changes, overgrazing and land use management.

Table 1.1 Designated sites within 2km of Keem Bay Achill and relevant ecological receptors

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[001955]	Croaghaun/Slievemore pNHA	0.00	pNHA	
[001955]	Croaghaun/Slievemore SAC	0.00	SAC	Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010], Blanket bogs * if active bog [7130], European dry heaths [4030], Alpine and Boreal heaths [4060], Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110]

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[002268]	Achill Head SAC	0.05	SAC	Large shallow inlets and bays [1160], Mudflats and sandflats not covered by seawater at low tide [1140], Reefs [1170]

1.6.2 Habitat Descriptions

The habitats at Keem Bay are shingle shores – but the surrounding habitats along the upland areas are wet heath (Fossitt Code HH3) which align with the Annex I habitat for which the SAC is designated (Northern Atlantic wet heaths with *Erica tetralix* [4010]). The cliff face itself is a sedimentary cliff edge.

Although fewer visitors were observed departing from the lower altitudes and most of the movements were recorded at the beach itself. It is evident through the path condition assessment that the trails through the heathland are eroding with 100% exposed substrate in some instances.



Figure 1.19 Habitats present at Keem Bay Achill

1.6.3 Condition Assessment

There are a range of habitats present on site, the assessment of habitat condition identified that the overall habitat quality³ following the assessment scale was "2" which means the majority of the habitats have a localised degree of negative impact, but slight and capable of rapid recovery. There were 14 recorded incidents of damage to habitats occurring off the marked paths on site. The causes of the damage were identified to be fire pits, desire lines, litter and dog fouling.

1.6.4 Mammals on Site

No mammals were recorded on site at Keem Bay Achill. The NBDC data shows that there are not many terrestrial mammals in the area and the majority of observations were of marine mammals, this is due to both the location of Keem Bay Achill and the habitats available. The only two terrestrial mammals recorded were badgers and otters, with grey seals and bottle-nosed dolphins being the most observed marine species.

³ This value was calculated using the methods set out in Appendix II

Table 1.2 List of mammals that have been recorded at NBDC Hectad F50

Taxonomic group	Common name	Scientific name	Record count
Marine mammal	Bottle-nosed Dolphin	<i>Tursiops truncatus</i>	16
Marine mammal	Common Dolphin	<i>Delphinus delphis</i>	8
Marine mammal	Common Porpoise	<i>Phocoena phocoena</i>	6
Marine mammal	Common Seal	<i>Phoca vitulina</i>	1
Marine mammal	Grey Seal	<i>Halichoerus grypus</i>	45
Marine mammal	Minke Whale	<i>Balaenoptera acutorostrata</i>	2
Marine mammal	Risso's Dolphin	<i>Grampus griseus</i>	1
Marine mammal	Striped Dolphin	<i>Stenella coeruleoalba</i>	3
Terrestrial mammal	Eurasian Badger	<i>Meles meles</i>	1
Terrestrial mammal	European Otter	<i>Lutra lutra</i>	3

1.6.5 Wintering Bird Survey

The shallow bay provides good habitat for winter waders – however, most of the activity observed on site was in the deeper areas of the bay. Additionally, the areas along the coast (including Keel Bay) had high levels of winter waders. There is thought to be high levels of seasonal variations in site use by waders but the species known to occur are seen below.

Table 1.3 Results of the wintering bird survey conducted at Keem Bay

Common name	Scientific name	Record count
Herring Gull	<i>Larus argentatus</i>	7

The only birds observed to be foraging on site during the winter bird survey were herring gull (7 individuals); however, there are a number of species known to occur within the receiving environment.

Table 1.4 List of wintering birds that have been recorded around Keem Bay

Taxonomic group	Common name	Scientific name	Record count
Bird	Arctic Skua	<i>Stercorarius parasiticus</i>	1
Bird	Black Guillemot	<i>Cepphus grylle</i>	5
Bird	Black-legged Kittiwake	<i>Rissa tridactyla</i>	8
Bird	Common Guillemot	<i>Uria aalge</i>	2
Bird	Common Sandpiper	<i>Actitis hypoleucos</i>	2
Bird	Common Snipe	<i>Gallinago gallinago</i>	8
Bird	Eurasian Curlew	<i>Numerius arquata</i>	2
Bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	8
Bird	Eurasian Woodcock	<i>Scolopax rusticola</i>	4
Bird	European Shag	<i>Phalacrocorax aristotelis</i>	10
Bird	European Storm-petrel	<i>Hydrobates pelagicus</i>	2
Bird	Glaucous Gull	<i>Larus hyperboreus</i>	3
Bird	Great Black-backed Gull	<i>Larus marinus</i>	14
Bird	Great Cormorant	<i>Phalacrocorax carbo</i>	3
Bird	Great Northern Diver	<i>Gavia immer</i>	3
Bird	Greater White-fronted Goose	<i>Anser albifrons</i>	2
Bird	Greenland White-fronted Goose	<i>Anser albifrons subsp. flavirostris</i>	2
Bird	Herring Gull	<i>Larus argentatus</i>	17
Bird	Hooded Crow	<i>Corvus cornix</i>	14
Bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	8
Bird	Little Grebe	<i>Tachybaptus ruficollis</i>	2
Bird	Long-tailed Duck	<i>Clangula hyemalis</i>	2
Bird	Mallard	<i>Anas platyrhynchos</i>	4
Bird	Manx Shearwater	<i>Puffinus puffinus</i>	18
Bird	Mew Gull	<i>Larus canus</i>	3
Bird	Northern Fulmar	<i>Fulmarus glacialis</i>	47
Bird	Northern Gannet	<i>Morus bassanus</i>	13
Bird	Purple Sandpiper	<i>Calidris maritima</i>	1
Bird	Razorbill	<i>Alca torda</i>	4

Taxonomic group	Common name	Scientific name	Record count
Bird	Ruddy Turnstone	<i>Arenaria interpres</i>	3
Bird	Sooty Shearwater	<i>Puffinus griseus</i>	1
Bird	White-throated Dipper	<i>Cinclus cinclus</i>	5

1.7 Recommendations

A designated BBQ area would help to alleviate the existing problems related to uncontrolled fires – this could also include a fire pit area (on existing hard stand areas) to facilitate the social campfire experiences currently being undertaken on site in an uncontrolled manner.

Educational signage is required on site to ensure visitors understand the importance of the Wet Heathland habitat and the need to stick to the way marked trail.

Low intensity interventions should be explored with regard to trail restoration and improvements – such as rope enclosures to allow recovery of damaged areas. Where necessary path stabilising membranes should be installed however, this should be undertaken with regard to the Habitats Directive. Where necessary this may require the NPWS to incorporate management actions into the management plan for the SAC as a satisfactory AA process cannot be completed for any such works.

It is recommended that a warden is present during the peak season. This warden can manage the trails, ensure there is no littering or fire management issues and help to monitor any traffic congestion issues. This could also provide opportunities for broadening awareness of the importance of coastal systems and habitat management practices.

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 sites⁴. 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.

⁴ 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.