
NATIONAL TOURISM MONITORING PROGRAMME 2021-2025

ANNUAL RESULTS FOR 2022

DERRYNANE BEACH

for:

Fáilte Ireland

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February 2023

Document Control

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Status of this version	Draft	

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Derrynane Beach – Interesting Finds

HIGHLIGHTS

The site contains the ancestral home of Daniel O’Connell as well as a National Historic Park. Derrynane hosts to a wide range of mammals including badgers and Irish stoat. The surrounding area is also known to play host to natterjack toads, which are the rarest amphibian in Ireland and protected under the Habitats Directive.



Derrynane has a complex range of habitats from near ancient woodland and ornamental gardens, to freshwater and saltwater marshes, to diverse coastal grassland systems.

KEY RECOMMENDATIONS

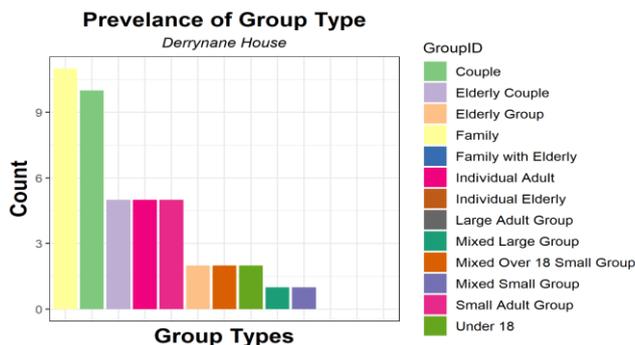
- Rabbit populations on site are causing dune destabilisation and measures should be explored to mitigate the impacts caused by the rabbit population
- The introduction of a dynamic trail management system should be considered to help protect dune erosion
- Designated areas for off-lead dogs should be introduced to reduce impacts to wildlife on site

VISITOR INTERACTION & MANAGEMENT

- Only low impacts were observed on site.
- Most common impact observed on site was trampling of vegetation, the same as 2021.
- Large decrease in the number of visitors to the site
- Large increase to average dwell time (78 minutes)
- Majority of visitors to the site did not read signage that was available.
- Majority of visitors arrived to site by car.

VISITOR NUMBERS AND DWELL TIME

- 121 people visited the site over 8 hours
- Average dwell time of 78 minutes
- Changes since last survey include a decrease of 63% of visitors recorded and an increase of 95% in average dwell time from last year



Highlights:

- Natterjack toad spawning area
- Lesser horseshoe bat roost
- Machaire habitat
- Extremely well managed site



1 Derrynane Beach

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 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 Fáilte 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 Derrynane Beach:

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 Derrynane Beach was undertaken on the 14th of August 2022, with max temperatures reaching 23.3° C, low levels of rainfall and low levels of wind on the day¹. These surveys followed an 8-hour time period recording samples of visitor behaviour of as many visitors on site as possible. Visitor movement patterns, demographic data and activities undertaken were recorded for all sampled visitors. Where activities had associated impacts, these were also recorded and the relevant severity was recorded using the same coding system as with the WAW monitoring (see Appendix I for details). It is important to note that the visitor characterisation surveys are indiscriminate between visitors and local amenity use. 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 Derrynane Beach

Derrynane House was the ancestral home of one of the most historic figures in Irish history, Daniel O'Connell, located on the Iveragh peninsula, which contains the Ring of Kerry - a noted scenic route as well as the Iveragh Peninsula SAC. The beach is the centre of a stretch of coastline covering about 5km that contains a National Historic Park, a number of popular sandy beaches as well as visitor accommodation and facilities. Derrynane Beach, although a short trail, contains areas like marram dunes, machairs, a broadleaved forest and tall herb swamps.

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



Figure 1.1 Derrynane Beach

¹ Weather data gathered from closest available weather stations to the site from: <https://www.met.ie/climate/available-data/historical-data>



Figure 1.2 Study Area within Kenmare River SAC

1.3.1 Critical Infrastructure

Table 1.1 Summary of Wastewater infrastructure at Derrynane Beach

Wastewater Treatment Plant (WWTP)	Irish Water Indication of Capacity	Comment
There are no toilet facilities on site No current WWTP on site at Derrynane Beach Nearest settlement with WWTP in Waterville (WWTP Reg #D0287)	Spare capacity available ²	If wastewater facilities are required on site, the Kerry County Council will support investment into sustainable wastewater infrastructure ³

Table 1.2 Summary of Drinking Water infrastructure at Derrynane Beach

Drinking Water	Water Resource Name (WRZ)	Irish Water Indication of Capacity	Comment
Nearest serviced settlement to Derrynane Beach is Waterville-Spunkane	Waterville PWS 075H	Capacity available ⁴	If water facilities are required on site, the Kerry County Council will support investment into sustainable water infrastructure ⁵

Table 1.3 Summary of Transport infrastructure at Derrynane Beach

Nearest Settlement	Current Transport Infrastructure	Comment

² <https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/kerry/>

³ <http://docstore.kerrycoco.ie/KCCWebsite/planning/devplan/vol1updatednew.pdf>

⁴ <https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/kerry/>

⁵ <http://docstore.kerrycoco.ie/KCCWebsite/planning/devplan/vol1updatednew.pdf>

Waterville	Derrynane Beach is located off the N70 Ring of Kerry Road with a car park located close to the site	Current transport infrastructure is sufficient
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1.4 Pathways and Features Condition Results

1.4.1 Pathway Condition

The paths are a mixture of hard infrastructure and soft infrastructure trails – as well as managed walkways and desire lines. The paths are all relatively consistent in width for each individual trail. Throughout the woodland and around the house the trail is hard/soft surfaced. Within the dune systems along the high traffic areas there are buried membranes to prevent substrate compaction. All paths are in high condition – but there are signs of trampling which are seen to be from horse riding. Along the inner bay edge (west of the site) there is signs of trampling and erosion from visitor movements along the ridge where the high density of movements is causing dune destabilisation.



Figure 1.3 Pathways identified at Derrynane Beach

1.4.2 Features Condition

The site contains not only Derrynane Beach itself, but there are also numerous signs which relate to the history, heritage, ecology and wildlife of the area. Derrynane Beach also contains trail maps which show the designated trails throughout the area.



Figure 1.4 Features recorded at Derrynane Beach



Figure 1.5 Features at Derrynane Beach

1.4.3 Hazards

No hazards of significance were recorded on site.

1.5 Visitor Characterisation Survey

The visitor monitoring surveys resulted in a total of 121 visitors (which represent 44 group observations), down from 325 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 78 minutes, a significant increase from 40 minutes in 2021; with the following activities undertaken during the survey (listed in order of occurrence rate):

Activity Type
Swimming
Sitting
Dog walking (off lead)
Photography
Café
Exploring off trail
Building sand castles
Picknicking
Dogwalking (on lead)
Camping
Digging
Flying drone
Other
Sports Match (informal)
SUP Boarding

Dwell Time

Derrynane House

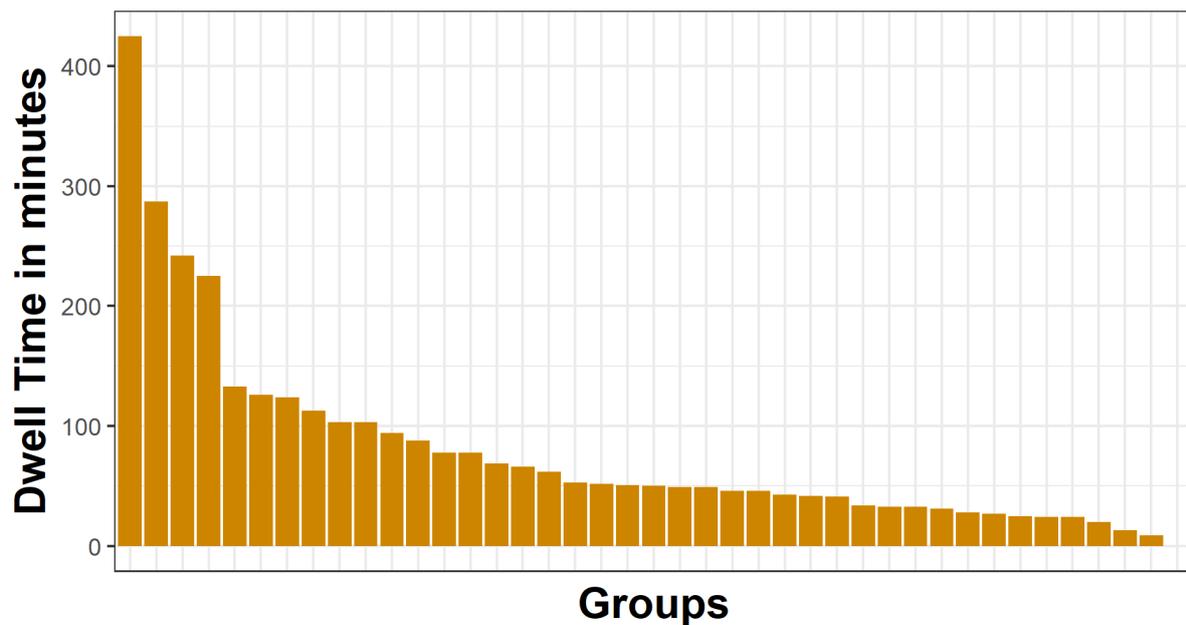


Figure 1.6 Duration of Time Spent at Derrynane Beach

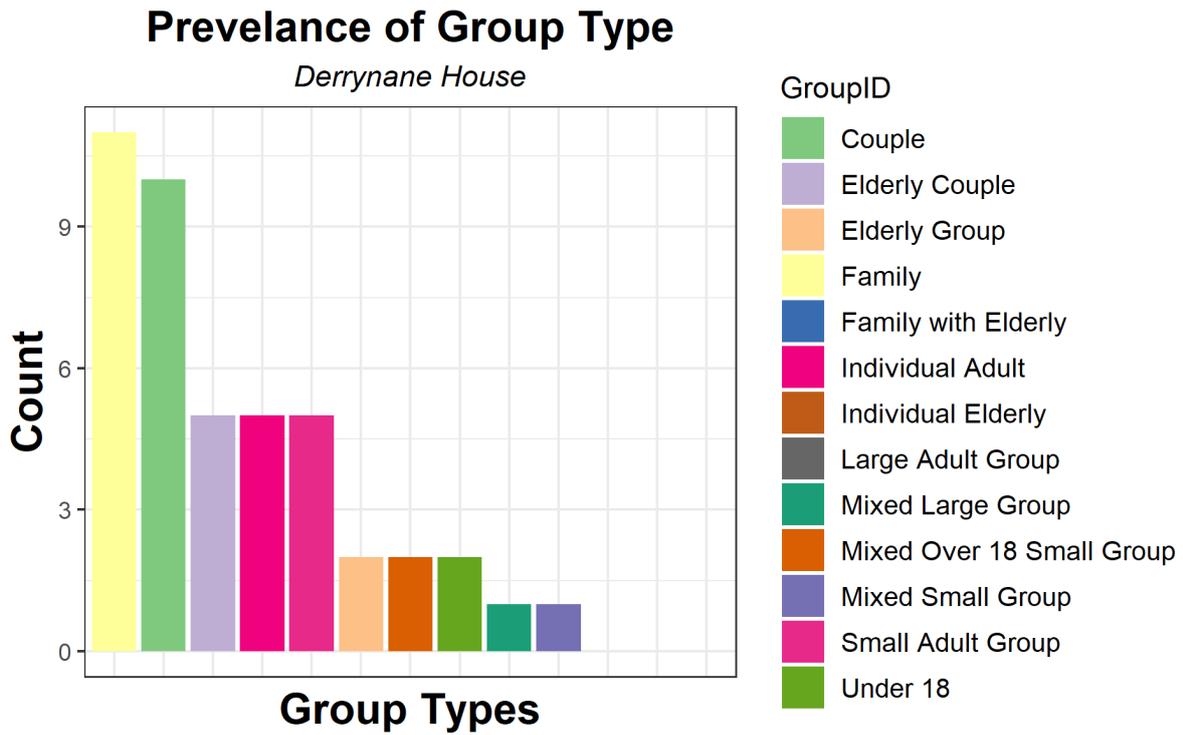


Figure 1.7 Groups of visitors that visited Derrynane Beach

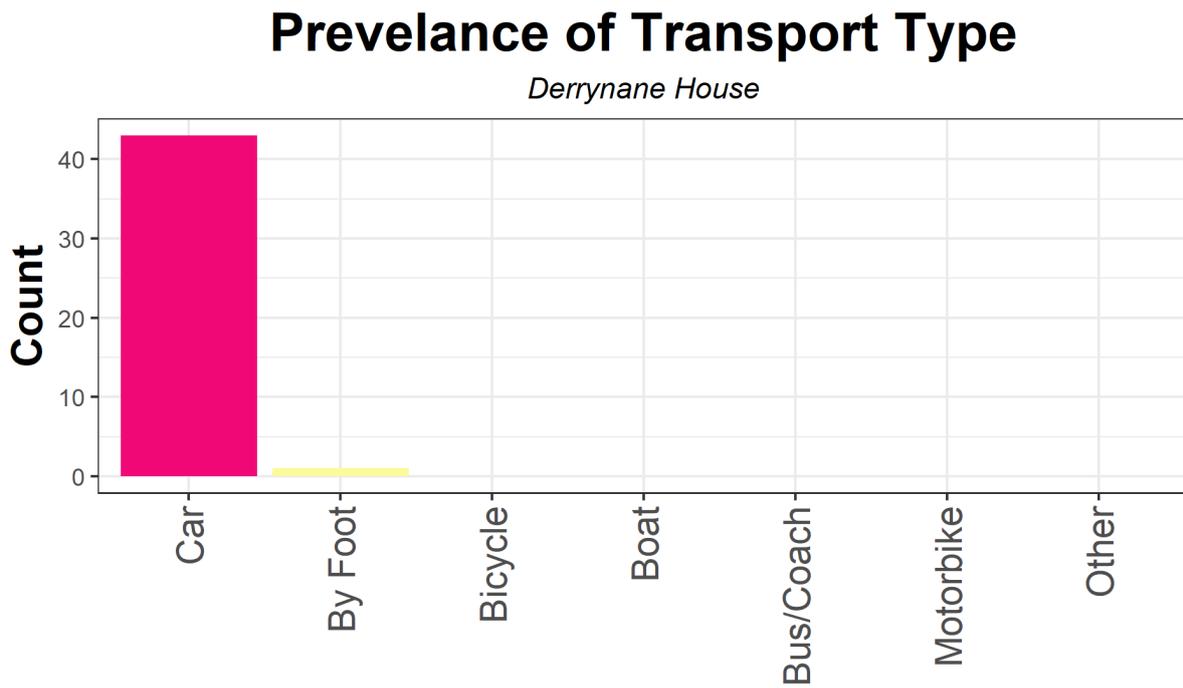


Figure 1.8 Mode of transport used to visit Derrynane Beach

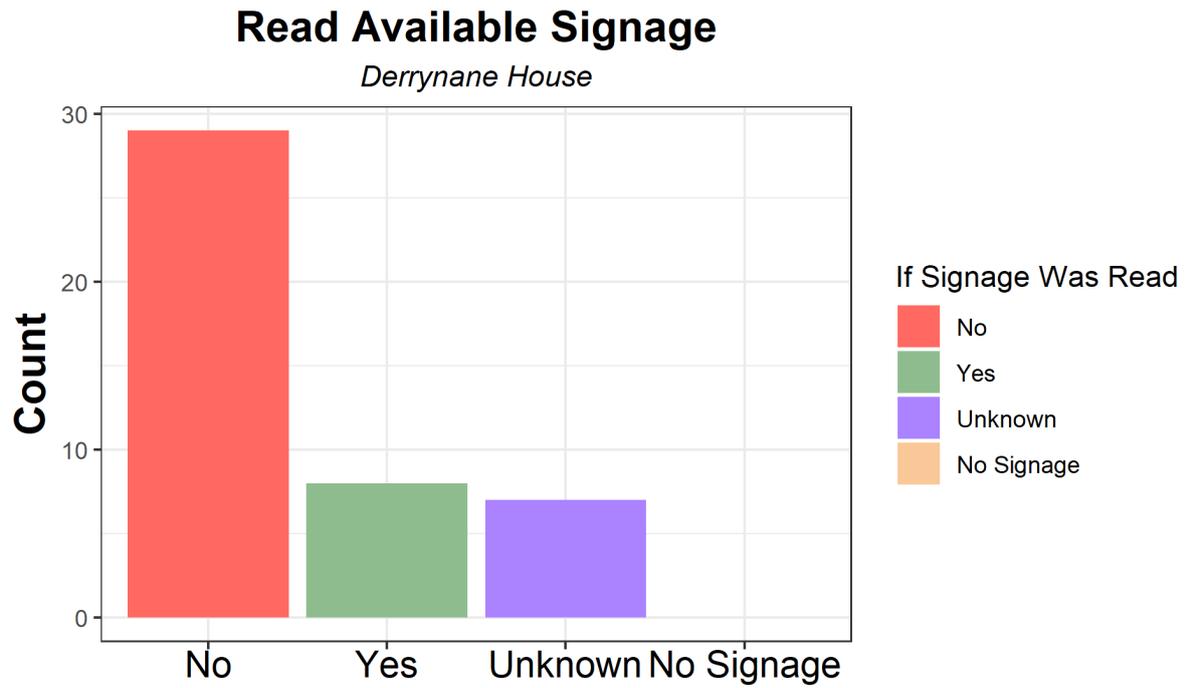


Figure 1.9 Use of Interpretive Material at Derrynane Beach

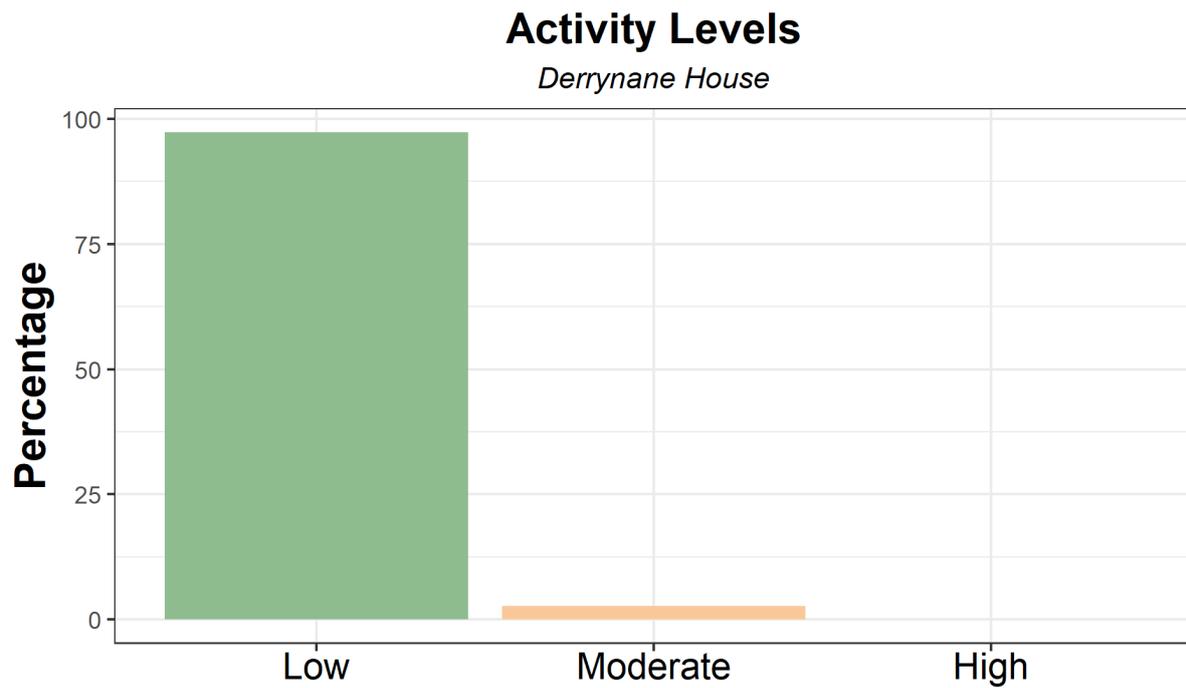


Figure 1.10 Categories of Activity Levels Observed at Derrynane Beach

Activity Undertaken Other Than Walking

Derrynane House

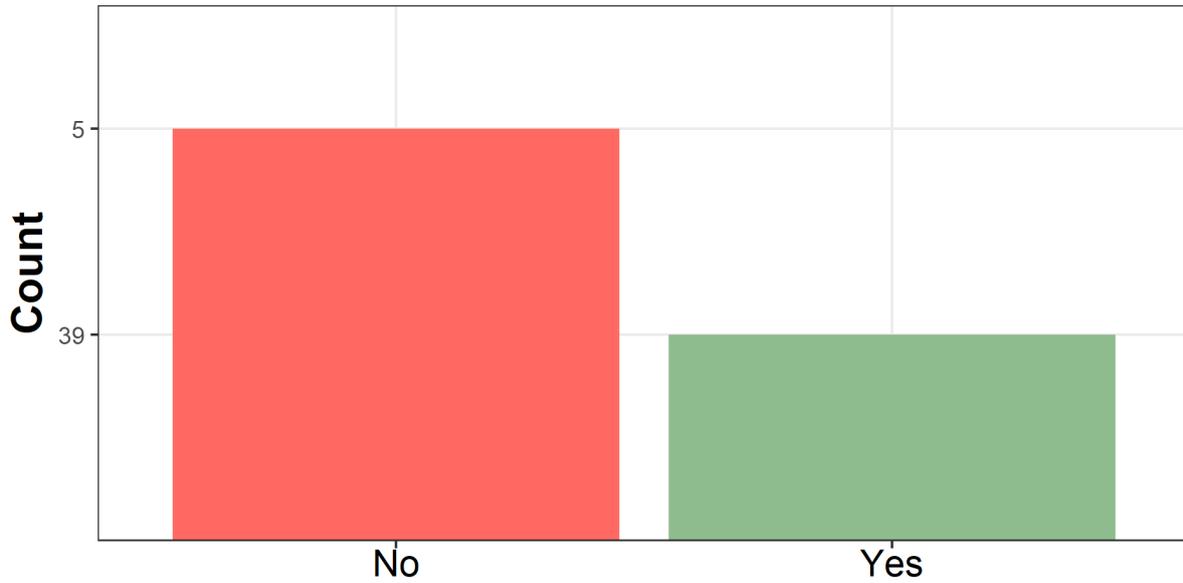


Figure 1.11 Activities undertaken other than walking

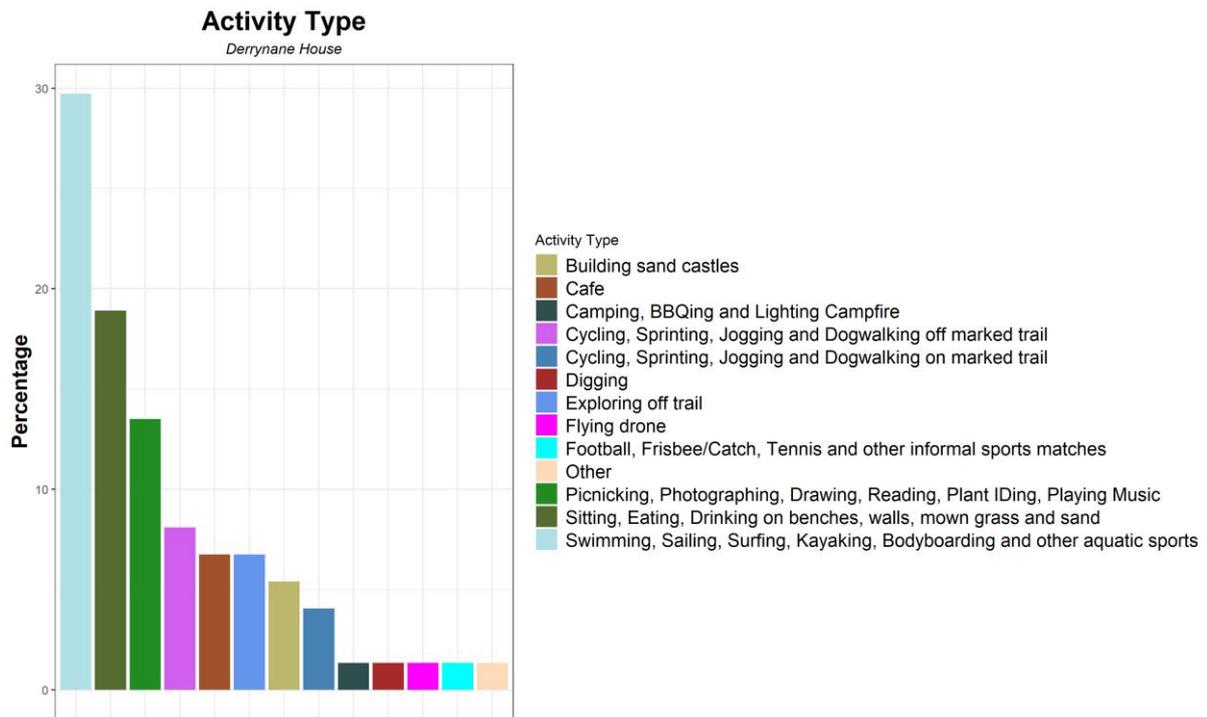


Figure 1.12 Range of Visitor Activities Observed at Derrynane Beach

Impact Severity Level

Derrynane House

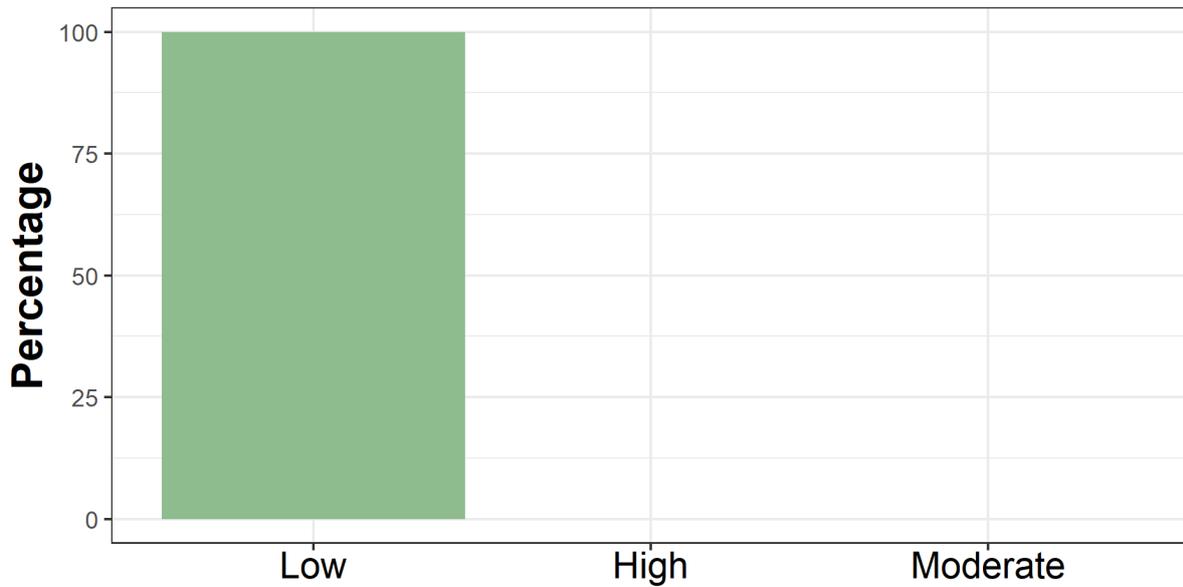


Figure 1.13 Categories of Environmental Impact Levels Observed at Derrynane Beach as a result of Visitor Activities

Impact Type

Derrynane House

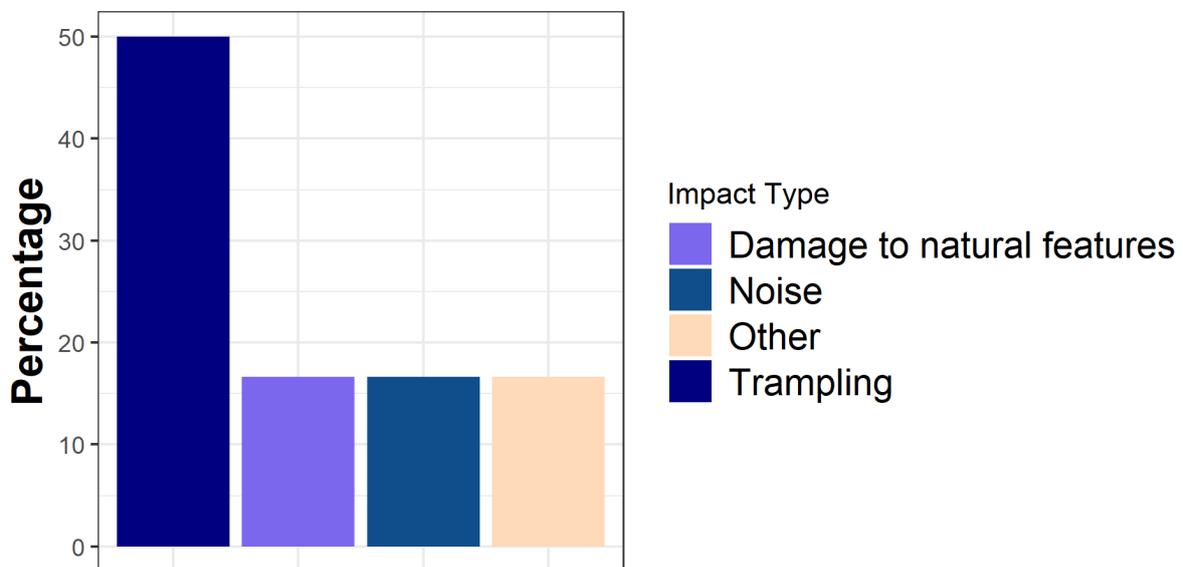


Figure 1.14 Range of Environmental Impacts Observed at Derrynane Beach

The environmental impacts that were observed and recorded used the same coding system as the Wild Atlantic Way Monitoring⁶. These impacts were recorded if a visitor’s activity or movement resulted in one of the defined impacts noted in said coding system, which were categorised by severity level to the environment, ranging from light desire lines to disturbance of wildlife to burning of materials.

⁶ See Appendix I for more detail



Figure 1.15 Visitor movement patterns at Derrynane Beach

Of the 44 groups recorded on site 89% of them undertook activities other than walking a significant increase from 14% in 2021. These activities (identified above) resulted in 6 impacts being observed on site during the survey, an increase from 3 impacts observed in 2021. Thus, 8% of activities on site resulted in impacts on the environment, an increase from 21% of activities resulting in impacts in 2021. The impact severity levels varied with 100% of the impacts being low, 0% of impacts being moderate, and 0% of impacts being high severity. The impacts identified for the site were:

Impact Type	Count
Damage to natural features	1
Noise	1
Other	1
Trampling	3

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 Derrynane Beach produced a number of changes from the 2021 Visitor Characterisation Survey. Noted changes include;

- No percentage change between the level of impacts observed despite an increase in the number of impacts
- An increase in the percentage of visitors who drove to the site instead of walking or cycling;
- Significant increase in the percentage of visitors undertaking activities other than walking
- Reduction of visitors during the 8-hour survey by 63% to 121 visitors over 44 groups with dwell time increasing by 95%.

Prevalence of Group Type 2021 vs 2022

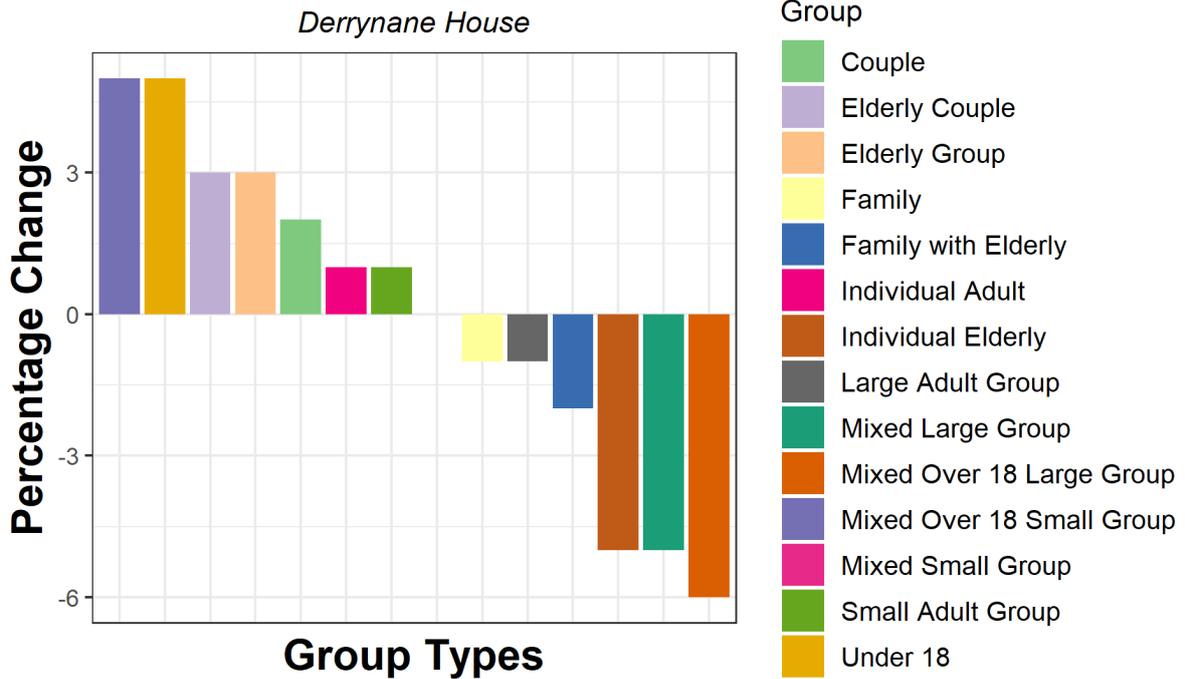


Figure 1.16 Percentage Change in groups of visitors that visited Derrynane Beach between 2021 and 2022

Prevalence of Transport Type 2021 vs 2022

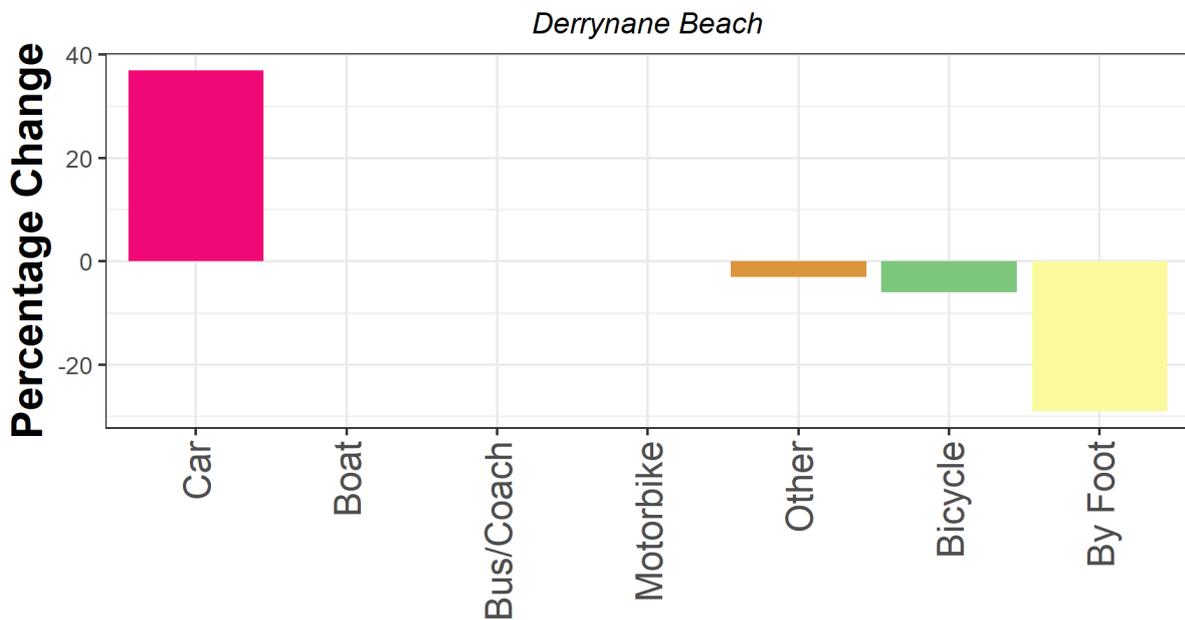


Figure 1.17 Percentage Change in mode of transport used to visit Derrynane Beach between 2021 and 2022

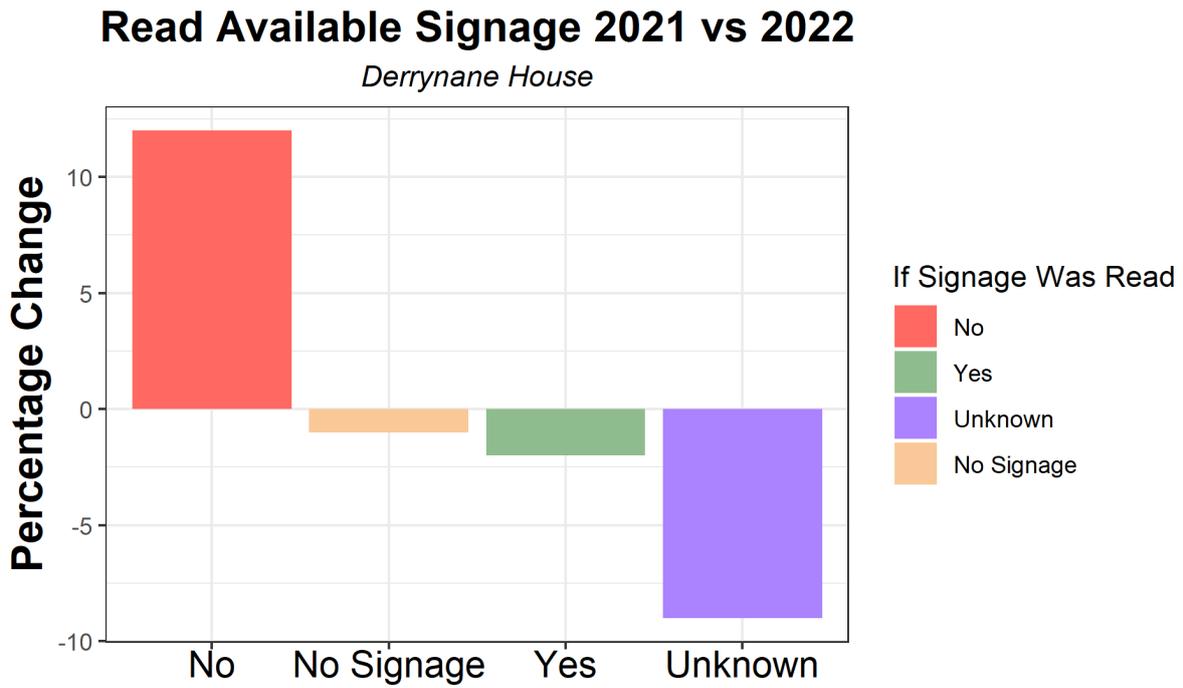


Figure 1.18 Percentage change in use of Interpretive Material at Derrynane Beach between 2021 and 2022

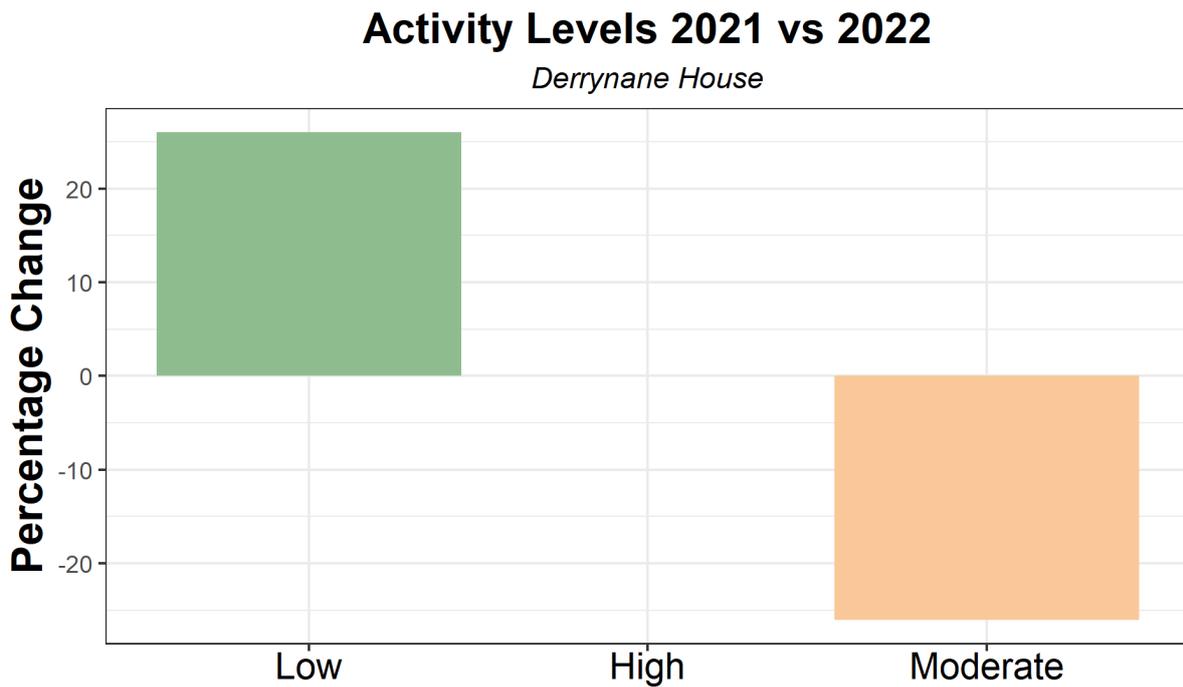


Figure 1.19 Percentage change in categories of Activity Levels Observed at Derrynane Beach between 2021 and 2022

Activity Undertaken Other Than Walking 2021 vs 2022

Derrynane House

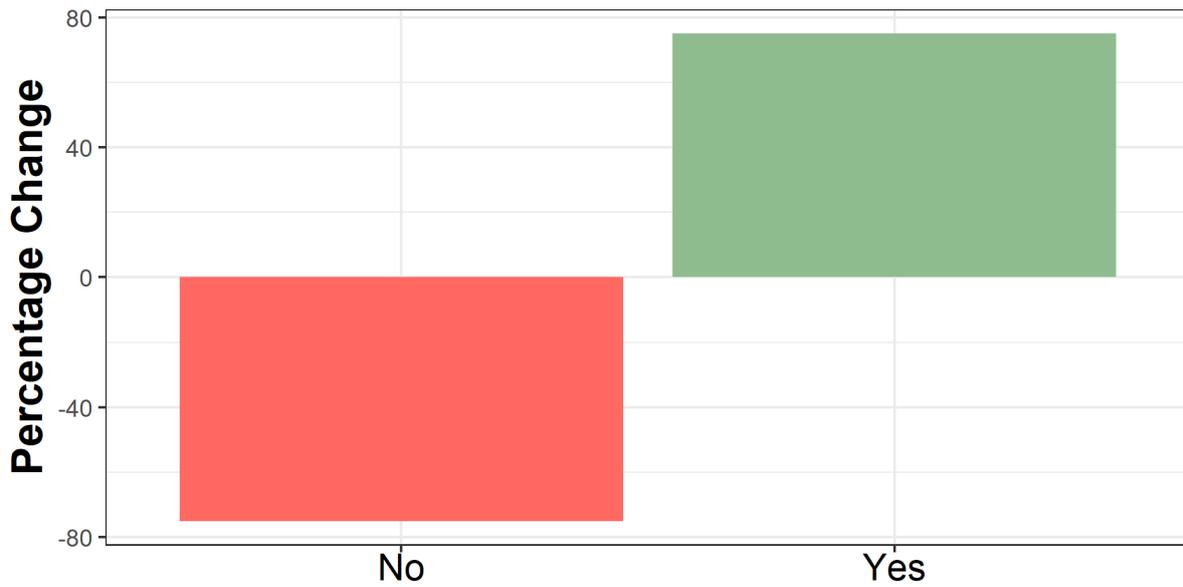


Figure 1.20 Percentage change in activities undertaken other than walking at Derrynane Beach between 2021 and 2022

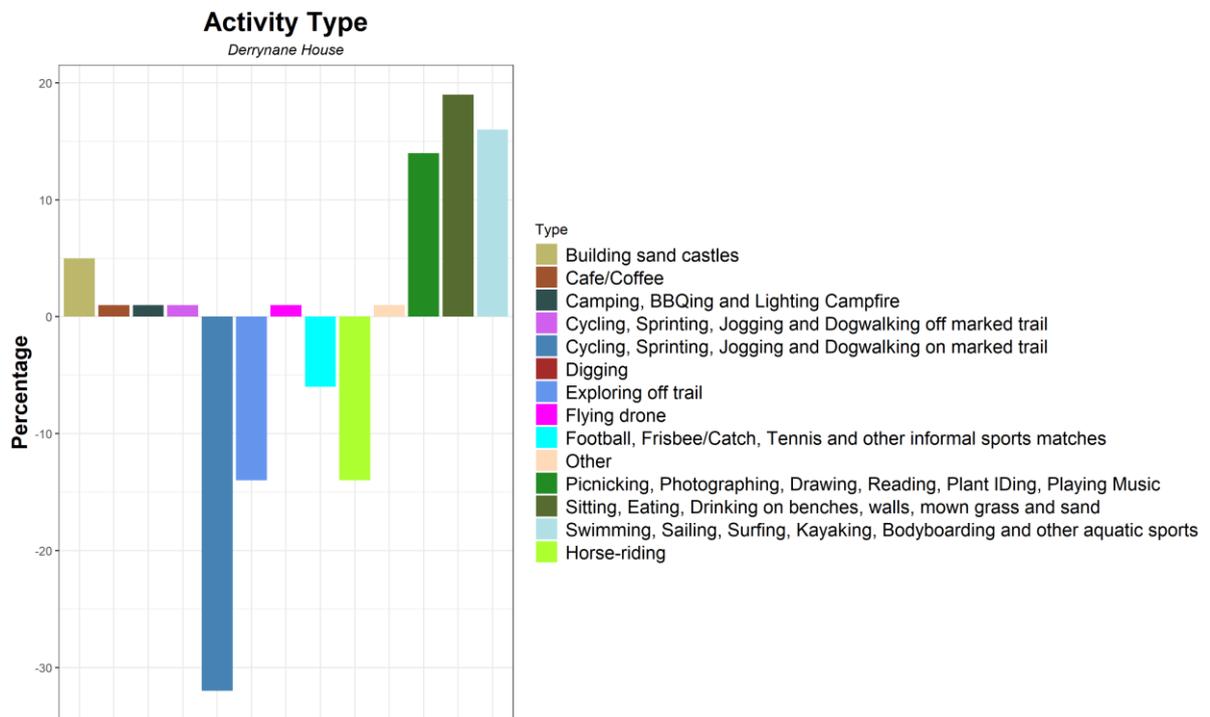


Figure 1.21 Percentage change in range of Visitor Activities Observed at Derrynane Beach between 2021 and 2022

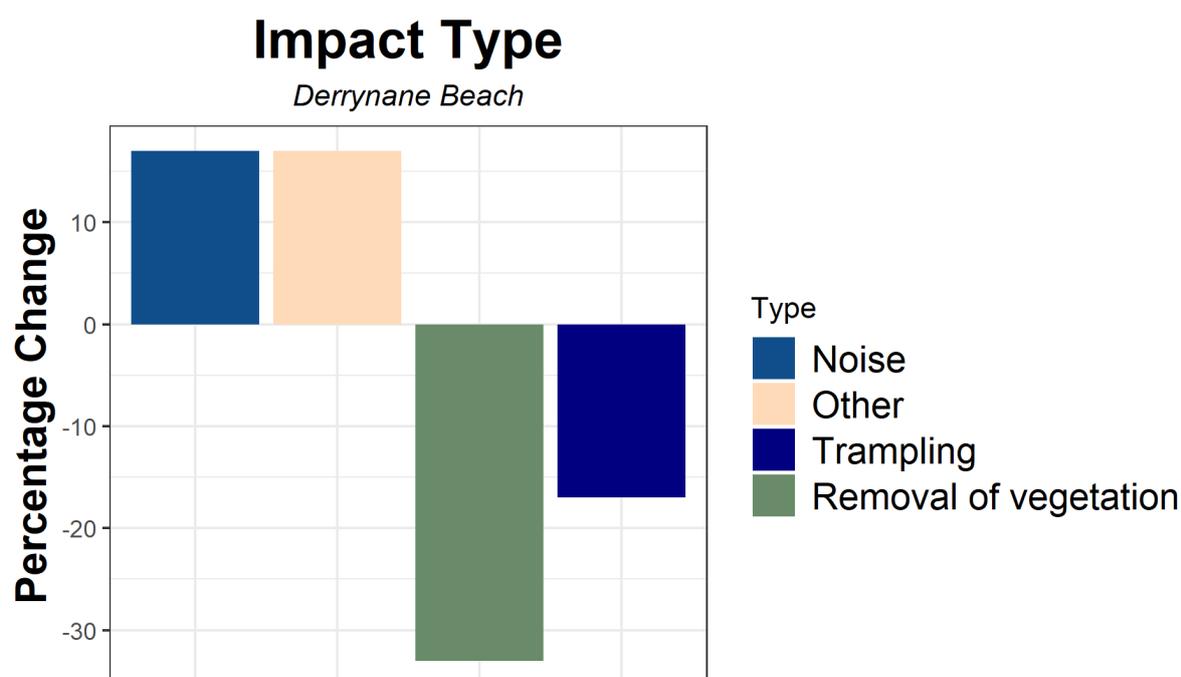


Figure 1.22 Percentage change in range of Environmental Impacts Observed at Derrynane Beach between 2021 and 2022

Table 1.4 Summary of changes with previous survey results

Survey	Notable Differences	Comment
Visitor Dwell Time	<ul style="list-style-type: none"> Average dwell time increased by 95% 	Survey was conducted later in the season compared to 2021 which could have led to an increased average dwell time
Prevalence of Group Type	<ul style="list-style-type: none"> Slight changes observed in group types visiting the site 	Slight changes in visitor group types could be attributed to the 2022 survey taking place later in the season
Prevalence of Transport Type	<ul style="list-style-type: none"> 6% decrease in bike 29% decrease by foot 37% increase by car 	Large increase in visitors arriving by car and thus a decrease in visitors arriving by foot and bike was noted
Read Available Signage	<ul style="list-style-type: none"> Signage not read increased by 12% 2% decrease in signage read Unknown decreased by 9% 	Small increase in the number of visitors that did not read available signage on site
Activity Levels	<ul style="list-style-type: none"> No change in high activity levels Low activity levels increased by 26% Moderate activity levels decreased by 26% 	Significant increase in percentage of visitors partaking in low level activities
Activity Undertaken Other Than Walking	<ul style="list-style-type: none"> Activities undertaken other than walking increased by 75% 	Large increase in the percentage of visitors undertaking activities other than walking
Activity Type	<ul style="list-style-type: none"> 14% decrease in exploring off trail Jogging, cycling, and dog walking etc. on marked trails decreased by 32% 19% increase in stationary activities such sitting on benches 16% increase in swimming and other aquatic activities 	<p>Noted decrease in percentage of visitors jogging etc. on marked trails. However, there was also a decrease in visitors exploring off of designated trails</p> <p>Percentage increase in both stationary activities and aquatic related activities</p>

Survey	Notable Differences	Comment
Impact Severity Level	<ul style="list-style-type: none"> No changes observed 	No changes observed
Impact Type	<ul style="list-style-type: none"> 17% decrease in trampling 17% increase in noise 33% decrease in in removal of vegetation 	Low percentage of impacts recorded during surveys, however there was an increase from the number of impacts observed during the 2021 survey

1.7 Ecological Monitoring Results

1.7.1 Ecological Constraints

Species within Derrynane are sensitive to pollution, disturbance effects, invasive species and habitat availability and the habitats are sensitive to hydrological changes, pollution, land use management changes and drainage.

Table 1.5 Designated sites within 2km of Derrynane Beach and relevant ecological receptors

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[001346]	Derrynane Bay Islands And Marsh, Lamb's Head pNHA	0.00	pNHA	
[004154]	Iveragh Peninsula SPA	0.11	SPA	Kittiwake (<i>Rissa tridactyla</i>) [A188], Peregrine falcon (<i>Falco peregrinus</i>) [A103], Guillemot (<i>Uria aalge</i>) [A199], Chough (<i>Pyrrhocorax pyrrhocorax</i>) [A346], Fulmar (<i>Fulmarus glacialis</i>) [A009]
[000365]	Killarney National Park, Macgillycuddy's Reeks And Caragh River Catchment pNHA	0.91	pNHA	

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[000365]	Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC	0.91	SAC	Alpine and Boreal heaths [4060], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>) [6410], Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0], Otter (<i>Lutra lutra</i>) [1355], Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010], Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation [3260], Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130], Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoetes-Nanojuncetea</i> [3130], Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110], European dry heaths [4030], <i>Taxus baccata</i> woods of the British Isles [91J0], River lamprey (<i>Lampetra fluviatilis</i>) [1099], Kerry Slug (<i>Geomalacus maculosus</i>) [1024], Lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) [1303], Marsh Fritillary (<i>Euphydryas aurinia</i>) [1065], Atlantic salmon (<i>Salmo salar</i>) [1106], Slender naiad (<i>Najas flexilis</i>) [1833], Brook Lamprey (<i>Lampetra planeri</i>) [1096], Sea Lamprey (<i>Petromyzon marinus</i>) [1095], Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) [1029], Slender Naiad (<i>Najas flexilis</i>) [1833], Killarney Shad (<i>Alosa fallax killarneyensis</i>) [5046], Killarney fern (<i>Trichomanes speciosum</i>) [1421], Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0], Depressions on peat substrates of the <i>Rhynchosporion</i> [7150], Blanket bogs * if active bog [7130], <i>Juniperus communis</i> formations on heaths or calcareous grasslands [5130]

1.7.2 Habitat Descriptions

Derrynane Beach has a complex of habitats ranging from ornamental gardens and mixed broadleaved woodlands to complex dune systems including machaire habitats and fixed dunes. The machaire is particularly diverse with an average species richness of 16 species per square meter. There are ponds on site which host natterjack toads as well as freshwater marsh habitats. To the west of the site there are also Atlantic salt meadow and mud flat habitats.

The movement patterns of visitors are well managed for the most part. However, along the western edge of the site there are signs of trampling causing dune destabilisation and erosion along the ridge.

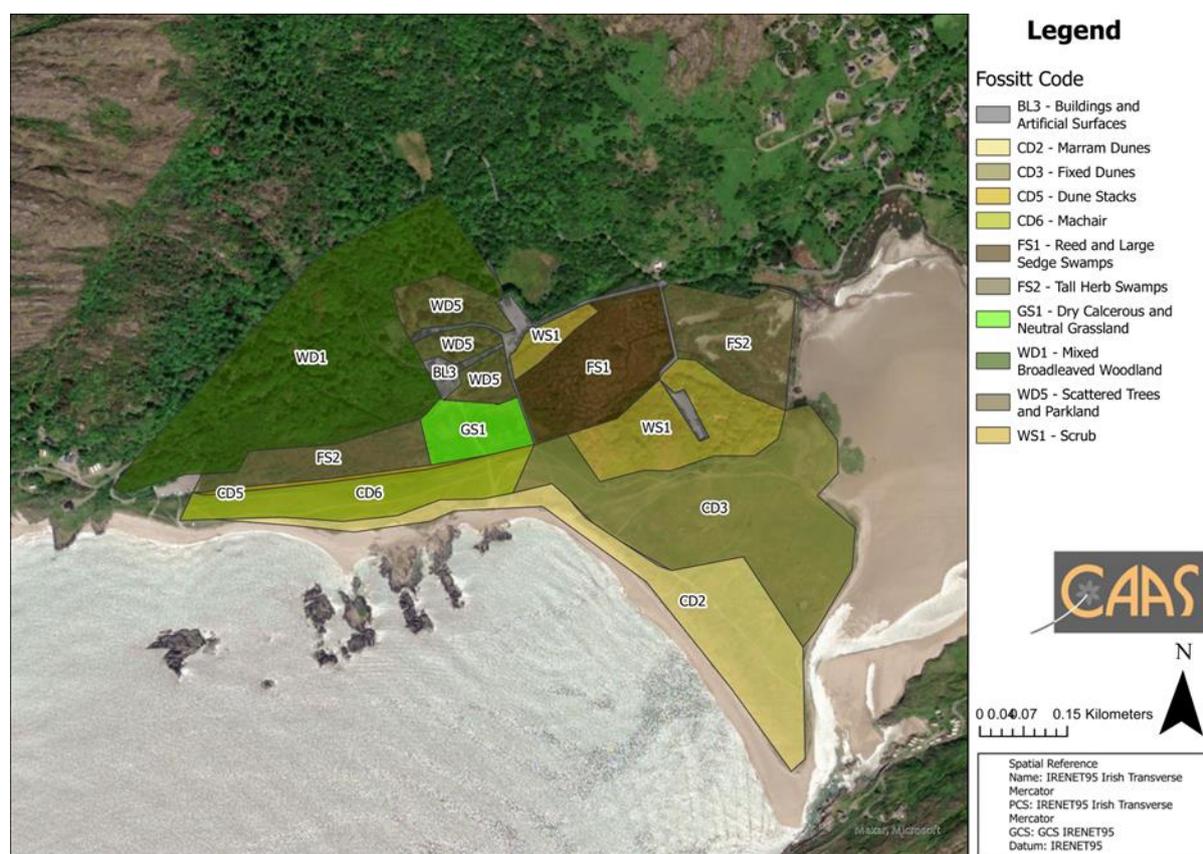


Figure 1.23 Habitats present at Derrynane Beach

1.7.3 Condition Assessment

Due to the nature of habitat quality, it was deemed unnecessary to conduct a condition assessment in 2022. Condition Assessment will continue in the 2023 survey.

1.7.4 NBDC Records of Mammals

The NBDC data shows a mixture of both marine and terrestrial mammals due to its location on the coast. Seals and dolphins were the most common marine mammals spotted while badgers, otters, rabbits, hares and hedgehogs were found to be abundant in the NBDC data.

Table 1.6 List of mammals that have been recorded at NBDC Hectads⁷ V55 & V56

Group	Common name	Scientific name	Number recorded
Marine mammal	Atlantic White-sided Dolphin	<i>Lagenorhynchus acutus</i>	1
Marine mammal	Bottle-nosed Dolphin	<i>Tursiops truncatus</i>	4
Marine mammal	Common Dolphin	<i>Delphinus delphis</i>	19
Marine mammal	Common Porpoise	<i>Phocoena phocoena</i>	11
Marine mammal	Common Seal	<i>Phoca vitulina</i>	23
Marine mammal	Fin Whale	<i>Balaenoptera physalus</i>	1
Marine mammal	Grey Seal	<i>Halichoerus grypus</i>	3
Marine mammal	Humpback Whale	<i>Megaptera novaeangliae</i>	1
Marine mammal	Long-finned Pilot Whale	<i>Globicephala melas</i>	2
Marine mammal	Minke Whale	<i>Balaenoptera acutorostrata</i>	6
Marine mammal	Phocidae	<i>Phocidae</i>	2
Marine mammal	Pinnipedia	<i>Pinnipedia</i>	1
Marine mammal	Risso's Dolphin	<i>Grampus griseus</i>	1
Marine mammal	Sei Whale	<i>Balaenoptera borealis</i>	1
Marine mammal	Striped Dolphin	<i>Stenella coeruleoalba</i>	2
Terrestrial mammal	Brown Long-eared Bat	<i>Plecotus auritus</i>	1
Terrestrial mammal	Brown Rat	<i>Rattus norvegicus</i>	5
Terrestrial mammal	Eurasian Badger	<i>Meles meles</i>	47
Terrestrial mammal	Eurasian Pygmy Shrew	<i>Sorex minutus</i>	5
Terrestrial mammal	European Otter	<i>Lutra lutra</i>	13

⁷ 10km² grid

Group	Common name	Scientific name	Number recorded
Terrestrial mammal	European Rabbit	<i>Oryctolagus cuniculus</i>	21
Terrestrial mammal	Feral Goat	<i>Capra hircus</i>	1
Terrestrial mammal	Irish Hare	<i>Lepus timidus subsp. hibernicus</i>	67
Terrestrial mammal	Irish Stoat	<i>Mustela erminea subsp. hibernica</i>	4
Terrestrial mammal	Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>	4
Terrestrial mammal	Lesser Noctule	<i>Nyctalus leisleri</i>	1
Terrestrial mammal	Natterer's Bat	<i>Myotis nattereri</i>	2
Terrestrial mammal	Pine Marten	<i>Martes martes</i>	4
terrestrial mammal	Pipistrelle	<i>Pipistrellus pipistrellus</i>	2
Terrestrial mammal	Red Deer	<i>Cervus elaphus</i>	3
Terrestrial mammal	Red Fox	<i>Vulpes vulpes</i>	5
Terrestrial mammal	Sika Deer	<i>Cervus nippon</i>	5
Terrestrial mammal	Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	2
Terrestrial mammal	West European Hedgehog	<i>Erinaceus europaeus</i>	24
Terrestrial mammal	Wood Mouse	<i>Apodemus sylvaticus</i>	2

1.7.5 NBDC Records of Birds

The birds recorded at Derrynane Beach encompass a good mix between waders and passerines due to both its coastal and woodland habitats. The mudflats to the west of the site were identified to be a site of high importance for winter waders for foraging.

Table 1.7 List of wintering birds that have been recorded at NBDC Hectads⁸ V55 & V56

Group	Common name	Scientific name	Number recorded
Bird	American Robin	<i>Turdus migratorius</i>	2
Bird	Arctic Tern	<i>Sterna paradisaea</i>	5
Bird	Bar-tailed Godwit	<i>Limosa lapponica</i>	2
Bird	Barn Owl	<i>Tyto alba</i>	7
Bird	Barn Swallow	<i>Hirundo rustica</i>	37
Bird	Black-billed Magpie	<i>Pica pica</i>	32
Bird	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	1
Bird	Black-headed Gull	<i>Larus ridibundus</i>	18
Bird	Black-legged Kittiwake	<i>Rissa tridactyla</i>	5
Bird	Black-tailed Godwit	<i>Limosa limosa</i>	1
Bird	Black Guillemot	<i>Cephus grylle</i>	10
Bird	Blackcap	<i>Sylvia atricapilla</i>	1
Bird	Blue Tit	<i>Cyanistes caeruleus</i>	28
Bird	Cattle Egret	<i>Bubulcus ibis</i>	4
Bird	Chaffinch	<i>Fringilla coelebs</i>	37
Bird	Coal Tit	<i>Periparus ater</i>	23
Bird	Common Blackbird	<i>Turdus merula</i>	36
Bird	Common Bullfinch	<i>Pyrrhula pyrrhula</i>	15
Bird	Common Buzzard	<i>Buteo buteo</i>	1
Bird	Common Chiffchaff	<i>Phylloscopus collybita</i>	8
Bird	Common Coot	<i>Fulica atra</i>	4
Bird	Common Crane	<i>Grus grus</i>	1
Bird	Common Cuckoo	<i>Cuculus canorus</i>	11
Bird	Common Grasshopper Warbler	<i>Locustella naevia</i>	5
Bird	Common Greenshank	<i>Tringa nebularia</i>	6
Bird	Common Guillemot	<i>Uria aalge</i>	22
Bird	Common Kestrel	<i>Falco tinnunculus</i>	24
Bird	Common Kingfisher	<i>Alcedo atthis</i>	7
Bird	Common Linnet	<i>Carduelis cannabina</i>	18
Bird	Common Moorhen	<i>Gallinula chloropus</i>	3
Bird	Common Pheasant	<i>Phasianus colchicus</i>	31
Bird	Common Pochard	<i>Aythya ferina</i>	3
Bird	Common Raven	<i>Corvus corax</i>	21
Bird	Common Redshank	<i>Tringa totanus</i>	9
Bird	Common Sandpiper	<i>Actitis hypoleucos</i>	4
Bird	Common Scoter	<i>Melanitta nigra</i>	2
Bird	Common Shelduck	<i>Tadorna tadorna</i>	1
Bird	Common Snipe	<i>Gallinago gallinago</i>	16

⁸ 10km² grid

Group	Common name	Scientific name	Number recorded
Bird	Common Starling	<i>Sturnus vulgaris</i>	38
Bird	Common Swift	<i>Apus apus</i>	4
Bird	Common Tern	<i>Sterna hirundo</i>	5
Bird	Common Whitethroat	<i>Sylvia communis</i>	1
Bird	Common Wood Pigeon	<i>Columba palumbus</i>	37
Bird	Corn Crake	<i>Crex crex</i>	2
Bird	Dunlin	<i>Calidris alpina</i>	3
Bird	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	19
Bird	Eurasian Curlew	<i>Numerius arquata</i>	35
Bird	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	1
Bird	Eurasian Jackdaw	<i>Corvus monedula</i>	28
Bird	Eurasian Jay	<i>Garrulus glandarius</i>	1
Bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	23
Bird	Eurasian Siskin	<i>Carduelis spinus</i>	7
Bird	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	8
Bird	Eurasian Teal	<i>Anas crecca</i>	1
Bird	Eurasian Tree Sparrow	<i>Passer montanus</i>	6
Bird	Eurasian Treecreeper	<i>Certhia familiaris</i>	2
Bird	Eurasian Wigeon	<i>Anas penelope</i>	7
Bird	Eurasian Woodcock	<i>Scolopax rusticola</i>	9
Bird	European Goldfinch	<i>Carduelis carduelis</i>	21
Bird	European Greenfinch	<i>Carduelis chloris</i>	20
Bird	European Nightjar	<i>Caprimulgus europaeus</i>	1
Bird	European Robin	<i>Erithacus rubecula</i>	39
Bird	European Shag	<i>Phalacrocorax aristotelis</i>	17
Bird	Fieldfare	<i>Turdus pilaris</i>	8
Bird	Gadwall	<i>Anas strepera</i>	1
Bird	Goldcrest	<i>Regulus regulus</i>	21
Bird	Great Bittern	<i>Botaurus stellaris</i>	2
Bird	Great Black-backed Gull	<i>Larus marinus</i>	21
Bird	Great Cormorant	<i>Phalacrocorax carbo</i>	21
Bird	Great Crested Grebe	<i>Podiceps cristatus</i>	1
Bird	Great Northern Diver	<i>Gavia immer</i>	14
Bird	Great Tit	<i>Parus major</i>	25
Bird	Greater White-fronted Goose	<i>Anser albifrons</i>	1
Bird	Grey Heron	<i>Ardea cinerea</i>	16
Bird	Grey Plover	<i>Pluvialis squatarola</i>	1
Bird	Grey Wagtail	<i>Motacilla cinerea</i>	19
Bird	Greylag Goose	<i>Anser anser</i>	1
Bird	Hedge Accentor	<i>Prunella modularis</i>	23
Bird	Hen Harrier	<i>Circus cyaneus</i>	4
Bird	Herring Gull	<i>Larus argentatus</i>	26
Bird	Hooded Crow	<i>Corvus cornix</i>	33
Bird	House Martin	<i>Delichon urbicum</i>	8
Bird	House Sparrow	<i>Passer domesticus</i>	28
Bird	Kumlien's Iceland Gull	<i>Larus glaucooides subsp. kumlieni</i>	1
Bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	15
Bird	Lesser Redpoll	<i>Carduelis cabaret</i>	8
Bird	Little Egret	<i>Egretta garzetta</i>	9
Bird	Little Grebe	<i>Tachybaptus ruficollis</i>	5
Bird	Long-eared Owl	<i>Asio otus</i>	3
Bird	Long-tailed Tit	<i>Aegithalos caudatus</i>	5
Bird	Mallard	<i>Anas platyrhynchos</i>	25
Bird	Manx Shearwater	<i>Puffinus puffinus</i>	12
Bird	Meadow Pipit	<i>Anthus pratensis</i>	29
Bird	Merlin	<i>Falco columbarius</i>	3
Bird	Mew Gull	<i>Larus canus</i>	16
Bird	Mistle Thrush	<i>Turdus viscivorus</i>	16
Bird	Mute Swan	<i>Cygnus olor</i>	11
Bird	Northern Gannet	<i>Morus bassanus</i>	29
Bird	Northern Lapwing	<i>Vanellus vanellus</i>	6
Bird	Northern Wheatear	<i>Oenanthe oenanthe</i>	12
Bird	Peregrine Falcon	<i>Falco peregrinus</i>	3
Bird	Pied Wagtail	<i>Motacilla alba subsp. yarrellii</i>	10

Group	Common name	Scientific name	Number recorded
Bird	Razorbill	<i>Alca torda</i>	5
Bird	Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	37
Bird	Red-breasted Merganser	<i>Mergus serrator</i>	9
Bird	Red-throated Diver	<i>Gavia stellata</i>	5
Bird	Red Grouse	<i>Lagopus lagopus</i>	2
Bird	Red Knot	<i>Calidris canutus</i>	1
Bird	Redwing	<i>Turdus iliacus</i>	10
Bird	Reed Bunting	<i>Emberiza schoeniclus</i>	15
Bird	Ringed Plover	<i>Charadrius hiaticula</i>	11
Bird	Rock Pigeon	<i>Columba livia</i>	6
Bird	Rock Pipit	<i>Anthus petrosus</i>	7
Bird	Rook	<i>Corvus frugilegus</i>	18
Bird	Rosy Starling	<i>Sturnus roseus</i>	1
Bird	Ruddy Turnstone	<i>Arenaria interpres</i>	4
Bird	Sand Martin	<i>Riparia riparia</i>	6
Bird	Sandwich Tern	<i>Sterna sandvicensis</i>	1
Bird	Scandinavian Rock Pipit	<i>Anthus petrosus subsp. littoralis</i>	1
Bird	Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	7
Bird	Sky Lark	<i>Alauda arvensis</i>	27
Bird	Song Thrush	<i>Turdus philomelos</i>	24
Bird	Spotted Flycatcher	<i>Muscicapa striata</i>	8
Bird	Squacco Heron	<i>Ardeola ralloides</i>	1
Bird	Stonechat	<i>Saxicola torquata</i>	25
Bird	Surf Scoter	<i>Melanitta perspicillata</i>	15
Bird	Tufted Duck	<i>Aythya fuligula</i>	1
Bird	Twite	<i>Carduelis flavirostris</i>	1
Bird	Water Rail	<i>Rallus aquaticus</i>	5
Bird	White-throated Dipper	<i>Cinclus cinclus</i>	4
Bird	White Wagtail	<i>Motacilla alba</i>	19
Bird	Whooper Swan	<i>Cygnus cygnus</i>	2
Bird	Willow Warbler	<i>Phylloscopus trochilus</i>	18
Bird	Winter Wren	<i>Troglodytes troglodytes</i>	31
Bird	Yellowhammer	<i>Emberiza citrinella</i>	5

1.8 Recommendations

As noted in the 2021 report, Derrynane beach has strong management practices that focus on biodiversity and is generally, well managed with engaging nature signage.

- Rabbit populations on site are causing dune destabilisation and measures should be explored to mitigate the impacts caused by the rabbit population
- The introduction of a dynamic trail management system should be considered to help protect dune erosion
- Designated areas for off-lead dogs should be introduced to reduce impacts to wildlife 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 sites⁹. For the purposes of this monitoring programme, habitat condition is assessed at every site by the surveyor examining four core criteria:

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

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

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

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

Table II-1 Habitat rating scale and condition assessment

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

⁹ Note: Where possible, the same surveyor is used across multiple sites – but in some instances, different surveyors survey different sites. This can lead to a human variation in the assigning of the rating scale for impact. However, there will be sufficient repetition of the data through the several years of the monitoring programme to account for any variations in human interpretation on this scale.