NATIONAL TOURISM MONITORING PROGRAMME 2021-2025

ANNUAL RESULTS FOR 2021

STREEDAGH BEACH

for: **Fáilte Ireland**

88 – 95 Amiens Street

Dublin 1

D01 WR86

by: **CAAS Ltd.**

1st Floor,

24-26 Ormond Quay Upper

Dublin 7

October 2022

Document Control

	Author/Reviewer	Date
Prepared by	Andrew Torsney & Callum O'Regan	Various dates to 31 July 2022
Reviewed by	Conor Skehan & Maeve Walsh	24 October 2022
Status of this version	Final	

Contents

Streedagh Beach – Interesting Finds

ECOLOGICAL HIGHLIGHTS

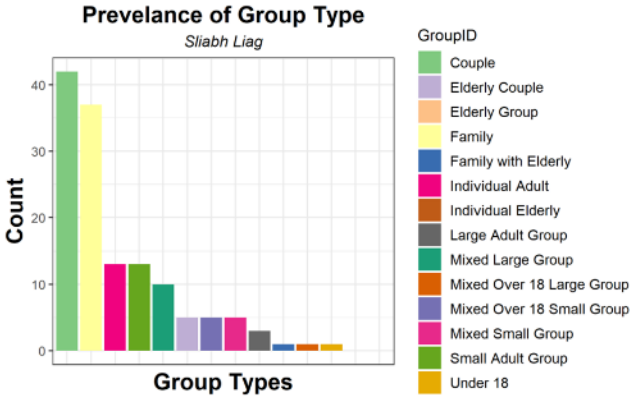
All of the designated features of the Streedagh Point SAC are present on site. Namely, Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330], Narrow-mouthed whorl snail (*Vertigo angustior*) [1014], Perennial vegetation of stony banks [1220], Mudflats and sandflats not covered by seawater at low tide [1140], Shifting dunes along the shoreline with Ammophila arenaria - white dunes [2120], Mediterranean salt meadows (Juncetalia maritimi) [1410]

The protection of these habitats is paramount.

Great northern diver (*Gavia immer*), Golden plover (*Pluvialis apricaria*), Bar-tailed godwit (*Limosa lapponica*) and Curlew (*Numenius arquata*) are known to winter at this beach.

VISITOR NUMBERS AND DWELL TIME

- 156 people visited the site over 8 hours
- Average dwell time of 44 minutes



KEY RECOMMENDATIONS

- The density of trails is extremely high – but all habitats off trail are relatively undisturbed. Efforts should be made to consolidate the trails on site. A dynamic path management system could alleviate the pressures which are occurring along with a habitat restoration plan for closed trails.
- Existing dune parking management system is ineffective, with movable barriers.
- Engaging interpretive material is required to increase visitor awareness of the importance of dunes and the damage to habitats caused by extensive trail networks.

VISITOR INTERACTION & MANAGEMENT

- Visitor interactions on site well controlled with strong management practices in place.
- Over 75% of activities recorded by visitors were deemed to be of low level such as swimming and dog walking.
- Impacts observed on site include desire lines and erosion.
- Most of the visitors to the site stayed for at least 44 minutes –given the nature of the site itself as a beach.
- All visitors did not read available signage on site.

Highlights:

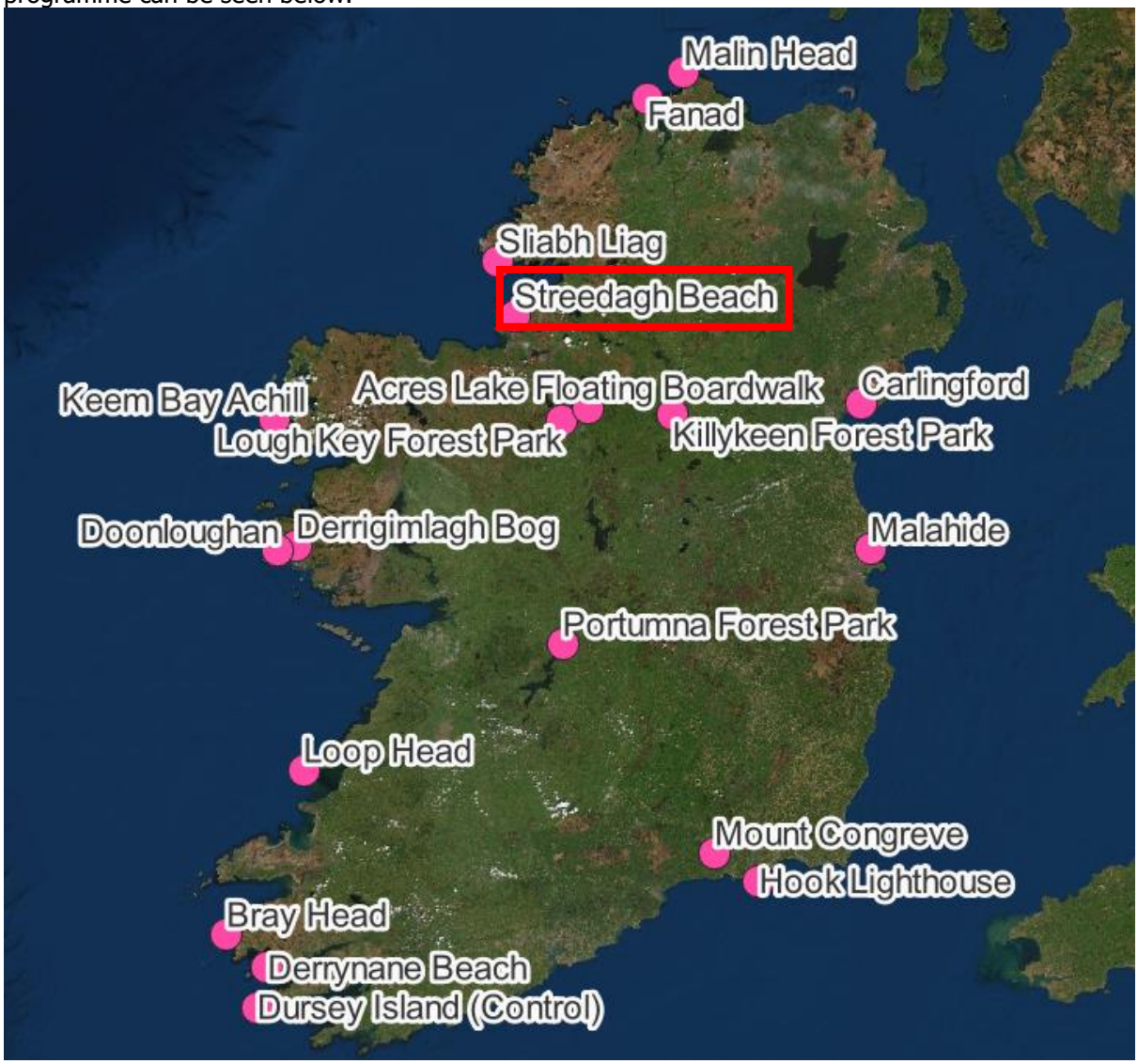
- Dune management system is needed
- Camping control measures are needed.
- Long site dwell time of at least 44 minutes.
- Site signage is limited – missed opportunity for wildlife and habitats.

1 Streedagh 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; a map of all sites for the 2021 – 2025 programme can be seen below.



The purpose of the programme is as follows:

- To gain more insight from an environmental perspective as to what is happening at a variety of sites where we encourage visitors to frequent,
- To gather information (visitor behaviour, movement, path and trail conditions, and the presence of 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.

To date, the Wild Atlantic Way Environmental Monitoring Programme has allowed us to sample and monitor the behaviour & movement of over 26,000 visitors, identifying where there were stresses on the environment or potential future risks as well as good and bad practices.

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). Following on from the WAW monitoring data and in refining the methodology as a result, we aim to: understand what activities cause which impact; and, what are the factors which influence these activity choices by visitors?

The aim is to build on the knowledge gathered by the 2015-2019 programme. This will be used in combination with a continued engagement and exchange of knowledge with site managers, to tailor monitoring requirements, and enhance the programme outcomes, for each site chosen nationally for the new 2021-2025 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 recommendations to be identified and shared with the relevant stakeholders, in order to support progressive and informed management practices

1.2 Methods & Surveys

The following surveys were undertaken at Streedagh 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 Streedagh Beach was undertaken on the 9th of July 2021, with max temperatures reaching approximately 21.6° C, with very little to no rainfall and low levels of wind on the day[1]. These surveys followed an 8-hour time period recording samples of visitor behaviour of an many visitors on site as possible. Visitor movement patterns, demographic data and activities undertaken were recorded for all sampled visitors. Where activities had associated impacts, these were also recorded and the relevant severity was recorded using the same coding system as with the WAW monitoring (see Appendix I for details). It is important to note that the visitor characterisation surveys are indiscriminate between visitors and local amenity use.

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 to give an indication of the presence of wintering birds. This information can inform potential management actions related to amenity services such as lighting which could conflict with protected species on site and their sensitivities.

1.3 Site Description of Streedagh Beach

Streedagh Beach in northern County Sligo, is around 3km long. It contains a wide range of important habitats such as a calcareous spring, marram dunes, fixed dunes and lower salt marshes and as such, is within the Streedagh Point Dunes SAC. It also has important historical association with the Spanish Armada as well as two nearby megalithic tombs. The remains of a 14th Century Spanish Armada ship still mostly buried at the far end of the strand is visible at very low tide.

Figure 1.1 Streedagh Beach

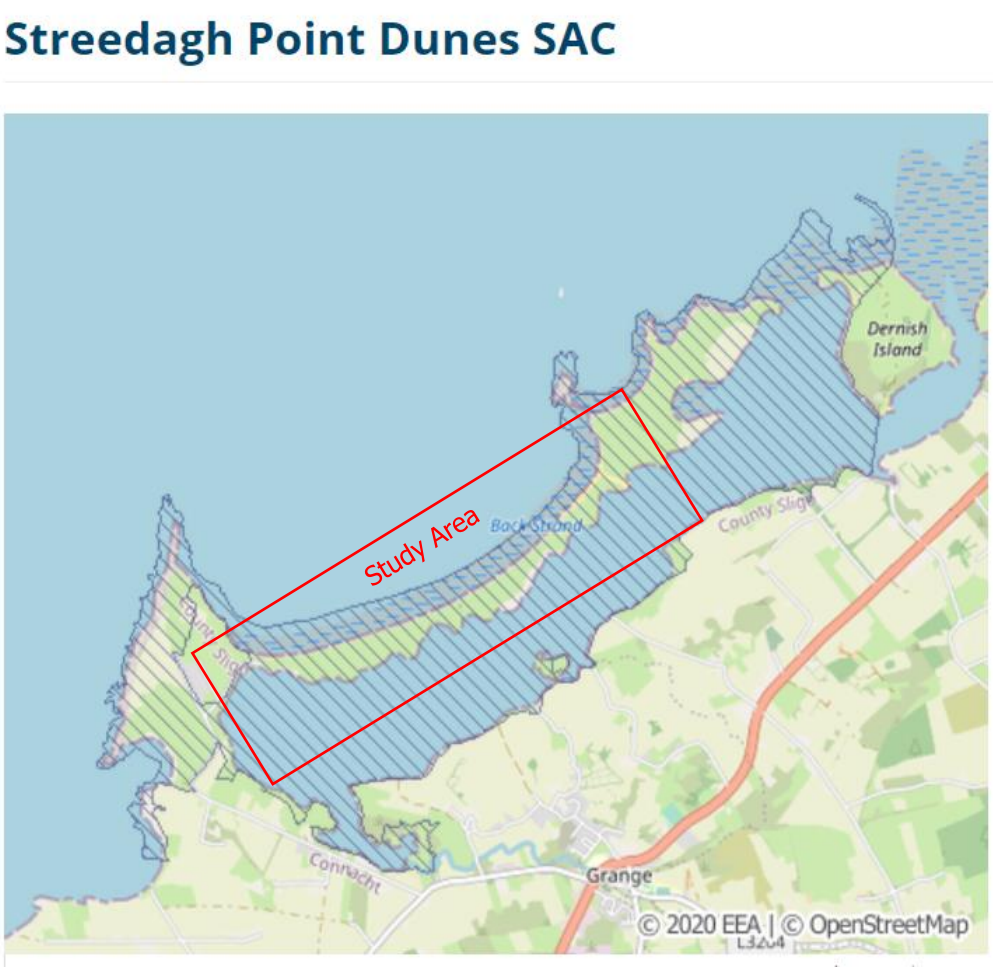


Figure 1.2 Study Area within Streedagh Point Dunes SAC

1.4 Pathways and Features Condition Results

1.4.1 Pathway Condition

Most of the main paths at Streedagh Beach are confined to an area within 250m of the paved road access point and the loosely organised – but unedged parking area that intrudes at busy times onto muddy sand and saltmarsh areas. There is occasional and slight evidence of paths or trails for remaining 2km of the beach length.

There are various degrees of pathways formation which show various levels of compaction and damage caused by walkers and vehicles in this restricted area.

Figure 1.3 Pathways identified at Streedagh Beach

Figure 1.4 Pathways at Streedagh Beach

1.4.2 Features Condition

Streedagh Beach contains features that would be expected of a coastal visitor area such as a lifeguard hut along with toilets and carpark surfaced with unbound material. The beach also has signage related to beach safety and warnings of strong currents. Along with these, it also has information signage such as historical information and a general information board as well as signage that designates the area as a Special Area of Conservation, with barriers that prevent cars from entering dunes, and as part of the Wild Atlantic Way (Figure 1.6).

Figure 1.5 Features recorded at Streedagh Beach

Figure 1.6 Features at Streedagh Beach

1.4.3 Hazards

No hazards were noted or recorded at Streedagh Beach during hazard mapping.

1.5 Visitor Characterisation Survey

The visitor monitoring surveys resulted in a total of 156 visitors (which represent 65 group observations). 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 44 minutes; with the following activities undertaken during the survey (listed in order of occurrence rate):

Activity Type
Swimming
Dog walking (off lead)
Jogging
Photographing

Activity Type
Surfing
Picnicking
Dog walking (on lead)
Frisbee/ Catch
Off road driving
Bodyboarding
Building sand castles
Digging
Horse-riding
Hurling
Local farmer checking cows
Shell collecting
Sitting
Yoga

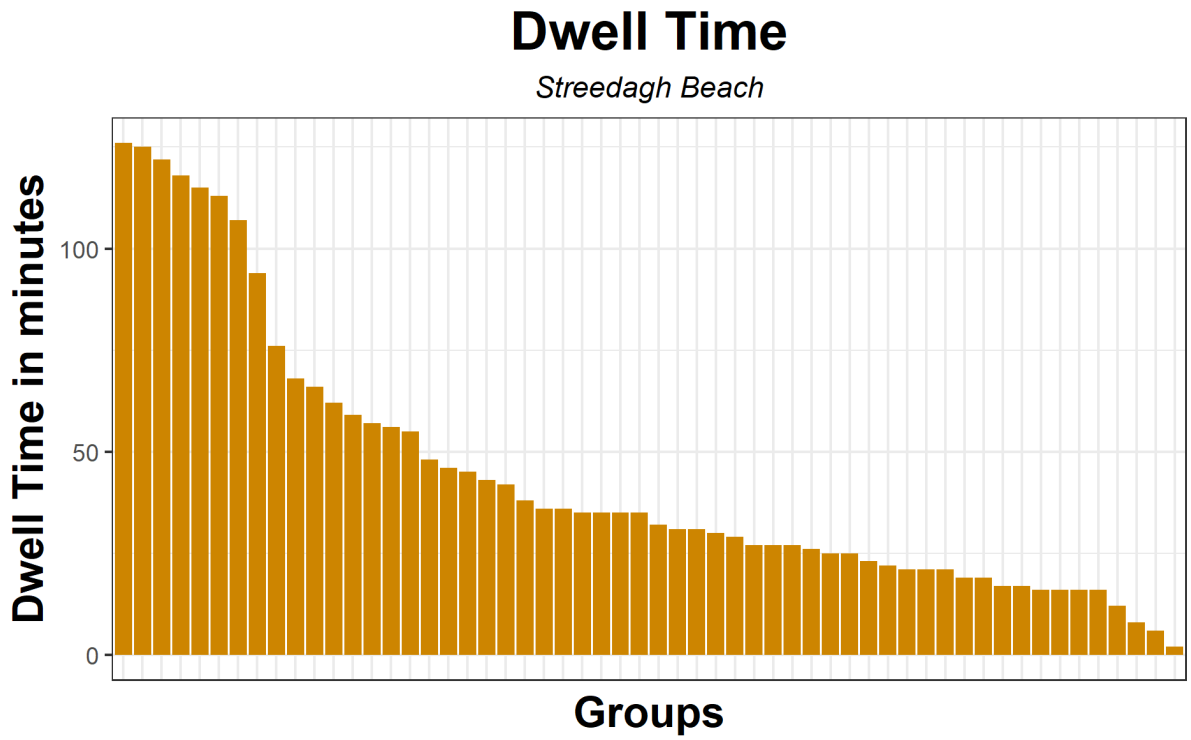


Figure 1.7 Duration of Time Spent at Streedagh Beach

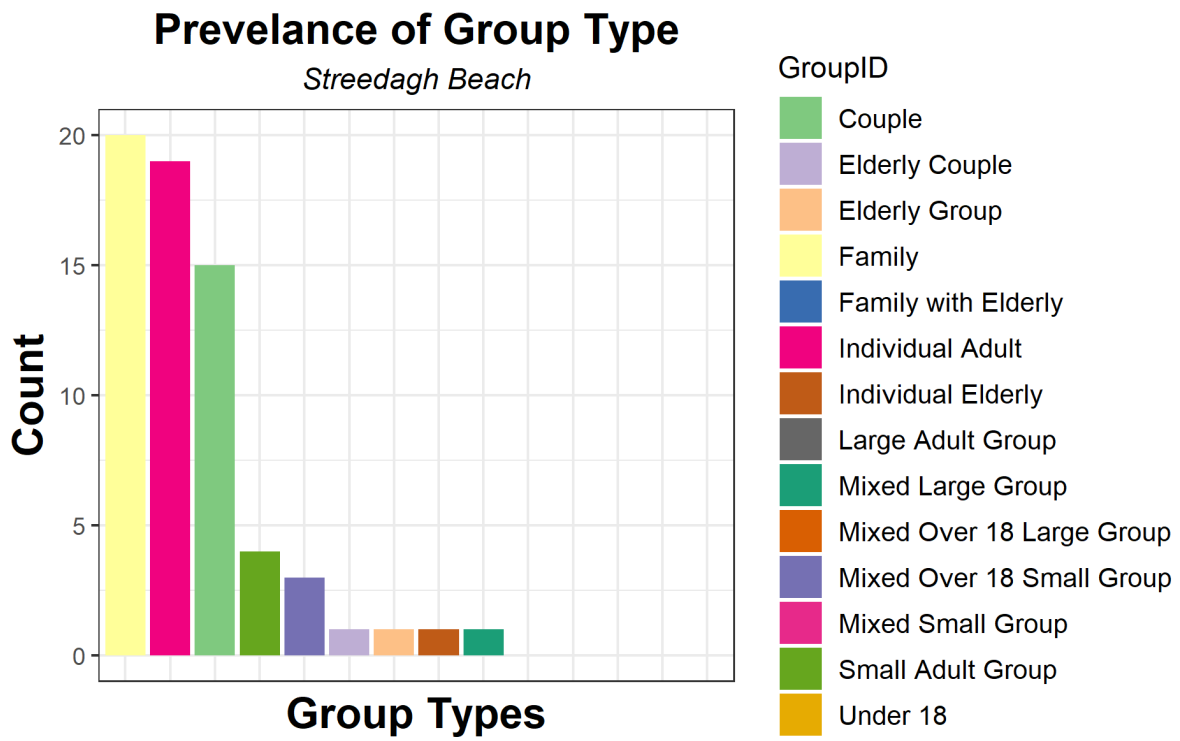


Figure 1.8 Groups of visitors that visited Streedagh Beach

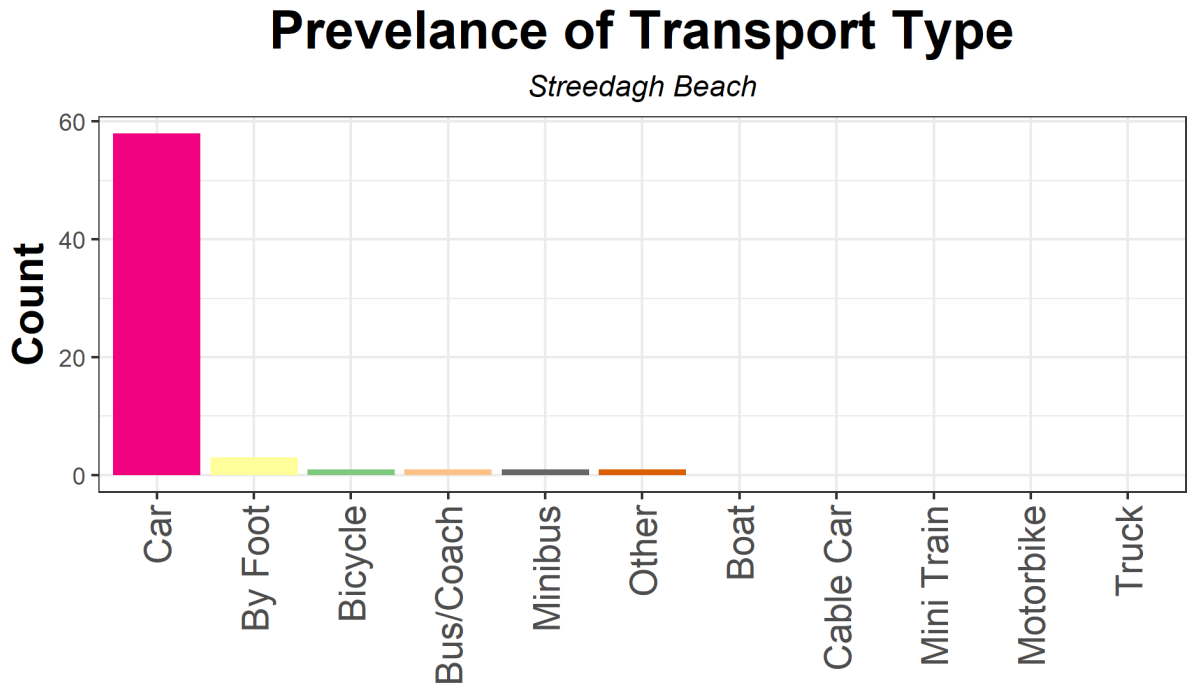


Figure 1.9 Mode of transport used to visit Streedagh Beach

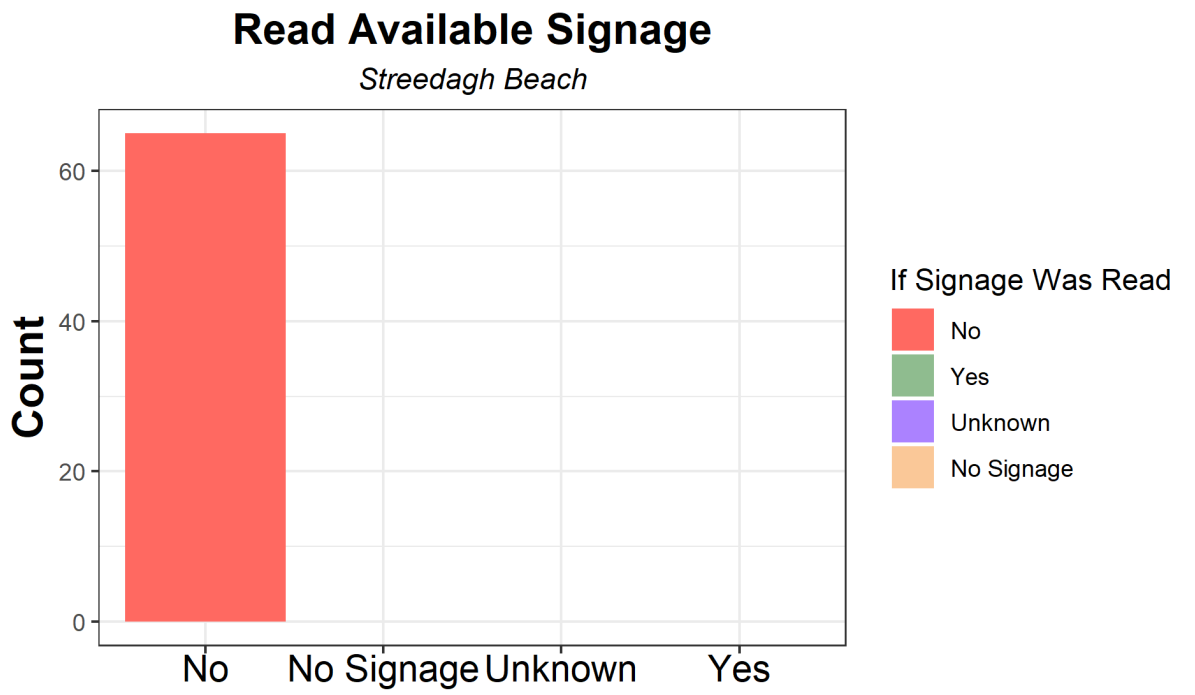


Figure 1.10 Use of Interpretive Material at Streedagh Beach

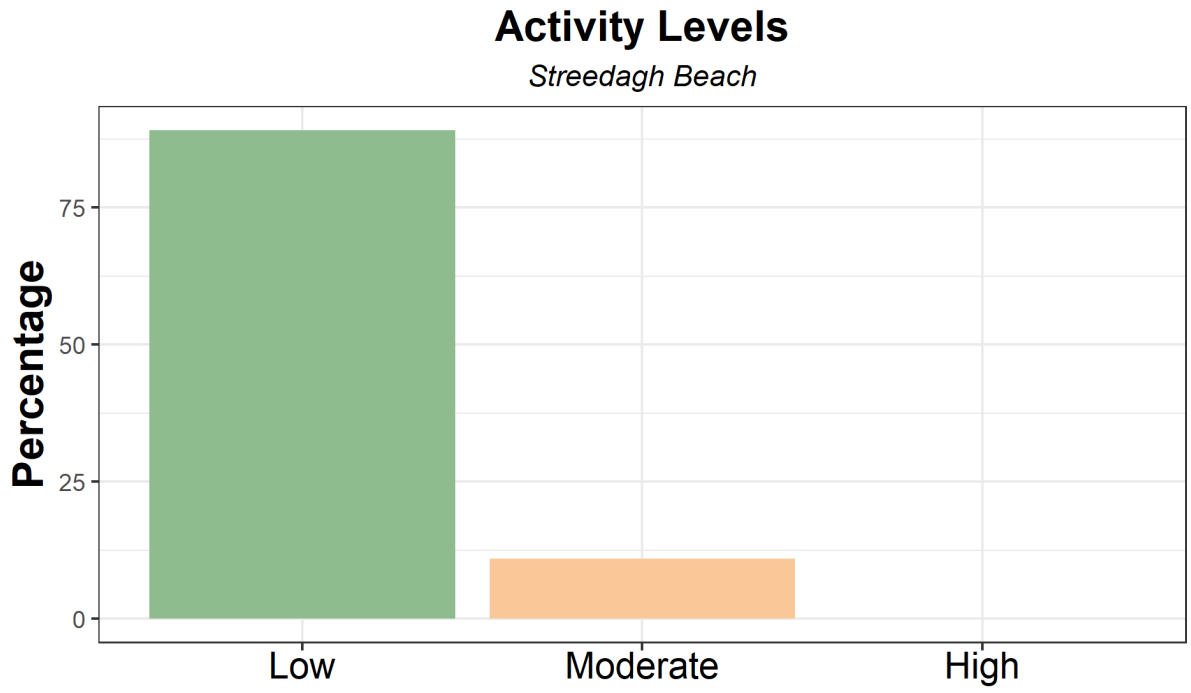


Figure 1.11 Categories of Activity Levels Observed at Streedagh Beach

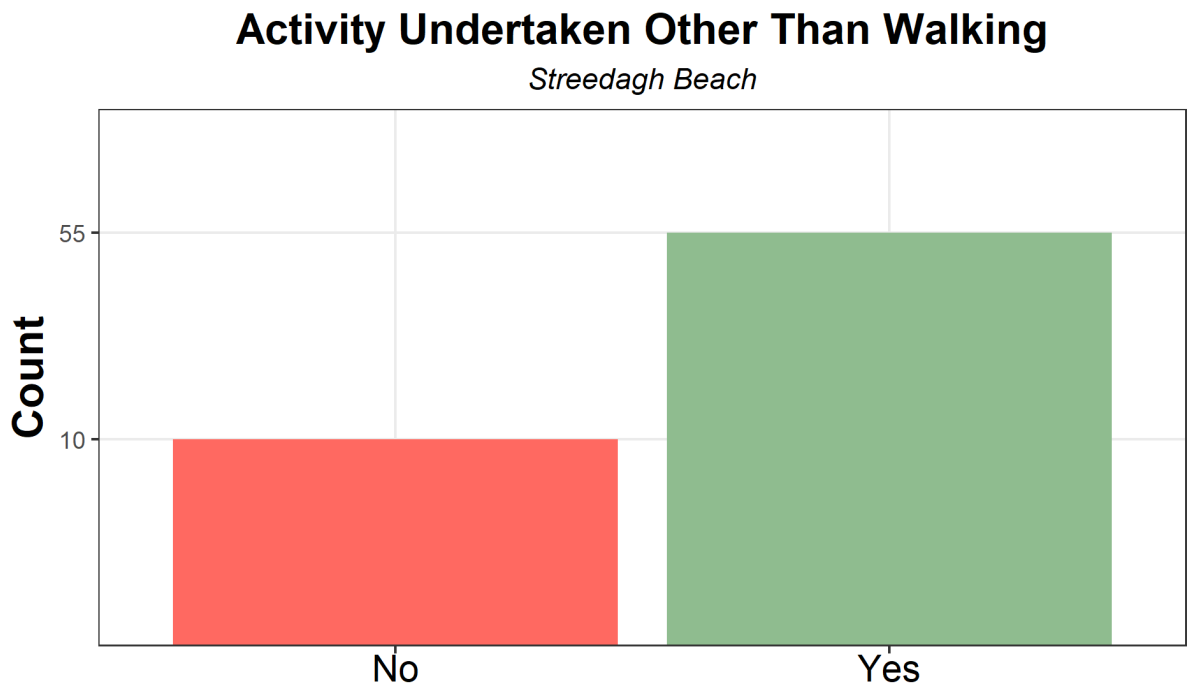


Figure 1.12 Activities undertaken other than walking

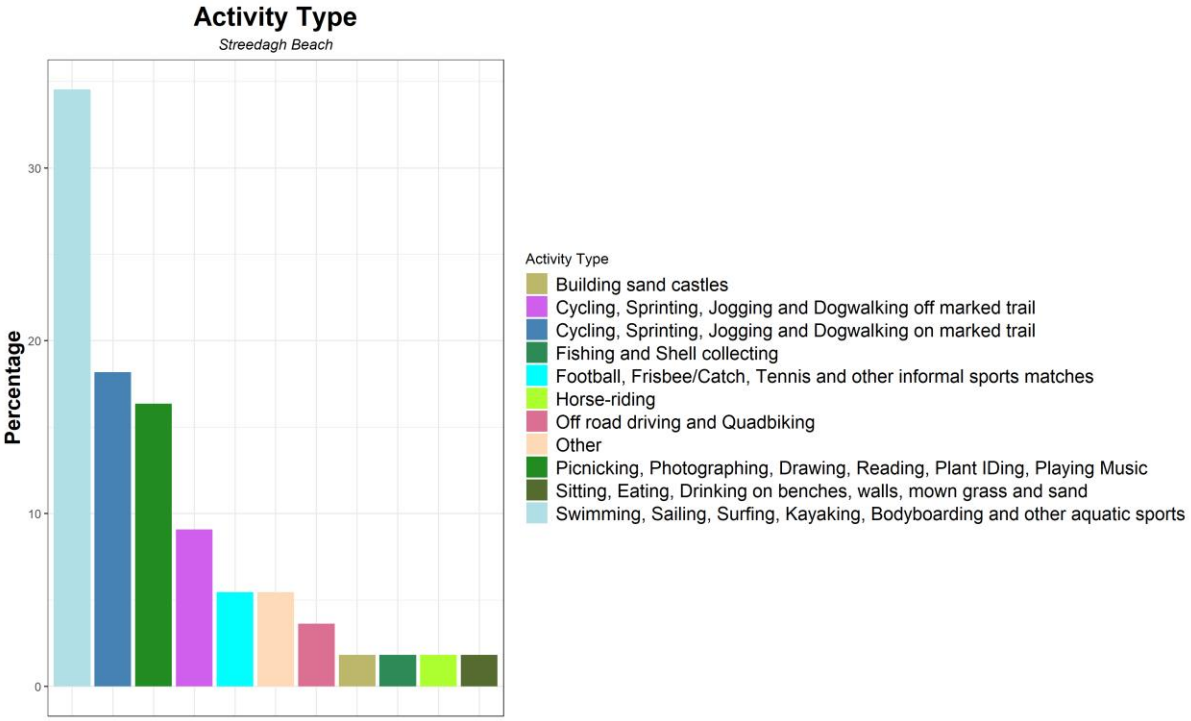


Figure 1.13 Range of Visitor Activities Observed at Streedagh Beach

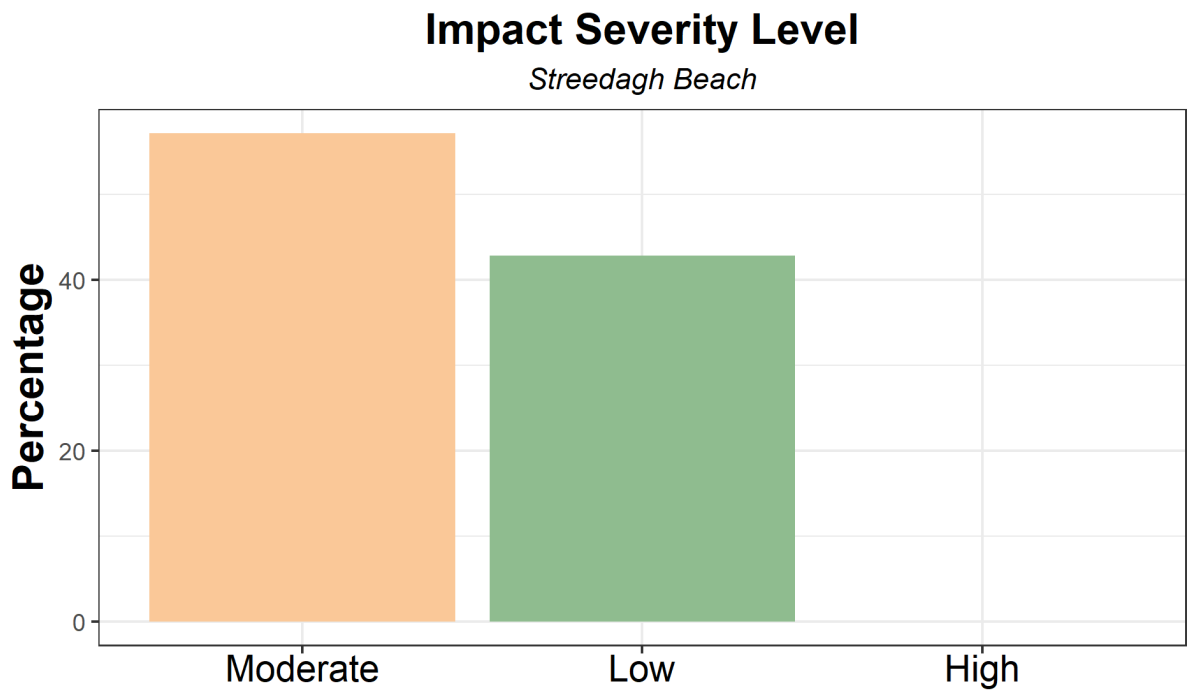


Figure 1.14 Categories of Environmental Impact Levels Observed at Streedagh Beach as a result of Visitor Activities

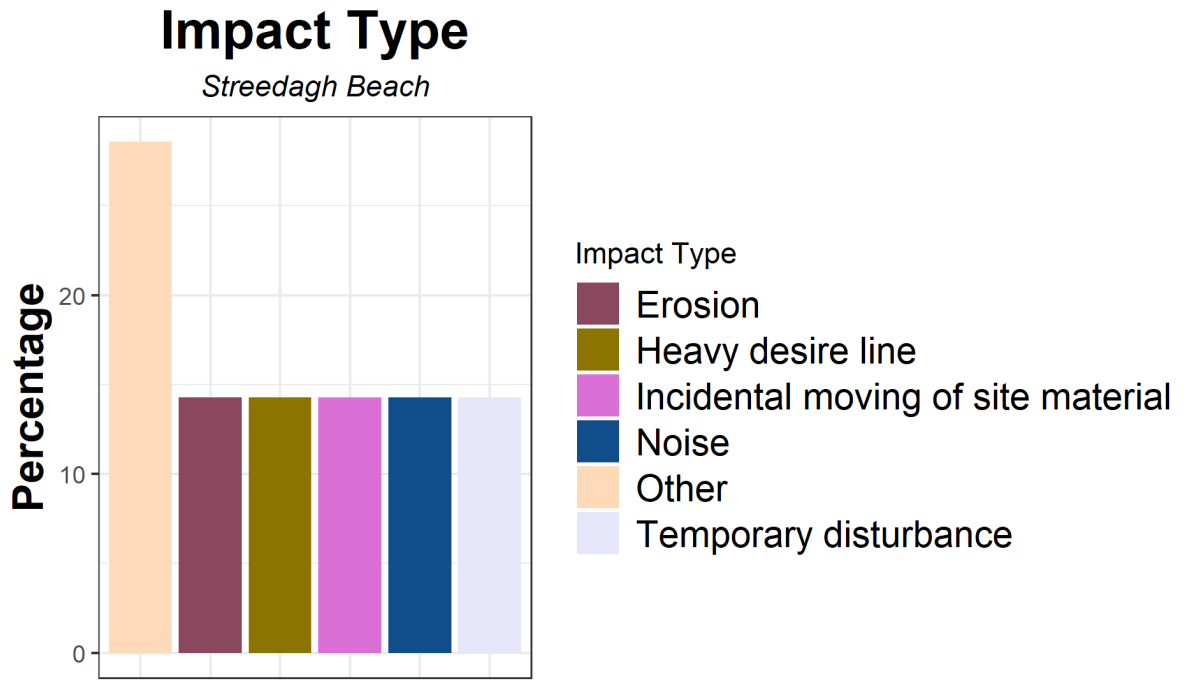


Figure 1.15 Range of Environmental Impacts Observed at Streedagh Beach

Figure 1.16 Visitor movement patterns at Streedagh Beach

Of the 65 groups recorded on site 85% of them undertook activities other than walking. These activities resulted in 7 impacts being observed on site during the survey. Thus, 13% of activities on site resulted in impacts on the environment. The impact severity levels varied with 43% of the impacts being low, 57% of impacts being moderate, and 0% of impacts being high severity. The impacts identified for the site were:

Impact Type	Count
Erosion	1
Heavy desire line	1
Incidental moving of site material	1
Noise	1
Other	2
Temporary disturbance	1

1.6 Ecological Monitoring Results

1.6.1 Ecological Constraints

The sensitive species and habitats of the designated sites within 2km of Streedagh Beach are sensitive to hydrological changes, land use management and overgrazing.

Table 1.1 Designated sites within 2km of Streedagh Beach and relevant ecological receptors

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[001680]	Streedagh Point Dunes pNHA	0	pNHA	na

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[001680]	Streedagh Point Dunes SAC	0	SAC	Fixed coastal dunes with herbaceous vegetation - grey dunes [2130], Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)* [1330], Narrow-mouthed whorl snail *(Vertigo angustior)* [1014], Perennial vegetation of stony banks [1220], Mudflats and sandflats not covered by seawater at low tide [1140], Shifting dunes along the shoreline with *Ammophila arenaria* - white dunes [2120], Mediterranean salt meadows *(Juncetalia maritimi)* [1410]

1.6.2 Habitat Descriptions

The majority of the habitats at this site consist of sand shores (Fossitt Code LS2) and infralittoral muddy sands (Fossitt Code SS2). Streedagh Beach also contains marram dunes (Fossitt Code CD2) and fixed dunes (Fossitt Code CD3) which align with the Annex I habitat for which the SAC, Streedagh Point Dunes, is designated (Fixed coastal dunes with herbaceous vegetation – grey dunes [2130]).

There is an extensive network of trails through the dunes which have locally exhibit erosion and exposed sand. The density of trails is extremely high but localised – but all habitats off-trail are relatively undisturbed.

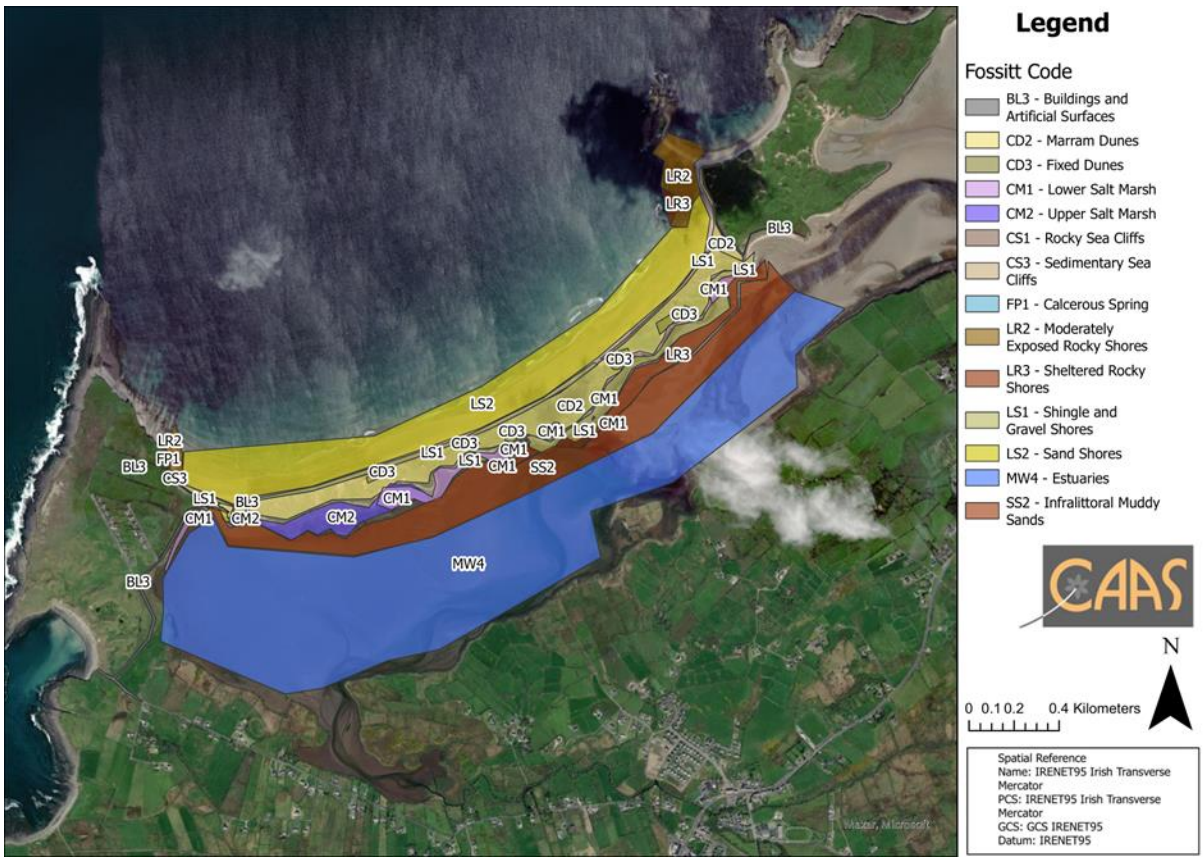


Figure 1.17 Habitats present at Streedagh Beach

1.6.3 Condition Assessment

There are a range of habitats present on site, the assessment of habitat condition identified that the overall habitat quality[2] following the assessment scale was "1" which means the majority of the habitats have no evidence of any negative impact on the habitats or other ecological features. There were 63 recorded incidents of damage to habitats occurring off the marked paths on site. The causes of the damage were identified to be walkers, agriculture, vehicles and camping.

[2] This value was calculated using the methods set out in Appendix II

1.6.4 Mammals on Site

The NBDC data shows that the most of the mammal species within the area of Streedagh Beach are marine mammals. Common seals, grey seal and bottle-nosed dolphins were the most commonly observed marine mammal species in the area while in regards to terrestrial mammals, there were also numbers of hares, badgers, otters and foxes that were observed and recorded in the area.

Table 1.2 List of mammals that have been recorded at NBDC Hectad G65

Taxonomic group	Common name	Scientific name	Record count
Marine mammal	Bottle-nosed Dolphin	*Tursiops truncatus*	14
Marine mammal	Common Dolphin	*Delphinus delphis*	3
Marine mammal	Common Porpoise	*Phocoena phocoena*	9
Marine mammal	Common Seal	*Phoca vitulina*	38
Marine mammal	Cuvier's Beaked Whale	*Ziphius cavirostris*	2
Marine mammal	Grey Seal	*Halichoerus grypus*	13
Marine mammal	Minke Whale	*Balaenoptera acutorostrata*	2
Marine mammal	Phocidae	*Phocidae*	1
Marine mammal	Sowerby's Beaked Whale	*Mesoplodon bidens*	1
Marine mammal	Sperm Whale	*Physeter macrocephalus*	1
Marine mammal	Striped Dolphin	*Stenella coeruleoalba*	1
Marine mammal	White-beaked Dolphin	*Lagenorhynchus albirostris*	1
Terrestrial mammal	American Mink	*Mustela vison*	1
Terrestrial mammal	Brown Long-eared Bat	*Plecotus auritus*	1
Terrestrial mammal	Eurasian Badger	*Meles meles*	8
Terrestrial mammal	Eurasian Pygmy Shrew	*Sorex minutus*	1
Terrestrial mammal	Eurasian Red Squirrel	*Sciurus vulgaris*	1
Terrestrial mammal	European Otter	*Lutra lutra*	8
Terrestrial mammal	European Rabbit	*Oryctolagus cuniculus*	7
Terrestrial mammal	Irish Hare	*Lepus timidus subsp. hibernicus*	12
Terrestrial mammal	Irish Stoat	*Mustela erminea subsp. hibernica*	5
Terrestrial mammal	Lesser Noctule	*Nyctalus leisleri*	3
Terrestrial mammal	Pine Marten	*Martes martes*	4
Terrestrial mammal	Pipistrelle	*Pipistrellus pipistrellus*	2
Terrestrial mammal	Red Fox	*Vulpes vulpes*	9
Terrestrial mammal	Soprano Pipistrelle	*Pipistrellus pygmaeus*	5
Terrestrial mammal	West European Hedgehog	*Erinaceus europaeus*	1
Terrestrial mammal	Wolf	*Canis lupus*	1
Terrestrial mammal	Wood Mouse	*Apodemus sylvaticus*	1

1.6.5 Wintering Bird Survey

Great northern diver (*Gavia immer*), Golden plover (*Pluvialis apricaria*), Bar-tailed godwit (*Limosa lapponica*) and Curlew (*Numenius arquata*) are known to winter at this beach.

Table 1.3 Results of the wintering bird survey conducted at Streedagh Beach

Common name	Scientific name	Record count
Eurasian Curlew	*Numenius arquata*	6
Great Northern Diver	*Gavia immer*	1
Bar-tailed Godwit	*Limosa lapponica*	6
Golden plover	*Pluvialis apricaria*	15

Table 1.4 List of wintering birds that have been recorded at NBDC Hectad G65

Taxonomic group	Common name	Scientific name	Record count
Bird	Arctic Tern	*Sterna paradisaea*	1
Bird	Barnacle Goose	*Branta leucopsis*	4
Bird	Bar-tailed Godwit	*Limosa lapponica*	7
Bird	Black Guillemot	*Cepphus grylle*	6
Bird	Black-headed Gull	*Larus ridibundus*	6
Bird	Black-legged Kittiwake	*Rissa tridactyla*	9

Taxonomic group	Common name	Scientific name	Record count
Bird	Black-tailed Godwit	*Limosa limosa*	1
Bird	Branta bernicla subsp. hrota	*Branta bernicla subsp. hrota*	5
Bird	Brent Goose	*Branta bernicla*	7
Bird	Common Eider	*Somateria mollissima*	7
Bird	Common Greenshank	*Tringa nebularia*	7
Bird	Common Guillemot	*Uria aalge*	1
Bird	Common Redshank	*Tringa totanus*	10
Bird	Common Sandpiper	*Actitis hypoleucos*	1
Bird	Common Scoter	*Melanitta nigra*	4
Bird	Common Shelduck	*Tadorna tadorna*	5
Bird	Common Snipe	*Gallinago gallinago*	3
Bird	Common Tern	*Sterna hirundo*	1
Bird	Dunlin	*Calidris alpina*	10
Bird	Eurasian Curlew	*Numenius arquata*	14
Bird	Eurasian Oystercatcher	*Haematopus ostralegus*	15
Bird	Eurasian Teal	*Anas crecca*	2
Bird	Eurasian Wigeon	*Anas penelope*	4
Bird	European Golden Plover	*Pluvialis apricaria*	2
Bird	European Shag	*Phalacrocorax aristotelis*	20
Bird	European Storm-petrel	*Hydrobates pelagicus*	4
Bird	Glaucous Gull	*Larus hyperboreus*	1
Bird	Great Black-backed Gull	*Larus marinus*	10
Bird	Great Cormorant	*Phalacrocorax carbo*	8
Bird	Great Egret	*Ardea alba*	1
Bird	Great Northern Diver	*Gavia immer*	7
Bird	Great Skua	*Stercorarius skua*	1
Bird	Great Tit	*Parus major*	9
Bird	Grey Heron	*Ardea cinerea*	8
Bird	Grey Plover	*Pluvialis squatarola*	4
Bird	Herring Gull	*Larus argentatus*	14
Bird	Lesser Black-backed Gull	*Larus fuscus*	3
Bird	Little Egret	*Egretta garzetta*	1
Bird	Little Grebe	*Tachybaptus ruficollis*	3
Bird	Long-tailed Duck	*Clangula hyemalis*	5
Bird	Mallard	*Anas platyrhynchos*	9
Bird	Manx Shearwater	*Puffinus puffinus*	26
Bird	Merlin	*Falco columbarius*	1
Bird	Mew Gull	*Larus canus*	11
Bird	Mute Swan	*Cygnus olor*	5
Bird	Northern Fulmar	*Fulmarus glacialis*	42
Bird	Northern Gannet	*Morus bassanus*	16
Bird	Northern Lapwing	*Vanellus vanellus*	7
Bird	Purple Sandpiper	*Calidris maritima*	1
Bird	Razorbill	*Alca torda*	2
Bird	Red Knot	*Calidris canutus*	2
Bird	Red-breasted Merganser	*Mergus serrator*	9
Bird	Red-throated Diver	*Gavia stellata*	3
Bird	Ringed Plover	*Charadrius hiaticula*	16
Bird	Ruddy Turnstone	*Arenaria interpres*	7
Bird	Sanderling	*Calidris alba*	6
Bird	Sandwich Tern	*Sterna sandvicensis*	3
Bird	White-throated Dipper	*Cinclus cinclus*	3
Bird	Whooper Swan	*Cygnus cygnus*	1

1.7 Recommendations

- The density of trails is extremely high, if very localised, but all other habitats off-trail are relatively undisturbed. Efforts should be made to consolidate the trails on site.
- A dynamic path management system could alleviate the pressures which are occurring along with a habitat restoration plan for closed trails in highly affected areas.
- There should be an examination of how to improve the existing parking management system which appears to be ineffective due to movable barriers.
- Engaging interpretive material is required to increase visitor awareness of the importance of dunes and the damage to habitats caused by extensive trail networks.

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[3]. 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.

[3] 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.