NATIONAL TOURISM MONITORING PROGRAMME 2021-2025

ANNUAL RESULTS FOR 2022

MALAHIDE

for: **Fáilte Ireland**

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Malahide – Interesting Finds

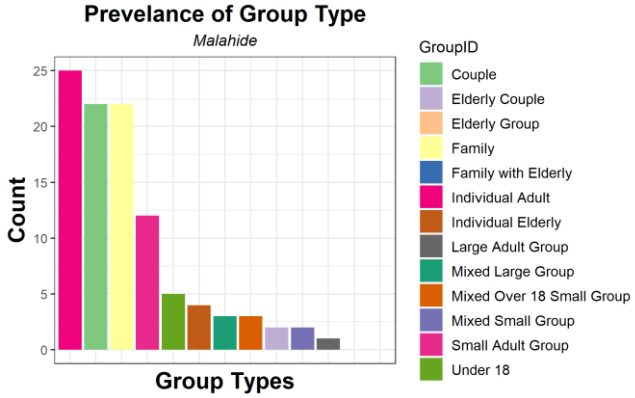
ECOLOGICAL HIGHLIGHTS

The estuary is an important wintering bird site and holds an internationally important population of Brent Goose and nationally important populations of a further 15 species.

The outer part of the estuary is mostly cut off from the sea by a large sand spit, known as 'the island'. The outer estuary drains almost completely at low tide, exposing sand and mud flats. There is a large bed of Eelgrass (*Dwarf Eelgrass, Zostera noltii, and Narrow-leaved Eelgrass, Z. angustifolia*) in the north section of the outer estuary, along with Beaked Tasselweed (*Ruppia maritima*) and extensive mats of green algae (*Enteromorpha spp., Ulva lactuca*). Common Cord-grass (*Spartina anglica*) is also widespread in this sheltered part of the estuary.

VISITOR NUMBERS AND DWELL TIME

- 279 people visited the site over 8 hours
- Average dwell time of 35 minutes



KEY RECOMMENDATIONS

- As was recommended in 2021, a visitor management strategy for the site is required – to include trail network interventions within the dune system where damage is evident along with the establishment of dune restoration works.
- Littering remains an issue and thus a litter management plan is required for the site to alleviate pressures related to litter impacts.
- Dogs walking off lead poses a known issue to the protected bird species of Malahide Estuary SPA and measures should be considered to reduce the impacts related to off lead dog walking.

VISITOR INTERACTION & MANAGEMENT

- Fishing related activities and stationary activities such as sitting were the two most common activities observed.
- Reduction in the number of observable impacts recorded with light desire lines encompassing over 20% of these impacts.
- Most of the visitors to the site stayed for at least 42 minutes.
- Majority of visitors undertook activities other than walking
- Significant increase in the percentage of visitors who arrived to site by walking.

1 Malahide

1.1 Purpose & Outputs of the Programme

Building on the success of the Wild Atlantic Way (WAW) environmental monitoring programme which ran from 2015-2019 – Fáilte Ireland has decided to expand the programme to a national level. The programme will monitor 19 individual sites located in all of Fáilte Irelands regional areas; The Wild Atlantic Way, Irelands Hidden Heartlands, Irelands Ancient East and Dublin. The programme will run for 5 years from 2021-2025.

The sites that are included in the programme vary in type from inland forest parks, to coastal sites, to privately owned attractions and diverse urban locations - can be seen below.

The purpose of the programme is as follows:

- To gain more insight from an environmental perspective as to what is happening at a variety of sites where we encourage visitors to frequent,
- To gather information (visitor behaviour, movement, path and trail conditions, surveys for birds, flora etc) for each site over the course of 5 years,
- To understand if there are observable trends and/or observable variations amongst site types over a 5-year period,
- To note good & bad practice at sites in order to;

- Make recommendations where appropriate for site management which is intended will have sustainable benefits for the site, the visitor and the natural environment.

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

This culminated in our ability to make useful recommendations to site owners and managers and ultimately to development a practical set of Guidelines for Visitor management (from Planning thorough to Site Operation).

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

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

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

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

1.1.1 Looking Ahead

The National Tourism Monitoring Programme aims to assess and characterise visitor movements and impacts in 19 popular Failte Ireland tourism sites across Ireland within a 5-year period. This will be achieved through building on the methodologies and findings of the Wild Atlantic Way Environmental Monitoring Programme (2015-2019), by monitoring yearly trends in visitor numbers and movements during the high tourism season at each site. In addition to the annual visitor trend monitoring; visitor impact assessments, which examine visitor activity levels relative to condition assessments, will also be taken every two years for each site. At the end of the 5-year period, the resultant extensive data set will be analysed for long term trends and correlations between visitor numbers, visitor activity, and site condition assessments, at each site across the 5 years of the programme.

This monitoring programme will allow an examination of year-on-year shifts in visitor impact and trends, across each of Fáilte Ireland's regional areas; The Wild Atlantic Way, Irelands Hidden Heartlands, Irelands Ancient East and Dublin, resulting in an annual interim report for each year - while also assessing visitors trends, and changes in the condition of the each of the sites' habitats in relation to visitor trends, over a the entire 5-year period of the programme.

The long-term aim of the Monitoring Programme will be to inform local authorities and stakeholders to help in the design and implementation of methods that will encourage the sustainable management of visitor numbers and tourism activities, while also aiming to protect vulnerabilities of the local area's habitats in order to reduce environmental impact and enable more effective local conservation of each site.

1.2 Methods & Surveys

The following surveys were undertaken at Malahide:

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 Malahide was undertaken on the 17th of July 2022, with max temperatures reaching approximately 27.8° C, 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. 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 Malahide

Malahide is a coastal town just north of Dublin city, situated in Fingal. While quite urban, is located along the Malahide Estuary and thus adjoins both Malahide Estuary SAC and SPA. Malahide also is home to the Malahide Castle and Gardens, which is primarily used for leisure activities. It contains habitats such as sand shores and mud shores along with dry meadows and grassy verges.

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

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

Figure 1.1 Malahide

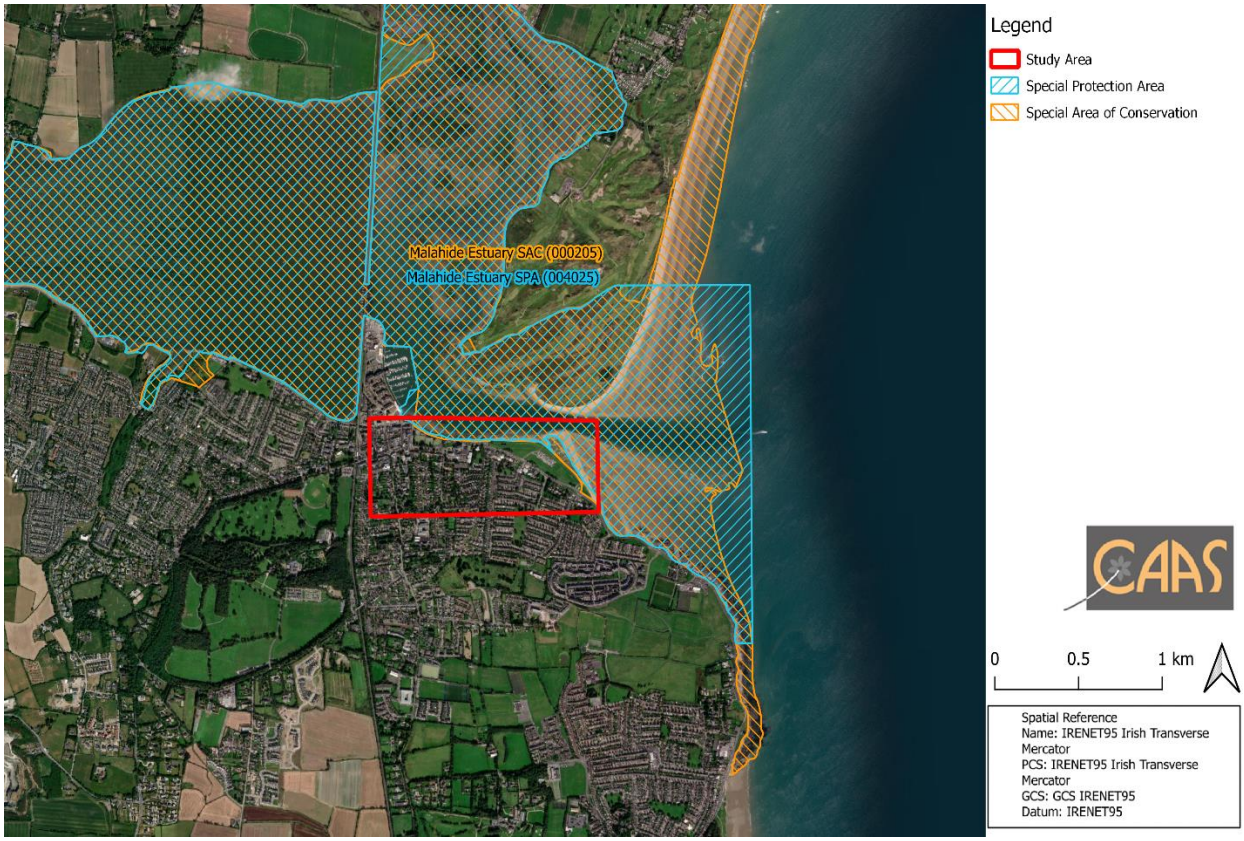


Figure 1.2 Study Area within Malahide Estuary SAC

1.3.1 Critical Infrastructure

Table 1.1 Summary of Wastewater infrastructure at Malahide

Wastewater Treatment Plant (WWTP)	Irish Water Indication of Capacity	Comment
Toilet facilities are available at Malahide There is a WWTP plant at Malahide (WWTP Reg #D00021)	Spare capacity available[2]	Current wastewater facilities are sufficient

Table 1.2 Summary of Drinking Water infrastructure at Malahide

Drinking Water	Water Resource Name (WRZ)	Irish Water Indication of Capacity	Comment
Malahide itself is a serviced settlement	Greater Dublin Area	Capacity available – Level of service (LoS) improvement required[3]	Current water supply is sufficient and upgrades have been recently completed[4]

Table 1.3 Summary of Transport infrastructure at Malahide

Nearest Settlement	Current Transport Infrastructure	Comment
Malahide	Coastal settlement, c. 14 km north of Dublin City. The village is served by the DART and some mainline rail services, run by Irish Rail. The Dublin Bus 32, 42 and 102, the 32X and 142 peak hour express services, and the 42N Nite-Link route serve the town from Dublin City Centre. Route 102 serves local areas to/from Dublin Airport (via Swords) and Sutton Station (via Portmarnock). Malahide is close to the M1 motorway	Current transport infrastructure is sufficient

1.4 Pathways and Features Condition Results

1.4.1 Pathway Condition

The pathways at Malahide are composed of a mix of hard infrastructure, due to the urban landscape of Malahide itself and light indentations and eroded pathways that lead to and are on the beach located at Malahide. The eroded pathways on the beach itself were mainly sand dunes which have eroded away due to trampling and walking, with mild levels of compaction seen.

[2] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/fingal/
[3] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/fingal/
[4] https://www.fingal.ie/sites/default/files/2022-03/fingal-development-plan-14.03.22-web.pdf

Figure 1.3 Pathways identified at Malahide

Figure 1.4 Pathways at Malahide

1.4.2 Features Condition

As would be expected of a coastal visitor area such as Malahide, there are various amenities and features on site that accommodate visitors such benches, toilets, coffee trucks and a lifeguard area for water related leisure activities. Due to the urban nature of Malahide, there are also a large number of bins within the area. Along with this there are a large number of signs that call for no littering along with providing rules to be followed when visiting the beach area (Figure 1.6). There are also a small number of wildlife and nature information signs that show the importance of Malahide estuary.

Figure 1.5 Features recorded at Malahide

Figure 1.6 Features at Malahide

1.4.3 Hazards

Erosion, dumping, desire lines and unrestricted camping were all found at Malahide, along with a small number of burned areas.

Figure 1.7 Hazards recorded at Malahide

1.5 Visitor Characterisation Survey

The visitor monitoring surveys resulted in a total of 279 visitors (which represent 101 group observations), a decrease from 375 visitors in 2021. The site is most popular amongst individual adults with the dominant mode of transport being by foot, with car being the preferred method of transport in 2021. The average dwell time for the site was 35 minutes, a decrease from an average dwell time of 52 minutes in 2021; with the following activities undertaken during the survey (listed in order of occurrence rate):

Activity Type
Sitting
Picnicking
Drinking
Dogwalking (on lead)
Photographing
Dogwalking (off lead)
Rockpooling/ Crab fishing
BBQing
Cycling
Shell collecting
Swimming
Jogging
Other
Powered Movement Through Water (Boat, Jetski etc)
Sailing
Digging
Playing Music
Scooter

Activity Type
Birdwatching
Birdwatching and Bird feeding
Camping
Digging
Exploring off trail
Fishing
Flower picking
Football, Frisbee/Catch, Tennis and other informal sports matches
Frisbee/ Catch
Kayaking
Lighting Campfire
Littering
Skateboarding/Roller Blading
Sports Match (informal)
SUP Boarding

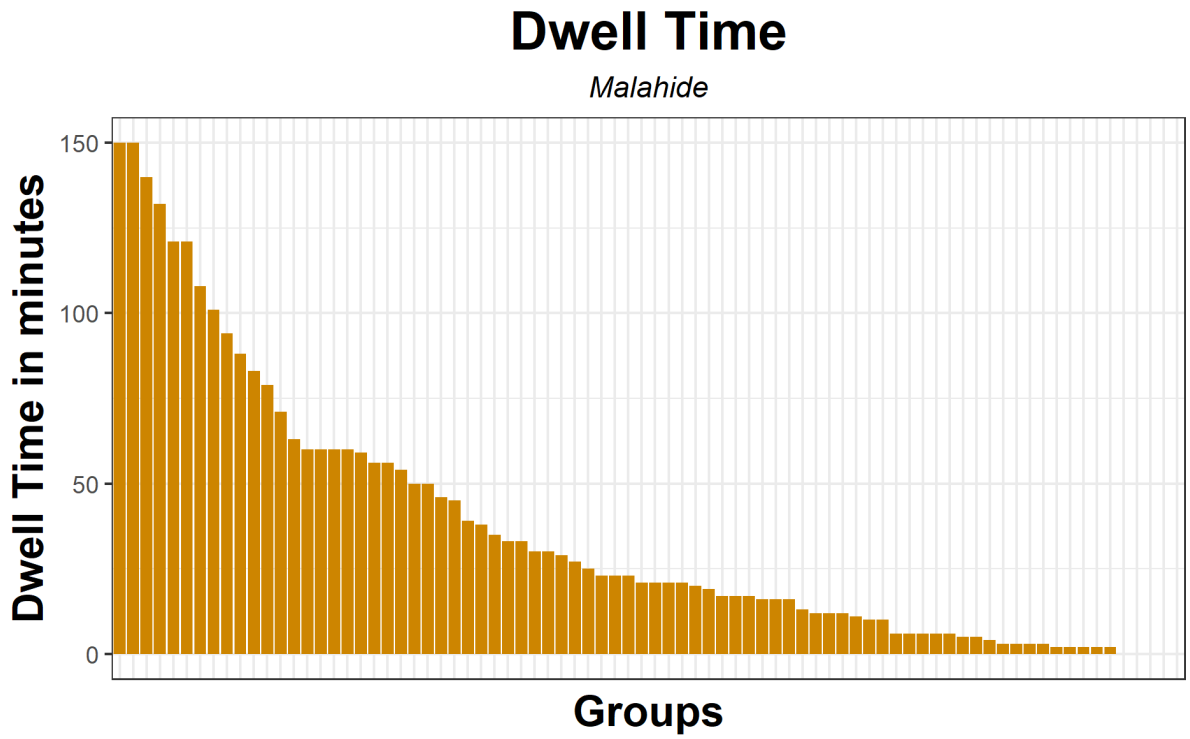


Figure 1.8 Duration of Time Spent at Malahide

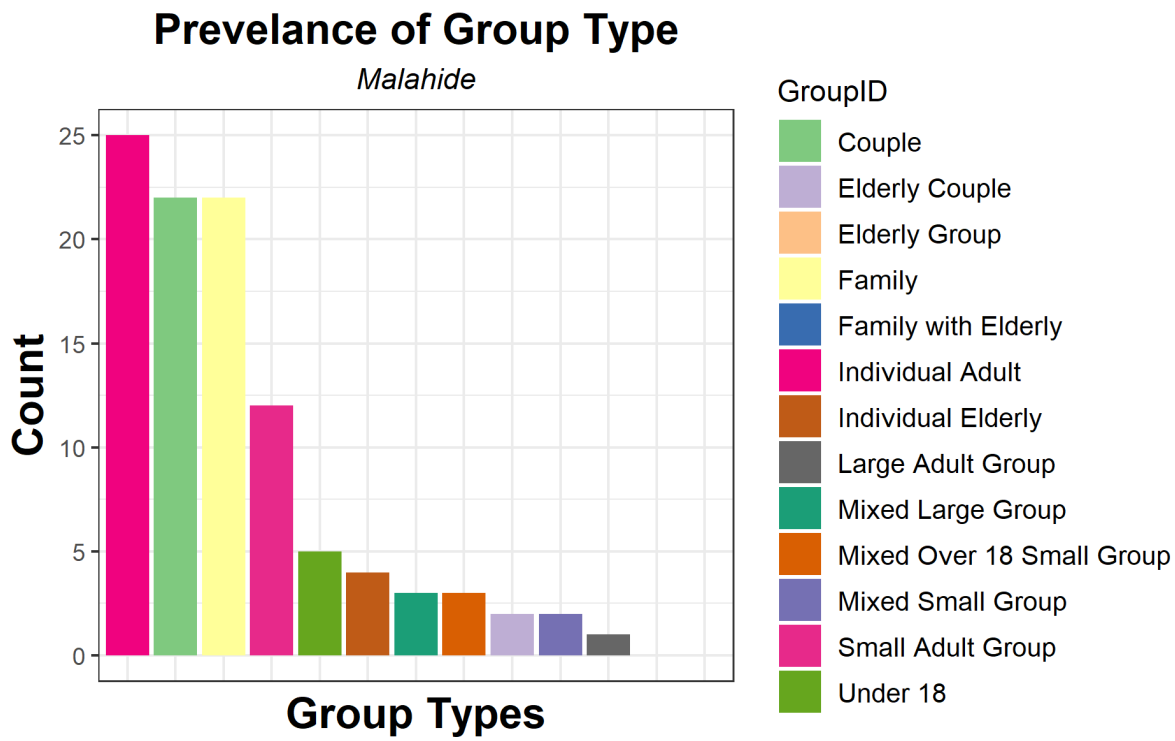


Figure 1.9 Groups of visitors that visited Malahide

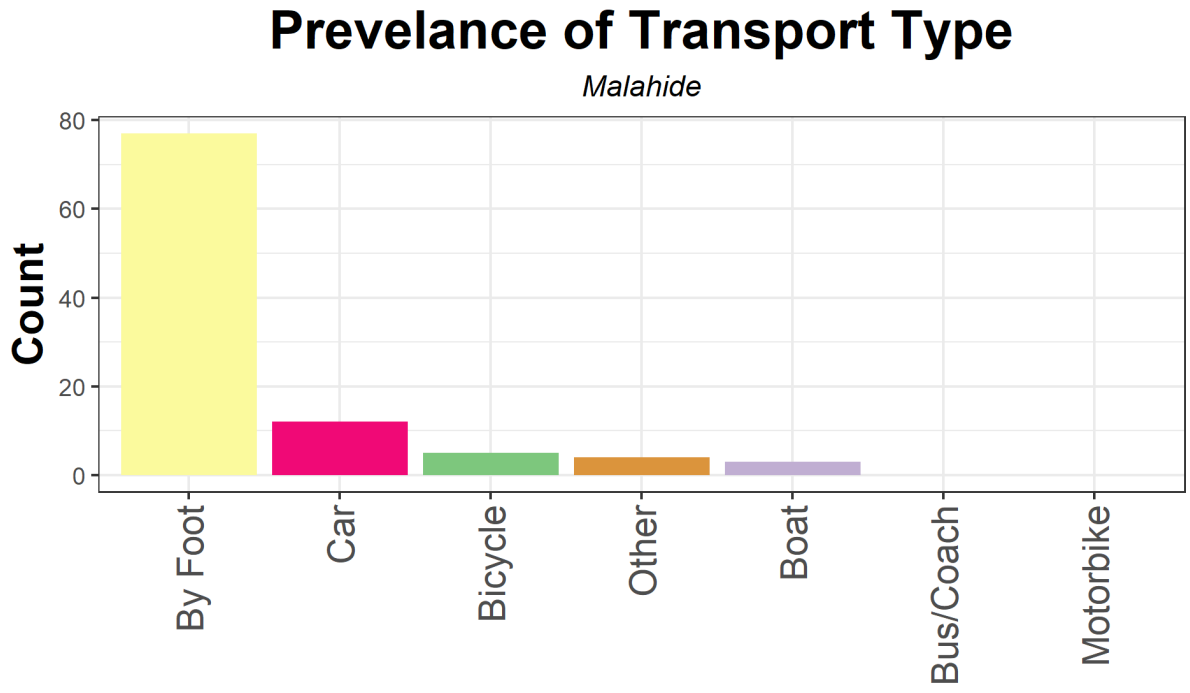


Figure 1.10 Mode of transport used to visit Malahide

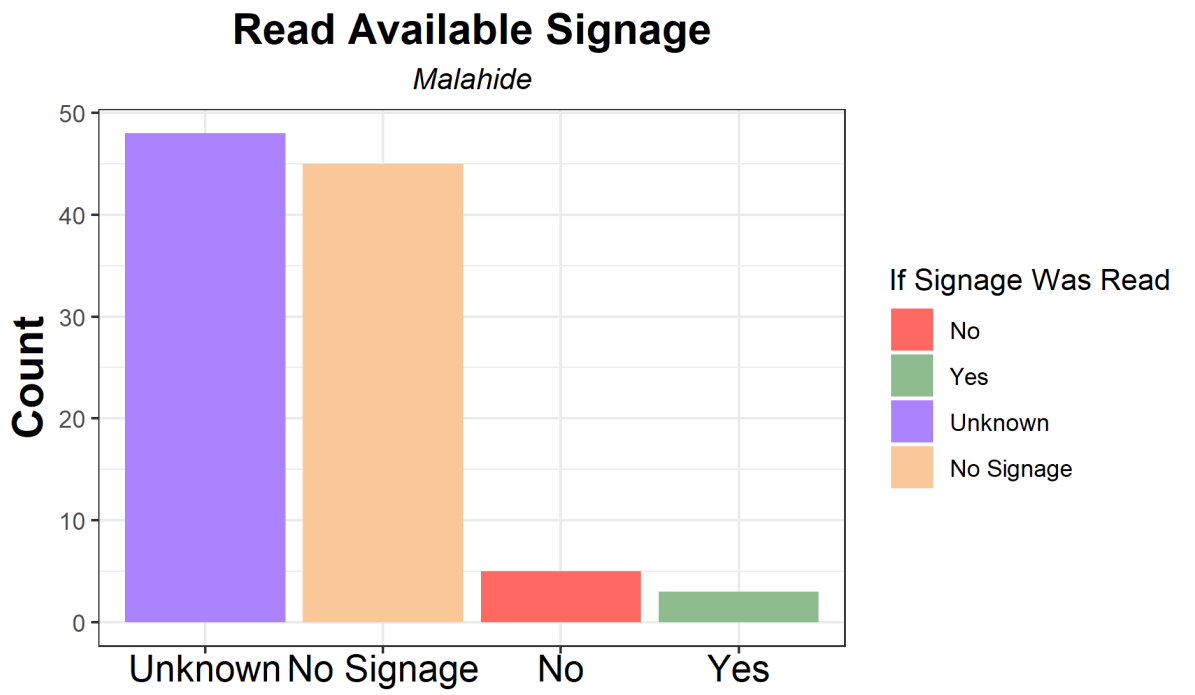


Figure 1.11 Use of Interpretive Material at Malahide

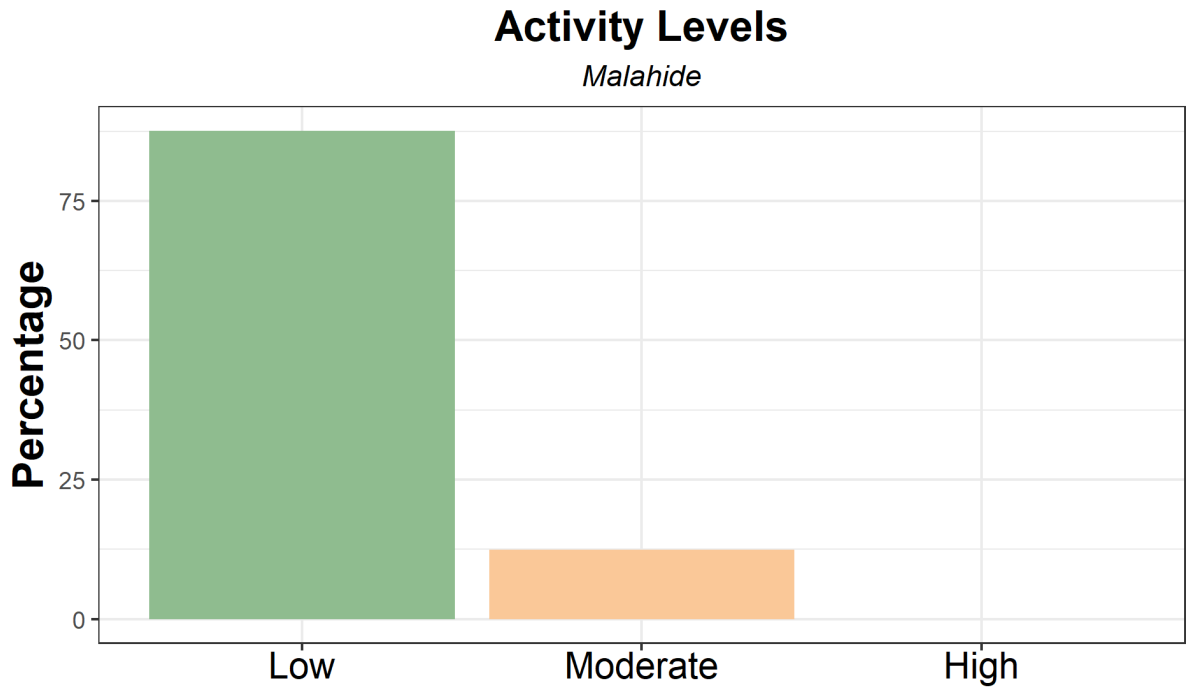


Figure 1.12 Categories of Activity Levels Observed at Malahide

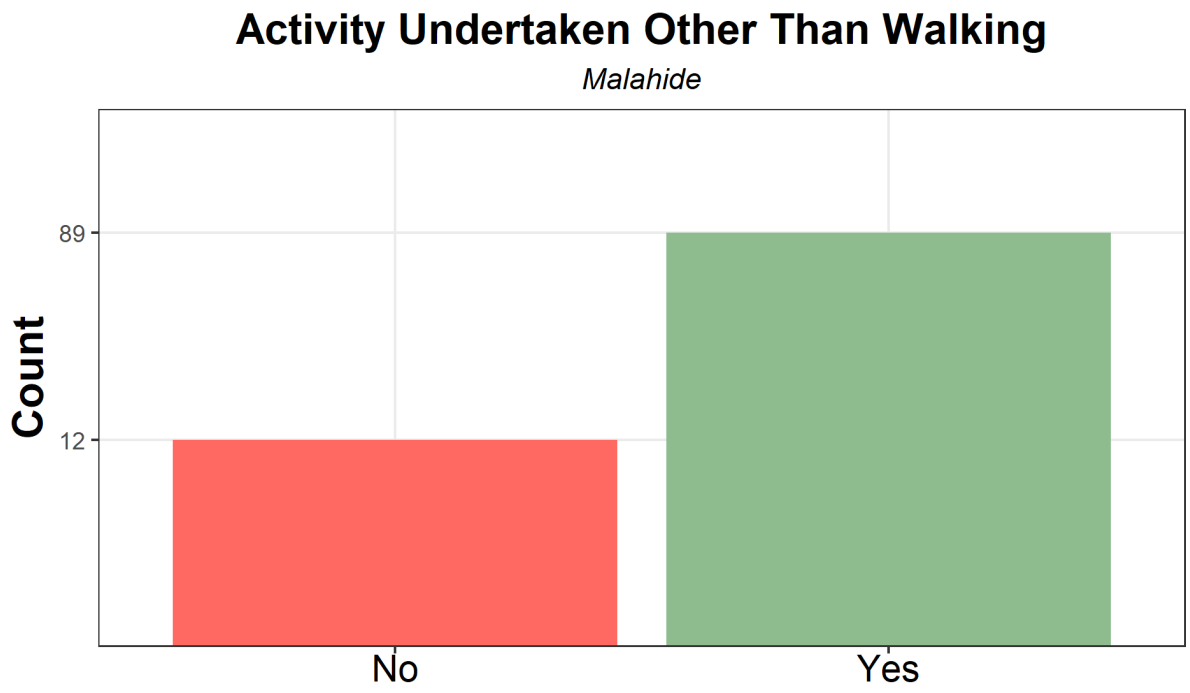


Figure 1.13 Activities undertaken other than walking

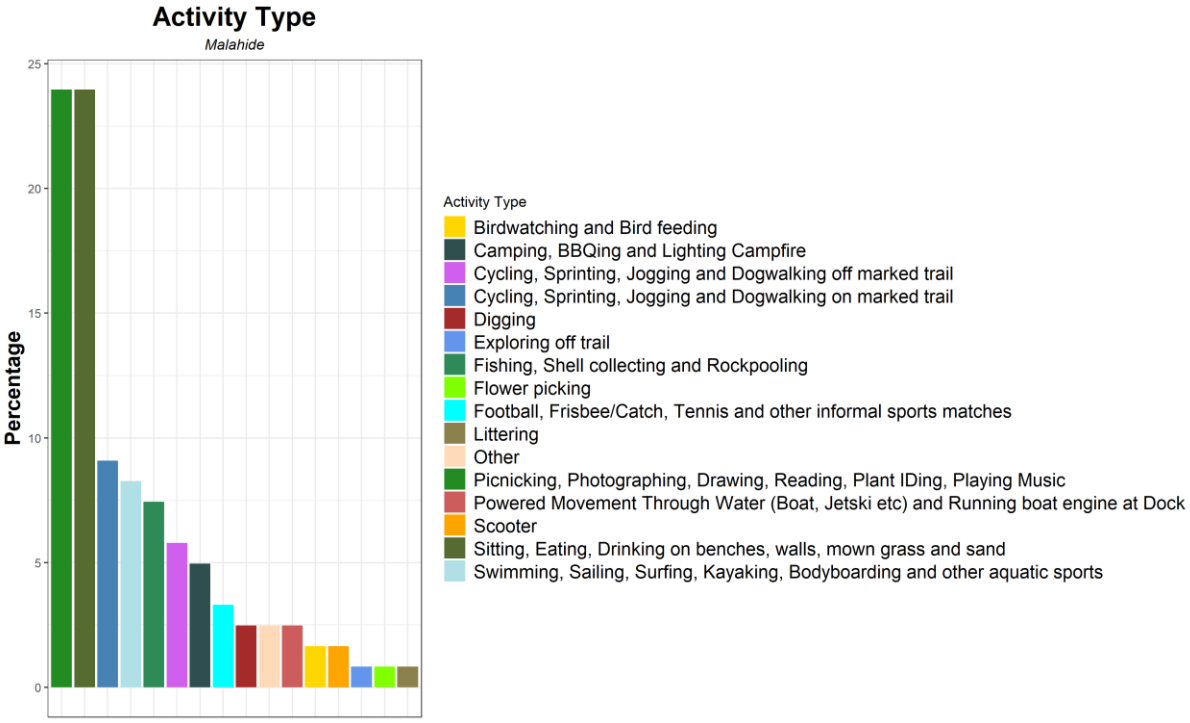


Figure 1.14 Range of Visitor Activities Observed at Malahide

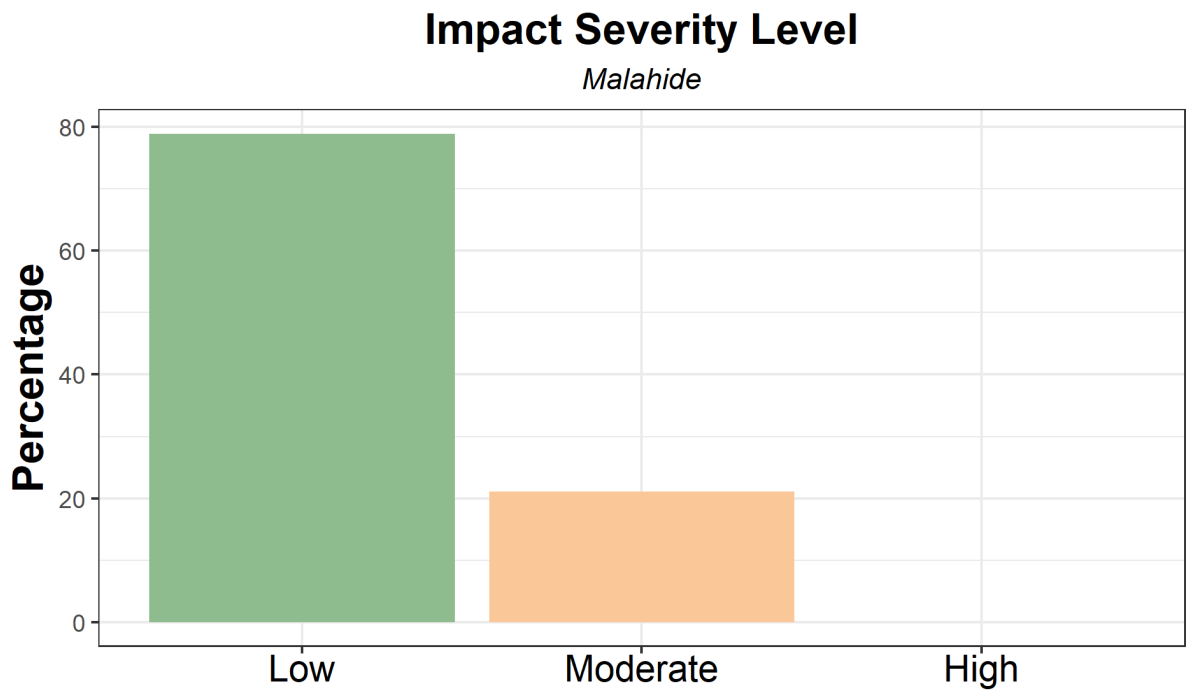


Figure 1.15 Categories of Environmental Impact Levels Observed at Malahide as a result of Visitor Activities

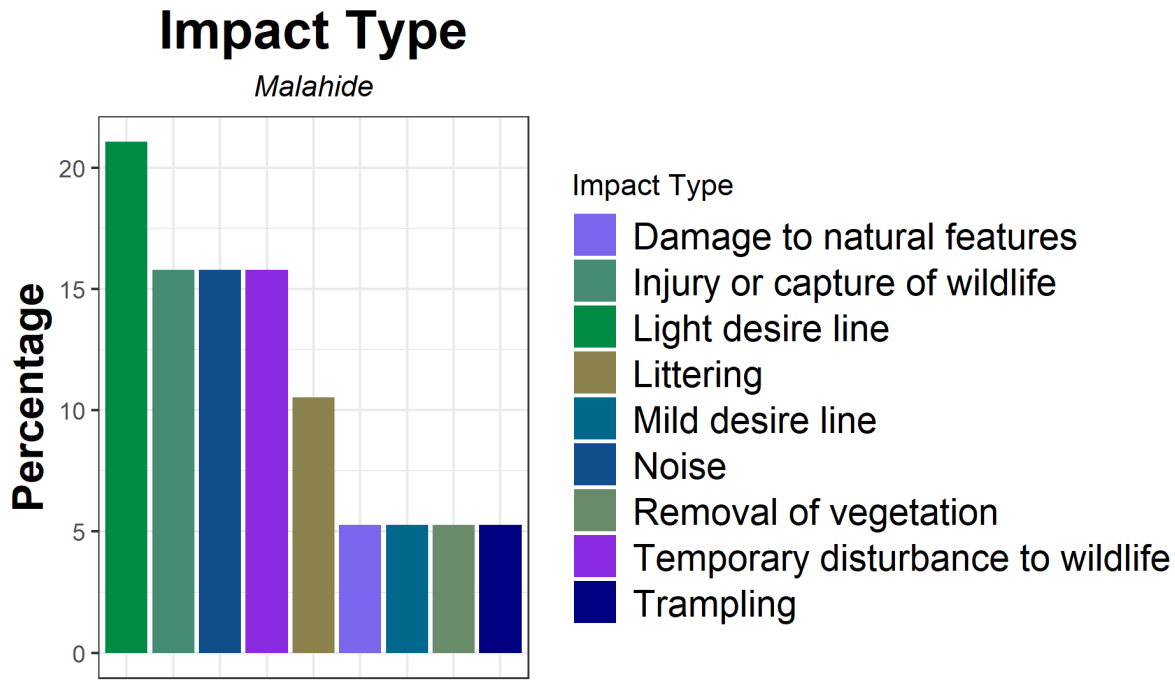


Figure 1.16 Range of Environmental Impacts Observed at Malahide

The environmental impacts that were observed and recorded used the same coding system as the Wild Atlantic Way Monitoring[5]. These impacts were recorded if a visitor's activity or movement resulted in one of the defined impacts noted in said coding system, which were categorised by severity level to the environment, ranging from light desire lines to disturbance of wildlife to burning of materials.

[5] See Appendix I for more detail

Figure 1.17 Visitor movement patterns at Malahide

Of the 101 groups recorded on site 88% of them undertook activities other than walking, an increase from 67% in 2021. These activities (identified above) resulted in 19 impacts being observed on site during the survey, a decrease from 26 in 2021. Thus, 16% of activities on site resulted in impacts on the environment, a reduction from 38% in 2021. The impact severity levels varied with 79% of the impacts being low, with 58% being low in 2021, 15% of impacts being moderate, with 21% being moderate in 2021, and 0% of impacts being high severity, a decrease from 21% in 2021. The impacts identified for the site were:

Impact Type	Count
Damage to natural features	1
Injury or capture of wildlife	3
Light desire line	4
Littering	2
Mild desire line	1
Noise	3
Removal of vegetation	1
Temporary disturbance to wildlife	3
Trampling	1

1.6 Comparison with Previous Survey Results

The data obtained has provided an opportunity to compare significant changes results with previous years. Where this occurs, this will be noted in the relevant sections.

The 2022 Visitor Characterisation Survey in Malahide produced a number of changes from the 2021 Visitor Characterisation Survey. Noted changes include;

- A decrease was noted between the number of impacts observed from 2022 when compared to 2021;
- A severe reduction in the percentage of visitors who drove to the site and opted instead to walk;
- An increase in percentage of aquatic related activities observed; and,
- Reduction of visitors during the 8-hour survey by 26% to 279 visitors over 101 groups with average dwell time reducing by 33%.

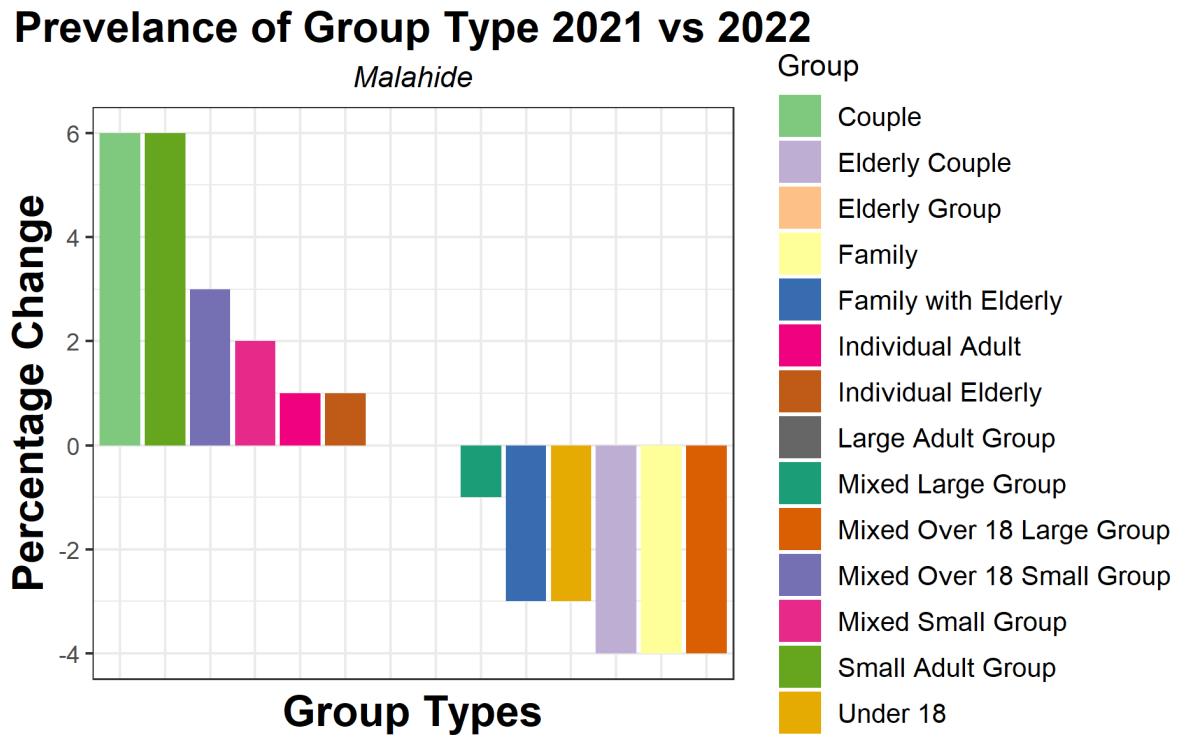


Figure 1.18 Percentage Change in groups of visitors that visited Malahide between 2021 and 2022

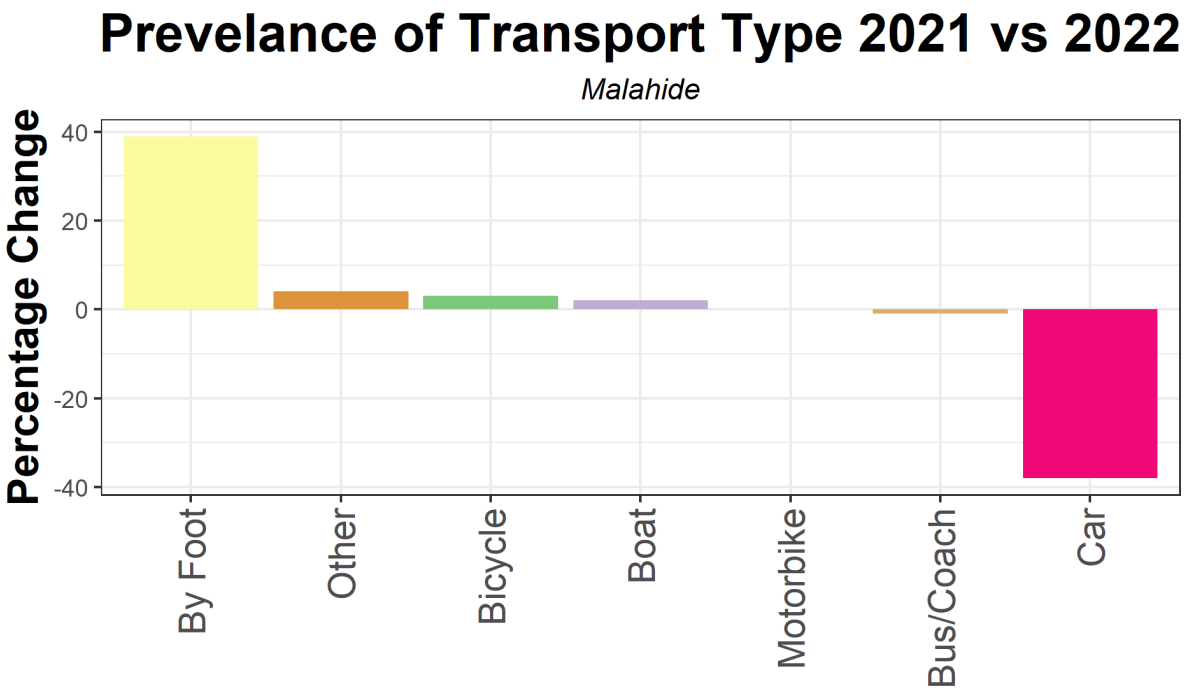


Figure 1.19 Percentage Change in mode of transport used to visit Malahide between 2021 and 2022

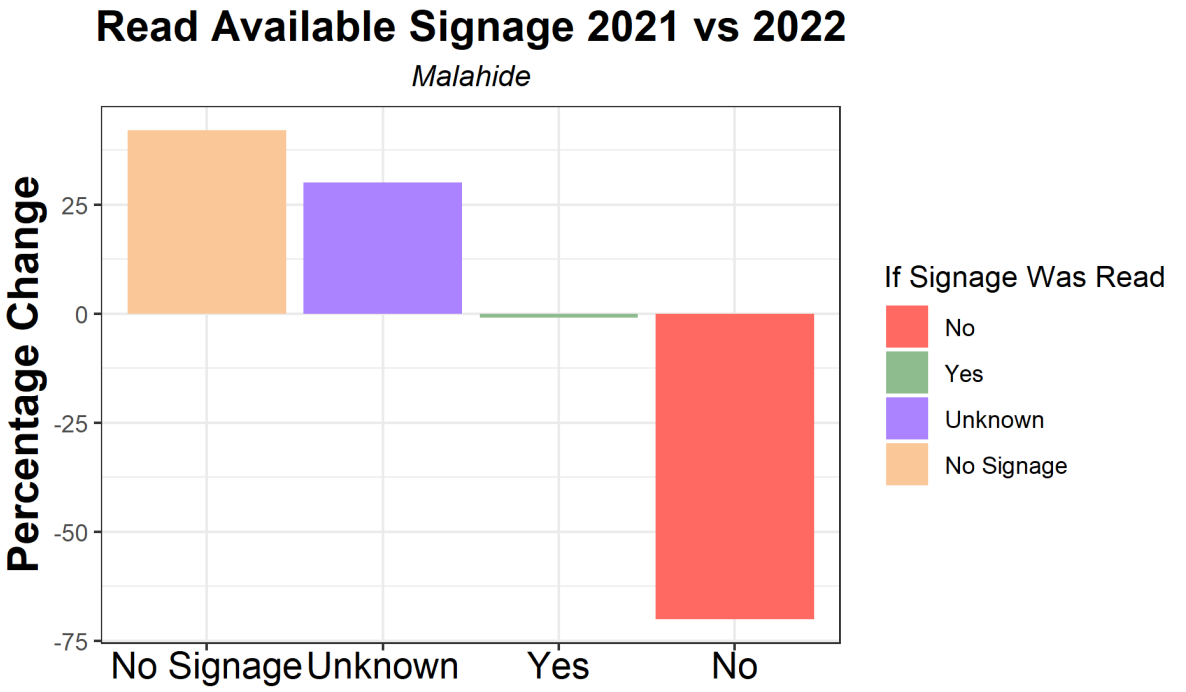


Figure 1.20 Percentage change in use of Interpretive Material at Malahide between 2021 and 2022

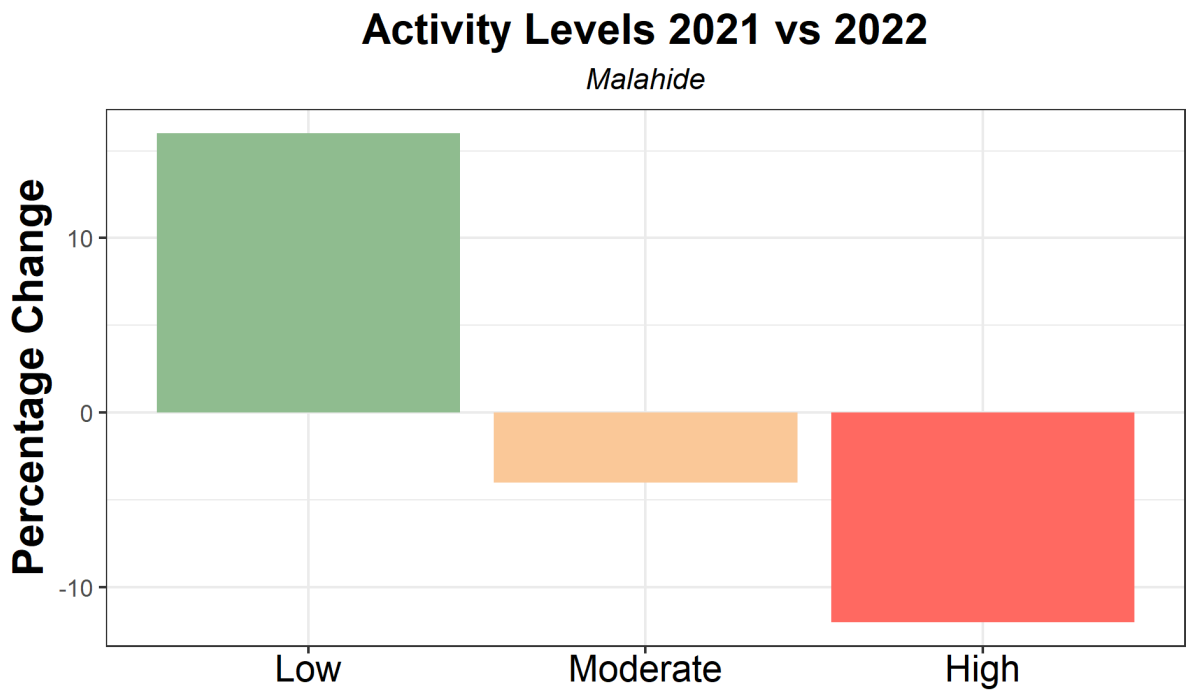


Figure 1.21 Percentage change in categories of Activity Levels Observed at Malahide between 2021 and 2022

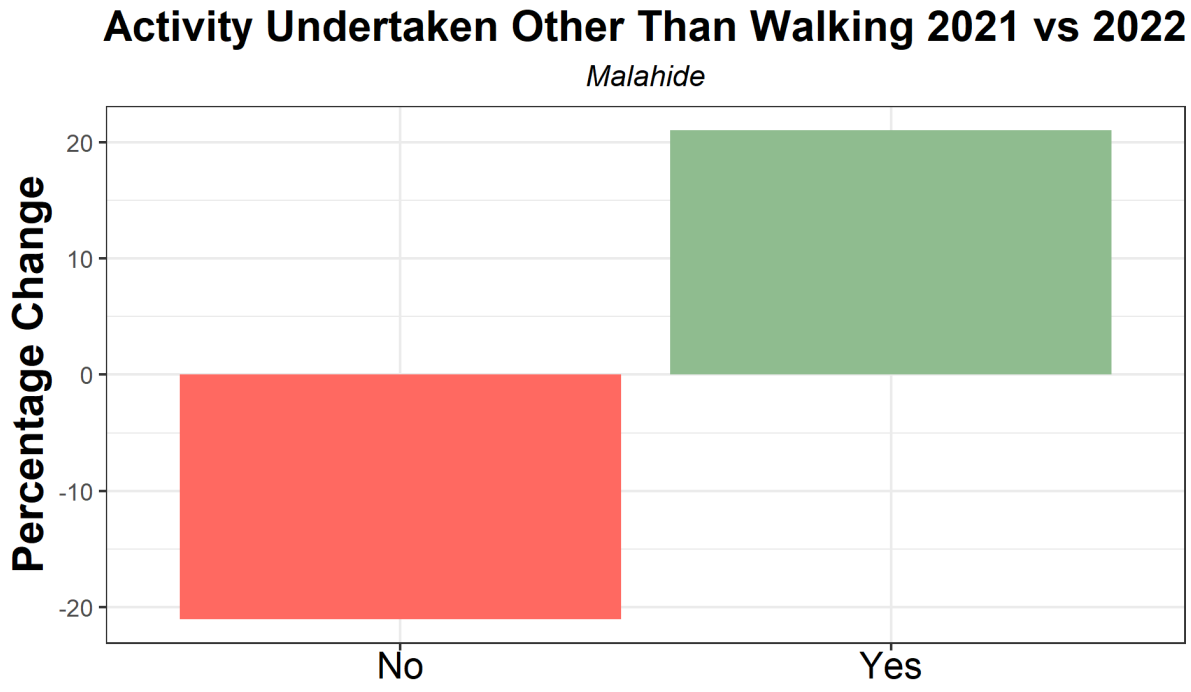


Figure 1.22 Percentage change in activities undertaken other than walking at Malahide between 2021 and 2022

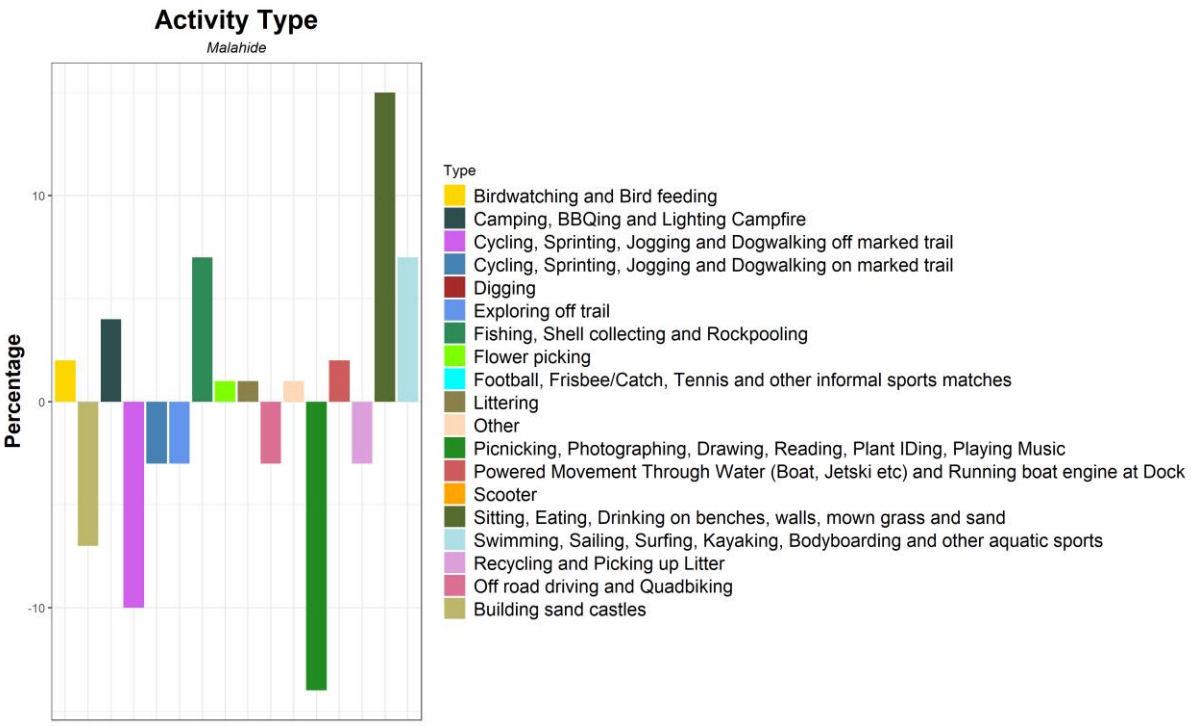


Figure 1.23 Percentage change in range of Visitor Activities Observed at Malahide between 2021 and 2022

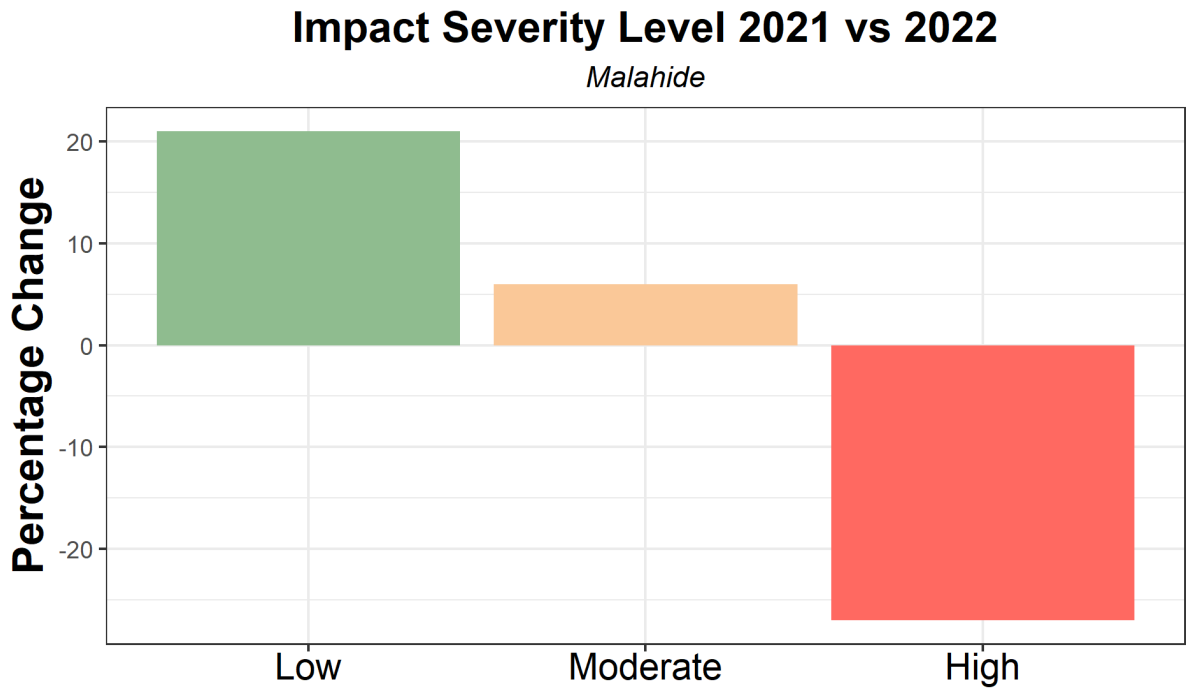


Figure 1.24 Percentage change in categories of Environmental Impact Levels Observed at Malahide as a result of Visitor Activities[6] between 2021 and 2022

[6] Impact severity was measures 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.

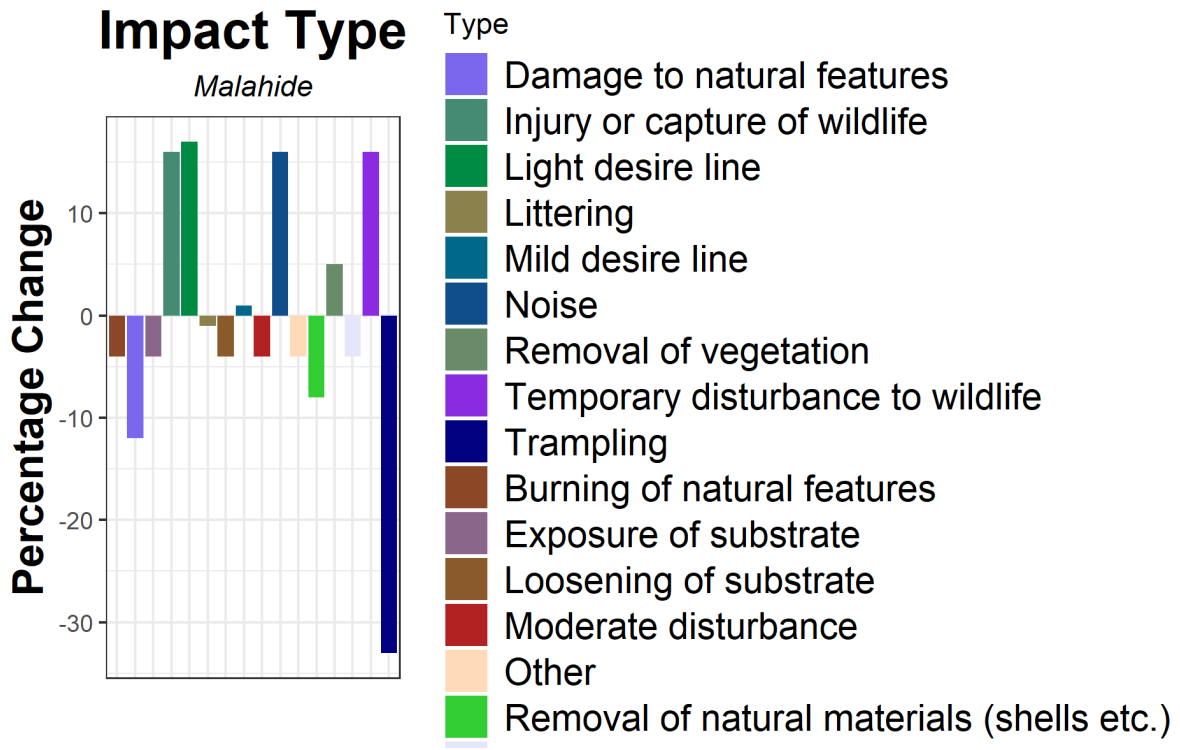


Figure 1.25 Percentage change in range of Environmental Impacts Observed at Malahide between 2021 and 2022

Table 1.4 Summary of changes with previous survey results

Survey	Notable Differences	Comment
Visitor Dwell Time	• Overall average dwell time reduced by 33%	Less visitors visited the site during the 2022 survey when compared to the 2021 survey which could have led to a reduced average dwell time. The survey was also conducted later in the season which also could have led to a lower average dwell time
Prevalence of Group Type	• No significant differences noted	Slight changes were present in the percentage of groups visiting the site, which could have been due to the later time in the season the survey was conducted and a reduction in the number of visitors to the site
Prevalence of Transport Type	• 39% increase by foot • 38% decrease by car	Large increase in percentage of visitors arriving by foot and thus a large decrease in the percentage of visitors arriving by car to the site
Read Available Signage	• Signage not read decreased by 70% • 30% increase in unknown if signage read • 54% increase in no signage available	Significant decrease percentage of visitors not reading available signage. However, this can be attributed to an increase in percentage of unknown if signage was read and no signage available
Activity Levels	• High activity levels decreased by 12% • Low activity levels increased by 16% • Moderate activity levels decreased by 4%	An increase in the percentage of visitors undertaking low level activities was observed

Survey	Notable Differences	Comment
Activity Undertaken Other Than Walking	• Activities undertaken other than walking increased by 21%	Noted increase in the percentage of visitors undertaking activities other than walking
Activity Type	• Jogging, cycling and dog walking etc. off marked trails decreased by 10% • 14% decrease in activities such as picnicking etc., • 15% increase in activities such as sitting on benches • 7% in swimming and other aquatic activities • 7% increase in activities related to fishing	Slight decrease in percentage of visitors undertaking jogging etc., off marked trails 7% increase in percentage of visitors partaking in both aquatic activities and fishing related activities, this could be due to the survey taking place later in the season in July when compared to the 2021 survey
Impact Severity Level	• High impact level decreased by 27% • Low impact level increased by 21% • Moderate impact level increased by 6%	Significant decrease in percentage of high-level impacts recorded along with a significant increase in percentage of low-level impacts recorded, this could be due to a lower number of impacts being recorded due to a lower number of visitors
Impact Type	• 33% decrease in trampling • 13% increase in noise • 16% increase in temporary disturbance to wildlife • 12% decrease in damage to natural features • 17% increase in light desire lines	Noted decrease in the number of impacts observed during the 2022 survey, along with an increase in the percentage of low level impacts, thus there is an increase in percentage of impacts such light desire lines and noise

1.7 Ecological Monitoring Results

1.7.1 Ecological Constraints

The species and habitats within 2km of Malahide are sensitive to hydrological changes, invasive species, land use management, pollution, anthropogenic disturbance and overgrazing.

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

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[000205]	Malahide Estuary SAC	0.01	SAC	Salicornia and other annuals colonising mud and sand [1310], Mudflats and sandflats not covered by seawater at low tide [1140], Mediterranean salt meadows (*Juncetalia maritimi*) [1410], Fixed coastal dunes with herbaceous vegetation - grey dunes [2130], Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330], Shifting dunes along the shoreline with *Ammophila arenaria* - white dunes [2120]
[000205]	Malahide Estuary pNHA	0.02	pNHA	
[004025]	Malahide Estuary SPA	0.02	SPA	Pintail (*Anas acuta*) [A054], Knot (*Calidris canutus*) [A143], Black-tailed Godwit (*Limosa limosa*) [A156], Shelduck (*Tadorna tadorna*) [A048], Dunlin (*Calidris alpina*) [A149], Red-breasted Merganser (*Mergus serrator*) [A069], Goldeneye (*Bucephala clangula*) [A067], Grey Plover (*Pluvialis squatarola*) [A141], Oystercatcher (*Haematopus ostralegus*) [A130], Great Crested Grebe (*Podiceps cristatus*) [A005], Golden Plover (*Pluvialis apricaria*) [A140], Redshank (*Tringa totanus*) [A162], Wetland and Waterbirds [A999], Bar-tailed Godwit (*Limosa lapponica*) [A157], Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]

1.7.2 Habitat Descriptions

The habitats of Malahide are typical of an urban, coastal area. The majority of Malahide itself is made up of buildings and artificial surfaces (Fossitt Code BL3) with patches of amenity grassland (Fossitt Code GA2) and scattered tress and parkland (Fossitt Code WD5). Malahide Estuary is an estuary (Fossitt Code MW4), designated as an SAC, is located at Malahide and therefore there are coastal habitats such as marram dunes (Fossitt Code CD2) which align with the Annex I habitat for which the SAC is designated (Fixed coastal dunes with herbaceous vegetation – grey dunes [2130]).

The outer part of the estuary is mostly cut off from the sea by a large sand spit, known as 'the Island'. The outer estuary drains almost completely at low tide, exposing sand and mud flats. There is a large bed of Eelgrass (*Dwarf Eelgrass, Zostera noltii, and Narrow-leaved Eelgrass, Z. angustifolia*) in the north section of the outer estuary, along with Beaked Tasselweed (*Ruppia maritima*) and extensive mats of green algae (*Enteromorpha spp., Ulva lactuca*). Common Cord-grass (*Spartina anglica*) is also widespread in this sheltered part of the estuary.

Damage to the dunes from visitor movements is evident, there is an extensive trail network in the dune system with considerable levels of substrate exposure.

Figure 1.26 Habitats present at Malahide

1.7.3 Condition Assessment

Habitat condition assessments are an integral part of the National Tourism Monitoring Programme. They will allow an assessment of how habitat degradation due to human disturbance may relate to visitor monitoring data gathered at each of the 19 Failte Ireland sites for the duration of the programme.

Each habitat condition assessment will follow a rating scale, that has been designed specifically for this monitoring programme as a standardised, repeatable measurement for assessing habitat condition across all Failte Ireland sites (details on the full methodology are supplied in Appendix II of this report). In order to adequately capture possible changes to habitat condition at each site in relation to tourism activities, the habitat condition assessments will be conducted every second year of the 5-year monitoring programme. Carrying out this condition assessment every second year, creates a sufficient timescale for changes in site condition in relation to visitor movements and activities on site to become apparent, and therefore to be reflected in the resultant data.

The initial habitat condition assessments that will form the baseline for the programme's condition assessments for each of the 19 sites, were carried out in the inaugural year of this programme in 2021. The next year of habitat condition assessment will be conducted in 2023. Each assessments results will be detailed within their relevant year's interim report, with the overall analysis of trends in habitat condition in relation to visitor movements for every site reported in the final year of the monitoring programme in 2025.

1.7.4 NBDC Records of Wintering Birds

Table 1.6 List of wintering birds that have been recorded at NBDC Hectad O24

Group	Common name	Scientific name	Number recorded
Bird	Alcidae	*Alcidae*	1
Bird	American Bittern	*Botaurus lentiginosus*	1
Bird	American Golden Plover	*Pluvialis dominica*	2
Bird	Arctic Tern	*Sterna paradisaea*	6
Bird	Atlantic Puffin	*Fratercula arctica*	10
Bird	Bar-tailed Godwit	*Limosa lapponica*	10
Bird	Black Brant	*Branta bernicla subsp. nigricans*	4
Bird	Black Guillemot	*Cepphus grylle*	15
Bird	Black-headed Gull	*Larus ridibundus*	31
Bird	Black-legged Kittiwake	*Rissa tridactyla*	44
Bird	Black-necked Grebe	*Podiceps nigricollis*	1
Bird	Black-tailed Godwit	*Limosa limosa*	15
Bird	Black-throated Diver	*Gavia arctica*	2
Bird	Bonaparte's Gull	*Larus philadelphia*	1
Bird	Branta bernicla subsp. hrota	*Branta bernicla subsp. hrota*	14
Bird	Brent Goose	*Branta bernicla*	28
Bird	Canada Goose	*Branta canadensis*	1
Bird	Caspian Tern	*Hydroprogne caspia*	1
Bird	Common Coot	*Fulica atra*	6
Bird	Common Eider	*Somateria mollissima*	1
Bird	Common Goldeneye	*Bucephala clangula*	9
Bird	Common Greenshank	*Tringa nebularia*	12
Bird	Common Guillemot	*Uria aalge*	24
Bird	Common Kingfisher	*Alcedo atthis*	8
Bird	Common Moorhen	*Gallinula chloropus*	26
Bird	Common Pochard	*Aythya ferina*	6
Bird	Common Redshank	*Tringa totanus*	25
Bird	Common Sandpiper	*Actitis hypoleucos*	3
Bird	Common Scoter	*Melanitta nigra*	11
Bird	Common Shelduck	*Tadorna tadorna*	36
Bird	Common Snipe	*Gallinago gallinago*	15
Bird	Common Tern	*Sterna hirundo*	3
Bird	Curlew Sandpiper	*Calidris ferruginea*	1
Bird	Dunlin	*Calidris alpina*	14
Bird	Eurasian Curlew	*Numenius arquata*	29
Bird	Eurasian Dotterel	*Charadrius morinellus*	1
Bird	Eurasian Oystercatcher	*Haematopus ostralegus*	38
Bird	Eurasian Spoonbill	*Platalea leucorodia*	1
Bird	Eurasian Teal	*Anas crecca*	17
Bird	Eurasian Wigeon	*Anas penelope*	18
Bird	Eurasian Woodcock	*Scolopax rusticola*	2
Bird	European Golden Plover	*Pluvialis apricaria*	8
Bird	European Shag	*Phalacrocorax aristotelis*	29
Bird	Ferruginous Duck	*Aythya nyroca*	1
Bird	Forster's Tern	*Sterna forsteri*	1
Bird	Gadwall	*Anas strepera*	2
Bird	Gavia	*Gavia*	1
Bird	Glaucous Gull	*Larus hyperboreus*	1
Bird	Glossy Ibis	*Plegadis falcinellus*	1
Bird	Great Black-backed Gull	*Larus marinus*	32
Bird	Great Cormorant	*Phalacrocorax carbo*	31
Bird	Great Crested Grebe	*Podiceps cristatus*	13

Group	Common name	Scientific name	Number recorded
Bird	Great Northern Diver	*Gavia immer*	7
Bird	Greater Scaup	*Aythya marila*	3
Bird	Green Sandpiper	*Tringa ochropus*	2
Bird	Grey Heron	*Ardea cinerea*	31
Bird	Grey Plover	*Pluvialis squatarola*	8
Bird	Greylag Goose	*Anser anser*	2
Bird	Herring Gull	*Larus argentatus*	42
Bird	Jack Snipe	*Lymnocryptes minimus*	3
Bird	Kentish Plover	*Charadrius alexandrinus*	1
Bird	Larus	*Larus*	2
Bird	Lesser Black-backed Gull	*Larus fuscus*	21
Bird	Little Auk	*Alle alle*	1
Bird	Little Egret	*Egretta garzetta*	22
Bird	Little Grebe	*Tachybaptus ruficollis*	14
Bird	Little Gull	*Larus minutus*	4
Bird	Little Stint	*Calidris minuta*	1
Bird	Little Tern	*Sternula albifrons*	3
Bird	Long-tailed Duck	*Clangula hyemalis*	3
Bird	Long-tailed Tit	*Aegithalos caudatus*	21
Bird	Mallard	*Anas platyrhynchos*	38
Bird	Manx Shearwater	*Puffinus puffinus*	4
Bird	Mediterranean Gull	*Larus melanocephalus*	6
Bird	Mew Gull	*Larus canus*	24
Bird	Mute Swan	*Cygnus olor*	24
Bird	Northern Fulmar	*Fulmarus glacialis*	13
Bird	Northern Gannet	*Morus bassanus*	32
Bird	Northern Lapwing	*Vanellus vanellus*	18
Bird	Northern Pintail	*Anas acuta*	9
Bird	Northern Shoveler	*Anas clypeata*	6
Bird	Phalacrocoracidae	*Phalacrocoracidae*	17
Bird	Pied Avocet	*Recurvirostra avosetta*	1
Bird	Pink-footed Goose	*Anser brachyrhynchus*	2
Bird	Purple Sandpiper	*Calidris maritima*	2
Bird	Razorbill	*Alca torda*	16
Bird	Red Knot	*Calidris canutus*	9
Bird	Red-breasted Merganser	*Mergus serrator*	9
Bird	Red-necked Grebe	*Podiceps grisegena*	1
Bird	Red-throated Diver	*Gavia stellata*	8
Bird	Ring-billed Gull	*Larus delawarensis*	2
Bird	Ringed Plover	*Charadrius hiaticula*	19
Bird	Roseate Tern	*Sterna dougallii*	1
Bird	Ruddy Duck	*Oxyura jamaicensis*	1
Bird	Ruddy Turnstone	*Arenaria interpres*	15
Bird	Ruff	*Philomachus pugnax*	3
Bird	Sanderling	*Calidris alba*	11
Bird	Sandwich Tern	*Sterna sandvicensis*	5
Bird	Slavonian Grebe	*Podiceps auritus*	3
Bird	Spotted Redshank	*Tringa erythropus*	1
Bird	Stone-curlew	*Burhinus oedicnemus*	1
Bird	Surf Scoter	*Melanitta perspicillata*	1
Bird	Tufted Duck	*Aythya fuligula*	5
Bird	Velvet Scoter	*Melanitta fusca*	2
Bird	Water Rail	*Rallus aquaticus*	3
Bird	Whimbrel	*Numenius phaeopus*	2
Bird	Whooper Swan	*Cygnus cygnus*	6

1.8 Recommendations

- As was recommended in 2021, a visitor management strategy for the site is required – to include trail network interventions within the dune system where damage is evident along with the establishment of dune restoration works.
- Littering remains an issue and thus a litter management plan is required for the site to alleviate pressures related to litter impacts.
- Dogs walking off lead poses a known issue to the protected bird species of Malahide Eastury SPA and measures should be considered to reduce the impacts related to off lead dog walking.

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[7]. 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.

[7] 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.