

**REPORT TO MONITORING COMMITTEE
OF
2016
ENVIRONMENTAL SURVEYING AND MONITORING
PROGRAMME
OF THE
WILD ATLANTIC WAY**

WILD ATLANTIC WAY OPERATIONAL PROGRAMME 2015-2019

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1. Introduction

This is the second report to the Monitoring Committee about the results of the Environmental Surveying and Monitoring Programme that is being carried out to assess the effects of the implementation of the Wild Atlantic Way Operational Programme 2015 – 2019.

The ruggedness of Atlantic Ireland belies its environmental sensitivity, which is reflected in the fact that a significant portion of the length of the Wild Atlantic Way is designated to protect its ecological, scenic, historic and cultural sensitivity.

From the outset, Fáilte Ireland has been aware of concerns that the Wild Atlantic Way could increase pressures on these sensitive areas. A Strategic Environmental Assessment and the Appropriate Assessment [of the ecological effects] informed the design and development of the Operational project – from the outset.

The result was that Wild Atlantic Way Operational Programme aimed, in its conception, to avoid and minimise impacts on the natural environment and to raise awareness and engender protection of the wealth of natural assets along the Atlantic coast. As a result of this process Fáilte Ireland are committed to continuous monitoring of the environmental effects of the Wild Atlantic Way.

Reporting to Monitoring Group

Fáilte Ireland is committed to presenting the results of Wild Atlantic Way monitoring activities to a Monitoring Group twice each year.

The objective of the Monitoring Groups is to ensure that that robust systems are in place, in appropriate existing authorities, to ensure that all key commitments made at the programme level will be delivered effectively (including at the appropriate time), and to ensure that no adverse effects on the integrity of the environment. The second meeting will be a chance to review the results gathered from the second year of monitoring. This will allow the identification of areas where the 2016 monitoring highlights any pressures to the environment.

This information can then be used by relevant members of the Working Group to identify protective, remedial or improvement actions within their own areas of responsibility during the following year.

The second meeting, in Q1 of the following year and in advance of the tourist season commencing, will be to approve the proposed next annual monitoring programme. The purpose of the meeting will be to ensure that monitoring is addressing areas of concern using methods and personnel that are appropriate. A secondary purpose would be to review progress made in addressing concerns raised by previous monitoring – in order to amend monitoring accordingly.

An annual summary of the results of monitoring will be publicly available on the Fáilte Ireland website.

Background

The Wild Atlantic Way is a branding exercise that unifies a series of existing and long-established touring routes along existing roads, viewing points and lay-bys. These predominantly seasonal activities have evolved over many years and now co-exist with a wide range of other year-round uses including farming, forestry and uses associated with settlement.

Tourism and its promotion are long-established activities in Ireland. The first promotion of Irish tourism is generally credited to Thomas Browne, 4th Viscount Kenmare who began to promote Killarney and its environs in the 1750's. By the beginning of the 20th century, tourism was being actively branded and promoted on a national scale, initially by the Irish Tourism Association and subsequently by Bord Fáilte since 1955 who have continually and consistently promoted Ireland as a tourist destination both as a country and as specific local/iconic destinations.

Touring guides to Ireland date to the late 18th century and large-scale touring in Ireland dates back to the latter part of the 19th century. At that time railways and associated large hotels offered access to areas, such as the West of Ireland, that had hitherto been remote and inaccessible. Indeed one major part of the Wild Atlantic Way (between Killarney and Glengarriff) has been in existence since the 1860's when it was known as The Prince of Wales Route.

Thus, it is important to understand that all Wild Atlantic Way routes are existing touring routes, on existing and long established public roads that have been subject to long-established promotion activities. The routes, their promotion and the intensity of their use are not new. It is acknowledged, however, that the Wild Atlantic Way itself constitutes a concerted promotional effort with the intention of sustainably growing revenue from tourism within the Atlantic coastal counties of Ireland.

Environmental Surveying and Monitoring Programme

To address the issue of ensuring that sustainably growing revenue from tourism within the Atlantic coastal counties of Ireland, without compromising the receiving environment, a surveying, monitoring and reporting strategy has been commenced to identify and assess environmental impacts of visitors at sites along the Wild Atlantic Way.

This investigates the actual effects of a range of representative tourism activities at a range of sites along the Wild Atlantic Way. The survey work commenced with a very detailed examination of the activities of visitors – to identify areas of concentration and pressure. The areas thus identified were then subjected to detailed ecological investigation to assess the actual effects. In parallel to this site-specific work a high-level monitoring programme has commenced that examines the well-being of the overall environment at the level of the counties in which the Wild Atlantic Way is located.

The monitoring includes the compilation of relevant regional data that is collected by other agencies as well as site specific data collected on behalf of Fáilte Ireland. Future monitoring will expand to include other candidate Discovery points prioritised in order of sensitivity and significance as directed by a Monitoring Group. Part of this work involves the development of generic monitoring methodologies and templates that may be used across a range of sites and conditions.

The principle concern is the capacity of the receiving environment, giving particular regard to European Sites, to sustainably absorb the impacts of the activities of existing visitors, and new. The monitoring examines individual sites as well as larger-scale and regional indicators. It examines the types, spatial patterns and intensity of existing visitor activities at and adjacent to candidate Discovery Points. This work serves to direct monitoring ecologists to areas known to receive maximum, moderate, minimum and no loading. The ecologists survey these and control areas, having particular regard to the specific conservation objectives of relevant European Sites.

Monitoring work is intended to describe the existing conditions of sites with a view to:

- contributing to Visitor Management Strategies;
- contributing to future editions of Fáilte Ireland's Wild Atlantic Way Operational Programmes and Guidelines.;
- identifying medial action/works required;
- assessing the capacity for future loadings;
- integrating site management with future European Site Management Plans.

In particular, the benchmark surveys at particular sites are intended to provide a factual basis for the future development of evidence-based design guidelines for tourism projects in Ireland and for the prior assessment of likely effects in areas of likely intensification or development of future tourism activity. The Strategy is also intended to guide future monitoring, surveying and evaluation of the likely effects of tourism activities at ecologically sensitive sites. It can be used to guide decisions regarding the maintenance, protection and mitigation of likely effects at these sites using an evidence-based approach to support resolutions.

The Environmental Surveying and Monitoring Strategy is based on a pilot ex-post survey that has provided benchmarks for the effectiveness of survey methods and facilitated the preparation and presentation of evidence about the likely effects of tourism on the receiving environment with increased level of reliability. This pilot survey was undertaken as part of the Burren and Cliffs of Moher Geopark LIFE Project¹.

The Environmental Survey and Monitoring Strategy is intended to produce data relating to:

- movement patterns of visitors at sites along the route;

¹ The Burren and Cliffs of Moher Geopark Co. Clare have been designated as one the European Geoparks Network for its unique glacio-karst landscape. It is recognised by UNESCO and is involved in the EU Life Project. Demonstration sites within the Geopark have been chosen as part of the EU Life Project requirements. These sites differ in size and represent a range of environments. The Burren and Cliffs of Moher Geopark is one of a number of locations worldwide the form part of the Global Network of National Geoparks.

- variations in visitor/traffic numbers;
- water quality effects at tourism settlements along the route;
- increases in tourism related planning applications;
- patterns of visitor activity, movement and behaviour at candidate Discovery Points and control sites;
- an indication of types of impacting activities at candidate Discovery Points and control sites;
- an indication of extent of ecological effect zones at candidate Discovery Points and control sites; and the need and type of mitigation responses.

The results aim to identify the extent and significance of effects from both typical circumstances and those that give rise to increased effects. This evidence can then be used as a guide for designers, decision-makers and the general public at times when the likely effects of proposed tourism activities are being evaluated.

The Strategy for Environmental Surveying and Monitoring is an evolving tool that will be informed and updated by emerging findings. It promotes an opportunity to set a precedent for monitoring and to carry out research into the likely effects of implementing the Wild Atlantic Way Operational Programme. The results will facilitate a best practice approach when incorporating environmental considerations into all aspects of route implementation.

The purpose of the monitoring is to ensure that the effects of the implementation of the Operational Programme are understood and acted upon to ensure that there will be no delays in identifying existing or emerging activities that could threaten the environment. This document sets out the Strategy for Environmental Surveying and Monitoring for the Wild Atlantic Way Operational Programme.

The collection of a combination of macro data, observational and ecological evidence provides the basis for the definition of monitoring for site-specific vulnerabilities as well as site specific indicators in addition to the indicators used among all sites. The former can be used to guide specific project and management interventions, while the latter can be used to report on the sustainability of emerging use patterns on a larger over a longer time.

The carrying out of surveying and monitoring will form the basis for the development of evidence-based studies that will assist users in collecting data on patterns of adverse environmental effects for use in the development and management of the sites.

During the 2015 monitoring the results concluded that existing visitor activities had generally low level effects on the environment, there was however some areas where impacts do occur. The survey work examined 6 sites (Downpatrick, Keem, Cliffs of Moher, Mizen Head, Loop Head and Old Head of Kinsale) and their contents to establish visitor activity and to examine the ecological effect in the areas frequented by visitors. From the information obtained regarding the causes of any observed effects, appropriate measures required to address the effects form the following stage if this monitoring.

Each site was a tourism/recreation attraction prior to the development of the Wild Atlantic Way. As a result of this many of the impacts identified have been developing over many years of visitor use.

Annual Method Review/Comparison

- During 2016 Observation survey, monitoring was carried out by three surveyors, compared to 2015 which saw a two-person team carry out the surveys
- Large sites were monitored more efficiently as a result of this change
- Two surveyors conducted the surveys, one acting as a supervisor moving between survey locations
- During the 2015 surveys, visitor numbers and activities were recorded during the pre-planning day, resulting in two days of survey information being gathered
- The 2016 surveys were completed with a full day of pre-planning, with visitor numbers not being recorded, and a full day of surveying
- Having a three-person survey team allowed sites be surveyed within the recommended 8-10-hour period
- Comparatively there are less numbers of visitors observed in 2016 than 2015 due to the recording of visitor information during the pre-planning surveys in 2015, along with the selection of smaller discovery points, which receive less visitors overall
- The methods are designed to be standalone site specific assessments and therefore the recording of visitor numbers during the preplanning visits in 2015 is not seen to have significant impacts on the monitoring program.
- All of the Signature Discovery Sites in 2015 were selected to be monitored as these were the flagship sites for the Wild Atlantic Way (WAW) brand and were expected to receive the largest visitor numbers per year
- A long list of all discovery points along the WAW was considered for the 2016 monitoring
- The sites monitored in 2015 were spatially constrained, which resulted in tourist impacts being condensed within a defined area
- It was determined that a focus on sites which had potential for disperse impacts was required
- Visitor interactions on Beaches were expected to be disperse in nature and therefore a short list of beach sites was prepared
- Following further discussions with the WAW Monitoring Group it was proposed to also include Island Sites which would also fit the criteria of disperse impact potential

The distribution of all sites monitored to date can be seen in Figure 1.1

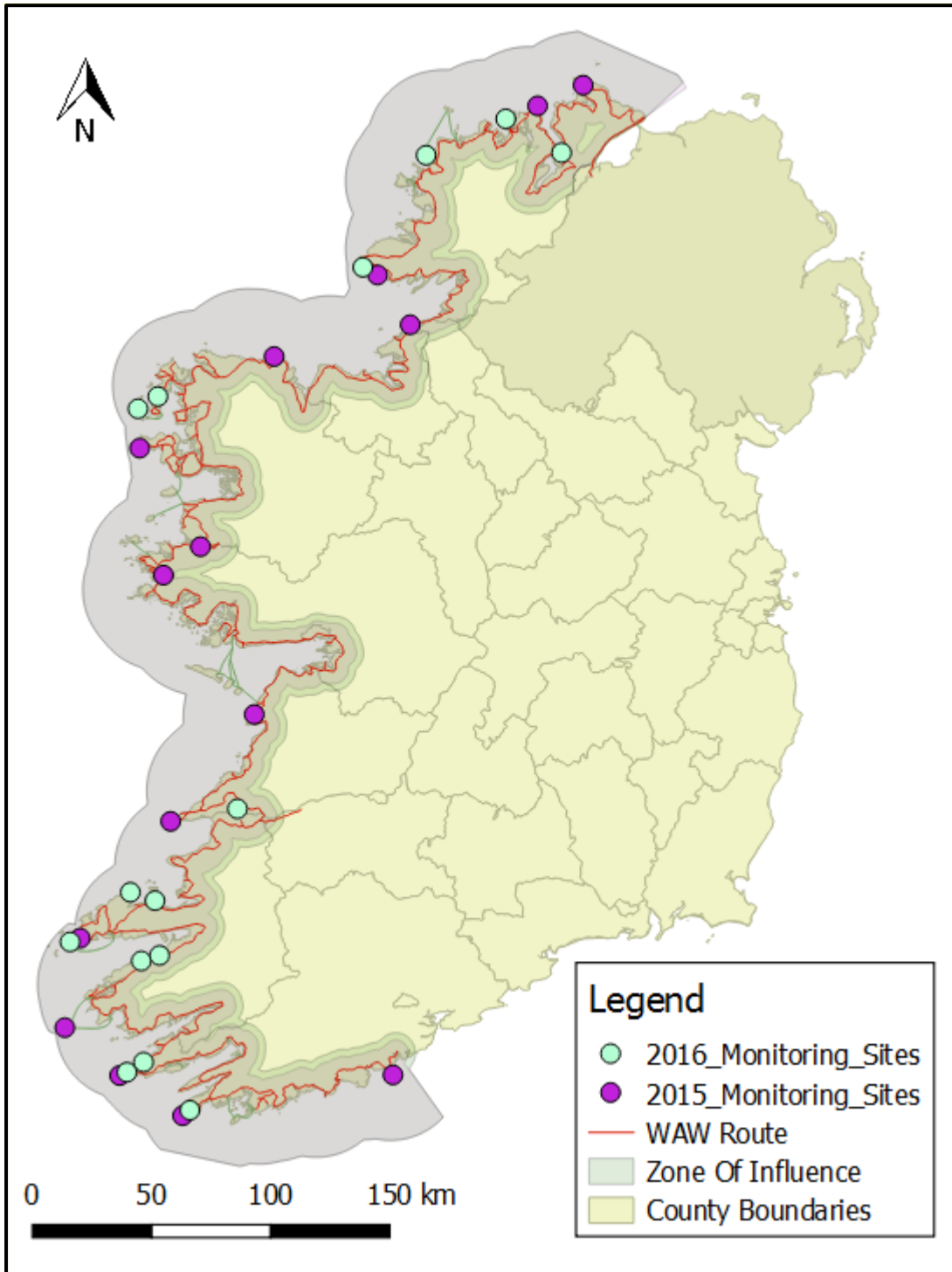


Figure 1.1 Wild Atlantic Way sites selected for monitoring in 2015 and 2016

Objectives for surveying and monitoring impacts of visitor at sites

The Environmental Survey and Monitoring Strategy encompass three levels of monitoring:

1. Macro monitoring of regional and/or county visitor numbers and associated level effects caused by the visitor contributions to loadings on transportation, waste and water infrastructure.
2. Site Surveys of visitor behaviour to describe general activities and associated environmental effects (including wear and tear of wildlife habitats, vegetation, monuments and site features.)
3. Site Surveys to describe the specific effects on the ecology of areas that were observed to have been used/trafficked by visitors and adjacent control areas.

The objectives of the Surveying and Monitoring Strategy are:

1. To establish
 - Visitor behaviour at sites (both tourist and local)
 - Environmental conditions (sensitivities or specific site issues)
 - Causes of pressures (effects, threats and trends)
2. To Understand
 - Nature and extent of behaviours and associated effects
 - Contribution of visitor behaviour to environmental effects
 - Causes of visitor behaviour causing adverse environmental effects
3. To Inform
 - Predictions about likely effects of future behaviour (at new or intensified sites)
 - Design and management measures to avoid adverse effects
4. To measure movement patterns
 - Vehicle types, numbers, age of visitors
 - Parking, arrival, departure
 - Times
5. To establish the extent of visitor movement at specific sites
 - the distances, routes and locations, movements (zones travelled from/to sensitivities and initial landing point)
 - the numbers, frequency and duration of activities
6. To establish the nature of the visitor behaviour at sites
 - Walking, climbing interacting with site features
 - Sitting, picnicking, playing
 - Filming, photography, drawing, writing etc.
7. To evaluate
 - Activities observed to most impact the resources

- Visitor types observed to most impact the resources

The methodology is replicable and will assist in establishing trends over time and across programmes. The information collected can be assessed to identify and isolate what can:

- most efficiently be measured in future monitoring programmes;
- provide the most reliable indicators to be used for future monitoring;
- provide the most effective methodologies to be used for observation; and
- identify site-specific dynamics and pathways to guide the development of mitigation responses if required.

The evidence collected from observing visitor behaviour has been used to direct monitoring ecologists to areas known to receive maximum, moderate, minimum and no loading. The ecologists surveyed these and control areas, having particular regard to the specific conservation objectives of relevant European Sites.

The combination of observation and quantitative evidence has been used to report on programme outcomes and advise on the present impacts arising from visitor behaviour onsite and assist in developing mitigation or remedial measures as directed by a Monitoring Group.

Outline of Summary Reporting

This summary will provide the following information

Summary Report on Strand One Monitoring - using Existing Datasets

Strand One of the monitoring concentrates on long-established, high quality, official baselines that measure inter alia the seasonal variances in environmental loading caused by visitors - such as water quality, road traffic, Blue Flag Beach conditions and Green Coast Awards.

Summary Report on Strand Two Monitoring - Visitor Observation Survey

Strand Two of the monitoring concentrates on the examination of patterns of visitor behaviour at sites along the Wild Atlantic Way. The aim of the Visitor Observation Survey is to collect evidence of stay duration, activities undertaken, location and direction of excursions from vehicles.

Summary Report on Strand Three Monitoring - Ecological Survey

Strand Three of the monitoring concentrates on the collection of ecological evidence. The evidence collected identifies core and secondary movement areas trafficked by users. This informs and guides the collection of ecological evidence. The zones identified during the Visitor Observation Survey provides evidence about where to examine evidence for the location, number, shape and extent of detailed ecological surveys to provide quantitative evidence of effects that can be compared to unaffected similar 'control' sites elsewhere.

2. Summary Report on Strand 1- Macro Monitoring using Existing Dataset



Figure 0.1 Macro Monitoring Location

Background

Strand One of the monitoring strategy concentrates at nine long-established, high quality, official baselines at seven locations. These measures *inter alia* the seasonal variances in environmental loading caused by visitors - such as water quality, road traffic, Blue Flag Beach conditions and Green Coast Awards.

The use of existing, robust datasets will be annually assessed to identify any emerging trends and changes in a small number of key diagnostic environmental performance indicators. These macro-indicators provide a very high level of coordination for the cumulative impact assessment of other activities. Strategic Environmental Assessment of these plans and policies – at county, regional and sectoral levels utilise the same indicators. This also facilitates the isolation of the contribution of tourism though in-combination effects.

The monitoring focuses on intra-urban settlements between gateway towns along the Wild Atlantic Way. Gateways such as Cork and Galway that capture the infiltration of visitors. These also supply the high-level 'input' data for the monitoring before they become dissipated among many smaller destinations and intra-urban settlements. The purpose of macro monitoring is to identify the state of the environment between the gateway settlements because these intra-urban settlements, such as Bundoran in Co. Donegal, often accommodate and entertain the bulk of overnight visitors. There are 7 monitoring sites and 4 control sites selected to for the purpose of the macro monitoring. Each site is located in the counties situated along the Wild Atlantic Way, the 7 sites are; Dungloe, Bundoran, Newport, Galway Bay, Kilrush, Bantry and Cahersiveen. The 4 control points are; Ballybofey, Gort, Castleisland and Lahinch.

This strategy facilitates the direct identification and assessment, at a high level, of the effects that visitor numbers have on key environmental indicators. These use long-established baselines (from agencies such as the National Roads Authority, Environmental Protection Agency, Department of Environment, Community and Local Government, Department of Arts, Heritage and the Gaeltacht, etc.).

The 9 macro Indicators were as follows:

Factor	Frequency
Water Quality	Annual
Traffic Volume	Annual
Blue Flag Beaches	Annual
National Green Coast Award	Annual
State of Knowledge Irelands Biodiversity Report	Occasional
EPA Irelands Environment-An Assessment 2016	Every 4 Years
The status of EU Habitats and Species in Ireland	Occasional
Visitor Numbers	Annual
Tourism Related Planning Refusals	Annual

Table 2.1 Macro Indicators

Macro Indicator 1- Water Quality

'Water Quality' was the first macro-indicator of environmental status to be examined at each of the monitoring points outlined in Table 1.2, and control sites outlined in Table 1.3. The 'Water Quality' indicator is broken into two sub-indicators: Wastewater treatment plant/Agglomeration operational status, and Bathing Water Status.

Wastewater treatment plant/ agglomeration operational status

This macro-indicator can be used to identify persistent effects on Water Quality that is attributable to tourism i.e. overloading of treatment capacity resulting in failure to meet minimum requirements in summer months as a result of high visitor numbers.

The results show that of the 7 monitoring points and 4 control points examined for this study, 5 (Castleisland, Ballybofey, Bantry, Cahersiveen and Galway Mutton Island) wastewater treatment plants/ agglomerations were compliant with Emission Limit Values in 2015, this shows that there has been an improvement from 2014 which recorded only 2 plants (Castleisland and Ballybofey) complying with the Emission Value Limit. (Reasons for non-compliance were regularly attributable to exceedances in permitted ELV's of ammonia and other substances. Non-compliance with ELV's at wastewater treatment plants could suggest that the facilities are serving over-populated catchment areas. Population numbers from 2014 to 2015 stayed generally the same, which did not seem to cause any more significant issues with compliance to the ELV. Increased visitor numbers to the monitoring points and control sites along the Wild Atlantic Way during the summer months could be putting pressure on these wastewater treatment facilities, resulting in breaches in annual ELV's.

4 of the named facilities received complaints during the year 2015, and 9 of the sites reported incidents to the EPA.

1 of the 11 wastewater treatment plants/agglomerations examined for this study had improvements or upgrades made to the facilities during the year 2015.

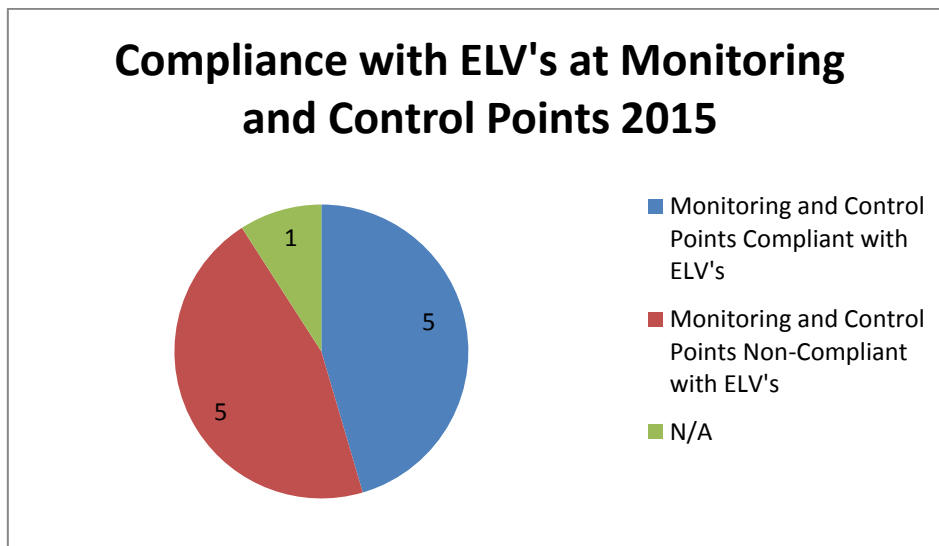


Figure 0.2 Compliance with ELV's at Monitoring and Control Points 2015

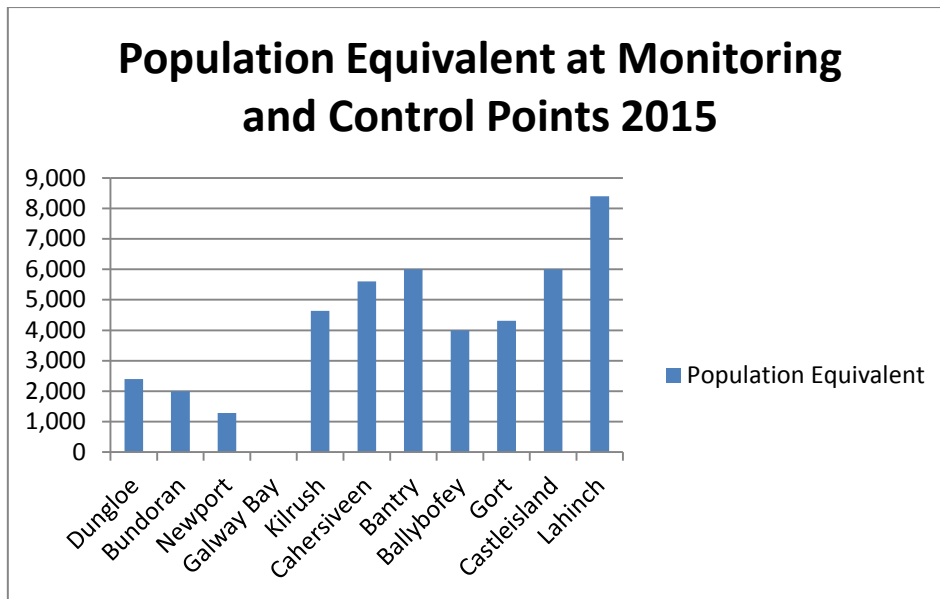


Figure 0.3 Population Equivalent at Monitoring and Control Points 2015

14 'Bathing Water Monitoring Sites' at 7 of the established monitoring points and control sites along the Wild Atlantic Way were examined. Of the 14 bathing water monitoring sites examined, 12 were found to have 'Excellent' bathing water status.

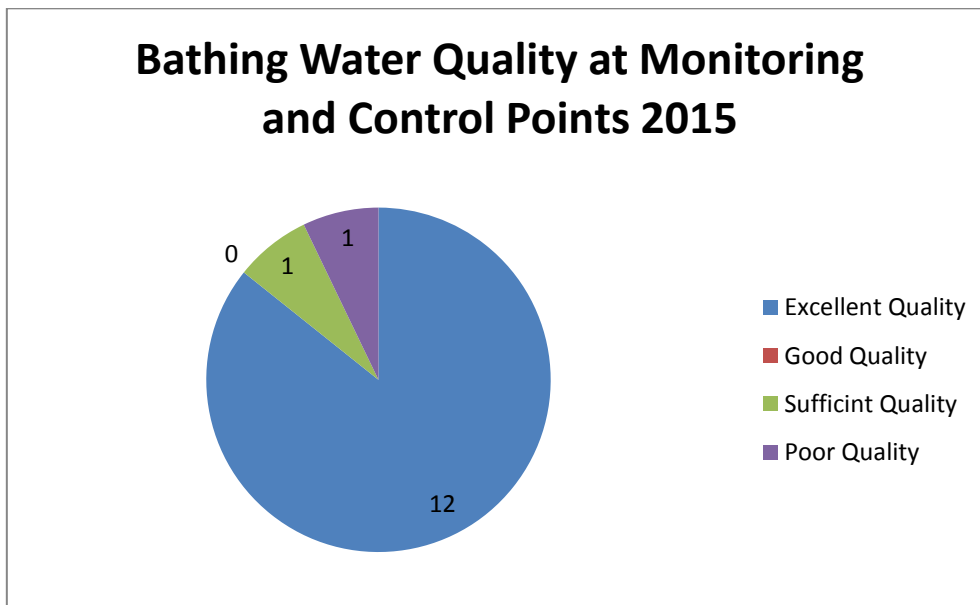


Figure 2.3 Bathing Water Quality at Monitoring and Control Points 2015

Monitoring Indicator 2- National Roads Authority Traffic Counter

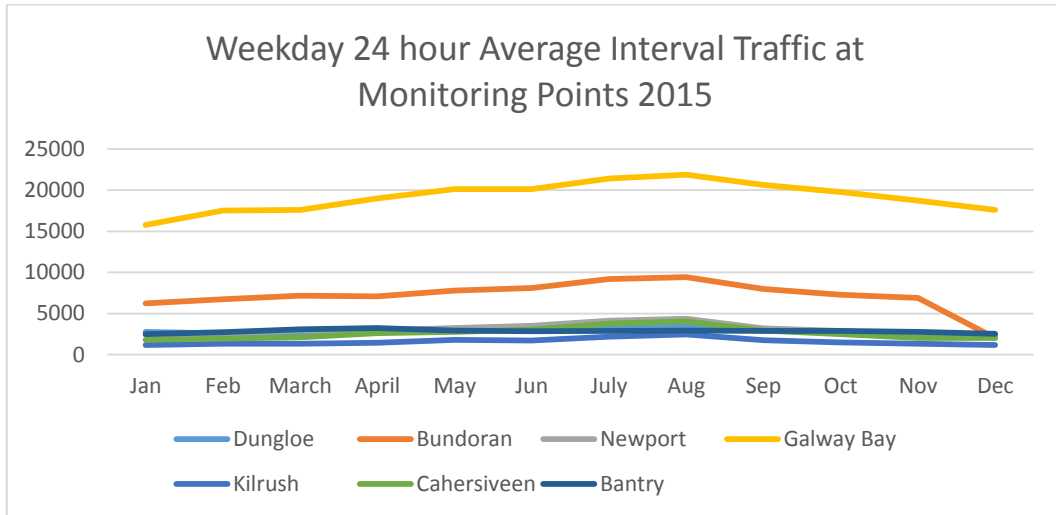


Figure 0.4 Weekday 24-hour average interval traffic at monitoring points 2015

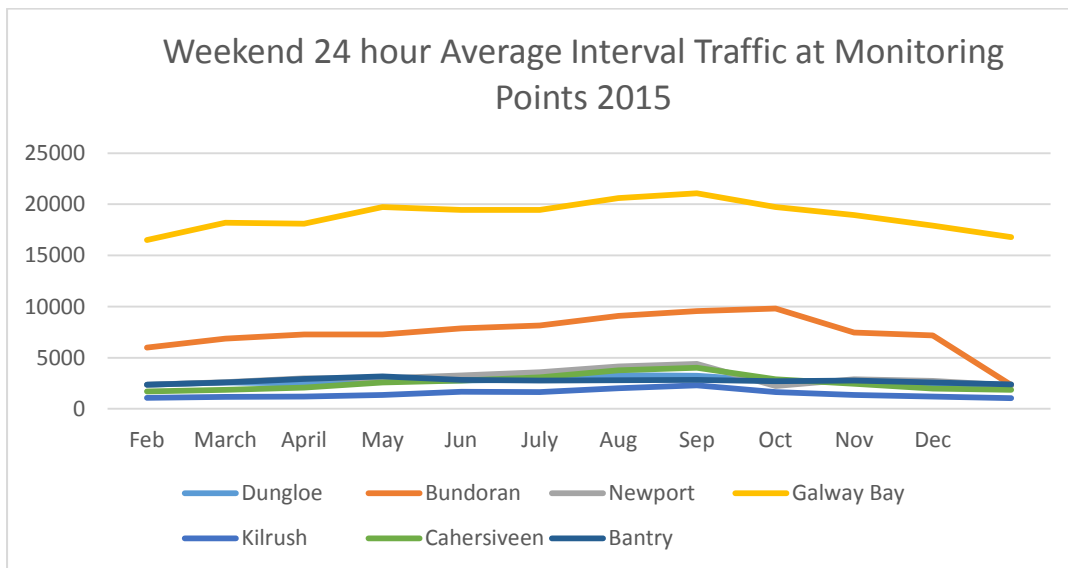


Figure 0.5 Weekend 24-hour average interval traffic at monitoring points 2015

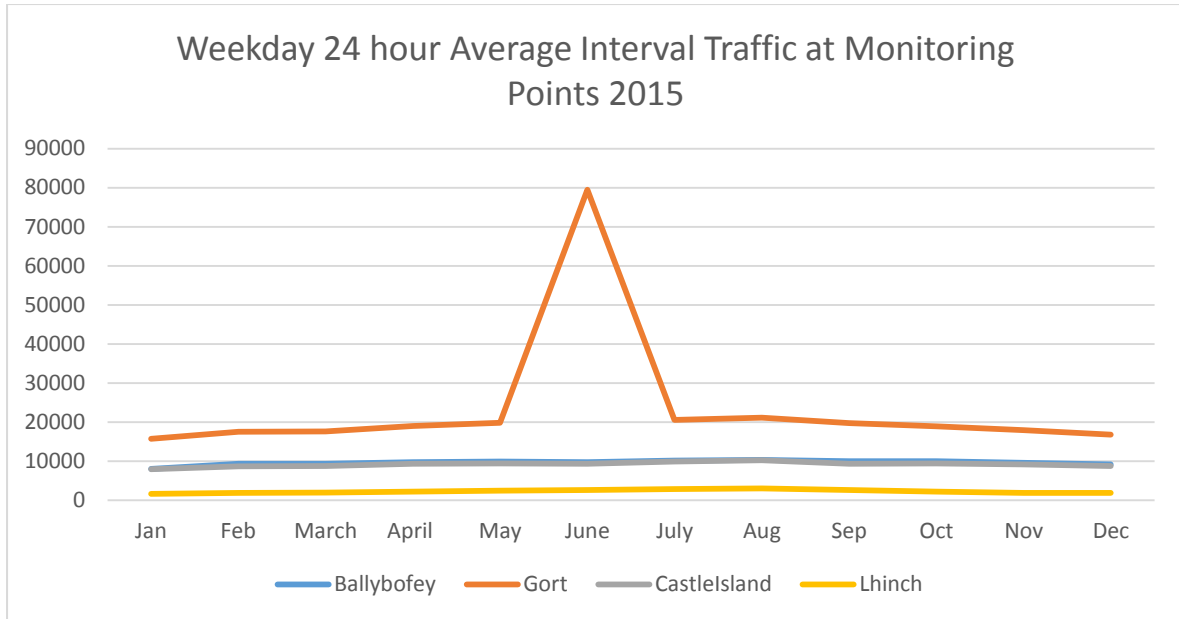


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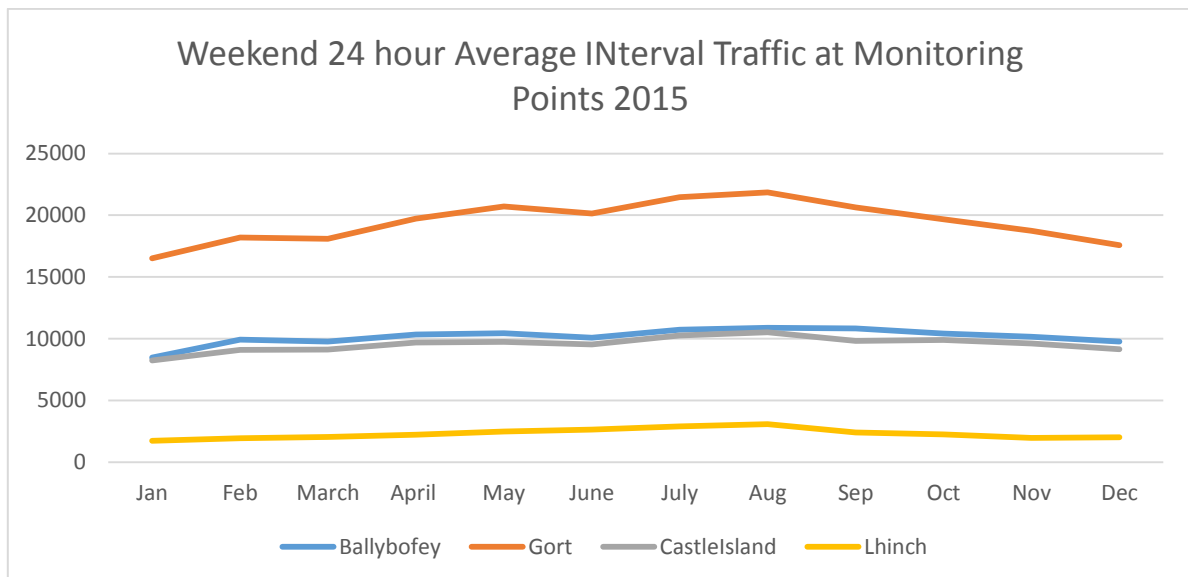


Figure 0.5 Weekend 24-hour average interval traffic at control points 2015

The results of this macro indicator show that in 2015 there was an increase in 24-hour average interval traffic volumes during both weekends and weekdays, at all monitoring and control points during the summer months. The results show that there was a sharp increase in weekday traffic during the summer months. This increase in average interval traffic at the monitoring points and control sites examined is likely attributable to an influx of tourists (domestic and foreign) travelling to and from the Wild Atlantic Way sites during the summer months.

Macro-Indicator 3- Blue Flag Beaches

The monitoring and technical Indicator 'Blue Flag Beaches' was applied to each of the monitoring points outlined in Table 2.3 , and control points outlined in Table 2.2 All those monitoring and control points that have been awarded 'Blue Flag' status in the year 2015 were noted.

County	Monitoring Point	Blue Flag
Donegal	Dungloe	N
Donegal (Sligo Border)	Bundoran	Y
Mayo	Newport	N
Galway	Galway Bay	N
Clare	Kilrush	N
Kerry	Cahersiveen	N
Cork	Bantry	N

Table 2.2 Blue Flag Beaches at Control Sites

County	Control Site	Blue Flag
Donegal	Ballybofey	N
Galway	Gort	N
Kerry	Castleisland	N
Clare	Lahinch	Y

Table 2.3 Blue Flag Beaches at Monitoring Points

Of the 11 beaches examined at the established monitoring and control points, 2 of the beaches had been awarded 'Blue Flag' status in 2015. These were Bundoran beach and Lahinch beach.

Macro Indicator 4- Green Coast Award

The monitoring and technical Indicator 'Green Coast Award' was applied to each of the monitoring points outlined in Table 2.4 and control points outlined in Table 2.5 All those monitoring and control points that had 'Green Coast' status in the year 2015 were noted.

Green Coasts at Monitoring Points

County	Monitoring Point	Green Coast
Donegal	Dungloe	N
Donegal (Sligo Border)	Bundoran	N
Mayo	Newport	N
Galway	Galway Bay	N
Clare	Kilrush	N
Kerry	Cahersiveen	N
Cork	Bantry	N

Table 0.4 Green Coasts and Monitoring Points

Green Coasts at Control Points

County	Control Site	Green Coast
Donegal	Ballybofey	N
Galway	Gort	N
Kerry	Castleisland	N
Clare	Lahinch	N

Table 0.5 Green coasts at control sites

Of the 11 monitoring and control points examined, none held an An Taisce 'Green Coast Award' in 2015.

Monitoring Indicator 5- State of Knowledge of Irelands Biodiversity

For monitoring purposes, the National Biodiversity Centre Annual Review was examined in order to inform on the State of Knowledge of Irelands Biodiversity for the year ending 2015. The following 2015 parameters were noted: Species Numbers, Datasets, Habitats and Recorded Users of Biodiversity Maps- the online data portal, as indicated in Table 2.11 below. Annual Review publications can be examined hereafter in order to assess any upward or downward trends in the state of knowledge of Irelands Biodiversity.

The National Biodiversity Centre Annual Review shows a notable rise in both numbers of species, and records and datasets of species in 2015. The National Biodiversity Data Centre has continued its work of collating empirical data and growing the national biodiversity database. This database now contains 3.7 million records from 116 datasets. Data on 15,300 species, which is almost half of all known Irish species, is available to map through the on-line data portal Biodiversity Maps. The only major change from 2014 is the larger percentage of bird records, thanks to the inclusion of almost 0.5 million bird records from the Bird Atlas 2017-11 dataset, provided by BirdWatch Ireland.

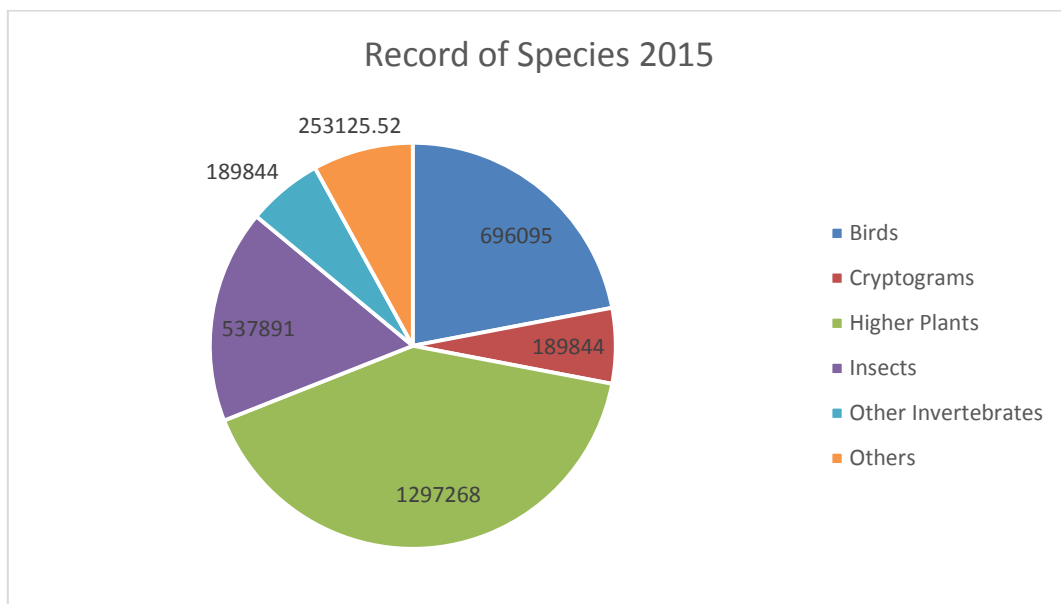


Figure 0.6 Composition of recorded species 2015

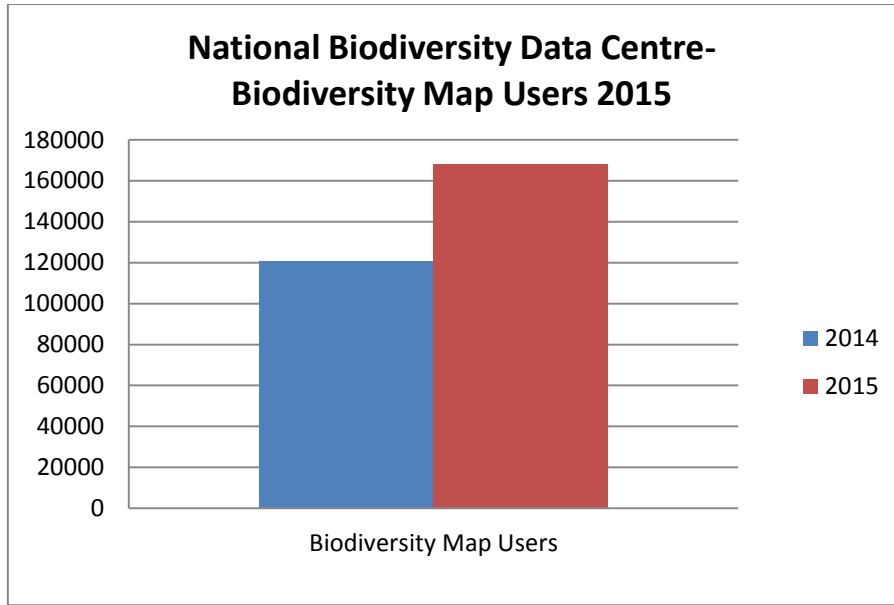


Figure 0.7 Biodiversity Map Users 2015

Monitoring Indicator 6- EPA Ireland's Environment - An Assessment (2016)

This general monitoring indicator is common to all of the above-mentioned monitoring and control points. Ireland's Environment 2016 – An Assessment, is the Environmental Protection Agency's four-yearly state of the environment report. It provides an evidence-based assessment of the current state of the environment in Ireland and the pressures being placed on it. It outlines the trends and changes in environmental quality as well as the socio-economic activities that are linked with these changes. The status of this monitoring indicator can be informed and updated by emerging findings and information sources from this report. It should be reviewed on release- every four years, and any changes in the environmental status along the Wild Atlantic Way should be noted.

The overall finding of the 2016 report is that Ireland's environment is in a generally good condition overall. However, there is no room for complacency and the country faces tough challenges in the coming years to meet EU commitments and targets across a range of areas including water, waste, air quality and greenhouse gases to name but a few. As a result of the growing economy focus must remain balanced between growth and becoming more sustainable to reduce emissions. In this context, the 2016 report has identified that the four key environmental challenges lined out in the 2012 report remain as valid now as they were in 2012: Valuing and protecting our natural environment; Building a resource-efficient, low-carbon economy; Implementing environmental legislation; and Putting the environment at the centre of our decision-making.

Monitoring Indicator 7- The status of EU Protected Habitats and Species in Ireland

This general monitoring indicator is common to all monitoring and control points. It provides for an assessment of the status of the habitats and species that Ireland is required to protect under the EU Habitats Directive. The status of this indicator can be informed and updated by emerging findings and information sources from the National Parks and Wildlife Service (NPWS) and other stakeholders on the status of EU Protected Habitats and Species.

The 2013 report 'The status of EU Protected Habitats and Species in Ireland' was reviewed in order to inform this monitoring indicator. The overall status of each of Irelands known habitats and species was noted as 'Good' 'Poor' or 'Bad,' for the period 2008-2014. This report should be reviewed on release every six years.

The data shows that in the year 2014, of the 59 EU protected habitats in Ireland- 4 were of 'Good' status, 26 were of 'Poor' status and 29 were of 'Bad' status. Of the 60 EU, protected species in Ireland- 25 were of 'Good' status, 15 were of 'Poor' status, 7 were of 'bad' status. The status of some 13 EU protected species in Ireland were 'Unknown' in 2014

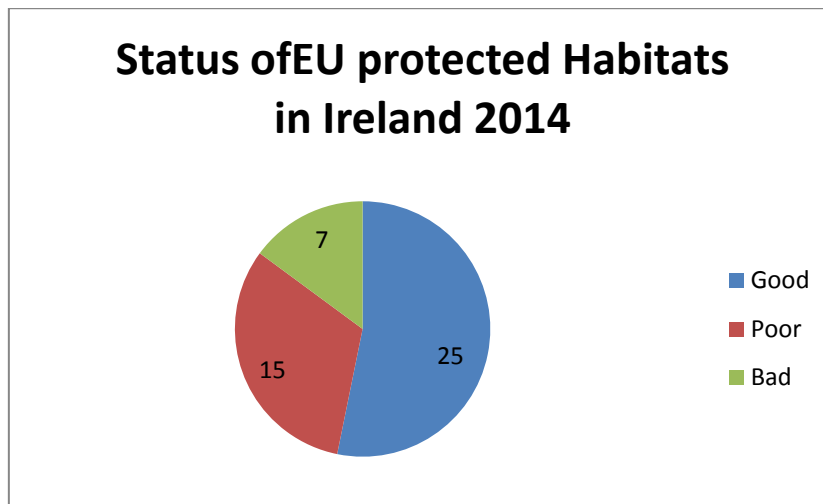


Figure 0.8 Status of EU Protected Habitats in Ireland 2014

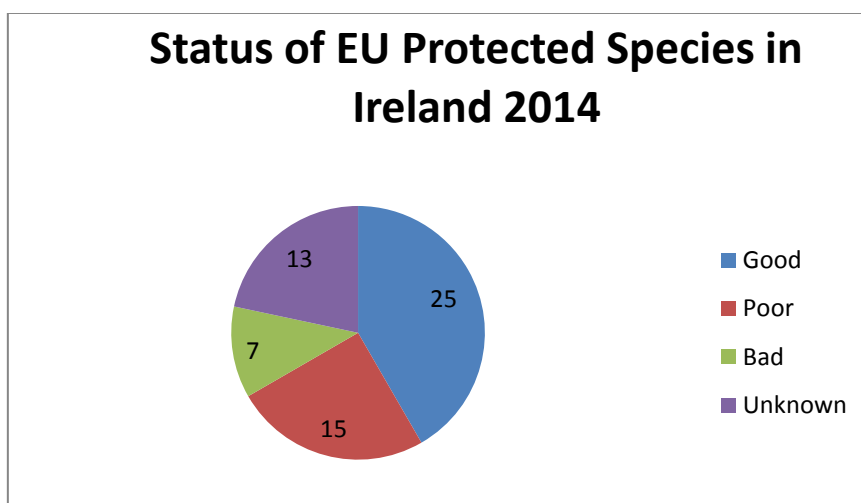


Figure 2.11 Status of EU Protected Species in Ireland 2014

Monitoring Indicator 8- Visitor Numbers

The monitoring and technical Indicator 'Visitor Numbers' was applied to each of the relevant counties for the year ending 2015.

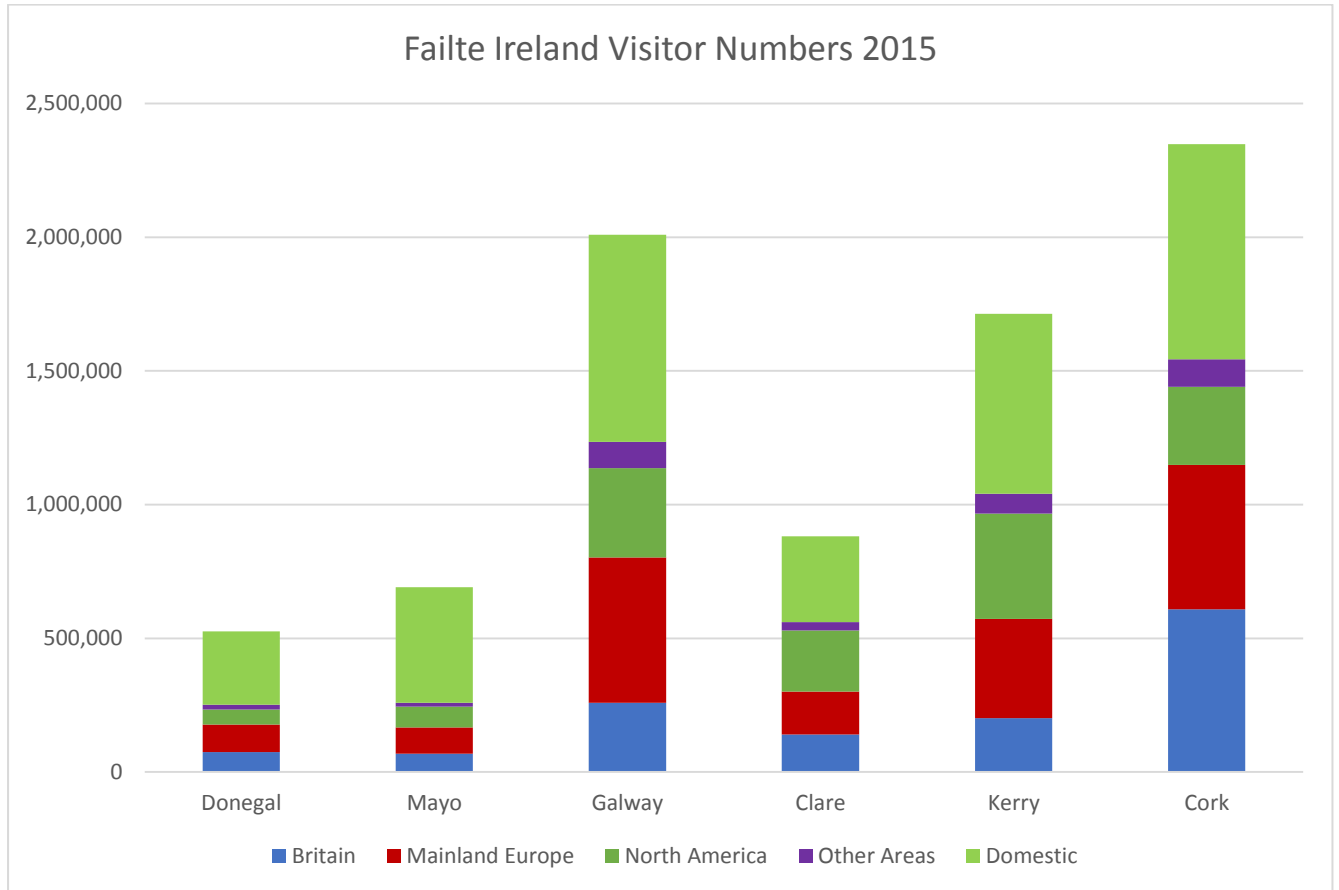


Figure 0.9 Failte Ireland Visitor Numbers at Counties along the WAW

Visitor numbers increased by 14% from 2014;

- Britain 10%
- North America 20%
- Mainland Europe 15%
- Domestic 5%

Monitoring Indicator 9- Tourism Related Planning Refusals

The final macro-indicator of environmental status examined for this study is 'tourism related planning refusals.' A high level of tourism related refusals is a potential indicator of pressure on the environmental status of a County.

Results show that every development in the six counties that was refused planning permission in 2015 as a result of tourism related reasons were all located along the Wild Atlantic Way route.

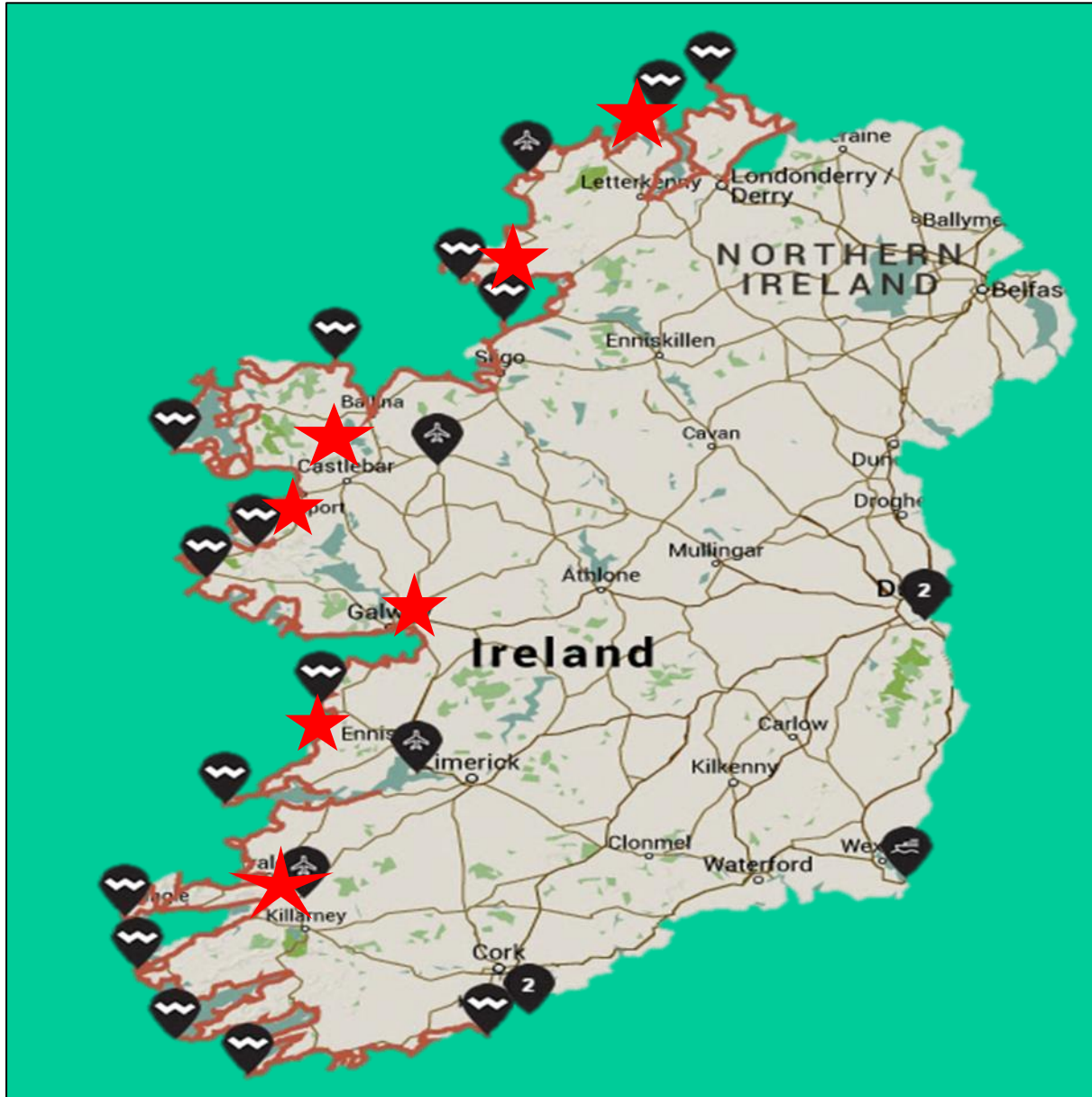


Figure 0.10 Locations of 2015 planning refusals along the WAW attributable to tourism

Conclusions and Recommendations

The macro monitoring element of the *Environmental Surveying and Monitoring for the Wild Atlantic Way Operational Programme*, as discussed in this document concentrates on long-established, high quality, official baselines. These official baselines were adopted for this monitoring survey in order to represent a number of key performance indicators, the intended use of which being to identify trends and changes in the state of the environment along the Wild Atlantic Way.

The key performance indicators, as described in detailed in Table 1.1 of this document, were applied to six monitoring points and a further four control sites inland from the route in order to provide an insight into the state of the environment along the Wild Atlantic Way during the year 2015. The results of these macro monitoring activities will be collated and presented to a Monitoring Group along with results of all other Wild Atlantic Way monitoring activities.

The Strategy for Environmental Surveying and Monitoring is an evolving tool that will be informed and updated by emerging findings. Presentation of all monitoring results should thus be presented to the Monitoring Group once a year hereafter. This information can be used by relevant members of the Monitoring Group to identify protective, remedial or improvement actions within their own areas of responsibility during the following year. An annual summary of the results of monitoring will be published on the Fáilte Ireland website at the end of each monitoring year.

3. Summary Report on Strand Two Monitoring - Visitor Observation Survey

Strand Two of the monitoring concentrates on the examination of patterns of visitor behaviour at sites along the Wild Atlantic Way. The aim of the Visitor Observation Survey was to collect evidence of stay duration, activities undertaken, location and direction of excursions from vehicles.

The Environmental Surveying and Monitoring was carried out as part of Fáilte Ireland's commitments in the Wild Atlantic Way Operational Programme 2015-2019.

Effective methods for visitor observation have been designed and tested using Pilot Visitor Observation Studies at the Burren and Cliffs of Moher Geopark in Co. Clare. The studies were carried out at full spectrum of types of circumstances that range from small spatially-concentrated areas to large diffuse sites. The study sites had a range of existing management regimes that range from those that are complex and highly structured, private enterprises to the simpler smaller sites.

The method is designed to have a simple, replicable template that allows easy identification patterns of visitor activity, movement and behaviour using a standardised visitor observation and tracking methodology for a range of site types. The collation of the data including the tracking of onsite movement by visitors result in the identification of core and secondary movement zones. The initial sites chosen for monitoring are the Fifteen Discovery Points along the Wild Atlantic Way. The candidate Signature Discovery Points range from having complex and highly structured existing management regimes to existing roadside laybys with little or no management. The candidate Signature Discovery Points and Control Sites represent the following habitats/landscape types:

1. Rocky shores
2. Soft shores/beaches/dunes
3. Montane/upland/peat
4. Marine areas (sea, estuaries, salt marsh)
5. Improved Grasslands (farm land)

The second round of monitoring focuses on fifteen Discovery Points which have been prioritised in order of sensitivity and significance as directed by the monitoring group the monitoring will target the conservation objectives of European sites, and will monitor, identify and highlight effects arising from the Wild Atlantic Way on its own and in combination with other plans and projects, taking existing uses, pressures and loadings into account.

A list of general activities and effects was developed to assist in the categorisation of visitor behaviour (See Appendix III). While these are generic to all sites, the list is non-exhaustive and was expanded depending on the individual site or emerging trends. Activities and effects were categorised depending on their severity to guide accurate reporting in an effective, efficient and easily replicated manner (See Table 0.1 and

Effects	
Low Impact	No impact or a discernible impact i.e. no significant, lasting damage is identified
Medium Impact	A short term, reversible effect that is intermittent but will have no significant, long term impact
High/Severe Impact	Severe effect that has potential to have a significant, long-term, irreversible or permanent impact

Table 0.2).

Activities	
Low Level	Activity for which the site is intended
Medium Level	Activities, often incidental, depending on site management whereby the visitor engages in behaviour that may result in an effect
High Level	Activity where visitors engage in behaviour that is likely to have an effect on the site but may not be directly linked to a high impact

Table 0.1 Description of Activity Categorisation

Effects	
Low Impact	No impact or a discernible impact i.e. no significant, lasting damage is identified
Medium Impact	A short term, reversible effect that is intermittent but will have no significant, long term impact
High/Severe Impact	Severe effect that has potential to have a significant, long-term, irreversible or permanent impact

Table 0.2 Description of Effects Categorisation

Results and Analysis for all site

Site	Male	Female	Total No. of People	No. of Groups	Average Duration on Site
Lisfannon Beach	126	124	213	73	01:01:33
Ross Guill	67	48	115	56	00:03:00
Gola Island	4	10	14	5	04:00:00
Málainn Bhig	42	42	84	34	00:19:00
Mullet Bay	75	72	146	23	00:45:00
Inishkea South	5	4	9	3	04:00:00
Scattery Island	8	10	18	1	03:00:00
Castlegregory Beach	126	136	268	107	00:45:00
Mount Brandon	60	67	125	57	00:11:00
Blasket I.C	144	146	310	82	00:33:00
Rossbeigh Strand	259	258	487	169	00:43:00
Mountain Stage	169	172	341	115	00:04:00
Dooneen	62	50	111	45	00:08:00
Barley Cove	77	78	150	62	00:38:00
Garnish Point	149	157	306	115	01:30:00
Grand Total	1,309	1,388	2,697	941	00:41:00

Average Time Spent across all Sites

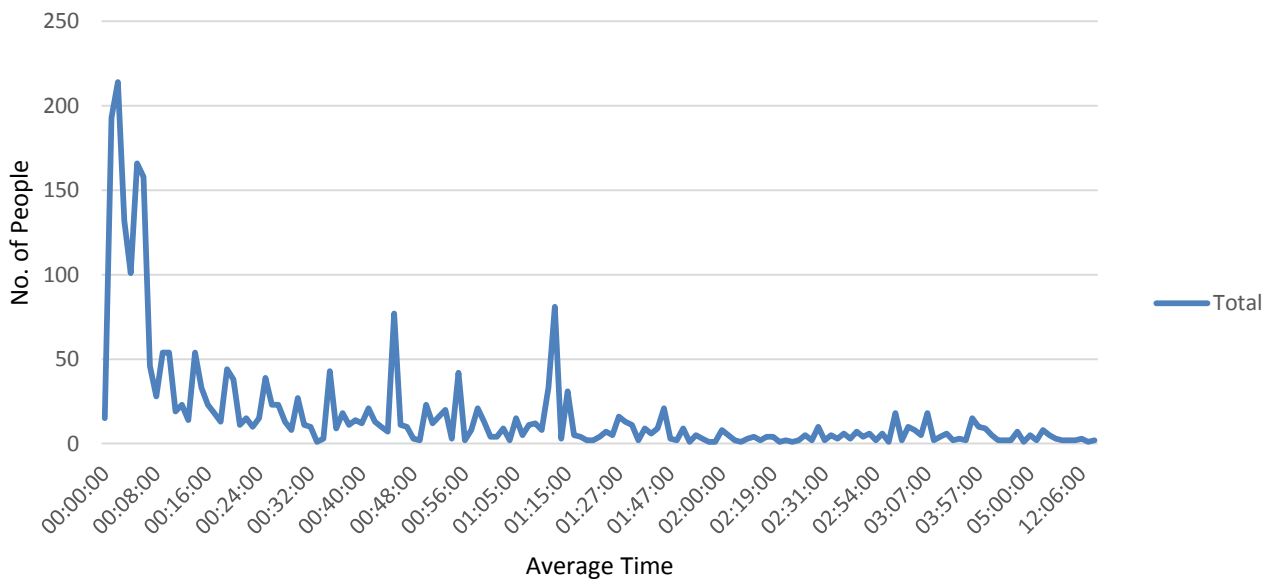


Figure 0.1 Duration of time spent by visitors across all sites

Mode Of Transport

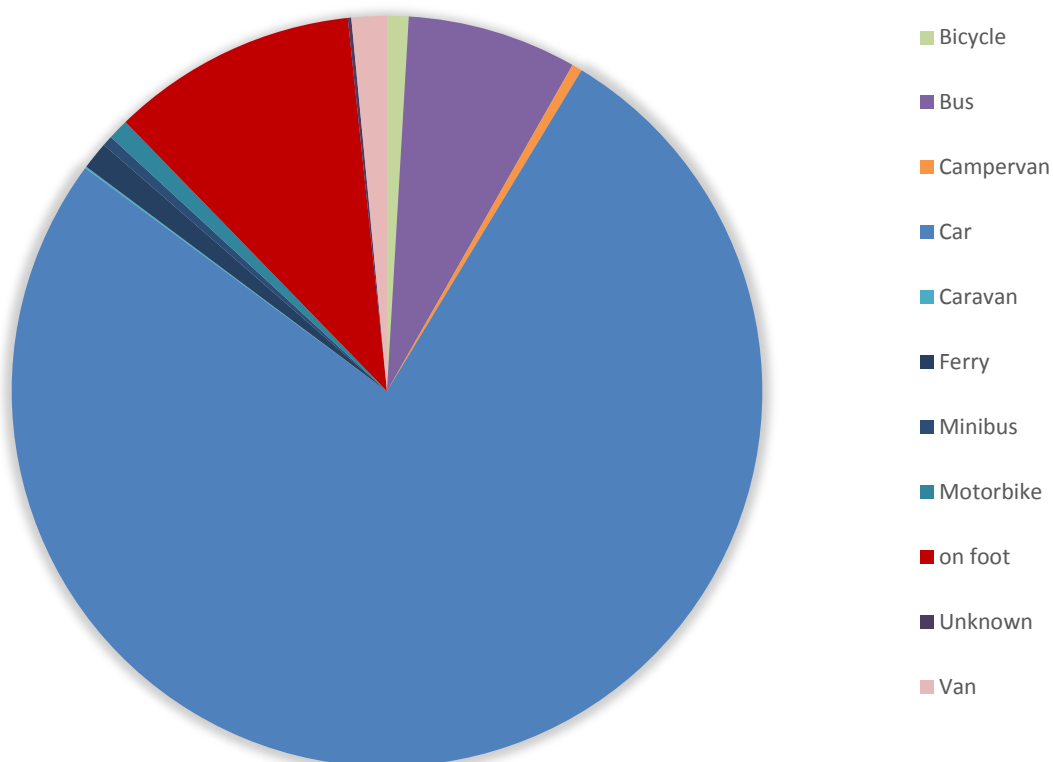


Figure 0.2 Modes of transport used across all sites

Table 0.3 Breakdown of modes of transport used at all sites

Mode of Transport	Number of People	Percentage of People
Car	2062	76.46%
On Foot	286	10.60%
Bicycle	25	0.93%
Bus	197	7.30%
Motorbike	24	0.89%
Van	41	1.52%
Minibus	12	0.44%
Ferry	32	1.19%
Caravan	12	0.44%
Unknown	4	0.15%
Grand Total	2697	100%

Age Demographic Across all Sites

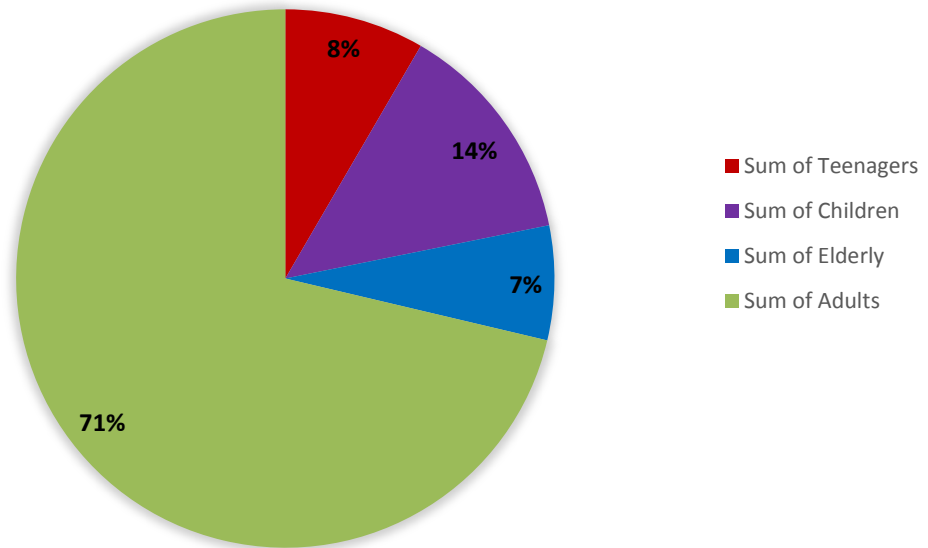


Figure 0.3 Age demographic across all sites

Use of Interpretive Material

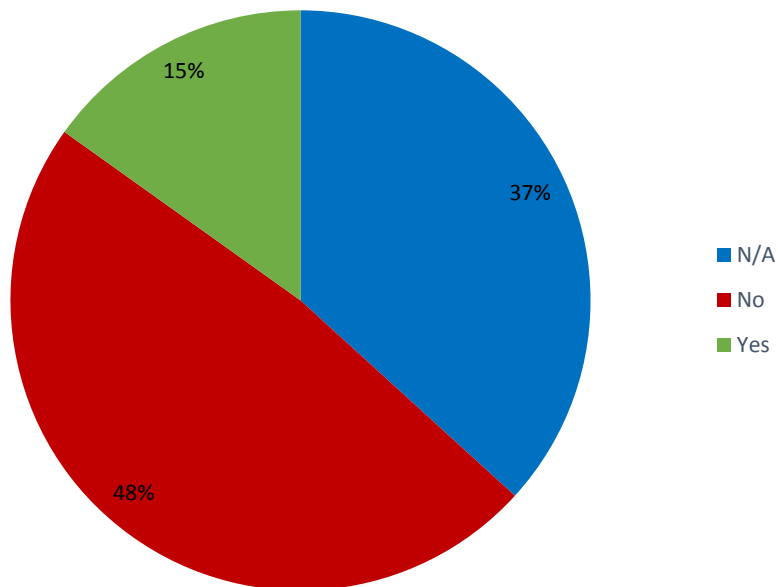


Figure 0.4 Use if interpretive material across all sites

Level of Activity Observed across all Sites

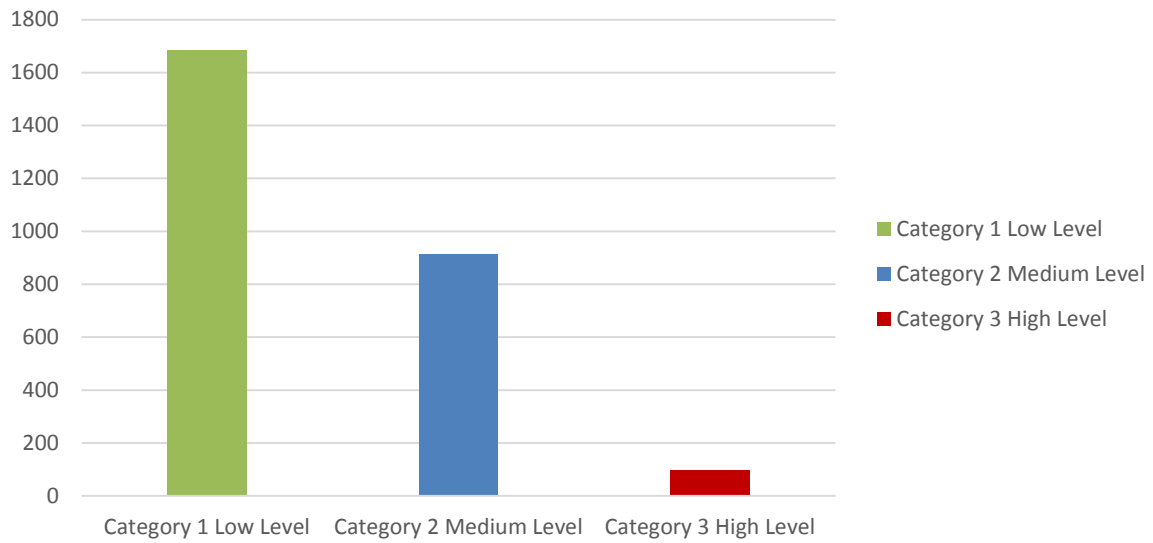


Figure 0.5 Overall level of activity recorded

Activity Level by Site

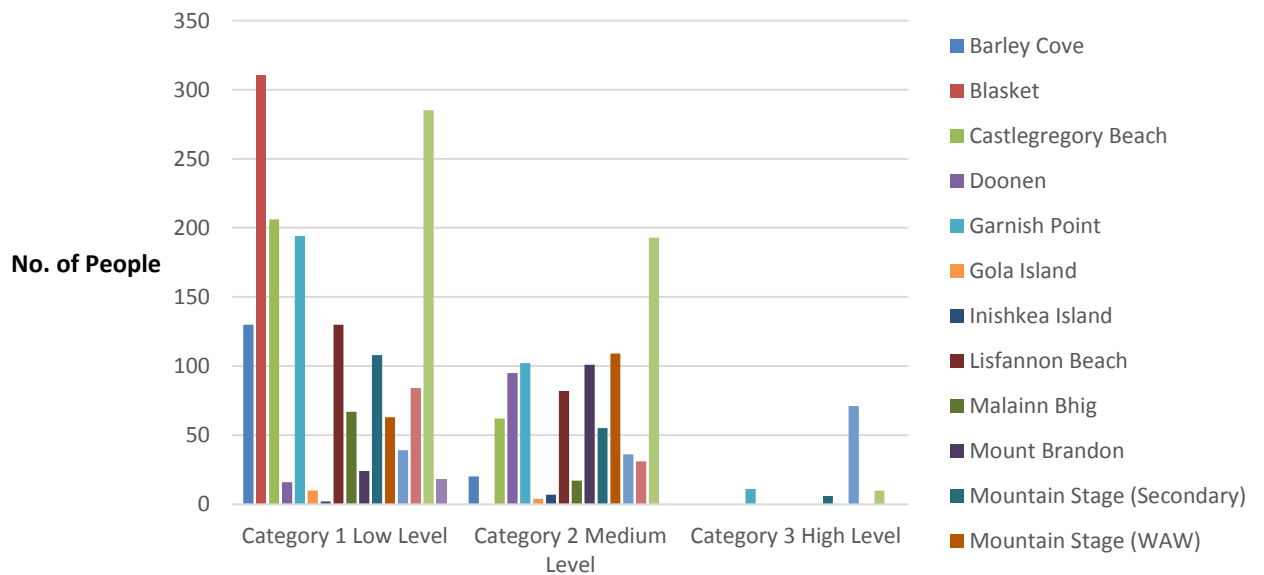


Figure 3.6 Level of Activity by Site

Activities Observed across all Sites

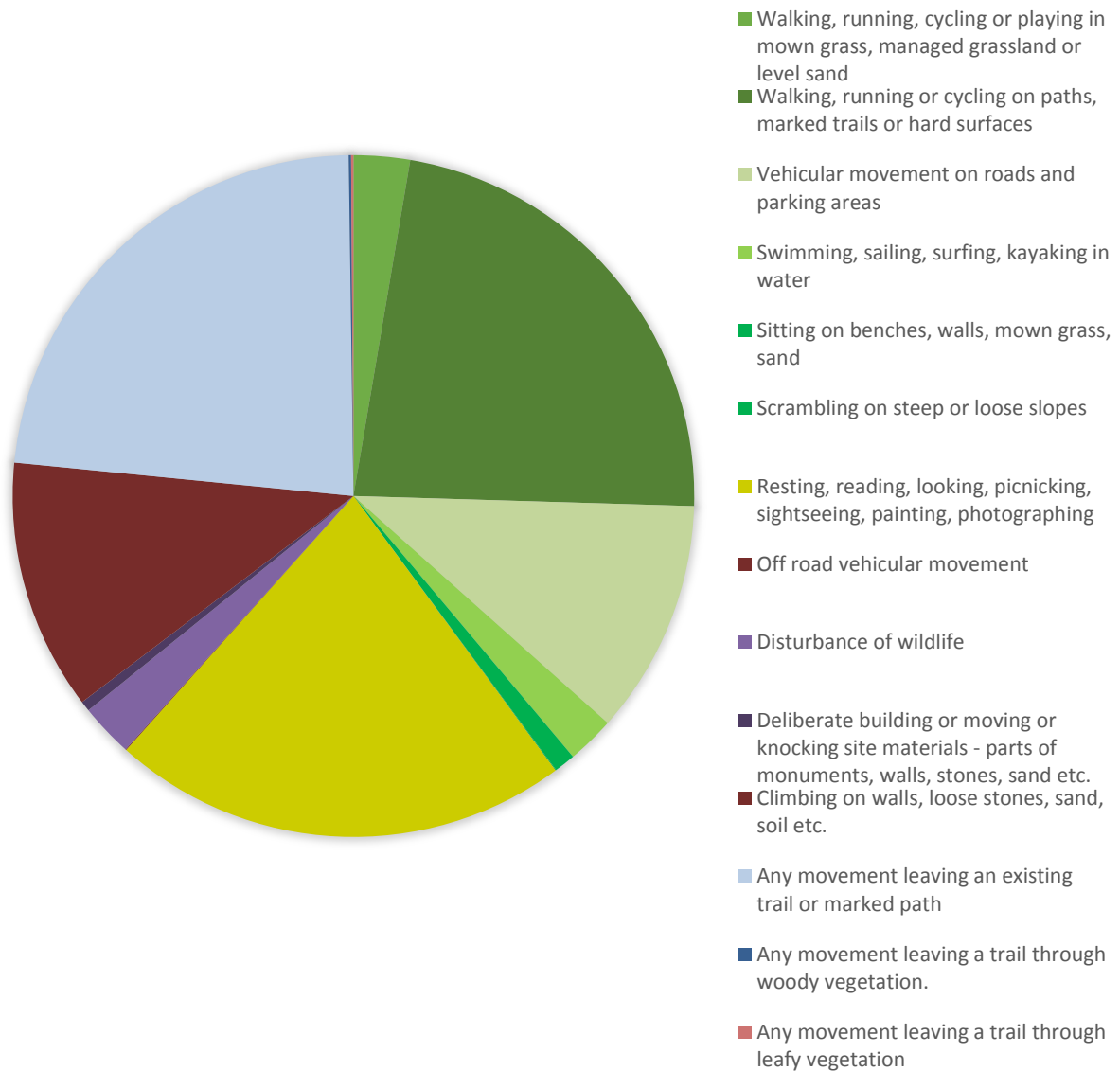


Figure 0.6 Range of activities recorded across all sites

Table 0.4 Breakdown of activities recorded across all sites

Activities Observed	No. of People	% of People
Walking, running, cycling or playing in mown grass, managed grassland or level sand	72	2.67%
Walking, running or cycling on paths, marked trails or hard surfaces	615	22.80%
Vehicular movement on roads and parking areas	300	11.12%
Swimming, sailing, surfing, kayaking in water	61	2.26%
Sitting on benches, walls, mown grass, sand	27	1.00%
Scrambling on steep or loose slopes	1	0.04%
Resting, reading, looking, picnicking, sightseeing, painting, photographing	586	21.73%
Off road vehicular movement	1	1.14%
Disturbance of wildlife	68	2.52%
Deliberate building or moving or knocking site materials - parts of monuments, walls, stones, sand etc.	13	0.48%
Climbing on walls, loose stones, sand, soil etc.	321	11.90%
Any movement leaving an existing trail or marked path	626	23.21%
Any movement leaving a trail through woody vegetation.	3	0.11%
Any movement leaving a trail through leafy vegetation	3	0.11%
Grand Total	2697	100%

Level of Impact across all Sites

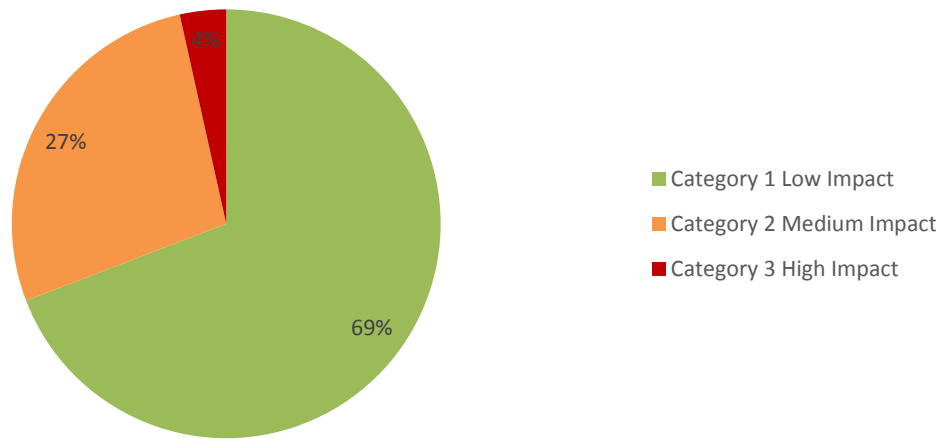


Figure 0.7 Overall level of impact recorded

Effect Level by Site

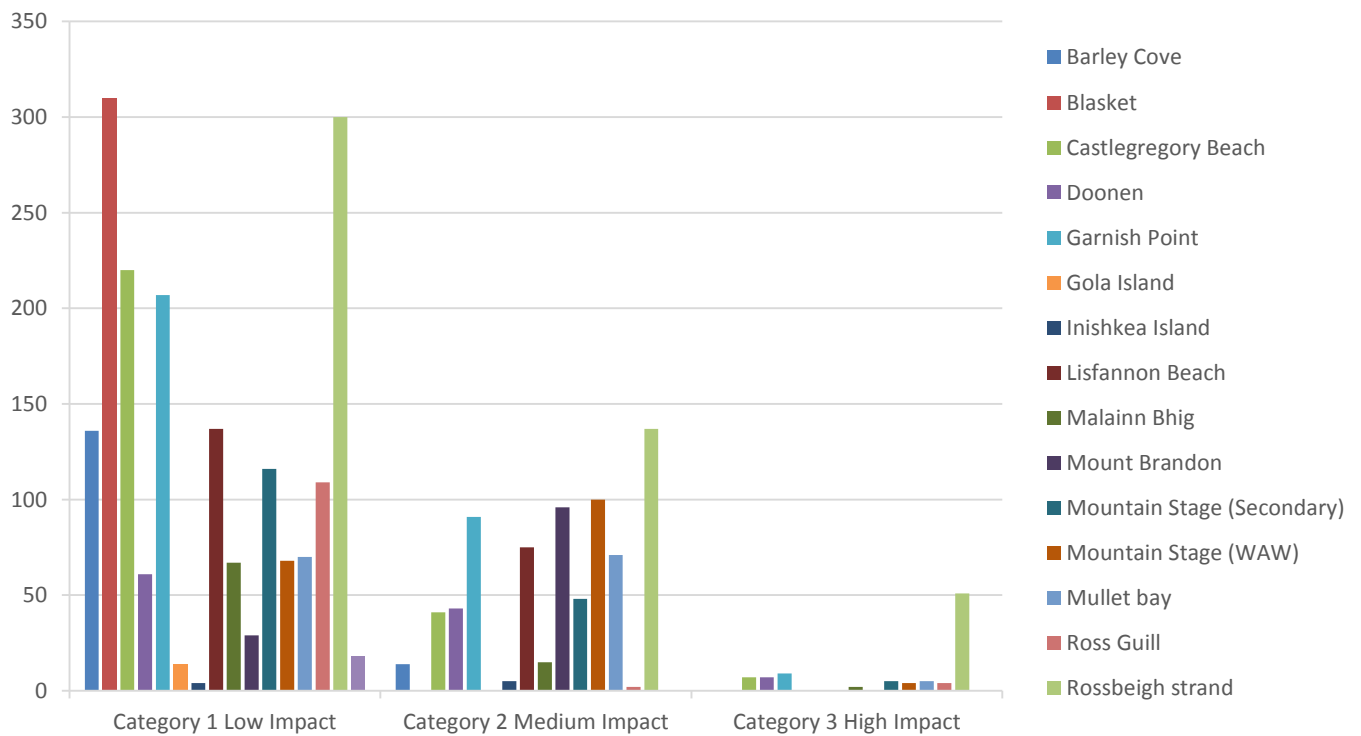


Figure 3.9 Level of Activity by site

Effects Observed	No. of People	% of People
No identifiable effect	5013	82.96%
Desire lines or tracks visible outside of existing trail or marked path	440	7.28%
Desire lines or trails visible on grass and leafy vegetation	244	4.04%
Removal of material - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.	119	1.97%
General/light littering including discarding cigarette butts, chewing gum and dogs defecating	74	1.22%
Temporary disturbance (including chasing and feeding) of insects, fish, amphibian, reptiles insects, birds and mammals	58	0.96%
Trampling of herbaceous vegetation	43	0.71%
Direct interference with site material - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.	34	0.56%
Incidentally moving or knocking site materials - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.	5	0.08%
Heavy littering or dumping quantities of waste	5	0.08%
Disturbance of wildlife	4	0.07%
Destruction of structures, vegetation or fauna	2	0.03%
Vandalism or Graffiti	2	0.03%
Grand Total	6043	100%

Table 0.5 Breakdown of effects recorded across all sites

Zones Trafficked by Visitors

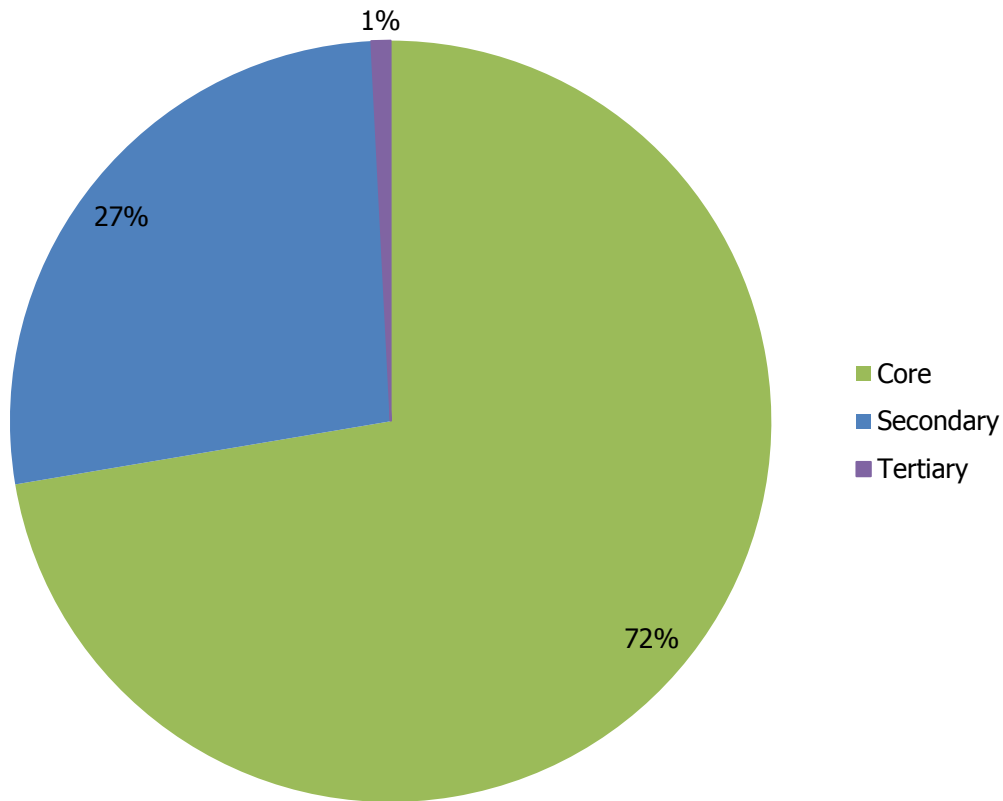


Figure 0.10 Zones trafficked by visitors at all sites

Core Zone	Existing car parks, paved areas, viewing platforms, marked pathways, trails, tracks and managed grassland and areas where pathways, trails or roads exist. The majority of visitors remain in these zones.
Secondary Zone	Areas outside of existing car park, paved areas, marked pathways, trails, tracks and managed grassland. Visitors are likely to traffic areas of grassland (in some cases farmland grazed by sheep or cattle), heath or bare rock, usually to get a better view of site attractions or to access trails at the site.
Tertiary Zone	Areas where no car park, paved areas, marked pathways, trails, tracks and managed grassland are identifiable and beyond the immediate boundaries of the site.

Analysis of Results for all Sites

Site Analysis

- 2697 visitors observed during the survey;
- 69% were reported to have a low impact on the sites;
- 27% were reported to have a medium impact, these effects however were not thought to have a significant or lasting impacts on the sites.
- 4% of visitors were recorded to have a high impact, however when this was analysed it became clear that this was a very small number of people and their activities did not have a lasting impact on the sites.
- 77% of visitors across all sites engaged in low or medium level activities
- There is a direct relationship between the length of time visitors spend on site and the likelihood of effects arising.
- Large groups of visitors with young children were also observed to have a higher level of Impact to sites.
- Where impacts did occur at the various sites, they were not reported to give rise to any significant long term effects.

Discovery Point	County	Activities/Impacts
Mountain Stage	Kerry	<ul style="list-style-type: none"> • The majority of visitors remained on the designated trails and paths. • 3 visitors observed to cross the wall to take photographs and sightsee. • One visitors observed to climb up to the old lookout tower on the other side of the road. • Overall activities had no lasting effects to the site.
Rossbeigh Strand	Kerry	<p>Site was surveyed on a warm day in July resulting in high volumes of visitors.</p> <ul style="list-style-type: none"> • 3% of visitors caused high impact with graffiti to the public bathroom and height gauge at the entrance • Desire tracks visible in the wetlands as a result of a van parking there • The majority of visitors had no identifiable effects to the site. • High impacts caused my graffiti is readily reversible
Dooneen	Kerry	<ul style="list-style-type: none"> • 65% of visitors left the layby to walk to the edge of the cliff to photograph and sightsee, this was noted to highly dangerous as the cliff has become severely eroded underneath. • 1 visitor was observed to discard banana skins behind the wall • A child from a large family group was observed to remove large stones and throw them into the water • Visitor activities would not result in any immediate adverse effects; however, visitor safety may become an issue here.
Garnish Point (Control Site)	Cork	<ul style="list-style-type: none"> • Majority if visitors that did not go in the cable car stayed within the paved area • 100 visitors (36%) left paved areas to step onto grazed land to take photographs • Several visitors observed to discard cigarette butts- if this continues could have a discernible effect to the site • Site is becoming under pressure due to the high volumes of visitors as a result of the WAW, this mentioned by the cable car operator.
Barley Cove	Cork	<p>Barley Cove shows an example of good site management in the way of a wooden walkway to prevent damage to the large dune system.</p> <ul style="list-style-type: none"> • 87% of visitors used the walkway and stayed within its

		<p>boundaries</p> <ul style="list-style-type: none"> • Visitor observed to not use the walkway were noted to be elderly and as the walkway was wet due to heavy rainfall this resulted in visitors becoming cautious of their stability. • No Significant effects were noted
Mount Brandon		<p>The majority of visitors (75%) left the car park to photograph and sightsee.</p> <ul style="list-style-type: none"> • The site is heavily grazed by sheep, • Desire lines were visible in the long grass, however this had no lasting effect to the site
Blasket Interpretation Centre	Kerry	<p>This site is an example of best practice, there were no impacts recorded at this site.</p>
Castlegregory Beach	Kerry	<p>On arrival, large amounts of litter scattered on the beach and car park, on speaking to a local walker, there was a party on the beach the night before. Resulting in a lot of visitors leaving until the litter was removed.</p> <ul style="list-style-type: none"> • 78% of all visitors had no effect on the site • 12% of visitors left desire lines by walking through the dunes to get to the beach • One car was noted to drive across the dunes, this is an example where site management needs to be put in place to prevent the worsening of onsite effects.
Scattery Island	Clare	<p>This is an example of a highly-managed site. With the presence of OPW tour guides. No identifiable effects were recorded at this site.</p>
Mullet Bay	Mayo	<p>Mullet Bay is located beside a summer school which results in large number of visitors throughout the day during summer months.</p> <ul style="list-style-type: none"> • 48% observed to take part in medium level activities- digging holes above high water mark • 2% observed to take part in high level activities- removing razor clam from their habitats • 50% had no identifiable effect to the site.
Inishkea South	Mayo	<p>There were no identifiable effects observed at this site.</p>
Rossguill	Donegal	<p>There were no identifiable effects observed at this site, visitors stayed on site for an average of 3 minutes to take photographs.</p> <ul style="list-style-type: none"> • 28% of visitors stood on the low wall, this did not have a significant impact to the site.
Gola Island	Donegal	<p>There were no identifiable effects observed at this site.</p>
Lisfannon Beach	Donegal	<ul style="list-style-type: none"> • 60% of visitors had no identifiable effect on the site. • 35% left desire trails through the dunes when accessing the beach • 4 people were observed to leave litter behind them when they left the site
Malainn Bhig	Donegal	<ul style="list-style-type: none"> • 1 visitor was observed to fill a rubbish bag from a camper van and leave it behind the Wild Atlantic Way sign. • 15 of the 84 visitors left the paved area and walked on the heavily grazed grassland. • 80% of the visitors to the area had no identifiable effect on the site.

Table 3.7 Summary of Results from Each site

Conclusions and Recommendations

Conclusion

- 2697 visitors were observed across fifteen Candidate discovery points along the Wild Atlantic Way.
- The majority of visitors to these sites were aware of the importance to respect the natural environment.
- There is a direct relationship between sites with physical landmarks and the likelihood of environmental effects arising.
- The average duration at the designated sites was 40 minutes.

Recommendations

- At sites with pressures to dune systems- Castlegregory, Rossbeigh and to a lesser extent Barley Cove, it is recommended to develop a system to prevent further pressures/damage to these sites, while maintaining consideration to site sensitivities.
- Mountain stage, Rossbeigh, Dooneen, Castlegregory, Mullet Bay and Rossguill were noted to have little to no interpretive material or relative signage, it is recommended that the implementation of such features should be done, while maintaining consideration to site sensitivities
- At layby sites (Mountain stage, Dooneen, Ross Guill) where the entrance becomes apparent to the visitor suddenly, appropriate signage should be implemented for the safety of visitors.

Recommendations for future surveys

Where site dynamics have changed since 2016, such as the addition of a new feature i.e. a car park or layby, repeat the observation survey for these discovery points.

During the Ecological Surveys carried out in 2016, if any sensitivities were identified, repeat surveys of these discovery points.

Carry out the monitoring and surveying strategy for further candidate discovery points approved by Fáilte Ireland.

4. Summary Report on Strand Three Monitoring - Ecological Survey

Strand Three of the monitoring concentrates on the collection of ecological evidence. The evidence collected identifies core and secondary movement areas trafficked by users. This informs and guides the collection of ecological evidence. The zones identified during the Visitor Observation Survey provides evidence about where to examine evidence for the location, number, shape and extent of detailed ecological surveys to provide quantitative evidence of effects that can be compared to unaffected similar 'control' sites elsewhere.

Wetland Surveys Ireland Ltd. were commissioned by *CAAS Ltd.* to undertake detailed ecological baseline surveys at fifteen signature discovery points on the Wild Atlantic Way.

The aim of the ecological study was to collect baseline ecological information on sites in order to inform an assessment of visitor impacts associated with the current level and pattern of use of each site. The data collected during the survey should prove useful as a baseline for any future ecological monitoring at the sites.

Prior to the ecological study, a visitor monitoring survey examined the types, spatial patterns, and intensity of existing visitor activities at and adjacent to each of the Discovery Points (CAAS 2016). This visitor monitoring survey informed the design of the ecological study so that baseline ecological conditions at each site could be investigated in areas known to receive; maximum, moderate, minimum, and no loading.

Study aims

The main aims of the ecological study included:

- Describe the existing ecological characteristics of areas at and in proximity to Signature Discover Points;
- Provide baseline ecological data against which future monitoring of potential visitor related impacts can be undertaken;
- Undertake a condition assessment of semi-natural habitats in those areas in proximity to each individual signature discovery point, and where degradation is recorded, elucidate on the likely causative factors taking into consideration the known visitor behaviour at each site;
- Determine, using evidence based data, those sites where current use or future development of signature discovery points are / or could potentially lead to significant ecological effects on habitats / species of conservation concern. This determination will make particular reference to habitats / species of conservation concern and areas designated for nature conservation (SAC / SPA / NHA);
- Make recommendations with regards the need for improved visitor management at particular sites based on the outcome of the study; and
- Make recommendations with regard to the benefit of undertaking future ecological monitoring at individual sites.

Table 3.7 Wild Atlantic Way Discovery Points surveyed as part of the study

Site Name	Site Survey Code	County	Grid Coordinates (ITM)
Lisfannon Beach	WAW16	Donegal	633283 928055
Rosguill	WAW17	Donegal	609867 942286
Gola Island	WAW18	Donegal	577101 927126
Malainn Bhig	WAW19	Donegal	549831 879960
Elly Beach	WAW20	Mayo	463741 825715
Inishkea South Island	WAW21	Mayo	455707 821119
Scattery Island	WAW22	Clare	497478 652540
Castlegregory Beach	WAW23	Kerry	462529 613978
Brandon Point	WAW24	Kerry	452593 617324
Blasket Interpretation Centre	WAW25	Kerry	431475 600771
Rossbeigh Strand	WAW26	Kerry	464445 590984
Mountain Stage	WAW27	Kerry	460411 589058
Dooneen	WAW28	Cork	457762 546036
Garnish Point	WAW29	Cork	450745 541925
Barley Cove	WAW30	Cork	477182 525923



Figure 0.1: Signature Discovery Points along the Wild Atlantic Way surveyed during 2016

Methods

The methods followed during the ecological field survey were based on the standard approach to vegetation description and analysis by use of representative vegetation quadrats (or relevés). In all, 122 quadrats were recorded during the survey. The various parameters recorded at each quadrat location are described in Section 0 below. One site, Garnish Point was revisited in 2016 after a similar visitor impact survey was undertaken in 2015. A comparison of the outcome of both surveys is presented in in this report.

Quadrat selection

A visitor behaviour survey undertaken during summer 2016 examined the types, spatial patterns and intensity of existing visitor activities at and adjacent to each Discovery Point (CAAS 2016). This work served to direct the ecologists to areas known to receive maximum (core movement areas), moderate (secondary movement areas), and minimum and no loading (control areas).

The locations of quadrats representative of each of these three categories were chosen based on the outcome of the visitor surveys prior to the commencement of ecology surveys.

Desktop review

A desktop review of ecological datasets was undertaken with a view to determining known sensitive ecological receptors at each discovery point. This included a review of NPWS designated site datasets. Field maps were prepared which showed the location of each of the pre-assigned quadrat locations and designated site boundaries (where relevant).

Field survey methods

Quadrat recording

Quadrats of the different vegetation types on the site were recorded in a specially designed digital database (FileMaker Pro software application) running on a GPS enabled field computer. The location of each of the quadrats was determined with the assistance of field maps and GIS software running on the GPS enabled field computer.

Once located, a wooden frame was laid down (orientated according to cardinal points) to indicate the extent of the quadrat (1m X 1m). All plant species within the quadrat were recorded and cover abundance value applied. The Domin scale of cover abundance was used during the study as follows:

- +: 1 individual, no measureable cover
- 1: <4% cover, with few individuals
- 2: <4% cover, with several individuals
- 3: <4% cover, with many individuals
- 4: 4-10% cover
- 5: 11-25% cover
- 6: 26-33% cover
- 7: 34-50% cover
- 8: 51-75% cover
- 9: 76-90% cover
- 10: 91-100% cover

A range of physical attributes were also recorded within each quadrat (e.g. slope, aspects, grazing impacts, soil type, soil/peat depth, substrate stability, cover and height values for different plant groups etc.).

A photographic record of each quadrat was taken in a north, south, east, and west direction, as well a view vertically down onto each quadrat. Photographs were geotagged to facilitate their incorporation into a GIS. Additional photographs were also taken at regular intervals during the field survey to assist with subsequent interpretation and to record features in the wider landscape.

General survey target notes were recorded on a GPS enabled field computer running GIS software application (ESRI Collector for ArcGIS). These notes referred to features of interest within the site and areas adjacent to quadrats.

During the course of the survey habitats present at each site were classified according to Fossitt (2000) and where relevant according to Annex I of the EU Habitats Directive. Guidance in determining whether or not a habitat type may correspond to an EU Annex I type was sought from a variety of sources including European Commission (2013), O'Neill *et al.* (2013), Perrin *et al.* (2013), Barron *et al.* (2011), Ryle *et al.* (2009), and Fossitt (2000).

1.1.1 Habitat condition assessment

An assessment of habitat condition was undertaken for each quadrat using a five point scale from good to bad as outlined in Table 0.1. The key criteria used when determining condition included; the presence (and abundance) or absence of indicator species, damage to vegetation (grazed, trampled, broken stems, etc.), erosion features, and presence and percentage cover of bare soil.

Table 0.1 Condition assessment of terrestrial habitats

Ranking	Assessment	Description
1	Good	No evidence of any negative impact on habitats or other ecological features
2	Fair	Localised degree of negative impact, but slight and capable of rapid recovery
3	Doubtful	Widespread degree of negative impact, but slight and capable of rapid recovery
4	Poor	Localised negative impact, requiring intervention to allow full recovery
5	Bad	Widespread negative impact, requiring intervention to allow full recovery

1.1.2 Nomenclature

During the field survey, attention was paid to the possible occurrence of plant species which are considered to be rare in both a national and local context (Scannell and Synnott 1987) with particular emphasis on plant species listed in the Irish Red Data Book for vascular plants (Curtis and McGough 1988), the Flora Protection Order (2015), and Annex II of the E.U. Habitats Directive.

Plant species nomenclature in this report follows Parnell & Curtis (2012) for vascular plants, Atherton (2010) for mosses and liverworts, and Whelan (2011) for lichens. Moss species were mostly only keyed out to whether they belonged to the acrocarpous or pleurocarpous groups. Some mosses, liverworts, and higher plants not readily identified in the field were collected and keyed out at a later time using appropriate keys.

1.1.3 Survey Limitations

The survey was constrained by trampled vegetation, and over grazing which led to difficulties in the identification of floral species in some instances. The surveys were carried out over the autumn period (early September to mid October 2016), a sub-optimal time for the identification of certain plant groups (e.g. grasses, sedges, spring flowering species). Quadrat locations were recorded using portable GPS units which have an accuracy of up to 5 metres. It is considered that, by referring to the GPS co-ordinates together with quadrat photographs, it should be possible to re-locate quadrats to a high degree of accuracy during any future monitoring surveys.

Results

This section of the report presents the outcome of the survey on a site by site basis. The results of the survey in relation to each site are presented under the following headings: site description, ecological constraints, baseline ecology, assessment of visitor impact, and recommendations.

In all, 122 quadrats were recorded during the survey. Information gathered during the survey of quadrats informed the individual site reports presented in this section. The original data pertaining to each of the 122 quadrats is presented in Appendix I.

Summary results of the survey in relation to each Discovery Point are presented in Table 4.3 below. Details that are presented include relevant designated sites, sensitive ecological features, impacts, and recommendations.

Of the fifteen sites surveyed all of them occur within or directly adjacent to sites designated for nature conservation. All of the sites surveyed are coastal sites. The features of ecological importance are remarkably consistent throughout most sites comprising coastal habitats (principally dune systems, dry heath, maritime grassland, and sea cliffs). Most of the discovery points are located within or nearby SPA sites designated for the protection of coastal sea birds, waterfowl, and waders.

Minimal and localised visitor impacts were observed at the majority of sites surveyed in 2016. These included: Rossguill, Gola Island, Malainn Bhig, Elly Beach, Iniskea South, Scattery Island, Mount Brandon, Blasket Interpretation Centre, Mountain Stage and Dooneen.

Visitor management at these ten sites ensures that sensitive habitats in the surroundings are safeguarded from potential impacts. In addition, it is considered that visitor activities at these sites do not result in any significant adverse ecological impacts, due in part to the pattern of use by visitors, short duration of stay, or currently low visitor numbers.

Those sites which showed more significant visitor impacts often as a result of visitor use of fragile heath or dune areas such as walking, dog walking and horse-riding included: Lisfannon Beach, Castlegregory Beach, Rossbeigh Beach, Barley Cove and Garnish Point.

At these five sites, some level of visitor impacts were noted on terrestrial habitats of ecological importance. These impacts are mainly associated with trampling of vegetation in areas regularly accessed by significant numbers of visitors. Such trampling may lead to exposure of bare soil/sand surfaces and thereby making the areas vulnerable to further erosion. The impacts are usually localised in nature and confined to the area being directly traversed. The impacted habitats are usually sand dunes, cliff-top maritime grassland and / or heathland areas.

A number of sites are located closeby areas used by large numbers of wintering waterbirds. These include; Lisfannon, Elly Beach, Inishkea South, Scattery Island, Castlegregory Beach, and Rossbeigh Strand. At most sites it is considered that the potential for significant displacement impacts is low. This conclusion is based on the following factors; the highest number of visitors occurs during summer months when birds are at their summer breeding grounds, and the areas of most interest to wintering birds are intertidal mudflats and other wetlands that are sufficiently removed from those areas most frequently used by the majority of visitors. Despite these considerations, potential conflicts exist at Lisfannon and Rossbeigh Strand where recreational visitor numbers are likely to be significant even during winter and where there is an overlap between the area used by waterbirds and recreational visitors (i.e. inter-tidal beach). An assessment of such impacts is beyond the scope of the current project but should be considered in any future monitoring programme.

Similarly some sites that are likely to be of value to breeding waders such as; Lisfannon, Elly Beach, Inishkea South, Gola Island, Castlegregory Beach, Rossbeigh Strand, and Barleycove Beach. At these sites wader species may nest on the upper sandy shores, gravel banks, or semi-natural grasslands which are also frequented by recreational users. An assessment of potential impacts on breeding

waders at these sites is beyond the scope of the current project but should be considered in any future monitoring programme.

It is considered that the potential for cliff nesting sea bird colonies to be impacted is low, as the nest sites typically occur on the near vertical cliff faces that are inaccessible to most visitors and sufficiently removed that disturbance impacts would not occur. Most sea birds do not venture further inland than the coastal cliffs, spending most of their time foraging at sea.

Chough and Peregrine Falcon nest sites typically occur on sea cliffs and therefore impacts on these nesting birds are deemed unlikely. However, chough are known to utilise cliff-top habitats such as semi-improved maritime grassland for foraging. There is therefore potential for adverse impacts on chough due to displacement as a result of disturbance and habitat alteration. Incidental chough observations recorded from the current survey confirms that the species have not been displaced from these areas. Based on the current level of use of the sites surveyed it is considered that such impacts are highly unlikely to arise at any of the sites surveyed in 2016.

The key recommendations made during the current study relate to:

- Improve visitor management / controls: In those sites where ecological impacts have been recorded there is a requirement to improve visitor management. This can include (but not restricted to) such measures as:
 - Improved signage directing visitors away from sensitive areas;
 - Creation of surfaced pathways or raised boardwalks; and
 - Improved interpretation facilities informing visitors of the sensitivity of the area and appropriate behaviour / activities.

The choice of appropriate actions / measures will be site specific depending on the sensitivity and characteristics of the area.

- Ecological monitoring: In those sites where visitor pressures on ecological features have been recorded then further ecological monitoring is suggested. In other instances, where there is an absence of sensitive ecological features in proximity to the Discovery Point and / or where visitor management is appropriate to the current and future levels of activity then monitoring is not recommended. Targeted monitoring of potential impacts on sensitive fauna (such as breeding and wintering birds) at particularly sensitive sites should be considered.

Table 0.2: Summary results of ecological monitoring at WAW signature discovery points undertaken in 2016

Discovery Point	Designated sites	Sensitive features	Ecological impacts ²	Effects Natura 2000 Conservation Objectives	Recommendation(s)
Lisfannon Beach	Lough Swilly cSAC Lough Swilly SPA Lough Swilly including Big Isle, Blanket Nook and Inch Lake pNHA	Coastal habitats (sand dunes) Waders and wildfowl	Minor localised impacts on dunes	No adverse impacts on cSAC SPA Monitoring required	Improve visitor management; Further monitoring ((incl. SPA)
Rosguill	Tranarossan and Melmore Lough cSAC/pNHA Horn Head to Fanad Head SPA	Heathland habitat	Minor localised impacts on heath	Minor adverse impact on cSAC No adverse impacts on SPA	Improve visitor management; Further monitoring (incl. SPA)
Gola Island	Gweedore Bay and Islands cSAC/pNHA West Donegal Coast SPA	Coastal habitats (sea cliffs, wet heath, maritime grassland, sand dunes) Seabirds	Minor localised impacts (desire lines) on heath and grassland	No adverse impacts on cSAC SPA Monitoring required	Further monitoring in event of increased visitor numbers SPA (birds) monitoring recommended
Malainn Bhig	Slieve League cSAC/pNHA West Donegal Coast SPA	Coastal habitats (maritime grassland, sea cliffs) Cliff nesting birds	No discernible impacts identified	No adverse impacts on cSAC SPA Monitoring required	SPA (birds) monitoring recommended
Elly Beach	Mullet/Blacksod Bay Complex cSAC/pNHA Blacksod Bay/Broadhaven SPA	Coastal habitats (sand dunes) Breeding waders	No discernible impacts identified	No adverse impacts on cSAC SPA Monitoring required	SPA (birds) monitoring recommended
Inishkea South Island	Inishkea Islands cSAC/pNHA Inishkea Islands SPA	Coastal habitats (sea cliffs, wet heath, maritime grassland, sand dunes);	Minor localised impacts on low value habitats	No adverse impacts on habitats of cSAC Grey Seal monitoring advised	Further monitoring in event of increased visitor numbers Further targeted monitoring of impacts on fauna ((incl. SPA)

² This refers to potential impacts on terrestrial habitats. Potential impacts on birds and other fauna were not considered in detail.

Discovery Point	Designated sites	Sensitive features	Ecological impacts ²	Effects Natura 2000 Conservation Objectives	Recommendation(s)
		Breeding waders, Barnacle geese, grey seals.		SPA Monitoring required	
Scattery Island	Lower River Shannon cSAC River Shannon and River Fergus Estuaries SPA Scattery Island pNHA	Coastal habitats (salt marsh).	No discernible impacts identified Agricultural abandonment has impacted biodiversity value of island.	No adverse impacts on cSAC No adverse impacts on SPA	Further monitoring in event that grazing livestock are re-introduced to assess effectiveness at enhancing biodiversity
Castlegregory Beach	Tralee Bay and Magharees Peninsula, West to Cloghane cSAC / pNHA Tralee Bay Complex SPA	Coastal habitats (sand dunes).	Minor localised impacts on dune habitat (QI of designated site)	Minor adverse impact on cSAC SPA Monitoring required	Improve visitor management. Further monitoring (incl. SPA)
Brandon Point	Mount Brandon cSAC / pNHA Dingle Peninsula SPA	Coastal habitats (sea cliffs, maritime grassland, heathland) Cliff nesting birds	Minor localised impacts on low value habitats	No adverse impacts on cSAC SPA Monitoring required	Further monitoring (incl. SPA)
Blasket Interpretation Centre	Dingle Peninsula SPA Blasket Islands cSAC	None	None No impacts on designated site QIs	No adverse impacts on cSAC No adverse impacts on SPA	Enhance biodiversity value by appropriate management of grassland habitat
Rosbeigh Strand	Castlemaine Harbour cSAC / pNHA Castlemaine Harbour SPA	Coastal habitats (sand dunes and salt marsh); Wintering birds, breeding waders	Moderate widespread impacts on coastal habitats (sand dunes, QI of designated site)	Adverse impact on cSAC (dune habitat) SPA Monitoring required	Improve visitor management; Rehabilitation; Further monitoring (incl. SPA)
Mountain Stage	Killarney National Park, Macgilllicuddy's Reeks and Caragh River	Coastal habitats (dry heath) Cliff nesting	Minor impact on low value habitat	No adverse impacts on cSAC No adverse	Improve visitor management

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Discovery Point	Designated sites	Sensitive features	Ecological impacts ²	Effects Natura 2000 Conservation Objectives	Recommendation(s)
	Catchment cSAC Iveragh Peninsula SPA	birds		impacts on SPA	
Dooneen	Beara Peninsula SPA Kenmare River cSAC	Coastal habitats (sea cliffs, grassland and dry heath); Cliff nesting birds	Minor localised impacts on heath (QI of designated site)	Minor adverse impact on cSAC SPA Monitoring required	Further monitoring (incl. SPA); Specialist bryophyte input to planning of any future works
Garnish Point	Beara Peninsula SPA Garnish Point pNHA	Coastal habitats (sea cliffs, maritime grassland and dry heath); Cliff nesting birds	Minor localised impacts on coastal habitats	Minor adverse impact on cSAC SPA Monitoring required	Improved visitor management; Further monitoring (incl. SPA)
Barley Cove	Barley Cove to Ballyrisode Point cSAC / pNHA Sheep's Head to Toe Head SPA	Coastal habitats (sand dunes); Cliff nesting birds	Minor localised impacts on dune habitats (QI of designated site)	Minor adverse impact on cSAC SPA Monitoring required	Improved visitor management; Further monitoring (incl. SPA)

Table 4.4 Summary of Visitor Impacts and Ecological Impacts

Discovery Point	Visitor Impacts	Ecological Impacts	Recommendations
Lisfannon Beach	Low-Medium Impacts	Minor localised impacts on dunes	Improve visitor management Further monitoring, including SPA
Rossguill	No-Low Impacts	Minor localised impacts on heath	Improve visitor management Further monitoring including SPA
Gola Island	Low Impact	Minor localized impacts-desire lines-on heath and grassland	Further monitoring in event of increased visitor numbers SPA (Birds) monitoring recommended
Malainn Bhig	High level impact ¹	No discernible impacts identified	SPA (Birds) monitoring required
Elly Beach	Low-High impact ₂	No discernible impacts identified	SPA (Birds) monitoring required
Inishkea South	No Identifiable impact	Minor localised impacts on low value habitats	Further monitoring in event of increased visitor numbers Further targeted monitoring of impacts on fauna (including SPA)
Scattery Island	No Identifiable impact	No discernable impacts identified Agricultural abandonment has impacted the biodiversity value of island	Further monitoring in event that grazing livestock are re-introduced to assess effectiveness at enhancing biodiversity
Castlegregory Beach	Low-Medium impact	Minor localised impacts on dune habitat (QI of designated site)	Further monitoring including SPA
Mount Brandon	Low-Medium impact	Minor localised impacts on low value habitats	Further monitoring including SPA
Blasket Interpretation Centre	No Identifiable impact	None No impacts on designated site Qis	Enhance biodiversity value by appropriate management of grassland habitat
Rossbeigh Strand	Low-High Impact ₃	Moderate widespread impacts on coastal habitats (sand dunes, QI of designated site)	Improve visitor management Rehabilitation Further monitoring (including SPA)
Mountain Stage	Low-High Impact ₄	Minor impacts on low value habitats	Improve visitor management
Dooneen	Low-High Impact ₅	Minor localised impact on heath	Further Monitoring (including SPA) Specialist bryophyte input to planning of any future works
Garnish Point	Low-High Impact ₆	Minor localised impacts on coastal habitats	Improve visitor management Further monitoring (including SPA)
Barley Cove	Low-Medium Impact	Minor localised impacts on dune habitats (QI of designated site)	Improved visitor management Further Monitoring

¹ Heavy littering or dumping – Large rubbish bag left behind at site

² Removal of site materials- parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna

³ Vandalism/ Graffiti, Removal of site materials- parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna, Direct interference with site material

⁴ Direct interference with site material, Removal of site material

⁵ Direct interference with site material

⁶ Direct interference with site material