

DRAFT STRATEGY FOR **ENVIRONMENTAL SURVEYING AND MONITORING**

FOR THE **WILD ATLANTIC WAY** **OPERATIONAL PROGRAMME**

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Section 1 Introduction

Fáilte Ireland has commissioned a surveying and monitoring strategy which will identify environmental impacts of visitors at sites along the Wild Atlantic Way. Part of this work involves the development of generic monitoring methodologies and templates that may be used across a range of sites and conditions.

Tourism is a positive factor in raising awareness of the importance of our natural assets, not only among visitors, but also local communities and businesses, thus engendering an appreciation of these areas as valuable tourism assets. It is an objective of the Wild Atlantic Way Operational Programme 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. However, assessment of the environmental effects of tourism (especially on ecology) can become a major source of delay and uncertainty for plans and projects. Most of these issues arise because of uncertainty about the likely effects of a plan or project that can lead to the 'Precautionary Principle' precluding decision-making where there is uncertainty about the likely effects. It is proposed to address this issue by preparing an environmental survey and monitoring strategy which will investigate the actual effects of a range of representative tourism activities at a range of sites along the Wild Atlantic Way

This document sets out a Draft Strategy for Environmental Surveying and Monitoring for the Wild Atlantic Way Operational Programme which is described in more detail in Section 3. This Strategy is being put in place in advance of the completion of the Strategic Environmental Assessment (SEA) which is currently being initiated for the Wild Atlantic Way Operational Programme, and will both inform and be informed by the results of the SEA.

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

- movement patterns of visitors at sites along the route;
- 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 Signature Discovery Points and control sites;
- an indication of types of impacting activities at candidate Signature Discovery Points and control sites;
- an indication of extent of ecological effect zones at candidate Signature Discovery Points and control sites; and
- the need and type of mitigation responses.

This Environmental Survey and Monitoring Strategy has been 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 with increased level of reliability. This pilot survey was undertaken as part of the Burren and Cliffs of Moher Geopark LIFE Project¹.

As mentioned above, the purpose of the Environmental Survey and Monitoring Strategy is 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.

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

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 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.

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 Draft 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.

1.1 Background

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.

Section 2 Objectives for surveying and monitoring impacts of visitor at sites

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

1. Macro monitoring of regional/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 wild-life, 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.

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
- identify site-specific dynamic and pathways to guide the development of mitigation responses if required.

The evidence collected from observing visitor behaviour will be combined with quantitative analysis employing the examination of aerial photography and ecological examinations of vegetation and surface condition at the identified sensitivity onsite, the maximum distance point travelled by the visitor away from the landing point and a relative control site.

The combination of observation and quantitative evidence can then be 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 where necessary.

Note that while all of these strategy elements are described in the future tense, all aspects have already been carried out in a pilot monitoring programme as part of the Burren and Cliffs of Moher Geopark LIFE Project.

Section 3 Surveying and Monitoring Strategy

This section provides detailed descriptions of Survey and Monitoring Methodologies.

3.1 Strand One: Monitoring using Existing Datasets

Strand One of the monitoring will concentrate 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 and Blue Flag Beach conditions.

The monitoring focuses on intra-urban settlements between gateway towns along the Wild Atlantic Way. Gateways such as Cork and Galway capture the infiltration of visitors and are subject to Environmental Assessment at these levels. These also supply the high-level 'input' data for the monitoring before they become dissipated among many smaller destinations and intra-urban settlements (See Figure 3.1). The purpose of macro-monitoring the state of the environment between the gateway settlements is because these intra-urban settlements, such as Bundoran in Co. Donegal, often accommodate and entertain the wealth of overnight visitors.

Robust and sustainable environmental impact assessment relies upon existing, long-established and spatially-specific monitoring of environmental factors by official agencies. The use of existing datasets will be combined to identify trends and changes in a small number of key diagnostic environmental performance indicators. These macro-indicators provide a very high level of co-ordination with the cumulative impact assessment of all other activities at County level (through SEA), regional and sectoral levels as these assessments utilise the same indicators. This also facilitates the isolation of the contribution of tourism to overall effects that may be due to in-combination effects.

This strategy facilitates the direct identification and assessment of the effects that visitor numbers have on key environmental indicators using long-established baselines (from agencies such as the NRA, EPA, DECLG, DAHG etc.). It should be noted from the summarised historical overview of tourism and promotion in Section 1.1, that there will be no survey areas associated with the Wild Atlantic Way where a meaningful 'baseline' condition exists that has not already been subject to decades of the effects of tourism and promotion.

3.1.1 Methodology for Macro-monitoring

1. Six sites have been selected along the route - one for each county or at the closest available point where monitoring is undertaken (See Table 3.2).
2. A further four control sites inland from the route in Donegal, Clare, Galway and Kerry have also been selected (See Table 3.3).
3. The sites were selected on the basis that they are primary settlements along the Wild Atlantic Way route which are representative of a range of typical tourism based settlements and where the data is readily accessible.

The monitoring points on Table 3.2 and the control points on Table 3.3 were chosen to meet the Monitoring and Technical Indicators shown on Table 3.1. This was based on the settlement meeting a specific criteria whereby datasets presently exist for infrastructure i.e. the settlement has a wastewater treatment plant, an NRA Traffic Counter, an EPA Bathing Water monitoring location at or adjacent to the location. Other settlements were considered but did not meet these criteria.

4. The information collected from the existing datasets outlined on Table 3.1 will be combined to identify trends and changes in the technical indicators identified for each of the ten monitoring points.

5. The results will be presented to identify which trends and changes to technical indicators are directly attributable to tourism. Other intervening factors for example a technical failures at a wastewater treatment plant which are not attributable to tourism will also be outlined. This will result in the ongoing review of indicators and targets, collating existing relevant monitored data, the preparation of monitoring evaluation report(s), the publication of these reports and, if necessary, the carrying out of corrective action.
6. Recommendations will be made depending on the outcome which may result in the route and the candidate Discovery Points changing if the results that show that visitor activity and/or visitor intensification is predicted or observed to result in a negative impact on the environment in particular locations.



Figure 3.1 Assessment of Regional Assimilative Capacity

Table 3.1 Macro-indicators of environmental status

Factor	Technical Indicator	Monitoring	Authority/Source	Frequency
Water Quality	The Waste Water Treatment data available from licensed facilities (Waste Water Treatment Plants and Agglomerations) at the chosen site will be assessed Non-conformities with relevant legislative requirements will be identified	Non-conformances relating to minimum water quality standards and the licenced Population Equivalent (P.E) loading for the WWTP will be examined. Where a non-conformance is identified, the EPA collects and details information on the reason for failure. Persistent effects 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. If the non-conformance is related to a relevant intervening factor, such as mechanical/technical issues, this will be noted.	Environmental Protection Agency (EPA)	Annual
	The closest bathing water monitoring site will also be assessed for conformance with legislative requirements	Non-conformances relating to minimum bathing water quality standards and legislative Coastal Water Quality status will be assessed		
Traffic Volume	Upward/downward trend in traffic volumes during tourist season and shoulder seasons	Sites will be chosen adjacent to National Roads Authority traffic counters along the Wild Atlantic Way route where year round statistics are collected	National Roads Authority (NRA)	Annual
		Local Authorities undertake intermittent monitoring of Regional and Local roads which comprises approximately 75% of the Wild Atlantic Way Route. Where available, this data shall also be used	Local Authorities	
Blue Flag Beaches and Marinas	Upward/downward trend in award	The closest bathing water monitoring site will be monitored for annual Blue Flag status	An Taisce	Annual

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Factor	Technical Indicator	Monitoring	Authority/Source	Frequency
Green Coast Award		The number of Green Coast Awards been retracted/awarded will be assessed		
State of Knowledge Ireland's Biodiversity Report (2010)	Changes in the status of biodiversity	The status of this indicator be informed and updated by emerging findings and information sources from Biodiversity Reports	National Biodiversity Centre	Occasional
EPA Ireland's Environment - An Assessment (2012)	Changes in environmental status along the Wild Atlantic Way	The status of this indicator be informed and updated by emerging findings and information sources from this report	Environmental Protection Agency (EPA)	Every 4 Years
The status of EU Protected Habitats and Species in Ireland	Changes in the status of EU Protected Habitats and Species in Ireland	The status of this indicator be informed and updated by emerging findings and information sources from the NPWS and other stakeholders on the status of EU Protected Habitats and Species	National Parks and Wildlife Service (NPWS)	Occasional
			Department of Environment, Community and Local Government (DECLG)	
			Department of Agriculture, Heritage and the Gaeltacht (DAHG)	
Visitor Numbers	Changes in Fáilte Ireland data on visitor numbers	Upward/downward trends in visitor numbers during the tourist season and shoulder season will be monitored	Fáilte Ireland	Annual
Tourism related planning refusals	Refusals of unsuitable tourism related projects by County	Applications to An Bord Pleanála will provide an official high level indicator as to where pressure points are occurring in Counties along the Wild Atlantic Way without the need to capture all planning applications to Local Authorities and or Foreshore Lease/Licence applications to DECLG A high level of tourism related refusals is a potential indicator pressure on the environmental status of said County	An Bord Pleanála	Annual

Table 3.2 Macro-monitoring Points

County	Monitoring Point	NRA Traffic Counter	WWTP Licence No.	WWTP/Agglomeration	Bathing Water Monitoring Site
Donegal	Dungloe	N56 Between Dungloe and R252 Jn, Co. Donegal (20562)	D0208-01	Dungloe	Naran Beach/Carrickfinn
Donegal (Sligo Border)	Bundoran	N15 Between Bundoran and Sligo, Tullaghan, Co. Leitrim (20153)	D0130-01	Bundoran/Mullaghmore /Cliffony	Bundoran/Mullaghmore
Mayo	Newport	N59 Between Mullranny and Newport, Newfield, Co. Mayo (20591)	D0224-01	Mallaranny	Mulranny/Clare Island/Bertra
Galway	Galway Bay	N18 Between Kilcolgan and Clarinbridge, Co. Galway (1182)	D0050-01	Galway Mutton Island	Silverstrand/Salthill/Grattan Road/Ballyloughane
Clare	Kilrush	N67 Between Kilrush Ferry and Kilrush, Moyne Court, Co. Clare (1671)	D0075-01	Kilrush Agglomeration	Cappagh Pier
Kerry	Cahersiveen	N70 Between Caherciveen and Glenbeigh, Gortaforia, Co. Kerry (20701)	D0181-01	Cahersiveen/Knightstown	Whitestrand
Cork	Bantry	N72 Between Bantry and Glengarriff, North of Bantry, Co. Cork (1715)	D0168-01	Bantry	Barley Cove

Table 3.3 Macro-monitoring Control Sites

County	Control	NRA Traffic Counter	WWTP Licence No.	WWTP/Agglomeration	Bathing Water Monitoring Site
Donegal	Ballybofey	N13 Between Stranorlar and Letterkenny, Treantaboy, Co. Donegal (1133)	D0120-01	Ballybofer/Stranlorlar	N/A
Galway	Gort	N18 Between Kilcolgan and Clarinbridge, Co. Galway (1182)	D0195-01	Gort	N/A
Kerry	Castleisland	N21 Between Tralee and Castleisland, Co. Kerry (1211)	D0180-01	Castleisland	N/A
Clare	Lahinch	N67 Between Ennistimon and Lisdoonvarna, Co. Clare(20671)	D0080-01	Lahinch	Lahinch

3.2 Strand Two: Visitor Observation Survey

A methodology for the Visitor Observation Survey has been established, which allows for the examination of patterns of visitor behaviour at candidate Signature Discovery Points along the Wild Atlantic Way. A visitor observation study is a tool used to collect systematic data about visitor behaviour at a site of interest. The methodology involves watching visitors and collecting information on how they are interacting with the site, as well as studying their activities and the flow of movement throughout the site. The purpose is to identify visitor use without interacting with the user or influencing behaviour in a systematic format that is suitable for use in a wide range of conditions and sites. The survey will identify patterns of visitor activity, movement and behaviour.

The aim of the Visitor Observation Survey is to collect evidence of stay duration, activities undertaken, location and direction of excursions from vehicles. The development of a methodology for surveying and monitoring visitor impacts at sensitive sites is integrated with the identification and definition of indicators to ensure that these provide accurate information in an effective, efficient and easily replicated manner. The methodology is reinforced using an evidence-based model to identify the current state of the site and existing contributing factors before establishing the likely behaviour of visitors and the likely nature of impacts at key sites.

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 (See Appendix 2). The collation of the data including the tracking of onsite movement by visitors will result in the identification of core and secondary movement zones. The sites chosen for monitoring are the fifteen candidate Signature Discovery Points along the Wild Atlantic Way (see Table 3.4). The candidate Signature Discovery Points range from having complex and highly structured existing management regimes to existing roadside laybys with little or no management. A further seven control sites (one for each County along the route) will also be surveyed. The candidate 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)
5. Improved Grasslands (farm land)

Appendix 4 outlines the indicative timelines and dates for carrying out Observation Surveys at the candidate Signature Discovery Points and control sites for the 2015 season.

Table 3.4 Wild Atlantic Way candidate Signature Discovery Points

Location	County	Habitat/Landscape Type
Malin Head	Donegal	Rocky shore/peat in peninsular coastal context
Fanad Head	Donegal	Rocky shore/peat in peninsular coastal context
Sliabh Liag	Donegal	Montane/upland/peat in peninsular coastal context
Mullaghmore Head	Sligo	Soft shores/beaches in a coastal plain context
Downpatrick Head	Mayo	Rocky shore/peat in peninsular coastal context
Keem Bay	Mayo	Rocky shore/peat in peninsular coastal context
Killary Harbour (South)	Galway	Montane/upland/peat in peninsular coastal context
Derrigimlagh	Galway	Montane/upland/peat in peninsular coastal context
Cliffs of Moher	Clare	Rocky shore/peat in peninsular coastal context
Loop Head	Clare	Rocky shore/peat in peninsular coastal context
Blaskets View (Blaskets)	Kerry	Rocky shore/grassland in peninsular coastal context
Bray Head	Kerry	Rocky shore/peat in peninsular coastal context
Durse Island	Cork	Rocky shore/peat in peninsular coastal context
Mizen Head	Cork	Rocky shore/peat in peninsular coastal context
Old Head of Kinsale	Cork	Rocky shore/grassland in peninsular coastal context

3.2.1 Development of Activities, effects and their categories

A list of general activities and effects was developed to assist in the categorisation of visitor behaviour (See Table 3.7). While these are generic to all sites, the list is non-exhaustive and can be expanded depending on the individual site or emerging trends. Activities and effects are categorised depending on their severity to guide accurate reporting in an effective, efficient and easily replicated manner (See Table 3.5 and Table 3.6).

Table 3.5 Description of Activity Categorisation

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 3.6 Description of Effects 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 Impact	Severe effect that has potential to have a significant, long-term, irreversible or permanent impact

Table 3.7 Activities and Effects by Category

Activities	Effects
Category 1 Low Level	Category 1 Low Impact
Walking on paths, mown grass or hard surfaces (including level sand)	No identifiable effect
Running, playing in mown grass or level sand	Non-noticeable wear and tear
Sitting on benches, mown grass, sand	Trails newly visible on grass and leafy vegetation
Swimming, sailing, surfing, kayaking in water	Temporary disturbance (including chasing and feeding) of insects, fish, amphibian, reptiles insects, birds and mammals
Resting, reading, looking, picnicking, sightseeing, painting, photographing	Temporary change of character - due to the appearance or nature of activities (noise, crowds, etc.)
Watching nature in hedges, woods, streams, pools and intertidal areas	General/light littering
Category 2 Medium Level	Category 2 Medium Impact
Vehicular movement on roads and parking areas	Addition/alteration of site features, transient emissions, noise.
Powered movement through water	Transient disturbance, emissions, noise
Any movement through woody vegetation	Trampling of herbaceous vegetation, Disturbance of wildlife
Any movement leaving a trail through leafy vegetation	Damage to woody vegetation, Disturbance of wildlife
Climbing on walls, loose stones, sand, soil etc.	Incidentally moving or knocking site materials - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.
Fishing	Disturbance of wildlife/ light littering
Category 3 High Level	Category 3 Severe Impact
Walking through wet/muddy soil	Direct interference with site material - stones, rooted vegetation, fauna
Scrambling on steep or loose slopes	Removal of material - stones, rooted vegetation,
Off road vehicular movement	Dumping, burning materials or lighting a fire
Any movement leaving a trail through woody vegetation	Destruction of structures, vegetation or fauna
Picking vegetation, disturbance of wildlife	Injuring, killing or taking wildlife, removal of vegetation
Deliberate building or moving or knocking site materials - parts of monuments, walls, stones, sand etc.	Vandalism or Graffiti

3.2.2 Methodology for Visitor Observation Survey

The following outlines the methodology for undertaking the visitor observation survey at the candidate Signature Discovery Points:

1. Prepare survey materials to include standardised observation sheets, maps and a briefing document.
2. Carry out a pre-planning site visit using the guidance included in Section 3.2.2.
3. Provide surveyors with materials in advance of survey date.
4. Carry out a site visit on the day of the survey to ensure familiarity and note any change in conditions or health and safety issues.
5. Provide Surveyors with a health and safety briefing, high-visibility vests, name tags and in-depth briefing on objectives and methods.
6. Carry out a site specific briefing to highlight individual site complexities before commencement of survey.
7. Commence survey and record the nature, duration and extent of activities by visitors for at least eight hours.
8. Present results of the surveys in report format detailing the methodology applied, the results of the survey in a tabulated format by site, maps showing core movement areas and the breakdown of activities and impacts recorded onsite. Include a brief overview of each site and present a summary of the results including a comparison between the core, secondary and control areas.

3.2.3 Guidelines for undertaking Visitor Observation Survey

The recommended time of year to undertake visitor observational surveys is from the beginning of tourist season to the end of July to allow sufficient time for undertaking of subsequent ecological surveys. Preparation of survey materials and site visits should be undertaken well in advance to increase efficiency of the monitoring programme during the tourist season.

3.2.3.1 Survey Planning

In advance of undertaking a Visitor Observation Study, an initial desk based study is required to assess available baseline information of the site and to compile maps, plans and other available documentation. The confirmation of landowner ownership and consent is also necessary.

Survey materials include standardised observation sheets (See Appendix 3 – sheets are adjustable to each site), maps and a briefing document should be compiled in advance of the study. The survey materials are designed to be iterative while allowing for the individual site complexities to be integrated.

The optimum onsite location to undertake the survey work should also be established employing local knowledge where available and aerial photography. The optimum route to the site should be identified in advance. In the case of numerous sites being surveyed simultaneously, establish the time needed to travel between sites in advance of the survey. At this stage it is important to establish whether an extra driver/runner is needed for surveyors drop offs/checks/in the event of an emergency, etc.

The suitability of the observer position should also be confirmed. The survey location is not fixed. The surveyor may be required to move around the site when observing visitor behaviour to ensure all activities are recorded in full.

The preparation of a preliminary set of maps and survey sheets for each site in advance of the survey and the undertaking of a short piloting survey on site are recommended. This is important to assess practicalities of the Survey method.

Surveyor details including should also be obtained in advance of the survey date to include emergency contacts and details of health issues. Surveyors should be briefed and provided with:

- briefing documents;
- lists of essentials to bring;
- equipment required/provided;
- examples of completed survey materials (See Appendix 2);
- details on how to use survey materials (See Appendix 3);
- timeline of events to include start time, when Surveyors will take up observer positions; checks in times, lunch breaks, finish times;
- Health & Safety Plan;
- Location of toilets and shelter.

3.2.3.2 Pre-planning Site Visit

A pre-planning site visit in advance of survey date is recommended. The visit in advance of the survey date should include the following:

- Identification of observer position(s);
- Identification of key site sensitivities (where applicable);
- Identification/installation of key distance measurement points (coloured stakes may be required if there are no existing features to use as markers);
- Collect baseline data for development of survey materials where relevant;
- Identification of potential Health and Safety issues for inclusion in a Health & Safety Plan and identification of locations for toilets and shelter;
- Identification of number of surveyors required for the site;
- Identification of 'relief' surveyor(s) for rest/break periods;
- Assignment of surveyors to individual sites (for multiple surveys at numerous sites only);
- Transport arrangements.

3.2.3.3 Health and Safety

A Health and Safety Plan should be prepared to include emergency contacts and details of health issues. It should detail procedures in the event of adverse weather conditions or an emergency and detail the location of shelter, toilets etc.

The use of high visibility vests is advised at sites where there is limited visibility or where the observer is located on or adjacent to a road or a parking area. However, high visibility vests may influence visitor behaviour on site if the observer appears to be a figure of authority. It is advisable - only where it is completely safe to do so - to avoid the use of high visibility gear.

3.2.3.4 Survey Recommendations

The following includes a number of recommendations for the survey:

- The surveyor should record the time of arrival and departure at observation post.
- The surveyor should not depart from site until the final visitor being monitored has left the site unless at least one hour has passed. It should be noted if the departure of the visitor has not been observed.
- At very busy sites, it is recommended that surveyors make a note of identification for the visitors for example the vehicle make, model, colour or a brief description of the visitors for recording their departure time.
- For sites that experience high volumes of visitors, it is recommended to choose and observe activity of a random group of visitors and record their activities from arrival until departure. On departure, the next group of visitors entering the site should be selected for observation.
- The survey should be abandoned if a significant amount of inactivity is observed or if adverse weather or other intervening factors make it unsafe for the surveyor to complete the survey. If it is not possible to achieve the specified amount of surveying time (recommended eight hours), the time spent on site and the reason for survey abandonment should be reported. The survey may need to be repeated on another date.

- Supervisors should check each site intermittently to discuss progress and issues in addition to requesting a 'check in' at regular intervals from Surveyors.
- A debriefing session after each day is recommended to finalise and adjust methods and collect survey sheets, notes and feedback from the survey.
- Before the next survey, a re-evaluation of the numbers of surveyors required per site. Prepare survey sheets in advance of subsequent survey dates (if required).

3.2.4 Assessment of Movement Patterns Observed on Sites

The pattern of movement of each visitor is observed and recorded on a sketch plan. The maps are then combined to note the intensity of movement patterns that recurred at the same locations.

Generally two levels of activity are noted, a 'Core Area' where the majority of visitors (>95%) moved and a 'Secondary Area' where occasional movement is observed by a very small proportion of visitors. A record of further levels of activity by a tiny proportion of visitors (usually only one visitor) should also be recorded for completeness.



Figure 3.2 Sample of Observed Visitor Movement Pattern

The shading is then superimposed over the aerial photographs (Figure 3.2) to illustrate where patterns of movement occurred. The Core Movement Area is indicated by an enclosing dotted line. These results are then used to direct the detailed ecological assessment which will examine the effects on vegetation in core and secondary areas as well as in 'Control Area' where no visitor movement was recorded on site (Control Area 1) and nearby areas with similar conditions but with no potential visitor access (Control Area 2).

3.3 Strand Three: Ecological Survey

Ecological Surveys are carried out where evidence collected during the Visitor Observation Survey identifies core and secondary movement areas trafficked by users. This informs and guides the collection of ecological evidence. The zones identified to have been used by visitors provides evidence for the location, number, shape and extent of detailed ecological surveys that provide quantitative evidence of effects that can be compared to unaffected similar 'control' sites elsewhere. The surveys also provide a basis for identifying the need and type of survey work to be carried out into lithic disturbance and/or wear and tear of monuments, walls, and pavement. The ecological study will identify vegetation species, composition, abundance and condition.

The recommended time of year to undertake the ecological survey is from the middle of May to the end of August. This ensures that the optimum range of ecological biodiversity is available for monitoring. Sites that have particularly sensitive vegetation that flower at a specific time of year should be prioritised to capture the optimum ecological biodiversity range. Summer is the flowering season for most vegetation and this facilitates early identification of vegetation, composition and condition. Ideally, an ecological survey as late into the tourist season as possible is recommended as this may be the best way to measure cumulative worst-case effects of visitors on the sites. The survey should be completed well in advance of late Autumn/Winter so ecology is not completely diminished naturally.

Appendix 4 outlines the indicative timelines and dates for carrying out Ecological Surveys at the candidate Signature Discovery Points and control sites for the 2015 season.

3.3.1 Methodology for Ecological Survey

The following outlines the methodology for undertaking an ecological survey of the candidate Signature Discovery Points and selected control sites:

1. Carry out a preliminary site visit of each candidate Signature Discovery Point and control site in advance of the ecological survey.
2. Provide a description of the site, its complexities sensitivities and physical attributes. Identify intervening factors such as natural erosion, damage from animals etc., and to identify the desire lines of visitors at the site.
3. Define a specific ecological methodology for the site depending on the identified sensitivities. This may comprise a combination of the following: Quadrat vegetation surveys, Line transects or Fixed Point Photography. Alternative methodologies may be applied or recommended to marine/intertidal habitats e.g. rocky shores, soft shores and beaches as required.
4. Carry out the ecological survey as outlined below and in accordance with a recognised standard surveying technique and best practice.

3.3.1.1 Belt Transect Survey

1. Carry out a Belt Transect survey using a rope marked at 1 metre intervals along a belt identified by aerial photography and guided by the core and secondary movement areas.
2. Carry out work in accordance with a recognised standard surveying technique.
3. Each interval shall be photographed and the location recorded by GPS.
4. Record the species inside the belt at each 1 metre interval. Record the condition of the species using the 5 point scoring system outlined in Table 3.8 noting species, abundance, condition (grazed, trampled, broken stems, etc.) as well as noting soil condition (compacted, exposed) and other relevant factors such as evidence of effects such as litter.

5. Identify changes in gradient or the linear pattern of vegetation communities a relevant.

3.3.1.2 Quadrat Vegetation Survey

1. Carry out 1m² quadrat vegetation surveys randomly located within the red squares (example shown on the aerial photograph - See Figure 3.3). The location of each quadrat shall be recorded by GPS and photographed.
2. Carry out work in accordance with a recognised standard surveying technique².
3. Record the species, composition, and abundance encountered in each sample area using the DOMIN scale with nomenclature following Parnell and Curtis (2012)³.
4. Record the condition of each quadrat using the 5 point scoring system outlined in Table 3.8 noting species, condition (grazed, trampled, broken stems, etc.) as well as noting soil condition (compacted, exposed) and other relevant factors such as evidence of effects such as litter.
5. The number of quadrats will vary with size and complexity of each site. Figure 3.3 displays an example of a site with the quadrat locations outlined in the red squares on the aerial photograph. Squares with a 'C' are intended to be control sites as these are areas where no visitor activity was observed.

3.3.1.3 Fixed Point Photography

1. Carry out fixed point photography at the plot markers identified by aerial photography and guided by the core and secondary movement areas.
2. Identify the plot marker at the site where the series of photographs will be taken. Record the GPS location, direction and fixed site features at the plot marker. Provide a description of the site and location of plot marker.
3. Take the photographs using a 35mm lens where possible.
4. Stand at the plot marker and take a photograph at the eight standard compass points (N, NE, E, SE, S, SW, W, NW).
5. Number and label all photographs with site location, direction, compass point, date and plot marker.
6. Repeat at each of the locations identified by the aerial photography.

3.3.2 Presentation of Results

1. Present results of the surveys in report format detailing the methodology applied, the results of the ecological surveys in a tabulated format by site with grid reference, species composition, abundance, condition index and notes on any specific issues arising.
2. For fixed point photography, provide details of the plot markets, GPS locations, direction of photographs, description of photographs.

² Recognised surveying technique: NRA (2010) Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes

³ Parnell, J., Curtis, T. 2012. Webb's an Irish Flora (8th edition). Cork University Press.

3. Include an overview of each site describing the site location, complexities and sensitivities. Provide descriptive material on the site complexities, sensitivities and physical attributes. Describe intervening factors such as natural erosion, damage from animals, damage from human behaviour, human desire lines etc.
4. Present a summary of the results including a comparison between the core, secondary and control areas.

Table 3.8 Condition Index for assessment of habitat condition at sites

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

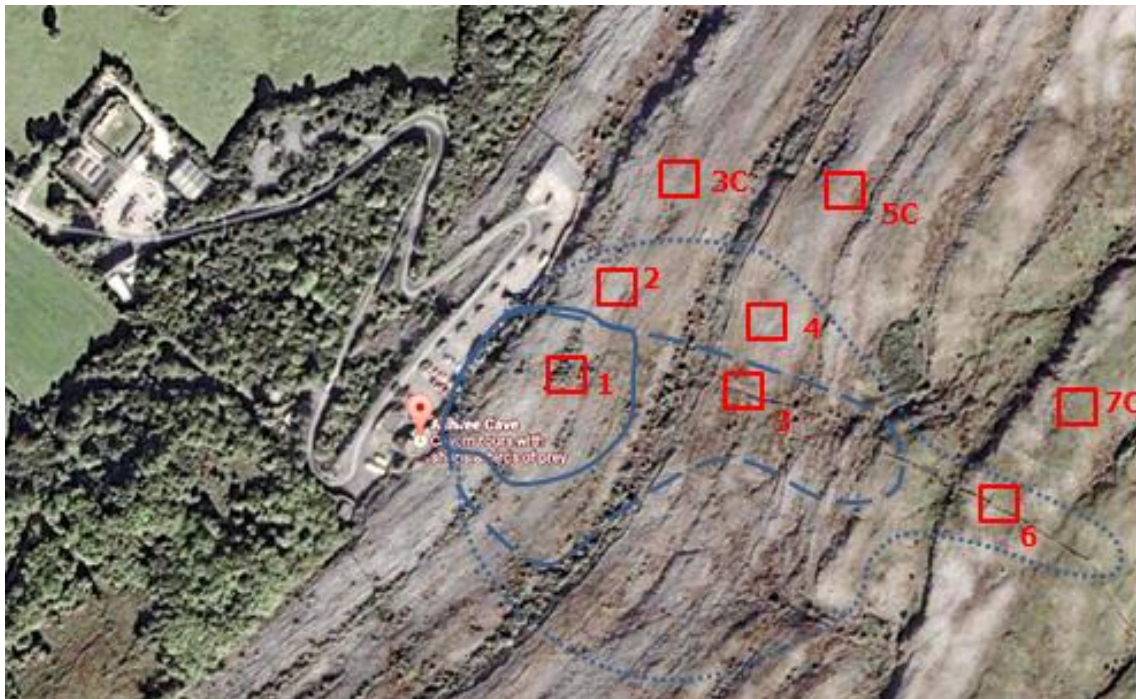


Figure 3.3 Sample of Quadrat Survey Plan for Ecological Survey

In Figure 3.3, Quadrat 1 is a core area, Quadrat 3 is an intermediate area and Quadrats 2, 4 and 6 were secondary areas while Quadrats 3C, 5C and 7C were control area. Note the location in Figure 3.3 had a number of sloped terraces with varying ecological conditions. This resulted in a more quadrats being used than usual.

3.3.3 Habitat Type Control Sites

The Wild Atlantic Way passes through a relatively narrow range of types of habitats. To ensure the highest standard of rigour for the monitoring of the candidate Signature Discovery Points a series of baselines will be identified and assessed to provide a clear picture of the degree to which change, if any is occurring. Surveying and monitoring will be undertaken on five areas within the candidate Signature Discovery Points and Control Areas as follows.

1. Habitat Control Sites

These will consist of off-site locations in similar areas that are unaffected by current, recent or regular human activity. This may include small lake islands, sea stacks or other remote uninhabited areas.

2. Off-site Control Areas

These will consist of areas of similar general vegetation, topography and land-use immediately adjacent to the candidate Signature Discovery Points but are not accessed by visitors.

3. On-site Control Areas

These will consist of areas within the candidate Signature Discovery Points that have been identified by observational studies to be unused by visitors.

4. Secondary Movement Areas

These will consist of areas within the candidate Signature Discovery Points that have been identified by observational studies to be regularly, but less frequently used by visitors.

5. Core Movement Areas

These will consist of areas within the candidate Signature Discovery Points that have been identified by observational studies to be regularly used by almost all visitors.

Table 3.9 Surveying and Monitoring to be undertaken within candidate Discovery Points and Control Areas

Habitat Type	Habitat Control Site	Control Areas		Visitor Affected Area	
	Off-site, unaffected by human activity	Off-site, unused by visitors	On-site, unused by visitors	Secondary Movement Areas	Core Movement Areas
Rocky shores					
Soft shores/beaches/dunes					
Montane/upland/peat					
Marine areas (sea, estuaries)					
Improved Grasslands (farm land)					

Section 4 Application of Results and Outputs

The undertaking of proposed 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. 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. Preliminary guidance material has already been prepared (See Appendix 1) and is currently in use to co-ordinate and guide developments along the Wild Atlantic Way

4.1 Identification of Indicators

Indicators are the quantitative or qualitative parameters that determine the performance of functions, processes, and outcomes over time. Indicators are used as a measure of progress on the condition, state or level of the specific parameters. They are measurable values used to influence what action will be undertaken as a mitigation or response. In order for an indicator to be useful, it must be calculated in the same way every time. This is important so that statistics collected from each of the demonstration sites are comparable over time and to each other during follow up studies.

Key Performance Indicators:

- variations in visitor/traffic numbers
- water quality at tourism settlements along the route
- increases in tourism related planning applications
- level of impact reported (increase or decrease)
- level of activity resulting in negative impact reported (increase or decrease)
- percentage of visitors travelling outside core movement areas
- species condition reported (positive or negative)
- soil condition reported (positive or negative)
- other factors identified in the ecological survey e.g. litter

A standard defines a specific point for that particular measurement which must be reached as a minimum or maintained. Standards are useful because they provide an indication of where programming is falling short of reaching operational goals and then quantify this shortfall.

The reason for pairing standards with indicators is that while an indicator is the measurement itself, a standard defines the point for that particular measurement which must be reached or maintained. In the case where there is a shortfall between standard and an indicator it should be identified and explained as the deficit if often caused by circumstances outside of reasonable control. For example, the recommended amount of time to survey a site is eight hours across one day; this should be consistent across all sites. If the survey is abandoned due to inactivity arising from adverse weather, it may not be possible to achieve the specified standard of eight hours surveying. The shortfall should be reported and if there is potential for it to reoccur, a recommendation should be made to deal with the issue in future circumstances.

4.2 Preparation of Guidelines

The results of the Surveying and Monitoring Strategy will be used to inform the preparation of evidence-based guidelines that will offer specific guidance to avoid ecological impacts (see Appendix 1) and design guidelines that will advise on matters relating to site strategy alternatives or specific design details at sensitive sites (to be prepared). These Guidelines will be commissioned by Fáilte Ireland and will be prepared in consultation with the National Parks and Wildlife Service and the National Monuments and Historic Properties Sections of the Department of Arts, Heritage and the

Gaeltacht. They will be used by Local Authorities, State Agencies or any other developer engaging in works at any of the candidate Signature Discovery Point sites.

Based on the outcome of the Strategy for Environmental Surveying and Monitoring, recommendations will be made which may result in the route and the candidate Discovery Points changing if the results show that visitor activity and/or visitor intensification is predicted or observed to result in a negative impact on the environment in particular locations. For this reason, a mid-term review of the route and the candidate Discovery Points has been built into the Operational Programme. Changes that could be made include the de-marketing of candidate Discovery Points, the removal of signage and the temporary or permanent removal of candidate Discovery Points from the route.

Appendix 1: Ecological Method Statement

Introduction

All projects must be undertaken in accordance with the Wild Atlantic Way candidate Discovery Points Remedial Works Guidelines, including this Ecological Method Statement, and in accordance with the requirements of the European Communities (Birds and Natural Habitats) Regulations 2011.

The purpose of the Ecological Method Statement is to identify what ecological control methods need to be specified to avoid adverse ecological effects arising from remedial works. All projects must comply with all planning, local authority and other statutory requirements both during and after the construction phase of the Project.

Remedial works are being proposed at a number of sites. The works vary in scale and are specific to the individual sites and incorporate a combination of the proposed works outlined on Table 1.1.

Table 1.1 Proposed Works for WAW candidate Discovery Points

Proposed works
Extend surfacing in car park
Enlargement of car park/lay-by
Provision of footpath
Provision of site amenities e.g. toilet block, painting, seating
Provide Wild Atlantic Way site marker
Lay-by reshaping
Removal/replacement of bollards
Extension of timber boardwalks to create access locations within car park to boardwalks
Proposed Management Activities
Road repairs (e.g. pot holes)
Repair stone walls, fencing, concrete posts, and furniture
Repair surfacing in car park
Removal of vegetation, tree and hedgerow cutting
Repair and maintain verge around car park and along access road
Rationalise existing information signage, removal of existing barriers, general tidy up of area
Undertake maintenance of grassed amenity areas
Maintenance of site amenities e.g. toilet block, painting, seating
Repair works to paths, slipways, kerbs, steps, etc. due to storm damage
Reinstate rock armour
Drainage clearance works

The locations of these sites are often within areas of high ecological sensitivity and therefore it will be necessary to consider the potential effects of such works on the natural environment. Depending on the site and the specific complexities, the works could potentially give rise to the following adverse ecological effects:

- Habitat loss and disturbance
- Disturbance of species
- Introduction and spread of invasive alien species.
- Increased runoff of silt and pollutants to surrounding aquatic ecosystems, which could impact on aquatic habitats and species

Ecological Control Measures

A number of Ecological Control Measures are to be integrated into the design of each site. The Ecological Control Measures have been detailed and tailored by giving due consideration to the sensitivity of the receiving environment and the scale of works proposed. Particular measures (see Table 1.2 below) are listed against each type of works being proposed for each site. It will be necessary for the Local Authority to specify that, when planning works at individual sites, the measures are adhered to and appropriately incorporated into the construction approach. Site specific detail on how these measures will be incorporated into the construction design will vary depending on the characteristics of each site and will need to be considered prior to the commencement of construction.

Table 1.2 Ecological Control Measures

No.	Description of wording to be included in Works Specification
G1	All rubbish, debris and other waste material shall be segregated to prevent contamination, stored appropriately and covered where required. Removal of waste materials from site shall be undertaken by an approved contractor for treatment/disposal. Hazardous waste material shall be stored separately from other inert waste materials and kept covered in an appropriate area/container(s) to ensure that the material does not inadvertently enter any existing surface water drainage network materials. The hazardous waste materials shall be removed from site by an approved contractor for treatment at a licenced facility - as directed by the Ecological Clerk of Works Particular care shall be taken in the removal of stockpiles of material such as gravel and chippings. (Such stockpiles are frequently sources of non-native invasive plants, such as Japanese knotweed). Disposal of contaminated material may require transport to an approved, licensed facility.
G2	All rubbish, debris and other waste material shall be removed in such a manner as to ensure that none of the material is contaminated and/or released inadvertently to watercourses and other sensitive ecological habitats.
G3	Prior to removal, all vegetation shall be checked by the Ecological Clerk of Works to ensure that it is free of non-native invasive species, such as Japanese knotweed. Should any such species be encountered, the area shall be treated as directed by expert advice on the management of invasive species.
G4	Works involving the removal or clearing of vegetation that would have any impacts on nesting birds shall be undertaken outside the bird nesting season (i.e. outside the period 1st March to 31st August). In addition, the possible presence of roosting bats shall be considered prior to the undertaking any works that may disturb the roosts. Any further safeguards shall be included and provided for subject to the supervision of the Ecological Clerk of Works
G5	Should they be required, all hazardous substances, such as fuels, oils, cement and concrete products, shall be stored on-site in a secure, dry and contained area and isolated from drainage connections to any existing surface water drainage network
G6	Should they be required, all hazardous substances, such as fuels, oils, cement and concrete products, shall be used in a manner that ensures that contamination of other materials does not occur and that they do not inadvertently enter any existing surface water drainage network
G7	Where possible, machinery shall only operate from existing parking or built surfaces, and shall not enter any sensitive or designated ecological habitat – as directed by the Ecological Clerk of Works
G8	All resurfacing works shall be undertaken within the existing or formerly paved areas
G9	All resurfacing and other minor construction or demolition works (including removal and consolidation of existing features, such as signage, litter bins, picnic tables) should be undertaken in a manner that ensures that no materials can inadvertently enter any watercourse or sensitive ecological habitat, and in a manner that ensures there are no impacts on fauna such as birds and bats – as directed by the Ecological Clerk of Works
G10	Prior to use, resurfacing materials, including hardcore and sub-surface fill material will be stored in a manner that ensures that they do not inadvertently enter any existing surface water drainage network, or any sensitive ecological habitat – as directed by the Ecological Clerk of Works
G11	All timber to be used in works shall be sustainably sourced
G12	Works to define boundary edges shall be undertaken in a manner that ensures that there are no impacts on any sensitive or designated ecological habitat on the natural environment – as directed by the Ecological Clerk of Works and shall consider the following: <ul style="list-style-type: none"> • Proposed low earth bunds shall be placed within the existing parking or built surface areas. • All material used, including rock, soil, seed and sods shall be sustainably sourced and appropriate

No.	Description of wording to be included in Works Specification
	to the setting
G13	Removal and consolidation of existing features, such as signage, litter bins, picnic tables shall be undertaken in a manner that ensures that there are no impacts on any watercourse or sensitive ecological habitat.
G14	Works to provide a natural surface to bare areas shall be undertaken in a manner that ensures that there are no impacts on the natural environment. All material used, including soil, seed and sods shall be sustainably sourced and appropriate to the setting.
G15	Where possible, site markers shall be placed within existing hard standing areas and installed in a manner that ensures that there are no impacts on any sensitive or designated ecological habitat – as directed by the Ecological Clerk of Works
G17	An Ecological Clerk of Works shall be retained to advise on and monitor works associated with construction, demolition, resurfacing and/or drainage

Advisory Measures

Advisory Measures, in addition to the requirements to comply with all planning, local authority and other statutory requirements both during and after the construction phase of the Project are detailed in Table 1.2 below.

Table 1.2 Advisory Measures

No.	Description
1. Protection of Biodiversity including Natura 2000 Network	<p>Contribute as appropriate towards the protection of designated ecological sites including candidate Special Areas of Conservation, Special Protection Areas, proposed Natural Heritage Areas, Nature Reserves, Wildfowl Sanctuaries, Ramsar Sites, Salmonid Waters and Wicklow National Park.</p> <p>The protection of natural heritage and biodiversity, including European sites that form part of the Natura 2000 network, will be supported in accordance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents):</p> <ul style="list-style-type: none"> • EU Directives, including the Habitats Directive (92/43/EEC, as amended)⁴, the Birds Directive (2009/147/EC)⁵, the Environmental Liability Directive (2004/35/EC)⁶, the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC). • National legislation, including the Wildlife Act 1976⁷, the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011), the European Communities (Environmental Liability) Regulations 2008⁸ and the Flora Protection Order 1999. • National policy guidelines, including the Landscape and Landscape Assessment Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2004 and the Appropriate Assessment Guidance 2010. • Catchment and water resource management Plans. • Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: and Ireland's National Biodiversity Plan; • Ireland's Environment 2012 (EPA, 2012), and to make provision where

⁴ Including Annex I habitats, Annex II species and their habitats and Annex IV species and their breeding sites and resting places (wherever they occur). Note that the NPWS provide sensitive areas mapping for Freshwater Pearl Mussels which are listed under Annex II of the Directive.

⁵ Including Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur)

⁶ Including protected species and natural habitats

⁷ Including species of flora and fauna and their key habitats.

⁸ Including protected species and natural habitats

No.	Description
	appropriate to address the report's goals and challenges.
2. Appropriate Assessment	<p>All projects will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A project will only be authorised after the competent authority has ascertained, based on scientific evidence and an Appropriate Assessment report to the relevant level of detail, that:</p> <ol style="list-style-type: none"> 1. The project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or 2. The project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or 3. The project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000. <p>The methodology followed by the Appropriate Assessment should follow, as relevant and appropriate, that outlined in DEHLG (2009) <i>Appropriate Assessment of Plans & Projects - Guidance for Planning Authorities</i>.</p>
3. AA and Exemptions	<p>Proposals for development must be screened for the need to undertake AA as per the European Communities (Birds and Natural Habitats) Regulations 2011 (Part 5, Section 42).</p> <p>If proposals are screened out then planning exemptions are not lost.</p> <p>If a Stage 2 AA is required then planning exemptions are lost and planning permission must be provided*.</p> <p>If a planning authority is applying for the permission and Stage 2 AA is required, then the application must go to An Bord Pleanála.</p> <p><i>*As per Part I, Section 4 (4) of the Planning Act 2000 as amended states that (Notwithstanding paragraphs (a), (i), (ia) and (l) of subsection (1) and any regulations under subsection (2)): development shall not be exempted development if an environmental impact assessment or an appropriate assessment of the development is required.</i></p>
4. Environmental Control Measures	<p>A number of Environmental Control Measures have been integrated into the design of each site. The Measures have been detailed and tailored by giving due consideration to the sensitivity of the receiving environment and the scale of works proposed. These measures should be taken into account by any Appropriate Assessments and are part of the design and are not mitigation.</p>
5. Protection of Natura 2000 Sites	<p>No projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted (either individually or in combination with other plans or projects⁹).</p>

⁹ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- a) no alternative solution available,
- b) imperative reasons of overriding public interest for the project to proceed; and
- c) Adequate compensatory measures in place.

No.	Description
6. Coastal Focus	Works undertaken in coastal areas will be in accordance with best practice and support measures to protect the coast, the coastal edge and coastal habitats. Protect, enhance and conserve the beaches from inappropriate development. Facilitate and Integrated Coastal Zone Management approach to ensure the conservation, management and protection of man-made and natural resources of the coastal zone.
7. Biodiversity and Ecological Networks	Support the protection and enhancement of biodiversity and ecological connectivity, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, geological and geo-morphological systems, other landscape features and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.
8. Waters	Protect the water resources, including rivers, streams, wetlands, groundwater, coastal waters and associated habitats and species in accordance with the requirements and guidance in the EU <i>Water Framework Directive 2000 (2000/60/EC)</i> , the <i>European Union (Water Policy) Regulations 2003</i> (as amended), the <i>North Western International</i> , the <i>Western</i> , the <i>Shannon International</i> and the <i>South Western River Basin Management Plans 2009-2015</i> (or any such plans that may supersede same) and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same).
9. Non-Designated Sites	Recognise that nature conservation is not just confined to designated sites and acknowledge the need to protect non-designated habitats and landscapes and to conserve biological diversity.
10. Non-native invasive species	Support, as appropriate, the National Parks and Wildlife Service's efforts to seek to control the spread of non-native invasive species on land and water.
11. Environmental Assessment	Ensure, as appropriate, that plans, programmes and projects comply with: <ul style="list-style-type: none"> • EU Directives - including the Habitats Directive (92/43/EEC, as amended), the Birds Directive (2009/147/EC), the Environmental Impact Assessment Directive (85/337/EEC, as amended) - and relevant transposing Regulations.
12. Cumulative/In-combination effects	<p>Any new development that could interact with projects for remedial works would have to comply with the provisions contained in relevant land use and other sectorial plans e.g. Development Plans, River Basin Management Plans. These provisions have been subject to and informed by Appropriate Assessment and Strategic Environmental Assessment which have considered in-combination effects.</p> <p>With respect to events (such as a vehicle collision) that are not reasonably foreseeable, contingency plans and procedures are already in place at various levels e.g. emergency plans, local response arrangements.</p> <p>As part of the wider WAW project, environmental monitoring is being coordinated at a number of levels – this includes monitoring related to habitats.</p>
13. Works to be carried out at candidate Discovery Points and potential impacts	The methodology for the incorporation of environmental control measures will require consideration at project level for each site to account for individual complexities with regards to the sensitivities and layout of the individual site.

Appendix 2: Example of Completed Survey Sheet for Visitor Observation Study



Name	Date	Site	Station
Sean N	6/9/14	Poulnabrone	

Total No. of people	Gender		Age			
	M	F	Kids	Teens	Adults	Elderly
4	2	2		2	2	

Mode	Arrive	Depart	Direction	Distance
	13:44	13:59		

Activities

- walked from path across rocks around hole
- walked north across rocks and back down path to leave

Effects

Comments

- woman climbed up boulder at 'x' for picture
- children jumping on rocks

Appendix 3: Key for completing Observation Survey Sheet

Key to filling out Observation Sheet

Name	Date	Site	Station		
Total No. of people	Gender	Age			
	M F	Kids	Teens	Adults	Elderly
Mode	Arrive	Depart	Direction	Distance	
Activities					
Effects					
Comments					

Callout Boxes:

- How many in the group? Are they male or female?** (Points to Gender section)
- Children
-Teenagers
-Adults** (Points to Age section)
- Note distances travelled –
- Into site
- Beyond site** (Points to Distance section)
- Only applies in car park!
- Car?
- Bus?
- Motorbike?** (Points to Mode section)
- Clockwise/ Anti-clockwise
Or
North, south, east, west
Or
Uphill/ downhill
Agree terms with Supervisor and use consistently.
USE MAP** (Points to Direction section)
- Walking,
-Climbing
-Sitting
-Picnicking
-Playing
-Filming,
-Photography
-Drawing,
-Writing
-Other (Specify)** (Points to Activities section)
- Use this section only when interactions and effects occur for example:
'Two teens wandered off from main group and climbed onto the walls – dislodging loose stones'
Or
'The couple had a small bucket that they used to store the slips of flowering plants that they gathered'
Or
The campervan backed onto the grassy area while trying to turn – resulting in a muddy patch where the wheels spun on the wet grass'
USE MAP** (Points to Comments section)
- Note any after-effects of interaction with site features
-visible vegetation marks
-Visible litter
-Visible footprints
-Visible tire-marks
-Visible disturbance of fences, walls, monuments, etc.
USE MAP** (Points to Effects section)
- Note time of entry and exit from your observation area.** (Points to Comments section)

Appendix 4: Indicative Survey Programme

The indicative survey dates are outlined overleaf. Note the sequencing of the programme outlined is indicative and is subject to change.

Timeline for completing Environmental Surveying and Monitoring Programme for WAW Operational Programme:

	March					April					May				June					July				August					September			
	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28	
Site Visit Observation																																
Site Visit Ecologist																																
Survey Preparation																																
Observation Fieldwork																																
Data Collation																																
Ecological Fieldwork																																
Data Collation/Analysis																																
Report Preparation																																

Indicative Survey Dates for WAW Operational Programme

Week	Site	County	Indicative dates for Observation Study to commence (W/E)	Indicative dates for Ecological Study to be completed (W/E)
1	Sliabh Liag	Donegal	10th April 11th April 12th April	1st May
2	Fanad Head	Donegal	17th April 18th April 19th April	8th May
3	Malin Head	Donegal	24th April 25th April 26 th April	15th May
4	Cliffs of Moher Loop Head	Clare	1st May 2nd May 3rd May	22nd May
5	Mullaghmore Head	Sligo	8th May 9th May 10th May	29th May
6	Downpatrick Head	Mayo	15th May 16th May 17th May	5th June
7	Killary Harbour (South)	Galway	22nd May 23rd May 24th May	12th June
8	Keem Strand	Mayo	29th May 30th May 31st May	19th June
9	Derrygimleach	Galway	5th June 6th June 7th June	26th June
10	Dursey Island	Cork	12th June 13th June 14th June	3rd July
11	Blaskets View	Kerry	19th June 20th June 21st June	10th July
12	Bray Head	Kerry	26th June 27th June 28th June	17th July
13	Mizen Head	Cork	3rd July 4th July 5th July	24th July
15-22	Old Head of Kinsale	Cork	10th July 11th July 12th July	31st July
16-22	Repeat Study (If required)		-	-