NATIONAL TOURISM MONITORING PROGRAMME 2021-2025

ANNUAL RESULTS FOR 2022

DERRIGIMLAGH BOG

for: **Fáilte Ireland**

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Document Control

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Derrigimlagh Bog – Interesting Finds

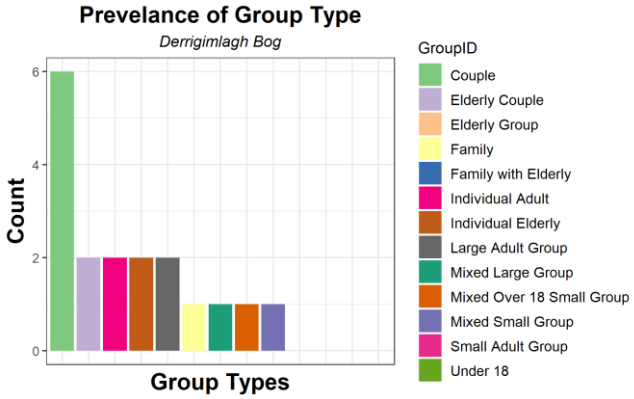
ECOLOGICAL HIGHLIGHTS

Derrigimlagh Bog is covered by a majority of cutover bog, which was previously cut for industrial use and still cut, but on a much smaller scale.

The bog itself has a low species diversity and requires management action to increase the habitat quality and species diversity present.

VISITOR NUMBERS AND DWELL TIME

- 51 people visited the site over 8 hours
- Average dwell time of 89 minutes
- Changes since last survey include an increase of 53% of visitors recorded and an increase of 7% in dwell time from last year



KEY RECOMMENDATIONS

- Opportunity to engage in a long-term habitat restoration process to increase floral diversity on site and to potentially use the site as a showcase to our cultural heritage.
- Attention is required in these areas to minimise the impacts seen in deteriorated areas of pathways.
- Consideration should be given to temporary sheep exclusion in order to allow trail recovery.

VISITOR INTERACTION & MANAGEMENT

- Visitor interactions at Derrigimlagh Bog are generally well controlled with strong management practices in place on site.
- Large increase in the number visitors that did not stick to designated paths.
- Most of the visitors to the site stayed for at least 89 minutes – given the nature of the site itself.
- Most of the visitors to Derrigimlagh Bog read signage that was available.

Highlights:

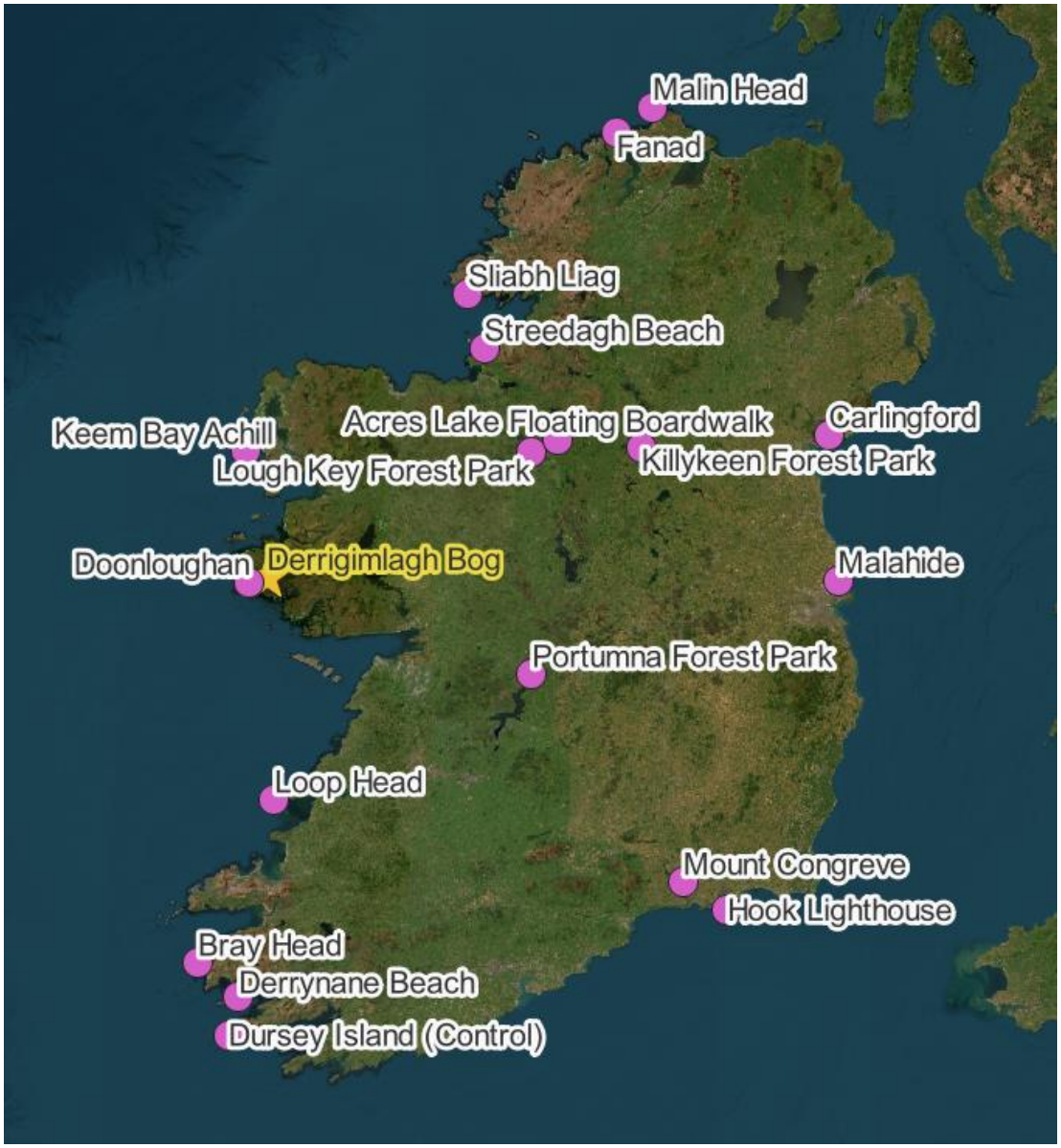
- Well maintained pathways and boardwalk.
- Decrease in peat cutting observed on site.
- Considerable number of interactive features and signage available on site, which saw an increase in the percentage read by visitors.

1 Derrigimlagh Bog

1.1 Purpose & Outputs of the Programme

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

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



The purpose of the programme is as follows:

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

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

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

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

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

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

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

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

1.1.1 Looking Ahead

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

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

The long-term aim of the Monitoring Programme will be to inform local authorities and stakeholders to help in the design and implementation of methods that will encourage the sustainable management of visitor numbers and tourism activities, while also aiming to protect vulnerabilities of the local area's

1.2 Methods & Surveys

The following surveys were undertaken at Derrigimlagh Bog:

1.2.1 Visitor Characterisation Survey

Visitor characterisation surveys were undertaken at each of the monitoring sites during the weekend period between June-August. The survey at Derrigimlagh Bog was undertaken on the 31st of July 2022, with max temperatures reaching 18.2° C, no rainfall and low to moderate levels of wind on the day[1].These surveys followed an 8-hour time period recording samples of visitor behaviour of an many visitors on site as possible. Visitor movement patterns, demographic data and activities undertaken were recorded for all sampled visitors. Where activities had associated impacts, these were also recorded and the relevant severity was recorded using the same coding system as with the WAW monitoring (see Appendix I for details). It is important to note that the visitor characterisation surveys are indiscriminate between visitors and local amenity use. It is also important to note that there was a lack of interaction with the subject matter of the surveys to ensure that there is no influence of the surveyor at all on the resultant data.

1.2.2 Ecological & Path Assessments

In addition to the visitor movement and behavioural records an ecological assessment and path network assessment was undertaken at each site. This consisted of mapping all tracks and trails – with records of hazards, notable damage etc. In addition to this, all habitats were mapped according to the Fossitt Habitat coding system while information on bird populations was gathered from National Biodiversity Centre Data.

1.3 Site Description of Derrigimlagh Bog

The Derrigimlagh Discovery Point is a 5km signposted looped walk through the boglands. The site also contains important historic commemoration sites, namely the transmission of the first commercial transatlantic message in 1907 and also the site of the landing of first non-stop transatlantic flight in 1919.

The trail is 5km long following a roadway and gravel tracks with small sections of boardwalk through sensitive area encompassing habitats of bogs such as dystrophic lakes (Figure 5.1) and cutover bog. This walking loop borders and is part of both the Connemara Bog Complex SAC and SPA.

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

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

Figure 1.1 Derrigimlagh Bog

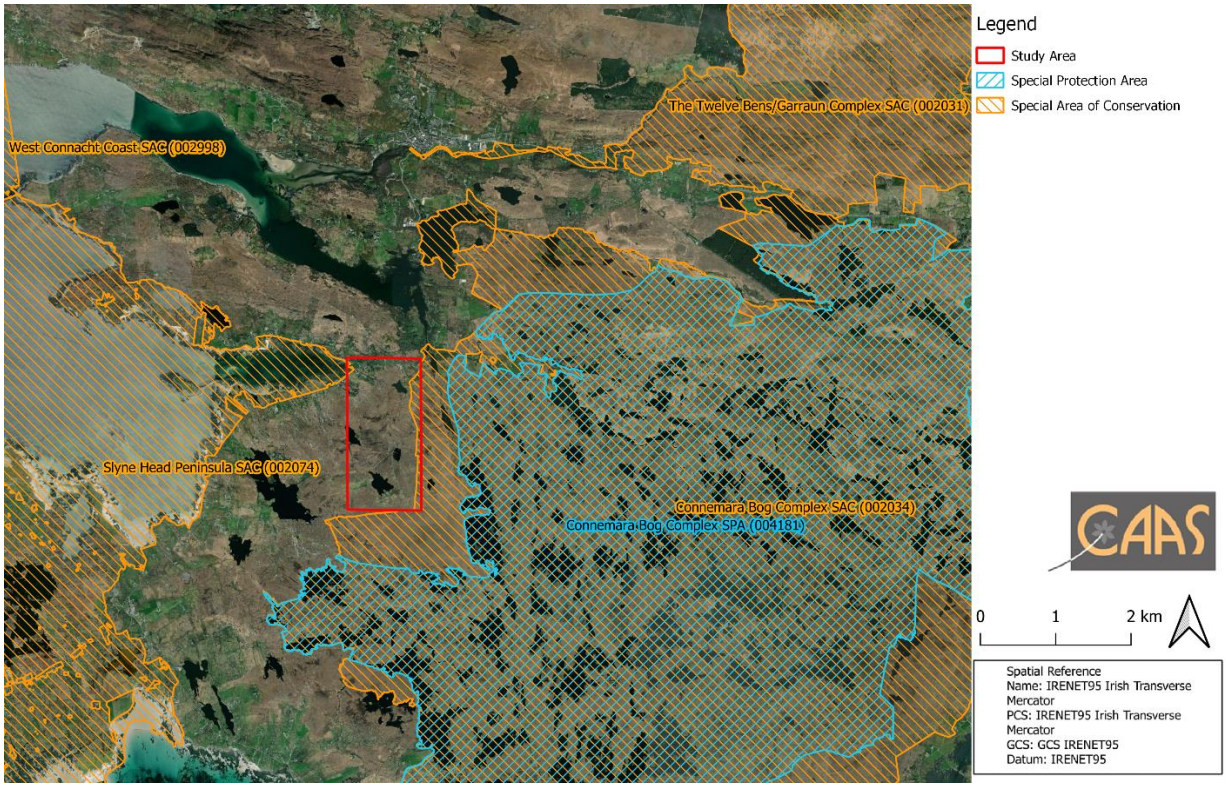


Figure 1.2 Study Area within Connemara Bog Complex SAC

1.3.1 Critical Infrastructure

Table 1.1 Summary of Wastewater infrastructure at Derrigimlagh Bog

Wastewater Treatment Plant (WWTP)	Irish Water Indication of Capacity	Comment
Toilet facilities are not available on site No current WWTP on site at Derrigimlagh Bog Nearest settlement with WWTP in Clifden (WWTP Reg #D0287).	Spare capacity available[2]	Current wastewater facilities are sufficient if visitor numbers increase

Table 1.2 Summary of Drinking Water infrastructure at Derrigimlagh Bog

Drinking Water	Water Resource Name (WRZ)	Irish Water Indication of Capacity	Comment
Nearest serviced settlement to Derrigimlagh Bog is Clifden.	Clifden	Capacity available – Level of service (LoS) improvement required[3].	Current water supply is sufficient However, there is limited capacity according to the Galway CDP 2022-2028[4]

Table 1.3 Summary of Transport infrastructure at Derrigimlagh Bog

Nearest Settlement	Current Transport Infrastructure	Comment
Clifden	Derrigimlagh Bog is approximately a 4km drive along the R431 from Clifden and a small parking space is present close to the site	Current transport infrastructure is sufficient

1.4 Pathways and Features Condition Results

1.4.1 Pathway Condition

The path is a mixture of both hard infrastructure and managed walkways which are consistent in size, respectively all the way through the path. The pathway is composed of a mixture of hard and soft infrastructure pathways which were previously used for transportation of peat from the bog, and comparatively new wooden boardwalk aimed to enhance the tourism aspect of the area.

As the pathways are hard surfaced, there is no evidence of erosion along the pathways, as there are little opportunities for erosion to occur on hard surfaced pathways. However, there are areas of wear and tear at junctions between paved and board-walked areas and also along transitions to areas of bog vegetation.

[2] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/galway/
[3] https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/leitrim/
[4] https://consult.galway.ie/sites/default/files/Chapter%207%20final.pdf

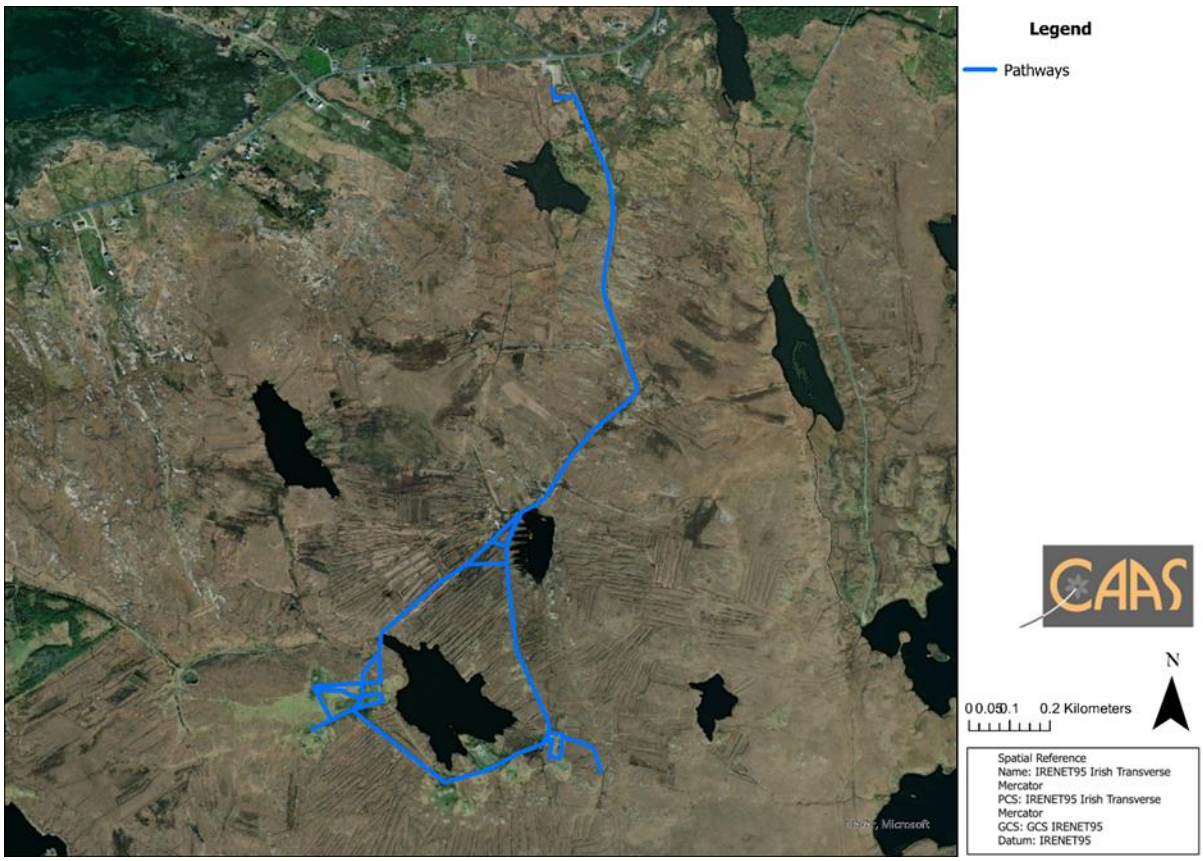


Figure 1.3 Pathways identified at Derrigimlagh Bog

Figure 1.4 Boardwalk pathway at Derrigimlagh Bog

1.4.2 Features Condition

The site has a large number of informational signs, some of which are interactive (Figure 1.6). These informational aspects of the site are placed along the designated boardwalk mainly relate to the heritage and cultural history of the site. There is a lack of signage related to the ecology of the area, especially the importance of peatlands.

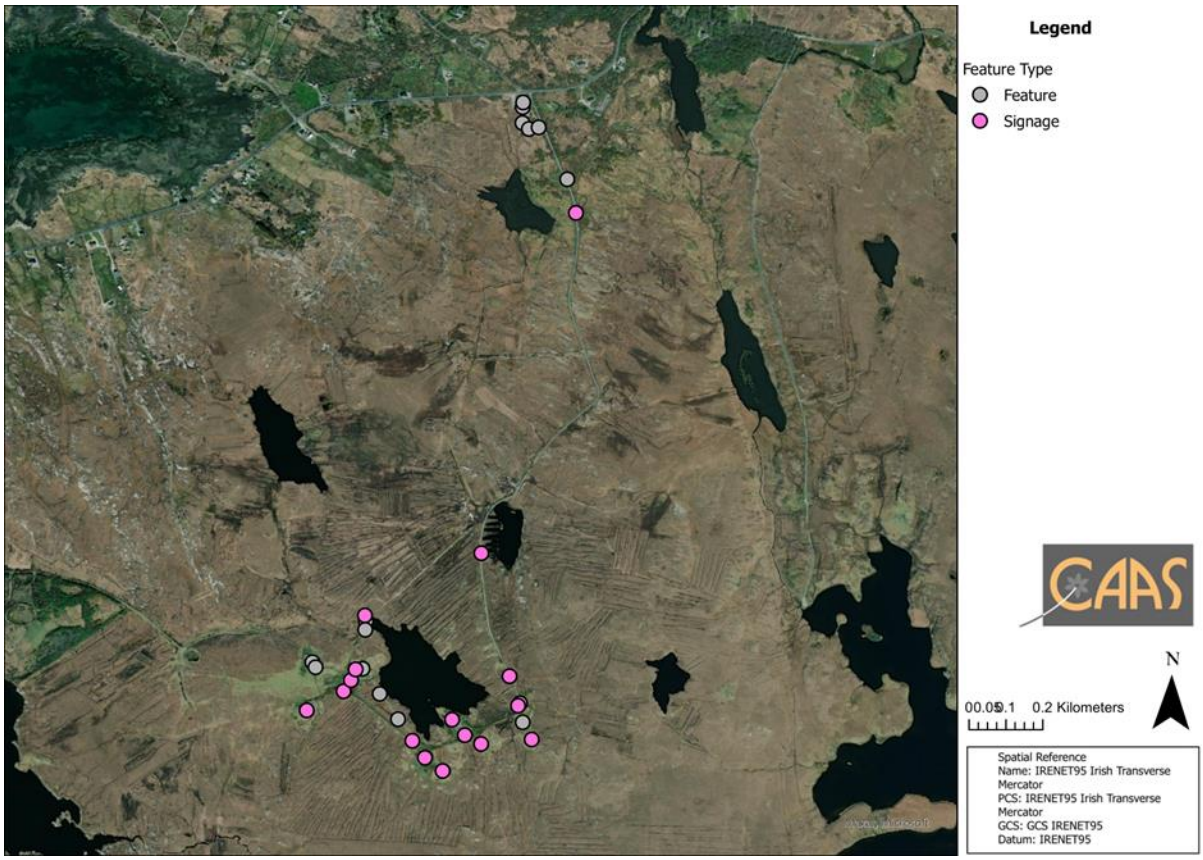


Figure 1.5 Features recorded at Derrigimlagh Bog

Figure 1.6 Features at Derrigimlagh Bog

1.4.3 Hazards

The hazard mapping identified no significant hazards at Derrigimlagh Bog. There may be future localised issues due to wear and tear at junctions between paved and board-walked areas and also along transitions to areas of bog vegetation.

1.5 Visitor Characterisation Survey

The visitor monitoring surveys resulted in a total of 59 visitors, up from 31 in 2021, (which represent 18 group observations). The site is most popular amongst the couple group with the dominant mode of transport being car. The average dwell time for the site was 89 minutes, an increase of 6 minutes from 2021; with the following activities undertaken during the survey (listed in order of occurrence rate):

Activity Type
Exploring off trail
Photographing
Other
Picnicking
Cycling
Dogwalking (on lead)
Flying drone
Plant ID
Sitting

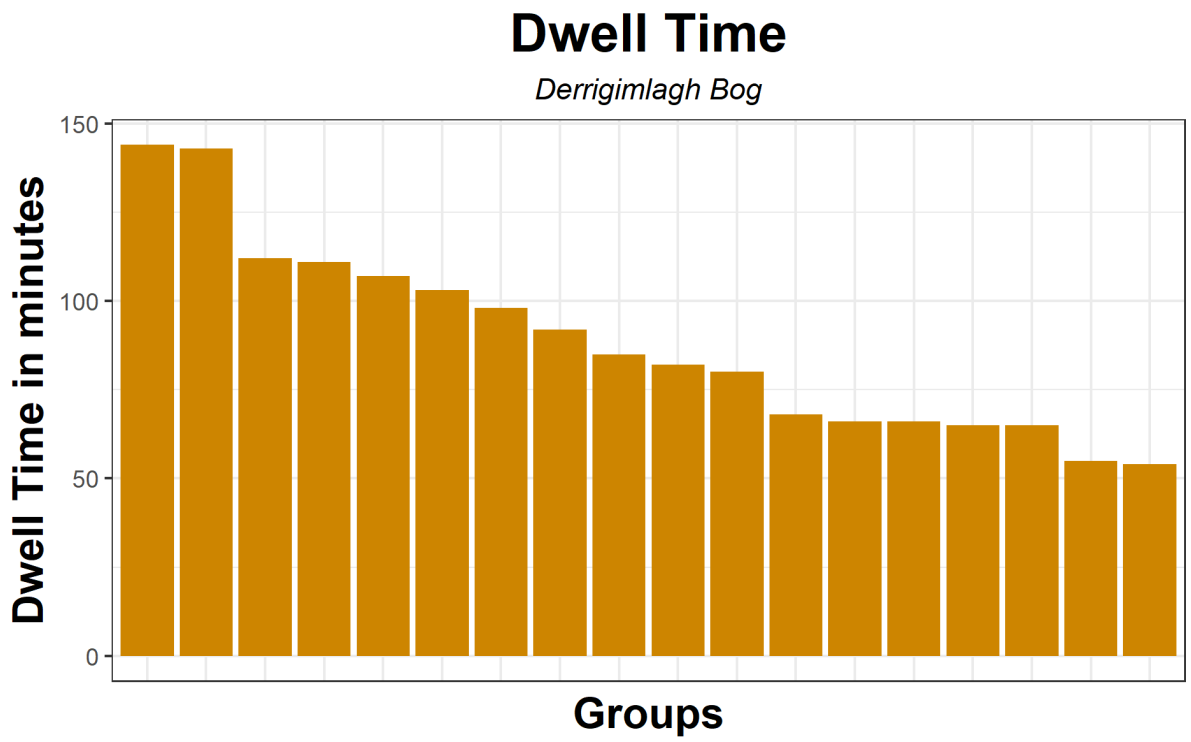


Figure 1.7 Duration of Time Spent at Derrigimlagh Bog

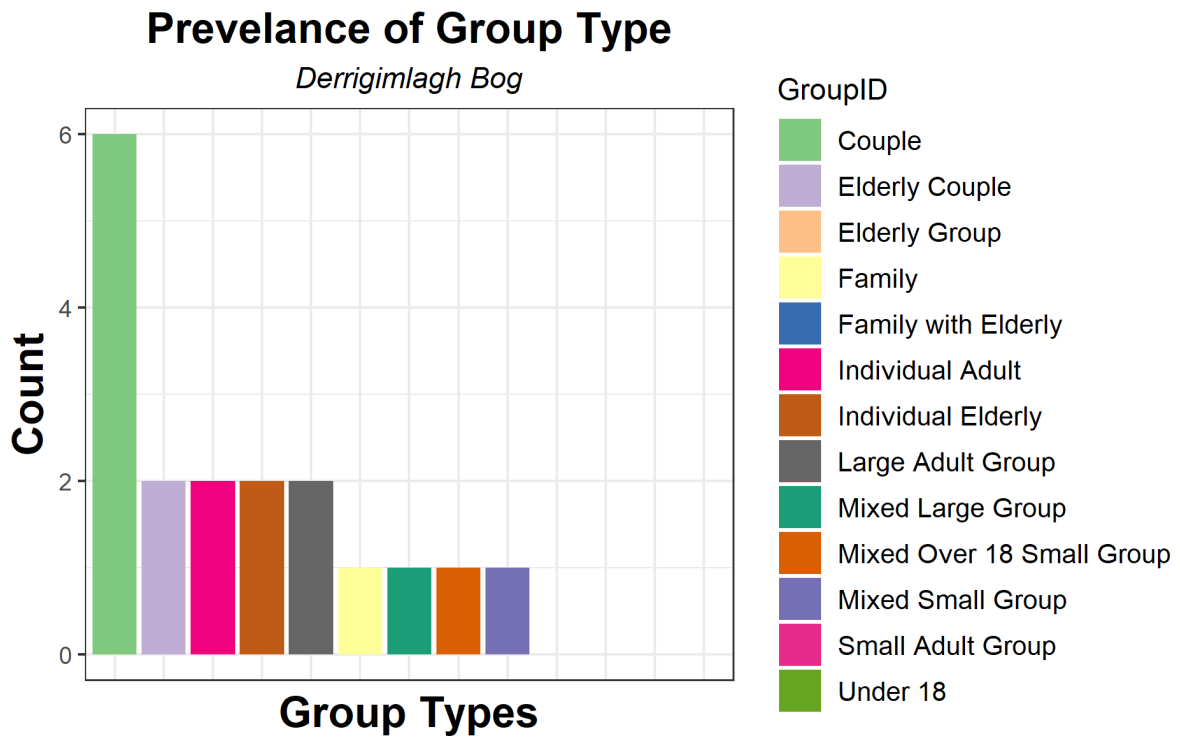


Figure 1.8 Groups of visitors that visited Derrigimlagh Bog

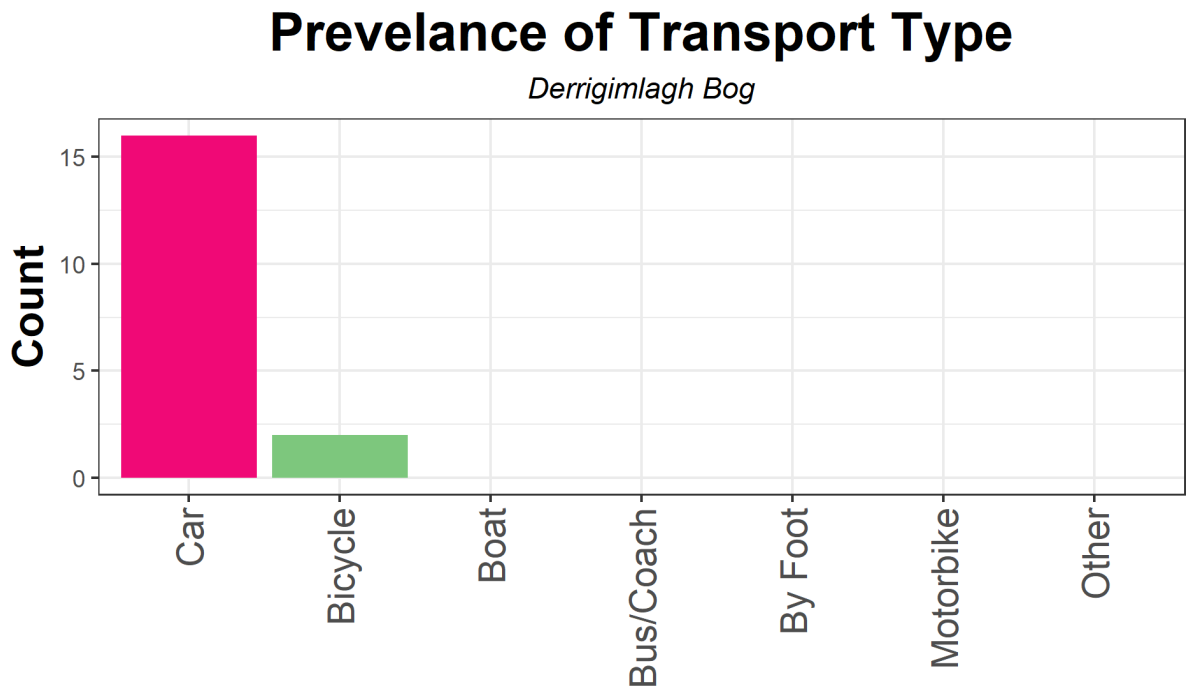


Figure 1.9 Mode of transport used to visit Derrigimlagh Bog

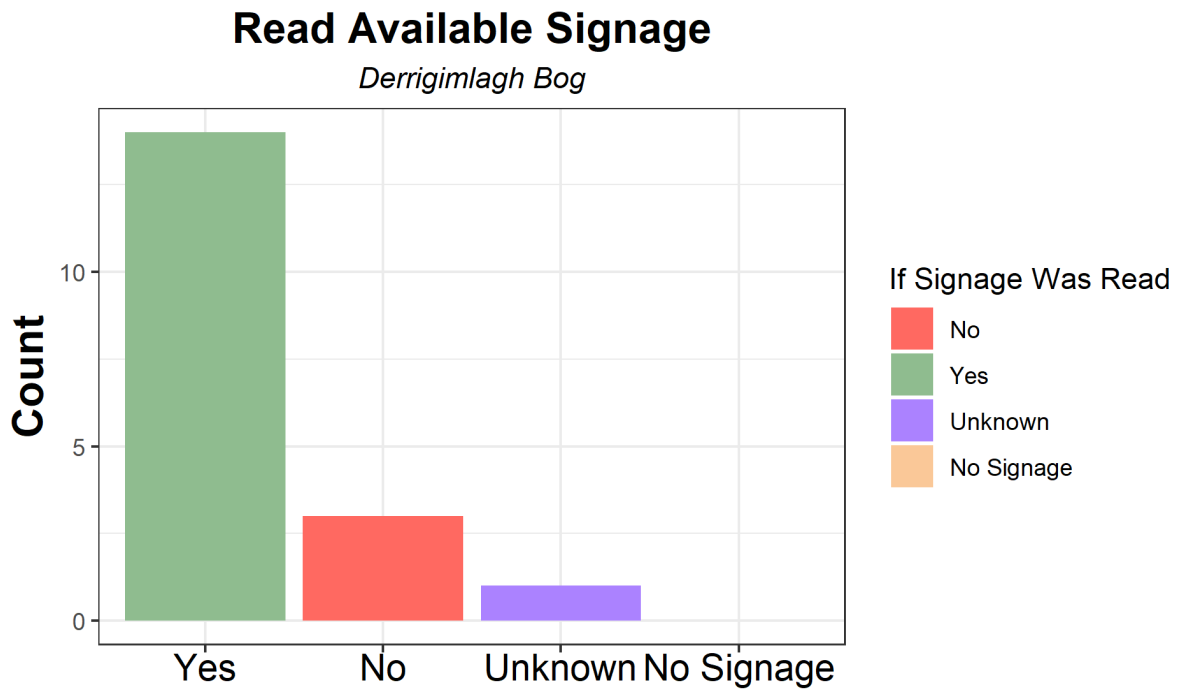


Figure 1.10 Use of Interpretive Material at Derrigimlagh Bog

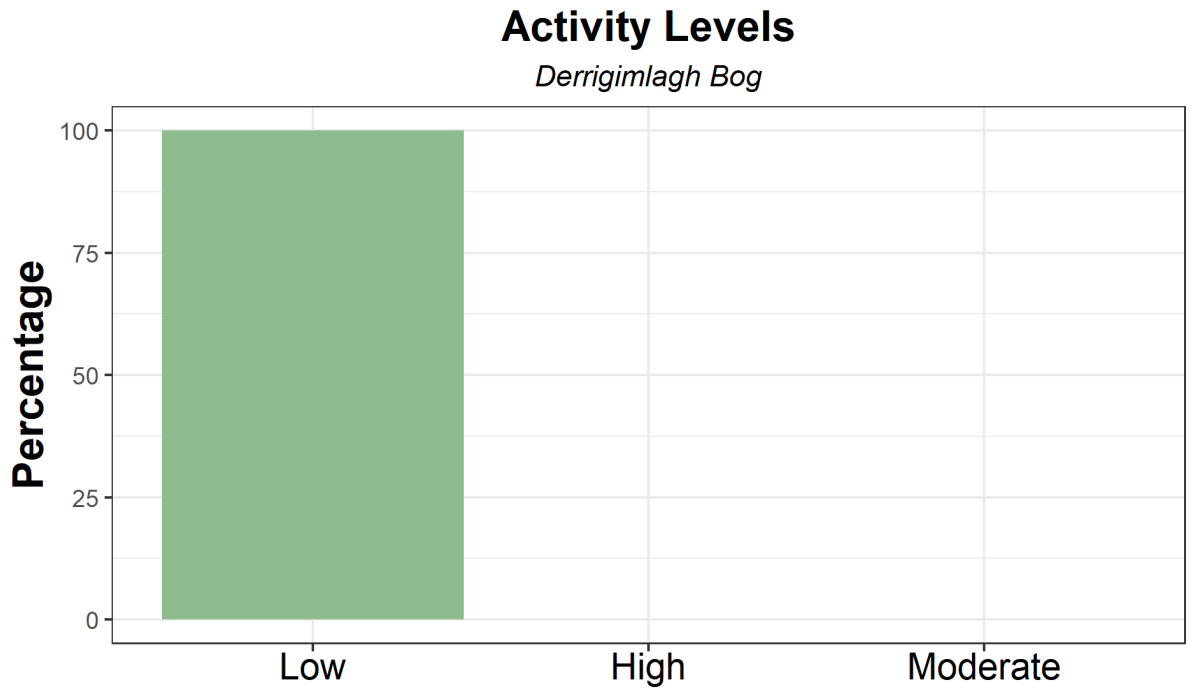


Figure 1.11 Categories of Activity Levels Observed at Derrigimlagh Bog

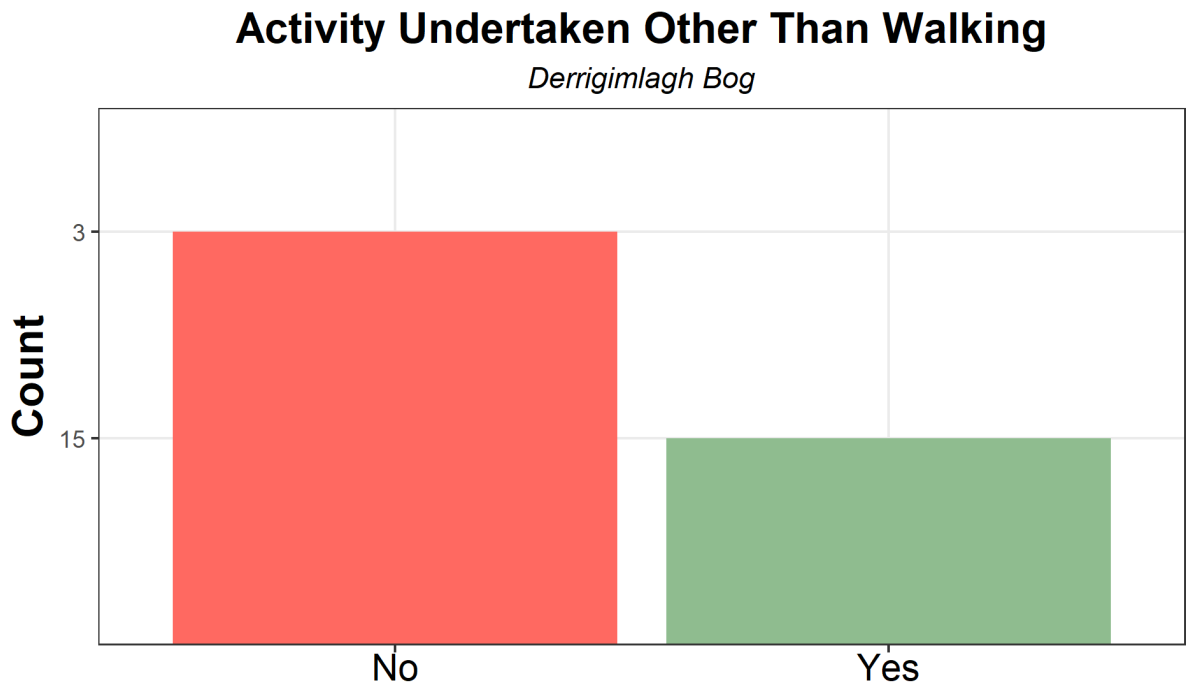


Figure 1.12 Activities undertaken other than walking

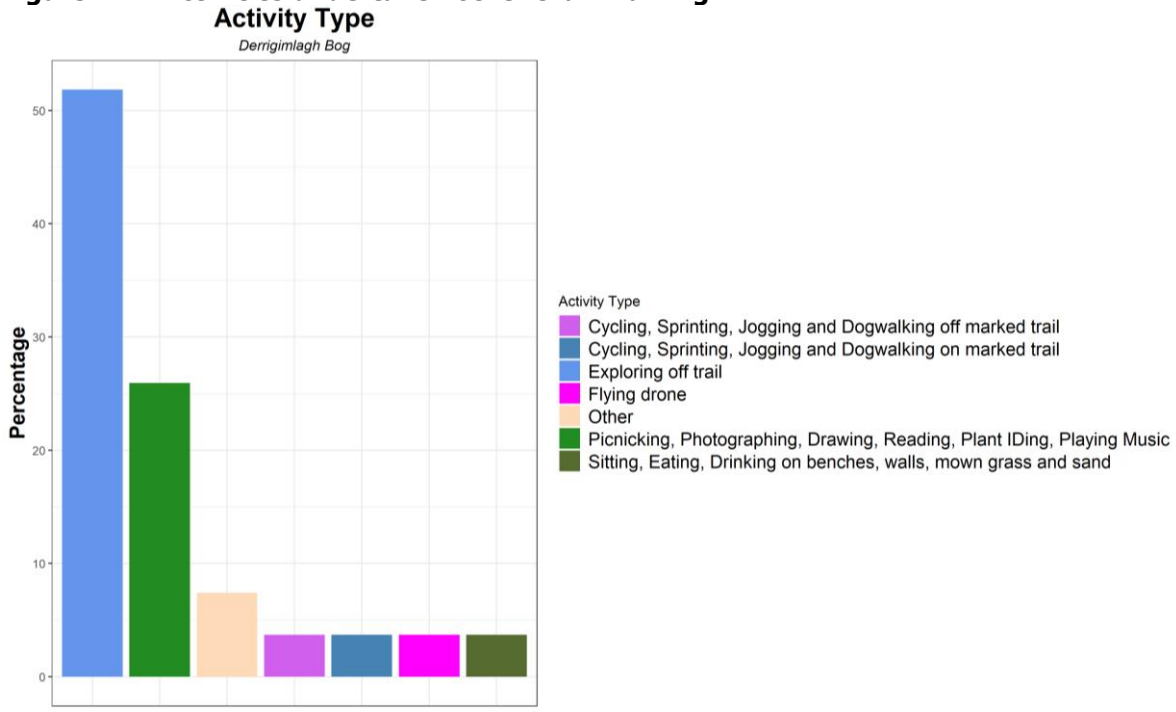


Figure 1.13 Range of Visitor Activities Observed at Derrigimlagh Bog

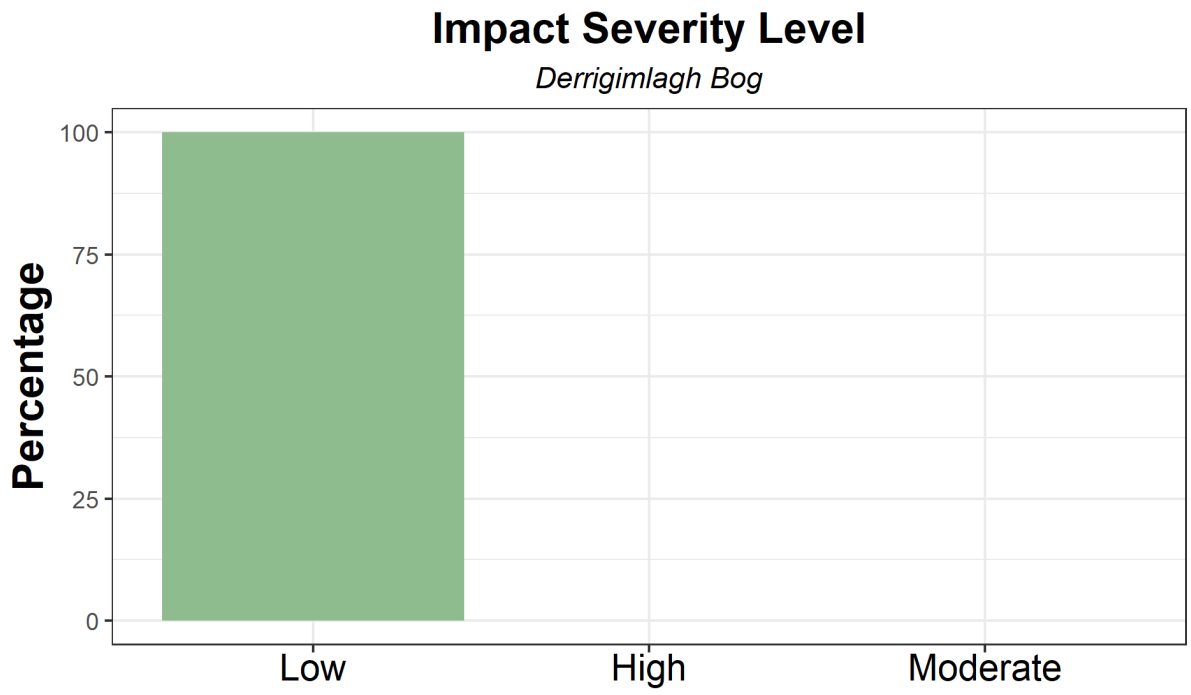


Figure 1.14 Categories of Environmental Impact Levels Observed at Derrigimlagh Bog as a result of Visitor Activities

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

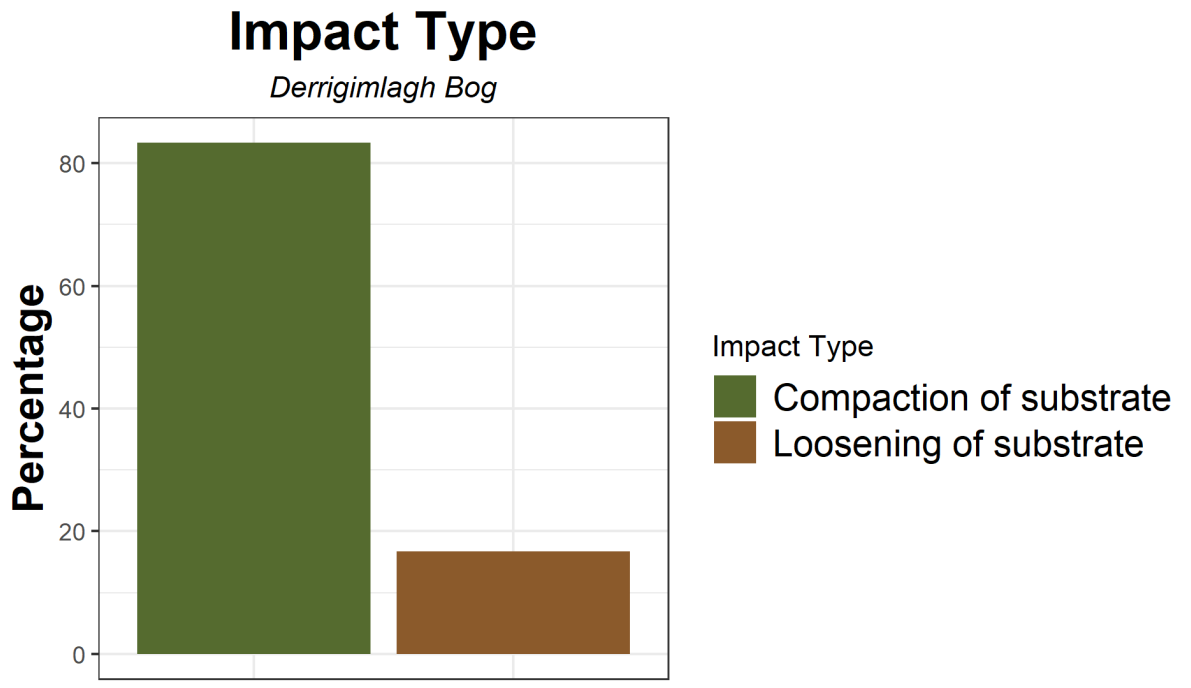


Figure 1.15 Range of Environmental Impacts Observed at Derrigimlagh Bog

[5] See Appendix I for more detail

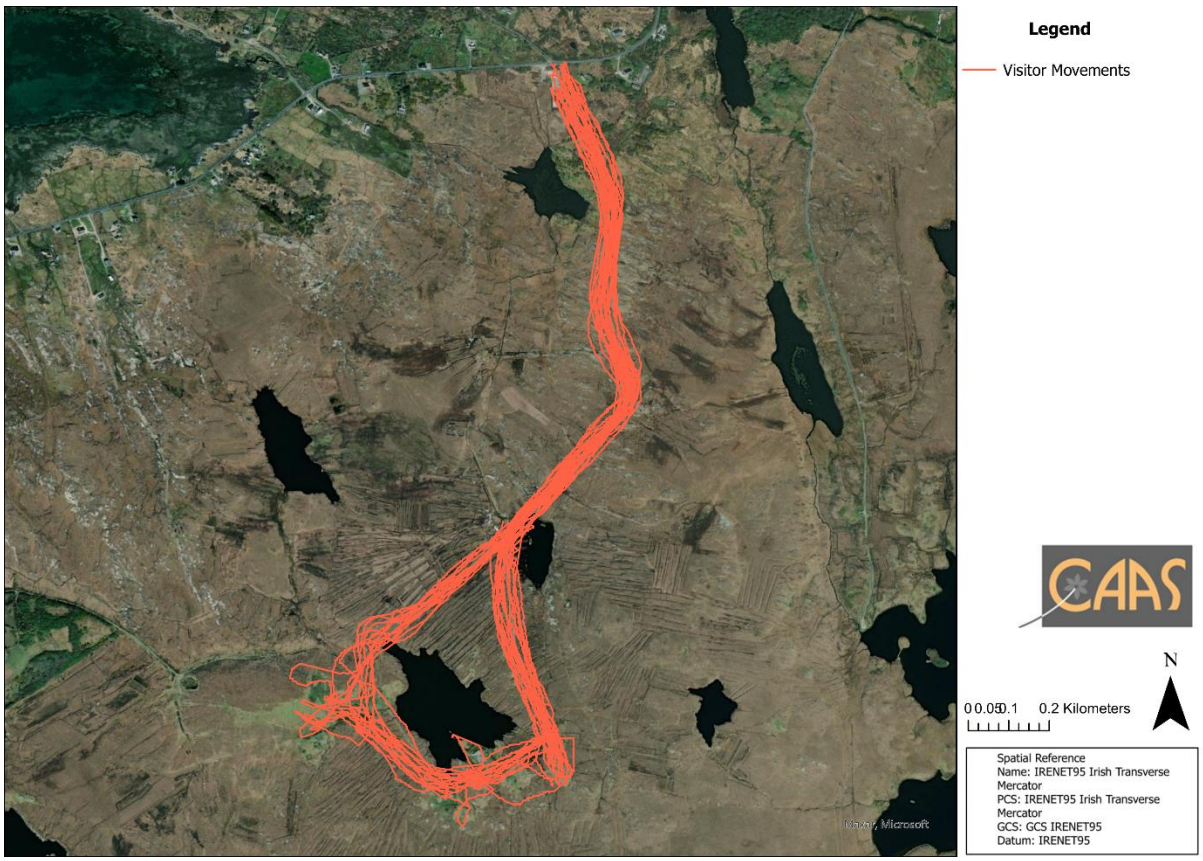


Figure 1.16 Visitor movement patterns at Derrigimlagh Bog

Of the 18 groups recorded on site 83%, up from 64% in 2021, of them undertook activities other than walking. These activities (identified above) resulted in 6 impacts, 5 impacts were observed in 2021, being observed on site during the survey. Thus, 22% of activities on site resulted in impacts on the environment, when compared to 42% of activities resulting in impacts in 2021. The impact severity levels did not vary with 100% of the impacts being low, 0% moderate and 0% high. The impacts identified for the site were:

Impact Type	Count
Compaction of substrate	5
Loosening of substrate	1

1.6 Comparison with Previous Survey Results

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

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

- A decrease was noted between the number activities resulting in impacts observed from 2022 when compared to 2021;
- A large increase in the percentage of activities observed off of marked trails and pathways,
- An increase in percentage of visitors reading signage available on site was noted; and,
- Increase of visitors during the 8-hour survey by 53% to 59 visitors over 18 groups with dwell time increasing by 7%.

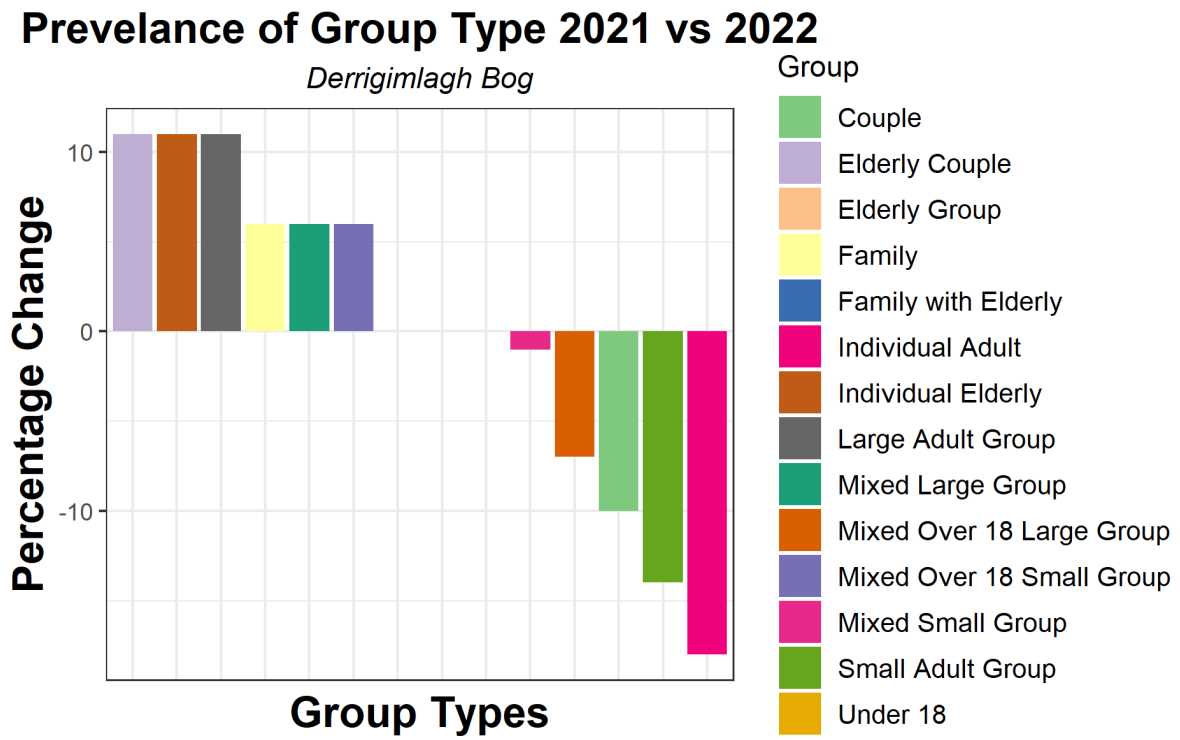


Figure 1.17 Percentage Change in groups of visitors that visited Derrigimlagh Bog between 2021 and 2022

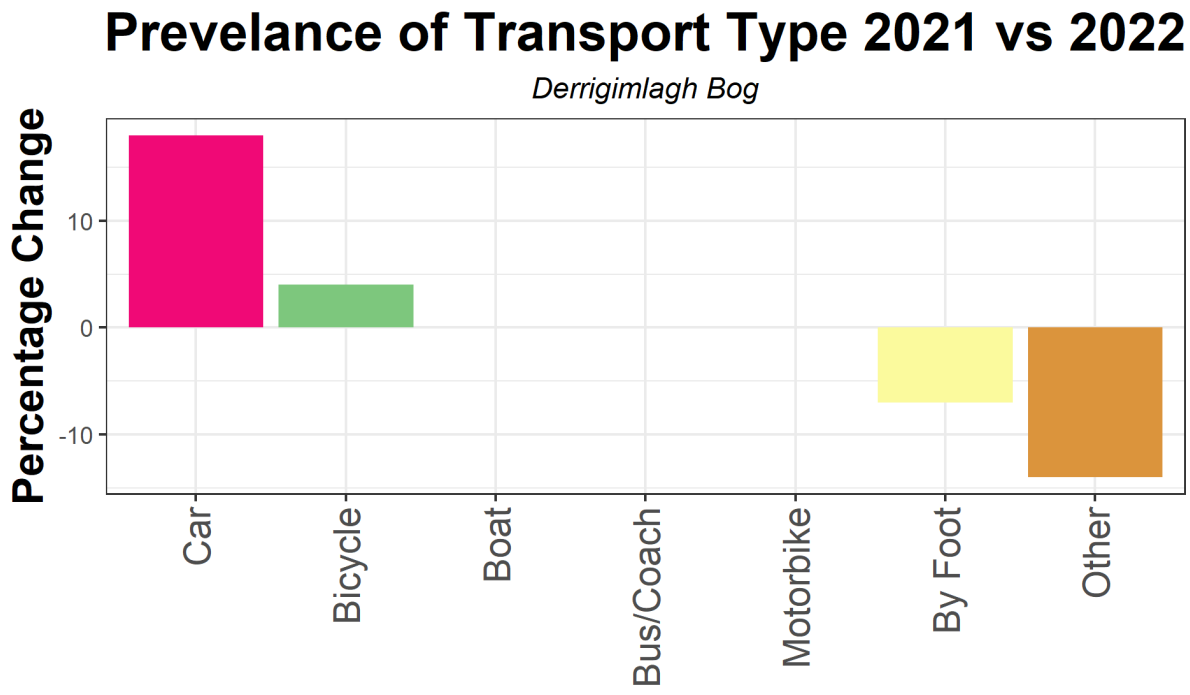


Figure 1.18 Percentage Change in mode of transport used to visit Derrigimlagh Bog between 2021 and 2022

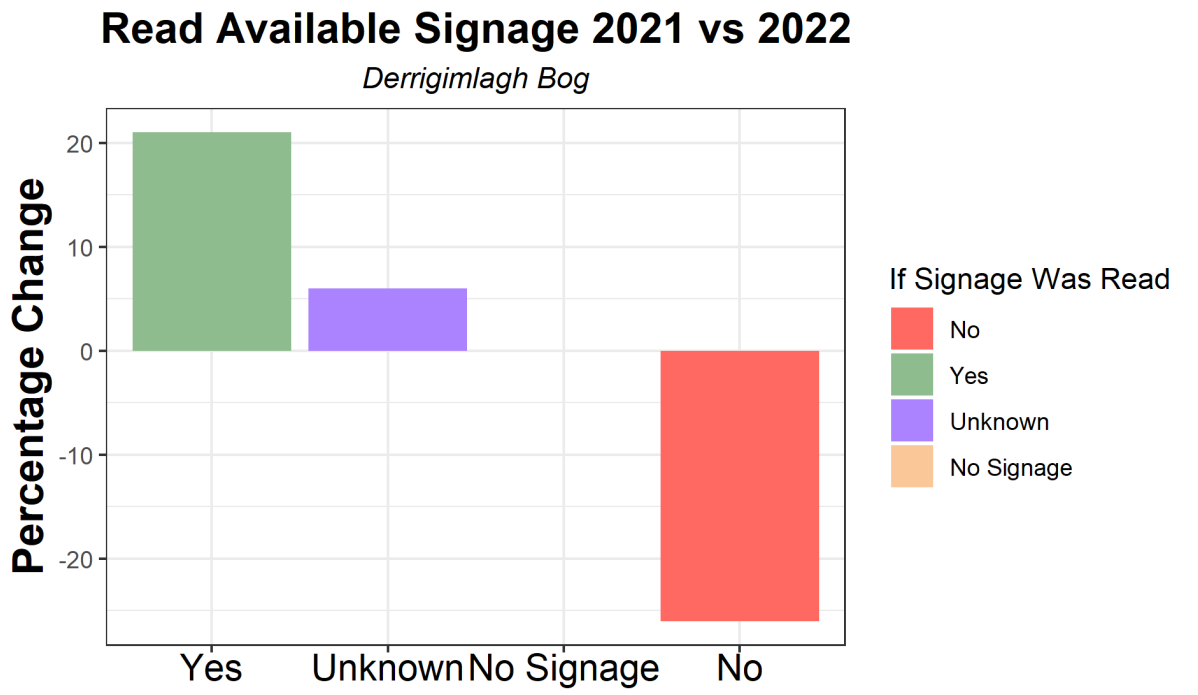


Figure 1.19 Percentage change in use of Interpretive Material at Derrigimlagh Bog between 2021 and 2022

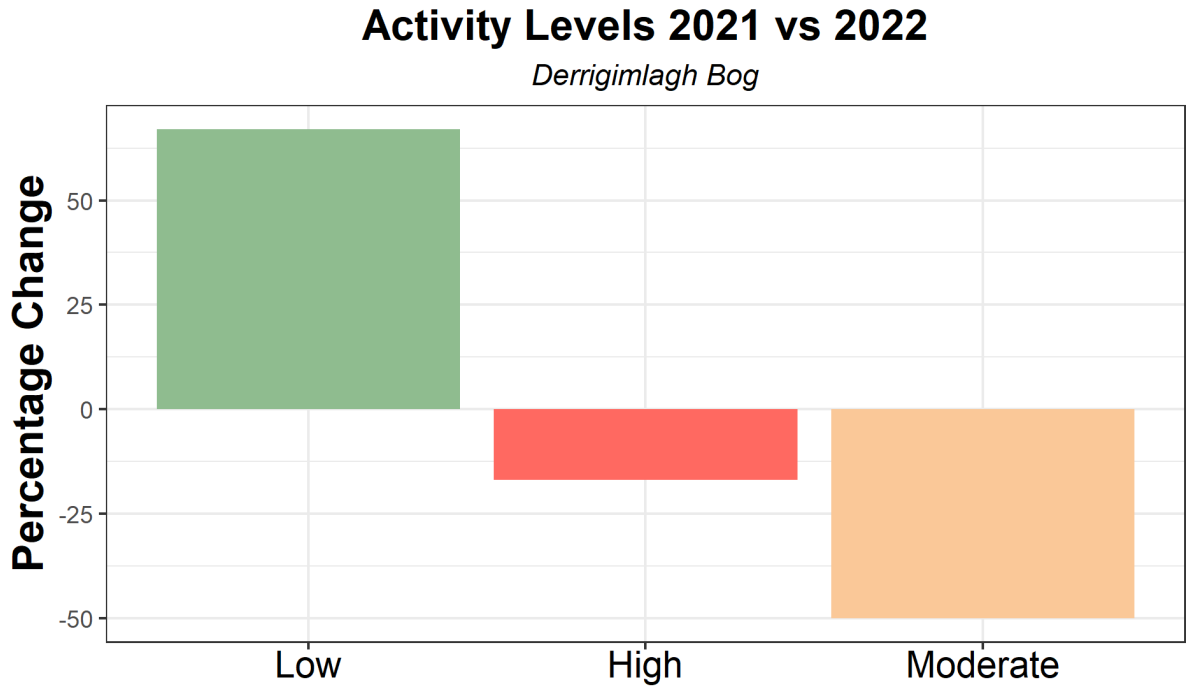


Figure 1.20 Percentage change in categories of Activity Levels Observed at Derrigimlagh Bog between 2021 and 2022

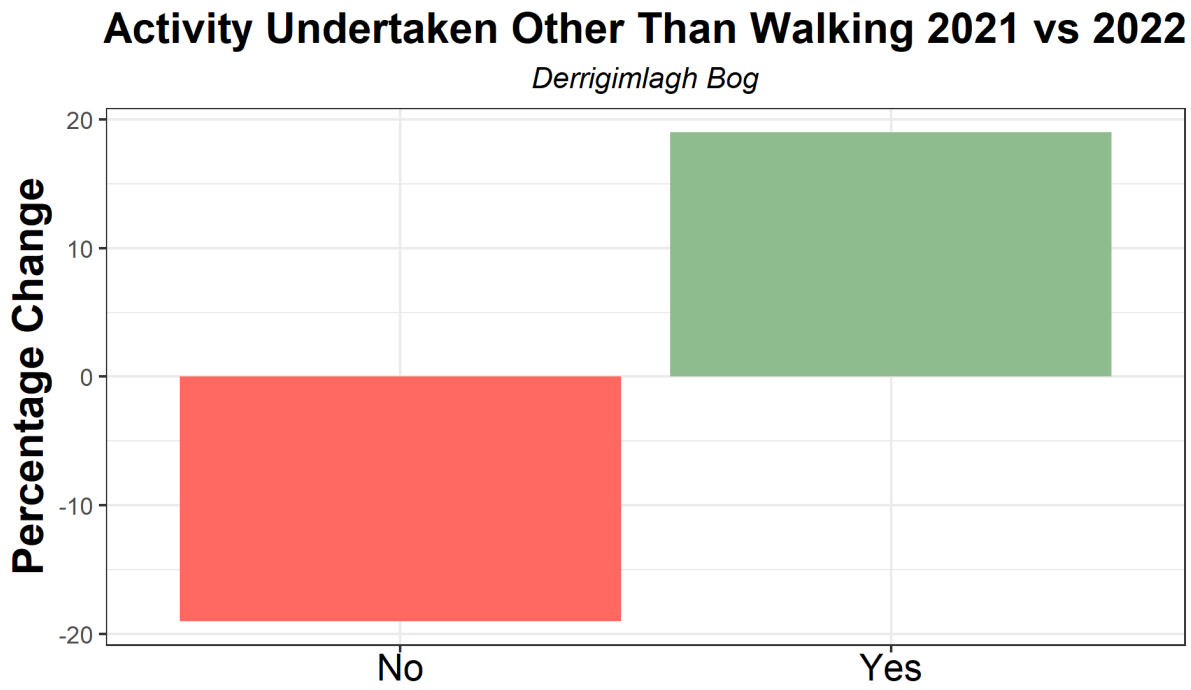


Figure 1.21 Percentage change in activities undertaken other than walking at Derrigimlagh Bog between 2021 and 2022

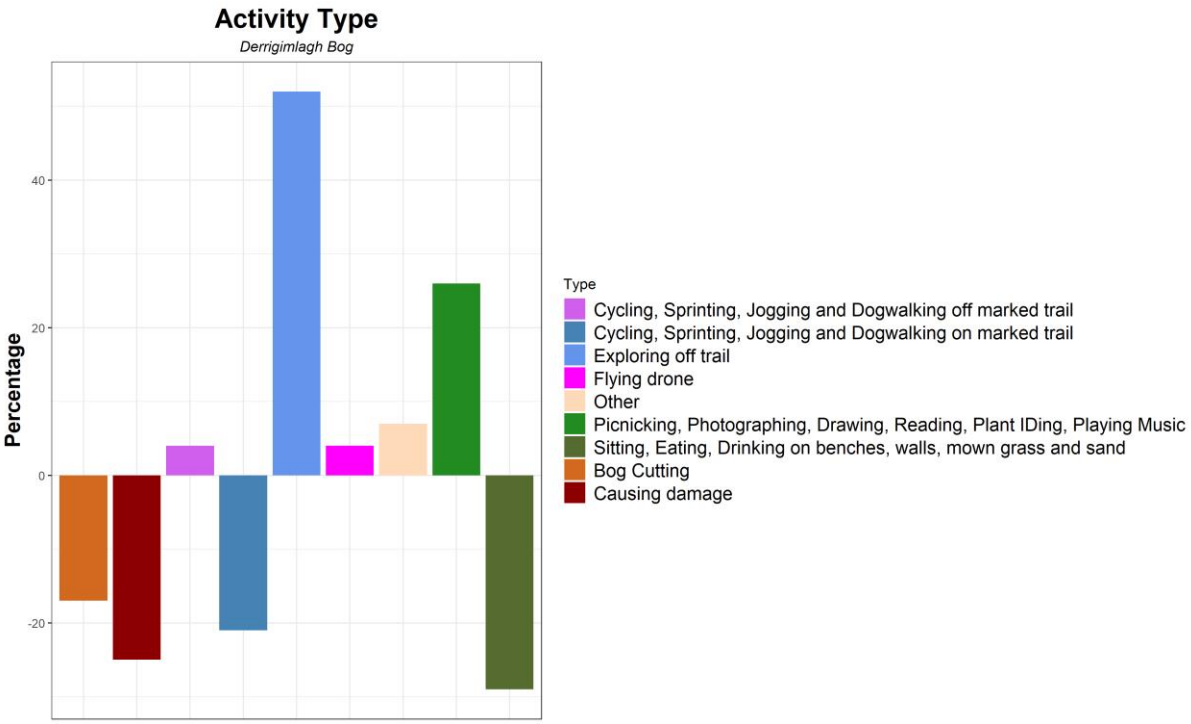


Figure 1.22 Percentage change in range of Visitor Activities Observed at Derrigimlagh Bog between 2021 and 2022

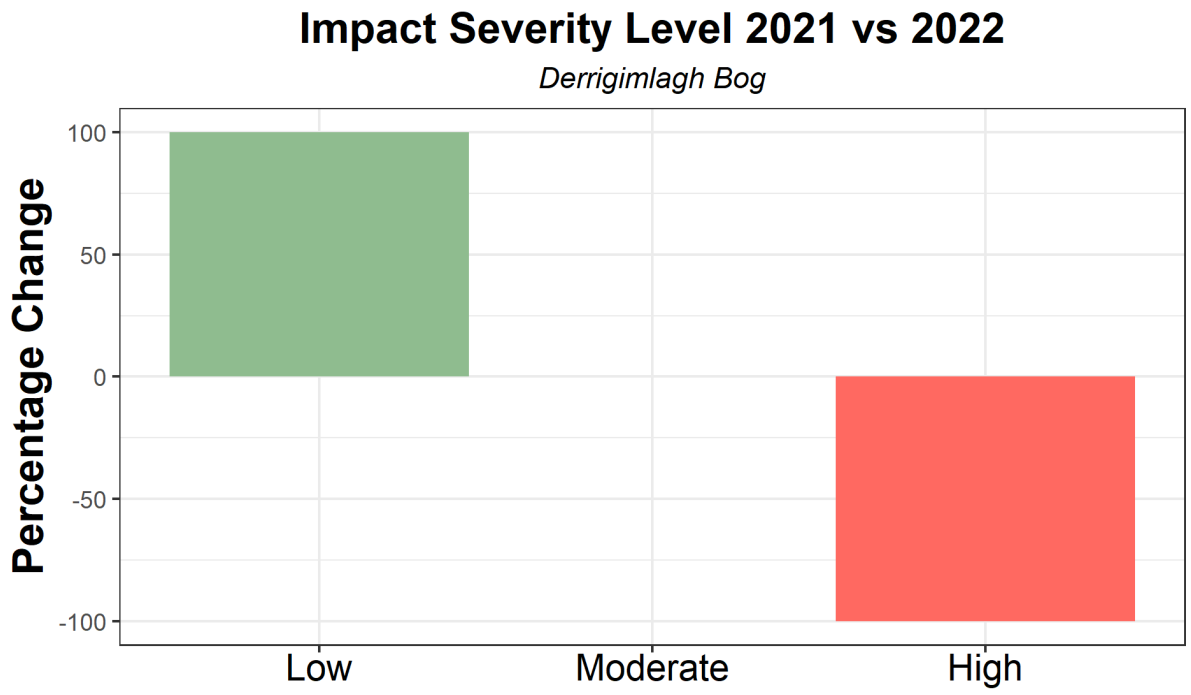


Figure 1.23 Percentage change in categories of Environmental Impact Levels Observed at Derrigimlagh Bog as a result of Visitor Activities[6] between 2021 and 2022

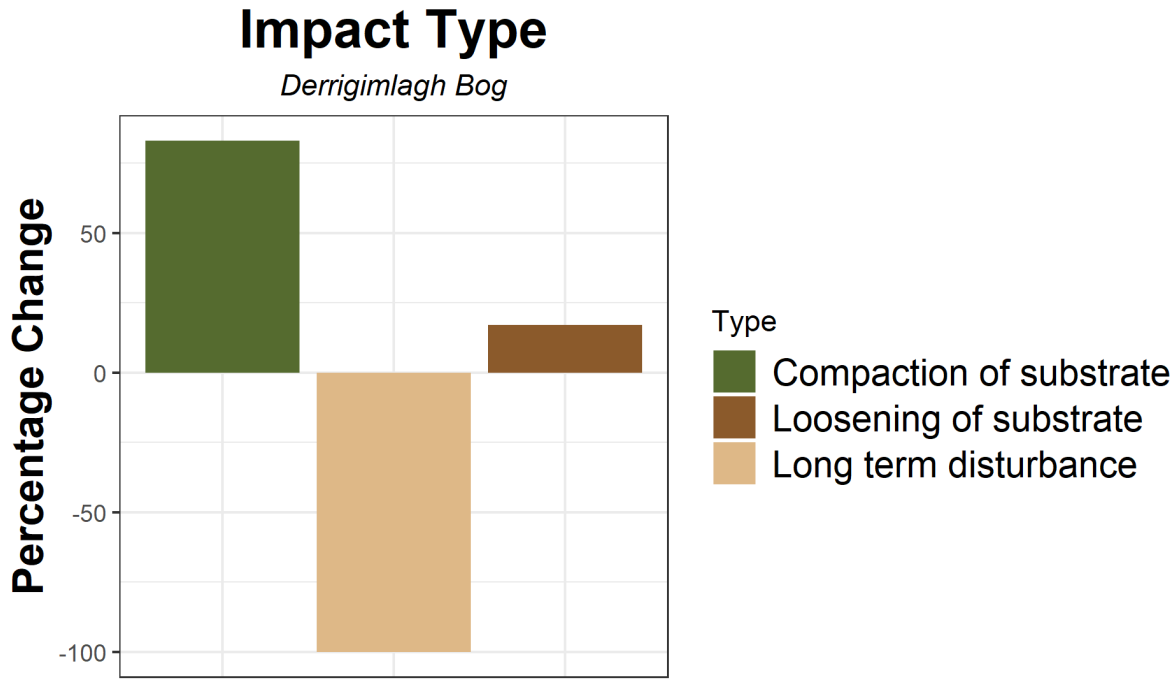


Figure 1.24 Percentage change in range of Environmental Impacts Observed at Derrigimlagh Bog between 2021 and 2022

[6] Impact severity was measures as a categorical variable which has a range of impact factors that are pre-determined; such as injuring, killing or taking wildlife as a severe impact (high) and temporary disturbance of wildlife being a low impact. These are explained fully in the method section above.

Table 1.4 Summary of changes with previous survey results

Survey	Notable Differences	Comment
Visitor Dwell Time	• Overall average dwell time increased by 7%	No significant changes observed
Prevalence of Group Type	• 6% decrease in families • 18% decrease in individual adults • 10% decrease in couples • 11% increase in elderly couples • 11% increase in individual elders • 11% increase in adult groups	Moderate increase observed in percentage of elderly visitors Decrease in percentage of families, individual adults and couples This could be attributed to a higher number of visitors observed in 2022
Prevalence of Transport Type	• 4% increase in bike • 7% decrease by foot • 18% increase by car	Increase in percentage of visitors arriving by car Slight decrease in percentage of visitors arriving to site by foot and bike
Read Available Signage	• Signage not read decreased by 26% • 21% increase in signage read • Unknown increased by 6%	Significant increase in percentage of visitors reading signage on site
Activity Levels	• High activity levels decreased by 17% • Low activity levels increased by 67% • Moderate activity levels decreased by 50%	Significant increase in percentage of low-level activities observed on site
Activity Undertaken Other Than Walking	• Activities undertaken other than walking decreased by 19%	Moderate decrease in activities other than walking observed on site
Activity Type	• 52% increase in exploring off trail • 14% increase in picnicking etc. • 14% decrease in horse-riding • 32% decrease in jogging etc on marked trail	Significant increase in percentage of visitors exploring off trail and decrease in percentage of activities performed on marked trails
Impact Severity Level	• 100% decrease in high impact levels • 100% increase in low impact levels	The severe reduction in percentage of high-level impacts observed is due to bog cutting being observed on site in 2021 and not being observed in 2022
Impact Type	• 83% increase in compaction of substrate • 100% decrease in long term disturbance • 17% increase in loosening of substrate	The changes observed in impact type are due to no bog cutting being observed in 2022, while it was observed in 2021

Figure 1.25 Peat cutting at Derrigimlagh Bog

1.7 Ecological Monitoring Results

1.7.1 Ecological Constraints

The species and habitats within Derrigimlagh bog are sensitive to hydrological changes, land use management, aquaculture, anthropogenic disturbance and pollution.

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

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
[002034]	Connemara Bog Complex pNHA	0.18	pNHA	
[002034]	Connemara Bog Complex SAC	0.18	SAC	Atlantic salmon *(Salmo salar)* [1106], European dry heaths [4030], Marsh Fritillary *(Euphydryas aurinia)* [1065], Natural dystrophic lakes and ponds [3160], Molinia meadows on calcareous, peaty or clayey-silt-laden soils *(Molinion caeruleae)* [6410], Coastal lagoons [1150], Otter *(Lutra lutra)* [1355], Reefs [1170], Depressions on peat substrates of the Rhynchosporion [7150], Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130], Alkaline fens [7230], Oligotrophic waters containing very few minerals of sandy plains *(Littorelletalia uniflorae)* [3110], Blanket bogs * if active bog [7130], Transition mires and quaking bogs [7140], Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0], Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260], Slender naiad *(Najas flexilis)* [1833], Northern Atlantic wet heaths with *Erica tetralix* [4010]
[004181]	Connemara Bog Complex	0.60	SPA	Cormorant *(Phalacrocorax carbo)* [A017], Common Gull *(Larus canus)* [A182], Merlin *(Falco columbarius)* [A098], Golden Plover *(Pluvialis apricaria)* [A140]

Site Code	Site Name	Distance (km)	Site Type	Qualifying Feature
	SPA			
[002074]	Slyne Head Peninsula pNHA	0.64	pNHA	
[002074]	Slyne Head Peninsula SAC	0.64	SAC	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140], Semi-natural dry grasslands and scrubland facies on calcareous substrates *(Festuco-Brometalia)* * important orchid sites [6210], Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or Isoeto-Nanojuncetea [3130], Annual vegetation of drift lines [1210], Slender naiad *(Najas flexilis)* [1833], Perennial vegetation of stony banks [1220], Mediterranean salt meadows *(Juncetalia maritimi)* [1410], Alkaline fens [7230], Shifting dunes along the shoreline with *Ammophila arenaria* - white dunes [2120], Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)* [1330], Petalwort *(Petalophyllum ralfsii)* [1395], Large shallow inlets and bays [1160], Coastal lagoons [1150], Common Bottlenose Dolphin *(Tursiops truncatus)* [1349], Oligotrophic waters containing very few minerals of sandy plains *(Littorelletalia uniflorae)* [3110], Juniperus communis formations on heaths or calcareous grasslands [5130], Lowland hay meadows *(Alopecurus pratensis, Sanguisorba officinalis)* [6510], European dry heaths [4030], Reefs [1170], Machairs * in Ireland [21A0], Molinia meadows on calcareous, peaty or clayey-silt-laden soils *(Molinion caeruleae)* [6410], Embryonic shifting dunes [2110]

1.7.2 Habitat Descriptions

The main habitat at Derrigimlagh Bog is cutover bog (Fossitt Code PB4). There are also a number of relatively large dystrophic lakes (Fossitt Code FL1) contained within the cutover bog along with small areas of scrub (Fossitt Code WS1).

The trail network is well defined and therefore there is limited interaction between the visitor movements and the habitats. There is an opportunity for biodiversity enhancement measures to be incorporated into the management practices at this site to increase the overall natural value of the landscape.

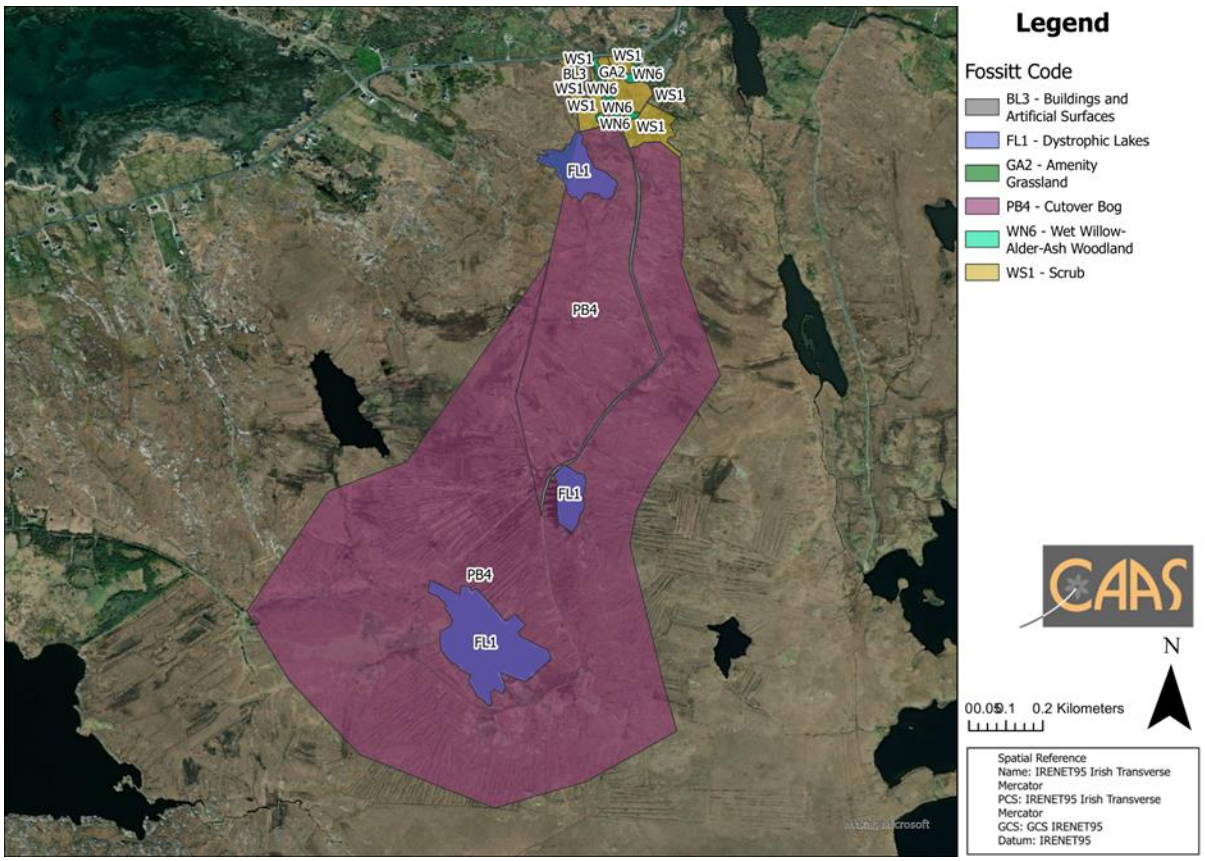


Figure 1.26 Habitats present at Derrigimlagh Bog

1.7.3 Condition Assessment

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

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

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

1.7.4 NBDC Records of Mammals

The NBDC data shows that a large number of seals were recorded close to Derrigimlagh Bog, due to its close proximation to the west coast of Ireland. In terms of terrestrial mammals, soprano pipistrelles, badgers and otters were the most recorded species.

Table 1.6 List of relevant mammals[7] that have been recorded at NBDC Hectad[8] L64

Taxonomic group	Common name	Scientific name	Record count
Terrestrial mammal	American Mink	*Mustela vison*	1
Terrestrial mammal	Brown Long-eared Bat	*Plecotus auritus*	1
Terrestrial mammal	Brown Rat	*Rattus norvegicus*	2
Terrestrial mammal	Daubenton's Bat	*Myotis daubentonii*	2
Terrestrial mammal	Eurasian Badger	*Meles meles*	5
Terrestrial mammal	Eurasian Red Squirrel	*Sciurus vulgaris*	1
Terrestrial mammal	European Otter	*Lutra lutra*	5
Terrestrial mammal	Irish Hare	*Lepus timidus subsp. hibernicus*	4
Terrestrial mammal	Irish Stoat	*Mustela erminea subsp. hibernica*	1
Terrestrial mammal	Lesser Noctule	*Nyctalus leisleri*	2
Terrestrial mammal	Pine Marten	*Martes martes*	1
Terrestrial mammal	Pipistrelle	*Pipistrellus pipistrellus*	2
Terrestrial mammal	Red Deer	*Cervus elaphus*	1
Terrestrial mammal	Red Fox	*Vulpes vulpes*	1
Terrestrial mammal	Soprano Pipistrelle	*Pipistrellus pygmaeus*	19

1.8 Recommendations

As stated in the 2021 report, there are opportunities at Derrigimlagh Bog to engage in a long-term habitat restoration process to increase floral diversity on site and to potentially use the site as a showcase to our cultural heritage.

There are areas of deterioration at junctions between paved pathways and boardwalk areas on site along with transitional areas to bog vegetation. Attention is required in these areas to minimise the impacts seen in these areas. There should also be consideration given to temporary sheep exclusion in order to allow trail recovery in parts of Derrigimlagh Bog.

[7] NBDC Hectad L64 lists 11 Marine Mammals – mostly cetaceans as well as Grey Seals
[8] 10km^2 grid

Appendix I

Activities		
Category 1 Low Level		
Walking, running or cycling on paths, marked trails or hard surfaces		LA 1
Walking, running, cycling or playing in mown grass, managed grassland or level sand		LA 2
Sitting on benches, walls, mown grass, sand		LA 3
Swimming, sailing, surfing, kayaking in water		LA 4
Resting, reading, looking, picnicking, sightseeing, painting, photographing		LA 5
Vehicular movement on roads and parking areas		LA 6
Watching nature in hedges, woods, streams, pools and intertidal areas		LA 7
Category 2 Medium Level		
Powered movement through water		MA 1
Any movement leaving an existing trail or marked path		MA 2
Any movement leaving a trail through leafy vegetation		MA 3
Any movement leaving a trail through woody vegetation		MA 4
Climbing on walls, loose stones, sand, soil etc.		MA 5
Fishing		MA 6
Category 3 High Level		
Walking through wet/muddy soil		HA 1
Scrambling on steep or loose slopes		HA 2
Off road vehicular movement		HA 3
Disturbance of wildlife		HA 4
Deliberate building or moving or knocking site materials - parts of monuments, walls, stones, sand etc.		HA 5
Picking herbaceous vegetation		HA 6

Appendix I Activity and impact code index used for recording visitor behaviours on site

Category 1 Low Impact		
No identifiable effect		LIE 1
Desire lines or trails visible on grass and leafy vegetation		LIE 2
Temporary disturbance (including chasing and feeding) of insects, fish, amphibian, reptiles, insects, birds and mammals		LIE 3
Temporary change of character - due to the appearance or nature of activities (noise, crowds, etc.)		LIE 4
General/light littering		LIE 5
Category 2 Medium Impact		
Desire lines or tracks visible outside of existing trail or marked path		MIE 1
Trampling of herbaceous vegetation		MIE 2
Damage to woody vegetation		MIE 3
Incidentally moving or knocking site materials - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.		MIE 4
Addition/alteration of site features, transient emissions, noise		MIE 5
Transient disturbance, emissions, noise		MIE 6
Disturbance of wildlife		MIE 7
Category 3 Severe Impact		
Direct interference with site material - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.		SIE 1
Removal of material - parts of monuments, walls, stones, sand, rooted vegetation, flora, fauna etc.		SIE 2
Vandalism or graffiti		SIE 3
Destruction of structures, vegetation or fauna		SIE 4
Heavy littering or dumping quantities of waste		SIE 5
Burning materials or lighting a fire		SIE 6
Injuring, killing or taking wildlife		SIE 7

Appendix II

Habitat Condition Assessment Methodology

A rating scale has been designed for this monitoring programme as a standardised, repeatable measurement for assessing habitat condition across all sites[9]. For the purposes of this monitoring programme, habitat condition is assessed at every site by the surveyor examining four core criteria:

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

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

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

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

Table II-1 Habitat rating scale and condition assessment

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

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