BLACKHEAD – FANORE DEMONSTRATION SITE

SITE ASSESSMENT REPORT

Prepared by

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(Updated February 2015 to include Visitor Surveys data)

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1. SITE DESCRIPTION

1.1. LOCATION

The GeoparkLIFE demonstration site at Blackhead-Fanore is situated in the coastal zone (Zone 1) as defined under this project. This area attracts casual tourists passing through the Burren, including coach tours on day or longer visits, many of which include the Cliffs of Moher on their itinerary. The site encompasses the popular scenic drive along the R477 coastal road from Blackhead south to Fanore beach. This route is considered one of the top 10 most scenic routes in Europe by the Automobile Association and has recently been incorporated into the Wild Atlantic Way (WAW) driving route. It is heavily used by international and national tourists, coach operators and amenity users such as rock climbing and fishing clubs, walkers, cyclists and surfers.

OS 1:50k Map sheet: 51

Figure 1: Location of Blackhead demonstration site (outlined black oval)

1.2. LAND DESIGNATIONS

Approximately 95% of the demonstration site is located within the Blackhead-Poulsallagh Complex Special Area of Conservation (SAC Site Code: 000020) and therefore protected under the EU Habitats Directive.

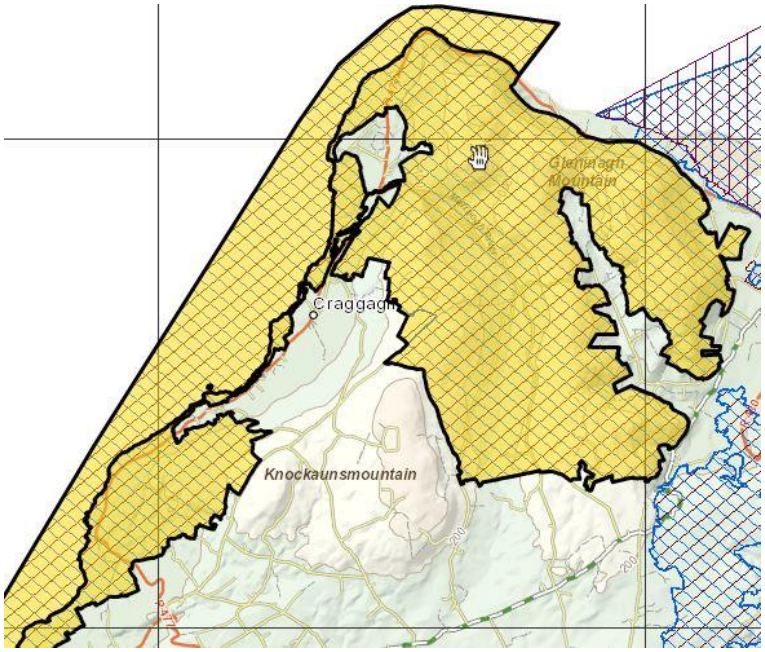

Figure 2: Blackhead-Poulsallagh SAC area (indicated by yellow shading)

The site is designated a Special Area of Conservation (SAC) due to the presence of the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1170] Reefs
[1220] Perennial Vegetation of Stony Banks
[3260] Floating River Vegetation
[4060] Alpine and Subalpine Heaths
[5130] Juniper Scrub
[6210] Orchid-rich Calcareous Grassland*
[6510] Lowland Hay Meadows
[7220] Petrifying Springs*
[8240] Limestone Pavement*
[8330] Sea Caves
[1395] Petalwort (*Petalophyllum ralfsii*)

Fanore dunes system supports the Annex I habitat 'fixed coastal dunes with herbaceous vegetation ("grey dunes")' (2130), as well as the other Annex I habitats 'Embryonic shifting dunes'(2110), and 'Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes") (2120).

Site-specific conservation objectives were developed in 2014 by the National Parks and Wildlife Service (NPWS) for the Blackhead-Poulsallagh Complex SAC with the aim of defining favourable conservation conditions for the particular habitats or species at the site.
https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000020.pdf

The area around Blackhead has been designated of County Geological Site importance and may be proposed for NHA designation under the IGH 3 Carboniferous-Pliocene Palaeontology theme and the IGH 8 Lower Carboniferous theme of the GSI's IGH Programme.

1.3 FEATURES OF TOURISM INTEREST

1.3.1. Built Heritage

Figure 1 illustrates the number, location and variety of recorded archaeological monuments within the demonstration site. Each of these monuments is listed on the Record of Monuments and Places (RMP) which is a statutory record established under Section 12 of the National Monuments (Amendment) Act 1994.

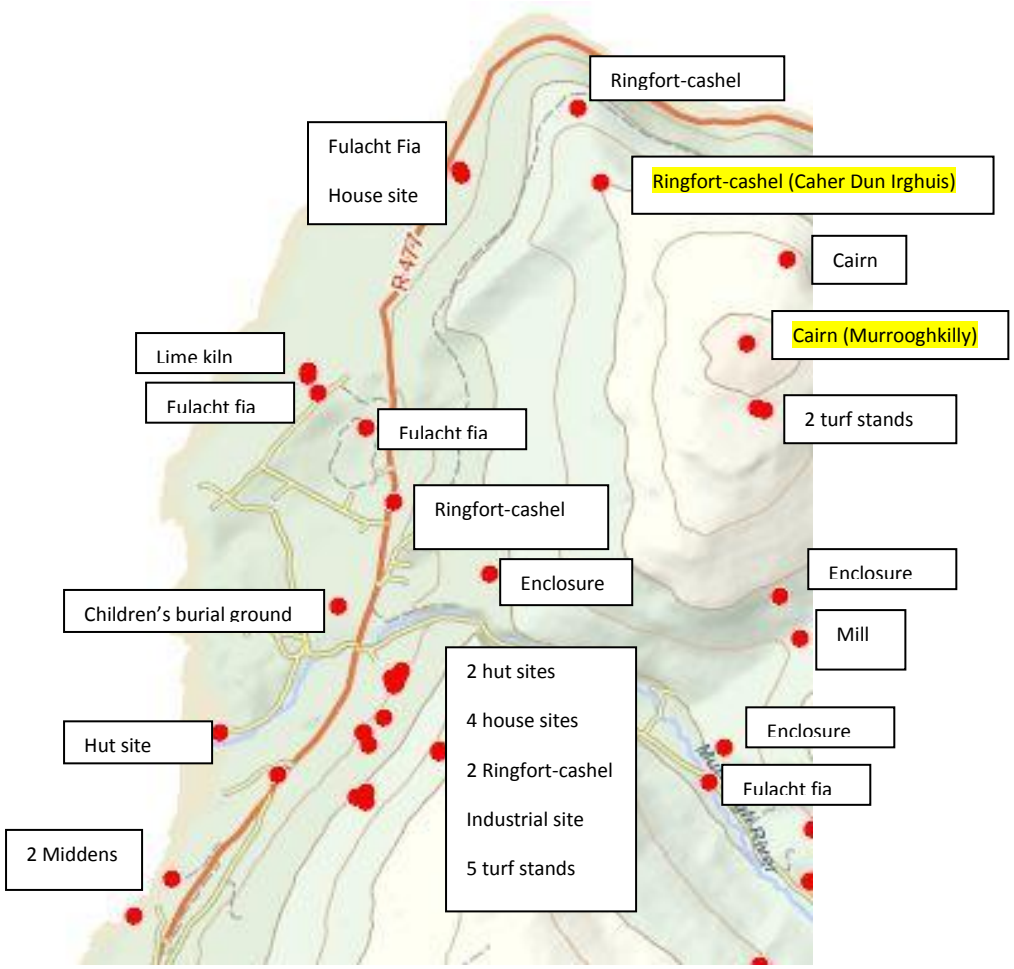

Figure 3: Recorded monuments (www.archaeology.ie) in the Blackhead-Fanore demonstration site. The two sites highlighted in yellow are identified as those most under pressure from visitor activity.

1.3.2. Natural Heritage

Range of Habitats

The Black Head-Fanore demonstration site encompasses a complete range of rocky Burren habitats from coastal, glacially planed limestone pavements to high level heaths. The bare pavement is interspersed with fine examples of species-rich, dry calcareous grassland. Limestone heath is also well developed, particularly on the higher areas to the north and north-east, where Bearberry (*Arctostaphylos uva-ursi*) occurs. The Caher River, the only river found in the high Burren, and Fanore dunes, one of the best dune systems in County Clare, are included in the site.

Photo 1: View south to Fanore from Caher Dun Irghuis

Geology

The main geological or geomorphological interest is Limestone pavement, including smooth, blocky and shattered types, with well-developed karst features. Erratics of Galway granite occur within the site, especially around Black Head. Also at Black head the transition in Carboniferous corals from *Siphonodendron* to cerioid *Lithostrotion* through semi-cerioid forms is visible. Here the Finavarra Member with dolomite bands, of the Tubber Formation is overlain by the Black Head Member, the basal unit of the Burren Formation. The first cerioid colonial rugose corals occur above the dolomite south of the road. (www.gsi.ie)

Freshwater

The Caher River is a shallow, spring-fed stream approximately 5 km long, which flows underground for some of its course during dry periods. The upper section is heavily shaded by Hazel (*Corylus avellana*) scrub, which in the vicinity of the channel bears a luxuriant lichen flora. The lower section of river is on limestone bedrock and periodically dries out. This part of the river is dominated by mosses and algal crusts, both of which are heavily calcified, and in some places form tufa deposits of considerable thickness.

Marine

The shoreline of this site has the best examples in Ireland of an important biogeographical variation of intertidal reefs extremely exposed to wave action, and these shores have been described as some of the most interesting open coast shores of both Britain and Ireland. The shores are gently sloping, stepped limestone pavements over most of the site, but at Black Head the shore is narrow and very steeply stepped.

Fanore dunes consist of both mobile and stabilised areas. The foredunes are covered by a mixture of Marram Grass (*Ammophila arenaria*) and Sand Couch (*Elymus farctus*). The dune slack is unusual, with extensive exposed limestone pavement and erratics. Species recorded from the high dunes include Sea-holly (*Eryngium maritimum*), Sea Spurge (*Euphorbia paralias*) and Marram Grass. A small population of the rare liverwort *Petalophyllum ralfsii* occurs within a damp, grassy area of the dunes (www.npws.ie)

Birds

The northern part of Black Head hosts approximately 25 breeding pairs of Black Guillemot while up to 15 Black-throated Divers winter there (this species is listed in Annex I of the E.U. Birds Directive).

Grazing

Most of the terrestrial part of the site is grazed by cattle and sheep, particularly in winter, and by feral goats throughout the year.

2. CURRENT SITE CONDITION

The area is of high recreational value, in terms of upland walking; spectacular coastal views; botanical, geological, archaeological and ornithological interest; blue flag sandy beach with swimming and surfing recreational facilities.

2.1. Access

2.1.1. Approach Road

The R477 road runs along the scenic coastal route from Ballyvaughan to Fanore within the demonstration site. This narrow road which hugs the cliffs around Blackhead is a very popular tourism route due to the spectacular viewing points across Galway Bay to the Aran Islands. The route has been included in the recently developed long distance driving tourism route the 'Wild Atlantic Way' (WAW).

2.1.2. Directional Signage

Signage is provided along the coastal route from Ballyvaughan and Fanore. and new signage has recently been added incorporating the WAW branding.

Fanore Beach is signposted from the R477 at the entrance to the car park adjacent to the beach.

The trailheads of three designated long distance walking routes are located at Fanore Beach car park and directional trail markers are placed on black marker posts along each route.

Photo 2: Directional signage to Fanore Beach

2.1.3. Parking

An official viewing point with a small parking layby has been created at Murroughtoohy, just south of Black Head. An interpretive panel has been erected on site by the Burren & Cliffs of Moher Geopark. During the summer months this area can become highly congested with cars and coaches parked on both sides of the road and visitors walking on the pavement areas.

Photo 3: Parking at Murrooghtoohy lay-by

As the R477 is very narrow along most of its extent, there are problems with coaches passing each other and this often adds to the congestion problems when a large number of coaches are using the route during the high tourism season.

Fishing is also popular along this stretch of coastline and those undertaking this activity tend to park their cars along the roadside.

At Fanore Beach a large car park is provided and managed by Clare County Council. A barrier at the entrance prevents coaches from using this parking facility.

2.1.4. Site Entry

Entry to Fanore Beach car park is unavailable to coaches due to the presence of a height barrier at the R477 road entrance to the site.

The trailheads to each of the three long distance designated walking routes is at Fanore Beach car park. Stiles are provided along each route to allow access through wall boundaries.

There are several unofficial entry points from the R477 road unto privately owned land, especially in the area around Murroughtoohy Viewing point. These consist of gaps in the wall boundary.

Photo 4: Traffic restriction barrier at entrance to Fanore Beach

2.2. Visitor Facilities

2.2.1. Recreational Facilities

At Fanore Beach, recreational facilities include a toilet block, car park, shower, access boardwalk and sand ladder to beach, lifeguards during summer season and informational signage on water quality, blue flag beach information and County Council bye-laws. All are managed by Clare County Council.

Three long distance marked walking trails are found within the site. These are monitored and managed by the Clare Rural Recreational Officer (RRO) working from Clare Local Development Company based in Ennis. The RRO works in conjunction with the landowners along each trail. The landowners are paid to carry out repair works along the trails under the National Walks Scheme. All trails are inspected and approved by the National Trails Office.

2.2.2 Interpretation

A lectern style interpretive panel at Murroughtoohy viewing point provides a panoramic image of the seascape, with points of interest highlighted and named in both English and Irish. Interpretation of the local placenames is provided and the Burren Code in several languages. This panel was erected under the Burren Connect project. The sign has damage in the top right hand corner and is scratched in places.

Photo 5: Interpretive panel at Murrooghtoohy

Also at this viewing point are two signs mounted on an upright pole both erected under the Burren Connect programme. The upper sign carries the Burren Code in several languages while the lower is a 'Move No stones, build no cairns' preservation sign installed as an awareness strategy to control the building of 'mini-dolmens' by visitors on the limestone pavement.

On the opposite side of the road the same Burren Code and preservation sign is repeated.

Photo 6: Burren Code and mini-dolmen sign at Murrooghtoohy

At Fanore Beach car park there are three signs mounted on a pole inside the entrance gateway. These carry No camping, overnight parking, dumping and bonfires messages. The two upper signs are damaged with sections of the 'message' scratched out. To the near left of these signs is a second upright pole with a blank A4 size panel attached. It is likely that the original sign attached to this panel has been removed.

Adjacent to the south side of the car parking area on the grass verge are a line of 5 upright interpretive panels and one lectern style.

Photo 7: Interpretive panels at Fanore Beach

Two of the uprights carry the mapboards for the three designated walking routes within the surrounding area (erected by Fáilte Ireland/Shannon Trails);

One carries the mapboard for a North Clare cycle route (erected by Fáilte Ireland/National Cycle Network)).

The fourth carries information about the birds, plants and animals to be found in the Fanore region (Burren Connect).

The fifth carries a conservation message and information about the conservation project being undertaken at the dunes (erected by Burren Connect).

The lectern style panel describes the geology and geomorphology of Fanore. It was erected by Burren Connect as Fanore is one of the designated geosites (now under the remit of the Burren & Cliffs of Moher Geopark).

In the parking area adjacent to the toilet block, three A4 size panels have been attached to existing parking sign poles. These panels carry photographic images and text on plants and birds of the area. The panels are in very good condition.

Photo 8: Wildlife Interpretive panel on Parking sign pole

Photo 9: Clare County Council signage at entrance to boardwalk

At the start of the boardwalk from the car park to the beach is an upright double sided panel. During the summer season information with regard to water quality and blue flag beach educational and awareness information is posted by Clare County Council.

On the opposite side on the landward side of the shower unit is a double poled upright sign. This carries information on the County Council bye-laws and penalties for non-compliance. This sign is badly damaged with most of the symbols scratched out.

Photo 10: Beach Bye-laws sign

Photo 11: Conservation sign on dunes

Close to the boundary fence which surrounds the sand dunes, are three pole mounted conservation signs on upright metal panels. These provide information on the dune protection project carried out by Clare County Council. These signs are in good condition. A further 3 poles without panels possibly indicate ‘removed’ signs.

Photo 12: NPWS Special Area of Conservation sign

Close to the board walk entrance to the beach is a pole mounted sign indicating that this is a Special Area of Conservation and use of all terrain vehicles is prohibited. This sign is badly damaged. It carries the NPWS name and logo.

3. CURRENT VISITOR USE OF SITE AND RESULTING IMPACTS

In September 2014, a number of GeoparkLIFE initiatives were undertaken to provide baseline data on visitor numbers at each of the demonstration sites and to develop a methodology to determine how visitors' behaviour is impacting on the natural and built heritage of sites. Previous to this baseline information was either non-existent or very sporadic.

3.1 Visitor Numbers

'Buses in the Burren 2014 – A study of the Impacts and Issues' (Saunders, J. 2015) a study commissioned by the Burren & Cliffs of Moher Geopark indicates that an estimated 25,000 visitors on bus tours stopped at Murrooghtoohy lay-by in 2014. This estimate is based on (a) 3 days of counting across seasons for this study and (b) analysis of day trip bus figures.

As part of this study the access routes and direction of travel of buses in the Burren was determined for July 17, 2014 by undertaking a driver/guide survey at the Cliffs of Moher and combining the results with data from a Clare County Council Road Traffic Census carried out on the same day. The results showed that 67 buses travelled along the R480 on this day (15 public day trips, 52 private tours).

This data however does not include the number of visitors travelling by other means of transport and stopping at Murrooghtoohy lay-by. It is estimated that 94% of visitors travel this route by car (Section 3.3.). Therefore the numbers stopping at this lay-by on an annual basis could be up to 400,000.

Through the GeoparkLIFE initiative a footfall counter was installed at the top of the sand ladder to Fanore Beach on September 11, 2014 and on the Blackhead long distance walking trail on November 5, 2014 to measure visitor numbers and times of visit.

The following numbers were recorded between September 5, 2014 and February 13, 2015:

	Blackhead Loop Walk	**Fanore Beach**
Month	Numbers Recorded	
September 2014	0	3662
October 2014	0	2528
December 2014	1000	1399
January 2015	1001	1158
February 2015	1102	1528
	745	939
Total (11-9-14 to 13-2-15)	3,848	11,214

Data will be continue to be collected and analysed by GeoparkLIFE staff throughout the duration of the project and shared with the site managers and other relevant partners.

3.2. Visitor Attitudes Survey

A Visitor Survey was conducted at the demonstration site between 5th September and 11th October 2014 as part of a wider survey of the GeoparkLIFE demonstration sites by Millward Brown Ltd. Surveyors were placed at Caher Dun Irghuis archaeological site and Fanore Dunes. The surveyor at the Caher abandoned his site after the first day due to lack of visitors and the altitude, distance and difficulty of climbing to the site. 82 people were interviewed at Fanore. The purpose of this survey was to record Visitors attitudes to the infrastructure at these sites and to the Burren. The results of the interviews conducted at Fanore Beach indicate:

- 91% of visitors interviewed gave a rating of between 8-10 for signposting to the site (1 being poor and 10 high):
- 98% rated physical entry between 8and 10
- 97% rated parking facilities between 8 and 10
- 99% arrived by car to the site
- 87% noticed the information boards; 59% read them entirely and 23% partially; of those that read the boards 97% felt that they added to their understanding of the Burren.
- 46% were very satisfied with the site and the remaining 51% were satisfied.

The full results of the interviews at the demonstration site are contained in Appendix II.

3.3. Visitor Observation Studies

Two sets of Visitor observations were carried out at the site to determine visitor movement around the site and how visitor behaviour is impacting on the site.

- On Saturday 6th and Sunday 7th of September 2014 one surveyor was stationed at Blackhead Lighthouse and one at the nearest layby south of the lighthouse and on Sunday September 7th, four were stationed at Fanore Beach as part of the CAAS Ltd.[1] study to assist GeoparkLIFE to develop a survey methodology for assessing environmental impacts at the demonstration sites. Two of the surveyors at Fanore Beach observed visitors in the car park, one surveyor observed the beach from the lifeguard hut as far as the River Caher while the fourth surveyor was stationed at the River Caher observing activities north of the beach (Figures 4-6)

Figure 4: Observer location at Blackhead lighthouse

Figure 5: Observer location at layby south of Blackhead lighthouse

Figure 6: Observer locations at Fanore Beach

[1] CAAS Ltd. 2015 'Pilot Visitor Observation Studies of Environmental Impacts at the Burren & Cliffs of Moher Geopark, Co. Clare'.

674 visitors were observed at Fanore Beach and the results indicate that:

- 87% of visitors engaged in low and medium level activities[2]. Of the high level activities reported, these included off road vehicular movement where cars were forced to park on the grass during busy periods and visitors or their pets scrambling through the loose sandy dunes. Children and dogs appeared to be the most likely to walk to dunes or scramble on the loose dune slopes.
- However, 94% of visitors to the site appeared to have no discernible impact on the site.
- A range of effects were observed for the remaining 6% ranging from movement and interference with site materials to light littering.
- 87% of visitors engaged in low and medium level activities with low levels of impact
- Of the 13% of visitors to Fanore Beach involved in high level impact activities – these included lighting a fire; directly interfering with, moving, destructing site materials, light littering and disturbance of wildlife.
- Approx. 6% of visitors read the information boards

114 visitors were observed at Blackhead and the results indicate that:

- 71% of the visitors to Blackhead Lighthouse and the nearby layby were adults and 94% of all visitors arrived by car or van.
- 64% engaged in walking on pathways or sightseeing activities. Some visitors were observed to climb over the gate or low wall and walked across the limestone pavement. The shore was a popular choice for families to stop and picnic.
- The average time spent per group was 25 minutes at the site.
- The most significant impact observed was one visitor picking vegetation.
- Traffic congestion was identified as an issue. Each layby has the capacity to accommodate a maximum of one or two cars. One side of the road was completely blocked off during busy periods and buses in particular struggled to pass. This was evident for the entire stretch of the road around Blackhead.
- 72% undertook low level impact activities; 26% medium level impact and 2% high level impact activities
- High level effects observed included disturbance of wildlife and removal of stones.

- On 13 September 2014 further visitor observations were carried out in the area around Caher Dun Irghuis between the hours of 11.30am and 4pm. 44 visitors were observed at the site during this time.
  The results indicate that
  - Average time spent at the site was six minutes
  - All visitors were involved in low level activities (i.e. activity for which the site is intended)– walking, viewing the fort and the landscape
  - Four visitors were involved in high level activities (i.e. activity that may have effect on site) - Two visitors walked on the caher walls and sat on them while viewing the landscape; two other visitors sat on a the field boundary wall
  - Potential Impacts observed: dislodgement of stone in caher walls and boundary walls (High impact effect)

  (Full data sheet of results in Appendix II)

[2] Activities categorisation: Low Level – activity for which the site was 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.

Fig 7: Surveyor station for visitor observations at Caher Dun Irghuis (indicated by red spot)

3.4. Ecological Study of Visitor Movement

Baseline habitat mapping was carried out in May and September 2014 as part of the *'Buses in the Burren 2014 – A study of the Impacts and Issues'* (Saunders, J. 2015) to determine the impact or vulnerability of the impact of stop-over activity on the ecological environment. A condition score was given to each site based on the level of negative impacts on habitats or other ecological features Murrooghtoohy lay-by at Blackhead was assessed and rated as *'Localised degree of negative impact, but slight and capable of rapid recovery (Fair condition)'.*

The following is an extract from the report on the impacts and conditions at this site:

'The zone of influence at Murroughtoohy is limited as most stop-over's appear to be brief photographic opportunities. People appear to walk on the exposed limestone pavement rather than on the areas of grassland though vegetation within the zone of impact shows some signs of compression and stunting due to trampling. There is no evidence of bare patches. Mini-dolmen building previously occurred in considerable amounts as there is abundant loose stone present, though the erection of signage appears to have reduced considerably. Littering is prevalent though minor in scale. There are no bins provided and signage is limited to the prohibition on the building of mini-dolmens and the Burren Code. Overall the impacts at Murroughtoohy are rated as Localised but slight and capable of rapid recovery (Fair condition).'

As part of the CAAS Visitor Observation Study 2014, vegetation monitoring was undertaken between October 21, 2014 and December 2, 2014. Vegetation was analysed in $1m^2$ quadrats.

Four locations within the Blackhead-Fanore demonstration site were assessed as part of this study.

1. Blackhead Lighthouse – 13 quadrats
2. Blackhead lay-by – 15 quadrats
3. Fanore Beach plan 1 – 21 quadrats
4. Fanore Beach plan 2 - 5 quadrats
   (as illustrated in Figures 9-12).

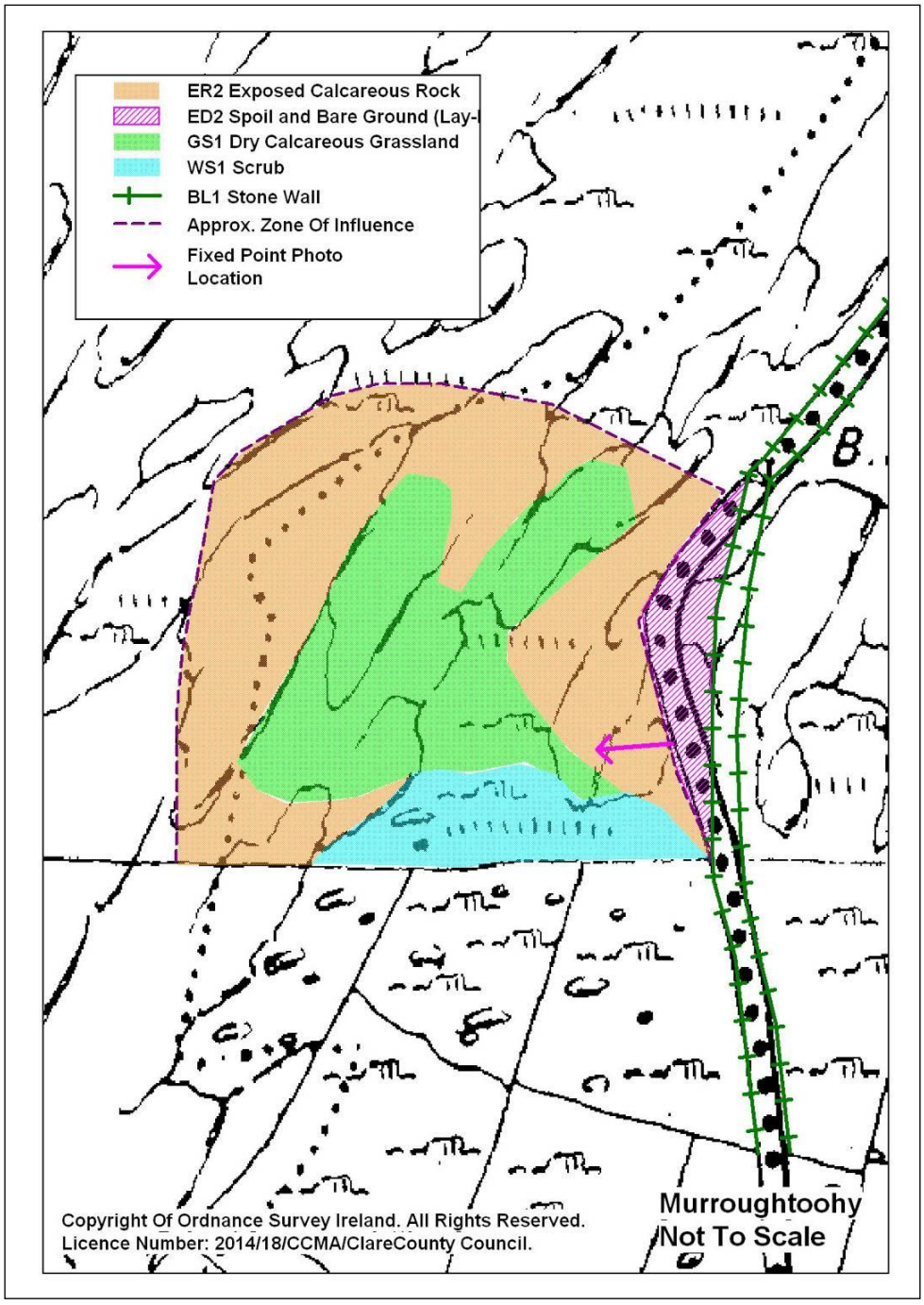

Figure 8: Habitat map of area around Murroughtoohy lay-by (EirEco Ltd. 2014)

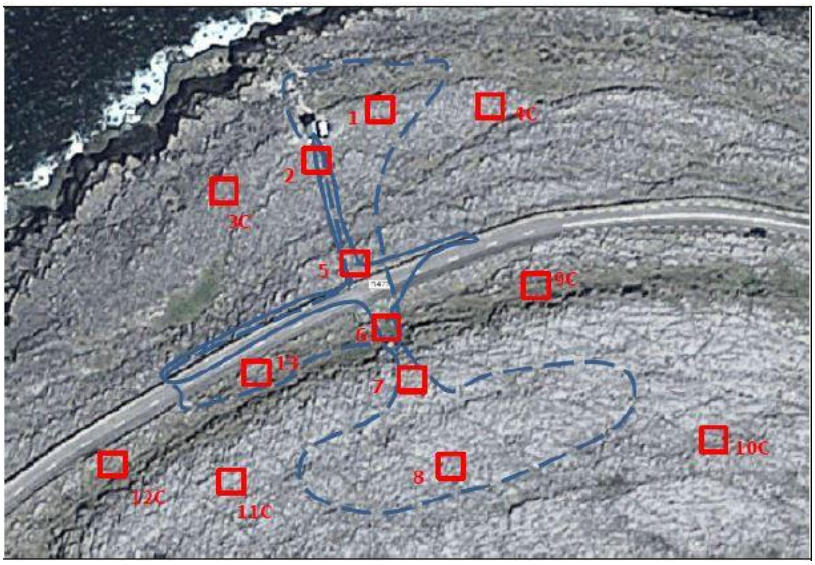

Figure 9 : Blackhead lighthouse location of quadrats

Extract from the report for Blackhead Lighthouse:

'The visual effect of tourist activity on the vegetation at this site is limited on the north of the road as the vegetation is sparse and visitors walk preferentially on the exposed limestone. To the south of the road a few desire lines lead inland to the higher ground though once above the terrace fringing the road, these become indistinct as visitors do not follow any specific route. There is a considerable amount of mini-dolmen and cairn building on the higher ground south of the road. Litter is also evident in the area adjacent to the road and towards the lighthouse'.

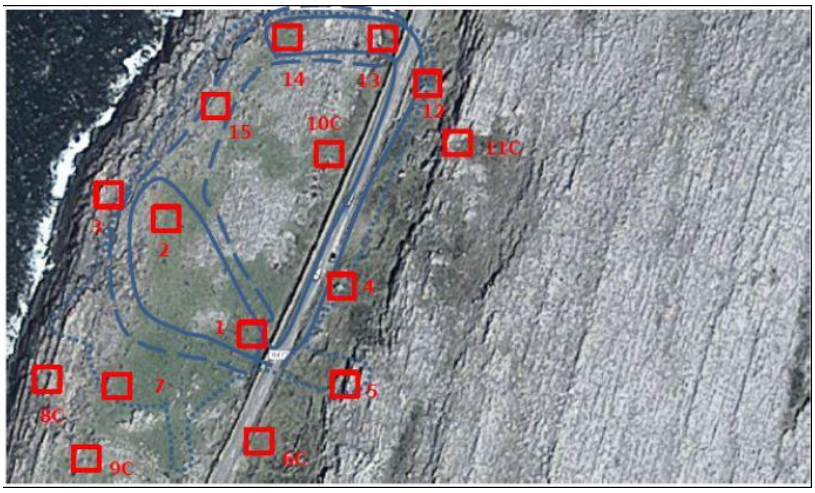

Figure 10: Blackhead lay-by location of quadrats

Extract from report for Blackhead lay-by (300m south of Blackhead lighthouse):

'The visual effect of tourist activity on the vegetation at this site is limited to the immediate vicinity of the access stile leading from the road to the coast and to a lesser extent, a few desire lines lead inland to the higher ground to the east. West of the road there is localised compaction of vegetation in the area immediately adjacent to the access stile. On the east of the road due to the presence of low cliffs, access is confined to a few obvious routes with localised compaction of vegetation. On top of the cliff the visitors spread out over a broader area and there are no discernible trails. As with many sites which have exposed limestone pavement, visitors tend to walk preferentially on the rock thus avoiding trampling the vegetation. Grazing and poaching by over-wintering cattle has a discernible impact on the vegetation at the higher levels. There is evidence of mini-dolmen and cairn building both to the east and west of the road. Litter is also evident along the coastal strip.'

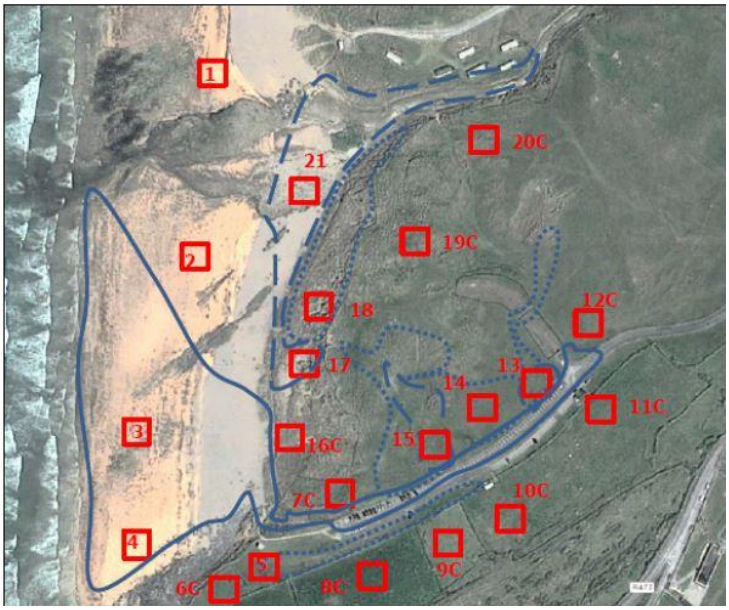

Figure 11 : Fanore Beach 1 location of quadrats

Extract from Report:

'Vegetation at Fanore varies according to the location within the dune system, with marram dominated communities along the dune front, and species rich calcareous grasslands further inland. Fields of managed grassland to the south of the carpark also vary in composition dependant on the management and grazing levels. The dune system and inland grasslands are grazed by cattle over the winter months and there is a large population of rabbits which maintain the inland areas as a short sward. Visitor activity has an evident effect on the grasslands fringing the carpark where there is compaction and occasional small areas of exposed soil. There are desire lines leading through the dune system though the fencing appears to limit the numbers of people using this area. The dune front was heavily eroded during the extreme storms of January and February 2014. There are a number of blowouts with wind eroded gullies extending into the dunes and their recovery is heavily dependent on preventing access by people or livestock. The shoreline consists of mobile sands with some areas of exposed rock in the mid shore. The river forms a braided and dynamic channel within the beach consisting of gravels and cobbles'.

Figure 12 : Fanore Beach 2 location of quadrats

Extract from report for Fanore beach 2 area:
'*Vegetation within the dune system follows the same pattern as to the south of the river with marram dominated communities along the dune front, and species rich calcareous grasslands further inland. The dune system and inland grasslands are grazed by cattle over the winter months and there is a large population of rabbits which maintain the inland areas as a short sward. The dunes are unfenced and there is a higher level of visitor activity with numerous desire lines leading through the dune system. The dune front was heavily eroded during the extreme storms of January and February 2014 and consists of a uniform steep and sparsely vegetated face of 4-6m in height. The shoreline consists of mobile sands with some areas of exposed rock in the mid shore zone close to the river mouth and at the northern end.*
Petalwort (Petalophyllum ralfsii), an Annex I listed liverwort under the EU Habitats Directive, is recorded from the dunes at Fanore. It is a qualifying interest for the Blackhead – Poulsallagh Complex SAC which encompasses the entire dune system'.

3.5. Community Consultation

The most visited archaeological sites within the demonstration site are Caher Dun Irghuis and Murrooghkilly cairn at the summit above Blackhead. Both sites are regularly passed by hill walkers as they are close to the popular walking areas of Blackhead, Gleninagh and Cappanawalla Mountain.

Through conversation with landowners at Blackhead and Fanore, the issue of damage to the Caher and cairn at Murrooghkilly by walkers was raised. The landowners are concerned about the perceived increasing damage to these monuments and they would like to see action being taken with regard to their conservation.

Other issues of concern are the increasing number of visitors using the coast road, the lack of roadside parking pull-in areas and the congestion caused by coach tourism.

3.6. Conclusions: Site Recreational Pressure Points

Through field study, visitor observation and community consultation, undertaken as part of this site appraisal, the following recreational pressures at the site were identified:

- Informal roadside parking along the R477 near Blackhead and at the Murroughtoohy lay-by can result in congestion and safety issues during the summer months.
- Visitor pressure at the archaeological monuments of Caher Dun Irghuis and the summit cairn at Murrooghkilly above Blackhead may be causing deterioration of the monuments.
- Erosion and a deterioration of the quality of the Fanore beach dune area is potentially being caused through climate change and visitor recreation.
- Anti-social behaviour is resulting in damage to signage at Fanore Beach.
- Footfall – some eroded areas are visible along sections of the Blackhead walking trail. As this site is also used for grazing by cattle, it is difficult to determine how much disturbance on trails is caused by visitors as opposed to livestock.

4. SITE MANAGEMENT

Each of the areas identified as recreational Pressure Points in 3.6. are detailed below in terms of who is responsible for the sites management and what are their responsibilities

4.1.Roadside parking

The R477 is designated a regional road and as such has a speed limit of 80km per hour. Clare County Council is responsible for the management of this road.

In March 2010 Burren Connect (forerunner to the Burren and Cliffs of Moher Geopark) received a Ministerial grant of consent through the NPWS for 14 parking bays subject to conditions. On the strength of this approval land acquisition went ahead with the purchase of 0.262 acres of land in May 2010.

Following a successful application for funding under the Fáilte Ireland Tourism Capital Investment programme the documentation of Part 8 Notice of the proposed development was submitted on February 7th 2012 by Clare County Council (CCC).

This application resulted in submissions being received from An Taisce and the Department of Arts, Heritage and the Gaeltacht requesting Appropriate Assessment Screening. An Appropriate Assessment Screening (Natura Impact Report) was submitted on 19 April 2012 and following a response in which the DAHG found the Screening report to be deficient in addressing the fact that there would be permanent loss of Annexed habitats a revised Screening report was submitted in November 2012.

In November 2013, CCC were advised by the DAHG that the screening process had become complex in light of the European Court of Justice Case C-258/11- Peter Sweetman and others v An Bord Pleanála, and that CCC should make an application to An Bord Pleanála under Section 177AE of the Planning and Development Act, 2000, as amended. Following this advice, CCC did not proceed with the Part 8 Planning Application.

The current situation is that there are 14 small parcels of land, covering in total 0.262 acres, along the R477 to the east and west of Blackhead lighthouse, owned by CCC which are used informally by recreationalists as pull-in and parking lay-bys. Due to the limited width of these areas, vehicles often protrude out onto the road and cause congestion.

4.2.Archaeological Monuments

The archaeological monuments of Caher Dun Irghuis and the summit cairn at Murrooghkilly which have been identified as under pressure from recreationalists are located on privately owned land, each with a separate landowner.

Both monuments are listed on the Record of Monuments and Places (RMP), which is compiled by the National Monuments Section of the Department of Arts, Heritage and the Gaeltacht. Section 12 (3) of the National Monuments Act provides for the protection of the monuments and places included in the record. The National Monuments Service (NMS) of the Department of the Arts, Heritage and the Gaeltacht advise on the protection applying to recorded monuments.

There is some historical information on the site in the writings of 18th century antiquarians such as Thomas J. Westropp (Appendix III), but there is no up-to-date information with regard to the condition of these sites or their perceived (as reported by landowners and walking guides) deterioration in recent years.

4.3.Fanore Beach

Fanore Dunes system extends 2km from the townlands of Murroughtoohy South in the north to Fanore More in the south. The dune system is divided into two sections by the Caher River. The area to the south of the River is in the ownership of Clare County Council (approximately one-fifth of the entire dune system) while the remainder is in private ownership with a number of landowners. Clare County Council operates and manages the visitor recreational facilities at Fanore Beach to the south of the river. A privately owned and operated caravan park is located in the dunes immediately to the north of the Caher River.

In 2003 a baseline study of the dunes was commissioned by Clare County Council and recommendations for interventions made (Dr Amanda Browne (2003) '*Habitat Survey of Fanore Dunes'* Clare County Council). Survey work was carried out in July 2003, consisting of 8 quadrats (GPS and photographs) using Braun-Blanquet approach.

An extract from the findings of that study states:

'*Embryo dune development is absent and marram dune vegetation is patchy along the top of the dune ridge, while the seaward side of the dune consists of a sheer cliff of bare eroding sand. This topographical situation, however is not widespread throughout the surrounding dune hinterland where active dune accretion, embryo dune formation and significant marram dune development is ongoing…the natural occurring processes of erosion have been augmented by pedestrian pressure on the dunes'.*

Photo 13: View of dunes from entrance to beach (March 2003)

The following recommendations were made to limit the public's access through the sensitive dune area:

- The periphery of the dunes to be fenced to prevent walking and pony trekking access. Sand fence to be erected on seaward side of dunes to trap sand. Photos to be taken and regular

monitoring and maintenance to be undertaken. Marram planting to accompany fencing. *In the future if sand fencing has not been effective in encouraging dune building, further coastal protection measures may be required. In order to effectively decide on the most appropriate measures to be employed a number of analyses on the physical environment of the beach need to be undertaken. Such analyses include sediment flow, wave action and beach profiling.*

- Single point access to be provided for pedestrians. Fencing along access point may be necessary to prevent straying off path.
- Public awareness campaign with regard to importance of dune resource and necessity of the dune protection measures.

The recommendations of the 2003 report were implemented in 2004/2005 when periphery fencing was put around the dune; sand trap fencing was put in place along the seaward side of the dunes and a sand ladder was put in place to provide single point access to the beach by the County Council's Local Area Office.

Photo 14: Fencing at base of dunes (January 2004)

Photo 15: Sand ladder and fencing (March 2005)

Photo 16: Sand trap fencing along gully at north end of dune (2005)

Photo 17 & 18 : Single point access to beach constructed 2005

Photo 19 : Car park 2005

In 2006 the dunes were surveyed under the Coastal Monitoring Project commissioned by the NPWS (Tim Ryle et al. 2009 'Coastal Monitoring Project 2004-2006' Report for NPWS). This survey found the sand dune system at Fanore to *be a relatively intact dune system despite recreational pressures*.

Photo 20: View of dunes from beach entrance (January 2006)

In 2007, as part of the Burren Connect Project (forerunner to the Burren & Cliffs of Moher Geopark), conservation works were planned and implemented at Fanore Beach in conjunction with the County Council's Environment Section, Local Area Office and Heritage Office and the National Parks and Wildlife Service (NPWS)

The programme included the replacement and reinforcement of the protective fencing and the installation of sand matting to encourage the re-colonisation of marram grass. A new parking area was developed to compensate for the closure of a relief car park, which was encouraging access to the beach through breaches in the protective fencing. A viewing platform was installed for those who cannot access the beach. The sand ladder, which gives pedestrian access only, to the beach, was repaired and extended. A shower unit was installed at the edge of the car park to facilitate swimmers and surfers.

Photo 21: View of dunes from beach entrance (May 2007)

An informative signage system was developed to explain the need for the conservation project and to highlight the extensive biodiversity value of the site.

Dr Amanda Browne was commissioned to develop a monitoring programme for the dune system and the interventions which had been put in place. The resulting programme and indicator system was loosely based on the Ryle et al. Coastal Monitoring Project of 2006, using habitat mapping and fixed points (reflecting changes in morphology) plus transects (at intervals quadrat and Braun-Banquet) sampling. A reassessment of the relevés recorded in 2003 was also carried out. The recommendation was made for this survey to be completed on an annual basis during the month of July, suggesting 10 person days for survey and analysis and for additional days to be allocated to monitoring the cattle grazing regime during the winter months as well as surveying the site after major storm events.

A Schools Conservation Project was developed in partnership with Mary Immaculate Secondary School, Lisdoonvarna and Fanore National School and the Heritage office of Clare County Council. Workshops and site visits were organised for the local community to provide information on the Dunes habitat, and the conservation and monitoring programmes.

In January and February 2008 some additional areas were fenced off where damage had occurred due to fires and one area which had previously been used for parking. In September and October new information and wildlife signs were put in place

In December 2008 a new fence was erected between the river and the dunes in an attempt to help prevent further access with trampling that leads to erosion in this area.

Monitoring was carried out in 2008 using 41 quadrats. However no further monitoring occurred until GeoparkLIFE project monitoring in 2014 (outlined in Section 3.4).

Photos 22-25 : Works carried out in 2008

4.4. Walking Trails

The Blackhead Loop Walking Trail (26km), the Caher Valley Trail (14km) and the Fanore to Ballyvaughan Trek (21km) all have their trailheads at Fanore Beach car park.

The routes have been approved by the National Trails Office and is managed by the County Clare Rural Recreation Officer (RRO), employed by Clare Local Development Company (LEADER) on behalf of the Department of Housing, Planning, Community and Local Government. The landowners along each route receive a payment for the development, maintenance and enhancement of the walk under the guidance of the RRO. The payment is based on a detailed work plan and a five-year contract.

5. CONCLUSIONS AND RECOMMENDATIONS

ISSUES	RECOMMENDED ACTIONS
There is currently a **lack of organised parking** areas along the popular coastal route the R477. Large numbers of tourist coaches and private cars use this route throughout the year with major peaks during the summer months (May-September). The area attracts walkers, adventure tourists (climbing, orienteering, rock climbing) and fishermen. Vehicles are often parked along the roadside impacting on the limestone pavement in places, which may result in erosion of the rock and vegetation. The route is now part of the designated Wild Atlantic Way long distance driving route. If official parking areas and further on-site interpretation are provided this could lead to increased congestion.	A review of the actions to date to develop parking lay-bys at Blackhead should be carried out and research undertaken to determine the feasibility of utilising the purchased land for pull-in area development.
The **Fanore sand dune system** has been impacted upon through visitor behaviour. Interventions have been put in place to alleviate this problem but impacts still occur in places and major impacts have occurred through storm damage in recent years. Although a monitoring programme was developed for Fanore Dunes in 2007, which recommended annual monitoring, no monitoring work had been undertaken since 2008 until GeoparkLIFE monitoring.	A full review of the current condition of the dunes and recommendations for remedial work made in light of climate change and recreational use and development of a monitoring scheme and management plan should be undertaken.
Caher Dun Irghuis stone fort and the summit Cairn at Murrooghkilly are deteriorating. This damage is perceived to being caused by recreationalists.	Commission baseline condition reports on each of the monuments and method statements for possible conservation work. Create awareness among recreationalist with regard to the importance of these monuments and how to act responsibly**.**
There are areas of erosion along the **Blackhead Loop walking trail** which require more comprehensive monitoring and management.	Work with the RRO to develop a comprehensive trail monitoring system which will be transferrable to all Burren trails.

APPENDIX I:

VISITOR ATTITUDES SURVEY Blackhead 2014 (MWB)

1. How long do you intend visiting this site?

Less than 1 hour	1-2 hours	3-4 hours	5-6 hours	Full day
44%	31	15	8	2

2. How would you rate the signposting for directions to this site on a scale of 1-10 (1=poor; 10=very good)

1	2	3	4	5	6	7	8	9	10
19	6	6	4	12	4	29	12	4	6

3. How would you rate the physical entry to this site (including stiles and footpaths)

1	2	3	4	5	6	7	8	9	10
4	6	2	0	2	10	38	21	15	2

4. How would you rate the parking facilities at this site? (Scale 1-10)

1	2	3	4	5	6	7	8	9	10
6	2	4	6	17	10	23	21	12	0

5. Have you noticed any information boards at this site/location?

Yes	No
50	50

6. Have you read the information on them?

Yes	Partially	No
92	4	4

7. Did they add to your understanding of the Burren?

Yes	No
100%	0

8. How would you rate your overall satisfaction with your visit to this site?

Very dissatisfied	Dissatisfied	Neither satisfied or dissatisfied	Satisfied	Very satisfied
0	0	0	37	63

9. What is the main type of transport you are using to travel within the Burren?

Own car	Hired/rented	Public transport	Motorbike	Coach day tour	Coach guided tour	Private chauffeur tour	Bicycle	Other
31	44	2	0	8	2	2	4	10

VISITOR ATTITUDES SURVEY FANORE 2014 (MWB)

1. How long do you intend visiting this site?

Less than 1 hour	1-2 hours	3-4 hours	5-6 hours	Full day
45%	30%	11%	4%	10%

2. How would you rate the signposting for directions to this site on a scale of 1-10 (1=poor; 10=very good)

1	2	3	4	5	6	7	8	9	10
0	0	0	0	1%	1%	6%	24%	29%	38%

3. How would you rate the physical entry to this site (including stiles and footpaths)

1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	2%	21%	32%	45%

4. How would you rate the parking facilities at this site? (Scale 1-10)

1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	1%	1%	17%	29%	51%

5. Have you noticed any information boards at this site/location?

Yes	No
87%	13%

6. Have you read the information on them?

Yes	Partially	No
59%	23%	18%

7. Did the information add to your understanding of the Burren?

Yes	No
97%	3%

8. How would you rate your overall satisfaction with your visit to this site?

Very dissatisfied	Dissatisfied	Neither satisfied or dissatisfied	Satisfied	Very satisfied
1%	0	1%	51%	46%

9. What is the main type of transport you are using to travel within the Burren?

Own car	Hired/rented	Public transport	Motorbike	Coach day tour	Coach guided tour	Private chauffeur tour	Bicycle	Other
67%	32%	0	0	0	0	0	1%	0%

APPENDIX II

Visitor Observations at Caher Dun Irghuis (ZH)

1. Survey Detail

Site Id : CDI	Date Of Survey	Day of Week	Duration of Survey	Weather	No of people observed
	13-9-14	Saturday	11.30- 16.00 (4.5 hours)	Hot and Sunny	44

2. Number of Observations, gender and group breakdown

Number of people observed	Total number of females	Total number of males	Number of observations (groups)	Size of groups
44	17	27	6	Average 1-2 Skewed by walking festival group of 33

3. Age demographic – All Adult

4. Mode of transport – all on foot

5. Time Spent on Site, Main activity type and impact caused with group and age demographic

Date of observation	Obs group id	Time spent on site (hours:minutes)	Group type	Mode of transport	Main activity	Impact
13-9-14	CDI1	00:07	M/F	N/A	Walking, viewing landscape	Walked on wall of fort and sat on it viewing landscape
	CDI2	00:16	2M/2F		Walking, viewing fort interior	Walking in fort interior
	CDI3	00:11	21M/12F		Walking, small number viewed fort interior	Walking in fort interior
	CDI4	00:03	M/F		Walking	None
	CDI5	00:05	M/F		Walking, sitting on field boundary walls	Climbing walls and sitting on wall
	CDI6	00:01	M		Walking	

Average time spent on site: 6 minutes

6. Level of Activity

Walking
Viewing the fort
Viewing the landscape
Sitting on walls
Walking on fort walls

7. Time spent reading Information Boards – N/A

8. Effects Observed

Two visitors walked on the fort walls and sat on them while viewing the landscape.
Two other visitors sat on a the field boundary wall
Accidental movement of stones while walking on the limestone pavement
Climbing over boundary walls
Comment: the size of the walking festival group skew results.

Time of day of arrival at site

Observation group id	Time of arrival
CDI1	12.20
CDI2	13.11
CDI3	13.57
CDI4	14.42
CDI5	15.30
CDI6	15.20

Visitor Movement Pattern

Observed movement patterns

Most activity occurred in the central area.

APPENDIX III

Westropp's account of Caher Dun Irghuis (1901)

The fort is an irregular enclosure, D-shaped in plan, forming almost a right angle at its south-west corner - an actual corner [7] such as we only see elsewhere in the presumably late rectangular forts or mohers - this, with the poor and small masonry adjoining, suggests a rebuilding of the older fort. The garth measures internally 65 feet, north and south, and 69 feet, east and west. The rampart is, indeed, for the most part of that inferior masonry found above the 'cyclopean' stonework in some of our forts. There is a large breach to the south-east, and another to the east, where the old gateway is still to be traced; between these gaps stands the highest piece of wall. I have failed to get an accurate measurement; but it may be 15 or 16 feet high; the masonry in the lower part, to the north and east, is better and larger than the upper part, and, perhaps, may mark a much older foundation, though it is equally probable that the larger and better stones may have been reserved for the lower, and the smaller and more portable blocks for the upper wall. The gateway was only 32 inches wide, the smallest I have measured in Clare (the next smallest being Ballyelly, 34 in., lying a few miles to the south, and Cahercommane, 36 inches). It had no corner posts, only one stone, 39 inches long, lies in the débris. A wider passage runs through the thickness of the wall and terrace from the gateway (as at Doon Aenghus, and Ballykinvarga). The outer section of the wall measures about 6 feet, and the terrace 5 feet; but the wall is often 13 feet thick. The masonry is irregular and poor, laid as headers, with no structural batter and leaning out in parts. Traces of distorted upright joints seem to remain, one to the north-west, and at least three others, for about a third of the height of the wall, along the northern segment; two of these diverge and are about 10 feet apart, as if built by a small gang; they all begin above the large stonework, and have unjointed masonry above them, as if more than one rebuilding had taken place. There is a short joint running for 4 or 5 feet up the wall to the south, and two more to the west, but wavy and distorted. I call these 'upright joints' with reserve; they are not as well marked as those in Dun Conor, Cahercommane, Ballykinvarga, Staigue, and other forts, and we shall see in the far better masonry of Caherclogaun how careless the old builders were about breaking joint. Between the western joints, the stones are larger; but have been in some cases set on a steep slope, as at Cahercommane,[8] which doubtless (as there) implies a hasty rebuilding. In short, the masonry is far inferior to the usually excellent coursed and 'cyclopean' stonework of other forts in the limestone districts.

A terrace, 3 to 4 feet high, runs round the inside of the wall; there is some appearance of a flight of steps, rising from the left and the right, to the summit of the wall from the terrace.[9] Lord Dunraven found them to be 2 feet 6 inches long; but I found no indisputable trace. There are no old structures in the fort or on the crags near it. The approach from the north is so steep as to be practically inaccessible; indeed, it seems wonderful that anyone took such a wind-swept, waterless brow for a residence, or, having done so, took pains to strengthen almost impassable crags and grassy slopes of rock, with a wall 12 feet high, on a ridge 647 feet above a harbourless and stormy shore.