POULNABRONE DEMONSTRATION SITE

SITE ASSESSMENT REPORT

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(Updated February 2015 to include Visitor Surveys data)

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1. SITE DESCRIPTION

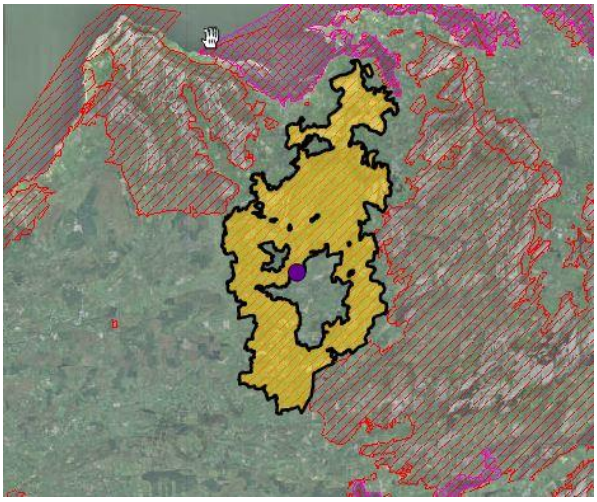
1.1. LOCATION

The GeoparkLIFE demonstration site at Poulnabrone is situated in Zone 2 (the central zone) as defined by this project. This zone attracts informed tourists who take an active interest in the heritage of the area. The demonstration site consists of a prehistoric burial tomb and associated parking and interpretive facilities. This site is a major attraction on the Burren landscape and attracts a large number of visitors on an all year-round basis.

It is located on the east side of the R480 regional road approximately 5 km south of Ballyvaughan. Also, located along this route are the GeoparkLIFE demonstration sites of An Rath-Cahermore, Aillwee Cave and Carran Church. The R480 route runs through the centre of the Burren and has an array of prominent attractions and natural and cultural heritage sites along its length. The route is used by coach tours and individual travellers, mainly travelling by car.

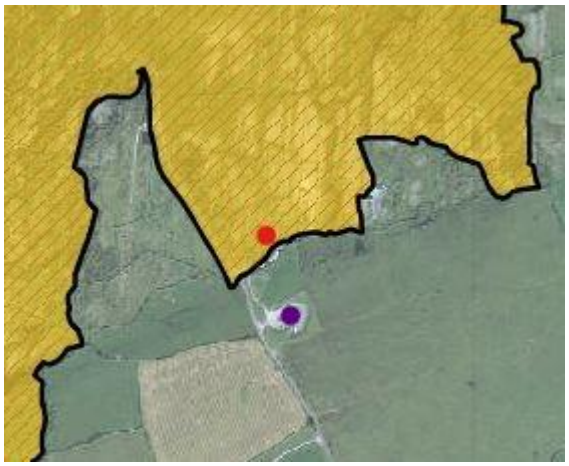
Figure 1: Location map of Burren. Poulnabrone demonstration site denoted by red circle.

1.2. LAND DESIGNATIONS



Part of the demonstration site at Poulnabrone lies within the Moneen Mountain SAC (Site Code; 000054). The site description for this SAC is contained in Appendix I.

Figure 2: Location of Moneen Mountain SAC with Poulnabrone demonstration site denoted with purple circle.



The area within the SAC includes the portal tomb and some of the access path leading to the monument. The car park and its access paths are outside the boundary of the SAC.

Figure 3: Location of Portal tomb denoted with red circle; car park by purple circle. SAC denoted by yellow striped area with black boundary.

Poulnabrone portal tomb is a designated National Monument in State Care managed by the Office of Public Works, Department of Arts, Heritage and the Gaeltacht.

1.3 FEATURES OF TOURISM INTEREST

1.3.1. Built Heritage

Poulnabrone Portal tomb is one of the most famous megalithic tombs of Ireland and is an ionic landscape feature. It is a tripod design with two large portal stones and lower back stones supporting a massive sloping cap stone. The tomb stands on a low, roughly circular mound that measures 10 metres in diameter. The entrance to the tomb faces north-northeast and is formed by the two high portal stones.

Photo1: Poulnabrone Portal tomb

The tomb was excavated in 1985 as part of a conservation project initiated when a crack appeared in one of the side stones of the monument. The disarticulated remains of at least 33 people were discovered along with various stone and bone artefacts and animal bones. The bodies had been buried or stored elsewhere until they had decomposed and were later transferred to the tomb at Poulnabrone. Radiocarbon dating of the bones give a date range between c.3800 – 3200 BC.

Within one kilometre of Poulnabrone portal tomb there are over 180 recorded archaeological sites that range from the Neolithic to medieval structures. In addition there is a rich post-medieval landscape that includes quarries, farm structures and stone built walls.

1.3.2. Natural Heritage

The dominant habitat type present at the demonstration site at Poulnabrone is limestone pavement interspersed with pockets of orchid-rich grassland. The north of the site which is predominantly flat limestone outcrop pavement is located within the Moneen Mountain SAC. The rocks are regularly bedded and extensively jointed in this area. Soil cover is sparse with thin soils in the joints and in the other karst features (dolines, dry valley etc.) The area to the south within which the car park is located has a thicker soil cover and improved grassland vegetation. A ravine (dry river valley) runs in a north-south direction to the east of the portal tomb. It has a thick sward of calcareous grassland with some wetland influence due to impeded drainage. The site has a good representative Burren flora featuring many characteristic Burren species. The combination of typical Burren limestone pavement, karren features and diverse flora at the site provides a very attractive and interesting visitor attraction alongside the important archaeology of the site.

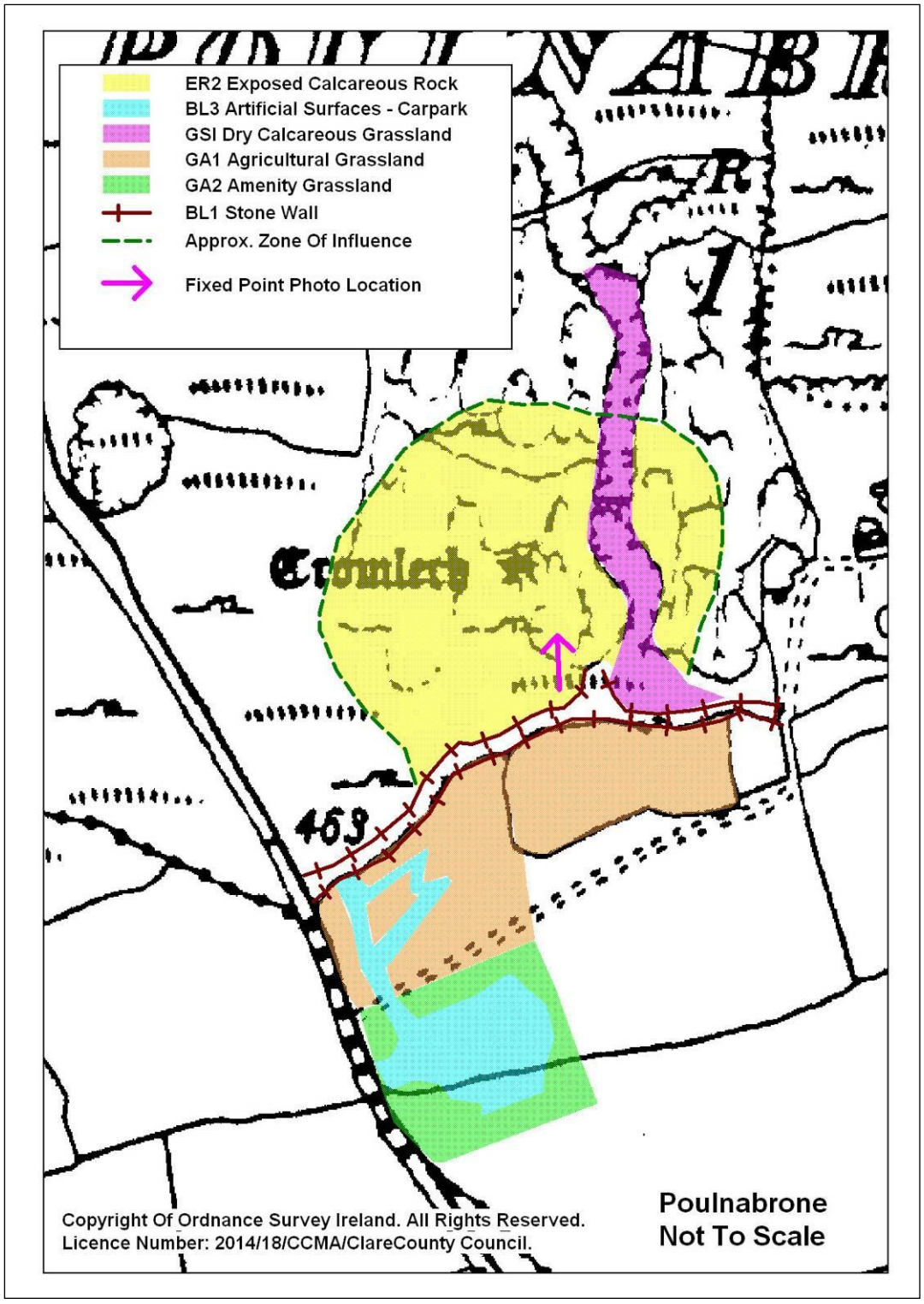


Figure 4: Poulnabrone Habitat Map (EirEco Consultants 2014)

2. CURRENT SITE CONDITION

The demonstration site at Poulnabrone is located adjacent to the busy tourism route of the R480 road which passes through the centre of the Burren. Attractions along this route include An Rath-Cahermore medieval forts, Aillwee Cave Visitor Centre, Caherconnell Visitor Centre and Carran Church.

2.1. Access

2.1.1. Approach Road

The R480 is located approximately 1.5km south of Ballyvaughan, as a branch off the N67 and continues south until it reaches Leamaneh Castle where it joins the R476 (Corofin-Kilfenora road). Poulnabrone portal tomb is located approximately 5km south of the junction with the N67.

2.1.2. Directional Signage

Poulnabrone portal tomb is signposted at the intersection of the N67 and R480 and at the intersection of the R480 and the R476.

2.1.3. Parking

A tarred parking area is provided to the south of the portal tomb, with capacity for approximately 20 cars and four coaches. During peak times the park can often be at full capacity. Coaches in general tend to park parallel to the designated parking areas as pulling in and out of the linear arrangement can be difficult to manoeuvre. This can cause congestion at peak times. The coach traffic is heaviest between 12 noon and 2pm during the summer months.

2.1.4. Site entry

Pedestrians approach the tomb from the parking area along either of two gravelled pathways. One of the pathways is stepped while an alternative non-stepped pathway is also provided for universal access. Rope fencing surrounds the monument restricting the public from interacting directly with the monument.

2.2. Visitor Facilities

2.2.1. Recreational Facilities

Visitor facilities at the site consist of the car/coach park, access paths and informational panels.

There are no retail, food or sanitary facilities at the site.

2.2.2. Interpretation and Information

Within the car park are several information signs. These consist of

- An upright panel illustrating North Clare Cycle routes which includes a section interpreting the Poulnabrone monument.
- Two signs informing visitors to ‘Beware of valuables’
- A lectern style panel with the Burren Code (in several languages) and a Burren map created under the Burren Connect project
- A Burren & Cliffs of Moher Geopark Geosite panel

- Directional brown fingerpost signs to the tomb
- and bye laws signs with regard to prohibition of dogs, horses, metal detecting and picking of flowers; climbing on rocks and control of children.

Photos 2 &3: Car/coach park area and signage

Along the access path to the monument are three interpretive panels mounted on limestone plinths. They provide illustrations and text interpreting the site in a historical and archaeological context; the Geology, ecology and farming at the site and the morphology and uses of the Portal tomb.

The panels are informative, well presented and in good condition.

Photo 4: Interpretive panel illustrating the significance of the portal tomb.

3. CURRENT VISITOR USE OF SITE AND RESULTING IMPACTS

In September 2014, a number of GeoparkLIFE initiatives were developed 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

As part of the preparation of the 'Poulnabrone Conservation Plan 2002' (Colin Buchanan and partners, 2002), which was commissioned following the acquisition of the site by the Department of Arts, Heritage and the Gaeltacht, a manual visitor count was carried out over 5 days. The following numbers were collected at that time:

Day	**Time**	**Visitor Count**
Thursday 18 July 2002	11am - 16.30pm	1724
Friday 19 July 2002	10am-18.00pm	911
Saturday 20 July 2002	10am – 18.00 pm	1257
Monday 22 July 2002	10am – 18.00 pm	1103
Tuesday 23 July 2002	10am- 15.00pm	746

Table 1: Visitor numbers recorded July 2002 (Poulnabrone Conservation Plan)

'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 99,000 visitors were brought to Poulnabrone by coach in 2014. This estimate is based on (a) 3 days of counting across seasons for this study; (b) previous counts conducted by on-site OPW personnel and (3) 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 48 buses travelled along the R480 on this day (10 public day trips, 38 private tours).

Through the GeoparkLIFE initiative a footfall counter was installed along the access path to the monument, at the exit point from the car park, on September 9, 2014 to measure visitor numbers and times of visit. The following numbers were recorded between September 9, 2014 and February 13, 2015:

Poulnabrone Visitor Numbers	
Month	Numbers Recorded
September 2014	9926
October 2014	9899
November 2014	4183
December 2014	2804
January 2015	2583
February 2015	2182
Total (9-9-14 to 13-2-15)	**31577**

Table 2: Data recorded by GeoparkLIFE footfall counter September 2014 – February 2015

This footfall counter data will continue to be collected and analysed by GeoparkLIFE staff throughout the duration of the project to provide a more comprehensive coverage of visitor numbers to the site. All results will be shared with the site managers and other relevant partners.

3.2. Visitor Attitudes Survey

A Visitor Survey was conducted at the Poulnabrone 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 the car park at Poulnabrone. 84 people were interviewed. The purpose of this survey was to record visitors' attitudes to the infrastructure at these sites and to the Burren. The results indicate:

- 88% of visitors interviewed gave a rating of between 8-10 for signposting to the site (1 being poor and 10 high):
- 94% rated physical entry between 8and 10
- 99% rated parking facilities between 8 and 10
- 89% arrived by car to the site
- 99% noticed the information; 89% read them entirely and 6% partially; of those that read the boards 97% felt that they added to their understanding of the Burren.
- 61% were very satisfied with the site and the remaining 39% were satisfied.

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

3.3. Visitor Observation Studies

Two sets of Visitor observations were carried out at the site in September 2014 to determine visitor movement around the site and how visitor behaviour is impacting on the site.

- On the 6 September 2014 visitor observations were undertaken 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 surveyors were present at the site. One was stationed adjacent to the tomb while the second observed visitors who left the main pathways and moved onto the limestone pavement area to the north of the tomb. 205 visitors were observed during this exercise.
  The results indicate that
  - Visitors spent an average of 14 minutes at the site
  - 3% arrived by bus
  - Approx. 40% read the information boards
  - Approx. 85% had a low impact at the site and 10% had a high impact.
  - The effects observed were:
    - 1% removal of material – stones, rooted vegetation, fauna
    - 2% incidental movement of material – stones, rooted vegetation, fauna
    - 7% movement of material – stones, rooted vegetation, fauna
    - 22% no effect observed
    - 30% trails newly visible on grass and leafy vegetation
    - 38% non-noticeable wear and tear.

- On 18 September 2014 visitor observations were carried out by GeoparkLIFE at Poulnabrone as part of the site appraisal which is the basis of this report, using the

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

methodology employed by CAAS Ltd. Observations were made from 10.30am to 2pm. 283 visitors were observed at the site during this time.
The results indicate that

- Visitors spent an average 13 minutes on site
- Approx. 35% were observed reading the information boards with an average time spent at this activity of 2 minutes 42 seconds
- Effects observed
    - 1% Incidental movement of material - Jumping on rocks
    - 1% Littering
    - 1% removal of material - Picking vegetation
    - 2% movement of material - Picking up stones and banging them
    - 40% non-noticeable wear and tear - Walking on limestone pavement away from the monument area
    - 55% no effect observed

The results of the observations undertaken by GeoparkLIFE are contained in Appendix II

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. Poulnabrone was one of the locations assessed and was rated as *'Localised degree of negative impact, but slight and capable of rapid recovery (Fair condition)'.*

As part of the CAAS Visitor Observation Study, EirEco Environmental Consultants were commissioned to carry out vegetation monitoring at the GeoparkLIFE demonstrations sites between October 21, 2014 and December 2, 2014. Vegetation was analysed in $1m^2$ quadrats at pre-selected locations identified by CAAS in each site. Seven quadrat surveys were conducted at the Poulnabrone site as illustrated in Figure 5.

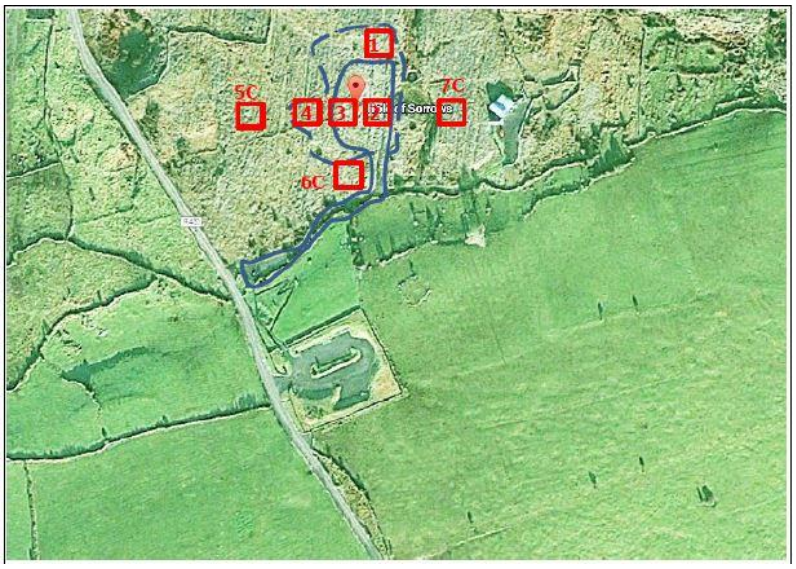


Figure 5: Ecological survey quadrat locations Poulnabrone

The following is an extract from the ecological survey report for Poulnabrone demonstration site (EirEco 2014):

'The habitat surrounding the dolmen is limestone pavement with classical clint and gryke structure. Vegetation is primarily confined to within the grykes and as people walk preferentially on the exposed

rock they generally avoid trampling on the grassland habitat. However, some compaction of vegetation and bare soil is evident in the area where the surfaced trail leads onto the limestone pavement. The high levels of visitor activity at the site are evident by the nature of the rock surface which has been worn smooth by footfall in the area surrounding the dolmen. The site is grazed by cattle in winter. The surrounding area consists of a mixture of limestone pavement with patches of hazel scrub and grassland in depressions. The majority of visitors appear to stay within a very limited zone around the dolmen with few moving beyond c 50m and there is no evidence of impact on the surrounding vegetation'.

3.5. Conclusions: Site Recreational Pressure Points

During the field survey, on site consultation and review of existing baseline reports undertaken as part of this site appraisal the following recreational pressures at the site were identified:

- Anti-social behaviour has occurred in the car park and vehicles have been broken into on occasion. Damage usually occurs during evening hours when the warden is off-duty (duty hours 8.30am-6pm)
- As the car park has open access there have been cases of horses being released into the area in the late evening when the warden has left the site. This has caused fouling and vegetation damage.
- Congestion can occur in the car park during peak visiting times (12noon – 2pm summer months) due to the large number of coach tours and lack of coach parking facilities.
- Most visitors stay within the vicinity of the monument and access paths, but approximately 40% can wander onto the limestone pavement area to the north of the monument. The majority of these visitors have a low impact at the site, but there is a limited amount of stone movement and picking of vegetation.
- Lack of toilet facilities at the site can be problematic for visitors and there have been cases of fouling in peripheral areas of the site

Photo 5: Coach parking facility at Poulnabrone

Photo 6: Coach congestion at Poulnabrone

4. SITE MANAGEMENT

4.1. Planning and Development

Poulnabrone Portal tomb has attracted visitors since the mid-19th century when tourism became established in the Burren. Since then awareness of the site has grown and visitor pressure has increased. Up until the mid-1980s there was no formalised management of the site and visitors gained access from the road, randomly crossing the field to the tomb which is located c.150m from the road. Parking was haphazard along the very narrow R480 road and caused major obstructions during peak tourism season. Visitor pressure was evident at the site due to graffiti on the surrounding rocks, limestone pavement being re-arranged as 'mini-dolmens' on the landscape, erosion of vegetation along access lines and damage to the tomb structure due to visitors climbing onto the monument.

The Commission of Public Works placed a Preservation Order on Poulnabrone Portal tomb on 21st November 1985 and appointed themselves Guardians of the tomb by means of a Guardianship Order dated 12th December 1985. The extent of the area covered by both the Preservation Order and the Guardianship Order was 0.222 hectares. The tomb was then excavated by the National Monuments Service as part of a conservation project initiated as a crack had appeared in one of the side stones of the monument. Conservation work included the replacement of the broken portal stone and the insertion of a new stone in the gap between the two eastern chamber orthostats to provide extra support for the capstone.

In 1997 the National Monuments and Historic Properties Service commissioned the Burren Monuments Strategy. One of the aims of this Strategy was to identify the number of monuments that could sustain an increase in visitor numbers, without damage and to spread visitor pressure over a range of monuments. A discussion document addressing some 30 monuments was produced setting out proposals for visitor access and management of these monuments. In relation to Poulnabrone the strategy acknowledged the already established tourist flow to the site and its importance for archaeological interest in the Burren. It stated that immediate action was required to control visitors to the site together with improved parking. Notably the strategy recommended acquisition of the site, dismantling of 'mini-dolmens' and construction of stiles. It also recommended actions relating to car parking, access and interpretation.

In October 2001, the then Minister for Arts, Heritage Gaeltacht and the Islands acquired Poulnabrone Portal Tomb and some 6.633 hectares of land surrounding the tomb for the benefit of the nation. Following this a conservation Plan was commissioned for the site (Colin Buchanan and partners, 2002). The purpose of the Plan was to set out the significance of site and outline policies to retain this significance. The plan provided a number of 'Policy Statements' regarding the management of the site. It made the following recommendations with regard to traffic management and car parking at Poulnabrone:

'That Dúchas (now the National Monuments Service and OPW) liaise with Clare County Council on the most appropriate location for car parking to provide the safest solution in terms of access and produce the least visual impacts. This may require purchase of additional land.'

The Conservation Plan was followed in 2004 by an Ecological Report for the site by Dr Brendan Dunford, commissioned by the Department of Environment, Heritage and Local Government. The purpose of this report was to provide baseline data, which could subsequently be used for future reference and comparison in assessing the impact of the proposed management initiatives for the site made in the Conservation Plan (Colin Buchanan and partners, 2002). The brief for the ecological report was

- the preparation of a full species list for the site,
- establishment of permanent vegetation quadrats throughout the site;

- intensive ground level photographs to convey landscape-level changes;
- vegetation monitoring of high-use area (pathways etc.)
- delivery of final findings report.

Since the Conservation Plan was developed, the OPW have put in place the following measures to protect the site and manage visitors:

- A permanent ranger is employed on site and staff facilities have been constructed
- Mini-dolmens have been dismantled
- Designated access pathways have been established
- Dry stone walls have been retained and repaired
- Livestock grazing is managed and controlled to enhance the flora
- Three interpretive panels have been provided along the access pathway.

In 2006 a funding application was made by Clare County Council and several local partners to Fáilte Ireland for an 'Environmental Protection of the Burren through a Visitor Management Initiative' project. The application was successful and resulted in the 'Burren Connect' project being established (forerunner to the Burren & Cliffs of Moher Geopark). One of the actions under this project was the '*implementation and demonstration of best practise in terms of visitor management, heritage and landscape conservation at key sites of high visitor pressure in the Burren'.* Included in the key sites was Poulnabrone portal tomb. Under this project land was purchased adjacent to the Poulnabrone portal tomb site and a car/coach park was developed in 2009. Clare County Council own and manage this car/coach park.

4.2. Current Management

At present the OPW own and manage the northern section of the site on which the tomb, access path, interpretive panels and warden facilities are located. Clare County Council owns and manages the southern section where the car/coach park and access path onto the tomb site are located. Because of the existence of two separate management system for one site, there is a lack of an integrated approach to site management.

5. CONCLUSIONS AND RECOMMENDATIONS

ISSUES	RECOMMENDATIONS
Anti-social behaviour on site outside warden hours	Provide CCTV camera at site
Lack of sanitary facilities	Carry out feasibility study for provision of toilets
Signage/interpretation	Review signage and panels in car park area – remove degraded/obsolete signs.
Site management responsibilities are divided due to existence of two owners - OPW owned section and Clare County Council owned section	Develop integrated management plan for site to facilitate holistic discussion and action.

APPENDIX 1

Moneen Mountain SAC Site Data (www.npws.ie)

Moneen Mountain SAC encompasses a complete range of inland Burren habitats, from open limestone pavement and its associated calcareous grasslands and heaths, to dense Hazel (Corylus avellana) scrub and patches of Ash (Fraxinus excelsior) woodland. The site extends inland from Muckinish Point and includes all of the higher ground between Ballyvaughan and Bell Harbour in a southerly direction for approximately 20 km. The underlying rock type is Carboniferous limestone, which rises into a series of rounded hills, intersected by deep and often steep-sided valleys to the north of the site (max. altitude 307 m) before levelling out towards the south. Traces of Galway Granite are found within the site, particularly to the north. Soil cover is shallow and the soil type most common in the area is rendzina. The site is a Special Area of Conservation (SAC) selected for 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):

[3180] Turloughs*

[4060] Alpine and Subalpine Heaths

[5130] Juniper Scrub

[6210] Orchid-rich Calcareous Grassland*

[7220] Petrifying Springs*

[8240] Limestone Pavement*

[1065] Marsh Fritillary (Euphydryas aurinia)

[1303] Lesser Horseshoe Bat (Rhinolophus hipposideros)

The bulk of the site is made up of limestone pavement, a priority habitat listed on Annex I of the E.U. Habitats Directive and its associated calcareous grasslands, juniper scrub and heaths. The limestone pavement includes smooth, blocky and shattered types. Common species typically associated with the shattered type include Burnet Rose (Rosa pimpinellifolia), Wood Sage (Teucrium scorodonia), Blue Moor-grass (Sesleria albicans), Blackthorn (Prunus spinosa) and Wild Thyme (Thymus praecox). The smooth, blocky type is deeply fissured and provides a good habitat for a variety of ferns and mosses. The bare pavement is interspersed with fine examples of species-rich dry calcareous grassland. On the higher ground of the uplands to the north and north-east of the site, heath with Bearberry (Arctostaphylos uva-ursi) is well developed. The main plants of the heath communities are Mountain Avens (Dryas octopetala), Heather (Calluna vulgaris), Crowberry (Empetrum nigrum), Blue Moorgrass, Juniper (Juniperus communis) and sedges (Carex spp.). Petrifying springs, a priority habitat listed on Annex I of the E.U. Habitats Directive, occurs within the site. Although the area covered by the petrifying springs is relatively small, the habitat is nonetheless important. The springs are generally intact in nature at this site, and often support a rich bryophyte community. They are often found in secluded and inaccessible areas such as inland cliffs, where disturbance is minimal. Expanses of low Hazel scrub interspersed with bare limestone pavement and calcareous grasslands dominate much of the southern part of the site. Along the lower slopes of some of the hills to the north, Hazel and Ash have reached a sufficiently significant height to be considered as woodland, a rare habitat in the context of the Burren. Many inland cliffs occur throughout the site, generally unvegetated but in places supporting a thick scrub cover with Hazel, Ivy (Hedera helix), Blackthorn and wild roses (Rosa spp.). These provide good sites for small breeding birds. Exposed outcrops of granite support a rich lichen flora. Muckinish Lough, which occurs close to Pooldoody Bay, is a small but important example of a turlough. This appears to be a transitional system from a turlough to a natural rock lagoon in karst. It receives seawater that probably enters through fissures in the

limestone. The lake becomes very shallow in summer and may dry out completely at times. Aquatic vegetation includes Tassleweed (Ruppia spp.) and Fennel Pondweed (Potamogeton pectinatus). This is considered an extreme in the range of turlough types in Ireland The rare plant species, Intermediate Wintergreen (Pyrola media), occurs among heath vegetation on higher ground within the site. This species is listed in the Irish Red Data Book. A breeding colony of Lesser Horseshoe Bats occurs within the site. More than 60 individuals were counted in 1998. The bats inhabit a semi-derelict cottage and a nearby out-building. Lesser Horseshoe Bat is listed on Annex II of the E.U. Habitats Directive. The dense hazel scrub provides ideal cover for mammals. Both Pine Marten and Badger have been recorded from this site. Both species are listed in the Red Data Book as threatened in Europe. The scarce butterfly, Marsh Fritillary (Euphydryas aurinia), has been reported from the site; this species is mostly found in areas where its food plant, Devil's-bit Scabious (Succisa pratensis), occurs commonly. Marsh Fritillary is listed on Annex II of the E.U. Habitats Directive. Breeding Cuckoo and Whitethroat are plentiful in this area, as are Yellowhammer, Stonechat and Wheatear. The area is very rich in entomological terms, with a number of species of butterfly and moth which are known in Ireland only from the Burren. Most of the site is grazed by cattle (particularly in the winter) and also by sheep and goats. The effects of both over-grazing and under-grazing are visible in places. Intensification of agriculture has caused damage to parts of the site, while clearance of scrub and limestone pavement represent the main threat to the remainder. The practice of winter grazing at appropriate stocking levels and of suitable duration must be maintained to preserve the species richness and diversity of these grasslands. Large silage pits and cattle feeding rings situated in sensitive areas directly on the pavement pose a threat to the water quality of the area. This site is of international scientific importance owing to the presence of fine examples of typical Burren habitats, including several habitats listed on Annex I of the E.U. Habitats Directive. The limestone pavement and heath are particularly noteworthy. The presence of a substantial summer colony of Lesser Horseshoe Bat is also of note and the site is, furthermore, of high amenity and scenic value.

APPENDIX II

VISITOR ATTITUDES SURVEY Poulnabrone 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
79	14	7		

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	4	2	1	0	4	1	15	37	36

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	6	15	43	36

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	0	1	5	56	38

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

Yes	No
99	1

6. **Have you read the information on them?**

Yes	Partially	No
89	6	5

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
0	0	0	39	61

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
27	62	0	0	4	2	0	2	2

APPENDIX III

Visitor observations findings at Poulnabrone (ZH 18-9-2014)

1. Survey Detail

Site Id : P	Date Of Survey	Day of Week	Duration of Survey	Weather	No of people observed
	18-9-14	Thursday	10.30am-14.30pm (4 hours)	Dry and Cloudy	283

2. Number of Observations, gender and group breakdown

Number of people observed	Total number of females	Total number of males	Number of groups	Average group size
283	135	148	19	See comment below

Comment: There are two different types of groups – the coach tours and the FIT – the average group size for coaches is 30 people and for the FIT is 3 people.

Due to number of coach tours it was difficult to determine the breakdown of gender in many of the tours and so these figures are approximate.

3. Mode of transport, Time Spent on Site and Main activity, group and age demographic

Date of observation	Obs group id	Time spent on site (hours:minutes)	Group type	Age demographic	Mode of transport	Main activity	Observed impacts
18-9-14	P1	00:25	10M:8F	30-65	Coach	Viewing monument Guided talk taking photos Walking about	Walking on limestone pavement
	P2	00:11	2M:2F	40-50	Car	Viewing monument taking photos Walking about	Walking on limestone pavement.
	P3	00:12	1M:1F	50-55	Car	Viewing monument taking photos Reading panels	None
	P4	00:04	1M:1F	50-55	Car	Viewing monument taking photos	None
	P5	00:05	1M:2F	20-25	Car	Viewing monument taking photos walking about	Walking on limestone pavement.
	P6	00:19	7M:8F	12-16	Coach	Viewing monument taking photos Sitting on rocks Walking about	Walking on limestone pavement. Jumping on rocks Picking up stones and banging them Littering Climbing into doline

	P7	00:10	20M:20F	7-65	Coach	Viewing monument taking photos Reading panels Walking about	Walking on limestone pavement. Jumping on rocks Walking around doline
	P8	00:15	50M:40F	30-65	Coach	Viewing monument taking photos Walking about	Walking on limestone pavement.
	P9	00:07	2M:2F	40-50	Car	Viewing monument taking photos Walking about	Walking on limestone pavement
	P10	00:08	2M:2F	60-65	Car	Viewing monument taking photos Reading panels Walking about	Walking on limestone pavement Picking vegetation
	P11	00:08	1M:3F	40-45		Viewing monument taking photos Reading panels Walking about	Walking on limestone pavement
	P12	00:11	3M	30-35		Viewing monument taking photos Reading panels Walking about	Walking on limestone pavement
	P13	00:04	6M:6F	15-60		Viewing monument taking photos Walking about	Walking on limestone pavement
	P14	00:15	1M:1F	40-45		Viewing monument taking photos Reading panels Walking about	Walking on limestone pavement
	P15	00:12	1M:1F	30-35		Viewing monument taking photos Walking about	Walking on limestone pavement
	P16	00:33	15M:15F	30-65		Viewing monument taking photos Reading panels Sitting on rocks listening to guide Walking about	Walking on limestone pavement
	P17	00:24	20M:20F	30-65		Viewing monument Listening to guide taking photos Reading panels Walking about	None
	P18	00:13	3M:2F	20-30		Viewing monument taking photos	Walking on limestone pavement

						Reading panels Walking about	
	P19	00:16	2M:1F	55-70		Viewing monument Reading panels Walking about	None

Summary

Main Activities undertaken by observed visitors:
Viewing monument
Viewing wider landscape around monument
Listening to guided talk
Taking photographs
Reading panels
Sitting on rocks

Mode of transport:
Coach
Car
Push bike
Motorbike

Average time spent on site: 13 minutes

Note: Guided coach tours would appear to spend the most time on site and they generally arrive in the middle of the day between 12 noon and 2pm (observation and site warden comment).

4. Time spent reading Information Boards

Observation group Id	Time spent reading information boards (mins:secs)
P1	0
P2	0
P3	05.00
P4	0
P5	0
P6	0
P7	03:00
P8	0
P9	0
P10	00:40
P11	0
P12	02.00
P13	0
P14	00:30
P15	0
P16	00:40
P17	05:00
P18	00:30
P19	07.00

Average time spent reading panel: 9 groups were observed reading the panels. The average time spent at this activity was 2 minutes 42 seconds.

5. Impacts Observed

Walking on limestone pavement.

Jumping on rocks

Picking up stones and banging them

Littering

Climbing into doline

Picking vegetation

Note: It is necessary to walk on the limestone pavement to view the monument. The impact of walking on the limestone pavement was only noted if the visitor strayed off the designated pathways and area immediately surrounding the monument.

Comment: Sample size is too small to use percentage as reliable result.

6. Time of day of arrival at site (observation study duration: 10.45-14.30 hours)

Observer Group ID	Time of Arrival at site
P1	10.55am
P2	11.14am
P3	11.26am
P4	11.35am
P5	11.37am
P6	11.39am
P7	12.21pm
P8	12.28pm
P9	12.35pm
P10	12.43pm
P11	12.47pm
P12	12.56pm
P13	12.58pm
P14	13.05pm
P15	13.12pm
P16	13.19pm
P17	13.21pm
P18	13.51pm
P29	14.00pm

Comment: Times of arrival indicate a continuous flow of visitors throughout the observation period.

7. Visitor Movement Pattern

Observed movement patterns – dark blue line show core movement area; lighter blue peripheral areas