

# Report on People Counters for GeoparkLIFE project

## September 2014-September 2015

As part of the GeoparkLIFE monitoring programme for demonstration sites in the Burren it was decided that monitoring trends of visitor numbers at these sites continuously, over a period of several years, was vital to inform any strategy on conservation. Apart from locations in the Burren National Park, there were no figures for visitor numbers to any of the other demonstration sites. While Aillwee Cave have good numbers for the cave, they had no numbers for their outdoor mountain trail.

Following a call for quotations for the supply of people counters, MCA consulting was awarded the tender to supply and install 18 people counters at GeoparkLIFE demonstration sites across the Burren. Seventeen counters were installed in two periods in September and November 2014. Due to location difficulties at the Black Head location only one counter was installed instead of the planned two counters. Due to the nature of access to Caherdunirgus and the hilltop cairn there is no single path for walkers and no good location for a people counter.

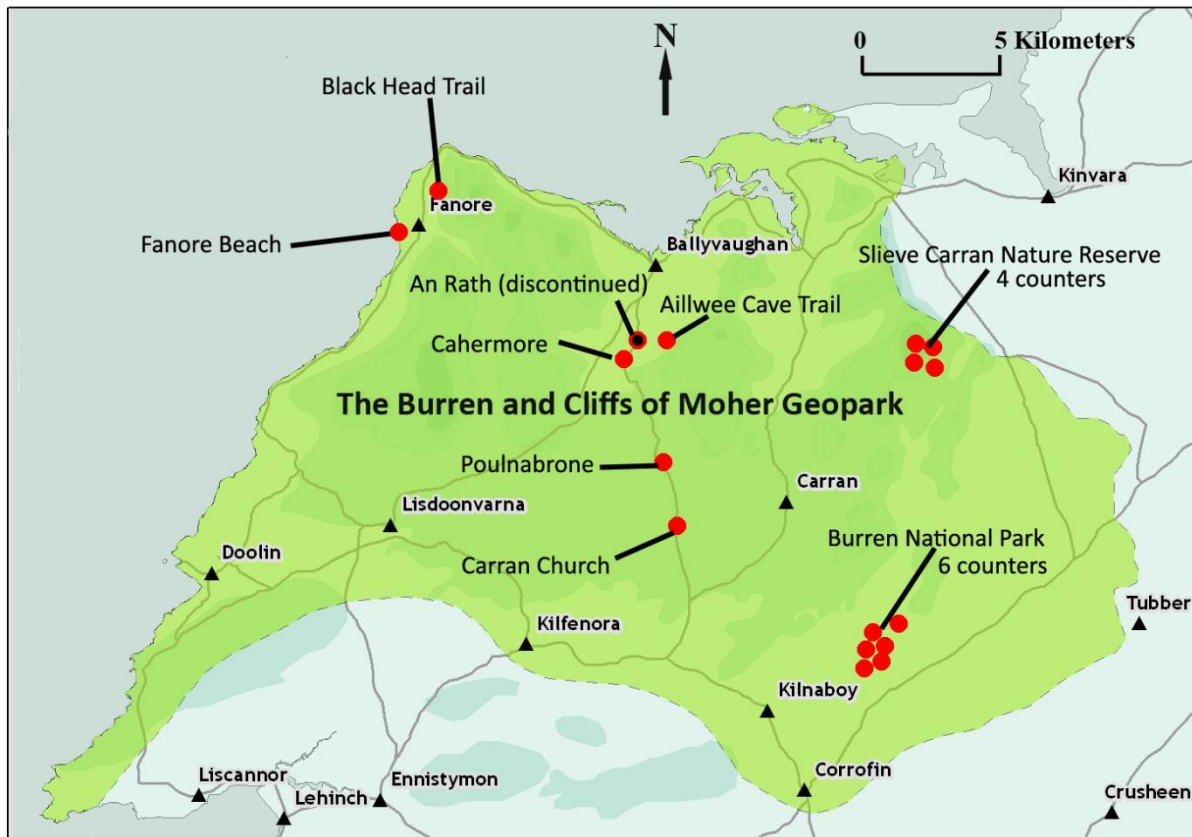
Counters were installed at the following locations:

GeoparkLIFE Demonstration Site	Location	Date installed
Aillwee	Start of Mountain Trail	September 2014
An Rath	Inside stile (now removed)	September 2014
Black Head	Inside first stile on looped walk	November 2014
Cahermore	Few metres inside stile	September 2014
Carran church	Inside stile	September 2014
Fanore Beach	On steps down to beach	September 2014
Poulnabrone	At sign near gate/post on pathway	September 2014
Slieve Carran Nature Reserve (4)	At second stile on Oratory trail	September 2014 (SCAR1)
	On return loop at Bothar na mais	September 2014(SCAR2)
	BurrenLIFE sign at roadside stile east	September 2014(SCAR3)
	BurrenLIFE sign at roadside stile west	September 2014(SCAR4)
Burren National Park (6)	Green Nature Trail (Gortlecka)	September 2014(NPGR)
	Trail Head for Mullaghmore trails	September 2014(NPTH)
	Blue Trail near end of return loop	November 2014(NPBL)
	At Coolorta sign/1 km from Coolorta	November 2014(NPRED)
	Main Trail passing Lough Gealain	November 2014(NPLAKE)
	Yellow Nature Trail (Gortlecka)	November 2014(NPYEL)

The counter at An Rath was removed in June 2015 after the site was closed by the OPW for health and Safety reasons relating to access. It is not known when this site will be open to the public again.

The counters in the Burren National Park have replaced previous NPWS counters and this data is now being supplied to the NPWS by the Geopark, in addition to data from the counters in the Slieve Carran Nature Reserve which previously had no counters.

Fig 1 Map of GeoparkLIFE counter locations.



## The Counters

The counters operate using Passive Infra Red technology and register an event by detecting a change in temperature as a person passes. The data is collected on data cubes which is read and processed by ECoPC and NUMERO software on a PC in office. Data can be analysed at yearly, monthly, weekly, daily or hourly levels.

For walks where it is probable a walker will pass twice (ie entering and return) a correction factor of 0.5 is applied to the data to account for people passing the counter twice.

The counters are battery-operated and while the batteries can last for six months or more they need to be checked at least every three months, particularly at busy sites such as Poul nabrone.

Data is currently collected every three months but can be collected daily or weekly or at any interval as required, battery life being the only constraining factor.

The counters are mounted in black recycled plastic posts and are weather-proof and relatively unobtrusive, being of a similar design to directional marker posts on way marked trails in the area.

Fig. 2 Example of people counter in black recycled plastic post



## The Data

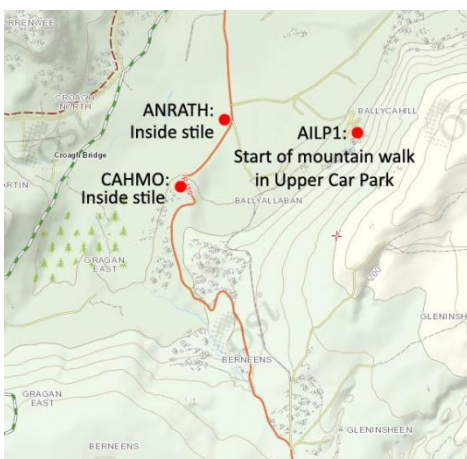
The following graphs show the monthly data collected for the 17 demonstration sites from the period September 2014-September 2015. Note that some counters were not installed until November 2014. The graphs show good correlation with expected trends in visitors, increasing steadily from a low in Nov-Jan to a maximum in August and then an abrupt fall off in numbers. As the data for September 2015 is incomplete (collected 23<sup>rd</sup> -25<sup>th</sup> September) this abrupt fall off is likely to be a little less abrupt when the full data are incorporated.

\*Note all graphs have different vertical scale due to the variety of numbers at different sites.

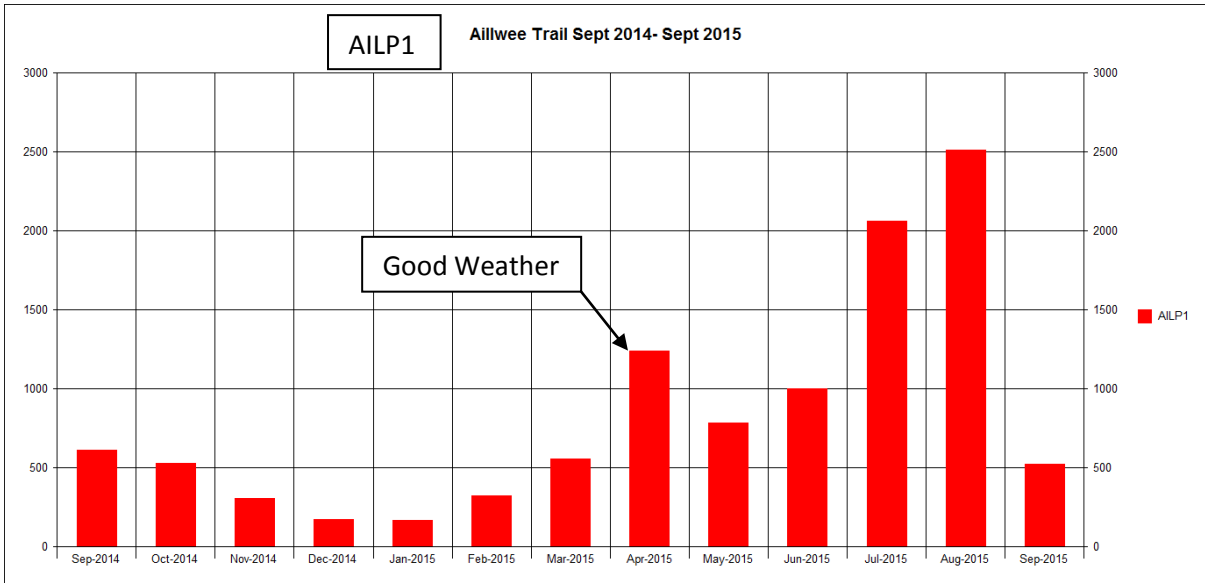
An example of hourly data from Fanore Beach is included on page 12.

A total of 406,468 counts were registered by all installed counters. Note that this figure includes errors as outlined below (p.13). Most recent data collected 3<sup>rd</sup> week of September so the totals for September will rise when further data is collected.

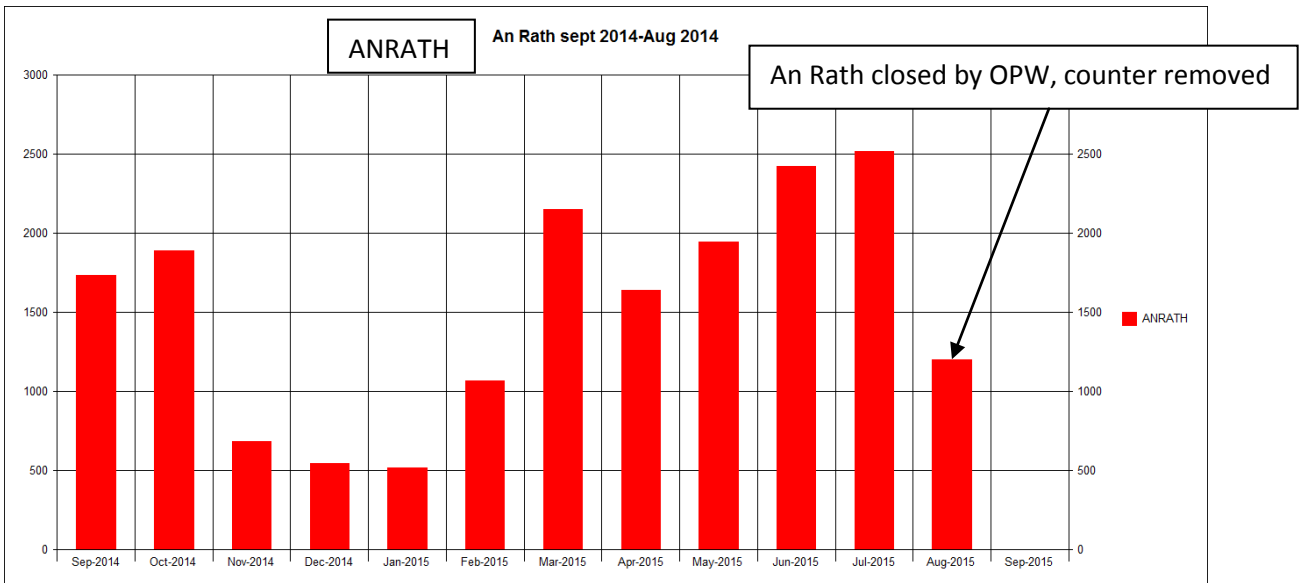
## Counter locations and data charts



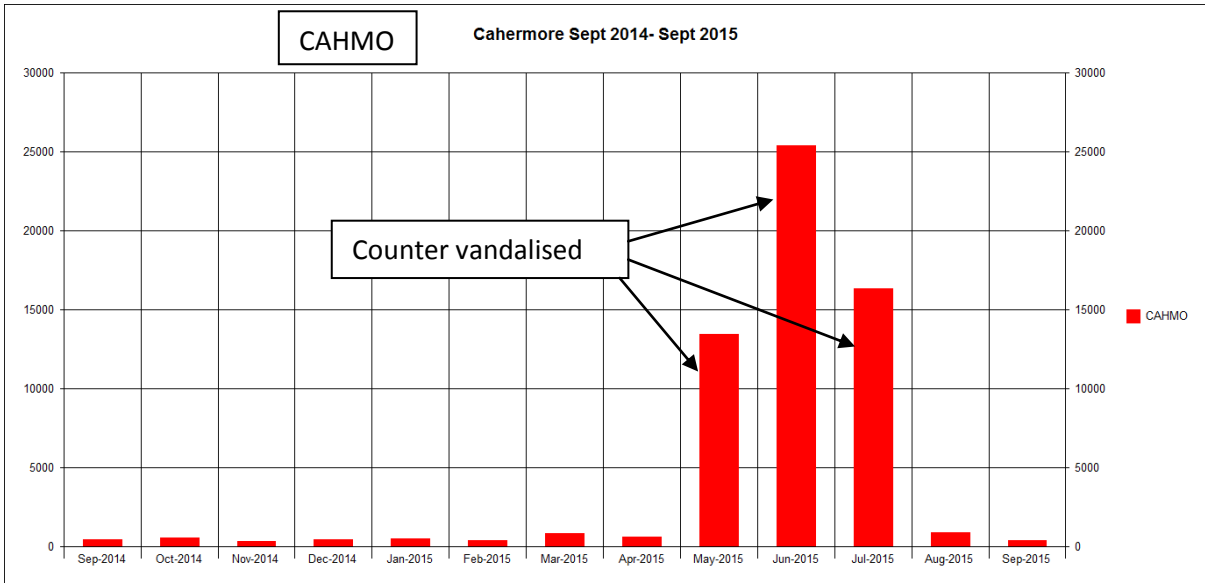
Location map for counters at An Rath (ANRATH), Cahermore (Cahmo) and Aillwee (AILP1)



Total number for year: 10,796      Highest monthly total : Aug – 2,514 (23% Total)



Total number for year: 18,317      Highest monthly total : July – 2,516 (August data incomplete due to closure).



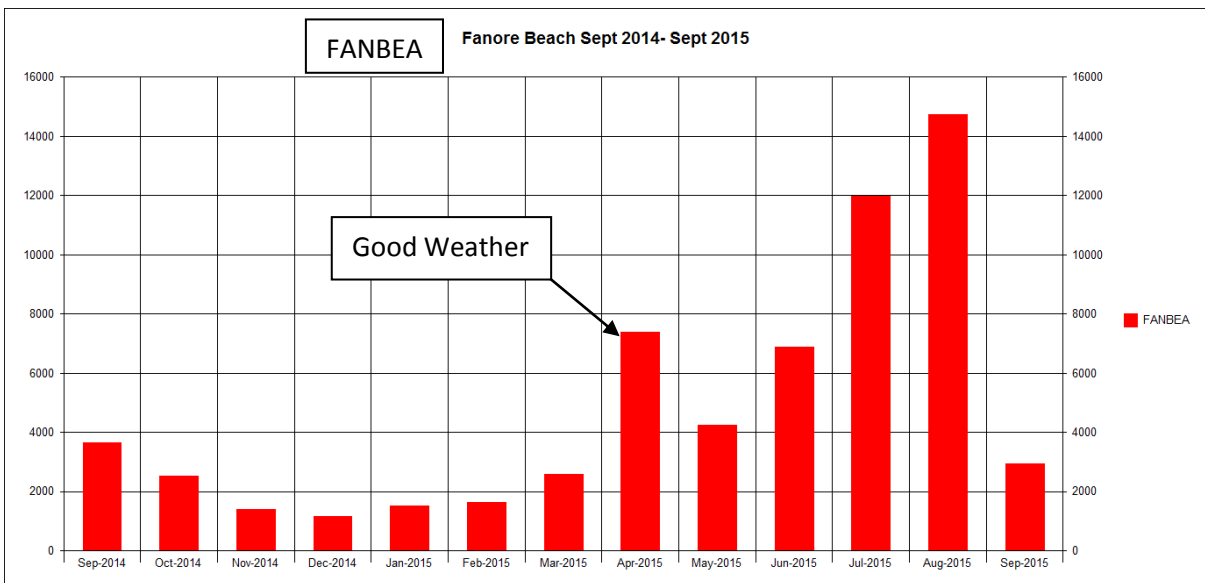
Total number for year: 7,100\* estimated due to May/June/July error

Highest monthly total: August\* - 906 (13% Total)

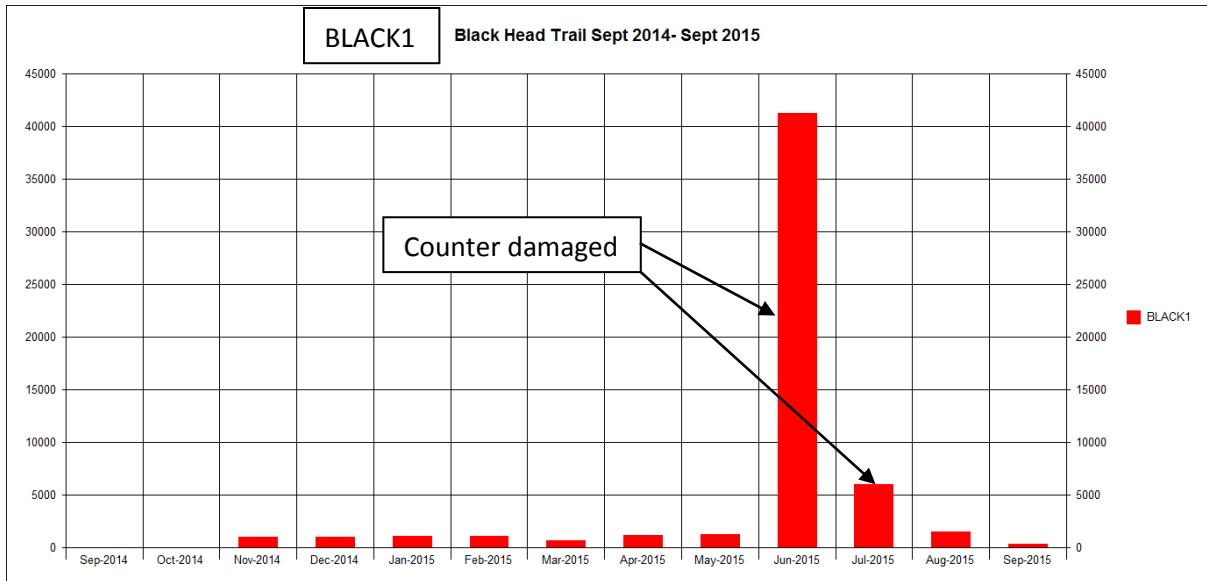


Counter locations at Fanore Beach (FANBEA) and Black Head

Trail (BLACK1).

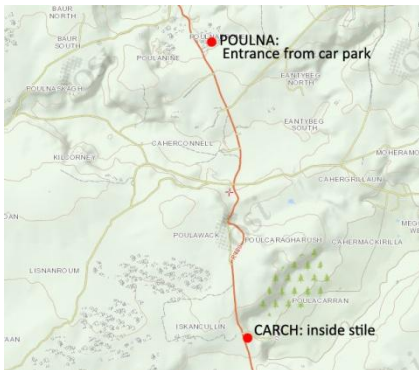


Total numbers for year: 62,667 highest monthly total: Aug – 14,727 (23% Total)



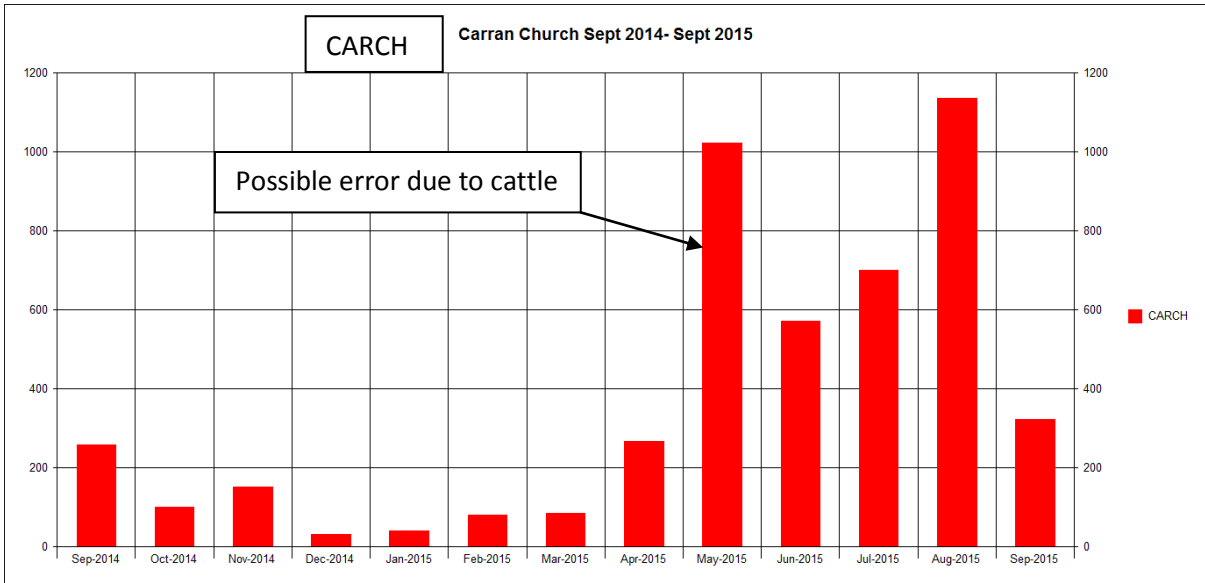
Total number for year: 12,100\*estimated due to June/July error

Highest monthly total : Aug – 1,488 (12% Total)

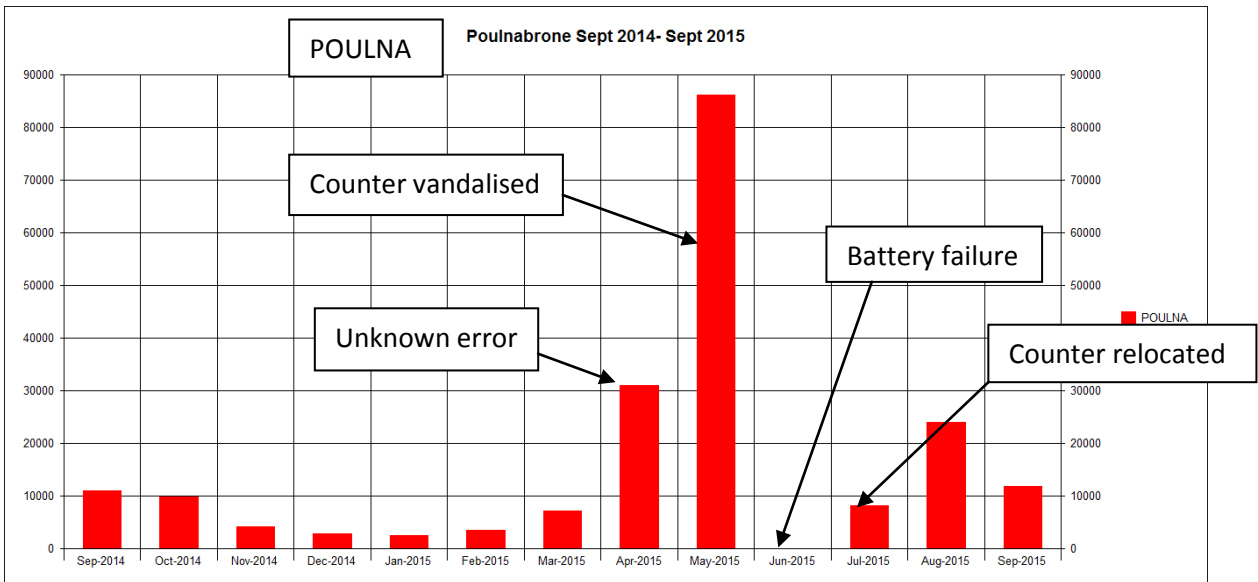


Counter locations at Poulnabrone (Poulna) and Carran Church

(CACH)

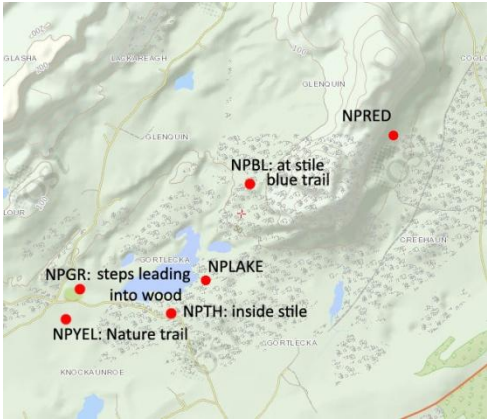


Total number for year: 4,770 Highest monthly total: Aug 1,135 (24% total)

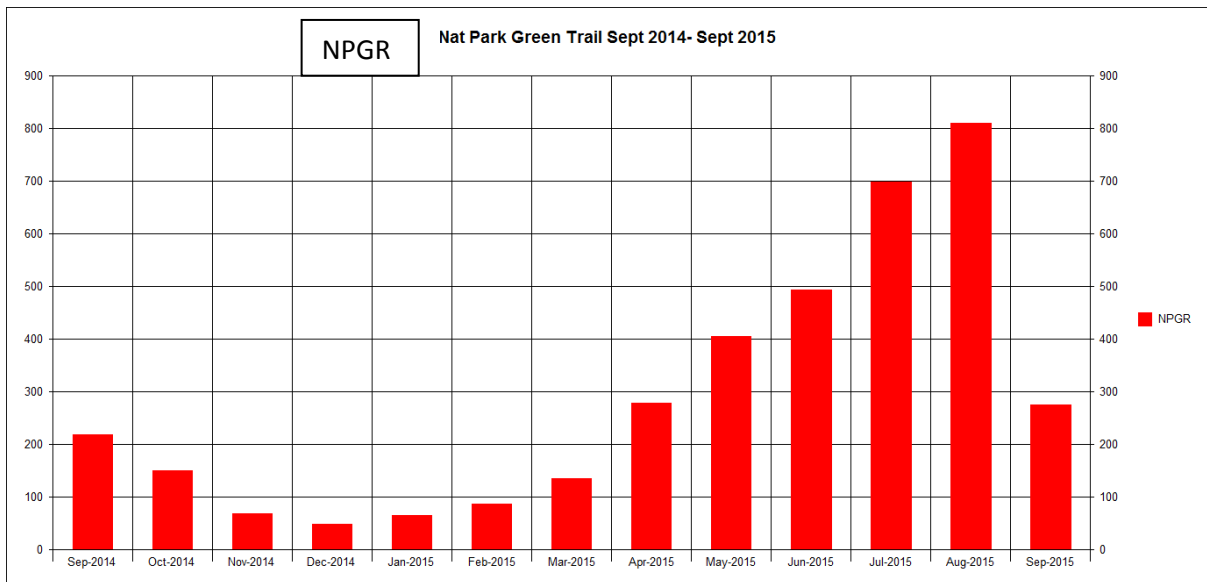


Total number for year: 157,000 \*Estimated Highest monthly total: \*Aug – 25,000 (16% Total)

\*The counter at Poulabrone was vandalised in May, this was witnessed by the trader who is located in the car park. Other unknown errors occurred in April; the counter recorded high numbers for some nights and no numbers for some days.

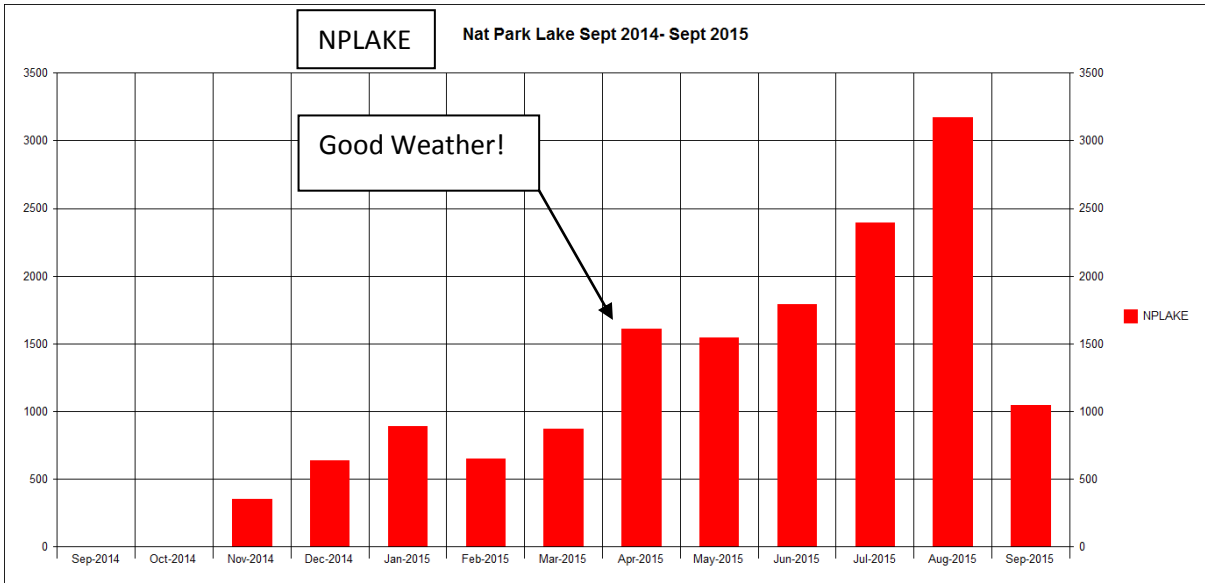


Counter locations in Burren National Park

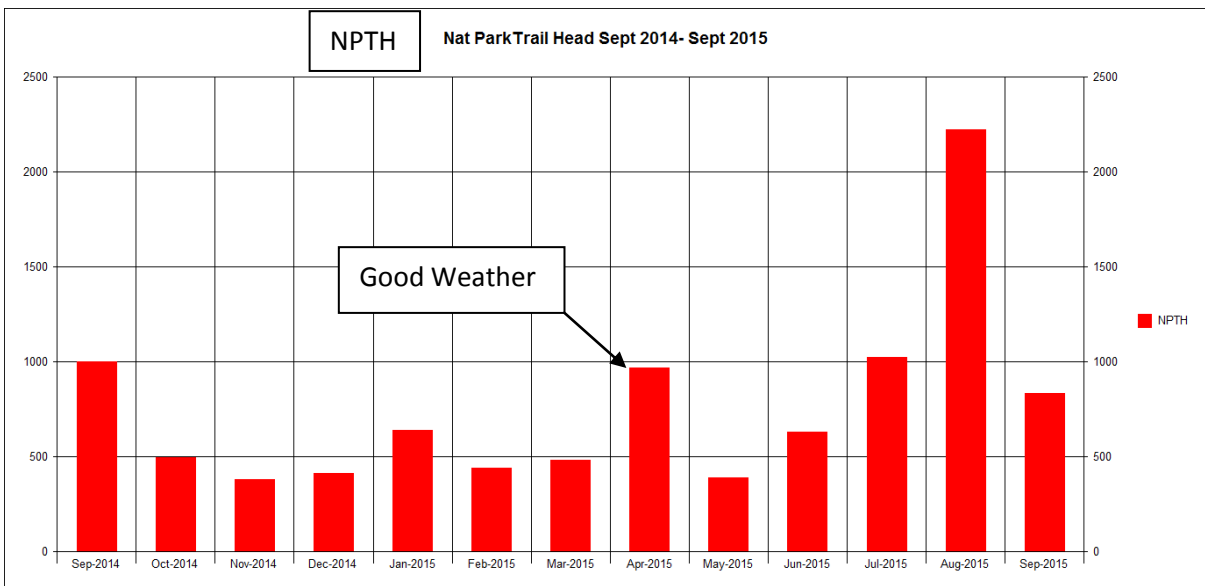


Total number for year: 3,732 Highest monthly total: Aug – 811 (22% total)

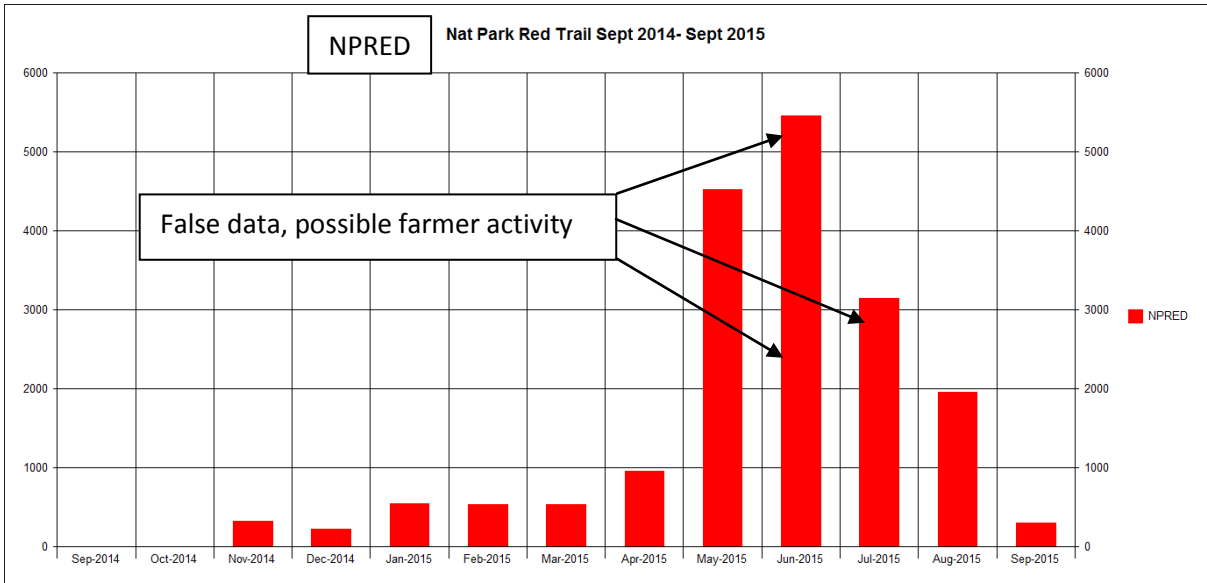




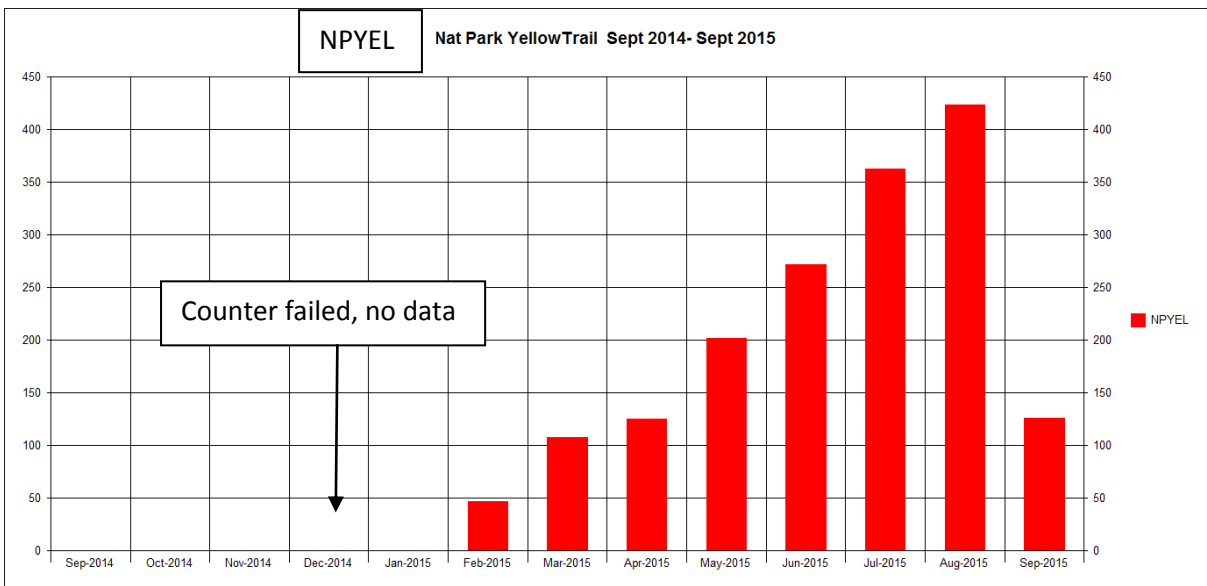
Total number for year: 14,947 Highest monthly total: Aug- 3,170 (21% Total)



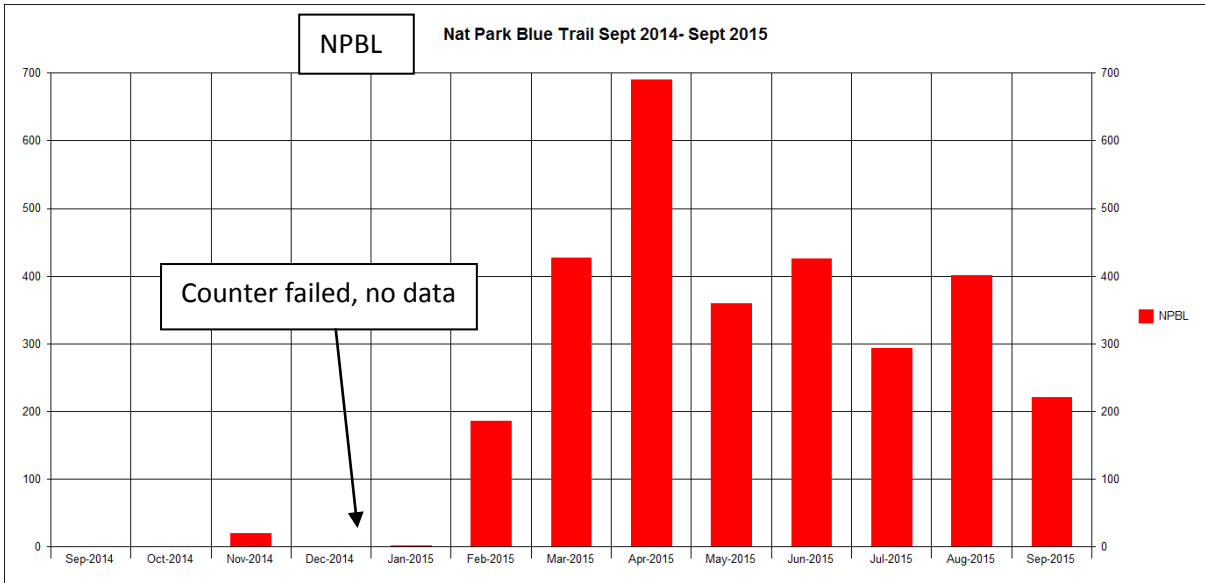
Total number for year: 9,921 Highest monthly total: Aug – 2,222 (22% Total)



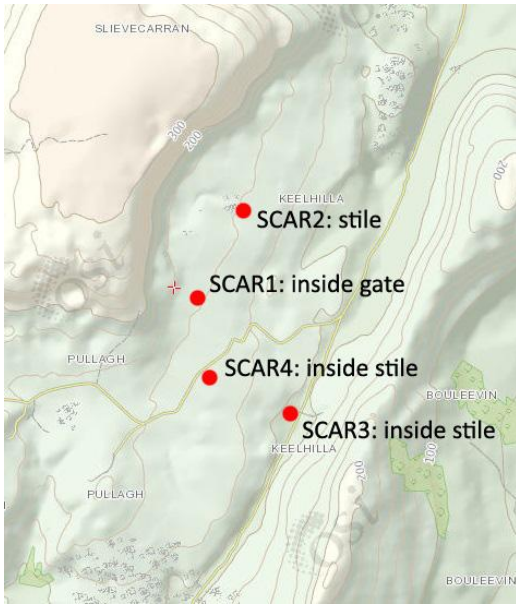
Total numbers for year 7,477\*Estimated



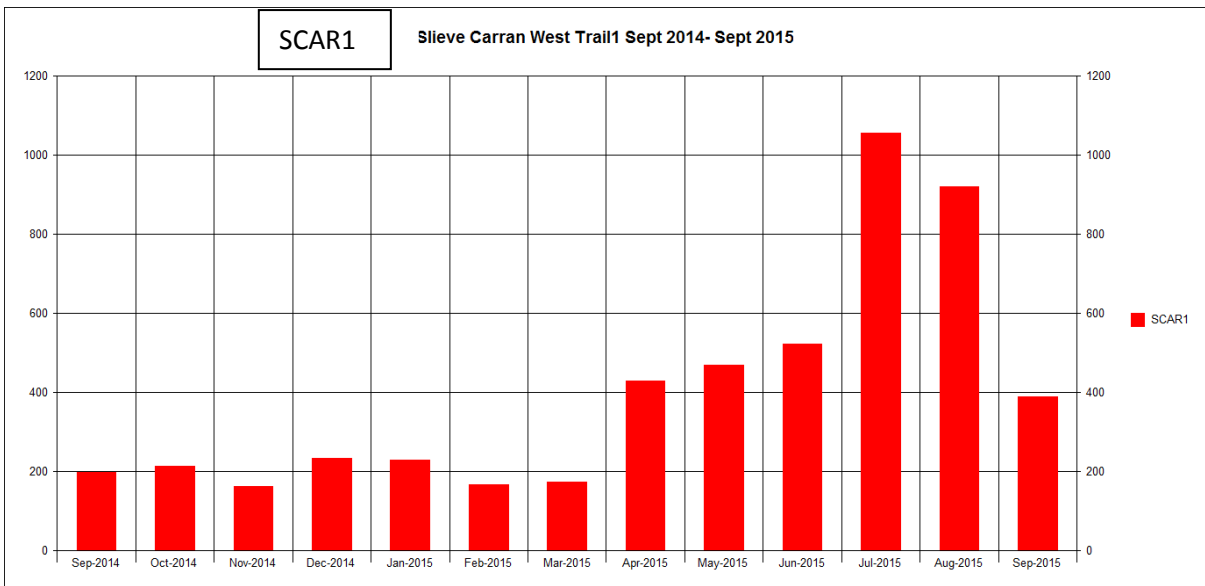
Total number for year: 1,800 \* estimated. Highest monthly total: Aug- 424 (24% Total)



Total numbers for year: 3,021 (incomplete) Highest monthly total: April – 690 (23% Total)

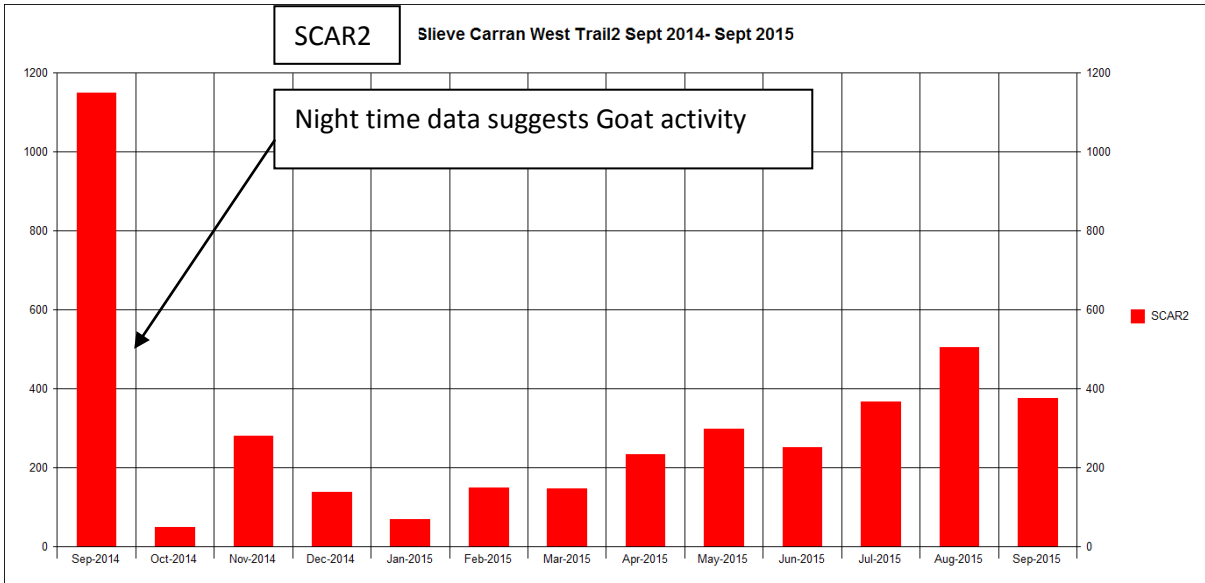


Counter Locations at Slieve Carran Nature Reserve

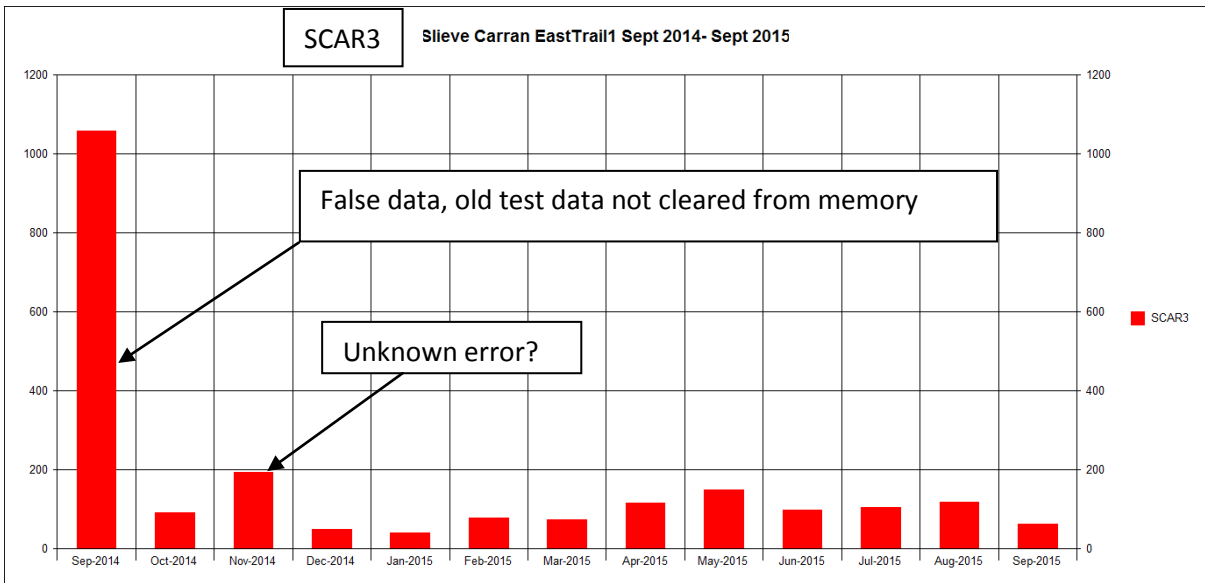


Total numbers for year: 5,163

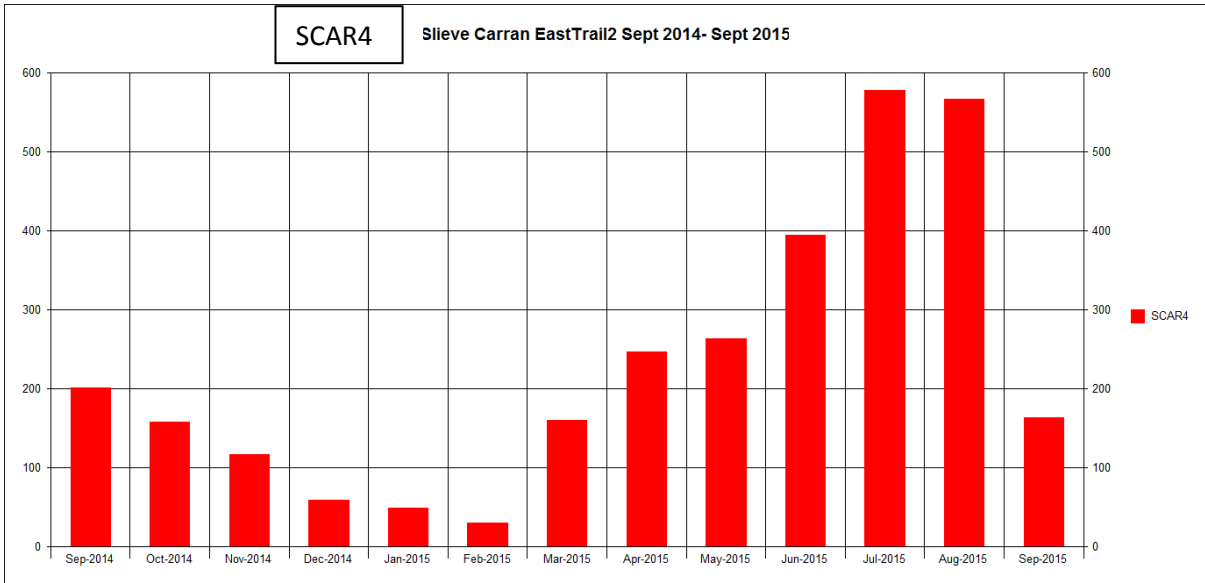
Highest monthly total: July – 1,052 (20% Total)



Total numbers for year: 2894 (excl goat numbers) Highest monthly total: Aug-504 (17% Total)

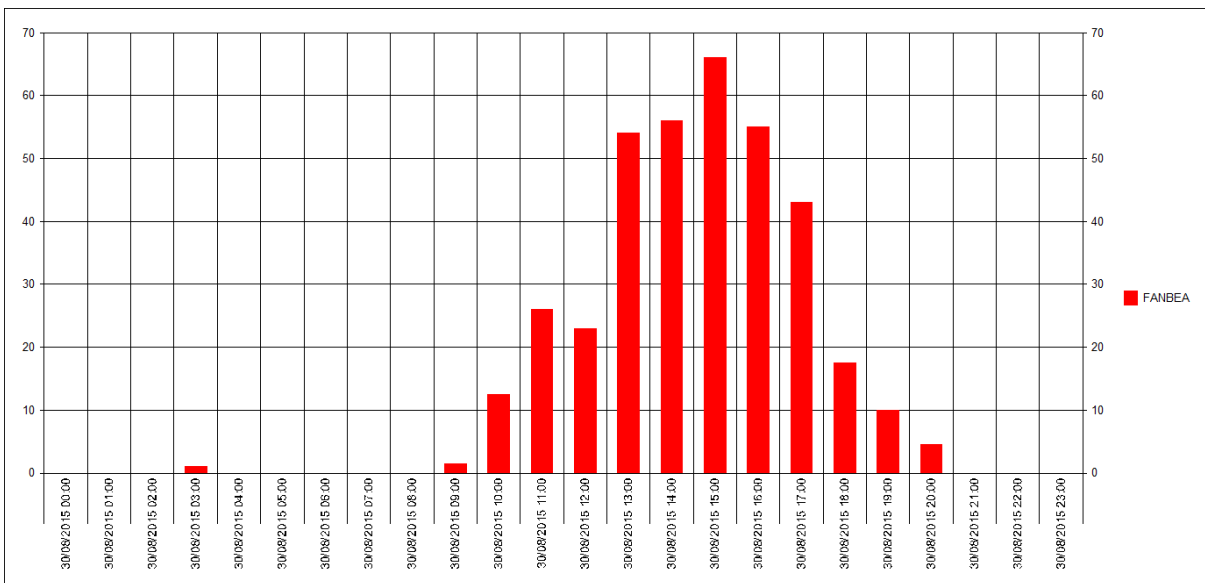


Total numbers for year: 1,260 (excluding old data) Highest monthly total: ? Nov 194 (15% Total)



Total numbers for year: 2,987      Highest monthly total: July- 578 (19% Total)

Fig. 3 Example of hourly data from Fanore Beach (30/8/2015)



## **Technical Issues**

There have been a number of technical issues with the operation of the counters which have been largely resolved these include; counters not collecting any data, vandalism and sensitivity settings on counters. The vandalised counters (Poulnabrone and Cahermore) have been replaced. The damaged counter at Black Head has also been replaced. While vandalism is not covered in the contract the cost of replacing the units (€100 each) was waived as a good-will gesture by the suppliers.

## **Re-positioning of counters**

The counters at Poulnabrone and the Red Trail in the Burren National Park have been moved since their initial installation. The counter at Poulnabrone was moved from the car park near the entrance to the OPW managed part of the site due to the regular presence of a trader who occupies various positions at that location; this was influencing visitor movement and behaviour which was compromising data. The counter has been moved and it is now attached to a fence post along the narrow pathway leading to the dolmen. The narrow pathway is the optimal location for the counter.

The counter at the Red Trail in the Burren National Park was originally installed close to the signage, near the road. It has now been moved to approx 1km up the trail to the position of a previous NPWS counter for continuity of data. This also eliminates readings from farming activity near the gate.

## **Young Scientist Competition project.**

Students at Lisdoonvarna Secondary School are using the people counters for a project submitted to the BT Young Scientist of the Year competition. The students will do visual observation of visitor numbers and visitor behaviour (based on the template developed by GeoparkLIFE in cooperation with the Failte Ireland Wild Atlantic Way project) as well as a variety of tests on what other events can trigger the counters and compare their records with counter records and then calculate a correction factor as required for each site,

## **Maintenance and Management**

Collection of data requires approximately 10 minutes at each counter. As the counters are spread across the Burren, this means a full day is needed to visit all 16 counters. There is no particular need to collect the data from all counters on the same day so data can be collected over a number days; as the electronic components of the counters should not be exposed to rain, this may be a necessity.

Currently data is collected every three months, given the issues with vandalism it is recommended that data should be collected monthly.

Processing of collected data requires one further day to assess data quality and prepare graphs as required

Data is currently collected and processed by the Geopark geologist. The suppliers of the counters offer a data collection and processing service that would cost €90 per counter, they recommend two data collections per year which would cost €3542.4 per year (includes VAT @23%) for the currently operating 16 counters.

However given the incidence of vandalism and other errors that we have encountered it is suggested in this report that more frequent (preferably monthly) maintenance and data checking is carried out.

### Cost of Counters

<b>Supply , delivery and installation and training for 18 people counters</b>	<b>Price</b>
<b>Costs of 18 people Counters</b> €875 x 18 (Price includes option of 4 housings plastic post/alloy box/pellicase buried/1 pressure slab)	€15,750
<b>Cost of required software/hardware</b> 1 no. software license €750 1 no. memory cube reader/control box €540 1 no. battery tester €25 1 no. access pin torx screwdriver €15	€1,330
<b>Cost of Installation of 18 people counters</b> Delivery and installation of 18 no. counters €75 x 18	€1,350
<b>Cost of staff training</b>	€550
Sub TOTAL	€18,980
VAT @ 13.5% Supply and installation	€2,562.30
<b>TOTAL</b>	<b>€21542.30</b>