

# Mayo International Dark Sky Park

---

## Annual Report for International Dark-Sky Association

---

Prepared by G. MacMillan  
October 2017



## Table of Contents

General.....	3
Lightscape Management Plan.....	4
Community Lighting .....	7
Raising Awareness/Public Policy .....	9
Funding & Support.....	9
Sky Quality .....	10
Arts and Culture.....	13
Mayo Dark Sky Festival .....	13
International Dark Sky Week .....	14
Other events: .....	14
Outreach Projects and Development .....	15
Mayo Dark Sky Park Website .....	15
Dark Sky Ambassador Programme .....	16
Light Pollution Workshops .....	16
Citizen Scientist Programme .....	17
Memberships and Partnerships.....	18
Community and Media Relations.....	19
Newport Astronomy Club.....	19
Ballycroy Astronomy Group.....	19



## General

Mayo Dark Sky Park, located in the West of Ireland, received accreditation as a Gold Tier International Dark Sky Park in May 2015. The 15,000 hectare site is nestled between the remote Nephin Beg Mountain Range and County Mayo's rugged Atlantic coastline. Its borders encompass both Ballycroy National Park and Wild Nephin.

The dark sky application was the result of a collaborative project between local communities, National Parks and Wildlife Service (Dept. of Culture, Heritage and the Gaeltacht), Mayo County Council and Coillte Forestry.

National Parks and Wildlife Service (NPWS) at Ballycroy National Park manage the dark sky site. Friends of Mayo Dark Skies (an IDA Chapter and Community Group) provides support in developing educational and outreach events and works closely with local authorities in support of the IDA objectives.

### Contacts:

Susan Callaghan District Conservation Officer National Parks and Wildlife Service Ballycroy National Park Lagduff Mór Ballycroy Co. Mayo Tel : 0761 002 520 Email: Susan.Callaghan@chg.gov.ie	Georgia MacMillan Development & Compliance Friends of Mayo Dark Skies 2 Acres Grove Newport Co. Mayo Tel: 086 859 5166 mayodarksky@gmail.com
---	---

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)



## Lightscape Management Plan



In the 2016 application for Dark Sky status the lighting compliance level within the proposed dark sky site was 84% with a commitment to reach 100% compliance within 2 years. We are pleased to report that this has been successfully achieved with lighting upgrades at two sites.

The two sites in question are Ballycroy National Park Visitor Centre and NPWS Ranger's Offices in Lagduff.

Visitor Centre:

Fixture Make & (Wattage)	Quant.	Application/Curfew in place	Compliance	Update Status for Annual Report 2017
Vik HPS (70W)	5	Not in use at any time - requested removal asap	YES (update since 2016)	Removal completed. Status update
Disano Faro 1230 (18W)	18	Walkway bollards only in use during open events. Curfew in place for all other times.	Yes	Replaced with Warm White Astrotek POLE E 5702/LBC bollards. Curfew remains in place.
WE-EF 108-0010 PFL240 (150W)	24	Car park lighting as prescribed upon original building spec in 2009. Only in use for open events. Curfew in place to switch off when building not in use.	Yes	No Action. Curfew remains in place.
Bulkhead (8W)	2	Curfew in place to switch off when building not in use. Replacement downlight requested.	YES (update since 2016)	Replaced with hooded downlights - Civic Apollo. Fully Compliant

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)

Old bollard at Visitor Centre	Replacement bollards installed
	

#### Lagduff Offices:

Fixture Make & (Wattage)	Quant.	Application/Curfew in place	Compliant	
Entrance/Doorway Bulkhead type (18W) under soffits	6	Curfew in place to switch off when building not in use.	Yes (Updated since 2016)	Replaced with fully shielded Civic Apollo lights and PIR sensors
WE-EF 108-0010 PFL240 (150W)	1	Not in use. Originally installed for security purposes, requested removal.	Yes (Updated since 2016)	Removal completed
Gable end bulkheads	3	Requested removal or replacement with downlight/compliant.	Yes (Updated since 2016)	Replaced with downlight shielded GE Fixtures.

Light fitting Lagduff Before	After
	
	

Lighting within these two sites is the responsibility of the National Parks and Wildlife Service, who outsource the duties for maintenance of external lighting to the Office of Public Works (OPW), a government owned service organisation providing Estate Portfolio Management and Flood Risk Management Services across Ireland.



## **Community Lighting**

As outlined in the Application for Dark Sky Status, the Public Sector has been challenged to reach energy-efficiency savings of 33% by 2020 as outlined in a National Energy Efficiency Action Plan. Lighting retrofits and upgrades are currently taking place across the county of Mayo. The Friends of Mayo Dark Skies has requested Mayo County Council examine the use of blue-rich LED lighting and consider warmer colour tones. It has also recommended that Mayo County Council apply environmental lighting zones in public areas (as provided in the ILP guidance documents).

Due to lack of national guidelines for local authorities, Mayo County Council cannot provide a blanket commitment for lighting models and fixture types to be used in retrofits. However, they have agreed to support the dark sky project as far as possible, especially in areas neighbouring the dark sky park and are working with Friends of Mayo Dark skies community group.

In 2016, six public lights were retrofitted in a small residential development in Ballycroy village (adjacent to the Dark Sky Park). The former unshielded lights were replaced with LEDs, with the intention of making the development more dark sky friendly. However, the new lights were brighter than the former (at 4000 Kelvin) and the height of light fitting also increased. Mayo County Council committed to replacing these with LEDs before end October 2017. It has recently been confirmed that the replacements will be Phillips UniStreet LEDs (3000k warm white) and also with 50% dimming from 12-6am.

A change of lighting within the local graveyard in Ballycroy village. At the time of Dark Sky application, an agreement to curfew the lighting in the local cemetery was reached. However, the lighting fixture in use was excessive for its purpose at any time. We are pleased to report that this

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)





### *Mayo Dark Skies*

500W Halogen uplighter has since been replaced with a 5W directional warm-white light. The light is controlled manually and only switched on when needed.

Graveyard Light Before	Graveyard Light After
	
	

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)





### **Raising Awareness/Public Policy**

Some progress has been made on the inclusion of Dark Skies on the public documents/projects as well as guidelines for light pollution:

- Commitment from Mayo County Council to include Light Pollution in Development plan & Heritage Plan
- Mayo County Council - inclusion of Light Pollution Guidelines on County Council Website.
- Submission on light pollution and biodiversity made to National Biodiversity Action Plan
- Light Pollution Mapping Project - part of Heritage Council funded community project.
- A Dark Sky action plan has been prepared and circulated to Mayo County Council to engage stakeholders, particularly in relation to artificial lighting matters.

### **Funding & Support**

The following funding &/or support sources were provided to the Friends of Mayo Dark Skies Community Group:

- Mayo County Council - funding for the Mayo Dark Sky Ambassador Course pilot scheme which took place in January 2017.
- Local Agenda 21- funding was provided to the project for light pollution measurements workshops and equipment and to fund the costs of visiting speakers and educational events (Project running 2017/2018).
- The Heritage Council - Mapping Light Pollution in Co Mayo - scaled down project based on CPRE's Night Blight Report and mapping and Event funding for Mayo Dark Sky Festival (Project timeline 2017/2018)

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)



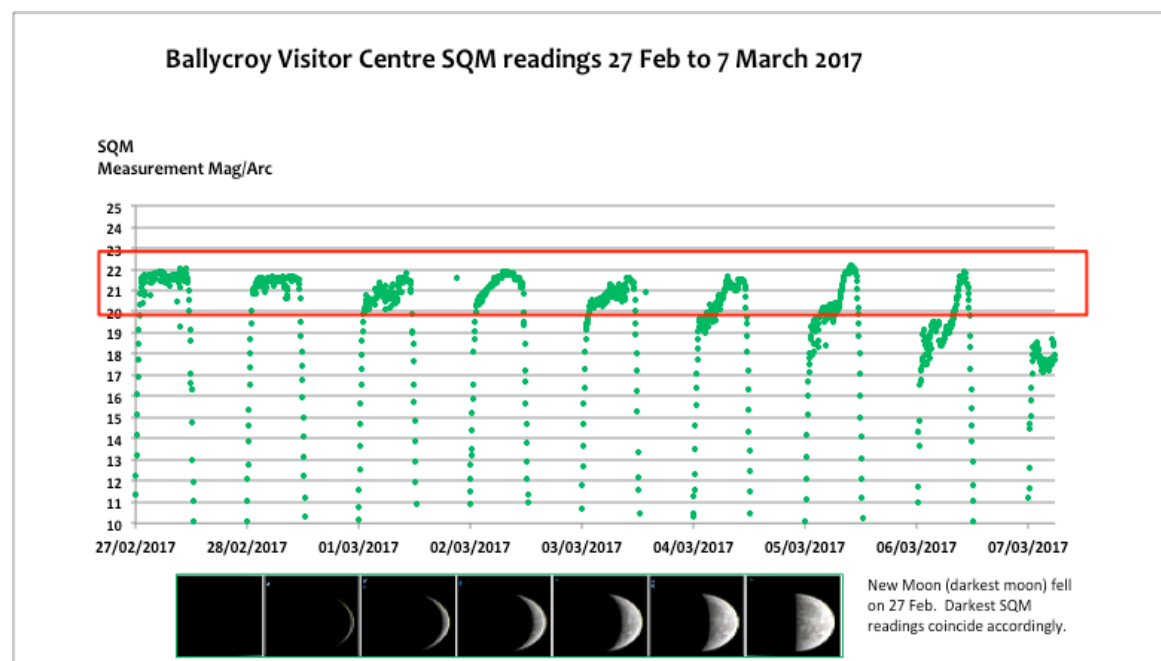
## Mayo Dark Skies

- Fáilte Ireland (Ireland's Tourism Board) - As a result of "The Big Idea" Innovation initiative, Mayo Dark Skies in collaboration with other Dark Sky site, sought support from Fáilte to develop a dark sky strategy and event initiative for Ireland. The only support received so far is event mentoring for the Mayo Dark Sky Festival.

## Sky Quality

SQM readings were obtained for four dark sky viewing sites earlier this year by the NPWS Rangers. Results have been summarised in graphical format below and are a good representation that sky quality (darkness) has been maintained at all sites. It is noted that the dark sky quality at the site at Ballycroy can be improved and this is a target area for future projects.

At the moment there are no plans to install permanent meters. However it should be noted that the SQM-DL-LU models used are fixed in place to record data over period of days/weeks.

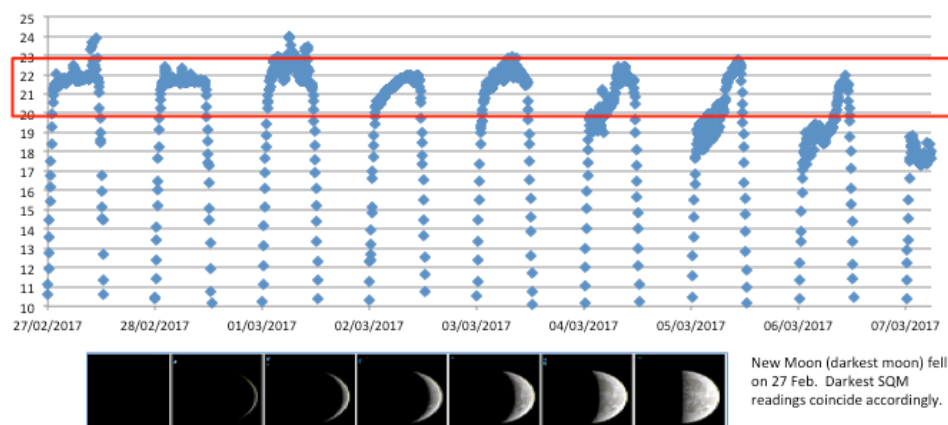


Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)



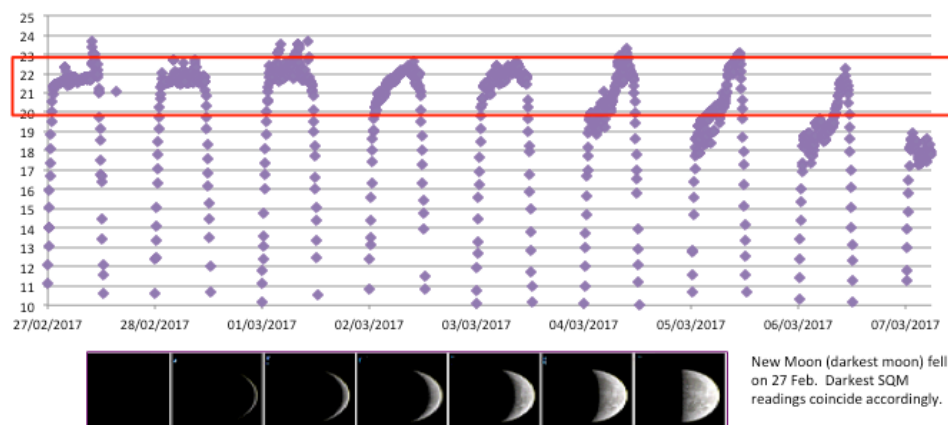
### Claggan Mountain SQM readings 27 Feb to 7 March 2017

SQM  
Measurement Mag/Arc



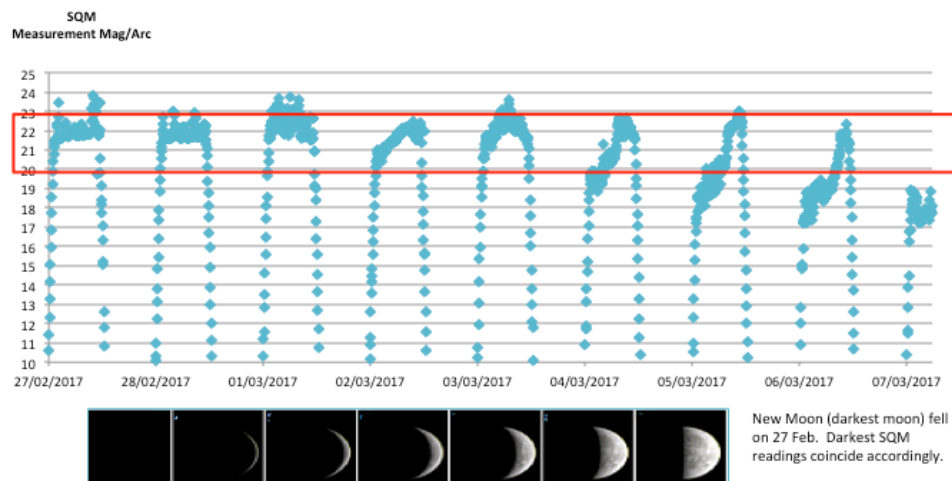
### Letterkeen Bothy SQM readings 27 Feb to 7 March 2017

SQM  
Measurement Mag/Arc





### Shrahduggan Site SQM readings 27 Feb to 7 March 2017





## Arts and Culture

Our event programming continues to have a strong focus on Arts and Culture.



### Mayo Dark Sky Festival

Most notably is the second year of Mayo Dark Sky Festival. In 2016 this event attracted over 300 people to the town of Newport, Mayo. Co-organised by Fiona Hopkins and Ronan Newman (members of the Friends of Mayo Dark Skies Group).

This year growth is expected and the festival includes themes of Heritage, Culture and the Environment as well as Science and Astronomy. Our extensive programme is available online and we have engaged speakers from around Ireland and the UK including notable Irish TV presenters and academics as well as artists, environmentalists, archaeologist and communicators. The other notable difference for 2017 is that the event being collaboratively hosted by the three dark sky communities; Newport, Mulranny and Ballycroy.

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)





*Mayo Dark Skies*

For more information, please view [www.MayoDarkSkyFestival.ie](http://www.MayoDarkSkyFestival.ie)

### **International Dark Sky Week**

In April 2017 over 100 people attended a programme of events organised for International Dark Sky Week.

- Dr. Ada Blair - invited from Edinburgh to give talks in two locations on her work “Sark in the Dark - Wellbeing and Community on a Dark Sky Island.
- “A little Night Art” was an evening showcase of two very different artists work with their philosophy and stories behind their work - the common theme was dark skies and their interpretation through art. Featuring Astro-Artist Deirdre Kelleghan and Philosopher, writer and artist Pauline McSorley.
- “Measuring The Heavens” - a talk by Newport Astronomy Club’s Derek Dempsey on the work of Edmond Halley.

### **Other events:**

- Dr Frank Prendergast - Archaeo-Astronomy. A very well attended talk on Dr Prendergast’s work and published research on alignments and cultural astronomy.
- International Observe the Moon Night 2016 - Moongazing and Music in Mulranny (Dark Sky Community).
- Magic Myth and Moonlight - an evening for Galway Mayo Institute of Technology Heritage Society. Stargazing, Moongazing, Magic and Storytelling with local Dark Sky Rangers Terra Firma.
- Protecting our Night Sky Heritage - A talk by Prof. Brian Espey on the value of the night and the importance of reducing light pollution. This event was sponsored by Mayo County Council for Heritage Week. This event had record 65 attendees indicating the growing interest in preserving our night sky heritage.

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)



Mayo Dark Skies

Celebrate the Night  
*International Dark Sky Week*  
22-28 APRIL 2017  
\*\*\*\*\*

**FREE DARK SKY EVENTS IN MAYO:**  
Weds, April 26th 7.30PM - MULRANNY COMMUNITY CENTRE  
"A LITTLE NIGHT ART"  
An evening connecting art and philosophy with astronomy  
and our night skies with artist **PAULINE McSORLEY**  
and **DEIRDRE KELLEGHAN**  
Astronomical Artist, Astronomer & Educator  
\*\*\*\*\*

Thurs, April 27th 6PM - GMIT MAYO (Castlebar Campus)  
Wellbeing & Community on the Dark Sky Island of Sark  
**ADA BLAIR**  
Edinburgh based psychotherapist & eco-psychologist  
Ada visits Mayo for the first time as part of  
International Dark Sky Week.  
Her talk will explore the positive impact on community  
wellbeing that dark skies offer.  
\*\*\*\*\*

Thurs, April 27th 8PM - Gráinne Uaile Newport  
Measuring the Heavens - A Talk from Newport Astronomy Club's  
Derek Dempsey on the work of Edmund Halley in measuring  
astronomical distances & the first global scientific project  
\*\*\*\*\*

Friday - April 28th 7.30PM BALLYCROY NATIONAL PARK  
Another chance to catch **ADA BLAIR'S** Talk on Dark Sky Wellbeing  
\*\*\*\*\*

contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)  
[www.mayodarkskypark.ie](http://www.mayodarkskypark.ie)

## Outreach Projects and Development

Since the launch of Mayo Dark Sky Park a considerable number of projects have launched.

## Mayo Dark Sky Park Website

In late 2016 National Parks and Wildlife Service funded and supported a brand new website for Mayo Dark Sky Park. This is a considerable resource on dark skies as well as information on the Mayo Dark Sky Park, its location, formation and guidelines on responsible lighting. The site contains several educational tools and downloads for the general public to access on basic stargazing.

For more info: [www.MayoDarkSkyPark.ie](http://www.MayoDarkSkyPark.ie)

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)



### **Dark Sky Ambassador Programme**

Following similar programmes in the UK we felt that communities and local businesses would benefit from a basic course on stargazing and introduction to Astronomy. We targeted local representatives, tour guides, hotel staff, and interested community members who would be in a position to champion the Dark Sky project. The head of Blackrock Castle Observatory and head of outreach travelled up from Cork City and presented a very successful weekend programme for over 50 participants.

The costs were kindly sponsored by Mayo County Council and the weekend organised by Friends of Mayo Dark Skies. At our AGM in July, our Chairman and Secretary noted this event as a highlight of the calendar.

### **Light Pollution Workshops**

As stated earlier we have received funding for equipment and this year we purchased several lighting fixtures to demonstrate good/bad outdoor lighting. Our Rural Social Scheme (government funded programme to support local employment), kindly agreed to install the lighting fixtures on display stands and these are now located at the Dark Sky Park and available for community workshops. We plan to increase the number of mobile displays and train community members to give talks on responsible lighting. Our recent attendance at the European Dark Skies Conference in Galloway, Scotland was helpful to see what other dark sky locations are doing to combat light pollution.

### Lighting workshop demonstrations



### Citizen Scientist Programme

Our citizen scientist programme to encourage community members to take sky quality meter readings is entering its second year. We have had a very positive response to this with meters being loaned out to community members. Some readings have already been submitted to Trinity College Astrophysics for Prof. Brian Espey's database. We plan to submit a set of data to Globe at Night project later this year. It has not been possible to submit data sets in smaller bulk sets as some recordings are returned in various formats, including handwritten form, and need considerable time to standardise, transcribe and submit.

### Replicable project

Since launch, several other potential Dark Sky sites in Ireland have contacted us. We are committed to supporting dark sky development and

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)



### *Mayo Dark Skies*

are happy to share our work. To date, the Mayo Dark Sky Application project plan has been provided to several potential sites (Bere Island Project, Cork, Cloughjordan, Lough Gur, Marble Arch Caves, Sperrins NI). We look forward to seeing their progress and are in contact with some of them on a regular basis to present light pollution workshops and talks.

### **Memberships and Partnerships**

The community group “Friends of Mayo Dark Skies” joined the following groups as partners:

#### **International Dark Sky Association - Chapter Member.**

The chapter supports the goals and objectives of Mayo Dark Sky Park and the International Dark Sky Association in working to protect the night sky for present and future generations.

#### **Mayo Public Participation Network**

This group ensures public participation and representation in the Environmental, Social Inclusion & Voluntary Sectors

#### **Leave No Trace Group Partner**

Leave No Trace is an outdoor ethics programme designed to promote and inspire responsible outdoor recreation through education, research and partnerships.

#### **GMIT Centre for Sustainable Community Stakeholder**

Currently undergoing feasibility study. It is proposed that this centre will work with local organisations and community groups to develop networks and sustainable solutions that support rural development and regeneration.

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)





*Mayo Dark Skies*

### **Community and Media Relations**

We have had quite an amount of media coverage ranging from National newspaper to National Radio coverage for issues ranging from 'why we should reduce light pollution' to promotional interviews and articles on Mayo Dark Sky Festival.

### **Following nominations also received:**

- 2016 Irish Responsible Tourism Awards (Commended),
- LAMA Community & Council (Finalist)
- Irish Tourism Industry Awards (Finalist)

### **Newport Astronomy Club**

The Newport Astronomy Club was formed following the establishment of Mayo Dark Sky Park and since then has been very prominent with an excellent series of monthly talks, many with a cultural focus, as well as demonstrations on astrophotography, observing sessions and a monthly newsletter. They have also received funding for a high spec telescope to be used by club members at observing sessions.

### **Ballycroy Astronomy Group**

Ballycroy Astronomy Group has also been established and over the summer organised an evening course in Astronomy for members of the group. This was well attended and is great progress for the local group.

Contact: [mayodarksky@gmail.com](mailto:mayodarksky@gmail.com)