

Dark Skies For All Project in Ireland

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Dark Skies for All was a flagship programme of the IAU100 to raise awareness of dark skies as a vital element of cultural and natural heritage. Furthermore, it advocated the preservation of dark skies by demonstrating the alignment between this goal and those of decision-makers focused on energy conservation and environmental protection. These goals were achieved through strategic meetings with stakeholders and policymakers, as well as campaigns advocating a transition to eco-friendly lighting. Some of the key successes included two major symposia, such as “The European Symposium for the Protection of the Night Sky”; successful lobbying of the Road Management Office to remove high temp LEDs from nationwide plans; and the facilitation of an application for International Dark-Sky Association recognition from an island community. In addition, outreach activities also measurably improved public awareness. It is clear the approach of aligning Dark Sky objectives with those of environmental protection and energy conservation is effective.

Introduction

Ireland hosts some of the most pristine dark skies in the Northern Hemisphere. The relative lack of heavy urban development on the west coast and midlands, coupled with the Atlantic Ocean to the west means that sizable portions of the island are subject to relatively low levels of light pollution.

Ireland is home to two internationally recognised dark sky locales: Kerry International Dark Sky Reserve and Mayo Dark Sky Park. Both have been awarded a gold tier for the quality of their night skies, which are free from light pollution and important assets of natural night sky heritage (Figure 1).

However, despite this natural resource, due to heavy concentrations of population in urban areas such as Dublin, nearly 50% of Irish people live in areas where they cannot see the glow of the Milky Way, and only 5% of Irish skies can be classed as pristine¹.

The night skies are an asset to Ireland, both as a natural and cultural resource for citizens, but also as a potential source of revenue through astrotourism.

The Dark Skies For All project was undertaken with the mission of advancing

awareness of this asset, to protect it, and to improve access to it for people throughout the island of Ireland.

Dark Sky Ireland

In October 2018, Dark Sky Ireland (DSI)² was formed as a national and cross-border partnership of stakeholders, a

group consisting of academics, park representatives, astronomy clubs, and special interest groups, from across the island of Ireland. Their common goal is to raise awareness of light pollution in Ireland and promote the use of responsible lighting through education and development of a national policy and strategy in the absence of appropriate legislation (Figure 2).



Figure 1. Aurora over Ballycroy National Park in Ireland. Credit: Stephen Hanley.



Figure 2. Beacons of light over Valentia Island in Kerry International Dark Sky Reserve in Ireland. Credit: Ian Carruthers Photography.

The Programme

Spearheaded by CIT Blackrock Castle Observatory (BCO)³ in 2019, The Dark Skies For All project was funded under an IAU100 celebrations special call (Figure 3). The DSI network continues to deliver its programme into 2020 and beyond. The programme is multifaceted, with policy development, education and public outreach elements.

For maximum impact, DSI partners organised a number of high impact events while also training and facilitating others to deliver events of their own to expand reach.

The DSI website continues to serve as a central hub for resources on light pollution in an Irish context, including documents pertaining to policy and best practices⁴.

Key Events in Ireland

Earth Hour

While dark sky activities were undertaken throughout the year, Earth Hour⁵ served as an excellent promotional tool from which to launch a six-week programme of dark sky events which incorporated Dark Sky Week. Launched by the Lord Mayor of Cork at CIT BCO, the event received media attention and helped bolster conversations with policymakers about environmentally-conscious initiatives that would tangentially lead to dark sky gains.

EcCoWell Symposium

Held at Cork County Hall, the EcCoWell symposium “Bright Planning For The Urban Environment – The Dark Side Of Illumination”⁶ was a very significant event for the 2019 activities. It brought together key stakeholders from across the community, from architects, policymakers, and special interest groups, to concerned and informed citizens, within Ireland (Figure 4).

Expert speakers from a number of disciplines, including ecology, environment and astronomy, were invited to speak before breakout groups were formed to discuss innovative approaches to issues pertaining to light pollution including environmental, economic, education, social, health, and art and culture.

14th European Symposium for the Protection of the Night Sky

This symposium about dark skies protection across Europe was held in Mulranny, County Mayo, from 3-5

November 2019. It featured speakers⁷ from over a dozen countries, and had over 100 attendees, half of whom were overseas visitors. A wide array of subjects were covered, including ecology, astrotourism, cultural heritage and policy.

Evaluation of the experience overwhelmingly reported a field trip to the Mayo Dark Sky Park as the highlight of the symposium for visiting attendees. Speaking further on evaluation and feedback from the symposium, Georgia MacMillan of Mayo Dark Sky Park reports, “*The biggest outcome for legacy is to keep the event going and to highlight environmental issues more in policy documents*”.

The symposium directly followed the annual Dark Sky Festival celebrating Mayo’s Dark Sky park. The festival saw record numbers in 2019, bringing over 400 people to the rural community.

Cape Clear Island, Ireland

DSI supported an island community in their bid to become internationally recognised by the International Dark Sky Association by assisting them in operating their first dark sky event in late May 2019. The remote island is already benefiting from its pristine conditions through ecotourism centred around whale watching and bird watching, and as such the local community has already seen that treating an unspoiled landscape as a natural resource can benefit the community if carefully managed and maintained.

Road Management Office

A vital victory during a busy year was the successful lobbying of the national Road Management Office, to amend plans to install high temperature LEDs on roads across nationwide. Professor Brian Espey of Trinity College Dublin was particularly instrumental in this victory, as his scientific expertise in the area of light pollution and



Figure 3. Dark Sky Ireland, IAU100 and Blackrock Castle Observatory logos.



Figure 4. Dark Sky Ireland partners and special guests at the EcCoWell symposium on light pollution. Credit: Rob O' Sullivan.

his written guidelines led to government departments contacting the Road Management Office in 2019 to enable DSI's increased access to steer consultation for best lighting practices⁸.

The Road Management Office removed high temperature LEDs from all specifications (bar some necessary exceptions). Efforts continue to identify and engage with stakeholders in positions to affect large-scale changes in Ireland's light pollution footprint (Figure 5).

Education Initiatives

CIT BCO has an education remit, reaching thousands of students and teachers every year. Throughout 2019 a special emphasis was given to the development and delivery of educational workshops that explore light pollution and potential solutions to it. The light pollution workshops continue to be one of the BCO Education Team's most popular offerings.

To build capacity, teachers and Continuous Professional Development Facilitators throughout the country were trained on how to deliver these workshops in their own classroom. External evaluation of these sessions by Eric Jensen of the Institute for Methods Innovation was overwhelmingly positive, and it was particularly encouraging that many participants had a strong working knowledge of light pollution prior to the training.

Outreach Initiatives

Artistic projects played a key role in public outreach efforts. One such project, *Starman*, was borne out of an artistic collaboration between CIT BCO, renowned

Irish musician Jack Lukeman and a number of students from around the country. The project culminated in a cover version of David Bowie's "Starman" including a high production video featuring footage from dark sky locations throughout Ireland. This STEAM initiative served as an excellent showcase for these unspoiled landscapes, and as a sort of informal "anthem" for dark sky advocacy throughout the year, including at high-reach events such as the Dublin Bowie Festival.

Another artistic exhibit of note was the visiting *Chasseur de Nuit* which was shown at venues throughout the country⁹. *Chasseur de Nuit* is a series of tactile demonstrations of constellations that allow people with blindness and vision impairments to grasp the night sky without the need to see it.

Conclusions

Evaluations and feedback across events saw a number of recurring themes. Most prominently, while appreciation for dark



Figure 5. The Milky Way as seen from Mayo Dark Sky Park. Credit: Stephen Hanley.

skies is generally easy to garner, the sentiment towards mitigation measures can be less enthusiastic when considered purely for their own sake. For instance, perceived safety as a result of more illumination can understandably be weighted more heavily than the ability to appreciate the night sky. However, conversations around tangential goals were easier to broach and, in many cases, proved more convincing. Mitigating light pollution to improve safety for drivers, to conserve electricity and to potentially help human health was an incredibly effective means of communicating the collective goal.

It was also found that participants were generally receptive to evidence-based challenges to their preconceived notions. Again, looking at the perception that increased illumination improves visibility of potential threats at night, participants were often convinced that the reality is more complex when you consider issues such as glare, intensification of shadows and reduced night vision due to pupil constriction.

It is fortunate that the goals of Dark Skies For All supports the objectives of the Irish Government's Project Ireland 2040 plan¹⁰ which has, as a key pillar, the support of rural populations and their natural and cultural heritage. Such serendipitous alignment of goals makes the task of garnering support considerably easier. We would encourage those pursuing avenues to promote and conserve dark skies to identify, and work with, special interest groups with closely aligned objectives as darker skies can be achieved as a side effect of those efforts rather than being an explicit goal in and of itself.

Notes

¹ Irish Times. "Only 5 per cent of Ireland's night skies are free from artificial light, says expert": <https://bit.ly/2B13EFW>

² Dark Sky Ireland website: <https://www.darksky.ie/>

³ CIT Blackrock Castle Observatory website: <https://www.bco.ie/>

⁴ Dark Sky Ireland Policy Documents: <https://www.darksky.ie/policy/>

⁵ Earth Hour website: <https://www.earthhour.org/>

⁶ Symposium event listing and schedule of speakers: <https://www.darksky.ie/bright-planning-for-the-urban-environment-the-dark-side-of-illumination/>

⁷ 14th European Symposium for the Protection of the Night Sky programme: <https://www.mayodarkskyfestival.ie/symposium-programme>

⁸ Espey, Brian. "Public Lighting Recommendations." (2020). http://www.tara.tcd.ie/bitstream/handle/2262/91582/Lighting_guidelines_13Feb2020.pdf?sequence=1

⁹ *Chasseurs de Nuit* website: <https://www.chasseursdenuits.eu/>

¹⁰ Project Ireland 2040 plan website: <http://npi.ie/>

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Biographies

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Niall Smith is the Head of The Observatory at CIT Blackrock Castle Observatory and Science Centre (BCO). He is part of a dedicated team at BCO and helps them realise their vision to use astronomy and space for societal and economic benefit.