

Northumberland National Park
and
Kielder Water and Forest Park
International Dark Sky Park Application

September 2013



Kielder Observatory

Image credit Gary Fildes

Table of Contents

Executive Summary	5
International Dark Sky Park Letters of Support	
Letter from CEO, Northumberland National Park	6
Letter from Chair, Kielder Water and Forest Park	8
Letter from Northumberland County Council	9
1. Northumberland Dark Sky Park	10
Northumberland National Park Description	11
Kielder Water and Forest Park Description	12
Kielder Observatory	13
Justification for a joint IDSP Application	14
Meeting the Eligibility Criteria for IDSPark Status	15
Meeting the Minimum Requirements for IDSPark Status	16
2. Night Sky Monitoring	17
Existing Conditions	18
Sky Quality Monitoring - Photographic	19
Sky Quality Monitoring - NELM	20
Sky Quality Monitoring - SQM-L	21
Tables of SQM Results	22
Justification for <i>Gold Tier</i> Status	29
3. Light Management Plan	30
Policy Statements	30
Environmental Zones - Refinement	31
Endorsement of the Lighting Management Plan	33
Community Support for Lighting Management Plan	37
4. Light Pollution Mitigation	38
Lighting Projects Undertaken	38
Influencing Others:	
Ongoing and Future Mitigation	40
5. Education and Outreach	42
Dark Sky Discovery Sites	42
Wider Support	44
6. Other Benefits	45
Environmental Benefits	45
Ecological Benefits	45
Economical Benefits	45
Dark Sky Tourism	45
7. Press and Media Coverage	46
8. Additional Letters of Support	48

Executive Summary

"In Northumberland alone, both heaven and earth are seen, we walk all day on long ridges, high enough to give far views of moor and valley, and the sense of solitude below. It is the land of far horizons . . ."

- G. M. Trevelyan 'The Middle Marches' 1926.

George Macaulay Trevelyan was a famous British historian who lived in Northumberland.

He was a passionate advocate for the protection of rural landscapes and played a key role shaping the agenda for countryside preservation and the establishment of National Parks in England before and after the Second World War.

Today, that sense of space and tranquillity is still very much the overwhelming visitor experience of Northumberland National Park and Kielder Water & Forest Park.

With a combined land area of 1400 square kilometres in dramatic scenery between England and Scotland and with a small population it retains the wildness lost from most other parts of the nation.

The Campaign to Protect Rural England (CPRE) has recognised Northumberland as possessing the largest area of truly dark skies remaining in England (see page 10).

Northumberland National Park Authority and Kielder Water & Forest Park Development Trust are committed to conserving this special quality for future generations and to provide people with the opportunity to be inspired by the Universe's night-time beauty.

We have an exciting story to tell. Kielder Observatory, which opened in 2008, has proven to be a world-class visitor attraction, transforming the public perception and understanding of our dark skies.

It has cultivated and catered for a growing public appetite for astronomy (see page 13).

Stargazing events in Northumberland National Park have also become exceptionally popular amongst visitors and residents alike (see page 42) and Kielder Water & Forest Park is home to one of the UK's largest star parties.

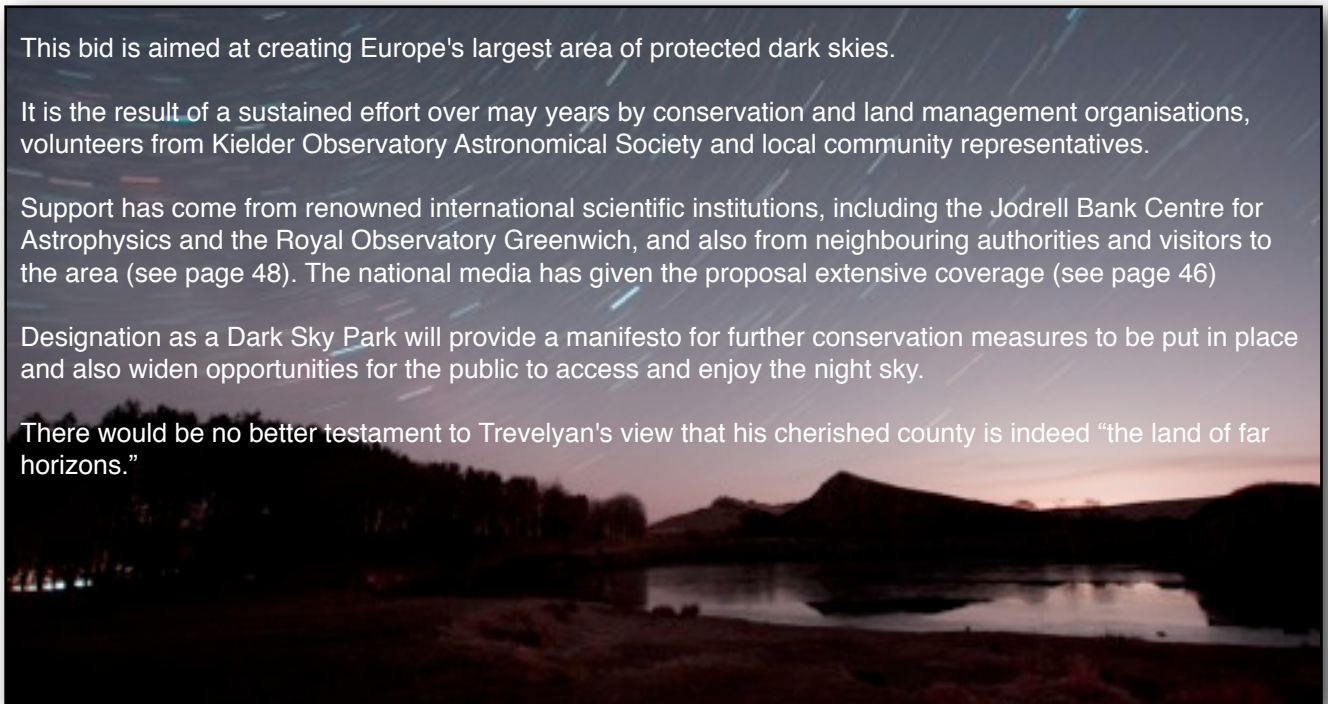
This bid is aimed at creating Europe's largest area of protected dark skies.

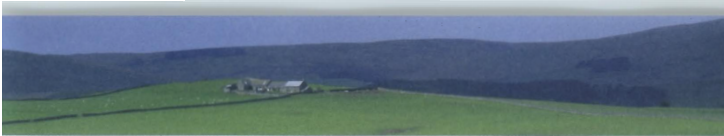
It is the result of a sustained effort over many years by conservation and land management organisations, volunteers from Kielder Observatory Astronomical Society and local community representatives.

Support has come from renowned international scientific institutions, including the Jodrell Bank Centre for Astrophysics and the Royal Observatory Greenwich, and also from neighbouring authorities and visitors to the area (see page 48). The national media has given the proposal extensive coverage (see page 46)

Designation as a Dark Sky Park will provide a manifesto for further conservation measures to be put in place and also widen opportunities for the public to access and enjoy the night sky.

There would be no better testament to Trevelyan's view that his cherished county is indeed "the land of far horizons."





Ref: TG/DW/TMB
Contact: Duncan Wise
Direct Line: +44 1434 611521
Date: 12th September 2013

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Northumberland NE46 1BS
T: 01434 605555 F: 01434 611675

Chief Executive (National Park Officer): Tony Gates

International Dark-Sky Association (IDA),
3225 North First Avenue,
Tucson,
Arizona 85719-2103

Dear Sir/Madam

Northumberland National Park and Kielder Water & Forest Park International Dark Sky Park Application

On behalf of Northumberland National Park Authority, I am writing to support the joint application by this Authority and Kielder Water & Forest Park to secure International Dark Sky Park status for more than 1400 square kilometres of spectacular countryside and dark skies in Northumberland.

The Northumberland National Park and Kielder Water and Forest Park are together the most tranquil part of England according to a study by the Council for the Protection of Rural England (CPRE, 2006). Tranquillity is recognised and valued as one of the special qualities of the Northumberland National Park by both residents and visitors and dark skies contribute to the National Park's sense of tranquillity. The National Park Management Plan (2009 - 2014) prioritises the need to retain the sense of "inspiration and tranquillity" and where opportunities exist to enhance tranquillity. The Management Plan Partnership, which consists of the National Park Authority and ten key partner organisations, develops an annual action plan and monitors actions to deliver the aims within the National Park Management Plan, including action to enhance tranquillity, and protection and enhancement of our dark skies.

As the planning authority for the National Park, we have within our Local Development Framework (Core Strategy & Development Policies) Policy 19 that is dedicated to conserving and enhancing this sense of tranquillity, including an assessment of light pollution generated as a result of the development.

Policy 20 within the same document looks to conserve and enhance the landscape quality and character of the National Park, and dark skies are recognised by Natural England as a key characteristic of the National Character Areas that cover the Dark Sky Park.

Much of what the National Park Authority does, in delivery of its statutory purposes, helps contribute towards the UK Government's delivery of the key actions arising from the European Landscape Convention, the ratification of which was announced by Government in the Northumberland National Park in 2006.

The National Park Authority recognises the work and activities associated with the Dark Sky Park designation, and has given a formal commitment to a range of activities such as collaborative working, co-operation across boundaries, involving people, increasing the understanding awareness and profile of a landscape affected by minimal light pollution, and integrating this work into areas of policy.



But just as important as the conservation of dark skies is the opportunity the designation of Dark Sky Park status will provide us with to celebrate and engage people of all ages and background, from every corner of the country and indeed of the world, about our wonderful dark skies, through star gazing events and other astronomical studies. As a National Park Authority one of our key priorities is to engage young people in national parks, as future custodians, decision makers and customers of what the Park has to offer. In this way we can help ensure care for the national park into the future. As an Authority we are already exploring many of the ways in which we can use Dark Sky Park status to ensure this, including exploring links with our many partners in the education and further education sectors.

This designation will help boost rural tourism businesses within the Dark Sky Park, using appropriate tourism to capitalise on this key natural asset, developing and further enhancing our nature-based tourism offer, notably at traditionally quieter times of the year during the autumn and winter months.

Finally, becoming a Dark Sky Park will reinforce the status of the National Park, Kielder Water & Forest Park and the County of Northumberland as a tranquil, unspoilt destination offering a true sense of tranquillity and wildness - a tonic in this day and age. We have consulted widely with local residents and visitors and have achieved an overwhelmingly positive response to this proposal, so much so that I know local people and visitors will readily adopt this new designation and work positively towards its aims.

Northumberland National Park Authority and its partners have a strong track record of delivering to a high standard on its key priorities. Given the level of support for this initiative I have no doubt that Northumberland National Park and Kielder Water and Forest Park will become a positive beacon for dark skies both within the UK and around the world.

I thank you for considering our application.

Yours sincerely

Tony Gates
Chief Executive (National Park Officer)

A handwritten signature in black ink, appearing to be 'Tony Gates', written over a circular stamp or seal.

6th September 2013

Northumberland Dark Skies Park Application

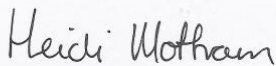
Kielder Water & Forest Park Development Trust has been the catalyst to bring this European significant Dark Sky Park application together. As the destination management organisation for Kielder Water & Forest Park, we have always been conscious that our dark skies, the darkest in England are a precious asset, one to be protected and enjoyed. So the development of the Kielder Observatory from 2005 in partnership with the organisations who had been arranging star gazing and parties in Kielder Water & Forest Park for years was a natural and obvious progression. We were able to encourage and extend the imagination and inspiration from the small beginnings of the Kielder Observatory to the amazing £500,000 facility enjoyed by thousands it is today. We were able to bring our project development, architectural design quality and fundraising expertise to the programme and work with the communities involved to develop an offering of international significance.

Through the foundation of Kielder Observatory Astronomical Society and our work with Gary Fildes the Founding Director, Dark Skies and Astronomy have become a passion in the area and so when we were looking at Dark Sky Park Status and our neighbouring Northumberland National Park were doing the same, it made perfect sense to work together with the local communities to create the largest European Dark Sky Park - Northumberland Dark Sky Park - to protect one of our greatest assets and make it available to more people.

We have been heading up the Dark Sky working group since 2011 ensuring the involvement of community representation and this application is a great milestone in the progress of our Dark Sky journey. It is not the end but the beginning of a large programme of accessible Dark Sky Discovery Sites across the area and into the neighbouring areas together with an extensive education and event programme to bring star watching and dark sky appreciation to a wider audience.

We are proud to be a key activist in this amazing Dark Sky programme and we see it as vital to our environmental sustainability and visitor experience development.

Yours Sincerely



Heidi Mottram
Chair
Kielder Water & Forest Park Development Trust

PART FUNDED BY:



Supported by
**ARTS COUNCIL
ENGLAND**



DEVELOPED BY KIELDER WATER & FOREST PARK DEVELOPMENT TRUST
REGISTERED CHARITY NUMBER: 1139328
MEMBERS: NORTHUMBRIAN WATER, FORESTRY COMMISSION,

Kielder Water & Forest Park
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Date: 20 September 2013

Dear Sir / Madam

Northumberland National Park and Kielder Water & Forest Park International Dark Sky Park Application

On behalf of Northumberland County Council I am writing to support the joint application by Northumberland National Park Authority and Kielder Water & Forest Park Development Trust to secure International Dark Sky Park status.

Northumberland's tranquillity and dark skies are distinctive characteristics which are valued by local communities and visitors to the County. Achieving Dark Sky status will significantly enhance the reputation of the area as a visitor destination, supporting rural tourism which is a vital part of the Northumberland economy.

The Council is committed to protecting and enhancing the tranquillity and dark skies of the area through its work. For example, the Council has prepared draft planning policies which recognise the importance of tranquillity and dark skies and seek to protect and enhance this through the statutory planning process. In addition, as part of the street lighting replacement process across the County the Council is using the Lighting Management Plan to guide the installation of new lighting within the area that is proposed to be designated as Dark Sky Park.

If you require any additional information, please do not hesitate to contact me.

Yours faithfully

A handwritten signature in black ink that reads "Steve Stewart".

Steve Stewart
Chief Executive



1. Northumberland Dark Sky Park

Northumberland Dark Sky Park is situated in the north-east corner of England, covering the largest remaining expanse of truly dark skies in the country. The Campaign for the Protection of Rural England (CPRE) conducted research in 2006 on Tranquillity, which showed that this area was the most tranquil in England, with the darkest skies. Night Blight maps undertaken by CPRE have shown that these dark skies to be diminishing, emphasising the need to protect this area in future.

The total area of protected dark skies under the newly-adopted Northumberland Dark Skies Lighting Management Plan (LMP) is 1482km².

It comprises of two adjoining - and in some places overlapping - parks, Northumberland National Park, and Kielder Water and Forest Park.

This makes Northumberland Dark Sky Park the largest area of protected night sky in Europe, and amongst the largest in the world.

Crucially, Northumberland Dark Sky Park lies due east of Galloway Forest Dark Sky Park, with the land in between being very rural. Northumberland County Council and Dumfries & Galloway County Council support the ethos of the dark sky parks and are both in the process of replacing **all street lights** with night sky friendly versions (at a cost in excess of £30million), forming a dark sky “collar” between the border of England and Scotland.

“The largest area of protected night sky in Europe.”



Both of the parks that make up Northumberland Dark Sky Park lie within one unitary authority, the council area of Northumberland County Council (NCC). NCC, along with Northumberland National Park Authority, are responsible for all planning applications within the Dark Sky Park, and have formally endorsed the LMP for all new developments within the Northumberland Dark Sky Park.

Although one of the largest areas of wilderness in England, Northumberland Dark Sky Park is not uninhabited. The total population of the park is approximately 2200, giving a population density of only 2 per square kilometre.

Northumberland National Park

Northumberland National Park was officially designated on 6 April 1956 (The UK's first National Park, the Peak District, was designated in 1951). The National Park covers an area of 1049km², or 405 square miles.

The purposes of National Park designation are set out in national legislation. First set out in the 1949 National Parks and Access to the Countryside Act and amended by the 1995 Environment Act, the two statutory purposes are:

- ❖ To conserve and enhance the natural beauty, wildlife and cultural heritage; and
- ❖ To promote opportunities for the understanding and enjoyment of the special qualities by the public.

The National Park is managed by Northumberland National Park Authority, but the Authority actually owns only 2.5 km² of the land in the National Park; private landowners, the Ministry of Defense and the Forestry Commission are the main landowners.

Northumberland National Park is the least populated of all the National Parks in England and Wales with a population of around 2000 people. That's only 2 people per square km! Visitors and residents value the tranquillity they experience in the National Park and recognise that dark skies are an important component of that sense of tranquillity.

Northumberland National Park Authority cares for:

- 1100 km of paths for walking, cycling and horse-riding including two National Trails
- 31 Sites of Special Scientific Interest covering over 10,000 ha
- 6 Special Areas of Conservation
- 3 National Nature Reserves
- A Ramsar (international site for the protection of birds)

It also looks after visitor information, facilities and services, many kilometres of dry stone wall boundaries and hundreds of signs, styles, car parks and picnic sites.



Kielder Water and Forest Park

Kielder Water and Forest Park is a recreational park, and covers land owned by the Forestry Commission and Northumbrian Water. It forms part of the largest man made forest in Northern Europe. Each year the Forestry Commission harvests around half a million cubic metres of timber. Kielder Forest is managed sustainably and is a valuable home and sanctuary for many species of flora and fauna, including deer, squirrels birds of prey, border mires with peat bog plant species.

Kielder Water is the largest man-made lake in northern Europe and is capable of holding 200 billion litres of water. It has a shoreline of 27 miles and is 170 feet at its deepest point. When completed, the Kielder Water Scheme was one of the largest and most forward looking projects of its time. The first example in the UK of a regional water grid, it was designed to meet the demands of the north east of England well into the future.

Kielder Water and Forest Park is managed by Kielder Water & Forest Park Development Trust as a destination for leisure, recreation and learning and to ensure its charitable objectives are met.. This is a registered charity working at Kielder to promote sustainable development, provide recreational facilities, improve knowledge of the natural environment and encourage the arts.

Members, who have appointed directors/trustees to serve on the board, are Northumbrian Water, Forestry Commission, Calvert Trust Kielder and Northumberland County Council. Affiliate organisations that are not members but have a close working relationship with KWFPDT include Arts Council England, Northumberland Wildlife Trust, Environment Agency, The Scout Association and local decision making bodies such as the parish councils.

Kielder Water and Forest Park covers 543 km², of which 136 km² is unforested, 122 km² are Sites of Special Scientific Interest (SSSI), and 51 km² is a National Nature Reserve. It has 430km of footpaths, bridlepaths, cycle paths and trails.



Kielder Observatory

Located within the Kielder Water and Forest Park is the stunning Kielder Observatory, a public observatory focussed on astronomy outreach and education.

Kielder Observatory Founder Director and Lead Astronomer Gary Fildes says:



“Kielder Observatory opened in April 2008 and has enjoyed unrivaled success. The aim was to provide an astronomical observatory where anyone could access the universe through observation and understanding. With its innovative design and sleek lines it entices the visitor to find out more about its core use, astronomy.

“The facility is a registered charity and uses the services of volunteers to deliver events and host members of the public. It was thought that we would have between 6-8 events per year. This soon changed and we started to become very popular as a visitor attraction. Through the dedication and hard work of the volunteers we were able to become self-sustainable and have had in excess of 43,000 visitors. We continue our ethos that the universe in which we belong is and should be accessible to all; the Kielder observatory provides a space for that.

“We run on average 30 events per month, 75% of which sell out in advance. Also we run school visits and educational outreach events where we take telescopes out into the community. With our array of new instruments and innovative events programme we do anticipate growth year on year of 30%. The acquisition of Dark Sky park status will only serve to enhance the visitor experience and ensure that we maintain the dark skies for future generations to look out into the universe and wonder about our place in it.”

Kielder Observatory

Image Credit: Gary Fildes

The location of Kielder Observatory is shown on the map on page 12, marked in red in the upper left corner.

Justification for a Joint IDSP Application

Northumberland National Park (NNP) and Kielder Water and Forest Park (KWFP) are adjoined, forming an area of exceptional beauty and tranquility.

In 2012 both Northumberland National Park Authority and the Kielder Water & Forest Park Development Trust committed to seeking International Dark Sky Status for the area. A number of possible options were considered:

*“Northumberland
Dark Sky Park”*

- A. Two separate parks, submitting separate applications, KWFP as a Dark Sky Park and NNP as a Dark Sky Reserve;
- B. Two parks submitting one application, with KWFP as a Dark Sky Park and NNP as a Dark Sky Reserve;
- C. Two parks submitting one application, with KWFP as a Dark Sky Park and NNP as a Dark Sky Reserve, with KWFP sitting within the IDSR core of NNP;
- D. Two parks submitting one application as one entity, a Dark Sky Park.

The decision was made to apply as per option D., where one application is submitted for the entire area of NNP and KWFP as one dark sky park, to be known as **Northumberland Dark Sky Park**. This has a great many benefits over the other options considered, namely:

- 1. **Simplicity.** This approach allows the creation of one lighting management plan which will apply the same lighting controls across the entire area of the Northumberland Dark Sky Park;
- 2. **Better Protection of the Night Sky.** Under all of the other options considered NNP was going to apply for IDSR reserve status, with a small core area with exceptional protection and a buffer zone making up the rest of the park. Under Option D. the entirety of NNP falls under the strictest lighting controls;
- 3. **Community Buy-In.** Throughout the process of developing the Northumberland Dark Sky Park plan, many small villages and communities requested that they be included in the core zone of the then-proposed IDSR. A number of the communities in the proposed IDSR buffer zone requested that the core be extended around them. It was felt best that the stricter controls of the IDSR core zone be extended throughout the entirety of NNP, which resulted in it meeting the requirements for an IDSPark.

Meeting the Eligibility Criteria

The IDA eligibility criteria for IDSParks state:

- A. *All protected public lands, whether managed by national, state, provincial, or local agencies, are eligible. These may include parks, refuges, forests, wilderness areas, monuments, protected rivers, or other categories of protected lands.*

Although some of the land within Northumberland Dark Sky Park is privately owned, the overwhelming majority of the land is public land, with open access along forest trails and onto the upland moors.

- B. *Park must provide the opportunity for public nighttime access. A portion of designated land may meet this requirement, or access must be available for a portion the night.*

There are many visitors centres and viewpoints throughout the park, perfect for stargazing. The main gateway visitor centre for Northumberland National Park is located at Once Brewed on Hadrian's Wall, attracting around 45,000 people a year. Cawfields Dark Sky Discovery Site, located 3 miles to the west of Once Brewed, is the main venue for hosting star gazing and other astronomical events throughout the year. Throughout the National Park there are many smaller car parks in remote locations, that are accessible to star gazers. In addition there is the Kielder Observatory, open throughout the year.

- C. *Park must have an outstanding dark sky resource relative to the population it serves and have locally, regionally, or nationally significant dark sky resources.*

Northumberland Dark Sky Park sits within the largest area of dark skies in England. An annual total of 1.5 million people visit the park. The Sky Quality Assessment presented in section 2 of this application demonstrates that it more than meets this criterion.

- D. *Park night sky must be of minimum quality or better— at a minimum the Milky Way should be visible and sky conditions should approximately correspond to limiting magnitude 5.0 or Bortle Class 6.*

The conditions within most of Northumberland Dark Sky Park meet Bortle Class 3/4, and large areas of it meet Bortle Class 2/3.

- E. *If a park unit is over 50,000 ha (123,550 acres/193 square miles), a portion of the park may be designated as a Dark Sky Park. This portion must incorporate relevant park developed areas that serve the designated DSP area.*

Although Northumberland Dark Sky Park covers over 1400km² and could opt for only a portion of the park under the Lighting Management Plan, the entire area of both NNP and KWFP is seeking IDSPark status.

Meeting the Minimum Requirements

- A. A quality comprehensive Lighting Guideline or Lightscape Management Plan with the following minimum standards:
1. Fully shielded lights standard throughout the park. When lights are for special purposes or historic preservation compliance, lights under 1000 lumens initial lamp output may be unshielded (non-fully shielded). When such unshielded lights are used, impacts to the lightscape must be addressed, AND;
 2. Methods for addressing whether an area should or shouldn't be lit, when an area should or shouldn't be lit, use of guidance lighting, lit signs, tower lighting, and appropriate lighting amount, AND;
 3. Methods for addressing what type of lamp (incandescent, fluorescent, high-pressure sodium, etc.) should be used for particular tasks and in particular areas. utilizing appropriate energy efficiency technology and methods for minimizing impact to wildlife, stargazing activities, and nocturnal scenery, AND;
 4. Lighting guidelines should conform to or surpass agency or departmental policy on lighting and dark sky protection as well as other applicable guidance and laws (e.g. environmental leadership programs, agency orders, wilderness act, energy management guidelines).

The Lighting Management Plan appended to this document and summarised in section 3 of this application more than meets these requirements.

- B. Park commitment to dark skies and lightscape management, as shown by:
1. Park recognizes dark skies as an important natural, cultural, or scenic resource value as evidenced by inclusion in approved management documents (e.g. General Management Plan, Resource Management Plan, Facility Development Plan), AND
 2. Two-thirds (67%) of existing outdoor lighting fixtures conform to the lighting guidelines (or an alternative fraction approved by IDA Board). All lights upon park public lands within the DSP are to be included in this assessment, AND
 3. All lighting (100%) on park land (whether operated by park or other entity) conforming, or committed to becoming conforming, with written park lighting guidelines, AND
 4. The importance of dark skies/natural darkness and the benefits of good lighting should be part of park interpretation/outreach programs. If park typically provides interpretive programs, then dark skies should be one of the central themes communicated through on-site interpretation. If interpretive programs are not typically offered, then publications, flyers, press releases, media, or other outreach are appropriate substitutes, AND
 5. Park has set a leadership example in the restoration of dark skies by implementing one of the following:
 - a. Producing at least 1 "night sky friendly" lighting project that is publicly visible and interpreted, OR
 - b. Involving at least 2 external partners in dark sky restoration efforts (e.g. chamber of commerce, power utility, university research, tribal nations, environmental groups, conservation groups, natural history association), OR
 - c. Cooperation with at least 2 nearby municipalities that results in adoption of lighting codes that improve sky conditions in the park, OR
 - d. Inventorying and monitoring night sky quality and using results to educate the public, OR
 - e. A combination of a-d above or an alternative restoration project may be suggested.

At time of application the compliance rates of lights within Northumberland Dark Sky Park stands at 75%, and with the endorsement by Northumberland County Council, Northumberland National Park, and Kielder Water and Forest Park, all future refits of lights will be made within the limits of the Lighting Management Plan, and so this compliance level will increase towards 100%.

- C. IDA may request stricter or alternative requirements in some circumstances.
- D. Once established, park must erect and maintain a sign indicating Dark Sky Park designation along roadway entrance, along a footpath entrance if no roadway exists, or a visitor contact center. Sign should include IDA DSP text and logo. With IDA Board of Directors approval, an alternative wording may be used, such as Dark Sky Wilderness, Dark Sky Refuge, or similar. The park may include the awarded tier if desired.
- E. Designation is permanent, but is subject to regular review by IDA and possible revocation if minimum requirements are not maintained.

2. Night Sky Monitoring

An extensive programme of night sky monitoring was undertaken between September 2011 and April 2012, and again between September 2012 and April 2013. Data was gathered from sites across the entire Northumberland Dark Sky Park using hand-held sky quality metres (SQM-L). This data is presented in a table on p21-28.

In addition to this, Kielder Observatory, located in Kielder Water and Forest Park has been monitoring the night sky conditions in the west of the park since April 2008. A qualitative assessment of the night sky conditions currently prevalent appears on p20.



Children from the local town of Haltwhistle participating in a star gazing event at Cawfields Dark Sky Discovery Site on Hadrian's Wall on 12th January 2013. The children were inspired to create their own art project, building a "Universe in a Shed", which was opened to the public in March 2013.

Existing Conditions

Although not very recent, the data used by the Campaign to Protect Rural England (CPRE) during their Night Blight Campaign shows how the sky in the north-east of England has deteriorated over the past 20 years.

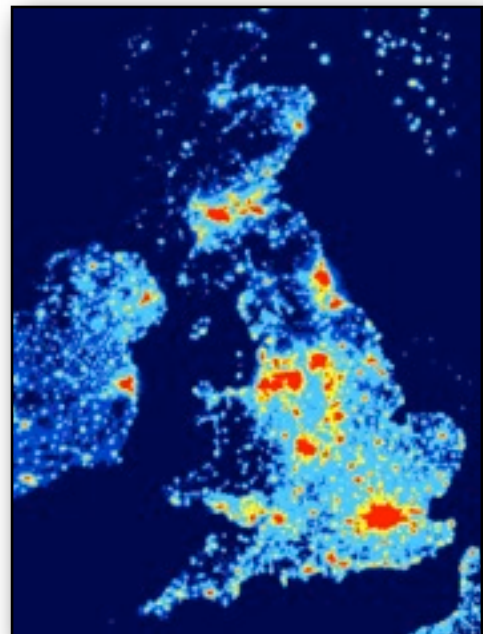
The spread of suburban areas around the major cities and towns in the area, namely Newcastle, Middlesbrough, Berwick, and Hexham, has meant that light pollution is a major presence in the skies across most of Northumberland.

However, despite this gloomy outlook the situation is already beginning to be reversed.

Kielder Observatory and the local amateur astronomy societies have been campaigning for many years, raising awareness about dark skies.

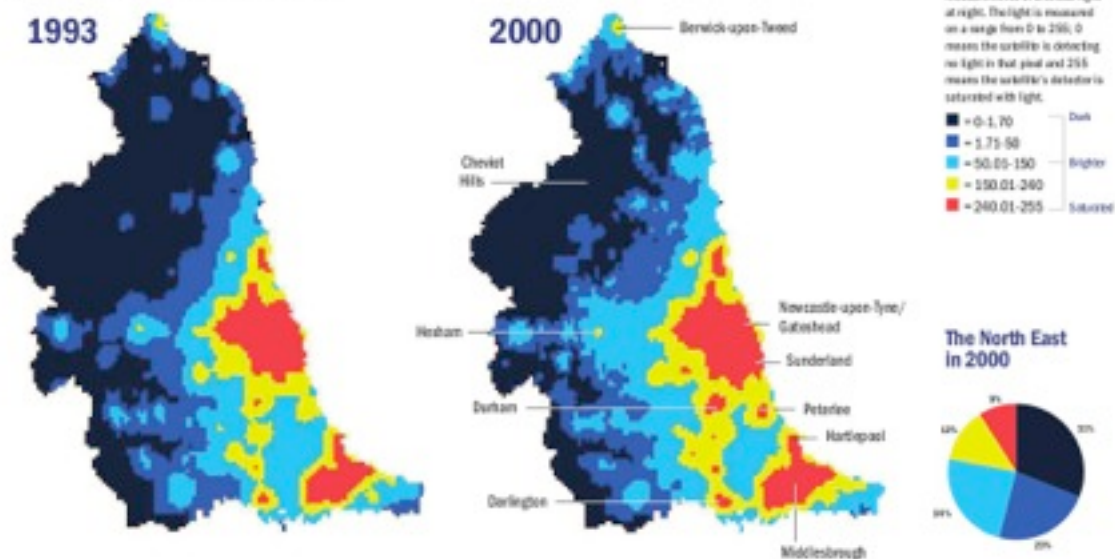
The designation of Northumberland Dark Sky Park is the next stage in protecting England's darkest skies.

Northumberland County Council, partly as a result of wishing to protect the unique natural skies of the area in 2013 announced a programme to refit all of Northumberland's street lights with dark sky friendly LED lighting (<http://www.government-online.net/street-lighting-retrofit-northumberland/>). Formal IDA recognition of these excellent efforts, in the form of an award of International Dark Sky Park, would fortify the existing support and result in a huge boost for the local area in terms of national and international press coverage, and increased opportunities for off-season tourism.



Night Blight in the North East

Satellite data shows that light pollution is rapidly increasing in the region, leaving less and less countryside where we can still enjoy starry, starry nights



Campaign to Protect Rural England

Sky Quality Monitoring - Photographic

Images of the night sky have been taken using a fisheye lens, to allow at a quick glance an assessment of the night sky quality.



*Image credit: Mark Pinder, Richard Darn, 0340 14 September 2013
ISO 1000, 180s, f3.5, Sigma 8mm fisheye lens, Canon 5D,*

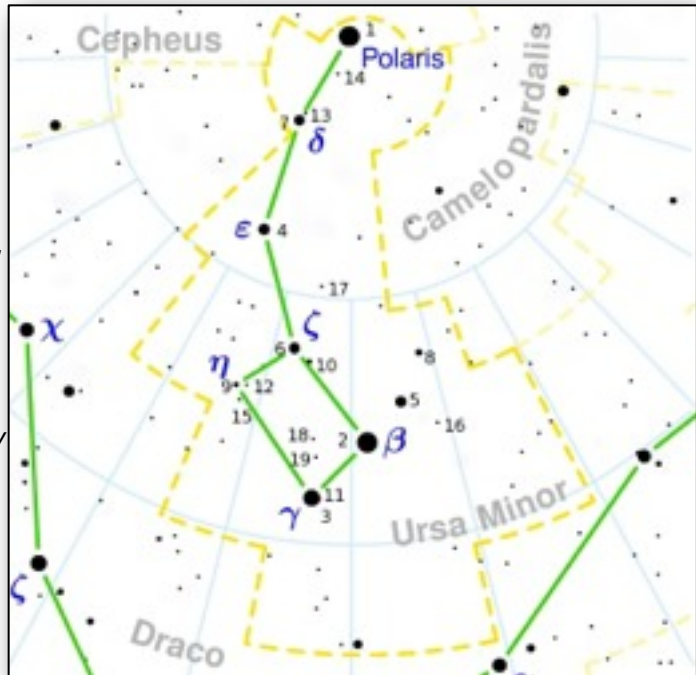
Sky Quality Monitoring - NELM

Gary Fildes, Founder Director of the Kielder Observatory (see p.13) makes regular estimates of the naked eye limiting magnitude (NELM) of the skies over Northumberland Dark Sky Park. He states:

"Using the stars in Ursa Minor I calculate the NELM (Naked Eye Limiting Magnitude) from above the Kielder Observatory. Of course sky conditions can affect this. i.e. when we have excessive humidity it can erase the faintest stars completely.

"I can readily see the star labelled 18 in this chart, giving me a NELM of 6.65. On occasion I have been convinced of observing star labelled 19, down to 7.35, however, I may have been using averted imagination..."

"I estimate the Bortle Class of the sky consistently as class 3, improving to class 2 under very good seeing."

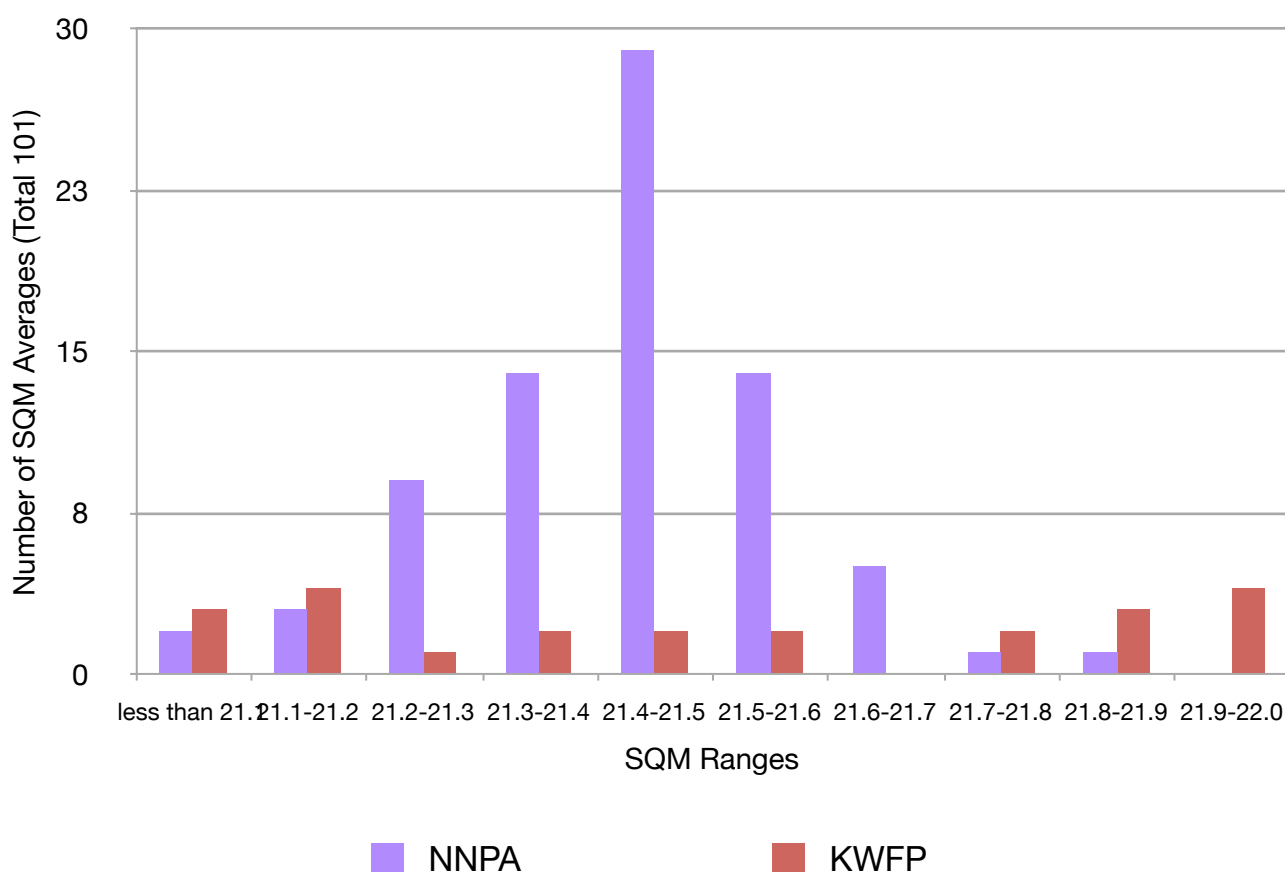


Sky Quality Monitoring - SQM

Volunteers from Northumberland National Park Authority and Kielder Observatory have taken a suite of SQM data from around Northumberland Dark Sky Park in order to provide an assessment of the night sky quality. This data was gathered:

- using an SQM-L
- across 101 sites spread around NNPA (78 sites) and KWFP (23 sites)
- between December 2011 and December 2012

The tables on pages 22-28 shows the data as it was gathered, with an average reading for each site. The following chart shows the range of SQM-L readings across Northumberland Dark Sky Park.



This chart shows that:

- some sites are exceptionally dark, with average readings higher than 21.7 (11 sites in total)
- the majority of the readings were in the range 21.4-21.5
- over 75% of all readings recorded across the park were above 21.3

The lowest average reading was 20.6 and the highest was 22.0

SKY QUALITY METER READINGS FOR Northumberland National Park														
Site Name / Description	Grid Reference	SQM Reading Dates												Av. Reading
		12/18/1	2/24/1	3/21/1	3/27/1	3/28/1	3/22/1	11/15/1	12/10/1	11/11/1	12/13/1	12/15/1		
Hadrian's Wall														
Walltown	NY 670660		20.8						21.4					21.13
Cawfields (Dark Sky Discovery Site)	NY 714666	21.16	20.7		21.19				21.6					21.14
Once Brewed	NY 753668								20.6					20.56
Jnct to Gibbs Hill Fm	NY 743681		21.2											21.18
Steel Rigg	NY 751676		21.1		21.21				21.6					21.29
Brocolitia Car park	NY 860713		21.5						21.5					21.51
Housesteads Car Park	NY 794684		21.2						21.4					21.3
North Tyne & Redesdale														
Layby on the C200	NY 818842			21.4				21.43						21.43
Lanehead	NY 792856							21.54						21.54
Greenhaugh School	NY 794875			21.5				21.42		21.37				21.42
LaneEnd Tasset	NY 792892			21.5				21.44						21.48
High Green	NY 810910			21.5				21.47		21.41				21.47
Jnct to Sunday Sight	NY 820917			21.5				21.44		21.38				21.44
Padon Hill Cattle Grid	NY 824918			21.5				21.5		21.41				21.48
Billsmoor NP Car park	NY 943968					21.3								21.26
Elsdon Village Green	NY 936933					21.3								21.27
The layby opposite the Gibbet	NY 962909					21.3								21.29
Layby at Elishaw	NY 856956			21.5										21.46
Rochester	NY 834978								21.5					21.45
Cottonhopesfoot Burn road	NT 782028			21.6				21.55						21.56
Byrness Campsite	NT 780015			21.6										21.62
Whitelee Farm	NT 713050			21.6										21.55
Carter Bar layby	NT 698069			21.6										21.63
Jnct of B6320 and rd to Greenhaugh	NY 834876			21.5										21.54
Jnct to Sunday sight	NY 819882			21.6										21.58
Coquetdale														
Woodhouse Bastle layby	NT 967002						21.56		21.5					21.52
Holystone	NT 956026						21.6							21.6
Holystone cattle grid	NT 951026						21.59							21.59
Out onto range	NT 925019						21.37							21.37
Harbottle Castle	NT 930048						21.61		21.5					21.56
Alwinton Car Park	NT 919064						21.35		21.6					21.5
Barrow scar lay-by	NT 906064						21.45		21.5					21.48
Shillmoor bridge	NT 887077						21.45		21.6					21.51
Byegate bridge	NT 870083						21.45		21.5					21.49
Barrowburn	NT 866103						21.42		21.6					21.49
Slimefoot Car Park	NT 859115								21.5					21.54
Carshope	NT 846113								21.5					21.54
Buchams Walls CP	NT 824106								21.5					21.48
Chew Green layby	NT 794086						21.47		21.5					21.49

Clennel Hall	NT 928071										21.4		21.36
1st Bridge from Clennel Hall to Kidland Forest	NT 924076										21.4		21.4
2nd Bridge from Clennel Hall to Kidland Forest	NT 926084										21.4		21.39
edge of Kidland Forest	NT 920092										21.5		21.45
Clearing in Kidland Forest	NT 918113										21.4		21.44
Makendon									21.5				21.51
Alnham Church	NT 991110											21.4	21.36
Alnham Castle Hill	NT 993107						21.4					21.5	21.43
Ewartly Shank	NT 961135											21.4	21.43
Scrainwood Farm	NT 990095											21.3	21.33
Eli Law	NT 977085						21.17					21.4	21.28
Puncherton Road end	NT 948080						21.18				21.3		21.25
Biddlestone	NT 961084										21.3		21.34
Turn off for High Carrick on Elsdon – Bilsmoor Road.	NY 937953						21.26						21.26
NCC layby on Elsdon – Bilsmoor Road	NY 938956						21.35						21.35
Lordenshaws Car Park	NY 052987						21.37						21.37
Tosson Waterworks	NY 032003						21.41						21.41
Alwinton Church	NT 923057						21.36						21.36
Yardhope									21.8				21.8
Dudlees	NY 869001								21.6				21.63
Stewartshield	NY 864992								21.7				21.72
Potts Durtrees	NY 873974								21.6				21.61
Troughend A68	NY 865929								21.6				21.57
Cheviots													
Ingram Bridge Car Park	NU 018163						21.59				21.38		21.49
Bulby's Wood Car Park	NU 008163						21.59				21.35		21.47
Peggy Bells bridge	NT 997166						21.57				21.39		21.48
Hartside layby	NT 977163										21.44		21.44
Linhope	NT 965163										21.39		21.39
Wooler Common - Forestry Car Park	NT 977273										21.05		21.05
Wooler Common - Road to	NT 973271										21.29		21.29
Wooler Common	NT 973264										21.21		21.21
West Kirknewton	NT 904303										21.44		21.44
Hethpool Car Park	NT 893281										21.42		21.42
College Valley	NT 887252										21.44		21.44
Trough Up Road End											21.37		21.37
Kilham 1st Cattle Grid											21.43		21.43
Kilham 2nd Cattle Grid											21.41		21.41
Kilham 3rd Cattle Grid											21.33		21.33
Old Yeavering Road End	NT 925303										21.36		21.36

Time & Date	Location	Map Ref;	Reading
19th Jan 2012	Kielder Observatory	NY 60936 93259	21.97
20th Jan 2012	Kielder Observatory	NY 60936 93260	22.41
21st Jan 2012	Kielder Observatory	NY 60936 93261	21.74
22nd Jan 2012	Kielder Observatory	NY 60936 93262	21.86
23rd Jan 2012	Kielder Observatory	NY 60936 93263	22
24th Jan 2012	Kielder Observatory	NY 60936 93264	21.36
25th Jan 2012	Kielder Observatory	NY 60936 93265	inclement
26th Jan 2012	Kielder Observatory	NY 60936 93266	22.12
27th Jan 2012	Kielder Observatory	NY 60936 93267	Inclement
28th Jan 2012	Kielder Observatory	NY 60936 93268	22.34
29th Jan 2012	Kielder Observatory	NY 60936 93269	21.87
30th Jan 2012	Kielder Observatory	NY 60936 93270	21.75
31st Jan 2012	Kielder Observatory	NY 60936 93271	21.89
1st feb 2012	Kielder Observatory	NY 60936 93272	inclement
2nd feb 2012	Kielder Observatory	NY 60936 93273	inclement
3rd feb 2012	Kielder Observatory	NY 60936 93274	21.99
4th feb 2012	Kielder Observatory	NY 60936 93275	inclement
5th feb 2012	Kielder Observatory	NY 60936 93276	inclement
6th feb 2012	Kielder Observatory	NY 60936 93277	inclement
7th feb 2012	Kielder Observatory	NY 60936 93278	22.1
8th feb 2012	Kielder Observatory	NY 60936 93279	inclement
9th feb 2012	Kielder Observatory	NY 60936 93280	inclement
10th feb 2012	Kielder Observatory	NY 60936 93281	21.77
11th feb 2012	Kielder Observatory	NY 60936 93282	22.45
12th feb 2012	Kielder Observatory	NY 60936 93283	22.15
13th feb 2012	Kielder Observatory	NY 60936 93284	Inclement
14th feb 2012	Kielder Observatory	NY 60936 93285	21.89
15th feb 2012	Kielder Observatory	NY 60936 93286	Inclement
16th feb 2012	Kielder Observatory	NY 60936 93287	Inclement
17th feb 2012	Kielder Observatory	NY 60936 93288	21.98
18th feb 2012	Kielder Observatory	NY 60936 93289	21.91
19th feb 2012	Kielder Observatory	NY 60936 93290	inclement
20th feb 2012	Kielder Observatory	NY 60936 93291	22.3
20th feb 2012	Catcleugh	NT 743034	22.95
20th feb 2012	Byrness school	NT 758028	21.06
20th feb 2012	Forest Drive Toll	NT 780002	22.54
21st feb 2012	Kielder Observatory	NY 60936 93291	22.47
21st feb 2012	Catcleugh	NT 743034	22.76
21st feb 2012	Byrness school	NT 758028	22.18
21st feb 2012	Forest Drive Toll	NT 780002	23.21
22nd feb 2012	Kielder Observatory	NY 60936 93291	22.1
23rd feb 2012	Catcleugh	NT 743034	21.07
23rd feb 2012	Byrness school	NT 758028	20.96
23rd feb 2012	Forest Drive Toll	NT 780002	21.33
23rd feb 2012	7 Linns	NY 6867 8012	21.56
23rd feb 2012	Hopehouse	NY 6891 8064	22.25
23rd feb 2012	Lord robinson	NY 6746 8117	21.38

23rd feb 2012	Chirdon Head	NY 7127 8189	21.15
24th feb 2012	Kielder Observatory	NY 60936 93291	21.58
24th feb 2012	Catcleugh	NT 743034	21.05
24th feb 2012	Byrness school	NT 758028	21.15
24th feb 2012	Forest Drive Toll	NT 780002	22.07
24th feb 2012	Gowanburn	NY 64718 91455	21.3
24th feb 2012	Janus Chairs	NY 6632 90761	21.33
24th feb 2012	Belling inlet	NY 66235 91122	21.3
24th feb 2012	Coal yard	NY 69902 88649	21.33
24th feb 2012	Wainhope bothy	NY 6719792369	21.4
25th feb 2012	Kielder Observatory	NY 60936 93291	22.17
25th feb 2012	Gowanburn	NY 64718 91455	21.9
25th feb 2012	Janus Chairs	NY 6632 90761	22.22
25th feb 2012	Belling inlet	NY 66235 91122	21.9
25th feb 2012	Coal yard	NY 69902 88649	21.71
25th feb 2012	Wainhope bothy	NY 6719792369	22.41
25th feb 2012	Blackaburn lough	NY 7645 7952	21.9
25th feb 2012	Pundershaw	NY 7977 8016	21.48
26th feb 2012	Kielder observatory	NY 60936 93291	21.54
27th feb 2012	Kielder observatory	NY 60936 93292	inclement
27th feb 2012	Kielder observatory	NY 60936 93293	22.01
28th feb 2012	Kielder observatory	NY 60936 93294	inclement
28th feb 2012	Catcleugh	NT 743034	21.21
28th feb 2012	Byrness school	NT 758028	19.92
28th feb 2012	Forest Drive Toll	NT 780002	20.61
29th feb 2012	Catcleugh	NT 743034	20.48
29th feb 2012	Byrness school	NT 758028	19.84
29th feb 2012	Forest Drive Toll	NT 780002	19.54
29th feb 2012	Gowanburn	NY 64718 91455	19.5
29th feb 2012	Janus Chairs	NY 6632 90761	19.54
29th feb 2012	Belling inlet	NY 66235 91122	19.55
29th feb 2012	Coal yard	NY 69902 88649	19.26
29th feb 2012	Wainhope bothy	NY 6719792369	19.88
1st march 2012	Catcleugh	NT 743034	19.95
1st march 2012	Byrness school	NT 758028	19.21
1st march 2012	Forest Drive Toll	NT 780002	19.81
3rd march 2012	Kielder Observatory	NY 60936 93294	20.87
4th march 2012	Kielder Observatory	NY 60936 93295	21.89
5th march 2012	Kielder Observatory	NY 60936 93296	Inclement
6th march 2012	Kielder Observatory	NY 60936 93297	Inclement
7th march 2012	Kielder Observatory	NY 60936 93298	Inclement
8th march 2012	Kielder Observatory	NY 60936 93299	Inclement
9th march 2012	Kielder Observatory	NY 60936 93300	Inclement
9th march 2012	Gowanburn	NY 64718 91455	19.3
9th march 2012	Janus Chairs	NY 6632 90761	19.87
9th march 2012	Belling inlet	NY 66235 91122	20
9th march 2012	Coal yard	NY 69902 88649	19.26
9th march 2012	Wainhope bothy	NY 6719792369	20.5

12th march 2012	Blackaburn lough	NY 7645 7952	22.64
12th march 2012	Pundershaw	NY 7977 8016	22.68
12th march 2012	Kielder Observatory	NY 60936 93294	21.99
13th march 2012	7 Linns	NY 6867 8012	20.47
13th march 2012	Hopehouse	NY 6891 8064	21.31
13th march 2012	Lord robinson	NY 6746 8117	20.58
13th march 2012	Chirdon Head	NY 7127 8189	21.03
15th march 2012	Blackaburn lough	NY 7645 7952	22.04
15th march 2012	Pundershaw	NY 7977 8016	21.7
15th march 2012	Kielder Observatory	NY 60936 93300	21.45
16th march 2012	Gowanburn	NY 64718 91455	21.7
16th march 2012	Janus Chairs	NY 6632 90761	21.7
16th march 2012	Belling inlet	NY 66235 91122	21.35
16th march 2012	Coal yard	NY 69902 88649	21.9
16th march 2012	Wainhope bothy	NY 6719792369	21.95
16th march 2012	Blackaburn lough	NY 7645 7952	22.32
16th march 2012	Pundershaw	NY 7977 8016	22.08
17th march 2012	Gowanburn	NY 64718 91455	21.3
17th march 2012	Janus Chairs	NY 6632 90761	21.36
17th march 2012	Belling inlet	NY 66235 91122	20.9
17th march 2012	Coal yard	NY 69902 88649	22.1
17th march 2012	1 Wainhope bothy	NY 6719792369	22
17th march 2012	Kielder Observatory	NY 60936 93300	21.87
18th march 2012	Kielder Observatory	NY 60936 93301	inclement
18th march 2012	Gowanburn	NY 64718 91455	21.5
18th march 2012	Janus Chairs	NY 6632 90761	21.65
18th march 2012	Belling inlet	NY 66235 91122	21.3
18th march 2012	Coal yard	NY 69902 88649	22.1
18th march 2012	Wainhope bothy	NY 6719792369	22.25
19th march 2012	7 Linns	NY 6867 8012	22.53
19th march 2012	Hopehouse	NY 6891 8064	21.87
19th march 2012	Lord robinson	NY 6746 8117	22.04
19th march 2012	Chirdon Head	NY 7127 8189	21
19th march 2012	Kielder Observatory	NY 60936 93300	20.12
20th march 2012	Kielder Observatory	NY 60936 93301	22.15
20th march 2012	7 Linns	NY 6867 8012	21.68
20th march 2012	Hopehouse	NY 6891 8064	22.01
20th march 2012	Lord robinson	NY 6746 8117	20.01
20th march 2012	Chirdon Head	NY 7127 8189	20.78
21st march 2012	Kielder Observatory	NY 60936 93301	inclement
21st march 2012	Blackaburn lough	NY 7645 7952	21.08
21st march 2012	Pundershaw	NY 7977 8016	21.4
22nd march 2012	Pundershaw	NY 7977 8017	22.08
22nd march 2012	Kielder Observatory	NY 60936 93301	22.34
22nd march 2012	Blackaburn lough	NY 7645 7952	21.42
22nd march 2012	7 Linns	NY 6867 8012	20.64
22nd march 2012	Hopehouse	NY 6891 8064	21.24
22nd march 2012	Lord robinson	NY 6746 8117	21.28

22nd march 2012	Chirdon Head	NY 7127 8189	21.2
22nd march 2012	coldstore	NY 72094 88392	21.51
22nd march 2012	crawberry craggs	NY 71371 90731	21.44
22nd march 2012	The cross	NY 71371 90731	20.92
23rd march 2012	Kielder Observatory	NY 60936 93301	22.67
23rd march 2012	coldstore	NY 72094 88392	21.55
23rd march 2012	crawberry craggs	NY 71371 90731	21.73
23rd march 2012	The cross	NY 71371 90731	20.25
24th march 2012	Kielder Observatory	NY 60936 93301	22.09
24th march 2012	Blackaburn lough	NY 7645 7952	21.9
24th march 2012	Pundershaw	NY 7977 8017	22.1
24th march 2012	coldstore	NY 72094 88392	21.52
24th march 2012	crawberry craggs	NY 71371 90731	21.46
24th march 2012	The cross	NY 71371 90731	21.43
24th march 2012	The cross	NY 71371 90732	21.69
25th march 2012	The cross	NY 71371 90733	21.82
25th march 2012	Kielder observatory	NY 60936 93301	22.31
25th march 2012	coldstore	NY 72094 88392	21.06
25th march 2012	crawberry craggs	NY 71371 90731	21.47
26th march 2012	crawberry craggs	NY 71371 90732	21.56
26th march 2012	Kielder observatory	NY 60936 93301	21.97
26th march 2012	coldstore	NY 72094 88392	21.48
26th march 2012	The cross	NY 71371 90733	21.7
27th march 2012	Kielder observatory	NY 60936 93301	22.01
27th march 2012	coldstore	NY 72094 88392	21.56
27th march 2012	crawberry craggs	NY 71371 90732	21.49
27th march 2012	The cross	NY 71371 90733	20.08
27th march 2012	7 Linns	NY 6867 8012	22.15
27th march 2012	Hopehouse	NY 6891 8064	22.35
27th march 2012	Lord robinson	NY 6746 8117	21.13
27th march 2012	Chirdon Head	NY 7127 8189	22.45
28th march 2012	Chirdon Head	NY 7127 8190	21.13
28th march 2012	Kielder Observatory	NY 60936 93301	21.78
28th march 2012	Kielder Observatory	NY 60936 93302	22.1
28th march 2012	coldstore	NY 72094 88392	21.47
28th march 2012	The cross	NY 71371 90733	20.88
28th march 2012	7 Linns	NY 6867 8012	21.7
28th march 2012	Hopehouse	NY 6891 8064	21.3
28th march 2012	Lord robinson	NY 6746 8117	21.78
28th march 2012	Chirdon Head	NY 7127 8189	21.13
24th feb 2012	butteryhaugh bridge	NY 63224 92289	21.65
24th feb 2012	Kielder castle	NY 63197 93456	21.53
24th feb 2012	Kielder campsite	NY 62790 93803	21.45
24th feb 2012	C200 at border	NY 56819 98107	21.56
24th feb 2012	Klerseycleugh-lay-bye	NY 56819 98107	21.49
16th march 2012	butteryhaugh bridge	NY 63224 92289	21.66
16th march 2012	Kielder castle	NY 63197 93456	21.91
16th march 2012	Kielder campsite	NY 62790 93803	22.57

16th march 2012	Klerseycleugh-lay-bye	NY 56819 98107	21.85
16th march 2012	C200 at border	NY 56819 98107	21.8
17th march 2012	butteryhaugh bridge	NY 63224 92289	21.67
17th march 2012	Kielder castle	NY 63197 93456	21.68
17th march 2012	Kielder campsite	NY 62790 93803	21.78
17th march 2012	C200 at border	NY 56819 98107	21.8
17th march 2012	Klerseycleugh-lay-bye	NY 56819 98107	22.45
21st march 2012	butteryhaugh bridge	NY 63224 92289	21.66
21st march 2012	kielder castle	NY 63197 93456	22.24
21st march 2012	Kielder campsite	NY 62790 93803	21.72
21st march 2012	C200 at border	NY 56819 98107	21.76
21st march 2012	Klerseycleugh-lay-bye	NY 56819 98107	21.74
22nd march 2012	butteryhaugh bridge	NY 63224 92289	22.42
22nd march 2012	Kielder castle	NY 63197 93456	22.74
22nd march 2012	Kielder campsite	NY 62790 93803	21.84
22nd march 2012	C200 at border	NY 56819 98107	21.78
22nd march 2012	Klerseycleugh-lay-bye	NY 56819 98107	21.76

A total of 207 separate readings were taken for 33 sites within Kielder Water and Forest Park, and the averages are shown on the table below:

Average site specific readings	
Kielder observatory	21.93
catcleugh	21.38
Byrness school	20.61
Forest drive toll	21.3
7 linns	21.53
Hopehouse	21.76
Lord robinson	21.13
Chirdon head	21.23
Coldstore	21.44
Craw craggs	21.52
The cross	21.13
blackaburn lough	21.9
Pundershaw	22
Gowan burn	20.92
Janus chairs	21.09
Belling inlet	20.9
Coal yard	21.09
wainhope bothy	21.48
butteryhaugh bridge	21.81
Kielder castle	22.02
Kielder campsite	21.87
c200 border	21.74
Kerseycleugh	21.86

Justification for Gold Tier IDSP Status

The skies over Northumberland Dark Sky Park are the darkest in England, and the area protected by the lighting management plan is the largest in Europe. While over most of England it is impossible to escape the man-made glow of light pollution there are places in Northumberland where you can.

Over much of Northumberland Dark Sky Park the sky conditions correspond to Silver Tier IDSP status, but within the wilderness areas of the park, and within the heart of Kielder Forest, there are areas corresponding to Gold Tier IDSP status, with Bortle class 2, and SQM readings of 21.8+. It is these areas in particular that the lighting management plan and the dark sky application have been put together to preserve.

With these areas of Gold standard we hope the IDA will consider awarding at Gold Tier status. There is precedent for this in the UK: Galloway Forest Park was awarded Gold Tier Status in 2009 due to the dark core of the park, although most of the park corresponds to Silver; just as Northumberland Dark Sky Park has areas of exceptional (Gold Tier) quality.

Gold Tier status would add yet another incredible element to the story of Northumberland Dark Sky Park, which in turn will create intense media interest, and will drive visitors from all over England to witness the best night skies that the country has to offer.

Northumberland Dark Sky Park would be:

- The largest area of protected night sky in Europe
- The only joint IDSPark in the world, with two adjacent parks sharing the status
- The first IDSPark in England
- The first GOLD TIER IDSP in England



Harbottle Castle, SQM-L average 21.6

3. Lighting Management Plan

Northumberland National Park and Kielder Water and Forest Park commissioned a Lighting Management Plan (LMP) from lighting engineer Jim Patterson (who has written the plans for the successful applications from Galloway Forest Park, Sark, Exmoor National Park, and Brecon Beacons National Park).

The LMP is included as a separate document to this application, but the policy statements are summarised here:

Plan Statement Number 1

Residential and business occupiers should be encouraged to switch off or reduce their exterior lighting quantity at 22.00 hours. (see section 2.2 of LMP)

Plan Statement Number 2

The Authority will endeavour to ensure that no lighting will be allowed to be projected from the adjacent light permitted Zones into the E0-0 areas and any overspill lighting from properties to be no greater than 0.05 lux (horizontal) at ground level or 0.05 lux vertical at 1 metre (or higher) above ground on the E0-0 side of the property boundary. (see section 2.3 of LMP)

Plan Statement Number 3

Any new or replacement lighting within the E0-250 Zone boundary shown in Figure 2.3 of LMP should be "Fully Cut-Off" (Fully Shielded (IDA term)) regardless of light source lumen output. (see section 2.3 of LMP)

Plan Statement Number 4

Residents in the E0-250 and E0-50 Zones are to be encouraged to limit the visual perception of light output at their property boundary by adapting or modifying existing units to this end. (see section 2.3 of LMP)

Plan Statement Number 5

Residents in the E1 communities within an E0-250 area are to be encouraged to limit the overspill light at their property boundary to no more than 0.5 lux. (see section 2.4 of LMP)

Plan Statement Number 6

Even although a village has a street lighting system the residents live with and enjoy intrinsic darkness and as shown in Table 1.1 of LMP, equivalent to Environmental Zone E1-0. (see section 2.4 of LMP)

Plan Statement Number 7

Where possible all new lighting within this application boundary should be designed and installed to provide lower glare or intensity values than that recommended by the ILP for night time Environmental Zones. (see section 2.4 of LMP)

Plan Statement Number 8

All design submissions and planning applications that include external lighting within and beyond this application boundary should be encouraged to show evidence of compliance with the zero candela intensity at 900 and above and encourage domestic luminaires to be selected from units having some form of upward light control. (see section 2.6 of LMP)

Plan Statement Number 9

Through this ELMP it will be possible for The Local Authority to adopt and provide a lighting industry professionally prepared standard for discussion with its neighbours on various options to help reduce upward light transmission. (see section 3.1 of LMP)

Plan Statement Number 10

All design submissions for new lighting should be encouraged to show evidence of compliance with the zero candela intensity at 900 and above and encourage domestic luminaires to be selected from units having some form of upward light control. (see section 3.2 of LMP)

Environmental Zones - Refinement

Unlike previous applications the unique nature of the Northumberland Dark Sky Park means that there is a mixture of remote wilderness and low population density rural habitations, and as a result finer grades of the UK's environmental zones have been adopted as a pragmatic measure in this case.

As an example Galloway Forest Dark Sky Park (awarded status in 2009) contains an area of zero inhabitants and within that area the plan of no new lighting is sustainable within what is known in the IDA as the Core Zone and that was described as a possible E0 in 2009, prior to the CIE/ILP recognition in 2012.

There are now "Core Zones" in other International Dark Sky Reserves (Exmoor (2011), Brecon Beacons (2013)) where there are remote farms and residences within a "Core" boundary where the "no new lighting" concept is not sustainable. However, it can be made sustainable if the visual perception of source intensity is limited to the immediate vicinity of the property or its boundary.

The table below shows the current published values in the E0 line with Assessment notes below to identify where "presence" can be measured depending on the property density. Within a group of houses a distance limit of 50 meters is appropriate (designated E0-50) and in totally remote locations a measurement distance of 250 metres should be applied (designated E0-250), assuming in both situations that the property boundary is more distant.

Night Time Environmental Zone	Sky Glow Upward Light Ratio %	Light Intrusion (into windows) $E_{vertical}$ (lux)		Source Intensity I (cd)		Maximum Luminance L (cd/m ²)	Assessment Point Illuminance
		Pre-10pm	Post-10pm	Pre-10pm	Post-10pm	Pre & Post -10pm	E_v or E_h (lux)
E0-0	No New External Lighting Units Permitted (excluding the need for red filtered navigation / marker lights)						
E0-250	0	0	0	0*	0*	0	0.10
E0-50	0	0	0	0**	0**	0	0.25
E0-SL***	0	0.25	0.1	0	0	0	
© LCADS Ltd 2013							(IESNA = 0.5 lux)

Assessment Note 1 Measurement or calculation of light intrusion should be in the vertical plane and parallel with the window pane in its centre.

* **Assessment Note 2** Measurement or calculation of the source intensity should be based on a 1.5 metre high visual receptor placed at any location on the property boundary or 250 meters beyond the new light source, whichever is closer (eg. remote house or farm).

** **Assessment Note 3** Measurement or calculation of the source intensity should be based on a 1.5 metre high visual receptor placed at any location on the property boundary or 50 meters beyond the new light source, whichever is closer (eg community within E0-250).

*** Note spill light from public street lighting unit only

The majority of the area within this application falls within the scope of an E0-250. Within the boundary of Northumberland Dark Sky Park we have determined that all areas will be considered E0-250 unless otherwise noted. The map below shows the areas where different control regimes are in place, namely E0-0 and E0-50 variations.

Specifically those sites are:

E0: The majority of Kielder Water and Forest Park is under the strict E0 “no new lights” plan.

E50: Kielder Reservoir and the villages of Greenhough, and Alwinton, and Otterburn Training Area are designated E0-50 zones.



Lighting Management Plan Endorsement

There are two planning authorities within Northumberland Dark Sky Park:

- Northumberland National Park Authority
- Northumberland County Council

Both of these agencies have endorsed the Lighting Management Plan to use within their planning process for any new lighting within the Dark Sky Park boundary. Their letters of support are included below.

The National Park Management Plan (2009 -2014) stresses the need to retain the sense of “inspiration and tranquillity”. In its planning role, the Authority is committed to preserving tranquillity through its adherence to Policy 19 in the Local Development Framework (LDF), which states that “proposals which conserve or enhance the tranquillity of the National Park will be supported”. The Lighting Management Plan will be used by planners as an ‘advisory document’ for all planning applications in relation to Policy 19 of the Local Development Framework, until it is considered for adoption as a supplementary planning document, when the current LDF is revised in future.

This means that any new development, whether residential, public or commercial will have their planning application judged against the codes included in the LMP, ensuring that the skies above Northumberland Dark Sky Park remain dark for generations to come.





Northumberland National Park Authority,
Eastburn, South Park, Hexham,
Northumberland NE46 1BS
T: 01434 605555 F: 01434 611675

Contact: Tammy Adams
Date: 13 September 2013

Chief Executive (National Park Officer): Tony Gates

International Dark-Sky Association (IDA)
3225 North First Avenue
Tucson
Arizona 85719-2103

Dear Sir / Madam

Northumberland National Park and Kielder Water & Forest Park International Dark Sky Park Application

As the Head of Planning and Communities for Northumberland National Park Authority, I fully support this application for International Dark Sky Status. Research has proven that Northumberland National Park is the most tranquil area in England. This tranquility is identified in our Management Plan as one of the defining special qualities of the National Park.

As the local planning authority for the National Park, we strive to ensure new development conserves or enhanced tranquility. Policy 19 of the Northumberland National Park Core Strategy and Development Policies (the statutory development plan for our area) provides that, to determine whether tranquility will be affected, there will be an assessment of the impact of light generated by any proposed development. Policy 19 is set out in full extract in the attachment.

We use this policy to manage any new external lighting provided in association with new development. Where permission is granted for a development likely to involve new external lighting, we use conditions to ensure the Authority can vet the new lighting before it is installed. The technical guidance contained in the lighting management plan, prepared in association with the International Dark Sky Park application, will be of great value in the continued implementation of this policy. It will help planning officers and developers alike to specify external lighting which protects the quality of the night sky and tranquility.

Policies on specific types of development (e.g. tourism development) further uphold Policy 19 by confirming they must not negatively impact on the special qualities of the National Park.

I can, therefore, confirm that the lighting management plan will be used by Northumberland National Park Authority's planning officers to support the continued implementation of Policy 19. I will also consider, as part of any future review of the Core Strategy and Development Policies, whether it would be beneficial to formally incorporate the advice set out in the lighting management within our policy framework.

Yours faithfully,

Tammy Adams
Head of Planning and Communities



6th September 2013

Northumberland Dark Skies Park – Lighting Management Plan

Kielder Water & Forest Park Development Trust is passionate about the protection and enjoyment of our Dark Skies.

We have four members: Forestry Commission, Northumbrian Water, Calvert Trust Kielder and Northumberland County Council. Northumberland County Council is the unitary authority for the area. The other three members own the majority of the land holding within Kielder Water & Forest Park.

We have been instrumental in the development of the Lighting Management Plan and we will implement this plan across Kielder Water & Forest Park where we are responsible for lighting.

We are proud to be a key activist in this amazing Dark Sky programme and we see it as vital to our environmental sustainability and visitor experience development.

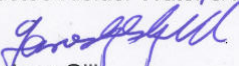
Yours Sincerely




Elisabeth Rowark
Director
Kielder Water & Forest Park Development Trust



David Hall
Northumbrian Water
Trustee Kielder Water & Forest Park Development Trust



Graham Gill
Forestry Commission
Trustee Kielder Water & Forest Park Development Trust



Peter Cockerill
Calvert Trust Kielder
Trustee Kielder Water & Forest Park Development Trust

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REGISTERED CHARITY NUMBER: 1139328
MEMBERS: NORTHUMBRIAN WATER, FORESTRY COMMISSION,

Kielder Water & Forest Park
Development Trust
Tyne House
Mill Way, Horsley
Newcastle Upon Tyne

Northumberland

Northumberland County Council

International Dark Sky Association
3225 North First Avenue
Tucson
Arizona 85719-2103

Your Ref:
Our Ref: JG/NNPA
Enquiries to: Jo-Anne Garrick
Direct Line: 01670 622343
E-mail: Jo-Anne.Garrick@northumberland.gov.uk

Date: 20 September 2013

Dear Sir / Madam

Northumberland National Park and Kielder Water & Forest Park International Dark Sky Park Application

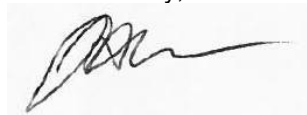
I am writing to support the joint bid by Northumberland National Park Authority and Kielder Water & Forest Park Development Trust in their application to secure International Dark Sky Park protected dark sky status for over 1400 square kilometres of Northumberland.

Northumberland has been identified by the Council for the Protection of Rural England as the darkest and most tranquil County in England. The emerging Northumberland Local Plan Core Strategy recognises its tranquillity and dark skies as distinctive characteristics of Northumberland's remote countryside. A number of draft policies seek to preserve unpolluted skies across the remote parts of the County, particularly policy 4. This highlights that the Council will continue to support Kielder Water & Forest Park as a focus for tourism development within the County, by permitting tourist accommodation, attractions and facilities linked to outdoor recreation and night sky interpretation at a scale larger than other areas of open countryside. The policy also states that all development should maintain Kielder's dark sky environment.

Planning Officers have inputted to the preparation of the lighting management plan. This provides helpful information to inform decisions on planning application where they require the installation of new external lighting. In addition to the emerging Core Strategy, the Council has also commenced work on the preparation of a Local Plan - Delivery Document which will include more detailed Development Management policies. As part of the work on this document the Council will use the information contained within the lighting management plan to inform draft policies or more detailed supplementary planning guidance, where appropriate.

If you require any additional information, please do not hesitate to contact me.

Yours faithfully,



Jo-Anne Garrick
Spatial Policy and Delivery Manager

Karen Ledger, Head of Development Services
County Hall, Morpeth, Northumberland, NE61 2EF
(T) 0845 600 6400 (F) 01670 533409 (W) www.northumberland.gov.uk



Community Support for the LMP

A small Steering Group, comprising representatives from Northumberland National Park Authority, Kielder Water and Forest Park Development Trust, Kielder Observatory Astronomical Society, and representatives of communities within both areas have met regularly to oversee and steer the process through to application.

Kielder Water & Forest Park Development Trust and Northumberland National Park work very closely together and with our respective communities; local residents, local businesses, traders in the area and visitors. With the dark skies park programme having such an impact on communities, it has been seen as one which must be developed and progressed with the full involvement of the community. From the first fact finding trip to Galloway Dark Sky Park in November 2011 members of the community have been engaged in and are very excited by the dark sky programme. There have been numerous consultation opportunities and every single residential community has received an opportunity to hear about, discuss and get involved with the dark sky park application through their local municipal organisation called Parish Councils. The working group progressing this application has always included representatives from the community both within and in the neighbouring areas of the dark sky park boundary and in January 2013 that management group was enlarged to increase the community representation so that once the application is approved, we can work together to progress the development plans for the dark sky park across the application area and beyond. It was through community engagement that an application for one dark sky park has come about and the community passion for this programme is evidenced in the changes that have already been made in street lighting in particular through community representation most notably in Elsdon, Kielder and Greenhaugh.

- Elizabeth Rowark, Director, Kielder Water and Forest Development Trust

Regular communication between the steering group and residents and communities has been critical to engaging and generating support, which has been very successful. Letters of support have been received from esteemed astronomical institutions, Defra, Wildlife Trust, Parish Councils and local individuals. The process has also resulted in considerable national and regional media coverage for both areas. Letters of Support have been received from the following communities:

- Bardon Mill
- Haydon Bridge
- Kirknewton
- Rochester
- Corsenside
- Bellingham
- Haltwhistle



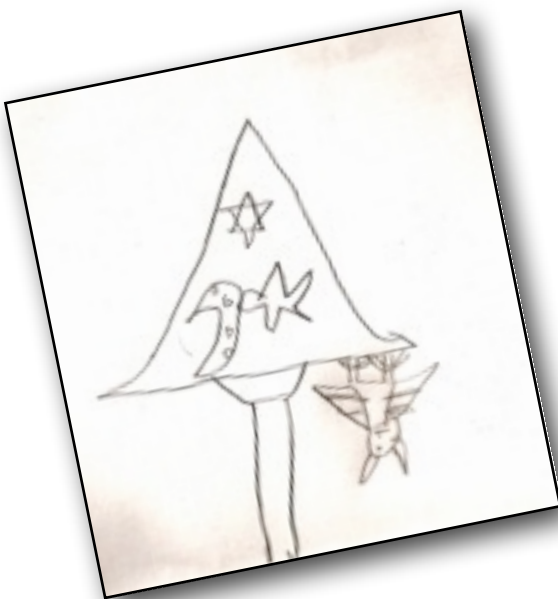
4. Light Pollution Mitigation

A number of exemplary lighting projects have been undertaken to date with and around Northumberland Dark Sky Park.

- Greenhaugh First School: When the Lighting Audit was undertaken in the village of Greenhaugh in November 2012 the School was identified as having a number of unshielded exterior bulkhead lights that were not compliant with IDA standards. In response, the School has established its own 'Dark Sky Day' each year, where they integrate aspects of the dark sky into their curriculum, as well as participating in observational activities. Children have since designed their own light shields, which are now being installed to make the whole building compliant and dark sky-friendly.
- The village of Elsdon is the largest community within the National Park, with a population of approximately 250 citizens. In the summer of 2013, as part of an undergrounding of cables initiative, the village had all of its existing low-pressure sodium street lighting units replaced with new LED units (see image). The village is hosting its first community star gazing event in October 2013.
- The College Valley, near Wooler is the most remote and unspoilt valley in Northumberland National Park. It is owned and managed by the College Valley Estates, who also run a number of self-catering cottages, located throughout the valley. The Lighting Audit identified a number of errant bulkhead lighting units installed on some of the cottages. Following discussions with the Estate, a number of lighting units have been adjusted and a plan is now in place to replace others with new shielded low-wattage units and promote the Estate as a dark sky friendly destination within the National Park.



Neil Johnston, Northumberland County Council Street Lighting Manager, holding one of the new LED street lights.



Kielder Forest Depot

Background

Kielder Depot is the maintenance depot for Forestry Commission England to manage the vast Kielder Forest. A team of approximately 10 members of staff is based at this location which is adjacent to the village of Kielder.

Operationally the depot has activity 6 days per week at anytime from 0400 through until 0200 the following day as the site is accessed during night hours by Forestry Commission Wildlife Rangers.

The Depot is made up of a collection of timber buildings spread out over the site and in the darker months access into and around the buildings needs to be illuminated for safe working practices when persons are on site.

Until March 2012 the Depot was illuminated by 500w outdoor floodlights at each doorway into the timber buildings. In total 9 lights for security were switched on each evening and were switched off the following morning after daylight.

The Solution

In March 2012 as part of the vision to protect and enhance the dark skies of Kielder Water & Forest Park all of the 9 light fittings were changed from 500w outdoor floodlights to PIR operated downward facing LED Lights.

Security has been identified as being better delivered by the LED lights which are PIR rather than being on throughout the dark hours as the timber building access points allowed potential thieves to see inside e.g. 4x4 utility vehicles and trailers which are held behind steel mesh doors could be seen.

The Outcome

Local residents who reside on Castle Drive which is the area of the village nearest the forest Depot have noticed the instant change in quality of light sky due to switching off the lights each evening and also the much improved lower light that can be seen once the led lights within the depot are activated.

A reduction in carbon and cost or energy use operating Kielder Depot to Forestry Commission is noted in the table below.

Forestry Commission as a UK Government department has a national commitment to reduce energy/ carbon by 3% per year. As can be seen in the below table changing the exterior lights in the department has led to an additional 4% saving.

Kielder Depot Electricity Use Table.

FY09/10	FY10/11	FY11/12	FY12/13	Financial Years (April – March)
37321	36406	35181	32742kw	
	-915	-1225	-2439kw	
	-3%	-3%	-7%	% reduction compared to previous year
	-91.5	-122.5	-243.9	£ saving compared previous year

Influencing Others: Ongoing and Future Mitigation

Northumberland County Council

Northumberland County Council are near to the publication of their new Local Development Framework (LDF) which determines their planning policy. The review of this Framework takes at least two years and is determined by UK Government. It involves extensive consultation with all communities and takes place approximately every 20 years.

The Chair of the Dark Skies Working Group, Elisabeth Rowark, and Duncan Wise, the leader of the Northumberland National Park dark sky programme, have been fully engaged from the outset in this review process with specific interest in Landscape and Tourism. Through this process we have been able to influence the CORE planning strategy which has been out for full public consultation and awaits publication and ensure that dark skies are recognised as a landscape feature and an asset to be protected and developed.

The following policy statements are included in the Framework which will govern planning decisions for the next 20 years because of their involvement and intervention. They demonstrate the commitment of the Council to the dark sky park and promoting dark skies across the rest of the Northumberland too. Inherent in this process is the commitment of the Northumberland Community since all feedback on the dark skies policies have been positive. The Lighting Management Plan will serve to support the decision making of the planners under these policies.

Policy 4f:

Kielder Water and Forest Park will continue to be a focus for tourism development, by permitting tourist accommodation and attractions and facilities linked to outdoor recreation and night sky interpretation at a scale larger than other areas of open countryside, in line with other plan policies. All development should maintain Kielder's dark sky environment;

Policy 15 (about tourism)

E: New or extension to existing sites for chalets, caravans, and camping will be supported in accessible locations provided that they:

- i. are not visually intrusive;*
- ii. have good quality year-round landscape screening;*
- iii. have no significant adverse impact on the surrounding road network unless it can be suitably mitigated; and*
- iv. do not compromise Northumberland's dark skies.*

G: The development does not significantly adversely impact:

- i. the current tourism offer;*
- ii. dark skies;*
- iii. the character of Northumberland's natural and historic assets and landscapes;*
- iv. the purpose and special qualities of the Northumberland National Park, or the North Pennines and Northumberland Coast Areas of Outstanding Natural Beauty.*

Policy 50

Natural and historic environment

Development proposals should seek to conserve, protect and enhance Northumberland's distinctive and valued natural and historic environment by:

- h. Limiting the impact of urbanising effects in those areas identified as tranquil, including light pollution in areas characterised by dark skies; and*

Policy 51 sub point 16.17

The existence of the National Park and AONBs contribute to Northumberland being ranked first out of 87 authorities in terms of tranquillity. The Core Strategy recognises tranquillity as a distinctive characteristic of Northumberland's remote countryside and will seek to avoid urbanising effects in these areas where possible. From the Issues and Options consultation it is clear that people consider such effects include light pollution and considered that the Core Strategy should preserve unpolluted skies across the remote parts of Northumberland. Kielder Forest is the location of the only dark sky, purpose-built public observatory in Europe. The Northumberland National Park Authority and Kielder Water and

Forest Park Development Trust are consulting on a bid to secure from the International Dark Sky Association, 'Dark Sky Park' status for the National Park and Kielder Water and Forest Park: nearly 400 square miles of rural Northumberland. If approved, this would be the largest area of protected dark sky in Europe and the World's third largest.

Northumbrian Water

As a result of the Northumberland dark sky park preparation, Northumbrian Water are working to include a dark sky supportive approach to the reviews of their lighting stock across all their sites in the North East of England, Suffolk and Essex. They are running some pilot schemes on potential dark sky discovery sites in Northumberland with a view to identifying suitable IDA friendly lights which can then be tested for other locations. This is an immense step forward since the company run hundreds of sewage treatment and water treatment sites many on very rural locations.

5. Education and Outreach

Kielder Water and Forest Park has a long record of engagement with the public in astronomy outreach. The Forestry Commission began annual public star parties in 1998 which proved a huge hit. Local amateur astronomers took this a step further by establishing the Kielder Forest Star Camp in 2003, which now runs bi-annually and gives novice and experienced stargazers from across the British Isles chance to observe under dark skies. It is now one of the UK's largest such events and was named as one of the world's top ten star parties by Sky at Night magazine.

This record of public engagement was built upon with the construction of Kielder Observatory, the UK's most successful public observatory, which runs 30 public and school observing and astronomy sessions each month. (see p13).

In addition the Dark Sky Discovery Project (<http://www.darkskydiscovery.org.uk/>) has designated another site within the park as a *Dark Sky Discovery Site*, namely Cawfields at the south end of the park, near Hadrian's Wall.



Star Trails at
Kielder Star Camp,
by Dave Thompson

To complement the excellent programme of events being delivered by Kielder Observatory, the National Park Authority has embarked on its own programme of dark sky events in recent years. Cawfields Dark Sky Discovery Site has hosted a number of introductory events that have been run by volunteers from the Newcastle, Border and Sunderland Astronomical Societies.

Engaging and inspiring local people has been a priority, an example of which was the Dark Sky Art project involving children from Haltwhistle, who, following a star gazing session at Cawfields in January, were inspired to build their own 'Universe in a Shed', which was opened to the public in March 2013: <http://whistleartstop.wordpress.com/2013/01/29/putting-haltwhistle-at-the-centre-of-the-universe/>

Local rural tourism businesses and accommodation providers have been made aware of the potential and supported with grant-aid to develop new astro-tourism activities. Many have developed star gazing packages, combining accommodation with star gazing events, to encourage people to stay in the National Park in the Autumn/Winter period - a traditionally quiet time of year for tourism. More business training seminars are planned for this year and next.

Funding is being secured to provide on-site interpretation at existing and new Dark Sky Discovery Sites throughout the proposed Dark Sky Park."

To inspire everyone about our dark skies, Northumberland National Park Authority commissioned a short film, which is now posted on its own website and on YouTube: <http://www.northumberlandnationalpark.org.uk/visiting/thingstodo/stargazing/dark-skies-video>



Northumberland National Park by Night

There are also a number of local amateur astronomy societies in the area who regularly use the park for observing nights. They are:

- Borders Astronomical Society
- Durham Astronomical Society
- Kielder Observatory Astronomical Society
- Newcastle-Upon-Tyne Astronomical Society
- Northumberland Astronomical Society
- Sunderland Astronomical Society

Their letters of support can be found in section 8.

Wider Support

As well as overwhelming local support for Northumberland Dark Sky Park, there is also national recognition of its importance.

Letters of support have been received from the following organisations:

- Department for Environment and Rural Affairs DEFRA (UK government)
- Campaign to Protect Rural England CPRE
- Royal Observatory Greenwich
- Jodrell Bank
- British Astronomical Association BAA
- Federation of Astronomical Societies FAS
- Society for Popular Astronomy SPA

These letters of support can be found in section 8.

"darkness at night is one of the things which defines the countryside and makes it so different from towns and cities. A moonlit rural landscape and the chance to appreciate a star-filled sky, free of the intrusion of artificial lighting, are precious and increasingly endangered things." - CPRE



6. Other Benefits

In addition to the astronomical benefits there are clearly many other benefits that will accrue as a result of Northumberland Dark Sky Park's lighting controls.

- Environmental
- Ecological
- Economic

Environmental Benefits

Northumberland County Council are investing £25million in replacing all old street lamps with zero-upward LED lights. This move was not primarily to benefit stargazers (although it will) but rather to meet carbon reduction targets. It is estimated that this change will result in a carbon reduction of 50%.

Ecological Benefits

The harmful influence of light at night on wildlife has been well documented, and the reduction in artificial light at night in and around Northumberland Dark Sky Park will help to preserve the wildlife that lives in the area.

There are many nocturnal animals living in the National Park including barn owls, noctule and pipistrelle bats, foxes, badgers, hedgehogs, moths and insects. These animals all rely on dark nights to forage for food and hunt their prey or avoid being hunted!

New research has revealed that light pollution disturbs the navigational patterns of nocturnal creatures, contributing to the decline of some of our native nocturnal species and may change their feeding and emergence habitats. The reduction in artificial light in and around the Dark Sky Park will improve their environment.



Economic Benefits

There are two ways in which Northumberland Dark Sky Park will benefit the economy of the area: cost reduction and tourism income.

Northumberland County Council estimates that their street light replacement programme will reduce maintenance costs by 60%, repaying the initial £25million investment within 6-8 years, in what they call a "spend-to-save" model.

Dark Sky Tourism

In addition Galloway Forest Dark Sky Park has shown that it contributes significantly to the local economy through increased visitor number, activities, events, and small-scale astronomy businesses. In the winter of 2010-11 Forestry Commission Scotland evaluated 34 local businesses around Galloway Forest Dark Sky Park. 77% of those businesses said they had seen a benefit from the dark sky park status, with an estimated increase of 600+ bed nights over the winter, and a financial benefit in excess of £40000.

7. Press and Media Coverage

There has been intense media interest in Northumberland Dark Sky park both regionally and nationally. Some of the press coverage is shown here:

Dark sky reserve boosts nascent astronomy tourism

By Chris Tighe

Astronomy tourism, a pastime that has grown in tandem with increasing light pollution, is set to be magnified further with plans to create in northern England the largest dark sky reserve in Europe.

The International Dark Skies Association, which has designated 35 areas in North America and Europe, unveils proposals today to focus on some of England's darkest skies as it creates a reserve in the Kielder area of Northumberland.

The association reports increased interest from locations wanting dark sky designation to help reduce light pollution and encourage public awareness and tourism.

"We're now becoming inundated with applications," says Steve Owens, a Glasgow-based dark sky consultant who is chairman of the IDA's development committee. "In the UK, astronomy tourism has become mainstream."

Light pollution means that more than 85 per cent of the UK's population has never seen a truly dark sky.

Kielder Water and Forest Park Development Trust and Northumberland National Park Authority will protect nearly 400 sq miles of countryside.

According to the trust, the reserve will add to the area's attractions. The £450,000 Kielder Observatory has drawn 30,000 people since opening in 2008. Star camps and Kielder Skyspace, a sculpture by James Turrell, the American artist, have also boosted visitor numbers.

"People do feel a connection with the sky," says Mr Owens, an astronomer by training. "Bringing people from cities has a very meditative, almost spiritual dimension."

Mr Muir, head of tourism at the Forestry Commission, says the park's status as a dark sky reserve is a success in Devon and Dartmoor. "It's a great way of selling to tourism in the winter months," Mr Muir says.

The sky at night; star trails over Kielder

Wina Dickens

FINANCIAL TIMES

Parks turn to dark side and strike back in star wars

Paul Jones

If the 21st century comes to be remembered as the age of darkness, the night sky is the place to watch a glimpse of celestial wonder and the dawn of darkness has been greeted with the growing problem of light pollution from the expansion of the nation's towns and cities.

The Park's astronomical experts are helping to ensure that future generations will be given the opportunity to see the stars and constellations that have inspired people's imagination for thousands of years.

PAUL JONES has also started his own interest in astronomy with programmes like Stargazing.

YORKSHIRE POST

STAR TRAILS - A camera has apparently gone into long drive at night

Campaigners have stars in their eyes

The Northern Echo

PROTECTION BID - Star trails over Kielder Water

MOVES to create the third largest area of protected sky in the world in the North-East have been revealed.

Consultation on securing dark sky status for seven sites, one of Northumberland's under way.

Kielder Water and Forest Park Development Trust and Northumberland National Park Authority are in talks with residents, parish councils and businesses to secure the proposals and group feedback before any application is made.

Seven other sites in the Forest Park area are also being considered as a potential dark sky site.

It is hoped that the designation will help to protect the area's night sky and the dark sky status would allow us to protect, cherish and promote our natural nightscapes, but getting public support is the key.

The designation is supported by the International Dark Skies Association, based in Arizona, and there are only 15 in the world.

If successful, Kielder Water and Forest Park would become England's first Dark Sky Park, while adjoining Northumberland National Park would be Britain's largest Dark Sky Reserve.

Sharon Wain, who is leading the Dark Sky Reserve project, calls "Dark sky status will help to protect the quality of the night sky. With public support we believe we can make this happen. It will be a year to workable tourism, help out among roads and benefit local communities."

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Northumberland seeks dark sky status

Stargazers are bidding to win a remote corner of England the status of Europe's largest dark sky park.

Hundreds of light meter readings have been taken around Northumberland National Park.

By Alex Marshall
10:55AM BST 17 Jul 2013

1 Comment

The Northumberland National Park, along with Kielder Water & Forest Park Development Trust and Kielder Observatory Astronomical Society, are to apply for special status from the International Dark Skies Association (IDSA).

The title means light pollution will be restricted in the area with the benefit of promoting astronomy.

Europe's largest dark sky park is currently in Galloway, Scotland, but the Northumberland bid would cover a larger area.

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News > UK > North Coast

Northumberland bids to create one of the world's biggest dark sky preserves

TOM WILKINSON THURSDAY 14 MAY 2013

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Plans have been laid to create one of the world's biggest dark sky preserves in England's most remote corner.

Managers at Kielder Water & Forest Park Development Trust and Northumberland National Park Authority hope to attract visitors to the wild Border country to appreciate theinky black of a moonless night.

Worsening light pollution means fewer Britons than ever have been able to enjoy the spectacular sight of countless stars.

The public will be consulted in Northumberland National Park on plans to protect 400 square miles of countryside from poor lighting which destroys the night vista.

Should residents agree, it will earn the designation from the International Dark Skies Association, based in Tucson, US.

Worldwide there are only 12 such preserves, and Northumberland would become the third biggest.

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7 January 2013 Last updated at 12:40

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Northumberland Park bid for dark sky status given backing

Approval would create Europe's biggest area of protected night sky

A bid for the darkness of the skies in north-east England to be given special status has received backing.

Related Stories

If approved by the International Dark-Sky Association (IDSA), the skies

Dark sky moves forward

8. Additional Letters of Support

The following pages contain the letters of support that Northumberland Dark Sky Park has received so far, in addition to those on pages 6-9 and 34-36.

The letters are from:

- DEFRA
- CPRE
- Northumberland Wildlife Trust
- Northumberland National Park & County Joint Local Access Forum
- Jodrell Bank
- Royal Observatory Greenwich
- British Astronomical Association
- Society for Popular Astronomy
- Federation of Astronomical Societies
- Outdoors Northumberland
- Sunderland Astronomical Society
- Northumberland Astronomical Society
- Newcastle Astronomical Society
- Durham Astronomical Society
- Rochester Parish Council
- Kirknewton Parish Council
- Haydon Bridge Parish Council
- Corsenside Parish Council
- Bellingham Parish Council
- Bardon Mill Parish Council
- Tarsset and Greystead Parish Council



Department
for Environment
Food & Rural Affairs

Nobel House
17 Smith Square
London SW1P 3JR

T: 08459 335577
helpline@defra.gsi.gov.uk
www.defra.gov.uk

Mr Tony Gates
Chief Executive (National Park Officer)
Northumberland National Park Authority
Eastburn
South Park
Hexham
Northumberland
NE46 1BS

20 November 2012

From Lord de Mauley
Parliamentary Under Secretary

Dear Mr Gates,

**Support for Kielder Water & Forest Park's application for Dark Sky Park status and
Northumberland National Park's application for Dark Sky Reserve status**

I am pleased to give my support to the Northumberland National Park Authority and Kielder Water & Forest Park Development Trust in their application for Dark Sky status.

In 2011 the Government published the Natural Environment White Paper, The Natural Choice, which committed to "work with industry and other bodies to reduce the negative impacts of artificial light and protect existing dark areas". This application is in line with our commitment.

I would like to commend the Northumberland National Park and Kielder Water & Forest Park teams for their efforts and demonstrating a local approach to decreasing light pollution. I wish you every success for the application.

Yrs sincerely
Rupert de Mauley



INVESTORS
IN PEOPLE

Duncan Wise
Visitor Development Officer
Northumberland National Park Authority
Eastburn
South Park
Hexham
Northumberland
NE46 1BS

24 September 2012

Dear Duncan,

Northumberland National Park application for *Dark Sky Reserve* designation and Kielder Water & Forest Park application for *Dark Sky Park* status.

On behalf of the Campaign to Protect Rural England (CPRE), I am writing to support the joint initiative by Northumberland NPA and Kielder Water & Forest to secure protected dark sky status for more than 400 square miles of spectacular countryside in Northumberland.

CPRE exists to promote the beauty, tranquillity and diversity of rural England by encouraging the sustainable use of land and other natural resources in town and country. Formed in 1926, we are one of the longest established and most respected environmental groups in England. A registered charity, we have almost 70,000 members and supporters living in our cities, towns, villages and the countryside. CPRE is a network of over 200 district groups; there is a branch of CPRE in every county, a group in every region, as well as a national office in London.

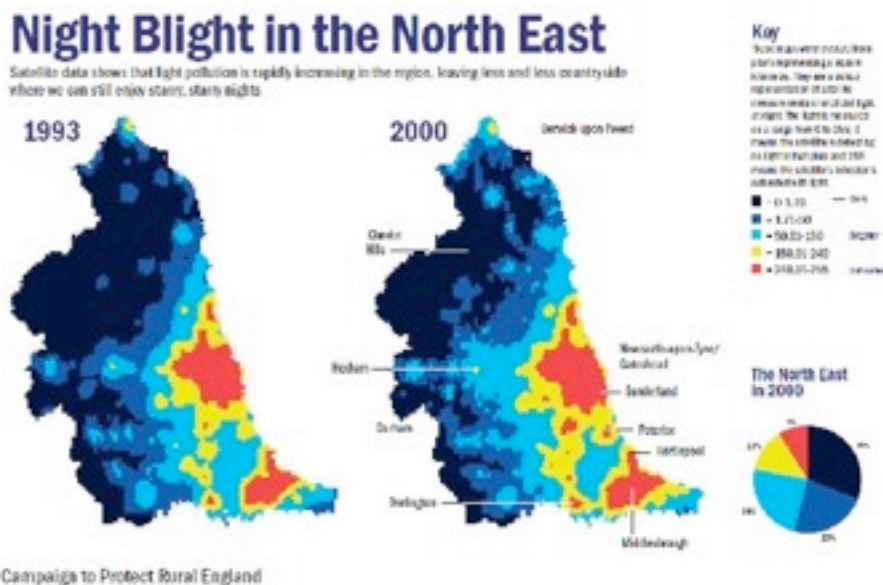
CPRE welcomes the International Dark-Sky Association's Dark Skies Programme and the opportunities it brings to recognise and protect the darkest skies across the United Kingdom and the rest of the world.

We believe that darkness at night is one of the things which defines the countryside and makes it so different from towns and cities. A moonlit rural landscape and the chance to appreciate a star-filled sky, free of the intrusion of artificial lighting, are precious and increasingly endangered things.

In 2003, CPRE launched our *Night Blight!* campaign to raise awareness of light pollution and the effect it has on night skies and the environment. We mapped light pollution levels around the country using data for 1993 and 2000. Our maps revealed that light pollution in England increased by 26% over that seven year period¹.

CPRE's light pollution maps showed that, in 2000, 45% of the skies above Northumberland were classified in the darkest category and had virtually no artificial light. This is the highest level of truly dark skies for any county in England, and compares to 16% of truly dark skies in Durham and 0% above Teeside and Tyne and Wear. The statistics clearly show how important the dark skies of Northumberland are to the whole region and to the country as a whole. Our *Night Blight!* map of the North East (fig.1) illustrates the levels of light pollution in the region in 1993 and 2000. It is evident from our maps that the Northumberland National Park contains extensive areas that are not affected by light pollution and so provide exceptional dark skies.

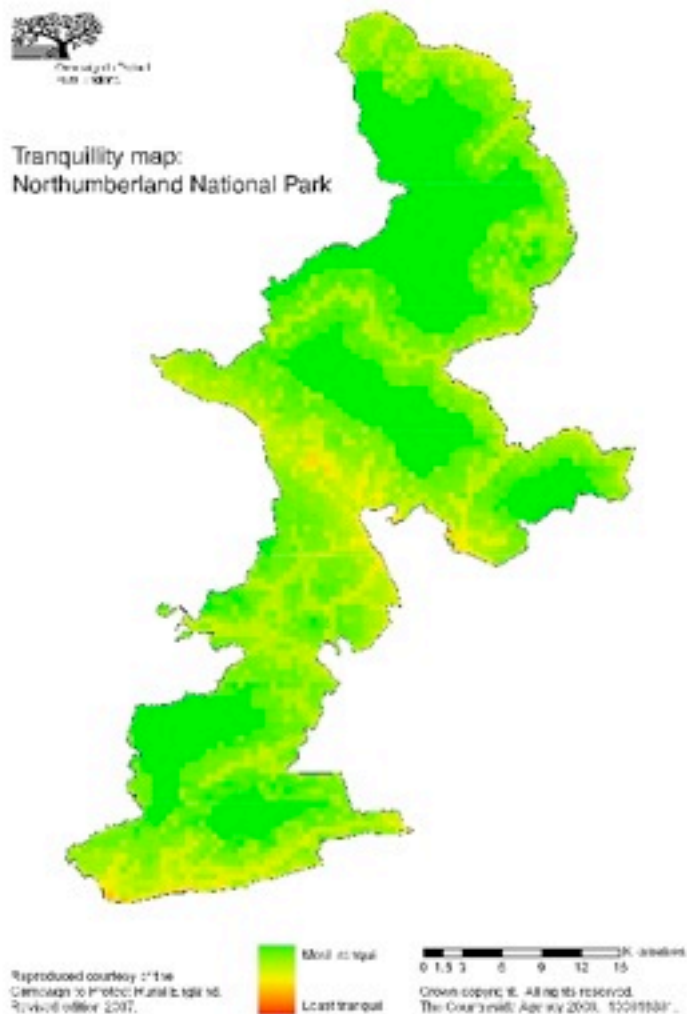
fig.1



¹ CPRE's *Night Blight!* report can be downloaded:
<http://www.cpre.org.uk/resources/countryside/dark-skies/item/1986->

Not only is Northumberland the darkest place in the country but it is also the most tranquil county in England, according to CPRE's tranquillity mapping². Various positive and negative factors (including dark skies) combine to create tranquillity scores for each 500m x 500m square, and Northumberland National Park enjoys the highest levels of tranquillity (fig 2). This is further evidence of the experiential qualities of the Northumberland National Park and the Kielder Water & Forest Park that sits at the heart of the National Park area.

fig.2

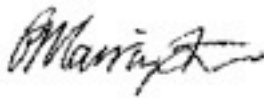


² More information about CPRE's tranquillity mapping can be found: <http://www.cpre.org.uk/resources/countryside/tranquil-places/item/1855->

CPRE would like to take this opportunity to place on record our full support for the joint Northumberland National Park Authority and Kielder Water & Forest Park bid for IDA *Dark Sky Reserve* and *Park* status respectively. Northumberland offers exceptional dark skies with very little light pollution to detract from the tranquillity and pristine night skies of the area. The designation of these areas would help ensure that their unique dark sky qualities would remain protected for future generations to enjoy.

If you would like further information please do get in touch.

With best wishes,

A handwritten signature in black ink, appearing to read 'Emma Marrington', with a stylized, flowing script.

Emma Marrington
Rural Policy Campaigner

Tel: (0191) 284 6884
Fax: (0191) 284 6794
Email: mail@northwt.org.uk
Web: www.nwt.org.uk

Northumberland Wildlife Trust

People taking action for wildlife



kw/mp/gc/2501/darkskies

25 January 2013

Elizabeth Rowark
Kielder Water & Forest Park Development Trust
Tyne House
Mill Way
Horsley
Newcastle upon Tyne
NE15 0PA

Dear Elizabeth

Dark Skies Designation, Support from Northumberland Wildlife Trust

I am writing to further support the designation of Kielder Water and Forest Park and the Northumberland National Park as an area of formal "dark sky" as indicated in the map illustrating proposed boundaries for designation.

We are particularly keen to see our own National Nature Reserve at Whitelee included in the boundary of the proposed designation. Already an area of extensive wild land it is naturally 'dark' and will complement the overall proposal. It is also contiguous with Kielder Forest & Water Park.

The concept of minimising light disturbance and pollution in what is primarily a large living landscape of wild land complements the Wildlife Trust's promotion of the conservation and well-being of wildlife species and habitats. Any such designation will add value to the special qualities of this area and have a positive effect on local wildlife, especially night time creatures.

We also support the bid in that it will help to add value to the natural integrity of the landscape and, linked to this, nature tourism opportunities in and around Kielder, thereby enhancing people's experience of the natural environment after dark and in the evening.

Yours sincerely

Mike Pratt
Chief Executive

Cc Richard Darn



**NORTHUMBERLAND NATIONAL PARK AND COUNTY
JOINT LOCAL ACCESS FORUM**

**Eastburn, South Park, Hexham, Northumberland NE46 1BS
Tel: 01434 611550 Fax: 01434 600522**

www.northumberland-national-park.org.uk email:jlaf@nnpa.org.uk

Tuesday, 10 September 2013

Dear Sirs

Northumberland National Park Authority's bid for Dark Sky Park Status

The Northumberland National Park and County Joint Local Access Forum fully supports the initiative between Northumberland National Park Authority and Kielder Water & Forest Park Development Trust, to secure protected dark sky status for more than 500 square miles of beautiful countryside in Northumberland.

There are very many benefits which would arise from being awarded this designation, and it would be of great value to both the local population in Northumberland and surrounding areas, as well as to visitors to the region.

Yours sincerely

Gill Featonby

Gillian M Featonby (Mrs)
Chairman JLAF

Chairman: Mrs G. M. Featonby gfeatonby@btinternet.com Vice Chairmen: George Astbury and Ted Liddle
Administrator: Marion Hume

Prof. Albert Zijlstra
Jodrell Bank Centre for Astrophysics
School of Physics and Astronomy
The University of Manchester
Oxford Road
Manchester M13 9PL

+44(0)161 306 3925

iapetus.jb.man.ac.uk

24/08/12

Dear Dr Lewis

The Jodrell Bank Centre for Astrophysics is keen to support the Dark Sky initiative at Kielder Water and Forest Park.. We note that astronomy is the most popular of the sciences and that for instance the BBC's Star Gazing Live attracted over 10 million viewers over three nights. About a quarter of Physics students are attracted into this topic through an interest in astronomy, and the importance of these students to the UK economy is well documented.

In much of the UK, the night sky is now too bright to be able to see the Milky Way. The few remaining dark sites should be protected as a valuable resource, able to inspire the next generation.

Yours sincerely



Albert Zijlstra

Director- Jodrell Bank Center for Astrophysics

FROM THE DIRECTOR
DR KEVIN FEWSTER AM FRSA

ROYAL
MUSEUMS
GREENWICH



Dr Paul Lewis FRAS
Chairman
Kielder Observatory Astronomical Society
c/o 9 Somerton Court
Ouseburn Park
Newcastle upon Tyne
NE3 2QZ

22 August 2012

Dear Dr Lewis

Many thanks for your letter dated 14 August outlining the plans of the Kielder Observatory Astronomical Society, Kielder Water & Forest Park Development Trust and Northumberland National Park Authority to apply for dark sky status.

The mission of the Royal Observatory Greenwich is to promote and explain astronomy to the public and media across the UK as well as internationally. As such, we have been extremely impressed by the work of the International Dark Sky Association in promoting astronomy through their recognition of prime dark sky locations. The beneficial effects that dark sky status can have in terms of engaging local communities and increasing press interest in astronomy also seem clear.

The creation of a Dark Sky Reserve in the north east of England will doubtless help to increase awareness of astronomy across the region as well as securing access to dark skies for future generations. We therefore wish you every success in your application.

Yours sincerely

Dr Kevin Fewster AM
Director

ROYAL OBSERVATORY GREENWICH | NATIONAL MARITIME MUSEUM | THE QUEEN'S HOUSE
WWW.RMG.CO.UK | PARK ROW, GREENWICH, LONDON SE10 9NF | +44 (0)20 8312 6606

PATRON

HRH THE DUKE OF EDINBURGH KG KT

CHAIRMAN

THE RT HON THE LORD STERLING OF PLAISTOW GCVO CBE



Maritime GREENWICH
A WORLD HERITAGE SITE



**The British Astronomical Association's Campaign for Dark Skies -
working towards star-quality lighting**

www.britastro.org/dark-skies

Bob Mizon MBE, FRAS
CfDS Co-ordinator
38 The Vineries, Colehill
Wimborne, Dorset BH21 2PX

01202 887084

e-mail: bob@mizarastro.freemove.co.uk

Dr Paul Lewis
Kielder Observatory Astronomical Society
9 Somerton Court
Ouseburn Park
Newcastle upon Tyne
NE3 2QZ
August 21 2012

Dear Dr Lewis,

The British Astronomical Association, and especially its Campaign for Dark Skies section (CfDS), is particularly interested to hear of the dark-sky initiative in Northumberland, in the context of which the Kielder Observatory Astronomical Society is consulting on securing Dark-Sky status within the IDA scheme for the Kielder area.

We have worked with Exmoor, Galloway Forest Park and the island of Sark on similar schemes. The CfDS believes that, while pursuing its aim to secure the optimum night sky for all Britons, wherever they live, it is also important to foster centres of excellence where astronomers, authorities and local residents work together to preserve existing very dark night skies.

We therefore wish you and your group all success in your aim to secure dark-sky status for the Kielder area. Please let us know if we can help in any way.

Yours sincerely,

Bob Mizon Coordinator BAA CfDS



Society for Popular Astronomy

President: Prof. Derek Ward Thompson

Jeremiah Horrocks Institute - University of Central Lancashire - Preston - PR1 1HE
Telephone: 01772 893540 E-Mail: dward.thompson@uclan.ac.uk

Dear Paul,

Thank-you very much for your letter of 20th July. I read it with great interest. I am very pleased to hear of your dark sky initiative in Northumberland. I think that this is an excellent idea, and I am writing on behalf of the Council of the Society for Popular Astronomy to say that we at the SPA fully support this initiative.

Northumberland National Park and Kielder Forest are ideally suited for dark sky status, and form a perfect location for a Dark Sky Reserve and Dark Sky Park respectively. The Kielder Observatory in particular will benefit hugely from dark sky status.

Speaking personally, I grew up in the north-east and can remember a school field trip (many years ago!) to watch the Kielder Dam being built. I have been back to Kielder Forest many times since, and find the country-side in that part of the world to be beautiful and tranquil.

I have not yet had the opportunity to visit the Kielder Observatory, but look forward to being able to do so – and especially if dark sky status is granted.

I wish you very good luck with this project, both personally, and on behalf of the Society for Popular Astronomy.

Yours sincerely

Professor Derek Ward-Thompson



FEDERATION OF ASTRONOMICAL SOCIETIES

c/o
4 Bache Drive,
Upton,
Chester,
CH2 2JB

14th October 2012

To:
Dr Paul Lewis
Chairman, Kielder Observatory Astronomical Society

Dear Paul,

Letter of Support for Dark Sky Initiative in Northumberland

Thank you for your letter of 14/08/12 in which you described how your astronomical society in partnership with Kielder Water & Forest Park Development, and with Northumberland National Park Authority, were intending to seek dark sky status for 400 square miles of the park. The Council of the Federation of Astronomical Societies (FAS) has discussed this.

The increase in light pollution threatens to reach even remote areas like the one you described, and if we do nothing it will eventually rob both the public and the astronomy community of a view of the beautiful starry night sky even in places remote from towns and cities. It is absolutely vital and a fundamental right that the public and generations to come are able to see the night sky in pristine condition free from artificial light pollution.

We are sure that the ~11,500 people that make up the 187 astronomical societies that are members of the FAS fully support the pursuit of dark sky status for the Northumberland National Park.

Therefore the FAS has no hesitation in expressing its full support to the above initiative. We wish you every success in your application for dark sky status.

Yours sincerely,

A handwritten signature in black ink that reads 'Richard Sargent'.

Richard Sargent
Vice President, Federation of Astronomical Societies



Outdoors Northumberland

Outdoors Northumberland
c/o Shepherds Walks
2 The Stone Barn
Kirkharle Courtyard
Kirkwhelpington
Newcastle upon Tyne
NE19 2PE

Northumberland National Park
Eastburn
South Park
Hexham
NE46 2HQ

Thank you for coming to speak to the Outdoors Northumberland network regarding the dark skies project you have been working on and your aim of Northumberland National Park becoming an International Dark Sky Reserve.

It sounds very interesting and it is something all our members support, as it is important for all our businesses to protect and enhance the dark skies.

We fully support your work to become an International Dark Sky Reserve and if we can be of any assistance in the future please do not hesitate to get in touch.

Yours faithfully,

A handwritten signature in blue ink, appearing to read "Jon Monks".

Jon Monks
(Chair, Outdoors Northumberland)



Paul Lewis
Chairman
Kielder Observatory Astronomical Society
C/o 9 Somerton Court
Ouseburn Park
Newcastle upon Tyne
NE3 2QZ

20th July 2012

Dear Paul,

Re: Dark Sky Park Initiative

I saw the recent coverage on local television of Kielder Observatory's aspirations to see Kielder Forest gain recognition from the International Dark Sky Association as a Dark Sky Park. Firstly can I say that the story of Kielder Observatory is nothing short of brilliant. Through the dedicated work of volunteers the facility has achieved remarkable things over the past four years, in making the universe accessible to all. Being situated in one of England's darkest places you are the envy of many other astronomical societies.

I believe that dark sky status is important for the observatory for a number of reasons. Having constructed this marvellous facility in such a challenging location and made it available to everyone it is imperative that the Kielder skies, which inspired the idea in the first place, are protected from the steady and relentless increase in artificial lighting.

Light pollution is low on the agenda of many local authorities and legislation often doesn't help minority groups like amateur astronomers. Our towns and cities continue to expand and with expansion comes more lighting, not all of it as well thought out as it could be. It is difficult to argue against artificial lighting completely, however, and most astronomers acknowledge that some level of lighting at night is both necessary and desirable in built up areas.

Although campaigns exist to champion the control of light pollution, with the best will in the world, skies above our towns and cities are simply never going to allow the same breathtaking vistas available in Kielder Forest. This makes it all the more important that there exist places where the sky is protected, for all, purely for the purpose of its study and appreciation.

Dark skies are the reason Kielder Observatory was built and the reason people visit. For future generations to enjoy the same experience, it is vital that care is taken to consider, control and protect one of Kielder's most valuable assets. I am sure that Dark Sky Park status would put in place the necessary steps to ensure that this happened and would be quite a coup for Northumberland too!

On behalf of everyone at Sunderland Astronomical Society, I wish you well with this important application.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'Graham', written in a cursive style.

Graham Darke FRAS
Chairman

Registered Charity number 1071527
Discovery Room
Wildfowl & Wetlands Trust
Pattinson
Washington
NE38 8LE



Adrian Jannetta, 40 Church Walk, Morpeth, Northumberland, NE61 2LG

24th August 2012

Dr Paul Lewis FRAS
Kielder Observatory Astronomical Society
Northumberland

Kielder Observatory

Dear Paul

This is a letter supporting the endeavours of Kielder Observatory's dark sky application on behalf of Northumberland Astronomical Society.

Kielder Observatory is a popular educational facility located beneath the darkest skies in Northumberland. The observatory is a popular tourist attraction and it enjoys a high profile nationally as well as locally.

The team at Kielder has done much to promote awareness of dark skies and the detrimental effects of light pollution with communities in the northeast. The team at Kielder has good links with the other astronomical societies and clubs in the northeast of England and our committee looks forward to working with and supporting Kielder Observatory in the future.

Please do not hesitate to contact me if you require anything further in support of your application.

Yours sincerely,

Adrian Jannetta
Chairman
Northumberland Astronomical Society
T: 01670 511536
E: adrian@themoon.co.uk

Newcastle Upon Tyne Astronomical Society

Established 1904

President. Professor Richard Stevenson.

c/o Tom Moran (Secretary)
20 Kielder Road
South Wellfield
Whitley Bay
NE25 9QW

moranhousehold@hotmail.com

18th August 2012

Re: Dark Sky initiative in Northumberland. C/o Paul Lewis. Kielder Observatory Astronomical Society.

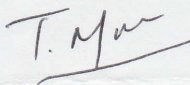
Dear Paul.

I have been asked by our committee to write you a letter regarding the application for dark sky status for nearly 400 square miles of Northumberland. We understand the need to protect our dark skies and have already worked closely with Duncan Wise from Northumberland National Parks on a joint venture at Cawfields in the west of Northumberland. Duncan was able to secure Cawfields as a Dark Sky Discovery site this year.

As urbanisation creeps ever outwards from our towns and cities citizens across the globe are increasingly unaware of the beauty and majesty of the night sky. We have witnessed this first hand at our observing site at Vallum Farm which has slowly lost some of its sky quality through light pollution. Programmes such as the BBCs Star Gazing Live and Professor Brian Cox's Wonders of the Universe demonstrate a public appetite for discovering the night sky. It is therefore important that we work now to protect the very few remaining dark skies that we have left on our small and highly populated island for the coming generations.

Following a full discussion Newcastle upon Tyne Astronomical Society offer our full support of your application to the International Dark Sky Association. The establishment of a Dark Sky Park for Kielder Water and Forest Park would protect this precious resource for generations to come.

We wish you good luck in the application.



Tom Moran
Secretary
On behalf of Newcastle Astronomical Society.

To

Paul Lewis
Kielder Observatory Astronomical Society
c/o 9 Somerton Court
Ouseburn Park
Newcastle upon Tyne
NE3 2QZ

Durham, 2012 July 20

Durham Astronomical Society
c/o chairman
Dr Jürgen Schmoll
48 Linden Road
West Cornforth
Ferryhill DL17 9NR

Letter of support of the Kielder Forest Dark Sky Status Application

Dear Paul,

in my function as chairman of the Durham Astronomical Society (DAS) I want to express my support for the application of the Kielder Observatory Astronomical Society to secure dark sky status for the Kielder Water and Forest Park.

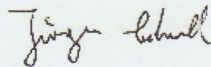
Many of our active members know Kielder Forest very well from various astronomical events as the starfests, events at the observatory or private stays in Kielder Forest aimed at astronomical observations under undisturbed skies. The dark sky status can help to preserve the situation that currently allows views of the Milky Way in its full glory and occasionally even observations of the zodiacal light.

These kinds of observation are not possible from County Durham due to the population density and the large industrial developments nearby. Hence, Kielder Forest is the only opportunity for DAS members to experience a dark sky within reasonable distance.

Apart from the astronomical point of view, Kielder Forest is also a resort for many night active animals whose habitats are endangered anywhere else due to the effects of artificial lighting. Hence the dark sky status has synergy effects towards fields outside of astronomy as well.

Hence, on behalf of the members of Durham Astronomical Society, accept my full support towards your application.

Best wishes,





Haydon Parish Council

Duncan Wise,
Visitor Development Officer,
Northumberland National Park.
Eastburn,
South Park,
Hexham,
Northumberland,
NE46 1BS.



3rd October 2012

Dear Duncan,

Dark skies initiative in Northumberland

The Parish Council have asked me to write to you to express their thanks for the interesting and informative presentation on the Dark Skies initiative, which you gave us at a meeting on the 20th of September.

They also asked me to pass on their unanimous support for your bid to make Northumberland National Park Europe's largest Dark Sky Reserve. The benefits outlined for this project-

- Contributing to the health and well being of residents.
- Providing opportunities for rural tourism.
- Reducing light pollution & contributing to sustainability of the area.
- Protecting the special quality of the area.

All match those outlined in the Parish Plan developed by the Parish Council and the Development Trust. In particular nearly everyone that responded to the Parish Plan consultation, agreed on the value they placed on "The rural feel and the high quality environment which living in the parish provides." (Parish Plan p.16) Should this bid be successful it can only add to the high quality of our environment.

Clerk : Mrs. C. McGivern, Belmont Lodge, Haydon Bridge, Hexham, Northumberland,
NE47 6HD. **Tel :** 01434 688020

Email : haydonbridgeparish@gmail.com

Northumberland National Park

11 OCT 2012

RECEIVED

Rochester with Byrness Parish Council

Clerk : D. Feeney

Tel : 0560 1937 403

4 Braeside,
Falstone,
Northumberland,
NE48 1BJ.

9th October 2012

Dear Mr Wise,

Conserving Our Dark Skies

I am writing to confirm Parish Council support for your "bid" for the designation of International Dark Sky Status.

Such status will give a special quality that is valued by residents and visitors.

In addition the Award will stimulate sustainable tourism in a protected landscape.

Best wishes.

Yours sincerely



David Feeney.

Mr D Wise
Visitor Development Officer
Northumberland National Park Authority
Easburn
South Park
Hexham
NE46 1BS

Kirknewton Parish Council

Chairman:
Edward Brown
The Old Vicarage
Kirknewton
Wooler
NE71 6XG

Tel: 01668 216219
E.mail:
epb348@btinternet.com

Northumberland National Park

04 OCT 2012

RECEIVED

Clerk:
Angela Hallam-Baker
Branxton Villa
Branxton
Cornhill-on-Tweed
TD12 4SW

Tel: 01890 820501
E.mail:
angela@hallam-baker.com

2nd October 2012.

Duncan Wise,
Visitor Development Officer,
Northumberland National Park Authority,
Eastburn,
South Park,
Hexham,
NE46 1BS.

Dear Duncan,

International Dark Sky Reserve status for Northumberland National Park

Following your visit to Kirknewton and your talk about conserving our dark skies, I am writing to congratulate you on the work you are doing to secure International Dark Sky status for Northumberland National Park, and to offer you the wholehearted support of Kirknewton Parish Council.

We are fortunate in that the College Valley does not suffer from light pollution, but we appreciate the problems it must create in other areas of the National Park.

With best wishes for your project.

Yours sincerely,

Angela

Angela Hallam-Baker
Clerk to Kirknewton Parish Council

Corsenside Parish Council

Clerk : D. Feeney

Tel : 0560 1937 403

4 Braeside,
Falstone,
Northumberland,
NE48 1BJ.

9th October 2012

Dear Mr Wise,

Conserving Our Dark Skies

I am writing to confirm Parish Council support for your "bid" for the designation of International Dark Sky Status.

Such status will give a special quality that is valued by residents and visitors.

In addition the Award will stimulate sustainable tourism in a protected landscape.

Best wishes.

Yours sincerely



David Feeney

Mr D Wise
Visitor Development Officer
Northumberland National Park Authority
Easburn
South Park
Hexham
NE46 1BS

Bardon Mill Parish Council

Clerk : D. Feeney

Tel : 0560 1937 403

4 Braeside,
Falstone,
Northumberland,
NE48 1BJ.

9th October 2012

Dear Mr Wise,

Conserving Our Dark Skies

I am writing to confirm Parish Council support for your "bid" for the designation of International Dark Sky Status.

Such status will give a special quality that is valued by residents and visitors.

In addition the Award will stimulate sustainable tourism in a protected landscape.

Best wishes.

Yours sincerely



David Feeney.

Mr D Wise
Visitor Development Officer
Northumberland National Park Authority
Easburn
South Park
Hexham
NE46 1BS

Bellingham Parish Council

Clerk : D. Feeney

Tel : 0560 1937 403

4 Braeside,
Falstone,
Northumberland,
NE48 1BJ.

9th October 2012

Dear Mr Wise,

Conserving Our Dark Skies

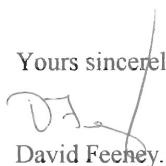
I am writing to confirm Parish Council support for your "bid" for the designation of International Dark Sky Status.

Such status will give a special quality that is valued by residents and visitors.

In addition the Award will stimulate sustainable tourism in a protected landscape.

Best wishes.

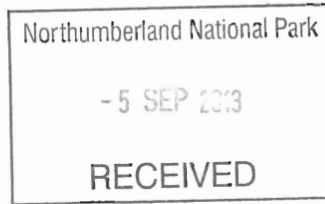
Yours sincerely



David Feeney.

Mr D Wise
Visitor Development Officer
Northumberland National Park Authority
Easburn
South Park
Hexham
NE46 1BS

Duncan Wise
Visitor Development Officer
NNPA
Eastburn
South Park
Hexham
Northumberland
NE46 1BS



Tarset & Greystead
Parish Council

2nd September 2013

Dear Mr Wise

The Parish Council would like to show the 'Dark Sky Preserve' their support in their application to the International Dark-Sky Association (IDA) to secure Dark Skies Park and Reserve Status for the Kielder Water & Forest Park and the Northumberland National Park respectively.

Yours faithfully

Kate Chadwick

Kate Chadwick
Parish Clerk

Parish Clerk: Kate Chadwick
2 Manor Park, Corbridge, Northumberland, NE45 5JS
Mobile: 07952 405036 Email: tarsetandgreysteadpc@hotmail.co.uk