

South Downs ‘Moore’s’ Reserve IDA Report Oct 2017

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Summary

The SDNPA has been very active since the International Dark Sky Reserve designation in 2016. In addition to the media and public awareness work that accompanied the announcement, the SDNPA has remained committed to delivering the objectives defined in the reserve application. Particular highlights have been the two week Dark Skies Festival held in February 2017; producing dark skies educational material; the development of the South Downs Local Plan incorporating dark skies policies; and the development of Local Plan accompanying technical design guidance for lighting due for consultation and confirmation later in 2017. In addition to these important policy instruments, the SDNPA has continued to provide events, advice and talks on dark skies and to develop candidate parishes for IDA Community status. Also the SDNPA has noticed that businesses, organisations and residents have generally welcomed the reserve and it does seem to have created a ‘buzz’ which we hope to continue to capitalise.

Although the year since designation has been lively, there have been issues. Primarily these involve major planning applications inside and outside of the park and a general public perception of what is expected of a dark skies reserve in the highly populated South Downs NP boundary.

This reports contents will include;

- Media
- Planning Policy
- Events
- Outreach
- Projects
- Other



Media

IDA Reserve Announcement

The SDNPA received good media coverage of the designation announcement and of the Dark Skies Festival, reaching TV, Radio, Web and Newspapers outlets. For the announcement the highlights included BBC South and live ITV news.

Dark Skies Festival

For the Dark Skies Festival we also hosted a TV crew from BBC's flagship 'Countryfile' programme. After a daytime piece at a local Dark Sky Discovery Site, we held a 'controlled' star party with Buriton Parish. The piece also included the Hampshire Astronomical Group at the Clanfield Observatory.



We also provided time for a Telegraph journalist and a team from AUDI looking for a suitable backdrop to promote their new Audi Q5 in their owners' magazine.



Planning Policy

Local Plan

Strategic Policy SDP: Dark Night Skies

1. Development proposals that conserve and enhance relative tranquillity, in relation to light pollution and dark night skies, and comply with other relevant policies will be permitted, provided it can be demonstrated that they meet or exceed the Institute of Lighting Professionals guidance and other relevant standards or guidance (CIE 150/2003 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations) for lighting within environmental zones, and have regard to the following hierarchy:

- The installation of lighting is avoided;
- If lighting is installed it is necessary for its intended purpose or use and any adverse impacts are avoided; and
- If it is demonstrated that (a) or (b) is not achievable, then adverse impacts are appropriately mitigated.

2. To be appropriate, lighting for development proposals should ensure that:

- The measured and observed sky quality in the surrounding area is not reduced;
- Lighting is not unnecessarily visible in nearby designated and key habitats;
- The visibility of lighting from the surrounding landscape is avoided; and
- Building design that results in increased light spill from internal lighting is avoided, unless suitable mitigation measures are implemented.

3. Development proposals that are located in or unnecessarily visible from the dark sky core boundary, as shown on the Policies Map, with SQPI values exceeding 20 mag per arcsecond² or in areas identified as being vulnerable to change will be subject to the most rigorous scrutiny in order to ensure that relative tranquillity is conserved and enhanced.

Evidence

- CIE 150/2003 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations
- DEFRA Statutory Nuisance from insects and artificial light (2006)
- Ecoserve Ecosystem Services Mapping for the SDNP
- Hampshire and Sussex Historic Landscape Character Analysis
- Lighting in the Countryside: Towards Good Practice (2007)
- South Coast Seascape Analysis (when published)
- South Downs Integrated Landscape Character Assessment (SDILCA) 2011
- South Downs Tranquillity Study
- South Downs Viewshed Characterisation Study
- The Institute of Lighting Professionals Report: Guidance Notes on the Reduction of Obtrusive Light

^{1.64} A wide range of other evidence materials is also used by the SDNPA including local landscape character assessments, where they exist, village design statements and parish plans.

* To be considered a dark sky of sufficient quality by the International Dark Sky Association, values of 20 magnitudes per arc second must be achieved.

PAGE 70 LOCAL PLAN 4: TERRAIN, LIGHTING, LANDSCAPE – STRATEGIC POLICIES

The Local Plan is a set of policies which will be used to make decisions on planning applications in the National Park. When it is adopted (expected to be in late 2017) the South Downs Local Plan will replace all existing local plans and joint core strategies within the National Park area. These plans will continue to operate outside the National Park. The South Downs Partnership Management Plan will continue to operate across the National Park alongside the South Downs Local Plan.

The current draft of the Local Plan puts forward a single set of 80 planning policies to apply across the 1,600km² of the National Park replacing around 1400 policies currently in operation across the area.

Dark skies feature as a strategic policy, (under SD9 under current draft plan – see picture above) and aims to provide a comprehensive approach that includes guidance from the Institute of Lighting Professionals, the IDA and covers important landscape impacts that have not yet been considered in existing guidance's. The policies will be backed up by a supporting technical guidance document that will provide greater detail and scope to lighting installations regardless of planning consent. A consistent set of policies will then be used throughout all the planning partners in the park, reducing the possibility of un-consulted lighting designs.

Technical Guidance



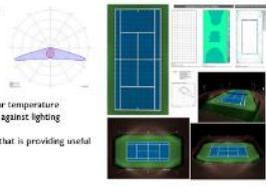
The technical guidance that will support the Local Plan will cover the detailed aspects of what should be considered for lighting development in the SDNP. It is intended to provide general design considerations for lighting, specific guidance for planning developers and guidance to planners to assess lighting plans. As it not supplementary planning guidance (SPG), the technical guide is not mandatory, but should be used to show duty of regard in planning applications.

At the heart of the guidance is the targeted use of landscape policies according to dark zones, which are themselves based upon sky quality measurements. The strongest policies will be recommended in the most sensitive areas, with a reduction in control under high urban brightness. Further limits for surface illuminance for zones are provided to prevent high powered designs that comply with all aspects of ILP and IDA installation, creating significant surface impacts – sports flood lighting for example.

5 Lighting Plan
5.1 Lighting Plan Summary
 If planning permission is required then in most cases a lighting engineer will be required to calculate a thorough lighting plan. The plan must show:

- The need for the lighting
- What dark zone the development is in
- What standards are to be used
- The position of all proposed lighting
- The installation details of all proposed lighting (angle, tilt, height)
- Technical specifications of the lighting including (spots, power, beam output, colour temperature)
- A modelled illuminance plot of the proposal, detailing spill and average illuminance against lighting guidelines.
- Baseline conditions, including details of any existing lighting, or any nearby lighting that is providing useful levels of ambient lighting should be provided.
- If the proposed lighting exceeds the limits described in this document.

The following table summarises the key questions that should be answered in a lighting plan. Descriptions indicated in **BOLD** are the key questions that should be asked by both planner and developer. Any proposals not sufficiently answering these questions should not be approved.



An important aspect of the guidance is to include glazing. These are key issues in the South Downs which the technical guidance and the Local Plan will look at address with further evidence gathering this winter.

General Planning

As an authority with high number of application per year, there were far too many applications to go into detail individually. All presented challenges, some pushing the interpretation of policy to the limits, but all those consulted by the DNS officer were consistent with emerging policy.

Some notable issues were in temporary development, which does not come under any planning development control (28 days or less). For example; the Lewes Light Festival raised a few eyebrows due to its initially perceived incompatible conflict with DNS. However, all installations were sufficient to meet ILP guidance and the small impact of the installations were drowned by the higher level of ambient light in Lewes. There was no threat to the main core.

Another event that raises concern is the Winchester Boom Town Music Festival on the edge of the National Park. The event has been a fixture on the downs for many years in some form or another, but since the IDA designation the idea of a music festival in the downs has created greater interest. After a consultation with the SDNPA, the festival lighting was improved, but did not remove all problems, particularly the use of sky scanner theatrical lighting which at least is be limited in use and direction. Festivals seem to be the en-vogue movement in the UK, so careful monitoring of their expansion – and guidance - will be required. Fortunately, they are mostly restricted to the urban fringe, rather than within the dark core. Although local residents were concerned about the events timing at the height of the Persieds, we did hear that campers managed to see meteors – probably clouded by an alcoholic haze.

Other planning areas of interest include:

The educational facility on page 152 of the main IDA application has been made aware of their landscape footprint and has altered the lighting to reduce the impact – mostly in installing them correctly. The facility management is keen to work with the SDNPA to provide educational opportunities to its residential kids and look at wider lighting plans with upcoming infrastructure plans.

A local private school, prominent in Hampshire has also looked at re-configuring their lighting on their main building as it seeks to improve its footprint and astronomical opportunities to their students. The school will be looking to collaborate with the local astronomy groups and the Parish of Buriton in support a future IDA Community application.

Midhurst Tennis courts were approved a compliant upgraded lighting scheme and were encouraged to open their facility to surrounding tennis facilities. This is intended to encourage tennis players in the darker downs to use appropriate urban amenities rather than submit planning applications for new floodlighting in smaller villages.

There is a further interesting case in another private school applying for new sports floodlighting just on the edge of the National Park. To allow provision but improve the overall footprint, badly installed sports floodlighting will be moved further away from the increasing darkness and beyond

the school buildings in order to offset the creation of sports floodlighting. Although it may seem counter-productive to the aims of reducing pollution, the net effect should be an improvement of skies towards the dark core rather than development and expansion of the existing installations.

Events

DNS Festival – Star Gazing South Downs

To celebrate the success of designation, the SDNP decided to hold a Dark Skies Festival in Feb 2017. Designed to span the two week period that covered all local authority school holidays, the main SDNPA led event was held on Feb 21st in Midhurst at the local college grounds. Although it looks particularly empty, I can assure that once the event was going, there's wasn't much time to take promo photos!



In addition to talks by ourselves, Dr John Mason and the local Wildlife trust, the festival provided activities throughout the night, including a very well attended star party supported by local astronomy groups. In conjunction with the Hampshire Astronomical Group, we also provided telescope workshops, astrophotography workshops and mobile planetarium sessions. The day was also supported with events held earlier in the day by the South Downs Planetarium. Other organisations such as University of Portsmouth also attended, helping provide family activities in

addition to our own badge making. The next DNS festival aims to attract a marquee speaker and expand the activities to include solar viewing in the afternoon.

Across the entire two weeks, we encouraged, promoted and supported partner organisations in their own festivals. Partners included, RSPB, National Trust and the astro-societies.

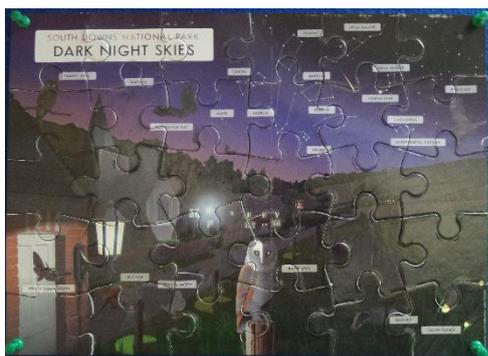
Around 600 people attended the main evening with an estimated 2,000 attending all other events throughout the week. The success of the evening means that it is likely to be an annual event, supported by our partners across the park. The festival was also publicised in the Telegraph newspaper.

Star Parties

In conjunction with partner during the DNS festival the SDNPA supported and promoted a range of star parties. The SDNPA organised and ran four across those weeks and attended some astro society's usual events programmes. We have purchased a much better solar scope (Quark Daystar Filter) to boost the experience at summer events.

Jigsaw

To aid our normal summer events programme, we have two large dark skies floor jigsaws for use. Designed by the SDNPA they aim to show the key issues of dark skies in an accessible way. Smaller, normal sized jigsaws have been produced to be included in the teacher packs. The large jigsaw has proven to be an excellent method of communication at events.



Outreach

Talks

Public talks are a persistent request for the DNS officer. Often one talk will inevitably lead to another request for another group for the audience. Since the designation many groups have had a talk as have some astronomical societies from further afield. Another dark skies talk is to feature at the prominent UK National Park conference to be held in the South Downs. Throughout the entire DNS project we have completed around 70 talks.

Teachers Pack

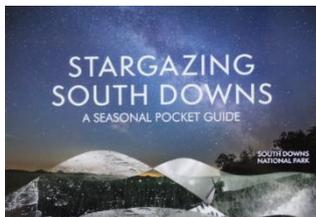


With support of the Tim Peake exhibition at the Novium Museum in Chichester, the education team at the SDNPA has developed dark skies teachers pack. These packs are available to schools to help promote dark skies in the area. They include educational material, links to resources, DNS leaflets and a normal size version of the DNS jigsaw. Schools are becoming more interested in the DNS and often request SDNPA or partner



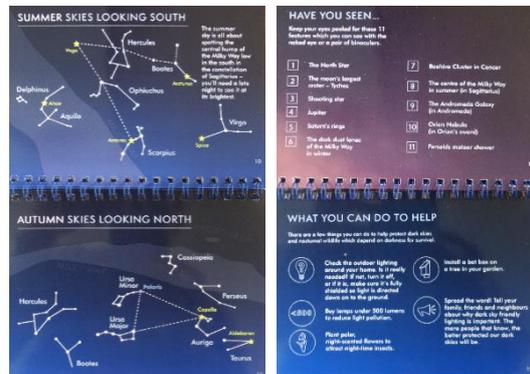
support.

Star Gazing South Downs – A seasonal Pocket Guide

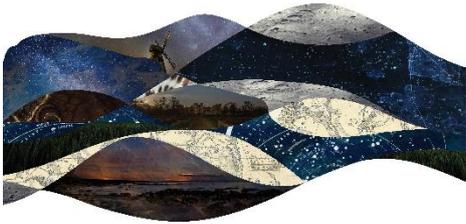


We produced a seasonal pocket guide for events and key partners. It contains information on easy to spot constellations,

moon phases and a list of deep sky and astronomical events to look out for. Similar to existing styles (e.g. BBC Stargazing 2012), ours placed an emphasis on the South Downs and some key pointers to help protect the sky and encourage wildlife.



Shared Identity



The shared identity is a communication design package that encourages partners to the SDNP to set a consistent brand identity for the downs. The 'swooshes' of the downs aim to capture the key qualities and habitats of the park and originated with daytime settings. It has now been updated to capture the night environment for our use and is available for partner organisations to use in publications, furniture or otherwise. The key objective is that the delivery of the dark skies, is seen as 'shared' between all stakeholders, not just led by the SDNPA.

Projects

SQM Planning guidance – Market towns

To improve planning policy in transitional areas around the market towns in the SDNP, more local SQM evidence is needed. Rather than concentrate on areas of the map that appeared brighter than expected, e.g. Western edge, it is more pressing to the local plan and urban development to provide greater resolution in these areas. This is due to the interpolation of data in the first sky quality map, as some areas appear brighter and darker than they are in reality which is causing difficulty in parish planning, particularly in strategic local housing assessment. This does mean altering the original plan in the IDSR application to re-visit the western edge of the SDNP where the conditions across the landscape appear brighter than they should be. This anomaly will be scheduled to a later date after the publication of the local plan.

Internal Light spill - Glazing Evidence

The internal spill of light from isolated domestic and business buildings can present a problem to protecting dark skies, particularly on the view of a landscape from surrounding viewpoints. While not so much a problem to overhead sky quality, large open areas of glazing can diminish the continuity of a dark landscape and further urbanise the rural environment. However, as light pollution guidance has traditionally focused on the types and installation of luminaires there is little information to assess the impact of internal lighting and what is an acceptable design.

Our current method of glazing assessment is based on two determinations;

- A thermal efficiency rating under building regulations which limits glazing to 25% of the floor space
- A visual impact assessment of the introduction of additional light sources into the landscape.

While both serve as temporary policy, neither really specify what glazing design (type, style, and surface area) is appropriate or acceptable in the Downs. This type of design requirement is becoming a consistent feature in planning applications so some work is planned to assess the impact.

The proposed methodology is to measure the sky quality at different distances from a building of known glazing and illumination (lux meter) in a dark area. We should get some understanding of how sky quality is affected as the glazing extended, from the curtilage of the property to the wider landscape. From this we should be able to provide a little more clarity for developers completing a visual landscape assessment design.

SQM Permanent fixtures – Skyglow Monitoring

A permanent SQM station is currently being investigated with the Hampshire Astronomical group in collaboration with the BAA and the CfDS. The objective is to provide a protocol to enable others to install similar sky glow monitoring stations across the UK. In this initial stage the compatibility with different systems is to be explored. If successful other aspects, such as imagery and live data may be looked at. The SDNPA is fully supportive and has offered resource for this pilot stage.

Due to changes in staff area offices, no SDNPA SQM site can be considered this year. Ideally one needs to be installed fairly centrally to inform the prospective visitor coming from one local weather environment to another; despite the weather forecast saying clear in the South, that is not always the case. However the only stable long term office is in the centre of Midhurst and would be swamped by light pollution. Once area offices are sorted, we would look to establish our SQM stations based upon the HAG/CfDS protocol.

Solar system walks

The SDNPA has had requests to develop a scaled solar system installation in the Downs, to represent the relative distances between planets. Although Queen Elizabeth Country Park already has its own Space Walk using a similar principle, these scheme will look to use the wider landscape to set the walks and possible use alternative scaling, e.g. deep sky objects, atomic scales. They are very much in the early stages of design and no project officially started.

Partners – South Downs Planetarium

Our key partner – the South Downs Planetarium – is currently enhancing its facilities. It has recently purchased a HD full Dome projector and is looking develop its grounds to include Patrick's Moore's collection, telescope and dome. It is an opportunity for the SDNPA to use its shared identity. The SD staff still allow office space and support for planning consultations. The planetarium is also developing its telescope hire facilities.

Dark Sky Discovery Sites

We have submitted more prospective sites to the UK Discovery scheme. Bignor Hill is the latest, and more are due for submission, taking the total to 8.

Communities - IDA Community Toolkit

Buriton Parish are keen to pursue an IDA Community status or something similar to further cement their commitment to protecting dark skies. The SDNPA are supportive of this and believe that this offers a potential delivery mechanism to move the focus of management from the NPA to the local level. While there are some obstacles to overcome, the SDNPA is keen to develop a toolkit for the SDNPA landscape that supports communities to achieve community status. In addition to IDA requirements, we think that a toolkit can be developed to incorporate SDNP relevant activities, such as habitat mapping, threat registry and inclusion into neighbourhood plans. If the SDNPA can achieve success with community status, it is highly likely that others will follow. The change of emphasis from authority to community is of key interest in the SDNPA DNS strategy and delivery.

Other

Awards

In addition to the Dark Sky Defender award – which the dark skies officer was most pleased to receive – we also received the Joy Griffiths Award from the CfDS for; meritorious efforts in the cause of darker skies for our descendants.

Reception

The designation of the SDNP as an IDSR has, on the whole, gone down rather well. There is a clear connection with residents between what the SDNPA is trying to achieve, the problem of light pollution and why it is important to do something about it. We hear anecdotally that many businesses and parishes are actively using it as a means to attract visitors and protect their own skies in local planning policy.

Embedded in the SDNPA

Due to a recent restructure in the SDNPA, the way the authority delivers the dark skies project has been reviewed. To ensure the sustainability of the project and reduce the risk, dark skies work is being embedded into the various departments rather than being under one officer's auspice. A strategy for the SDNP partners has been developed that details how reserve objectives should be met, with the intention that delivery is shared where appropriate. Overall strategic control will reside with the officer which will ensure long term delivery and development.

Lumen Criteria, Consumer Choice and planning

The IDA guidelines recommend that no lamp greater than 500 lumens (Reserve) or 1,000 lumens (Community) should be installed without Fully Cut off features. This limit presents some issues in relation to consumer choice and that typical domestic lighting does not require planning permission.

The issue for consumer choice is that there is not much choice for the consumer below 500 lumens, with the bulk of lamp choices sitting within the 500 to 1,000 lumen range and not all local retailers stock lamps as low as 500 lumens.

The issue for planning is that minor domestic fittings – which can hold lamps above 500 lumens – are not subject to planning control, be they fully cut off or otherwise. Insisting that any domestic fitting that uses a lamp above 500 lumens to be fully cut-off would be severely restrictive and would create a planning consent issue every-time a resident changes their bulb.

Our solution is to promote the use of 500 lumen bulbs or less as standard, and suggest that any design using lamps above 1,000 lumens is not domestic in character and needs appropriate design and standards. In combination with surface illumination limits our technical guidance will reflect this as it is an acceptable trade-off between IDA guidelines and what is practically and lawfully possible under UK planning. In this sense we aim to define the point at which lighting is non-domestic and domestic, which provides some clarity for developments and residents.

Surface Illumination

Appropriate surface illumination is problematic to dark skies, particularly given the current guidance which largely is silent on the matter. The reflected light and the immediate surface blooming can create a significant impact on dark skies but there currently little guidance on what surface lighting –

or tasks – are appropriate in a dark sky environment despite a development creating a compliant lighting design in all other respects.

Our technical guidance will recommend that any surface illumination above 5 lux – the point at which the Institute of Lighting Professionals define a rural security light – is not appropriate in the darkest of areas.

Given that surface illumination presents a significant problem to populated dark sky designated sites, perhaps the IDA would consider issuing updates to guidelines or recommendations to reflect this.