



Dark Sky Park De BOSCHPLAAT



Application to the Dark-Sky Association

Staatsbosbeheer Terschelling
Buren van Oosterend

Colophon
Application for the Dark Sky
Places Program of the
International Dark Sky
Association

March 2015

Staatsbosbeheer Terschelling
Buren van Oosterend

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1 Application

Wederom trekken we oostwaarts, over zandige, zonnige wegen en na een uur gaans de buurt Oosterend, de laatste bewoonde buurt aan deze zijde van het eiland. Meer en meer naderen wij de woeste, alles met een zandzee overstelpende, duintoppen. Rechts ligt de Grie, een grazige strandweide, ten noorden door de duinen begrensd, ten oosten allengs in een dorre zandplaat overgaande.

Once again we travel eastwards, over sandy, sunny roads. After an hour we reach the area of Oosterend, the last inhabited neighborhood. More and more we approach the rugged dunes, buried under a sea of sand. On our right hand lies the Grie, a grassy beach meadow, in the north limited by dunes and in the east gradually changing into a barren sand plate.

from Frederik van Eeden Album der Natuur 1885

Frederik van Eeden was psychiatrist and writer. Basically De Boschplaat has not changed in the 130 years since this quotation. It is still an area dominated by the sea which incidentally gets inundated. Nights on De Boschplaat are still just like Frederik would have seen, should he have been able to stay overnight.

We propose to recognize De Boschplaat on the island of Terschelling as the first Dark Sky Park in the Netherlands.

The application is done by two different local organizations:

- Staatsbosbeheer, being the owner of De Boschplaat. Staatsbosbeheer is commissioned by the Dutch government and manages a sizeable amount of the nature reserves in the Netherlands.
- De Buren van Oosterend, being the local organization of the nearest village Oosterend. Oosterend has 120 inhabitants. Since medieval times all the men of the village have been participating in 'De Buren', a form of local government in which local issues are discussed and dealt with.
- The application is supported as nominator by Wim Schmidt, president of Platform Lichthinder, Dutch affiliate of the IDA.

Dark Sky Park De Boschplaat is a chance to preserve the unique points of this part of the island, where people can relax and settle down in this country full of distracting sounds and light; where you can find something of the eternity again.

*Terschelling bewaart zorgvuldig de tijd, de Brandaris behoedt mijn jeugd voor vervuiling en vervorming.
Terschelling preserves carefully the time; the Brandaris guards my youth for pollution and deformation.*

from: Dirk Vellenga Paal 8 1998 Application letters

Oosterend, 7 januari 2015

Hierbij verklaren De Buren van Oosterend dat zij de Boschplaat als Dark Sky Park willen voordragen bij het Dark Sky Places Program van de International Dark Sky Association, IDA.

Wat zijn de voorwaarden voor een Dark Sky Park:

1. Een donkere hemel
2. Een management plan betreffende de verlichting en verdere punten in de directe omgeving
3. Nachtelijke toegang van het gebied
4. Publiekgerichte activiteiten om het park aantrekkelijk te maken, en het mogelijk te maken dat men van het park kan genieten.
5. Veel steun van de neme maar vooral van de directe omgeving

Oosterend is het dichtstbijzijnde dorp in de nabijheid van de Boschplaat. De Buren van Oosterend is de bijeenkomst van de inwoners van het dorp Oosterend die meer dan een jaar lang in het dorp wonen en is daarmee al sinds de middeleeuwen de vertegenwoordiger van de gemeenschap.

De Boschplaat is één van de, zo niet donkerste locatie van Nederland, haar nachtelijke schoonheid wordt door geen enkele verlichting verstoord. De duisternis en de nachtelijke schoonheid samen met de stilte, de rust en de ruimte op de Boschplaat is daarmee een belangrijke waarde voor het dorp.

De Buren van Oosterend verklaren daarom dat zij graag, samen met Staatsbosbeheer deze aanvraag indienen.

We hopen dat de Boschplaat daarmee het eerste Dark Sky Park van Nederland kan worden.

Namens De Buren van Oosterend

International Dark-Sky Association, Tucson, Arizona, USA
P/a Sotto le Stelle, de heer W. Schmidt
Merwedepantsoen 27
3522 JS UTRECHT
THE NETHERLANDS



Date March 3, 2015
Subject international Dark Sky Park
Handled by Tamara Bok
Our reference G2015-0514
Your reference
Enclosures 1

Dear Sir, Madam,

From my position at Staatsbosbeheer, the National Forest Service in the Netherlands, and on behalf of 'The Neighbors of Oosterend' (our local dedicated group of citizens), I am asking your organization to designate the European nature conservation area known as 'De Boschplaat' as an International Dark Sky Park.

Together with our country's Rijkswaterstaat, the Directorate-General for Public Works and Water Management, Staatsbosbeheer has a management plan for nature and recreation management on the Island of Terschelling known as the 'Management Plan for Government-owned Lands 2003 – 2013'. Although a new management plan is being drawn up at this time, the 'Management Plan for Government-owned Lands 2003-2013' will apply until the new plan goes into effect.

In the management plan, we describe the objectives of management on the Island of Terschelling with specific attention given to how De Boschplaat is managed. Included in this document is a paragraph concerning the qualities of tranquility, quiet and darkness in the area:

"Objective:

Rijkswaterstaat and Staatsbosbeheer want to make a contribution to the quietness and the unspoiled character and image of Terschelling. In this way, Terschelling will remain an island where a sense of serenity, open space and the dark night sky can be thoroughly enjoyed. Rijkswaterstaat and Staatsbosbeheer will not participate in any long-term initiatives that would disrupt the quietness and dark night sky on Terschelling."

We have established recreational zoning for the Island of Terschelling. Among other things, this means that we are cautious regarding the permission of organized (large-scaled) activities and events and regarding the installation of facilities in De Boschplaat area.

With regard to the introduction of permanent lighting installations on De Boschplaat, we can state that we will not allow this since it would adversely affect one of the key objectives for this area: a dark night sky (for more information, please refer to Enclosure 1).

Staatsbosbeheer | Leonard Springerlaan 23 | 9727 KB Groningen | Postbus 333 | 9700 AH Groningen | T 050-7074444 | F 030-6922978 | KVK 30263544

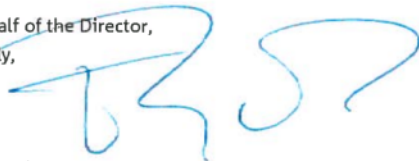
In recent years, our foresters, accompanied by Melis de Vries, a businessman in Oosterend, attended certain information evenings concerning the dark night sky and the view of the heavens at night. This was followed up by having our nature guides participate in certain training activities about the amenity value of the dark night sky as experienced by recreational visitors as well as the value of this darkness for flora and fauna. The knowledge acquired during these meetings was then shared among participants in special events such as 'De Nacht van de nacht', a national initiative intended to promote the importance of the dark night sky among the general public. In addition to this, our nature guides hold 'darkness excursions' for groups, schools and tourists a number of times every year.

I support the idea that recognizing De Boschplaat as an International Dark Sky Park could make the environment aware of the need for the sustainable use of lighting. It will allow a specific group of tourists to experience the uncommon qualities of De Boschplaat that include the fact that it is one of the best places to observe the night sky and actually feel what 'natural darkness' is like.

Within the framework of 'Leeuwarden, Friesland, as a European Capital of Culture in 2018, there is also substantial attention for darkness in the project 'Feel the Night' (more information about this is available at <http://www.feelthenight.eu/en/about-feel-the-night>). The Wadden Islands will play an important role in the events and the experience of the European Capital of Culture.

We have also been informed that you have been in contact with the municipality. The Municipal Executive has already responded to the initial plans. We very much hope that the following steps will be taken in close cooperation with the municipality. A copy of this letter is also being sent to the Municipal Executive of the Municipality of Terschelling.

On behalf of the Director,
Sincerely,



Tamara Bok
area manager Wadden

ENCLOSURE 1

Declaration made by Staatsbosbeheer concerning not allowing others to introduce permanent lighting installations (and/or not doing so itself) in the nature conservation area, De Boschplaat.

Staatsbosbeheer will make use of its legal opportunities to deny third parties permission to introduce permanent lighting installations within De Boschplaat area considering that doing so would adversely affect one of the key objectives for this area: a dark night sky. For this reason, Staatsbosbeheer itself will not introduce any permanent lighting installations in the area.



Tamara Bok
area manager Wadden

Utrecht, 20-3-2015

While the sun darkens over Holland, De Boschplaat, one of the most serene and unspoiled parts of the Netherlands asks to become also part of the growing number of Dark Parks in the world.

As long time member of the IDA, as president of the Dutch organization Platform Lichthinder, affiliate of the IDA, I recommend this wholeheartedly.

De Boschplaat is a wonderful place, symbol of the other side of our busy, human driven landscape where no square inch is not turned over many times.

This is for many Dutch (and foreign tourists) the reason to go there. Terschelling on which De Boschplaat lies is one of the most visited tourist places in the Netherlands, because of De Boschplaat.

Residing in the west part of the island, hiring a bike and driving eastward over bike routes through the dunes, the landscape gets quieter, less people, more birds and more nothingness. After 10 miles if driving they finally reach the border of De Boschplaat itself and look over a dune over this vast array of empty land with creeks and willows standing in the wind, they know, this is nature, this is part of me and go back on their bikes, happy with memory and filled with wholeness.

This experience can also be done at night and to establish a Dark Sky Park here will be a symbol of this feeling, a anchor point on which the Dutch movement to reduce the human impact on our night landscape can reside.

De Boschplaat has darkness, Staatsbosbeheer and local entrepreneurs have enough knowledge after three years of hard work, will power and strengths to make this Dark Sky Park a lively place where people from all over Holland will want to come.

Wim Schmidt
President Platform Lichthinder

2 Preface

The idea for a Dark Sky Park in the Netherlands came from Melis de Vries. Melis de Vries is an entrepreneur living in Oosterend, next to De Boschplaat, one of the most deserted, unspoiled and wild areas in the Netherlands. Melis de Vries is the manager of two bungalow parks. The cottages on the park can be rented by tourists, as is common practice on the island.

For Dutch people, the islands in the north represent the 'other' way of life, the rural 19th century life. On some of the islands even no cars are allowed. Especially in the winter life is quiet and simple. The tourists are at home and the islanders are among each other.

Melis de Vries travelled to dark sky parks in Great Britain and contacted Wim Schmidt of Sotto le Stelle, a Dutch company, solely dedicated to the investigation and advice on light pollution. Melis de Vries contacted Staatsbosbeheer, the owner of De Boschplaat as well and informed whether they were interested. Three years of hard work followed for all the participants, resulting in this application.



Figure 1 Andreas Hänel (on visit) and Melis de Vries in the central hall of his bungalow park

3 De Boschplaat in the Netherlands



Figure 2 The Netherlands and his provinces

3.1 Terschelling

The island of Terschelling is situated ca. 30 kilometers from the mainland of the Netherlands. Terschelling belongs, along with the neighboring islands, to the province of Friesland.

In total there are five relatively large islands from west till east: Texel, Vlieland, Terschelling, Ameland and Schiermonnikoog.

The total area of Terschelling is about 90 square kilometers. It has about 5.000 residents living in 6 villages with more than 100 residents.

In the summer the population grows substantially. In total 450.000 tourists visit the island each year. Therefore it is one of the most popular holiday destinations in Holland.

3.2 Waddenzee

Between those islands and the mainland lies the Waddenzee, which stretches all the way along the northern coasts of the Netherlands, Germany and Denmark. The Waddenzee is very shallow and runs with low tide mainly dry. Sometimes, on specific times, you can even walk to the islands, while only a few hours later you can only travel by boat.

At the end of June 2009, the Dutch and German parts of the Waddenzee were declared a Unesco World Heritage Site. In June 2014 the Danish part of the Waddenzee received this nomination as well. Together they form the largest tidal barrier island system in the world, internationally renowned as key feeding area for millions of migratory birds, which pass through, in spring and autumn on their way to and from the breeding areas in the arctic to the wintering grounds in West Africa. There is a special website dedicated to the Waddenzee World Heritage: <http://www.Waddensea-worldheritage.org/>

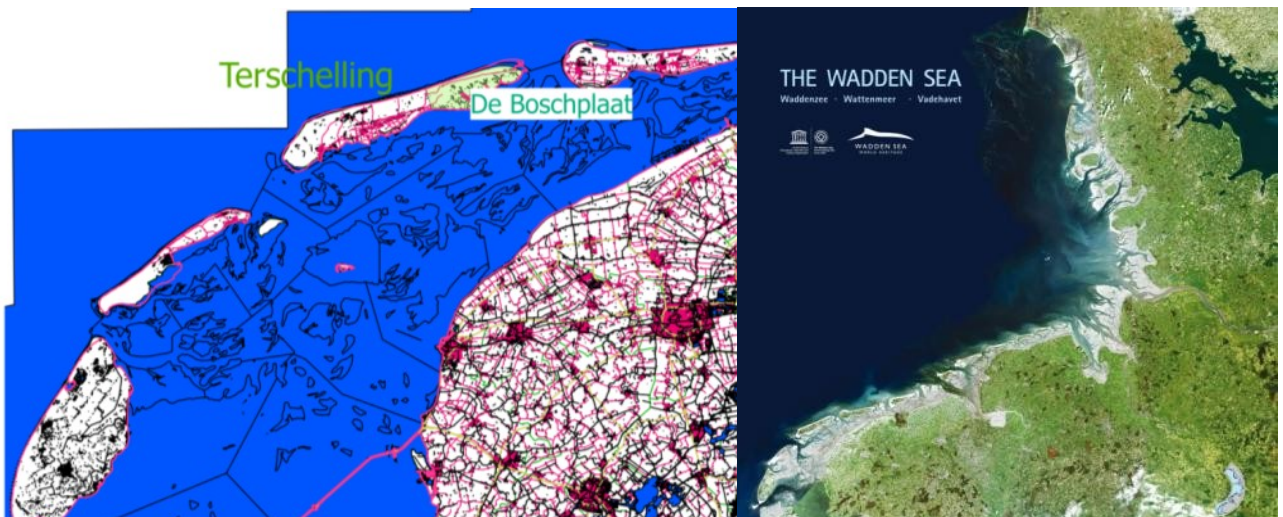


Figure 3 Location De Boschplaat and the Waddenzee in three countries

3.3 De Boschplaat

The Nature reserve De Boschplaat is situated on the eastern part of Terschelling and covers an area of about 10 kilometers length and 4 kilometers width. The boundaries are not very specific as there is not a definite border between sea and land.

De Boschplaat was before the year 1932 a sandbank, a part of the island of Terschelling which was not defended by artificial or natural dunes. In 1932 the inhabitants 'made' a natural dune by planting grass along the north sea in the accumulated sand and doing that month after month, a artificial dune was erected, called the Stuifdijk. The Stuifdijk connected the formerly loose lying sandbank De Boschplaat to the already existing island of Terschelling and now the Stuifdijk, is official maintained as part of the defense of the whole island against the sea. De Boschplaat is now anchored in this way as part to the island of Terschelling and will not be surrendered to the sea anymore.

On the sandbank De Boschplaat you find a rich so called 'kwelder' (salt marsh) vegetation. A salt marsh is a coastal ecosystem between land and open salt water with a lot of salt-tolerant plants such as Common Sea Lavender (*Limonium vulgare*) and Sea Purslane (*Atriplex portulacoides*). On the sandbank an enormous amount of water birds nestle like Spoonbills (*Platalea leucorodia*), all kinds of gulls and ducks (*Laridae* and *Anatidae*) and Cormorants (*Phalacrocorax carbo*) and many other kinds of birds.

De Boschplaat has been unspoiled and full of nature since its origin. There are only, near the rest of the island, two farms on De Boschplaat: one inhabited, the other one can be rented. There are some footpaths, one cycle path and two mobile bird watching stations. There are three duck decoys. That totals the artificial elements in the landscape. There is no artificial light in De Boschplaat.



Figure 4 Farm left and duck decoy right



Figure 5 Impressions of De Boschplaat

Formal situation of De Boschplaat

De Boschplaat is entirely a Natura 2000 area. Natura 2000 is the European network of protected nature areas. De Boschplaat lies in various Natura 2000 zones:

- Waddenzee
- Northsea coast
- Dunes of Terschelling

The entire Boschplaat is in the hands of Staatsbosbeheer, on behalf of the Dutch national state. Since 1970 De Boschplaat has been recognized by the European Council as an European Nature Reserve. It is in Europe one of three so called soft coastal ecosystems, together with the Camargue in France en Doñana in Spain.

Each year a report is submitted to Europe and every five years the designation is being examined. The last renewal of the designation was in 2010.



Figure 6 Natura 2000 areas around the Waddenzee

There is a management plan De Boschplaat. At this moment the management plan of 2003-2013 is still in action. The new one is being written now.

In the management plan the two objectives - nature conservation and recreation - are woven together. The goal is to support the development of a dynamical coastal landscape, on which people live while it must be protected against the (rising) sea and which is yearly visited by more than 450.000 tourists for recreational purposes.

In the current management plan darkness is mentioned as a value that must be retained on De Boschplaat. This was written in 2003, long before any plans about darkness preservation in the form of a Dark Sky Park were mentioned.

Part of the current management plan De Boschplaat 2003-2013

Objective

*Rijkswaterstaat en Staatsbosbeheer want explicitly make a contribution to the quietness, unspoiled character and image of Terschelling. In this way Terschelling retains an island where quietness, space and **nightly darkness** can be enjoyed thoroughly.*

*Rijkswaterstaat en Staatsbosbeheer will not participate in initiatives that for longer time will disrupt the quietness and **nightly darkness**.*

4 Criteria for becoming a Dark Sky Park

4.1 Eligibility Criteria¹

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.

De Boschplaat is a Nature Reserve recognized by the European Council and is managed by a national organization.

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

De Boschplaat is open at night. There is not a specific time of the day with different public access. A part of De Boschplaat is not publicly accessible, during nestling time between half March and half August.

C. The 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.

This criterium is met, as will be shown in the next chapter.

4.2 Minimum Requirements

- A) A quality comprehensive Lightscape Management Plan (LMP) with the following minimum standards (see “Lightscape Management Plan Guidelines” section for more details):
- i) New, current, and retrofitted lighting must meet the park’s LMP (which must meet the “Lightscape Management Plan Guidelines” included in this document). The RASC/IDA Guidelines for Outdoor Lighting (GOL) should be used while creating the park’s LMP. These guidelines may be found on IDA’s website at http://www.darksky.org/assets/documents/RASC-IDA_GOL_November_2012-Final.pdf;
 - ii) Included policy for determining whether an area should or should not be lighted, at what times an area should or should not be lighted, and appropriate illumination levels, AND;
 - iii) Fully shielded fixtures are standard throughout the park. Any lighting fixtures above 600 lumens are required to use fully shielded fixtures emitting no light at or above the horizontal. An exception to this may be when lighting fixtures contain lamps emitting less than 600 lumens. When such unshielded fixtures are used, impacts to the lightscape must be minimized with the use of timers and/or curfews, AND;
 - iv) Methods for determining the appropriate type of lamp (color, efficiency, technology) and fixture that should be used with goals to maximize energy efficiency and minimize impact to human vision dark adaptation/recovery time, wildlife, and the

¹ We are referring to the criteria published in may 2013.

- nocturnal ecology. It is recommended that only lighting under 3100K correlated color temperature (CCT) be used as this will minimize the impact on most wildlife, AND;
- v) LMP 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).

Because there is at his moment not one single light source on De Boschplaat, these criteria are met.

The management organization Staatsbosbeheer of De Boschplaat declares in its application no artificial light will be erected permanently in the future and will not allow others to do so.

In chapter 6 is described how the lighting in the neighborhood of the Park is managed and what the future plans are concerning the lighting.

- A) The park's commitment to dark skies and lightscape management, as shown by:
 - i) The park recognizes dark skies as an important natural, cultural, and/or scientific resource value as demonstrated by inclusion in approved management documents (e.g. General Management Plan, Resource Management Plan, Facility Development Plan)
The Park has recognized, already more than 10 years ago, darkness as an important value.
 - ii) At least two thirds (67%) of existing outdoor lighting fixtures within park boundaries conform to the park's LMP at the time of IDA DSP application (or an alternative fraction approved by the IDA Dark Sky Places Committee (DSPC) AND;
 - iii) A schedule defining a five year plan for when 90% of all outdoor lighting on park land will conform with the park's LMP, and a written commitment that 100% of the lighting will conform in the future;

Because there are no lights there is no need for an improvement plan.

- iv) A measurement program must be maintained either by the park or by another public or private organization (university, research center, IDA chapter, astronomy club, etc.) to follow the evolution of light pollution in the IDA DSP and assert that the night sky quality does not degrade. Installation of at least one permanently mounted, approved, night sky brightness meter (NSBM) and participation in the IDA Global Sky Monitor website is recommended, AND;

Monitoring

Since the beginning of the spring in 2015 a permanent SQM datalogger is standing at the center of De Boschplaat near one of the mobile bird watching stations and measures the zenithal night sky brightness every 5 minutes. In the yearly report these measurements will be documented.

- v) The park has set a leadership example in the restoration of dark skies by implementing at least one of the following:
 1. Producing at least one "night sky friendly" lighting project that is publicly visible and interpreted, OR
 2. Involving at least two 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
 3. Cooperation with at least two nearby municipalities that results in adoption of lighting codes that improve sky conditions in the park, OR

4. Inventorying and monitoring night sky quality and using results to educate the public, OR
5. A combination of the above or an alternative restoration project may be suggested.

There is a co-operation with the municipality of Terschelling. Two other islands have made an intensive improvement plan for reducing their lighting. There is a co-operation with some municipalities on the mainland as well. They all agree to try to improve the darkness on the whole of the Waddenzee, including the darkness on De Boschplaat. More on the different initiatives in the chapter 6.

Staatsbosbeheer itself is part of one of the initiatives, European cultural capital 2018 as mentioned in her application.

5 Nights in and around De Boschplaat

5.1 Darkness in the Netherlands

The Netherlands is one of the most light polluted countries in the World. In the World Atlas, which Cinzano and others have published in the year 2000, the Netherlands belong to the three most light polluted countries in the world, together with Belgium and Porto Rico. Since ten years there have been inquiries in the Netherlands on the exact distribution of light and resulting light pollution in the Netherlands. The darkness in the Netherlands is one of the best studied in the world. There are different sources available.

The Viirs data from 2012 are shown in figure 7. This is the light going upwards. The downward light was extensively measured by a private company, in assignment of 8 of the 12 provinces in the Netherlands, including the two most northerly and darkest provinces; the map is shown in figure 6. In total more than 2000 measurements were executed.

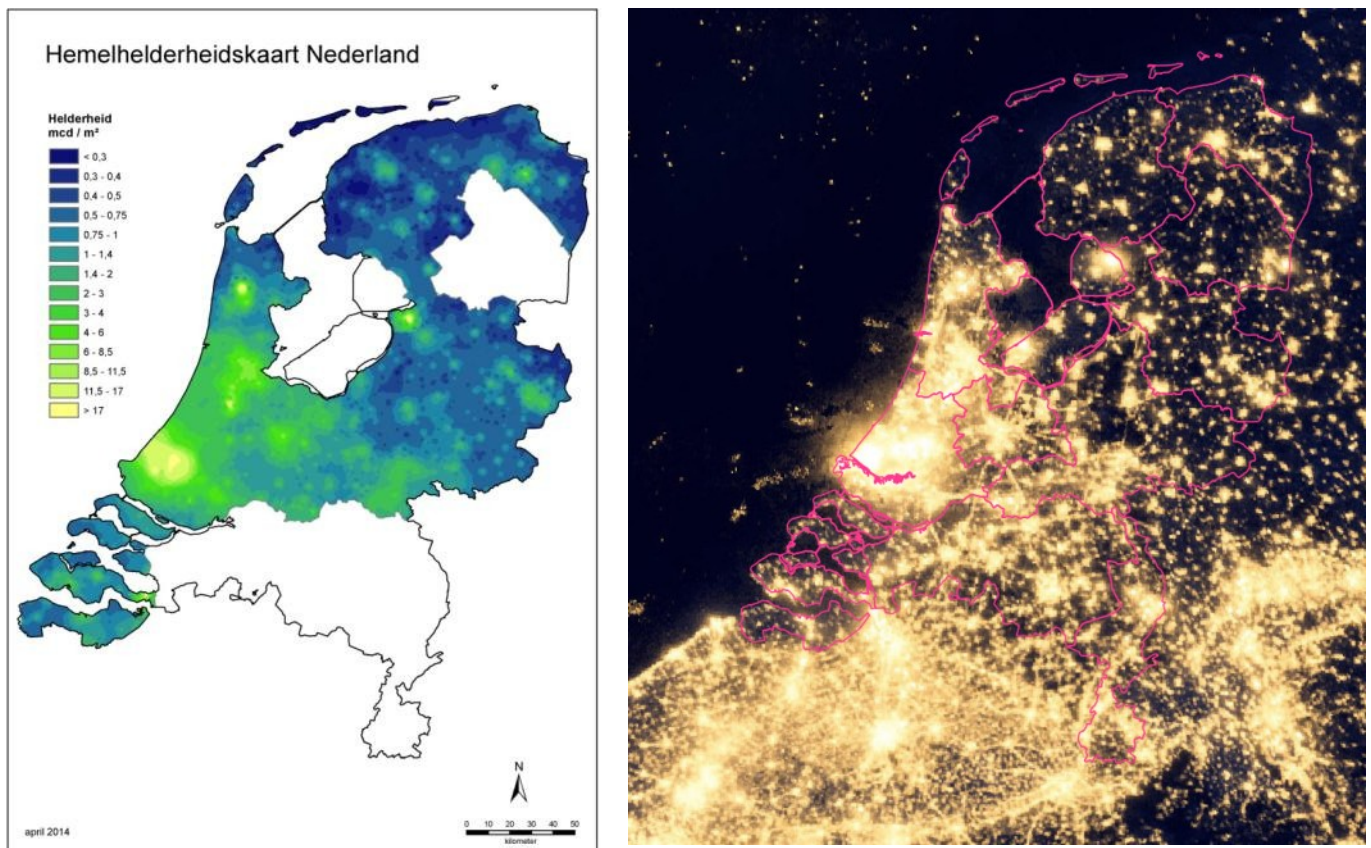


Figure 7 Zenital sky brightness in 8 of the 12 provinces and Viirs data 2012

One of the most surprising findings was the fact that there is a much larger variety of light pollution then was expected.

The darkness in the Netherlands is affected in a large part of the Netherlands. In the middle and western part of the Netherlands the luminance of the night sky is in general higher than 1 mcd/m², which is around 20 magn/bs².

Going to the northeast the darkness progresses significantly. The darkness in the most northern part of the mainland is between 20,6 and 21,2 magn/bs², while on the four most eastern islands the darkness is in general between 21, 2 and 21, 7 magn/bs².

5.2 Direct light on De Boschplaat

In most parts of De Boschplaat, small dunes, trees and bushes prevent seeing any light at the horizon.

The Netherlands is mostly a flat country and these lights are situated on a flat plane along the horizon.

At the south coast of De Boschplaat, you can see the lighting on the mainland, being mainly the town of Harlingen. Harlingen adopted a plan to reduce their light output to the Waddenzee. See next chapter.



Figure 8 Harlingen in the distance over the Waddenzee

Other direct light sources are the Brandaris, the lighthouse of Terschelling and the lighthouse of Ameland, Bornrif. Both light towers direct their lights mostly over the heads of the people. It does not affect looking at the stars, as the pictures proofs. No light is visible on these pictures although the light turns over your head repeatedly.

This light is very characteristic and has existed for centuries. It is vital for navigating on the treacherous North Sea. Therefore nobody including amateur astronomers, takes any offence by these lights. They form an intrinsic part of the night culture as do the stars and black clouds.

5.3 Darkness on De Boschplaat

As commissioned by the province some monitoring has already been done on the island of Terschelling and in the neighborhood of De Boschplaat. In the last few years there have been done more monitoring especially for becoming a Dark Sky Park. This is not always easy done as you can't go with a car into the Park. With a special permit it is allowed to drive on the beach. The data were collected in one night and together with the other measurements they were filled in on a map of the darkness of the eastern part of the island. The measurements were done by two different handheld SQM's.

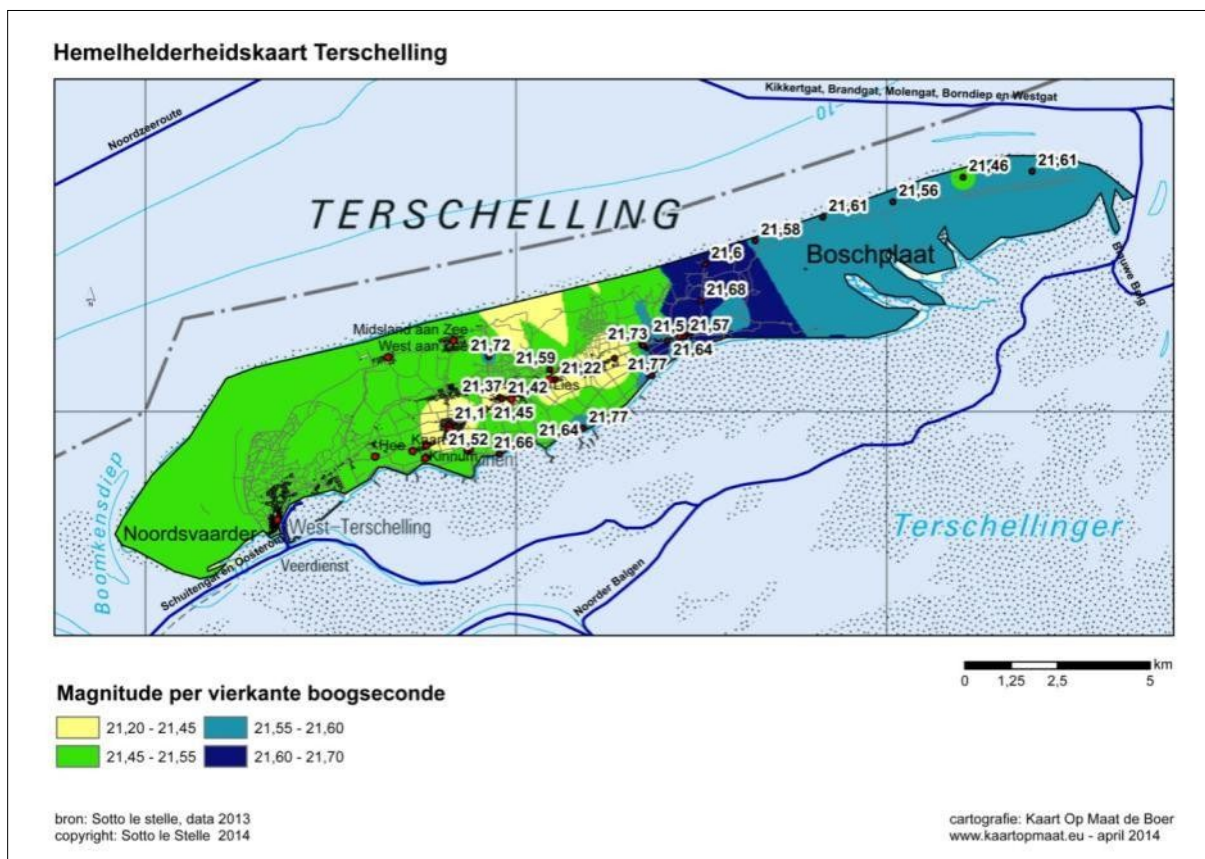


Figure 9 Zenithal sky brightness on Terschelling and De Boschplaat

This map shows the sky brightness in the zenith in colors and numbers. The magnitude of the darkness in De Boschplaat is higher than 21,5. It looks as if the darkness in the center of the island is the most profound, while in the eastern part there is some influence maybe by the next island of Ameland, where the western part is inhabited.



Figure 10 Milky Way and Gegenschein over de Boschplaat on 1-1-2014 (10 minutes exposure and contrast augmented)

Since the production of this map some more monitoring was done, together with Andreas Hänel of the German Fachgruppe Dark Sky. The results are again and again around 21,5 magnitude for the whole of the land outside the villages and around 21,3 inside the villages. All measurements are in Appendix one.

5.4 Conclusion

The darkness on the eastern part of the island including De Boschplaat is as good as at sea level anywhere in the world. The nights can be described as unspoiled with minimal artificial influence.

Seeing the Milky Way, unknown to most of the Dutch people, is an overwhelming experience. The sight of dark clouds, before a star spangled universe, is completely unknown and in the beginning even frightening for the visitors of the future Dark Sky Park.

6 Lighting management plan

6.1 De Boschplaat

On De Boschplaat is no lighting: no commercial, no private nor public lighting. There is one habited farm with some light out of a window and another one that is incidentally rented during the summer months. There is one road along the border of De Boschplaat. This road has no public lighting.

There are about 5 kilometers of semi hard surfaced bike roads in De Boschplaat and more kilometers unpaved. There is no light. At the entrance are two public parking places; both do not have any lights.

The management Staatsbosbeheer of De Boschplaat is very clear about it:

Management rule: Staatsbosbeheer will not erect or allow any lighting in De Boschplaat as she declared in the enclosure of the application.

6.2 Lighting in the neighborhood

The darkness above De Boschplaat is determined by three different areas:

1. The island Terschelling
2. The other islands
3. The mainland and especially the north of Friesland

To determine the relative contribution to the brightening of the night sky above De Boschplaat, the well known Law of Walker was used. A more elaborate model developed in the Netherlands, IPO Licht, was not detailed enough (the values calculated of the brightening were only zero's). In the table below are the different contributing municipalities calculated by the Law of Walker. The red names are on the island itself and the purple one (Hollum) is on a neighboring island Ameland.) In the Law of Walker only the relative increase of the sky luminance is calculated, so the numbers are only meaningful in relation to each other. The importance of the different towns can be determined this way.

Therefore the two biggest contributors are the capital of Friesland, Leeuwarden, a town of almost 100.000 inhabitants at 35 kilometers and Terschelling itself with the various villages, both contributing around a third.

Name	Habitants	Distance in meters	Increase sky brightness	Relative contribution
Leeuwarden	97.327	35.000	0,42	34,4%
Harlingen	15.000	28.500	0,11	8,9%
Hoorn	480	7.200	0,11	8,8%
Franeker	12.997	27.700	0,10	8,3%
Oosterend	120	4.500	0,09	7,2%
Midsland	1.280	11.600	0,09	7,2%
West-Terschelling	2.880	16.100	0,09	7,1%
St Annaparochie	4.300	21.000	0,07	5,5%
Hollum	1.390	13.600	0,06	5,2%
Stiens	7.800	28.200	0,06	4,7%
Lies	140	9.100	0,02	1,4%
Formerum	200	10.900	0,02	1,3%

6.3 Public lighting on the island Terschelling

Terschelling participates together with the other Waddenzee islands in the plan to be energy autonomous from the mainland. The plan is to invest in durable energy sources like photovoltaic and bioenergy. In this plan also a reduction of the energy use is foreseen. The plan is more comprehensive than only the lighting. Obviously, the lighting and public lighting of the islands will be effected by this plan.

There are about 1040 public lampposts on the island Terschelling (survey 2012). In the following table the amount of type and wattage of the lampposts is mentioned in the different villages on the island.

Plaats	inwoners	Bolder Dock 18 W	De Nood A11 26 W	De Nood A11 50 W	FXGS 104 36W	INDU 2000 36 W	IRIS 2551 36 W	IRIS 2552 55W	LUMIS-LED Ecowhite	OGR LED 28W	PHIL CPS 200 HS	PHIL SGS201	SRM SOX 35 W	Eindtotaal
BAAIDUINEN	110						15			2		1		18
FORMERUM	240					2	51	1						54
HEE	30				1		18				1			20
HOORN	480					7	22			15				44
KINNUM	30						6							6
LANDERUM	85						16	1						17
LIES	140				1	3	28	1						33
MIDSLAND	1015	7		40	6	56	148	17						274
OOSTEREND	130				9		36							45
STRIEP	30						4							4
WEST-TERSCHELLING	2430	33	62	42	31	45	215	71	6		11	7	2	525
TOTAL	4720	40	62	82	48	113	559	91	6	17	12	8	2	1040

The most used light fixtures are Industria Iris 2551 and 2552 (2/3 of the lamp bodies) with 36 and 55 Watt.

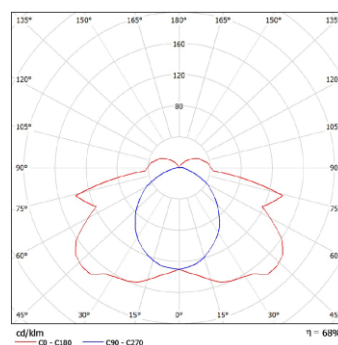


Figure 11 Industria 2551 in Hoorn; Industria, 2552 is a little longer

Another much used light fixture is Industria 2000 (more than 100 lamp bodies) with 36 watt lamps.

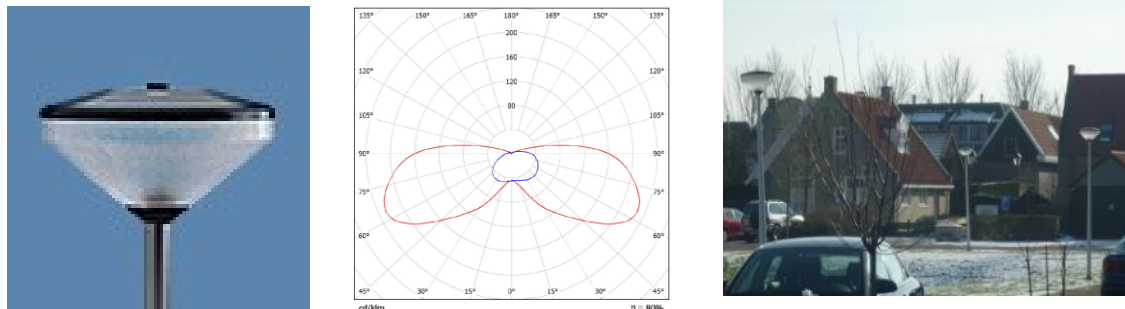


Figure 12 Industria 2000 in Midsland

The two light fixtures above are typical for the Dutch public lighting. Both are used with fluorescent lamps with low wattage. The first emits a little light above the horizon and the second does that substantially, so both are not (fully) cut off. The color temperature of the used lamps is 3000 Kelvin.



Figure 13 Public lighting in Hoorn Terschelling

There are 4720 inhabitants with 1040 luminaries on the island. That is about the same as the average in the Netherlands: 1 post for 4,41 inhabitant. The average wattage is 37 watt per light fixture, which is less than the average in Holland (around 53).

The lighting of Terschelling has, next to the low wattage, another peculiarity: the ample and extensive use of so called evening light fixtures. About 30% of all

the light fixtures are extinguished at 10:30 in the evening and stay that way whole night long including the morning rush. In this way the total light produced on the island is about 40% of the total light of comparable Dutch villages. Figure 13 gives a good impression of the night situation in the villages, with only one lamppost.

This restricted policy on lighting is also expressed in a letter the municipality has issued concerning the possible erection of a Dark Sky Park.

From the letter (see the first support letter in Dutch):

The college of Terschelling wholeheartedly support the plans to come to a so called Dark Sky Park.

The plans fit in our own ambition in the realm of durability, increasing the darkness and the experience of the darkness as touristic product. In this respect we are busy with the other Wadden islands in the perspective of durability, reducing the demand for energy for public lighting and increasing the darkness. This all of course within the boundaries of social context and traffic safety.

When the public lighting will be changed during the coming years we will take into account the principles of the Dark Sky Park.

The island has already reduced light and is willing to take into account the principles of the Dark Sky Park in their future plans for the public lighting.

6.4 Other lighting on the island Terschelling

There is hardly any other light on the island Terschelling apart from public lighting and emerging from windows.

In Oosterend, the village nearest to the boundary of the park, are no other lights.

There is one lighted up church on the island, 10 kilometers from the boundary, and the symbol of the Island, the lighthouse Brandaris, is lighted up till one o'clock in the morning (at 16 kilometers).

There are two sport grounds with special lighting, fully cut off.



Figure 14 Lighting on the sportgrounds

There is one market with a commercial sign. Upon request of the initiator Melis de Vries this sign is shut down when the shop is closed.

This very personal and social way of life is characteristic for the entire island.

The municipality of Terschelling stresses this also in its letter:

We consider making agreements about the lighting also the responsibility of the entrepreneurs and habitants of the area concerned.

A Dark Sky Park on Terschelling will be much more than in other areas a personal affair where contacts between people are much more influential than rules and regulations. The lighting in the surrounding of the Park will be regulated by the people themselves. It will be really a Park of the people on the Island.

6.5 Leeuwarden

From De Boschplaat, Leeuwarden is at night not directly visible, because the distance is large and there are many trees and other obstacles in between.



Figure 15 Sight on Leeuwarden from 7 kilometer distance , in the direction of De Boschplaat

But the effect of Leeuwarden is still there. When the plans for establishing a Dark Sky Park were developing, there have been talks with the authorities in Leeuwarden. They were clear about the future of the lighting in their town: it will be better and less. The latest established management plan for the town dates from the year 2011 and is valid till 2020. It is called in Dutch, 'The darkness illuminated'

In the summary of this management plan, we can read:

Ambition

Darkness in principle and light to measure. At each location or situation the question must be asked if and if so, what artificial light is necessary and how light or dark it must be.

The public lighting must be durable, environmental friendly, safe, pleasing, and payable and correspond with the wishes of the inhabitants.

We will save in the period till 2020 on the energy costs of the public lighting. Instead of a yearly increase (till now 1,3% per year), we will, in spite of planned town expansion and infrastructure, spend less energy. Our plan is to spend in the year 2020 10% less than in the year 2010.²

It means in practice that in 2013 440 of the in total 20.000 light poles have already been removed and another 550 will be removed the coming years, in communication with the different quarters about which light poles can be removed. In this way Leeuwarden will diminish its total output and will reduce the light input on De Boschplaat.

² Beleidsplan

“Het Donker Belicht”, Over het duurzaam verlichten van de openbare ruimte in de gemeente Leeuwarden 2011-2020

6.6 The other contributors

There is a lot going on in the area around the Waddenzee in respect to darkness.

To give a short impression:

- The island Texel has a new public lighting plan containing the reduction of the number of lamp posts, extinguishing all of the public lighting in the nightly hours and being energy neutral in the future.
- Harlingen (big city at the edge of the Waddenzee) makes new policies about their public lighting and has in that respect issued its own policy on light pollution (the first Dutch municipality in the Netherlands to do so). There is special attention to the lights visible from the Waddenzee. In November 2014 there was even a special boat trip on the sea to watch and evaluate the lights visible from the Waddenzee.



Figure 16 Harlingen from a boat in the Waddenzee

Ameland, the neighboring island, is reducing its CO₂ output to zero in the next 5 years to become so called 'climate neutral'. In this plan reducing the amount of public light is included as well.

6.7 Future

The artificial light around the Waddenzee is at this moment predominantly public lighting. There are possible developments which can also bring other artificial light and they can be a threat to the future Dark Sky Park.

- The greenhouses on the mainland are hardly lighted at this moment. In the map of Netherlands of the darkness (figure 7), the area with greenhouses, next to Leeuwarden is not a independent source of light. There are some plans for more (lighted) greenhouses, but the last years there is the amount of greenhouses diminishes. So the prospect is there will not be more greenhouses. Also the law for regulating the light in and outside the greenhouses has becoming more severe each year; at this moment the reduction must be 98% before midnight and 74% after midnight. The expectation is no light of greenhouses on the mainland will affect the light above De Boschplaat in the future.
- Another possible threat is the erection of windparks near the islands in the Northsea and gas extraction on and near Terschelling. These are only plans and the whole of the island is against it, while it threatens the main economic activity of the islands: tourism.

These developments will be monitored closely and in the yearly report will be discussed.

The future brings not only treats but also new possibilities.

- The combined municipalities of northern Friesland mainland have decided to make a map of all lighting, by flying in an airplane over the whole coastal area at night and make pictures with a resolution of less than 1 meter. This is completely new for the Netherlands and these municipalities hope to get input from this map, for reducing their light and make it more environmental friendly with less light to the sky and over de Waddenzee in the direction of the islands.

7 Public outreach

There is no astronomical tradition on Terschelling. Although seafarers and islanders traditionally used stars as navigation method. In the province of Friesland is a lot of history about so called peasants who were astronomer as well. The most famous one is Eise Eisinga who built the now oldest private planetarium of the world in his own home to explain to his fellowmen there was no harm when all the planets were at the same time at the same side of the sun. See for English information: <http://www.planetarium-friesland.nl/en>



Figure 17 The planetarium on the roof of a bedroom

7.1 Meetings and star parties

To start a new tradition Melis de Vries has organized the last three years every half year a meeting for the local people and tourists. He does this together with local organizations like the Stichting Natuurlijk Oosterend, and the mentioned Eise Eisinga planetarium.

For instance last October the yearly Night of the Night is organized. they invited astronomers and rangers to explain about stars, bats and seabirds feeding at night.

Last spring two well known Dutch amateur astronomers, specialized in making your own telescope gave a lecture for an audience of more than 30 people. At the time of sending of this application, another evening is organized.



Figure 18 waiting for the program to start

The get a more definite structure for this public outreach a group of three former amateur astronomers, all living on the island, has been formed. They will organize from now on these meetings on a regular basis.

7.2 Staatsbosbeheer

Staatsbosbeheer as the administrator of the future Park, has done some extensive work on becoming more expert in the field of light and darkness, stars etc. They have organized for their whole staff on the island consisting of 20 people, three meetings with a well known Dutch amateur astronomer, to give a presentation about themes, like what you can see at the heaven, the most asked questions from a layman about astronomy etc. Also subjects like the adaption of nature to darkness and navigation at sea, with the help of the stars.

March and April 2015 there will be another two meetings for Staatsbosbeheer en inhabitants of Oosterend about what can you see at the night sky the coming months like planets, northern lights, etc.

Two of the workers have gone more into this and are now fully capable of giving their own night excursions.

7.3 Other entrepreneurs

Other entrepreneurs in the village of Oosterend are getting the hang of it too. For instance the organization who goes with hooded carts and horses with tourists over the beach, are doing this also at night and giving extensive stories about falling stars, Milky way etc. They are very aware of this part of the nature and are proud to be part of this initiative in their village.

To support those entrepreneurs a leaflet is written and distributed on various bungalow parks and camping sites among tourists, given people an idea what to do with the night sky.

There has been created a website for tourists about the nights of Terschelling as well: <http://darkskyterschelling.nl/>



Figure 19 Leaflet, what can you see at night?

There are two big yearly events on Terschelling:

Oerol, a ten day cultural and art festival mostly in the open air in June. It has in 30 years become one of the biggest location festivals in Europe, with more than 50.000 visitors each year. Since two years there has been a co-operation and each year a part of the programs is done at night.

Springtij is a three day manifestation each year on Terschelling which is the central point of the Dutch environmentalist movement. This year the darkness and its presentation was a topic in two workshops.

7.4 Locations and walks for stargazing

Eight locations are chosen in and near the edge of the Park where people can go at night or evening to look at the stars.



	reachable	facilities	view	suited for	remarks
Parking Place Wierschuur	car	open terrain	view on the mainland and southern sky	amateur with equipment	
Sil de strandjutter	car and short walk	bench	free east and south	walkers and bikers	Protection to the westwind
Parking place Heartbreak Hotel	car	open terrain	all sky	amateur with equipment	
Nature camping	bike	open terrain	all sky, no horizon	amateur with equipment	not in summer
Cycle path Lies	bike	benches	View on north and east	walkers and bikers	
Panorama dune Oosterend	bike	high point	all sky	walkers and bikers	no protection
Parking place cycle path	car	open terrain	all sky	amateur with equipment	hedge
Skating ring Hoorn	car	bench	all sky, no horizon	walkers and bikers	protection against wind

7.5 Mainland

Also at the other side of the Waddenzee on the mainland the idea of the darkness and its preservation is getting stronger. There are plans for another Dark Sky Park on the mainland at the Lauwersmeer and on one of the other islands.

The last and very ambitious initiative is the fact the town of Leeuwarden is awarded the title of Cultural Capital of Europe in 2018. One of the main projects is 'Feel the night' with already its own website: www.feelthenight.eu.

In the project 'Feel the night' will be a lot of initiatives around astronomy and manifestations to enjoy the beauty of the night. The relation between all the municipalities along the Waddenzee and their common experience of darkness will be an important element. In this project even the bold initiative to work together with Germany and Denmark to integrate all the initiatives over the whole of the Waddenzee for a Dark Sky Park is under way.

De Boschplaat will not be the last Dark Sky Park in the Netherlands.

8 Support letters

Many organizations wrote a of support letters, which you will find on the following pages.

1. Municipality of Terschelling
2. Entepreneurs organization, Terschellinger Ondernemers Vereniging.
3. The local touristic organization, Stichting VVV Terschelling
4. The conservation organization for the Waddenzee, Waddenvereniging
5. Andreas Hänel, Leader of the German fachgruppe Dark Sky

The first three letters are written in Dutch and are not translated. They express their support for the initiative. The last two are in English.

West Terschelling, maart 2014

Geachte heer de Vries,

In vervolg op uw verzoek van 19 juli 2013 aangaande de realisatie van het eerste “dark sky park” in Nederland, de Boschplaat delen wij u mee dat het college van de gemeente Terschelling dit initiatief van harte ondersteunt.

Het voornemen past binnen onze eigen ambitie op het vlak van duurzaamheid, verhogen van de duisternis en de beleving daarvan als toeristisch product. In dit kader zijn wij Waddeneilandenbreed bezig met het vanuit duurzaamheidsperspectief niet alleen de energievraag van de openbare verlichting omlaag te brengen, maar daarmee tevens duisternis te creëren. Zulks wel binnen de randvoorwaarden van de sociale context en verkeersveiligheid.

Bij verdere uitwerkingen en mogelijke veranderingen van de openbare verlichting rekening zal worden gehouden met uitgangspunten van Dark Sky. Hiervoor noemt u de onderstaande vereisten

- De gemeente verklaart dat in de bufferzone samen met de Boschplaat de duisternis en het donkere landschap beschermd moeten worden.
Dit is een mogelijkheid die het bevoegd gezag krijgt via de wet Milieubeheer waarin in artikel 2.1 de zorgplicht aangeduid wordt, waaronder veel zaken verstaan worden, waaronder ook onderdeel q: het beschermen van de duisternis en het donkere landschap in door het bevoegd gezag aangewezen gebieden.
- In het buffer gebied zullen in de toekomst alleen armaturen gebruikt worden voor de openbare verlichting die geen licht boven de horizon uitstralen. In het Engels wordt daarvoor de term full cut off gebruikt. In de Nederlandse technische literatuur is vergelijkbaar een lichtsterkteklasse van minimaal G6.
- In het buffergebied zullen geen armaturen toegestaan worden, die licht omhoog stralen. Dat kan gaan om verlichting van monumenten of reclameborden.
- In het buffergebied zal reclame verlichting en aanstraling na 23.00 uur gedoofd worden.
- Ook wordt een mogelijke vervanging van armaturen betrokken bij het project "Dynamisch verlichten Waddengebied".

Wij beschouwen het maken van lichtafspraken echter ook als een verantwoordelijkheid voor de in de bufferzone aanwezige ondernemers en bewoners. Hierover dienen zij zelf afspraken te maken en de naleving te verzorgen. De actie ligt hierin dus bij de TOV en de burens van Oosterend.



**Terschellinger
Ondernemers
Vereniging**

Midsland, 3 juni 2013

Geachte heer De Vries, beste Melis,

Hartelijk dank voor de heldere en uitgebreide presentatie over Dark Sky Parks tijdens onze Ledenvergadering op 8 april jl.

Het is ons duidelijk geworden dat dit een fantastische uitbreiding op ons toeristisch aanbod zal zijn, indien dit op de Boschplaat op Terschelling ook gerealiseerd kan worden.

Wij ondersteunen als Terschellinger Ondernemers Vereniging dit project van harte, in de verwachting dat eventuele aanpassingen van te helder verlichte objecten niet op bezwaren zullen stuiten.

Met vriendelijke groet, namens het bestuur van de Terschellinger Ondernemers Vereniging,

Karin Lodder

Voorzitter Terschellinger Ondernemers Vereniging

Akkersweg 12 • 8891 GT Terschelling Midsland • Tel: 06-20807061
Email: info@tov-online.nl • KvK Leeuwarden: 40005085 • Rabobank nr. 11 93 69 176



Melis de Vries
p/a vakantiepark Tjermelan
Oosterend 2
8897 HZ Oosterend Terschelling

Terschelling West, 22 mei 2013

Betreft: steunbetuiging Dark Sky park Terschelling

Geachte mijnheer De Vries,

U heeft ons onlangs geïnformeerd over het initiatief Dark Sky Park. Wij zien de mogelijkheden dat een dergelijk park voor ons eiland kan betekenen; voor het trekken van bezoekers, voor het vermaak en educatie van bezoekers en voor de algehele duurzame uitstraling wat past bij de uitstraling van Terschelling.

Wij delen uw mening dat het een goede zaak voor het eiland zou zijn als het predikaat Dark Sky Park voor ons eiland zou worden toegewezen. Dat dit enige aanscherping voor regelgeving omtrent verlichting nodig heeft mag in onze optiek geen belemmering vormen om dit mooie plan ten uitvoer te kunnen brengen.

Wij wensen u heel veel succes met dit project toe.

Hoogachtend,



Roelan Schroor
Directeur

Stichting VVV Terschelling

Willem Baronszijkade 19a | Postbus 20 | 8860 AA West-Terschelling | tel. +31 (0) 562 443003 | fax. +31 (0) 562 442875
info@vvvterschelling.nl | www.vvvterschelling.nl | **Rabobank** 34.24.01.386 | **KvK** Leeuwarden 41000387 | **BTW** NL 36.67.170.801
Betaling binnen 14 dagen na factuurdatum onder vermelding van factuur- en debiteurnummer.

Beleef de wadden. Beleef de bijzondere natuur, de rust en het open landschap.
Help ons dit ruige natuurgebied te beschermen.



Waddenvereniging

Sotto le Stello
t.a.v. de heer Wim Schmidt
Merwedoplandsoen 27
3522 JS UTRECHT

Datum: Harlingen, 17 December 2013 Kenmerk: AB/EK

Belreft: Statement of Support

Dear mr. Schmidt,

We would like to support the designation of the dark sky parks in the Wadden Sea area.

The Wadden Sea is the largest unbroken system of intertidal sand and mud flats in the world, with undisturbed natural processes throughout most of the area. It encompasses a multitude of transitional zones between the land, sea and freshwater environment, and is rich in species specially adapted to the demanding environmental conditions. It is considered as one of the most important areas for migratory birds in the world, and is connected to a network of other key sites for migratory birds.

The Wadden Sea is unique in its kind and for this reason UNESCO gave out the World Heritage status in 2009. In this area you can experience the core values rest, space and darkness. The Wadden Society will protect and restore the special properties of the Wadden Sea. Therefore we think the initiative to designate Dark Sky parks is very important.

Achieving this designation brings recognition of the efforts a park has made towards protecting dark skies. It will raise the awareness of the importance of dark skies.

I wish you success in realizing the Dark Sky parks.

Best regards,

Wadden Society

Arjan Berkhuysen



Directie milieuzorg Postbus 901 8860 AB Harlingen t: (0517) 435 403 fax: (0517) 493 401
info@waddenvereniging.nl www.waddenvereniging.nl Kvk-nummer 24 24 210 KvK-40000475 BTW-nr. NL 84684934 B.V.

Fachgruppe DARK SKY - Initiative gegen Lichtverschmutzung

www.lichtverschmutzung.de



A. Hänel, Am Sportplatz 7, D-49124 Georgsmarienhütte

International Dark-Sky Association
IDA Board of Directors
3223 N. First Avenue
Tucson, Arizona 85719
USA

Geschäftsstelle
Postfach 1169
49629 Leesenheim
Telefon 06252/787154
Telefax 06252/787220
service@vds-astro.de

**Leader of the
working group**
Dr. Andreas Hänel
Am Sportplatz 7
D-49124 Georgsmarienhütte
Email: ahaenel@uos.de

2014-02-22

Support of the Application of the International Dark Sky Park Terschelling

Dear IDA Board of Directors,

The Netherlands are famous for the many lights that can be seen from space and which is mainly due to the dense population. Only some regions appear darker, one is the Wadden Sea and their islands in the North. In February 2014 I could visit the island of Terschelling, which is about 20 km from the mainland, the travel took just 3/4 of an hour with the fast ferry. It was no problem to go with a public bus to the holiday resort Tjermelan in the eastern part.

During the night I made one of my most exciting astronomy excursions together with Wim Schmidt: riding on a bicycle and with all measurement equipment against a very strong wind over the island! The small streets and the small typical Dutch houses are only faintly illuminated, so going into the dunes or the nature reserve Boschplaat gave an impressive sight on the starry sky. Only faint light domes on the southern and southwestern horizon were due to artificial lights from cities on the mainland and the largest city on the island, Westerschelling, were visible. The zenithal sky brightness was measured at 21.5 mag/arcsec², and we could observe the in central Europe rare effect of dark low clouds in front of high illuminated clouds. It was too late to observe the zodiacal light (in the beginning of the night it was still cloudy), but the faint glow of the Gegenschein was visible and can be seen on the all-sky pictures.

These observations confirm the exceptional quality of the night sky on Terschelling, many undisturbed observing places are easily accessible from the tourist resorts on the island. The engagement of Melis de Vries convinced me that Terschelling might become a very active dark sky region in the Netherlands.

Therefore I strongly support the project of creating an International Dark Sky Park on the eastern part of the island!

With best regards

Dr. Andreas Hänel

Section leader of the working group Dark Sky Germany,
Astronomer and director of the planetarium in the Museum am Schölerberg, Osnabrück
Member of the International Dark Sky Association IDA, Member of the International Planetarium Society IPS,
Member of the Astronomische Gesellschaft, Member of the International Astronomical Union IAU

9 Press

There is been elaborate press coverage already for the initiatives .
Here are some scetches .

"WE WILLEN IEDEREEN DE STERRENHEMEL LATEN ZIEN"

Terschelling krijgt er binnenkort een toeristische attractie van formaat bij. En dat zonder iets te bouwen, te ontwikkelen of te veranderen. De Boschplaat is in de race om het eerste officiële duisternispark van Nederland te worden. En dat dankzij een prachtige sterrenhemel en een minimum aan lichtvervuiling. En dankzij Melis en Anka de Vries van Vakantiepark Tjermelân op Oosterend.

Melis de Vries kan zich nog goed herinneren hoe hij op het idee kwam. "In 2010 deden Anka en ik mee met de Nacht van de Nacht in Oosterend. We trokken de duinen in, kleedje mee, een picknickmand, flesje wijn en de hond. Het was een fantastisch heldere nacht, dus konden we heel wat sterren zien. Tjonge, zeiden we tegen elkaar toen we terugliepen, dit is wel heel erg mooi. Kunnen we hier

thousiast gehoor bij Staatsbosbeheer. "Ze vonden het een leuk plan, maar konden er zelf niet veel mee. Toen ben ik het zelf maar gaan doen." Melis zoekt contact met Wim Schmidt van het Platform Lichthinder uit Utrecht. "Hij was meteen enthousiast en wilde wel meewerken. Hij heeft een plan geschreven om van Terschelling een Dark Sky Park te maken." Wereldwijd zijn er een twaalfal

gelegd aan de Buren van Oosterend. Daar was iedereen unaniem enthousiast. Wel werd er gevraagd of er nog wel met de Landrover rondgereden mocht worden. Dat heb ik uitgezocht en was geen enkel probleem. Net zoals de vuurtoren; die kunnen ook gewoon blijven branden." Lachend: "Gelukkig maar, want die kun je niet uitzetten." Dan weer serieus: "Dat willen we natuurlijk ook niet, veiligheid

Boschplaat wordt het eerste duisternispark

● Lauwersmeer afgetroefd door Friezen

Door Gerdt van Hofstolt

Groningen Niet het Lauwersmeer, maar De Boschplaat op het oostelijk deel van Terschelling wordt eind dit jaar het eerste Nederlandse 'duisternispark'. Dat is een gebied waar zo weinig mogelijk lampen branden. Dat zegt Wim Schmidt, die zich namens het Platform Lichthinder in Utrecht bezighoudt met de aanwijzing van Nederlandse gebieden zonder storende verlichting.

Zowel het waddeneiland als het Nationaal Park waren in de race om de titel *Dark Sky Park*. Het predicaat is bedacht in de VS. Er zijn wereldwijd nu tien van deze parken. Het

De parken moeten behalve zo donker mogelijk 's nachts ook voor het publiek toegankelijk zijn. Ook moeten er regelmatig activiteiten zijn die hebben te maken met de duisternis.

Dat De Boschplaat als eerste gebied in Nederland voor deze status in aanmerking komt, heeft volgens Schmidt vooral te maken met de situatie. Het is er aardedonker, terwijl je in het Lauwersmeer nog bewoning hebt en, niet te vergeten, een haven met allerlei uitbreidingsplannen. Bovendien is er op De Boschplaat een ondernemer die het plan trekt. In Noord-Groningen is de situatie ingewikkelder en heb je te maken met allerlei autoriteiten en beheersorganisaties zoals Staatsbosbeheer.

Schmidt wil het Lauwersmeer



Terschelling profileert zich graag als weelderig eiland, met een prachtige natuur, brede stranden en gezellige dorpjes. Maar er is meer te zien en te beleven, zegt Melis de Vries. "Kijk wanneer het donker is ook eens omhoog. We hebben op Terschelling een schitterende sterrenhemel die uniek is voor ons land."

Het begon allemaal een paar jaar geleden, toen Melis en zijn vrouw Anka, die samen de vakantieparken Tjermelân in Oosterend en de Kluisen in IJze betrekken, meededen met de Nacht van de Nacht. Melis: "Het was heel

me veel meer bezoekers, al was dat niet de bedoeling om het park te ontwikkelen. Men wil de bezoekers ook meer bewust maken van de prachtige natuur en ze wijzen de randen van lichtvervuiling. Veel bezoekers van het park wonen in grote steden en hebben nog nooit echte duisternis ervaren. De activiteiten die er worden georganiseerd zijn inmiddels een groot succes."

Terug in Nederland kwam Melis in contact met Wim Smits van het Platform Lichthinder uit Utrecht. "Hij was meteen enthousiast en wilde wel meewerken. Hij heeft een plan geschreven om van Terschelling een Dark Sky Park te maken. Het zou heel bijzonder zijn als dat zou lukken, want Nederland is een van de meest dichtbevolkte en verlichte landen ter wereld. Het zou ook goed zijn voor de verdediging van het toerisme, want juist in de wintermaanden is de sterrenhemel op zijn mooist."

Melis doet het vooral uit idealisme, zegt hij. Hij vindt de benaming 'park' dan ook een beetje misleidend. "Want het wordt natuurlijk geen pretpark. Je hoeft er niets voor te bouwen, alles is er immers al. Er is alleen meer voorlichting nodig. Vaak zien we de hemel wel, maar kijken we niet echt. En dat heeft helemaal geen halsoverkopende kosten voor u te betalen, want op nog geen vijftig meter in de duinen zit je al volledig in het donker. Het past dan ook heel goed in het streven naar duurzaam toerisme."

Het rapport van het Platform Lichthinder wordt naar de Amerikaanse organisatie gestuurd en dan is het wachten op goedkeuring. "Het zal eind van het jaar bekend worden" naar Melis. "Het rapport moet van

Appendix 1 Darkness measurements De Boschplaat

Nummer	x-coördinaat	y-coördinaat	Date-time	SQM	Photographic
1	155584,7247	602072,4867	8-02-13 19:43		21,50
2	155488,5249	602470,5406	8-02-13 19:53		21,52
3	153572,6952	601994,7789	29-01-11 23:14		21,56
4	154716,2933	602266,7671	29-01-11 23:27		21,41
5	155131,7415	603973,1946	10-02-13 20:29		21,60
6	156474,8087	604603,9529	10-02-13 20:42		21,58
7	158301,124	605241,4106	10-02-13 20:53		21,61
8	160193,6455	605651,3989	10-02-13 21:06		21,56
9	162088,0527	606316,7671	10-02-13 21:18		21,72
10	163949,9372	606473,4797	10-02-13 21:31		21,61
11	155004,9686	602983,3173	10-02-13 21:59		21,68
12	154833,9337	602361,9089	10-02-13 22:12		21,71
13	154568,975	602027,0726	10-02-13 22:24		21,71
14	154566,9129	602022,065	10-02-13 22:36		21,57
15	153421,2019	601798,0771	10-02-13 22:54		21,55
16	152268,3523	601264,9998	10-02-13 23:31		21,51
17	149578,0162	600379,0563	10-02-13 23:43		21,37
18	149283,0451	601480,3394	10-02-13 23:54		21,72
19	150935,6576	601139,9883	11-02-13 0:14		21,59
20	152682,8789	601436,0432	1-05-13 23:05		20,91
21	152187,4393	601209,5167	1-05-13 23:15		21,09
22	151089,6801	600868,7696	1-05-13 23:25		21,22
23	150218,1938	600448,2509	1-05-13 23:30		21,45
24	149646,0985	600344,0354	1-05-13 23:40		21,42
25	148697,6381	598946,5871	1-05-13 23:55		21,52
26	148208,0783	599652,5832	2-05-13 0:05		21,10
27	149574,6746	598859,5879	2-05-13 0:35		21,66
28	150490,4786	599195,5922	2-05-13 1:00		21,64
29	151830,3392	599548,9401	2-05-13 1:15		21,77
30	153690,2493	600971,9307	2-05-13 1:30		21,77
31	154104,5664	601906,2857	2-05-13 2:00		21,64
32	153441,1492	601785,1614	2-05-13 2:15		21,73
33	155488,5249	602470,5406	8-02-13 19:53	21,44	
34	153572,6952	601994,7789	29-01-11 23:14	21,4	
35	154716,2933	602266,7671	29-01-11 23:27	21,41	

36	155131,7415	603973,1946	10-02-13 20:29	21,4	
37	156474,8087	604603,9529	10-02-13 20:42	21,43	
38	158301,124	605241,4106	10-02-13 20:53	21,42	
39	160193,6455	605651,3989	10-02-13 21:06	21,48	
40	162088,0527	606316,7671	10-02-13 21:18	21,46	
41	163949,9372	606473,4797	10-02-13 21:31	21,49	
42	155004,9686	602983,3173	10-02-13 21:59	21,47	
43	154833,9337	602361,9089	10-02-13 22:12	21,53	
44	154568,975	602027,0726	10-02-13 22:24	21,49	
45	154566,9129	602022,065	10-02-13 22:36	21,47	
46	153421,2019	601798,0771	10-02-13 22:54	21,42	
47	152268,3523	601264,9998	10-02-13 23:31	21,4	
48	149578,0162	600379,0563	10-02-13 23:43	20,95	
49	149283,0451	601480,3394	10-02-13 23:54	21,5	
50	150935,6576	601139,9883	11-02-13 0:14	21,49	
51	152682,8789	601436,0432	1-05-13 23:05	20,91	
52	152187,4393	601209,5167	1-05-13 23:15	21,09	
53	151089,6801	600868,7696	1-05-13 23:25	21,22	
54	150218,1938	600448,2509	1-05-13 23:30	21,45	
55	149646,0985	600344,0354	1-05-13 23:40	21,42	
56	148697,6381	598946,5871	1-05-13 23:55	21,52	
57	148208,0783	599652,5832	2-05-13 0:05	21,1	
58	149574,6746	598859,5879	2-05-13 0:35	21,66	
59	150490,4786	599195,5922	2-05-13 1:00	21,64	
60	151830,3392	599548,9401	2-05-13 1:15	21,77	
61	153690,2493	600971,9307	2-05-13 1:30	21,77	
62	154104,5664	601906,2857	2-05-13 2:00	21,64	
63	153441,1492	601785,1614	2-05-13 2:15	21,73	