

DOME – Valberg

Mercredi 17 juin – 11h15

Coopérations internationales pour la promotion du ciel étoilé / International cooperation around dark skies

Mike HAWTIN / Head of Nature Recovery Projects and Dark Skies lead officer for the North York Moors International Dark Sky Reserve

Andreas HAENEL / Working Group DARK SKY of the German Amateur Astronomers VdS & Commission Light Pollution of the Astronomische Gesellschaft



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Northern England Dark Skies Alliance: Working together to create a stronger regional voice

Mike HAWTIN / Head of Nature Recovery



North York Moors
National Park

Coopérations internationales

17/06 – 11h15





North York Moors
National Park



Protecting Dark Skies

Northern England Dark Skies Alliance

Working together to create a stronger regional voice

Protecting Dark Skies

A bit of background...



The North York Moors is an upland area in Yorkshire, north east England.

- Designated as a National Park in 1952
- Covering an area of 554 sq mi (1,430 km²)
- Approximately 23% woodland cover
- One of the largest expanses of heather moorland in the UK.
- Population of approximately 24,000
- Designated at an International Dark Sky reserve December 2020

Perfect days, starry nights. Make magical memories in a peaceful corner of northern England. Sweeping moorland, a rugged coast, ancient woods and timeless villages. A special place, forged by nature and shaped over generations.

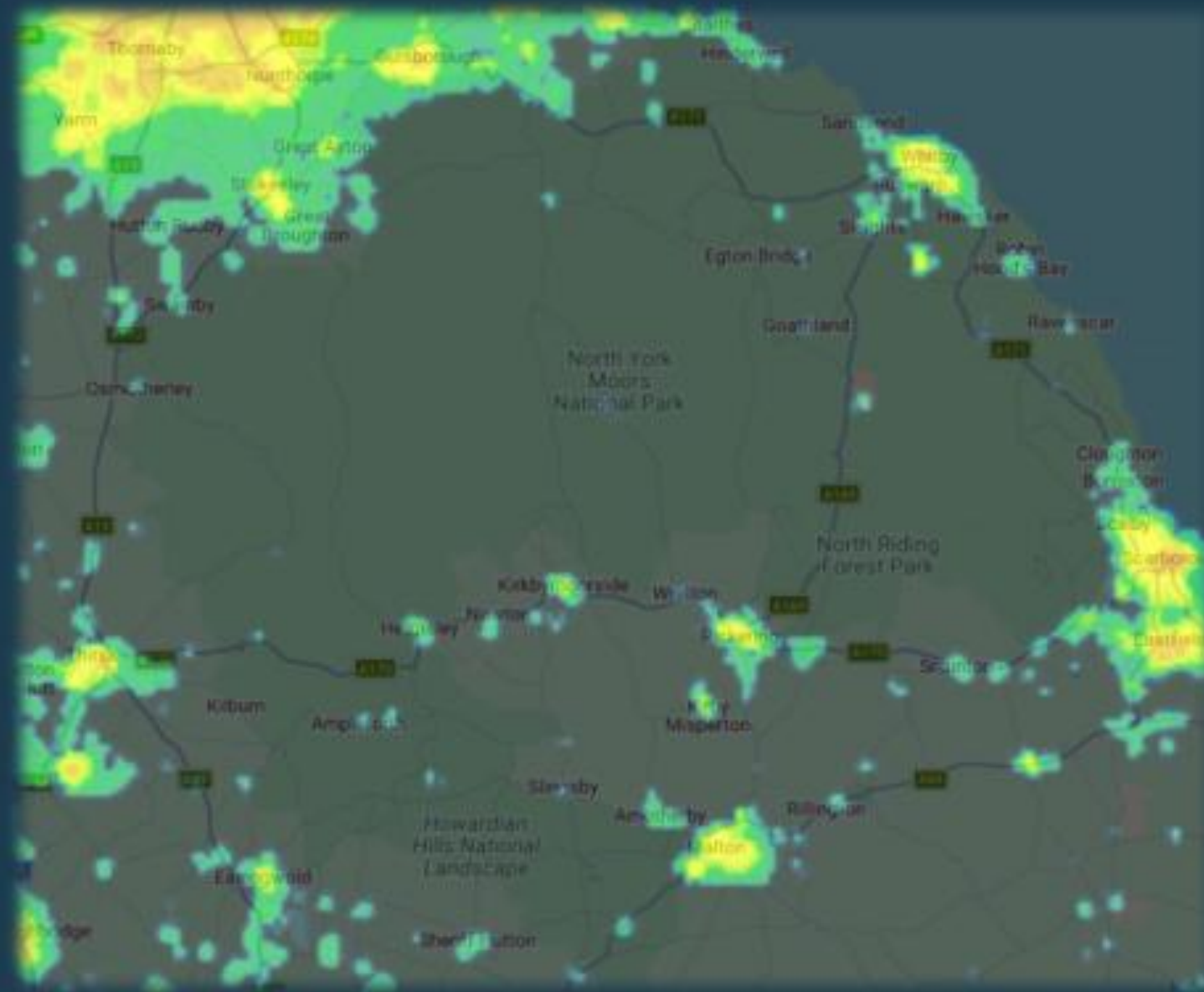


Protecting Dark Skies

Northern England Dark Skies Alliance (NEDSA)



North York Moors
National Park



National Parks and National Landscapes are some of the only places in the UK where dark skies can be enjoyed

- Like many Dark Sky Places we have pressures
- High population density across the UK
- Impacts of light pollution in urban areas
- We need to work at a bigger scale



Protecting Dark Skies

Northern England Dark Skies Alliance (NEDSA)



North York Moors
National Park



Formalising a dark skies alliance with a group of protected landscapes in the north of England

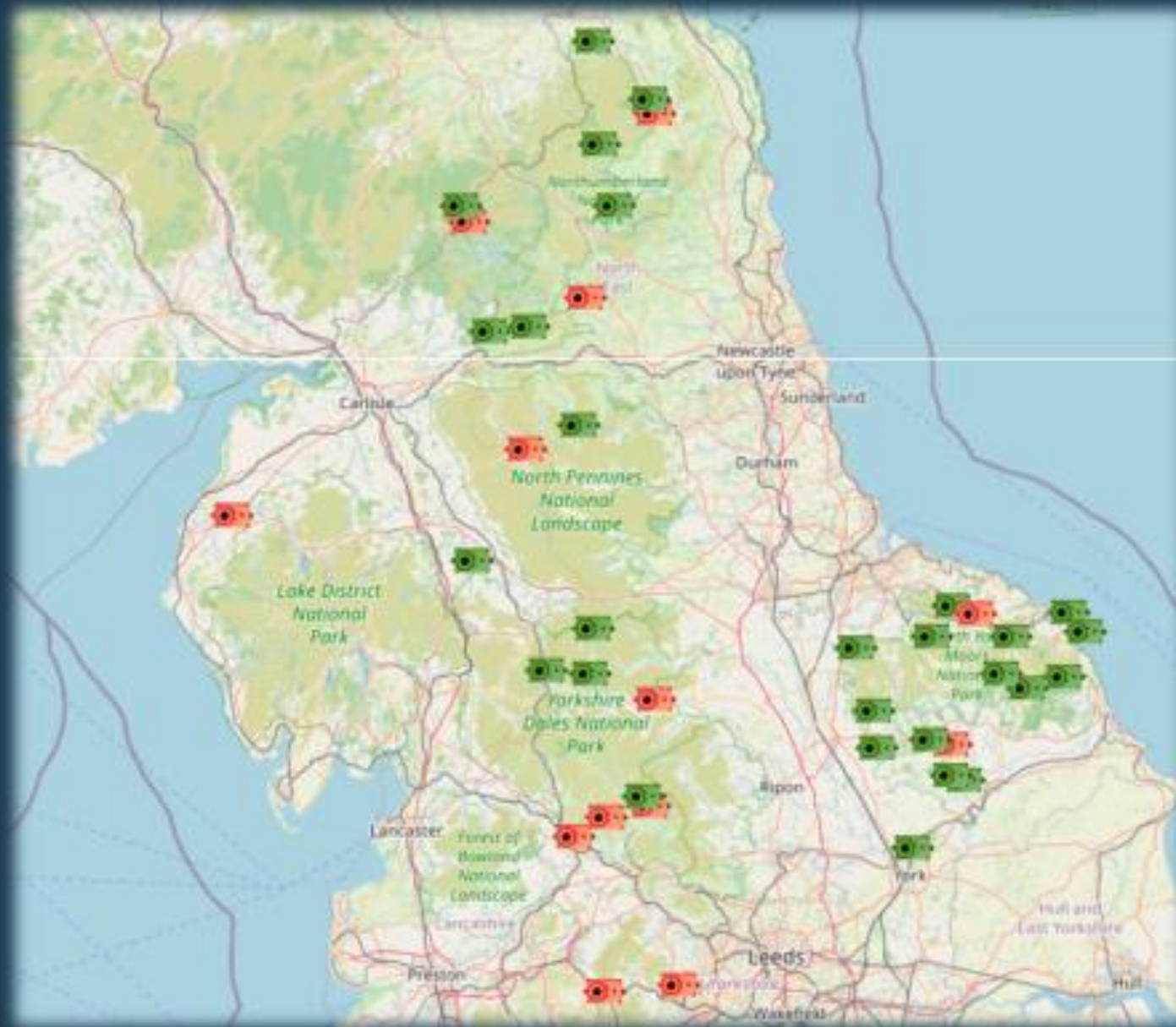
- ★ Three International Dark Sky Places
 - 13 National Parks and National Landscapes
 - Create a stronger regional 'voice'
 - Share information and processes
 - Working beyond our boundaries

We also collaborate nationally through a UK Dark Sky Forum of Dark Sky Places and protected landscapes and through the Dark Sky UK chapter



Protecting Dark Skies

Northern England Dark Skies Alliance (NEDSA)



Expanding the monitoring network

- Currently 37 TESS meters (NEDSA group)
- Monitoring trends over time by region and area
- 'Ground truthing' of satellite data

tess.dashboards.stars4all.eu/d/tess_network_map



Protecting Dark Skies

Engagement drivers. It's more than 'just' stargazing



North York Moors
National Park



CULTURE & HERITAGE

Special qualities
of protected
landscapes



EDUCATION

Gateway
science for
young people



WILDLIFE

Nature Recovery,
don't neglect
the night!



RURAL ECONOMY

Significant uplift
in the shoulder
season



ENERGY USAGE

Increased global
focus on carbon
emissions



HEALTH & MINDFULNESS

Reconnecting
us with the
natural world



Protecting Dark Skies

Share messages



North York Moors
National Park



It's not about banning light, it's about encouraging responsible use of light.



Light only what you need



Light only when you need it



Light at a suitable level to the need

Protecting Dark Skies

Sharing lighting examples

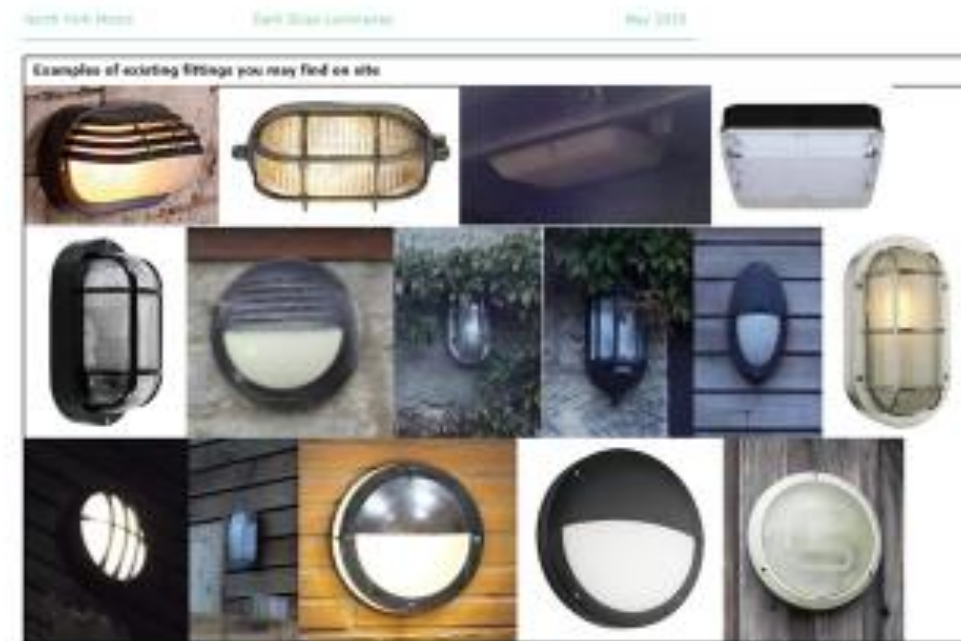


North York Moors
National Park

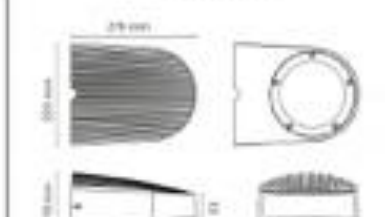
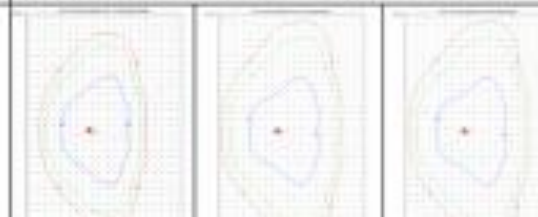


Protecting Dark Skies

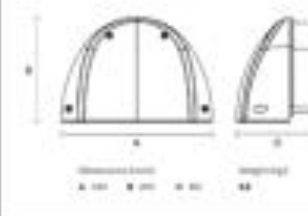
Share technical documents



North York Moors Dark Skies Luminaires May 2023

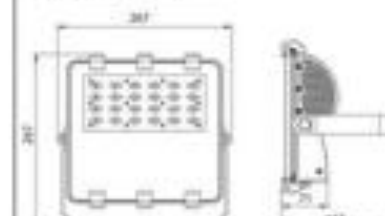
Type	Image	Quote	Description	Photometric Image
65		25Watt Asymmetric 2500K 15W 2320 Lumens Output CRI of >70 IP65 0% UGR	25 Watt with 2320 lumen output. Mounting height 5m. Contour lines Blue=5 Lux, Green=1.0 Lux, Red=0.5 Lux. Typical full moon approx. 0.1 Lux	25 Watt with 2320 lumen output. Mounting height 5m. Contour lines Blue=5 Lux, Green=1.0 Lux, Red=0.5 Lux. Typical full moon approx. 0.1 Lux
Dimensions  Points shown are 0.5m from edges and then at 1m spacing. 				

North York Moors Dark Skies Luminaires May 2023

Type	Image	Quote	Description	Photometric Image
10		DW Windor 8000K Wall 3700W 3600K 300-700mA 6 to 37W 8-16 LED Up to 3,983 Lumen Output CRI 70/80/90 0% UGR IP66	8 LED, 14 Watt, 500mA with Clear, Narrow Optic Mounting height 2.5m. Contour lines Blue=5 Lux, Green=1.0 Lux, Red=0.5 Lux. Typical full moon approx. 0.1Lux	8 LED, 14 Watt, 500mA with Clear, Medium Optic Mounting height 2.5m. Contour lines Blue=5 Lux, Green=1.0 Lux, Red=0.5 Lux. Typical full moon approx. 0.1Lux
Dimensions  Points shown are 0.5m from edges and then at 1m spacing. 				



North York Moors Dark Skies Luminaires May 2023

Type	Image	Quote	Description	Photometric Image
12A		ARROW Mini 50W 2500K 2500K 30W & 40W 5,250-6,300 Lumen Output CRI >70 IP65 0% UGR (Subject to talk)	50-Watt Arrow Flood with 5250 lumen output. Mounting height 5m. Contour lines Blue=5 Lux, Green=1.0 Lux, Red=0.5 Lux. Typical full moon approx. 0.1Lux	60-Watt Arrow Flood with 6300 lumen output. Mounting height 5m. Contour lines Blue=5 Lux, Green=1.0 Lux, Red=0.5 Lux. Typical full moon approx. 0.1Lux
Dimensions  Points shown are 0.5m from edges and then at 1m spacing. 				

Protecting Dark Skies

Share processes and fixtures – Small farms



Protecting Dark Skies

Share processes and fixtures – large farms



* Mounted horizontal
Zero upward light
2700K



Protecting Dark Skies

Engagement.



North York Moors
National Park



We have calcium in our bones, iron in our veins, carbon in our souls, and nitrogen in our brains. 93 percent stardust, with souls made of flames, we are all just stars that have people names. *Nikita Gill*





North York Moors
National Park



Thank you

Please scan the QR code for more information
conservation@northyorkmoors.org.uk

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Dark Sky Places in Germany



Andreas HAENEL / Working Group DARK SKY of the German Amateur Astronomers VdS and Commission Light Pollution of the Astronomische Gesellschaft



Coopérations internationales

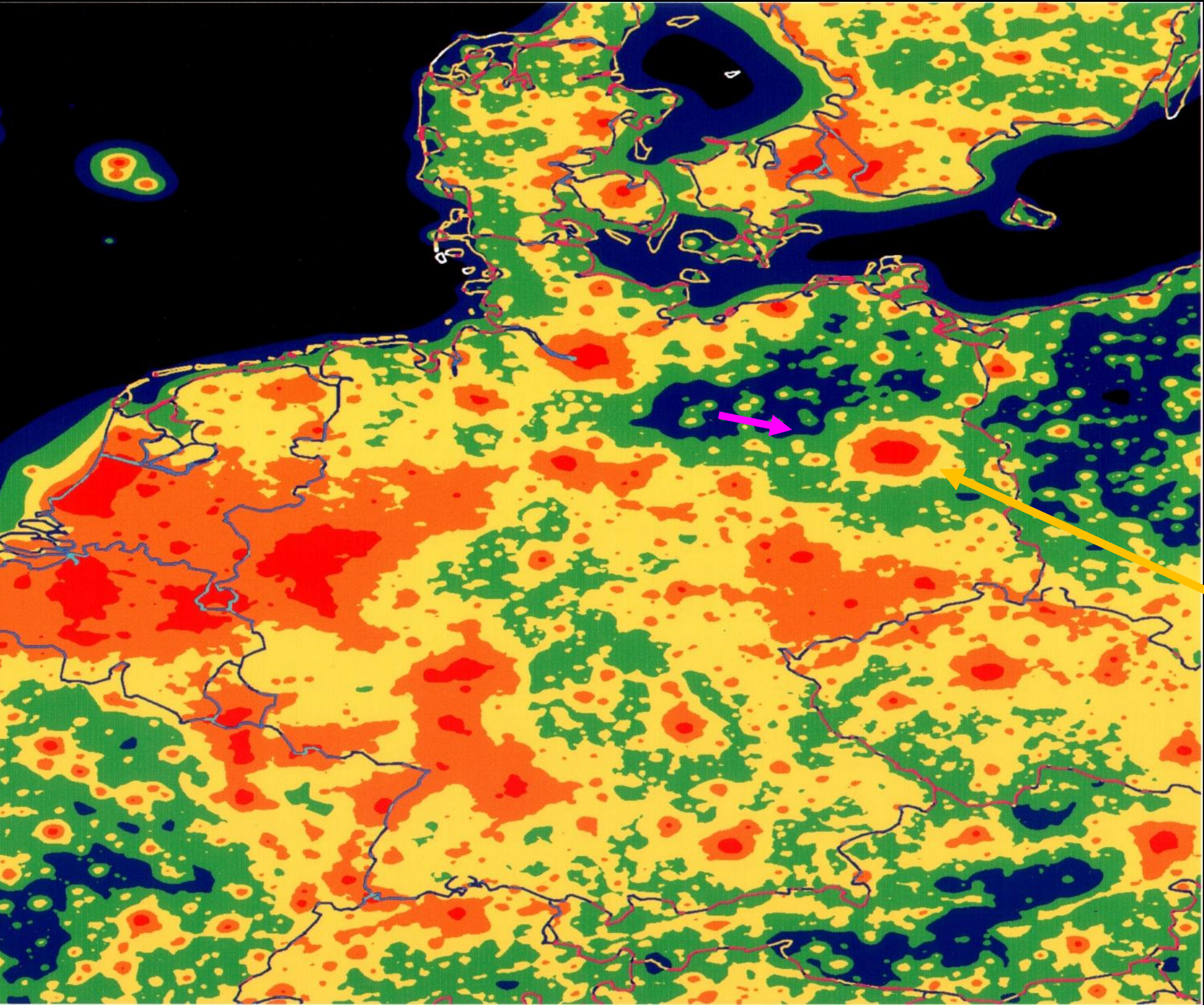
17/06 – 11h15



2010 sur le chemin à Berlin

Parc Nature Westhavelland, 70 km à l'ouest de Berlin

ciel très sombre ($21.7 \text{ mag/arcsec}^2$) -> Dark Sky Park?



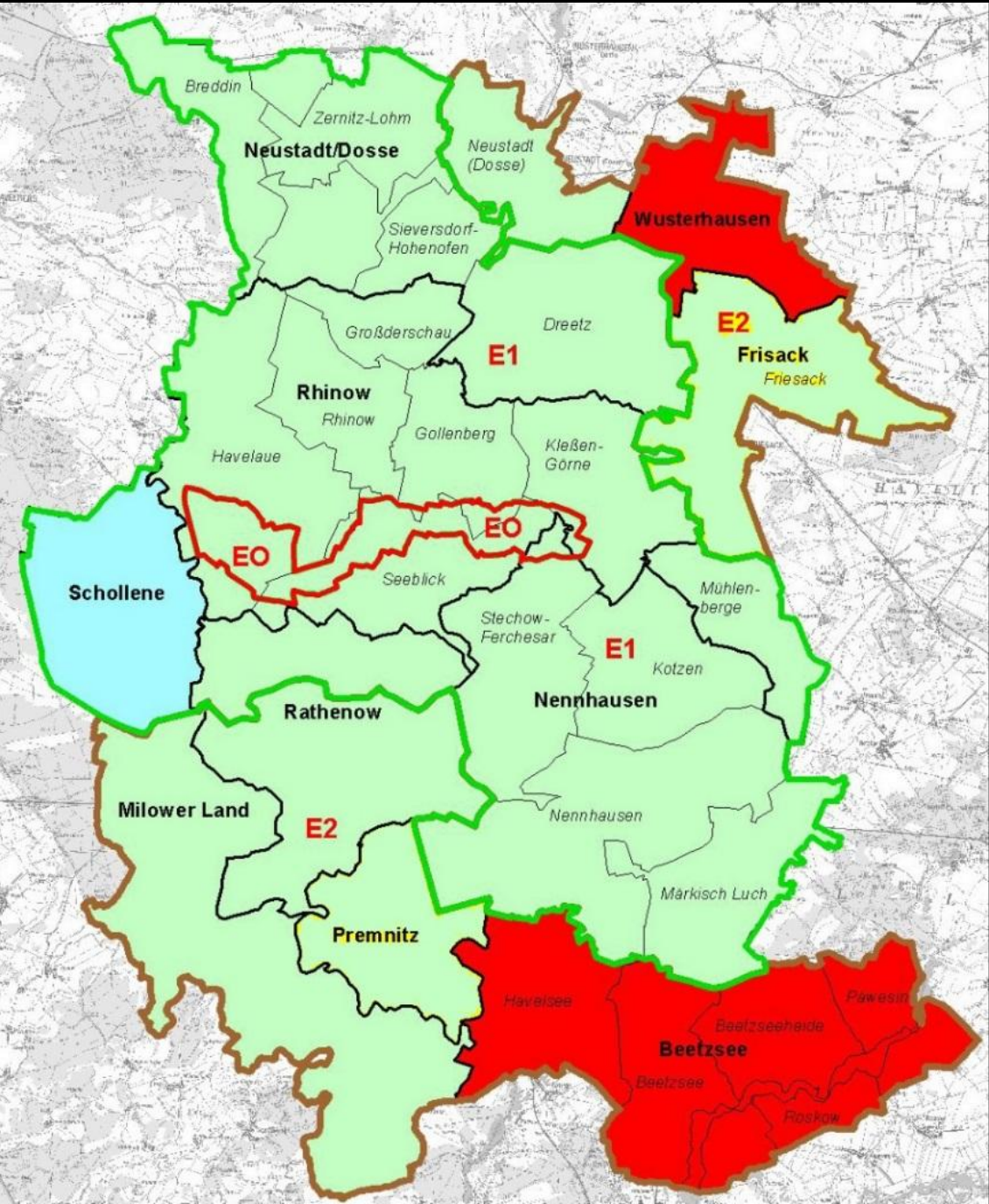
Berlin



Naturpark Westhavelland – cadastre des luminaires

11 328 luminaires comptés

Lighting Management Plan:
zonage coeur – tampons
full cut-off luminaires ULR= 0
cct <= 3000 K (IDA: 4000 K!)
2200 K!



A 3.3 Explanations to these decisions (in German)



Ökologische Beleuchtung
zur Reduzierung von Lichtsmog

Erläuterungen zu den Beleuchtungsrichtlinien
für Sterneparks

Fachgruppe DARK SKY
der Vereinigung der Sternfreunde e.V.



Affiliate organisation of the International Dark Sky Association



Dr. Andreas Hänel
Museum am Schölerberg
Osnabrück



Leuchtenkataster

für den

Naturpark Westhavelland



Naturpark
Westhavelland



Parey, den

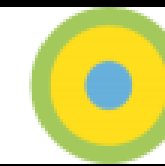


Parc Nationale / Parc Nature Eifel: Park -> Reserve?

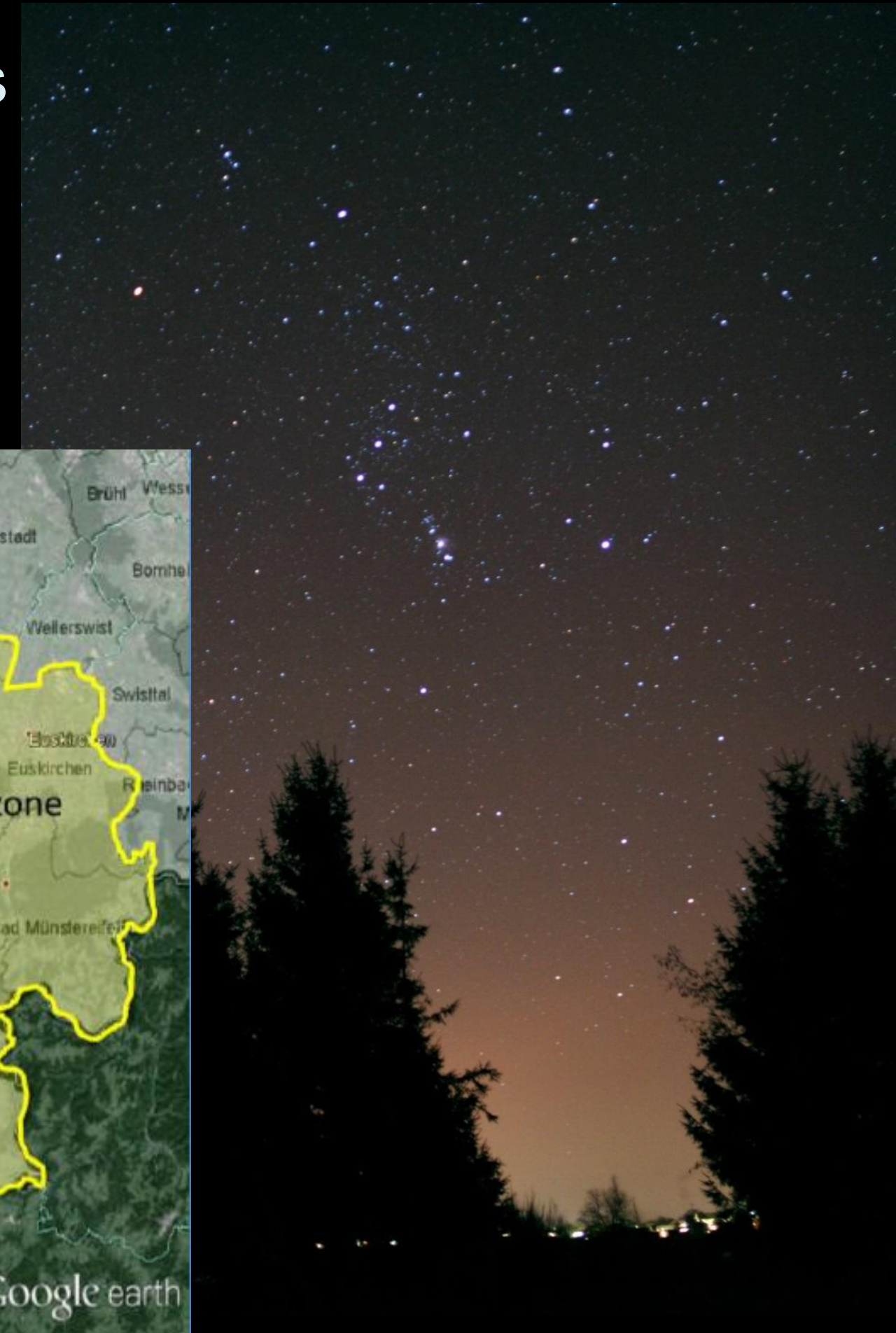
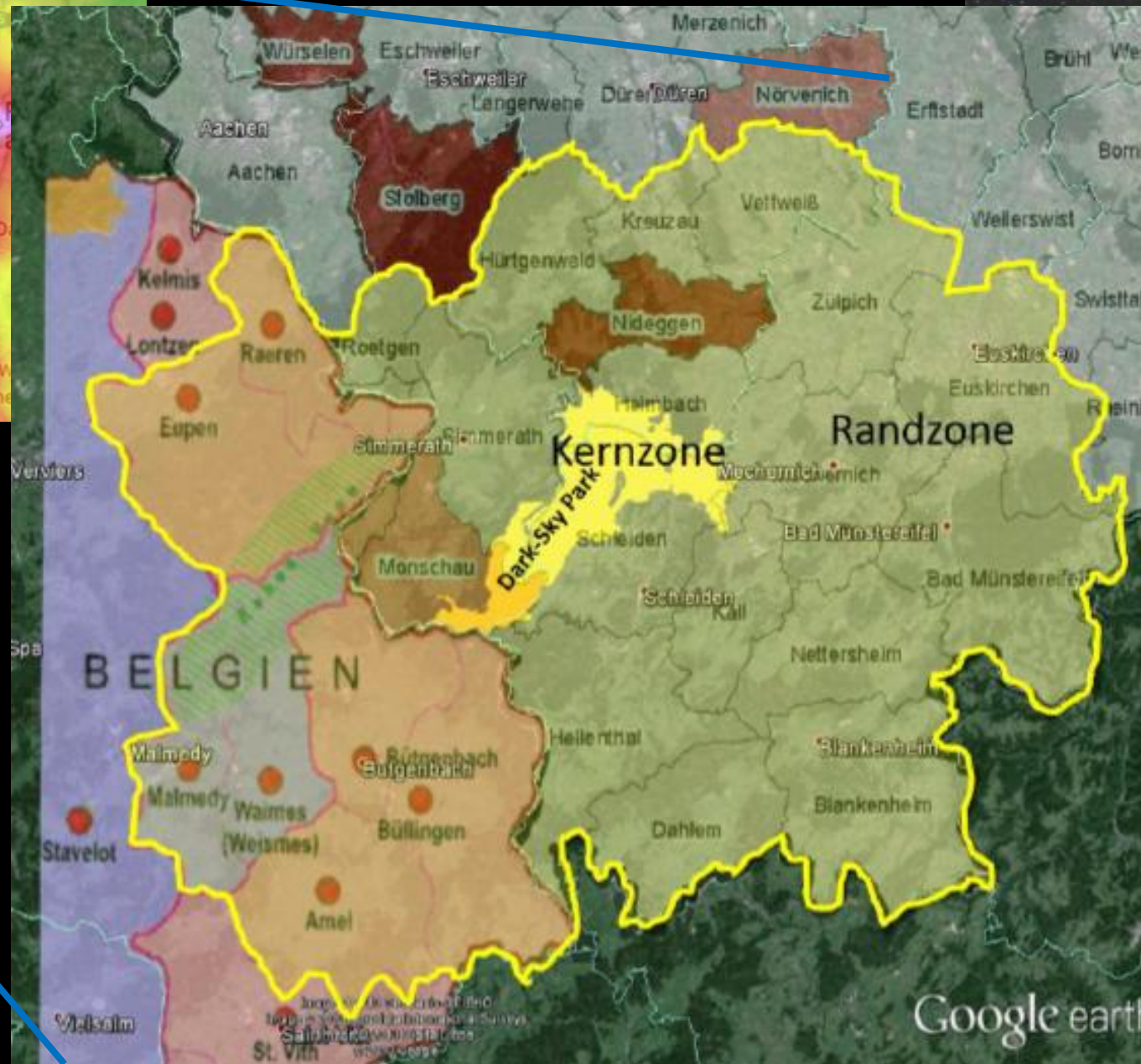
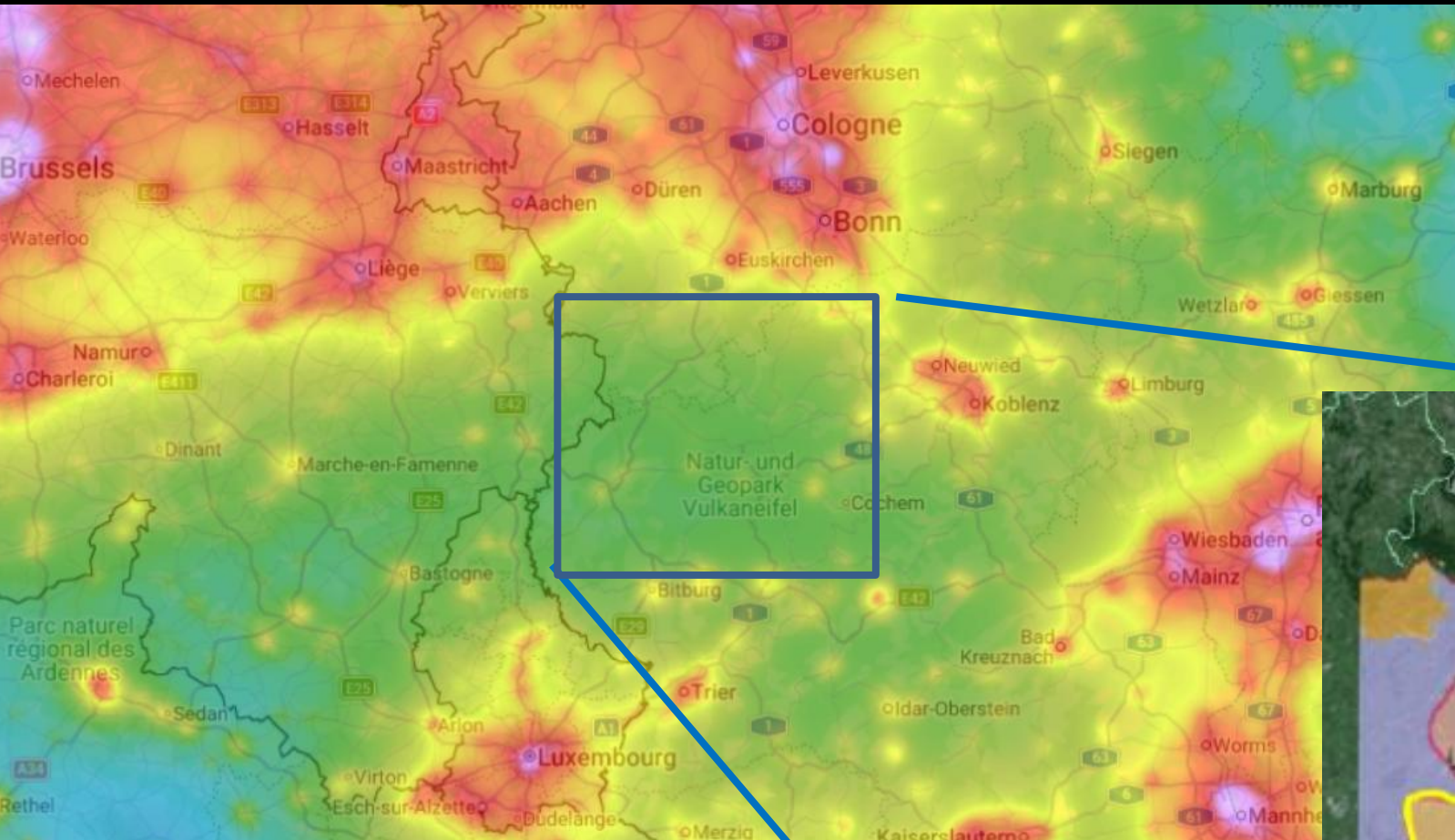
Région très peuplée à la frontière Belges

pas de lumière en Parc National -> mais communes autour

Nationalpark
Eifel



Deutsch-Belgischer
Naturpark
Hohes Venn - Eifel

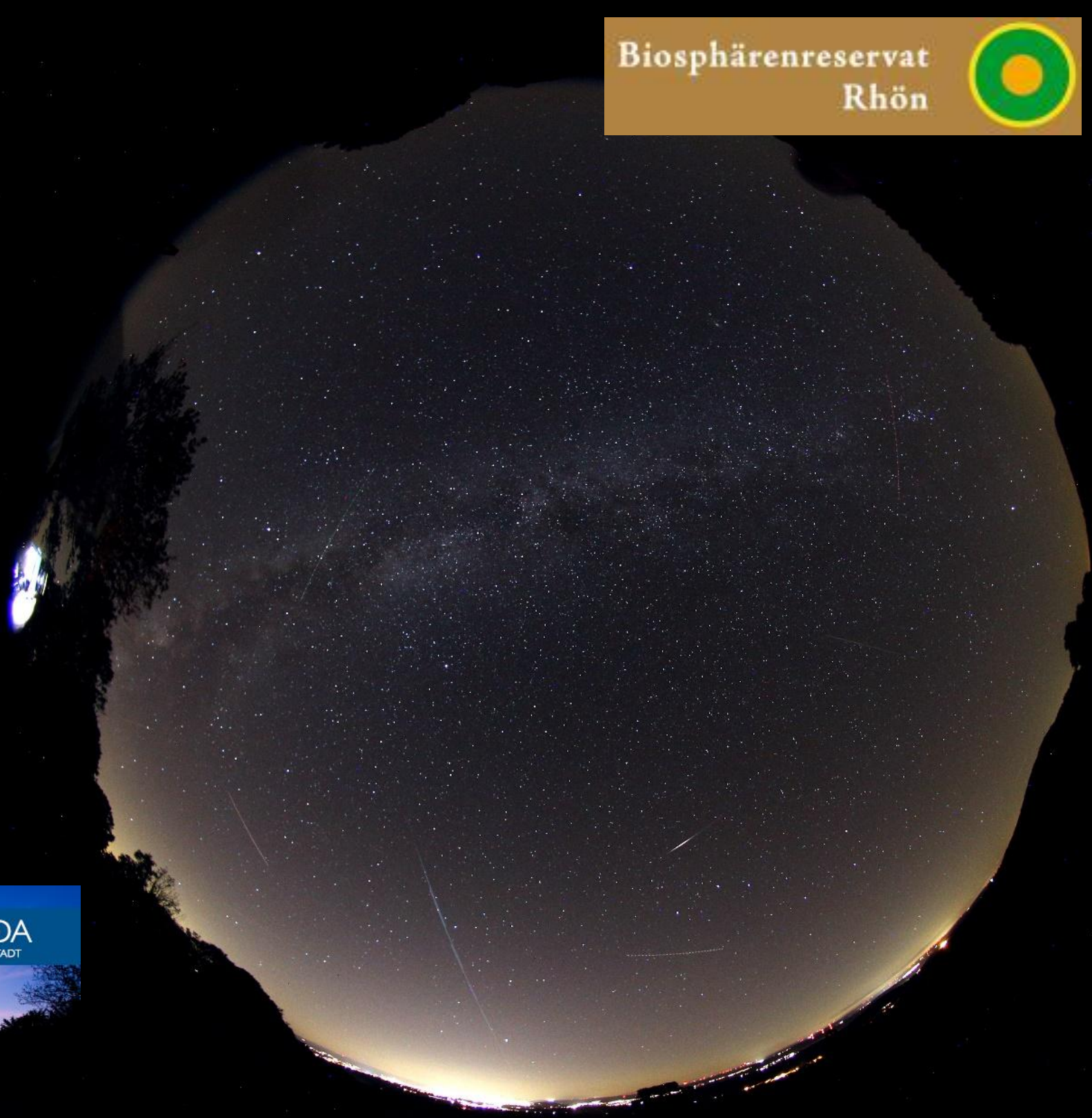
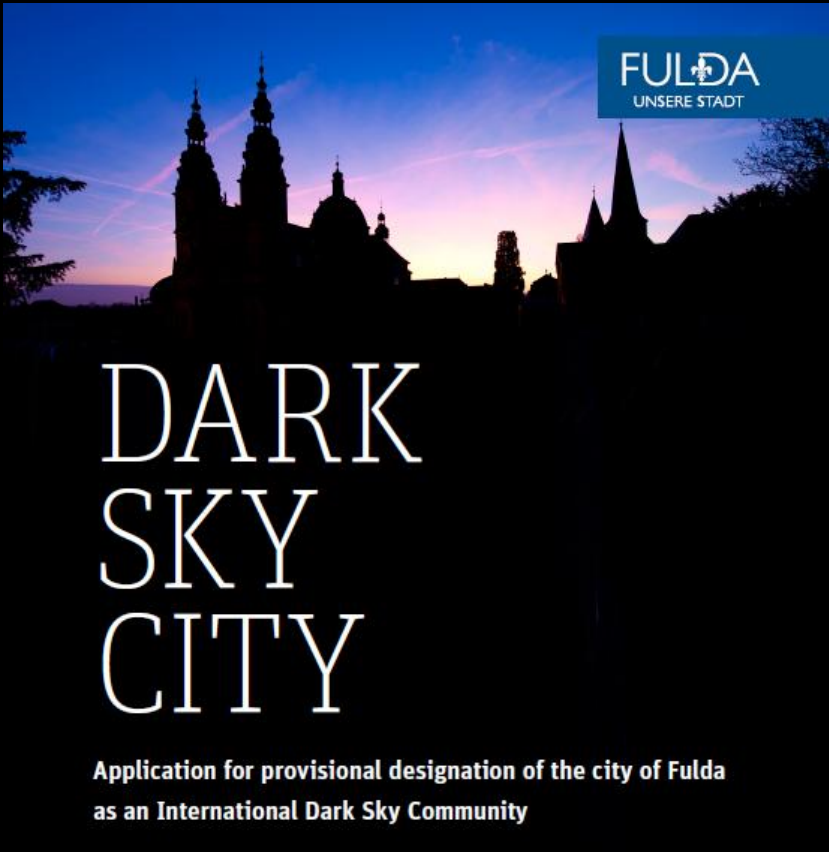


UNESCO Réserve Biosphère Rhön -> Fulda

impact de lumière sur IDS Reserve Rhön
échange des lampes (-> 2700 K LED)
dans lanternes historiques
pour diriger la lumière vers le bas (full cut-off)



Illumination de la cathédrale:
technique GOBO (masques)



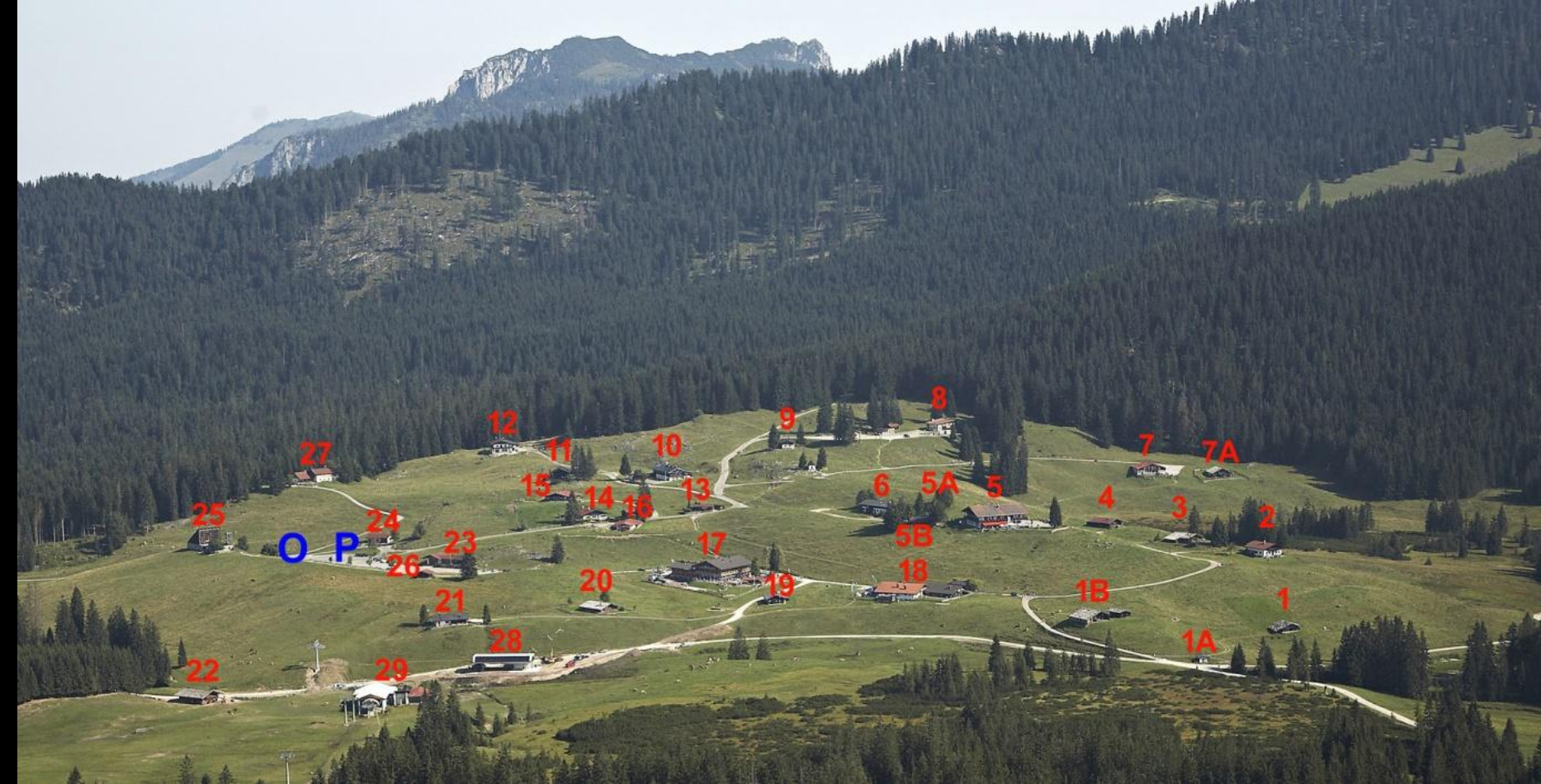
Winklmoosalm, Alpes Allemands

35 maisons, 2 hôtels

pas de lumière public, seulement privé!

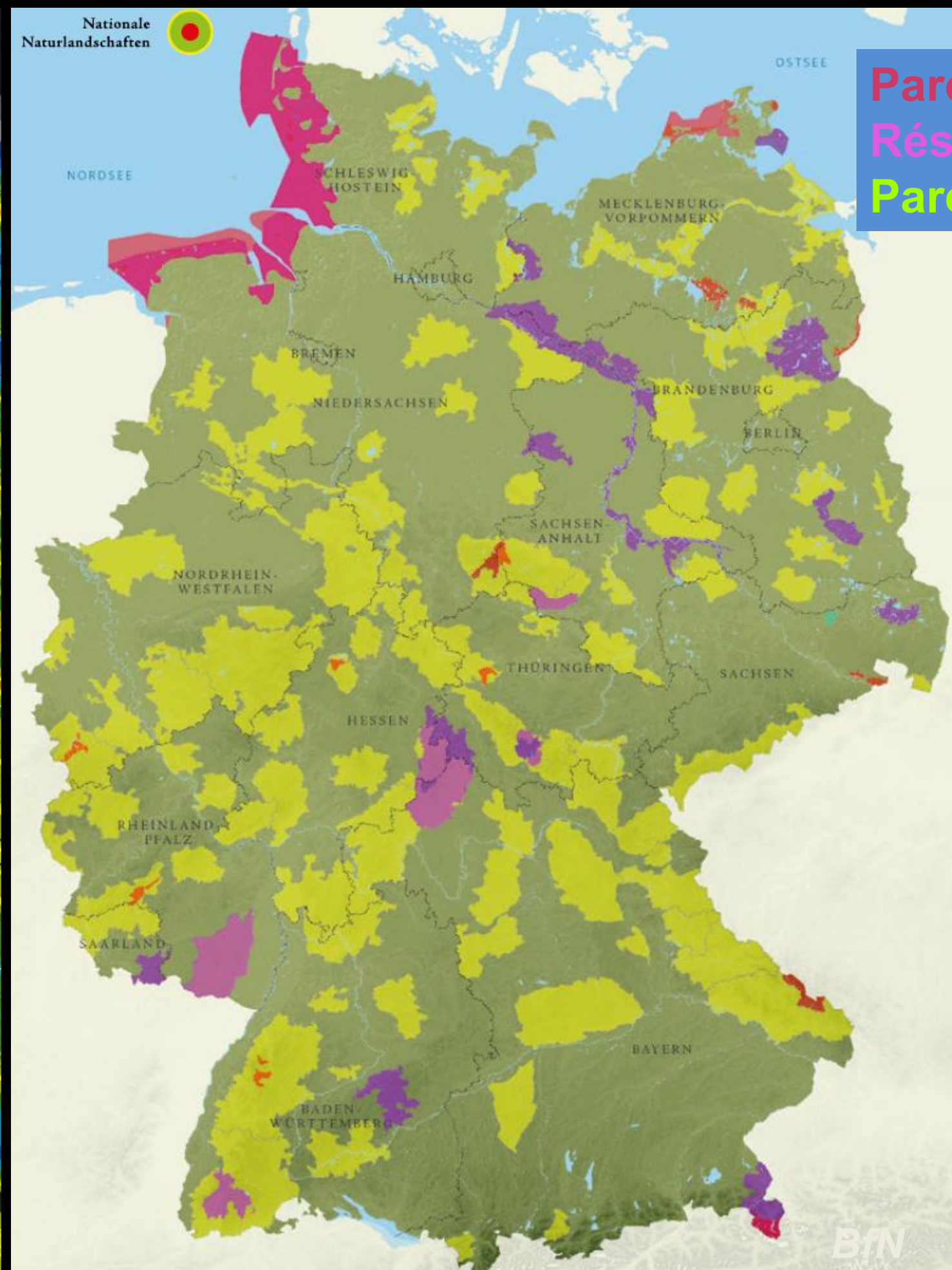
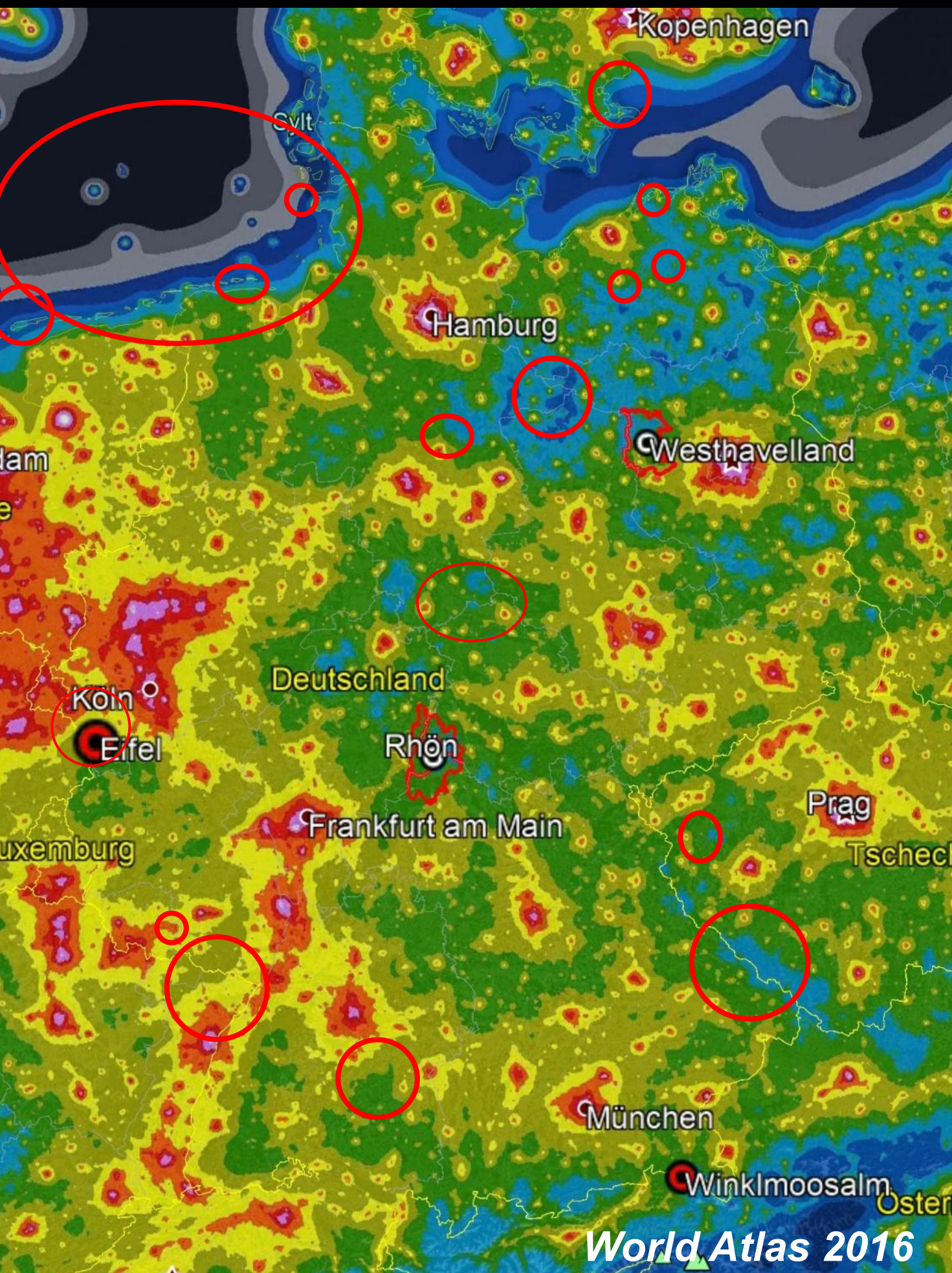
Adaption des luminaires très simple (bon marché):

diriger vers bas



Sebastian Voltmer

Brilliance de ciel et grandes zones protégées en Allemagne



Parcs Nationales	0.6%
Réserves de biosphère	3.9%
Parcs Naturels	28.7%



"Sternparks"

- IDSPark
 - IDSReserve
 - IDSCommunity
-
- Naturpark Westhavelland
 - Biosphärenreservat Rhön
 - Nationalpark Eifel
 - Winklmoosalm
 - Stadt Fulda
 - Sterneninsel Spiekeroog
 - Sterneninsel Pellworm
 - Eiweiler/Saarland
 - Natur-/Nationalpark Bayerischer Wald
 - Kyritz-Ruppiner Heide
 - Nossentiner-Schwintzer Heide

Coopération informelle, échange d'idées,

European Symposiums for the protection of the Night Sky

premiers contacts entre activistes en Europe:

2002 Luzern	2010 Kaposvar
2003 Stuttgart	2011 Osnabrück
2004 Paris	2012 Bielska-Biela
2005 Genk	2013 Pamplona
2006 Portsmouth	2019 Mayo
2007 Bled	2022 Fulda
2008 Wien	2024 Groningen
2009 Armagh	2026 Kaunertal

Sternenparktreffen Rencontres Allemands

19.-20.3.2017 Fulda

11.-12.3.2018 Lambrecht/Pfalz

10.-11.3.2019 Nossentiner-Schwintzer Heide

~~15.-16.3.2020 Eifel~~ ---- Corona

20.4.2022 Fulda (afternoon 15th Europ. Symp)

1.-4.12.2023 Eifel



Utilisent les mêmes principes dans les Dark Sky Places:

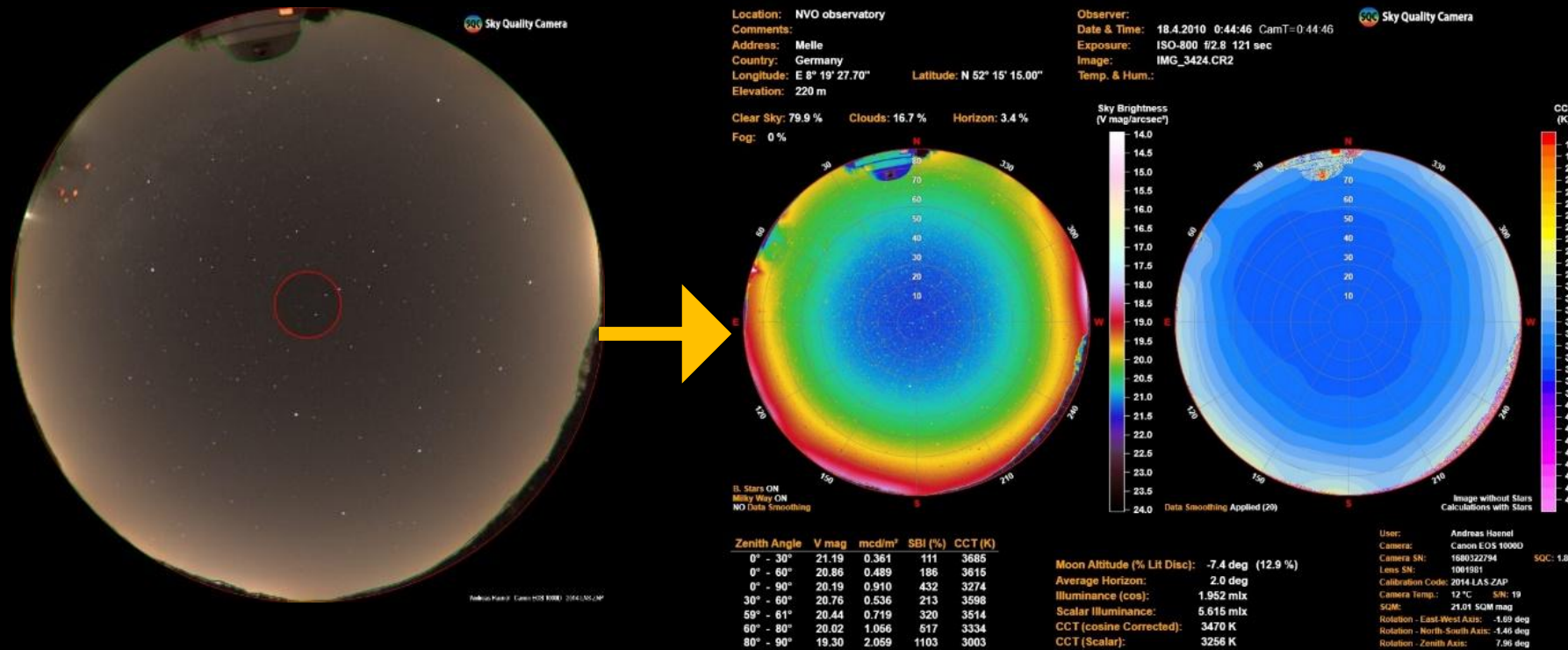
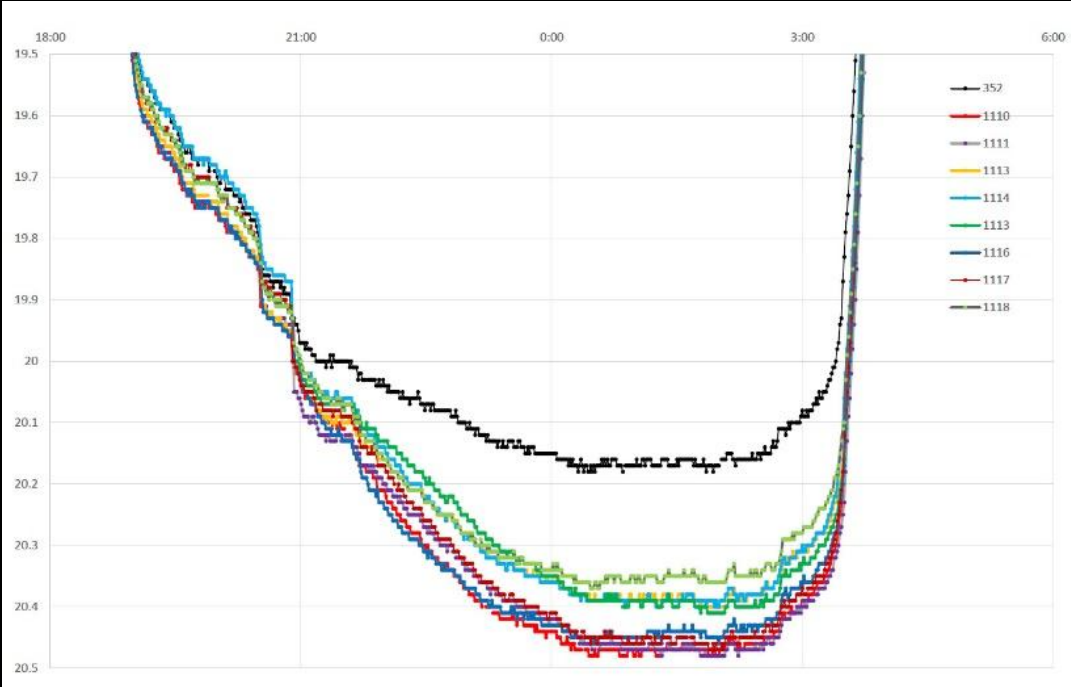
Mesurer la qualité du ciel

- SQM-L manuel
- SQM-LU continue, « Roadrunner »
- TESS-W continue
- SQC Sky Quality Camera

Problèmes:

- vieillissement
- propreté

Important: Intercalibration!
SQC comme référence

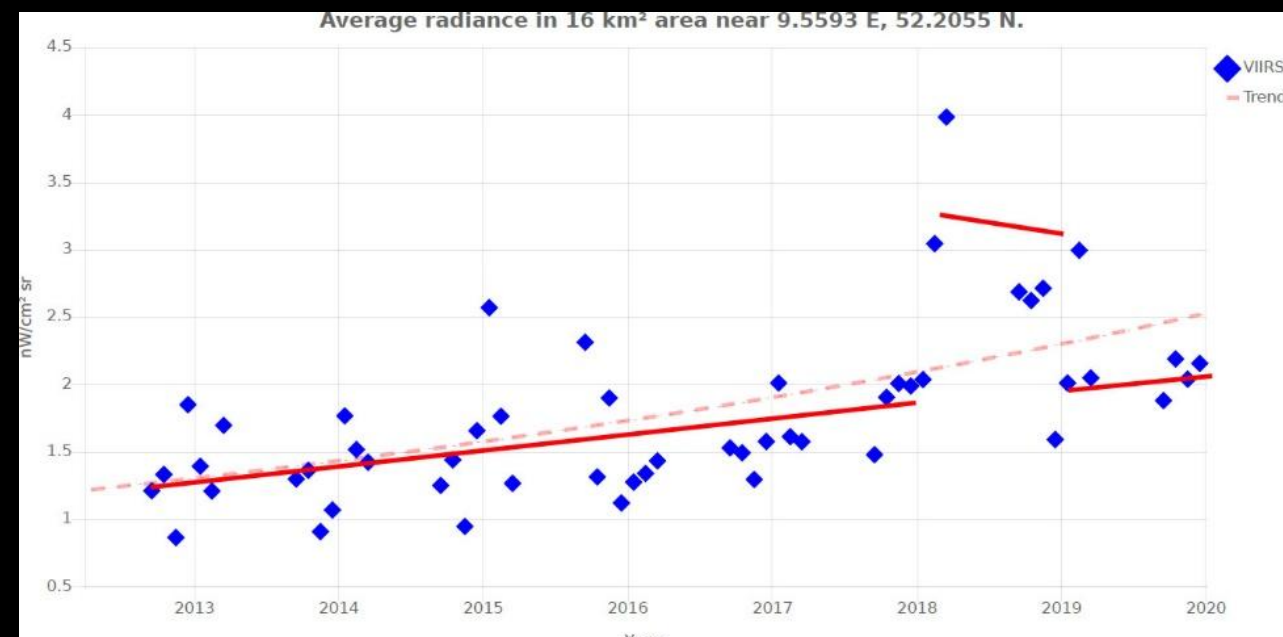


Mesurer et changer la lumière

Au sol:

- illuminance (lx)
- luminance (cd/m²)
- spectre (CCT, K)

Changes par mois: satellite VIIRS:
lighttrends.lightpollutionmap.info



Identification de sources individuelle:

SDGSAT:

<https://pmisson.users.earthengine.app/view/sdgsat-eu-visual>

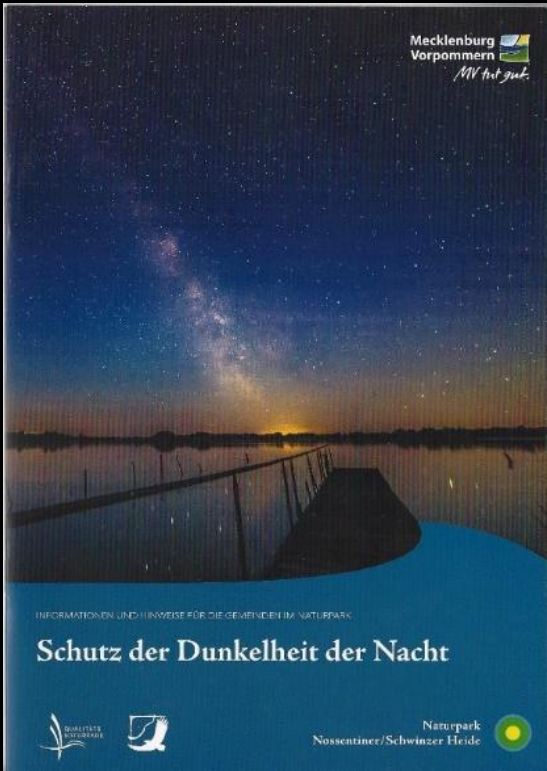
ISS:



Spiekeroog: luminaires trop brillant:
programmation de réduire le flux lumineux
(par le maire!)

Sensibilisation

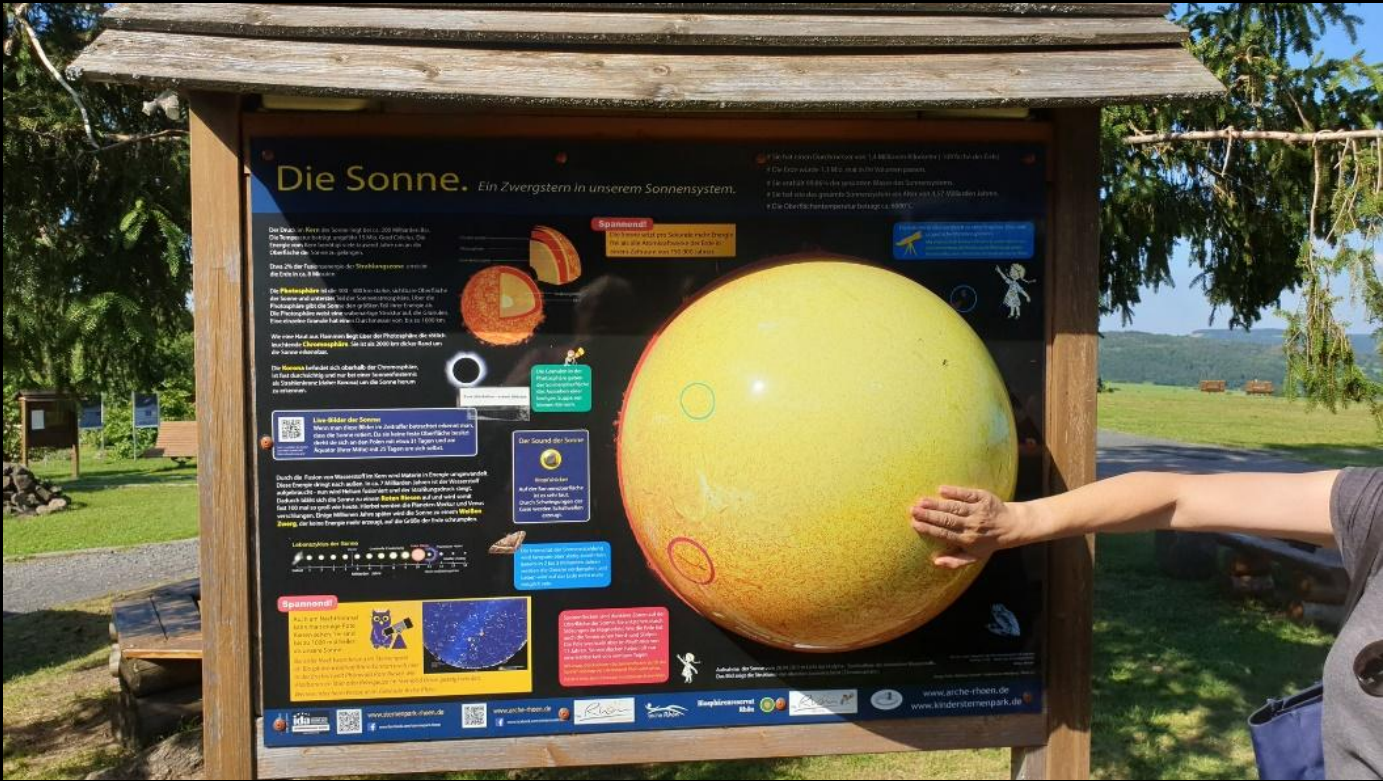
Dépliants/brochures/panneaux



Sensibilisation

Expositions

Présentations



Sensibilisation

star guides, formation



Sensibilisation

places d'observations

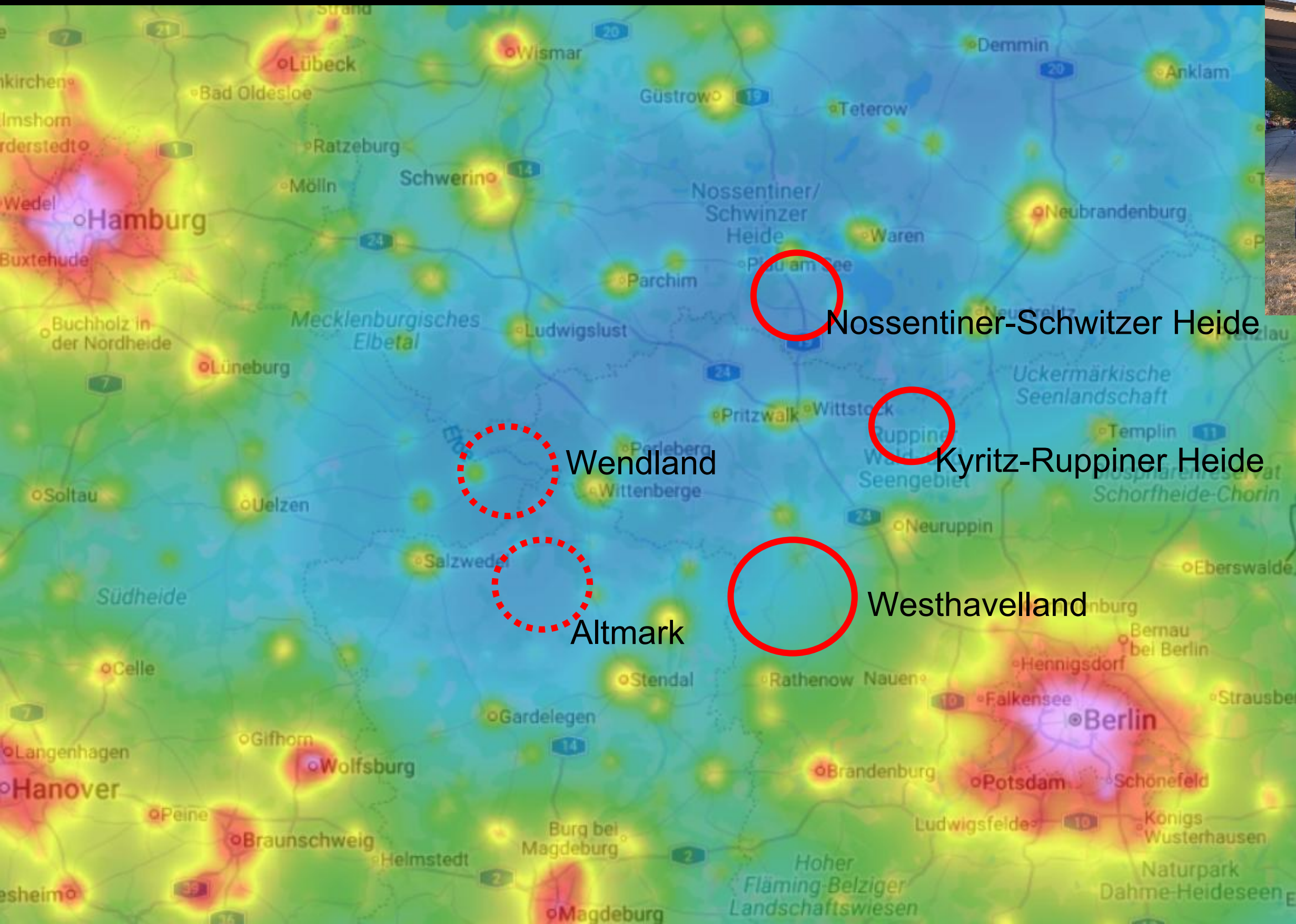
- grand public
 - astronomes amateurs
- comment trouver?



coopération Westhavelland – Kyritz-Ruppiner Heide / places d’observation (LEADER Brandenburg)

Vision: Région: certification comme «best practice»

Westhavelland – Kyritz-Ruppiner Heide – Altmark – Wendland ?



UNESCO World Heritage Wadden Sea

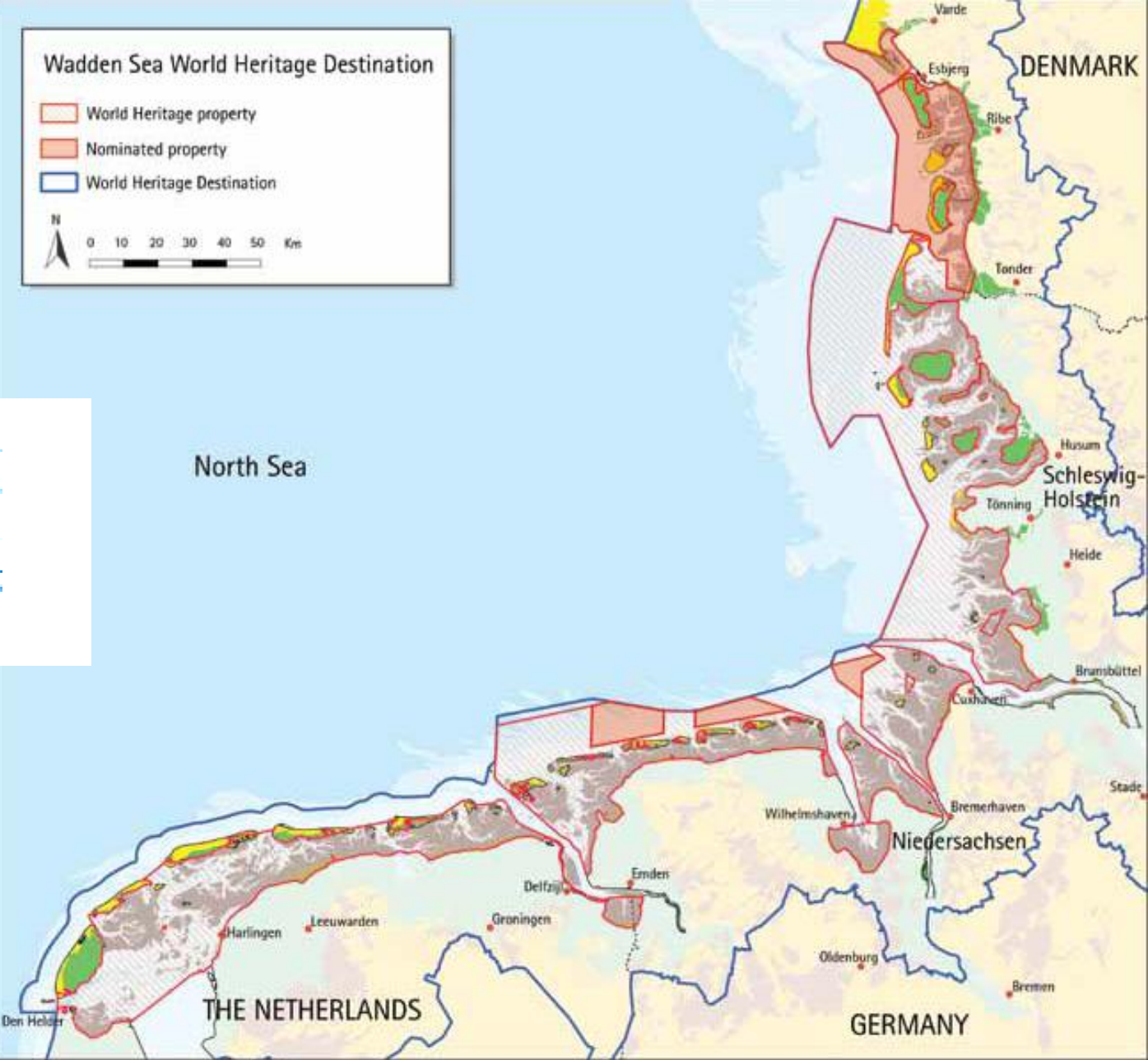
Pays-Bas, Allemagne, Danemark

Leeuwarden Declaration, 2018: plan de travail:
réduire la pollution lumineuse

Ministerial Council Meeting
Leeuwarden Declaration

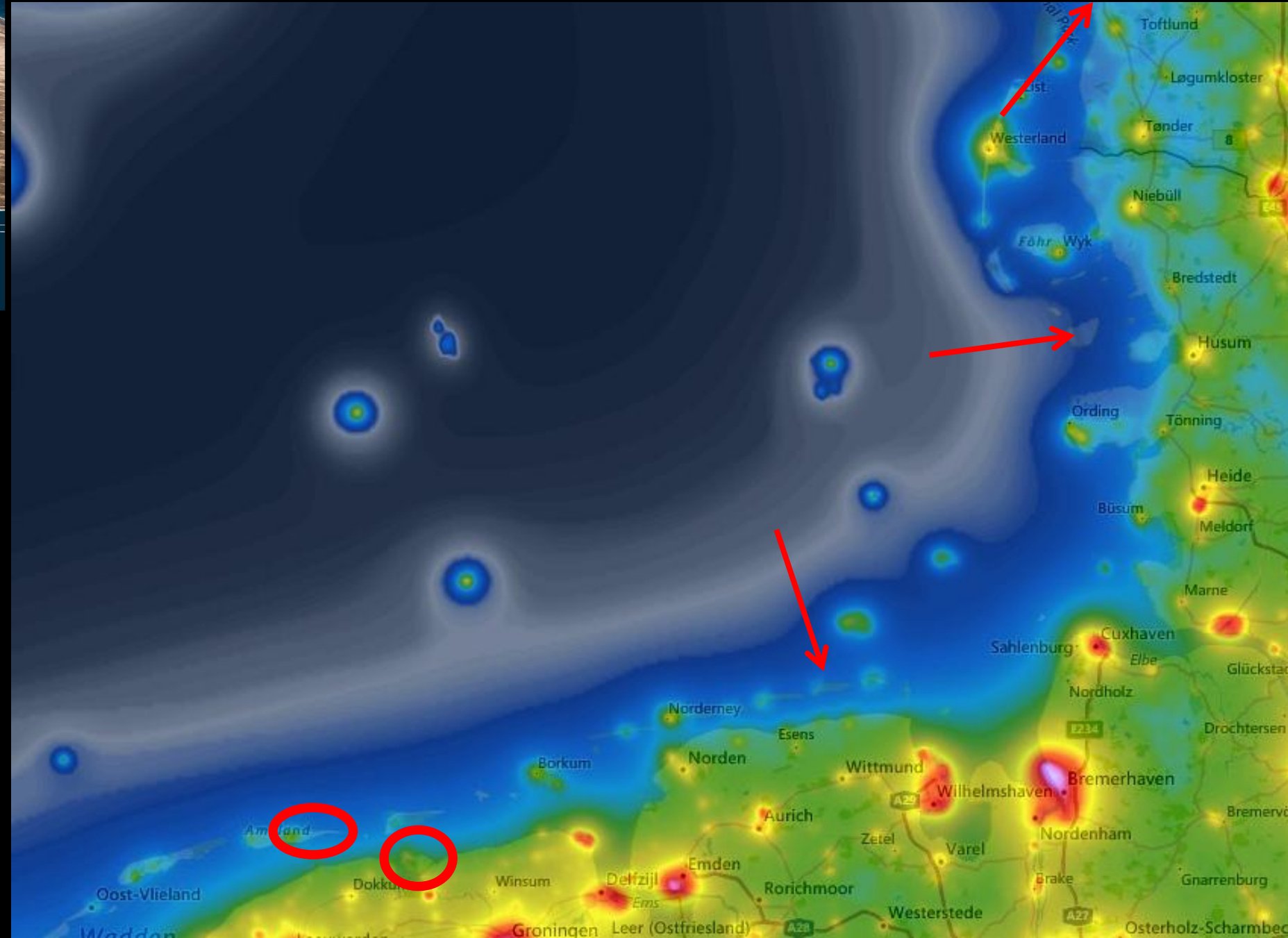
13th Trilateral Governmental Conference
on the Protection of the Wadden Sea
Leeuwarden, 18 May 2018

24. Request the Wadden Sea Board to stimulate various initiatives, together with communities and relevant stakeholders, aiming to reduce light emissions, such as measures to avoid unnecessary lighting, the exchange of best practices, technological innovations or monitoring, for the benefit of the whole Wadden Sea Area, whilst ensuring safety standards prescribed by pertinent legislation;



Dark Sky Parks:

- Mandø
- Pellworm
- Spiekeroog
- Lauwersmeer
- Boschplaat/Terschelling



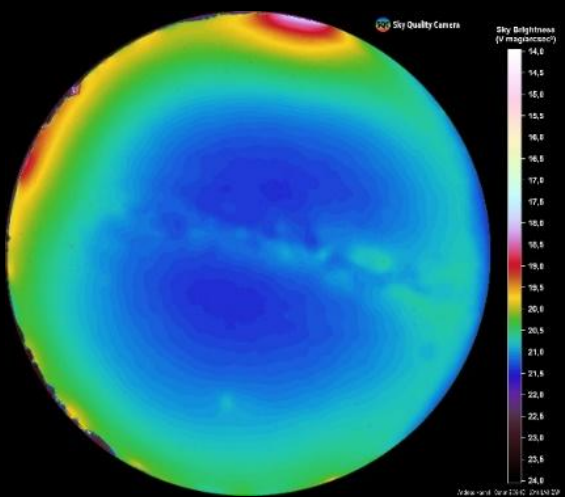
Darker Skies audessus le Wadden Sea

Les mesures de la brillance du ciel

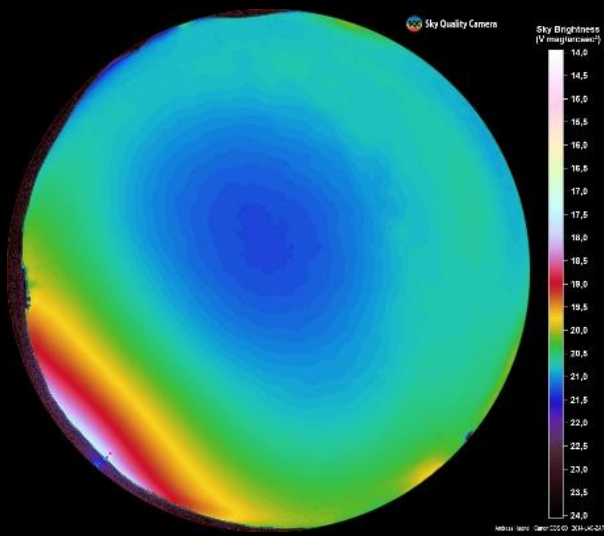
EU: Darker Sky (présentation Sébastien Gallet)



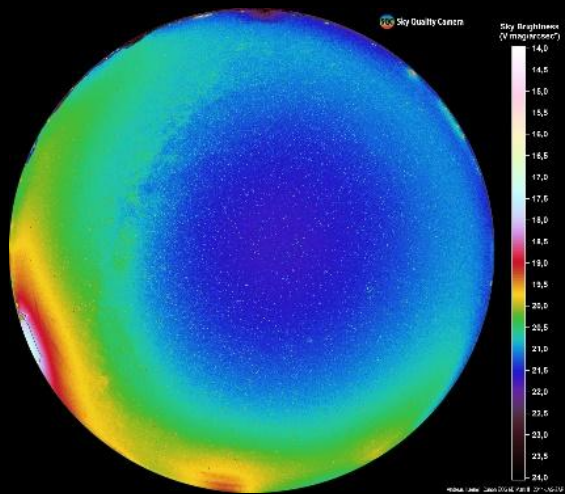
Mandø:
21.44 mag/arcsec²
0.29 mcd/m²



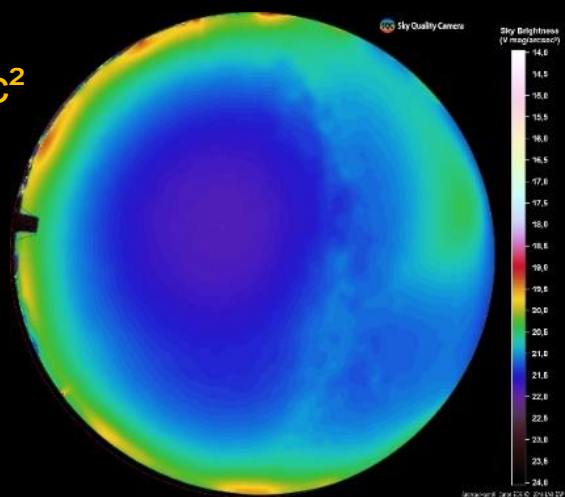
Helgoland:
21.40 mag/arcsec²
0.30 mcd/m²



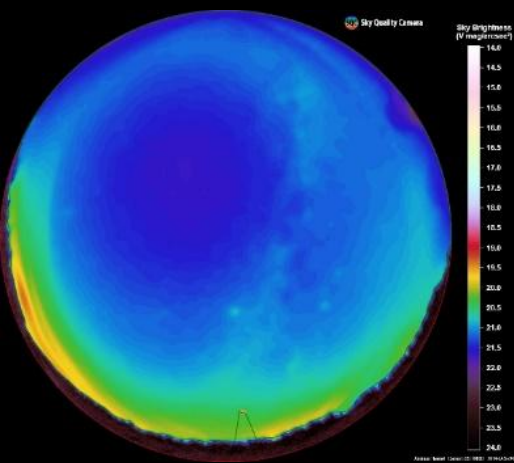
Neuwerk:
21.70 mag/arcsec²
0.20 mcd/m²



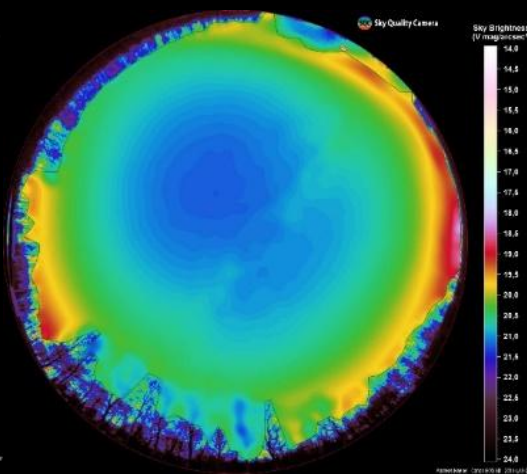
Pellworm:
22.00 mag/arcsec²
0.17 mcd/m²



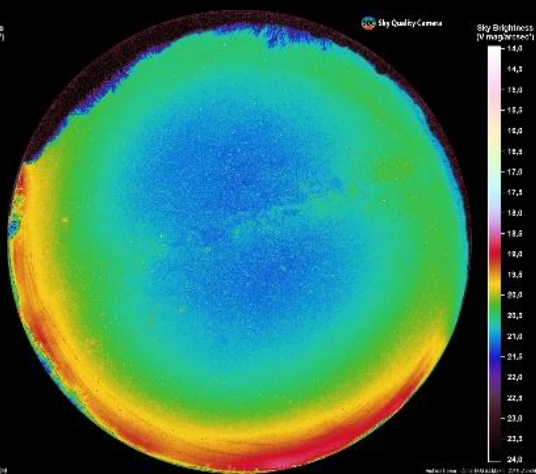
Boschplaat:
21.50 mag/arcsec²
0.27 mcd/m²



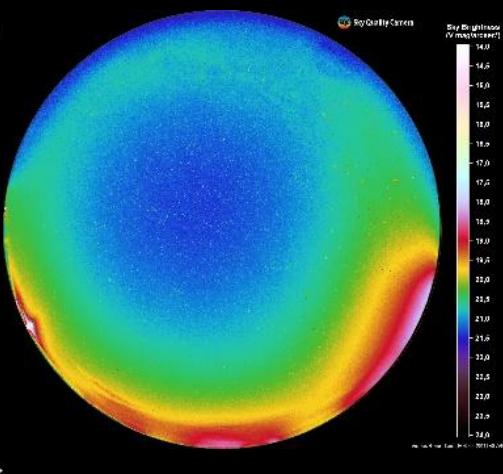
Lauwersmeer:
21.35 mag/arcsec²
0.31 mcd/m²



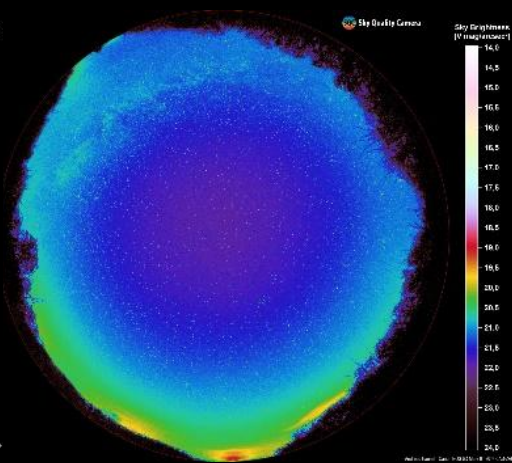
Juist:
21.0 mag/arcsec²
0.36 mcd/m²



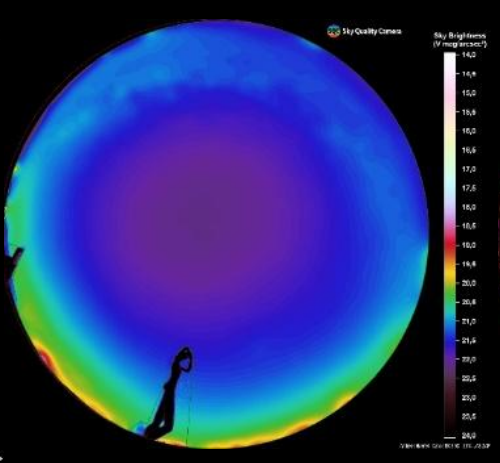
Norderney:
21.45 mag/arcsec²
0.28 mcd/m²



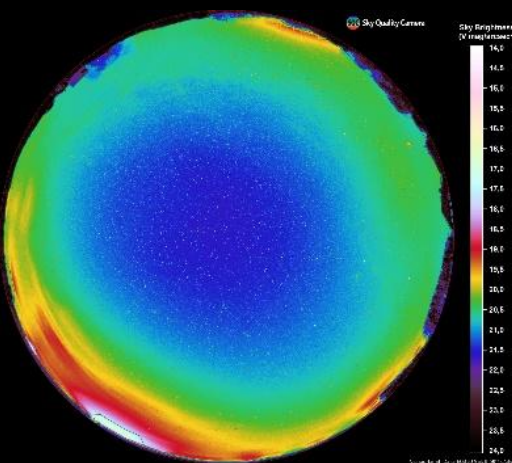
Langeoog:
22.00 mag/arcsec²
0.31 mcd/m²



Spiekeroog:
22.11 mag/arcsec²
0.15 mcd/m²



Wangerooge:
21.71 mag/arcsec²
0.22 mcd/m²





Merci de votre attention

Contact :

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**North York Moors
National Park**

