

Protected places and the night sky, a match made in heaven

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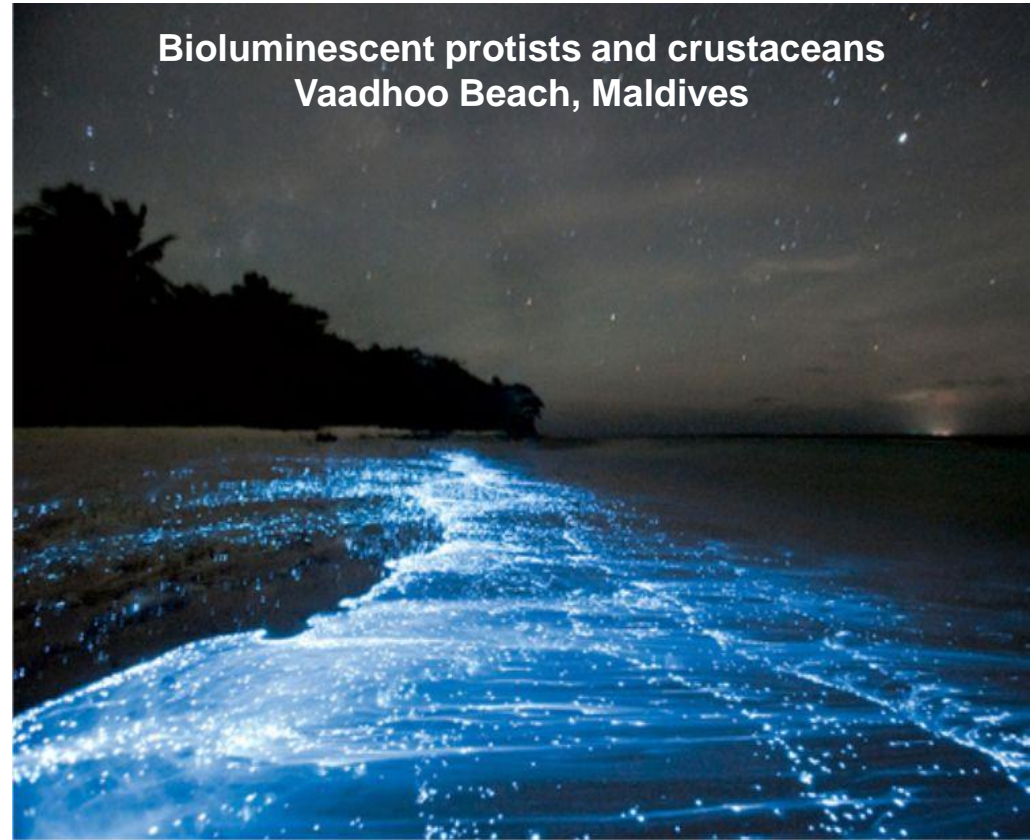
Chair, Dark Skies Advisory Group
Urban Specialist Group, WCPA, IUCN

Artificial Light at Night 2015, Sherbrooke, Canada



Things to see under dark skies

- (Not just) stars ...
- Planets and their moons
- Comets
- Meteors
- Our moon
- Zodiacal light, gegenschein
- Satellites
- *Aurorae*
- *Lightning and sprites*
- *Noctilucent clouds*
- **Nocturnal wildlife**
- **Bioluminescence**
- **Heritage landscapes**



Why all parks should be dark sky parks

- Ecosystems 24/7: half their time is dark; ecological impacts of LP
- Visitor experience: the night should be a part of ecosystem, wilderness and natural landscape appreciation
- Visitors enjoy viewing and learning about the night sky in dark settings away from urban glare and sky glow
- Repeat visits and over-night stay opportunities, especially for one-visit parks such as historic sites
- Respect for aboriginal and other cultural traditions
- Preserve authenticity of heritage sites



**NamibRand
International Dark
Sky Reserve**
NamibRand Nature
Reserve, Namibia

Brown bear, Jasper Dark Sky Preserve
Jasper National Park of Canada



What is a dark sky protected area?

A protected natural area or cultural site with all of:

- Protocols and practices for LP prevention, including management plans, site plans, outdoor lighting guidelines, LP monitoring and compliance;
- Outreach programmes and agreements to address sky glow and light trespass in the viewshed; and
- Recognition by an independent body

And typically with any of:

- Night sky appreciation/education activity, e.g. star parties, wilderness astronomy;
- Nocturnal ecology interpretation, guided observations, research and monitoring;
- Significant commemorative or ecological values closely linked to night sky viewing or natural darkness; and
- Good accessibility for general public participation

What's in it for protected areas?

- Part of prime mandate to restore and protect **ecological integrity**
- Enhances **public appreciation** of nature, culture and traditions
- **Increases visits**, especially in low and shoulder seasons
- **Increases capital investments** from management agencies
- Easy and cost-effective way to support **sustainable development**
- Light pollution prevention is a low-cost, high-gain opportunity, especially in terms of environmental quality, public participation, conservation messages and sustainable development, cooperative science and learning

What's in it for night sky enthusiasts?

Wilderness astronomy

- New audiences who already appreciate nature at night

Facilitation

- Information sharing: signs, leaflets, talks, web sites
- Staff to help with hosting events
- Locations and access

Links to cultural resources

- Cultural traditions of the night sky
- Archaeoastronomy, representative sites
- Historic heritage



La Rioja Starlight Reserve
Core area of several
biosphere reserves, Spain



Mt John Astrocafe and Observatory, Aoraki MacKenzie
International Dark Sky Reserve, New Zealand

Night sky engagement opportunities in PAs

- Night ecology talks and hikes
- Night sky talks, including cultural traditions and myths
- Star parties, amateur astronomy
- Static displays, signage
- Travelling planetaria, audio-visual presentations
- Wilderness astronomy
- Citizen science
- Media opportunities



**Star party at Torrance
Barrens Dark Sky Preserve**
Torrance Barrens Conservation
Reserve, Canada

Dark sky protected area milestones

- 1993 First dark sky park, Lake Hudson State Park, Michigan, USA
- 1999 First dark sky park recognized by an astronomy society, Torrance Barrens Conservation Reserve, Ontario, Canada
- 2001 IDA Dark Sky Places Program starts
- 2005 RASC Dark Sky Preserves Programme
- 2005 UNESCO Astronomy and World Heritage Initiative to add archaeoastronomy as an outstanding value for World Heritage Site designation
- 2007 First IDA Dark Sky Place, Natural Bridges NP, Utah
- 2008 Starlight Initiative and Declaration of La Palma (Spain)
- 2010 Starlight Tourist Destinations (Fundacion Starlight and UN World Tourism Organization)
- 2013 Dark sky protected areas exceed 50 world wide

Dark sky protected area classification

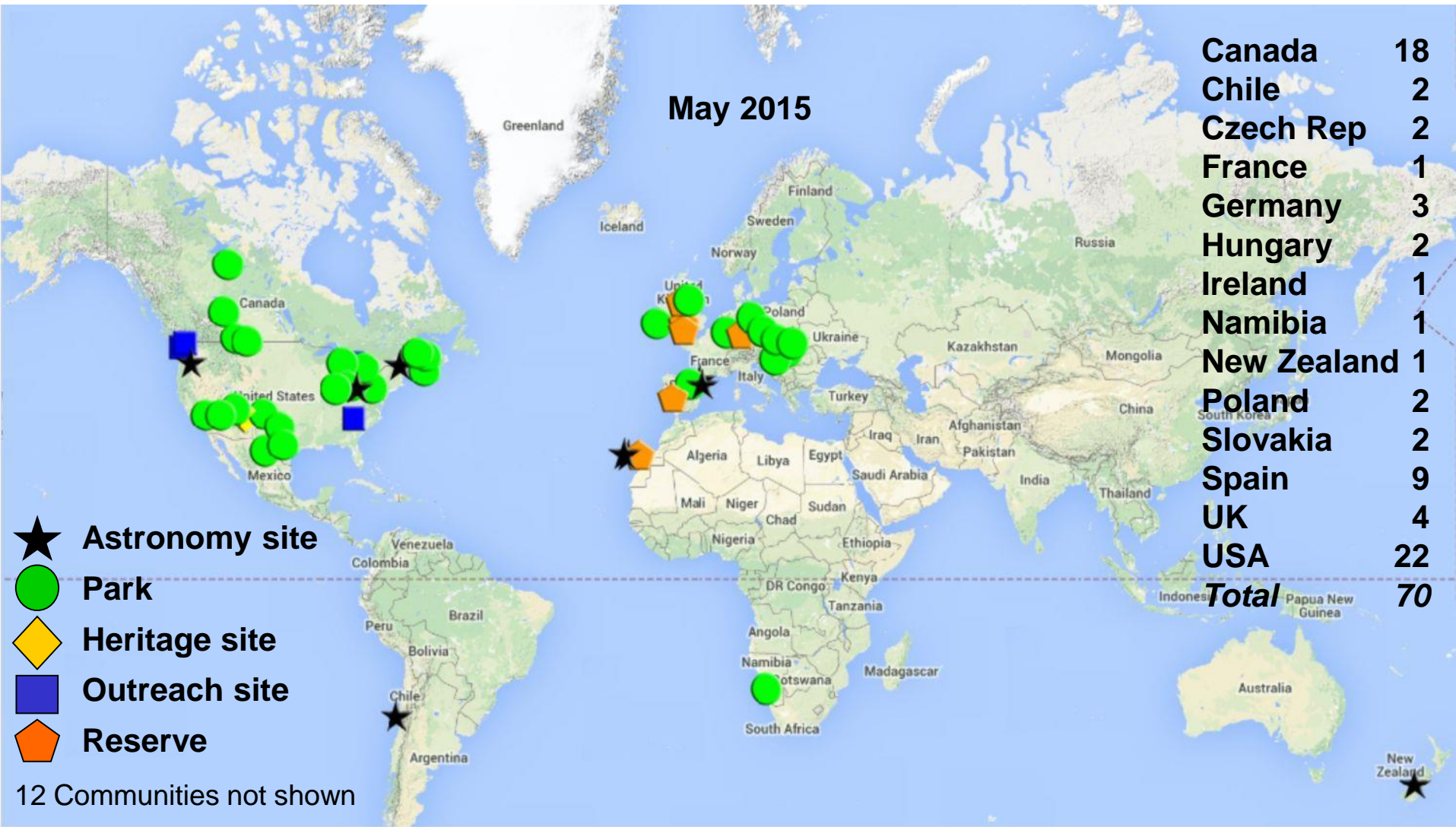
- To overcome conflicting terminology while being descriptive
- Developed by the Dark Skies Advisory Group
- Based on protection status, heritage values, administration style
- Similar to IUCN protected area class system

**Zselic International
Dark Sky Park**
Zselic Landscape
Protection Area, Hungary
DSAG class 2a



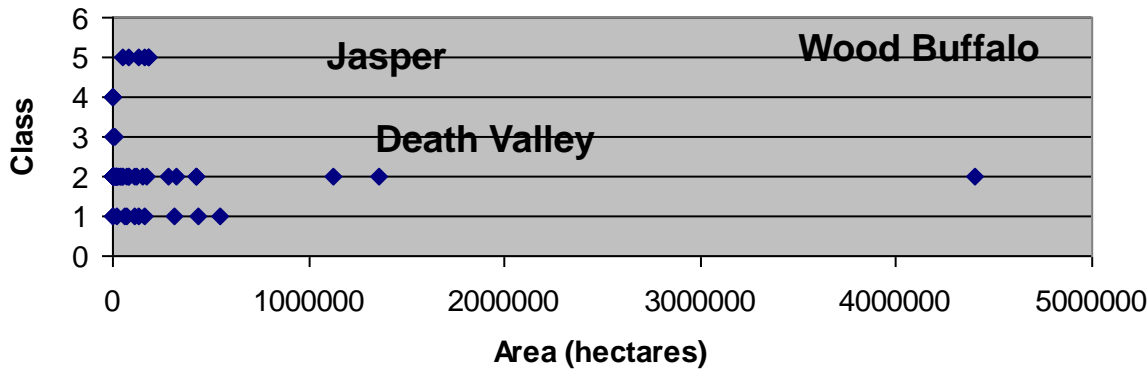
DSAG Dark Sky Classes		May 2015 totals
1	Dark Sky Astronomy Site: having an astronomical observatory	11
2	Dark Sky Park: protected natural area	45
	2a Park, reserve or other ecological protection	39
	2b Area for traditional or sacred practices related to the sky	2
	2c Rural area	4
3	Dark Sky Heritage Site: physical heritage of mankind	2
4	Dark Sky Outreach Site	6
	4a Urban or suburban site	3
	4b Rural site	3
5	Dark Sky Reserve: mix of community and natural areas	6
6	Dark Sky Communities	12

Dark sky protected areas of the world



Dark sky protected areas profile, May 2015

DSAG Class versus DSP area



Jurisdiction

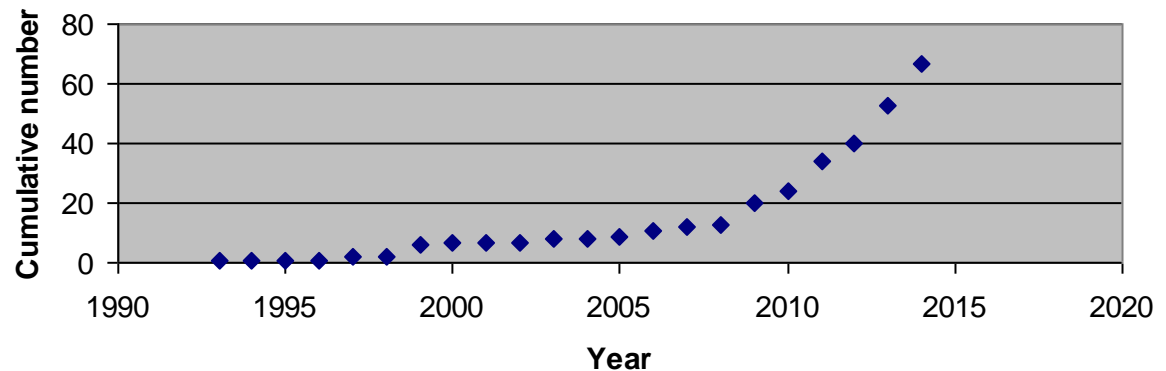
National	37
Sub-national	19
Regional	5
Local	2
Municipal	3
Private	4

International status

UNESCO

World Heritage Site	7
Biosphere Reserve	16
Ramsar Site	4

Growth of Dark Sky Parks



Conclusions

- Dark sky protection is a natural fit with protected areas, archaeoastronomy and traditional cultural sites and practices
- North America and Europe still lead
- Reserve approach is best: core protected area *and* communities with light pollution controls
- Many communities manage light pollution, but only 3 urban star parks
- Communities, urban star parks create public support despite sky glow

Wood Buffalo Dark Sky Preserve
Wood Buffalo National Park of Canada



Some recommended web sites

dsag.darkskyparks.com

darksky.org

rasc.ca/lpa

starlight2007.net

wildernessastronomy.com

nature.nps.gov/night/

At Geraldine, between Christchurch and Aoraki IDSR, NZ

*We don't ask for the Moon....
We have the Stars....*

