



# Okarito Dark Sky Community

Photo in background, or stars!

*Surrounded by Tai Poutini National Park,  
Okarito is the perfect place to be New  
Zealand's first Dark Sky Community*

# The International Dark Sky Places Program offers five types of designations:

1. [International Dark Sky Communities](#)  
Communities are legally organized cities and towns that adopt quality outdoor lighting ordinances and undertake efforts to educate residents about the importance of dark skies.
2. [International Dark Sky Parks](#)  
Parks are publicly- or privately-owned spaces protected for natural conservation that implement good outdoor lighting and provide dark sky programs for visitors.
3. [International Dark Sky Reserves](#)  
Reserves consist of a dark “core” zone surrounded by a populated periphery where policy controls are enacted to protect the darkness of the core.
4. [International Dark Sky Sanctuaries](#)  
Sanctuaries are the most remote (and often darkest) places in the world whose conservation state is most fragile.
5. [Urban Night Sky Places](#)  
UNSPs are sites near or surrounded by large urban environs whose planning and design actively promote an authentic nighttime experience in the midst of significant artificial light at night, and that otherwise do not qualify for designation within any other International Dark Sky Places category.

# Dark Sky in New Zealand

- 'Dark Sky Reserve' – Tekapo - *the largest in the world at 4,300 sq kms.*
- Waiheke Island – *in process*
- 'Dark Sky Park' – Nelson/Tasman
- 'Dark Sky Sanctuary' – Stewart Island
- 'Dark Sky Sanctuary' – Aotea/Great Barrier Island – *NZ's first Dark Sky Sanctuary*
- Wairarapa Dark Sky Reserve - South Wairarapa & Carterton - NZ's most recent addition to Dark Sky status
- 'Dark Sky Nation' – New Zealand - *in process now!*

# WHY PROTECT OKARITO'S DARK SKIES?

- The Dark Sky is a natural resource that is slipping away across the country and the planet, just like the clean air we breath and the clean water we drink
- One benefit would be to learn and understand the significance of the night sky to our ancestors - by seeing the same, unadulterated night sky unblemished by light, but there is much more...

Improper lighting can negatively affect our environment and impact our quality of life.

This is a global issue with lighting effects causing harm all over the world.

# Impact on Plants

- Leaves grow unnaturally long and weaken if exposed to artificial light at night
- Soybean plants exposed to artificial lights at night were 30% less productive
- Moths (important nocturnal pollinators) are often trapped and die due to their attraction to lights. Artificial lighting has led to a large decline in moth populations.

# Impact on wildlife and birds:

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- Animals have their natural circadian rhythm confused by artificial lighting.
- Shoreline life is adversely affected which can have impacts all the way up the food chain.
- Artificial night lighting lures insects to their death, some of those are an important food source for whitebait and other native species.



# Impact on humans

- Our minds and bodies have a natural rhythm of winding down as the sun goes down, that trickles down to relaxation and ultimately sleep quality. Blue light (computer screens, bright white LED lights etc) is like the sun coming up and stimulates our senses.
- The American Medical Association declared light pollution a human health risk due to melatonin suppression. Melatonin helps regulate our hormones. Studies have found that hormonally driven cancers and childhood leukemia are more likely in those exposed to artificial blue enriched spectrum night lighting.
- Our eyes are impacted by too much nighttime lighting as well. Studies have shown a marked decline in the protective layers of the eyes for those exposed to excess lighting at night.

# Safety

- We often think bright outdoor lighting makes us safer. Several studies have shown that is not the case. There are ways to lessen our light pollution impacts and still have security lighting.
- Motion sensors are very useful in only lighting an area when required. Also, using a warmer light tone minimizes the detrimental effects of outdoor lighting.

e.g The city of Madrid, Spain reduced their outdoor lighting by 50% and saw no increase in crime.

# The basic principles of responsible lighting are:

- Light must be useful
- Light should be directed to only where it is needed
- Light should be off when it is not needed
- Lighting colors should be warmer tones ie amber
- Lighting should not be brighter than necessary





*Okarito could be the first 'Dark Sky Community'  
In New Zealand*

# Benefits of being a Dark Sky Community

- Internationally recognised accreditation
- Great nature tourism benefits that align with Okarito's ethos – protecting our endemic and native species - plants, insects and birds as well as aquatic life
- fits in with our conservation goals, ZIP, J4N work etc
- Good for the community health & wellbeing
- Future proofing/protecting our skies for our next generations
- wonderful education resources for children, adults, visitors and locals alike
- aligns with NZ's recognition and celebration of Mataraki, the night sky and stars

We currently  
have support  
from:

- Te Rūnanga o Makaawhio
- Okarito Community Association

# Ideas for events & promotion

- A Matariki Festival to strengthen Matariki public holiday
- Night sky photography competition – Okarito Wharf, Donovans Store historic buildings
- Night sky tourism
- Potential collaboration with the new Pounamu Pathway to enhance cultural & ancestral Maori legends & history of the skies

The Observer New Zealand holidays

The star quality of New Zealand's Great Barrier Island

Chris Hall

Sun 20 May 2018 07:00 BST



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Dark Sky Sanctuary status will put Great Barrier Island on international stage

The Aucklander by Paul Charman

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Wai-iti Reserve near Nelson to be New Zealand's first Dark Sky Park

7:25 am on 10 July 2020

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Tracy Neal, Nelson Reporter

Ralph Bradley was a 10-year-old in Golden Bay when he went outside in the early hours of a morning with his father, and saw his first aurora.



National Geographic Nov 2022

TRAVEL

What's a 'dark sky nation' and why does New Zealand want to become one?

With Māori experts leading the way, the country is planning to slash light pollution at an unprecedented scale.

BY RINA DIANE CABALLAR



PUBLISHED NOVEMBER 3, 2022 • 8 MIN READ

On a clear night above Lake Tekapo, a township at the heart of New Zealand's South Island, the sky is studded with countless glittering stars. Light pollution affects 80 percent of the globe, making this stellar night view somewhat rare—but it's not uncommon in this island nation of 5 million.

In fact, New Zealand is aiming to become certified as a dark sky nation by the International Dark-Sky Association (IDSA), an unprecedented goal for a country of New Zealand's size.

Indigenous Māori people are leading the initiative by spreading awareness of the ecological and cultural importance of dark sky preservation.

"Our language [te reo Māori] and different cultural practices and beliefs come out of our observations of the night sky," says Rangi Mātāmua (of Ngāi Tūhoe tribal descent), an astronomer and professor of Mātauranga Māori (Māori knowledge) at Massey University. The Māori people use maramataka (the lunar calendar), for instance, to identify the best times to plant, harvest, fish, and hunt.





# Dark Sky Requirements Summary

**1/ A quality comprehensive lighting policy that includes all of the following minimum standards for permanent lighting:**

A) Full shielding of all lighting fixtures over 1000 initial lamp lumens

B) A limit on the emission of short-wavelength light

C) A restriction on the total amount of unshielded lighting

D) A policy to address over-lighting, such as lumens per net acre

E) Regulations of new installations of publicly-owned outdoor lighting

F) Restrictions on the installation and operation of illuminated signs

G) Outdoor recreational and/or athletic field lighting may be exempted from the strict shielding & short-wavelength emission requirements

# Dark Sky Requirements Summary

## 2) Community commitment to dark skies and quality lighting as shown by:

A) City owned lighting conforming with, or committed to conforming with the lighting policy

B) Municipal support of dark skies and quality lighting as demonstrated by city publications, flyers, public service announcements, funding of lighting upgrades, etc.



# Dark Sky Requirements Summary

**3) Broad support for dark skies from a wide range of community organizations**

**4) Community commitment to dark skies and education**



# Dark Sky Requirements Summary

- **5) Success in light pollution control**
- **6) A sky brightness measurement program must be established and maintained either by the Community or by a public or private entity**
- **7) Once established, the Community must erect and maintain appropriate signage indicating the International Dark Sky Community designation**

Dark Sky NZ are able to assist us in the following areas:

- Measuring the level of darkness and night sky brightness in our area
- Obtaining dark sky accreditation for our area
- Providing astronomy outreach to our community
- Assistance with building a group of Dark Sky Ambassadors for our area

# Next Steps...

1/ Seek support from:

- Development West Coast
- Westland District Council
- Glacier Country Tourism Group
- Forest & Bird

2/ Complete 'intent to apply' pre-application

3/ Research funding support (if any)



# Goals/timeline

Application  
process  
takes 1-2  
years

Aim to  
apply by  
start 2023

Aim to  
complete &  
launch at  
Matariki  
2024/2025



# In Conclusion

Okarito is a special place and the opportunity for us to protect our night skies, our plants, birds, shoreline species and our health from future light pollution can be achieved by becoming part of the International Dark Sky Project.

## From Dark Sky Waiheke...

*“Okarito is gorgeous and a hugely ecologically important area. It’s very advantageous to you to not have to ‘retro fit’ infrastructure that hasn’t been rolled out yet unnecessarily.*

*You have a taonga that needs to be preserved. Dark skies are sought by high value northern hemisphere tourists (as well as domestic) however so many kiwis don’t realise how fortunate we are as for so long we’ve taken our dark skies for granted.*

*Protect and preserve.”*

# International Dark Sky Association

<http://www.darksky.org/>

The **International Dark-Sky Association** works to protect the night skies for present and future generations.

- World-wide recognition
- The International Dark-Sky Association is a United States-based non-profit organization incorporated in 1988 by founders David Crawford, a professional astronomer, and Tim Hunter, a physician/amateur astronomer.



# THANK YOU!

## Questions?

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contact us:

*[darkskyokarito@gmail.com](mailto:darkskyokarito@gmail.com)*

*Photo Donovans Store, Okarito  
With thanks to Ben Sarten Imagery &  
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