

Saving The Night

A night sky photograph featuring the Milky Way galaxy, a bright star, and silhouettes of trees. The Milky Way is a prominent feature, appearing as a dense band of stars and dust that stretches diagonally across the frame. A single, bright star is visible on the left side of the image. The foreground is dominated by the dark silhouettes of evergreen trees, which frame the sky. The overall scene is a clear, dark night sky with a rich field of stars.

Today

- ★ **Recap**
- ★ **Light Pollution & Lighting**
- ★ **Why Should You Care?**
- ★ **How Can We Fix It?**
- ★ **Benefits**
- ★ **The Process**

Starlight Foundation



STARLIGHT
TOURIST
DESTINATION

- The Canaries Astrophysics Institute (IAC) created the Starlight Foundation in December 2009.
- Manage, promote and spread Starlight Initiative around the world.
- **To help protect the night sky and to defend the right to observe the stars.**
- The Starlight Initiative received the support of UNESCO, the International Astronomical Union and the World Tourism Organization.



el Cielo de Canarias.com
Fotografía y divulgación astronómica de las islas canarias y sus cielos nocturnos

South West Nova



1st
In
North
America



4th
In
The
World
To Have
Both

Since 2014

Stargazing Experiences

Trout Point Lodge



La Nuit Stella
Night Hike



Wedgeport Trail
Stargazing Platform



Deep Sky Eye Observatory



A night scene featuring a glowing blue tent on a grassy shore next to a calm lake. The sky is dark and filled with numerous stars, with a prominent bright star in the upper right. The silhouette of a tree is visible in the top left corner, and a dark treeline is visible in the background across the water.

*Yarmouth * Acadian Shores*

WHERE THE STARS ALIGN

Starlight Development ~~Comittee~~ Society

- Promote the Starlight Initiative
- Grow Astro Tourism in South West Nova by working with tourism operators
- Create infrastructure for night sky viewing (platforms, trails, information panels)
- Promote astronomy in the education system
- Engage our leaders to help in the protection of the dark skies through education and legislation.
- Non-profit. Accepting members
- Attain Certification From IDA + Others



Partners / Associations

TOURISM
NOVA SCOTIA



Nova Scotia
POWER
An Emera Company



efficiency™
NOVA SCOTIA

Municipality of
Argyle
Municipalité



MUNICIPALITÉ DE CLARE
NOVA SCOTIA



Municipality of the District of
YARMOUTH
lovely connected




Yarmouth • Acadian Shores
WHERE THE STARS ALIGN

TOWN OF YARMOUTH
MATTACHEESE
INCORPORATED 1639



THE ROYAL ACADEMIC SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ÉTUDES
SCIENTIFIQUES DU CANADA



STARLIGHT
FOUNDATION





**"International Starlight Awards".
Modality of "Education and diffusion of the astronomy":
ACADIAN SKIES & MI'K MAQ LAND (TOURISTIC STARLIGHT
DESTINATION & STARLIGHT RESERVE)**



Parks Canada 2019
Sustainable Tourism Award
Prix du tourisme durable
de Parcs Canada 2019
Deep Sky Eye
Observatory

Light Pollution & Lighting

A night sky photograph featuring the Milky Way galaxy as a prominent diagonal band of light and stars. A single, bright star with a lens flare is visible on the left side. The foreground is dominated by the dark silhouettes of evergreen trees, with a small red light source visible at the bottom center.

*Light that shines
where it is not needed nor wanted.*

Light Trespass



Glare



Sky Glow



Light Clutter



Quinan Light Pollution

April 12, 2015

March 6, 2018



Bortle Scale

- 80% World Lives Under Light Polluted Skies
- 65% of people that visited Deep Sky Eye had never seen the Milky Way (our galaxy)

8/9

City/Inner
City Sky

7

City/
Suburbia
Transition

6

Bright
Suburban
Sky

5

Suburban
Sky

4

Suburban/Rural
Transition

3

Rural Sky

2

Dark-Sky
Site

1

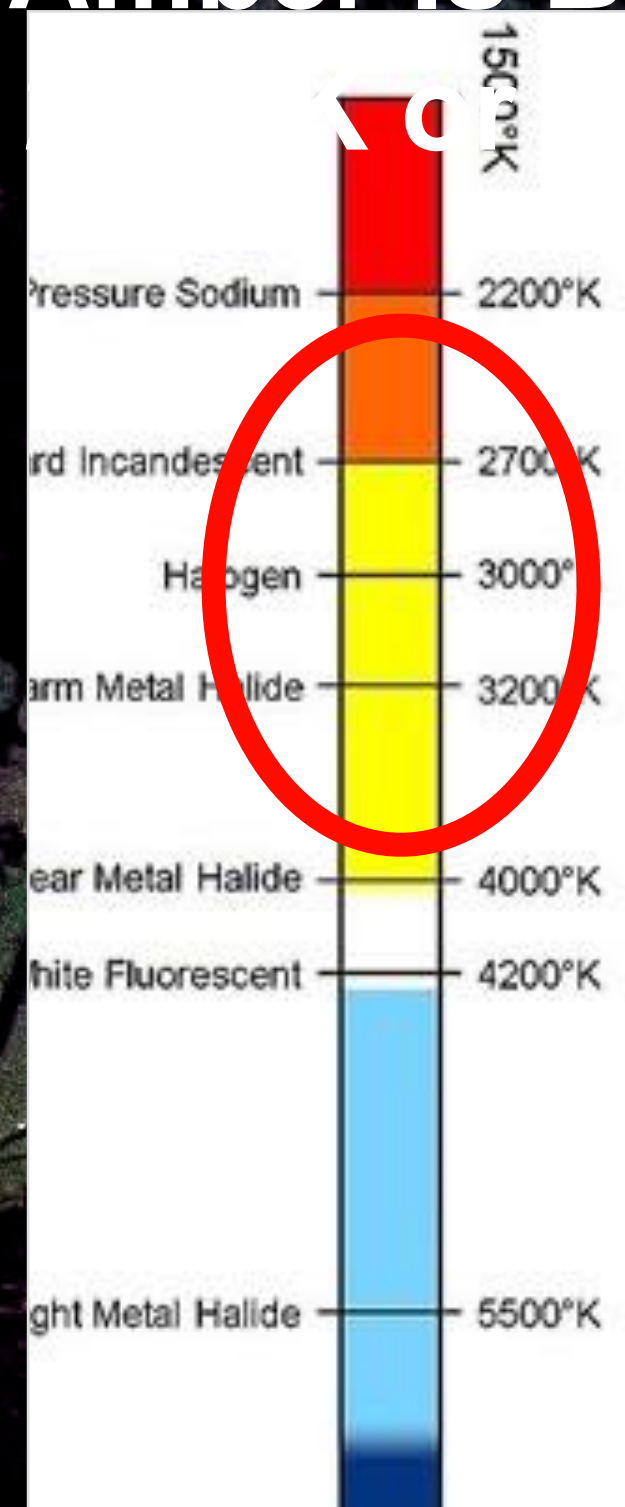
Excellent
Dark-Sky
Site

Dark Sky Friendly Lighting

#1

COLOUR

Select LED's
Amber Is Best
Class



#2

SHIELDING

Bulb Not Visible
From Side



#3

BRIGHTNESS

Use Lumens
NOT watts

EFFICIENCY	Least				Most			
	STANDARD	HALOGEN	CFL	LED	STANDARD	HALOGEN	CFL	LED
BULB TYPE								
LUMENS	450	800	1100	1600	450	800	1100	1600
	40 W	60 W	75 W	100 W	29 W	43 W	53 W	72 W
	9 W	14 W	19 W	23 W	9 W	14 W	19 W	23 W
	8 W	13 W	17 W	20 W	8 W	13 W	17 W	20 W
RATED LIFE	1 year	1-3 years	6-10 years	15-25 years	1 year	1-3 years	6-10 years	15-25 years
SAVINGS	×	up to 30%	up to 75%	up to 80%	×	up to 30%	up to 75%	up to 80%

#4

TIMING

Motion Sensor
Or Timer



Myths

More Light Improves Visibility -- Not Necessarily!



More light \neq Better Security



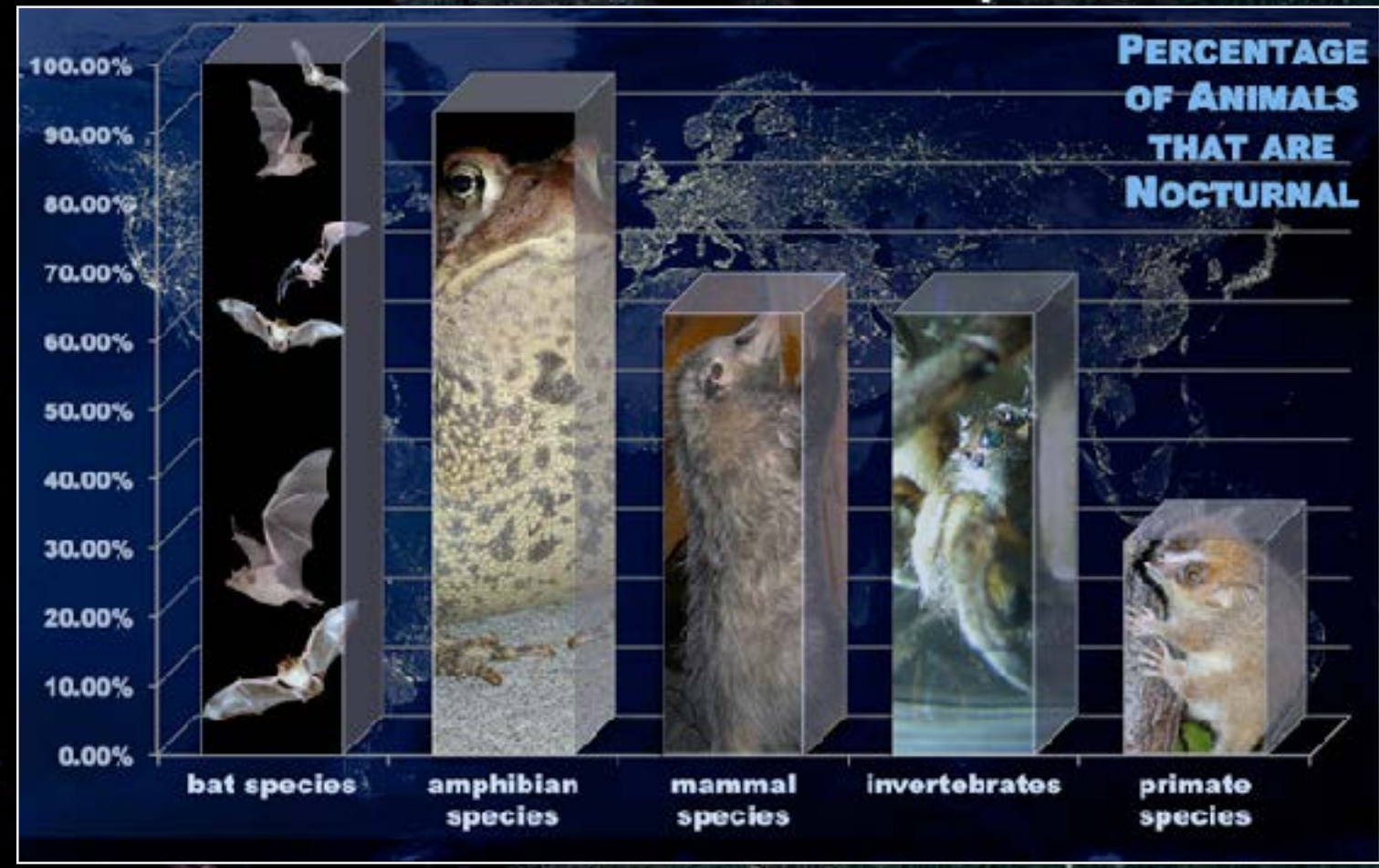
A night sky photograph featuring the Milky Way galaxy. The galaxy's bright, yellowish-white core is visible in the lower right, with its starry band stretching diagonally across the frame. The sky is dark with numerous individual stars. In the foreground, the dark silhouettes of evergreen trees are visible on the left and right sides. At the bottom center, a small red light, possibly from a tent, is partially visible.

Why Should You Care?

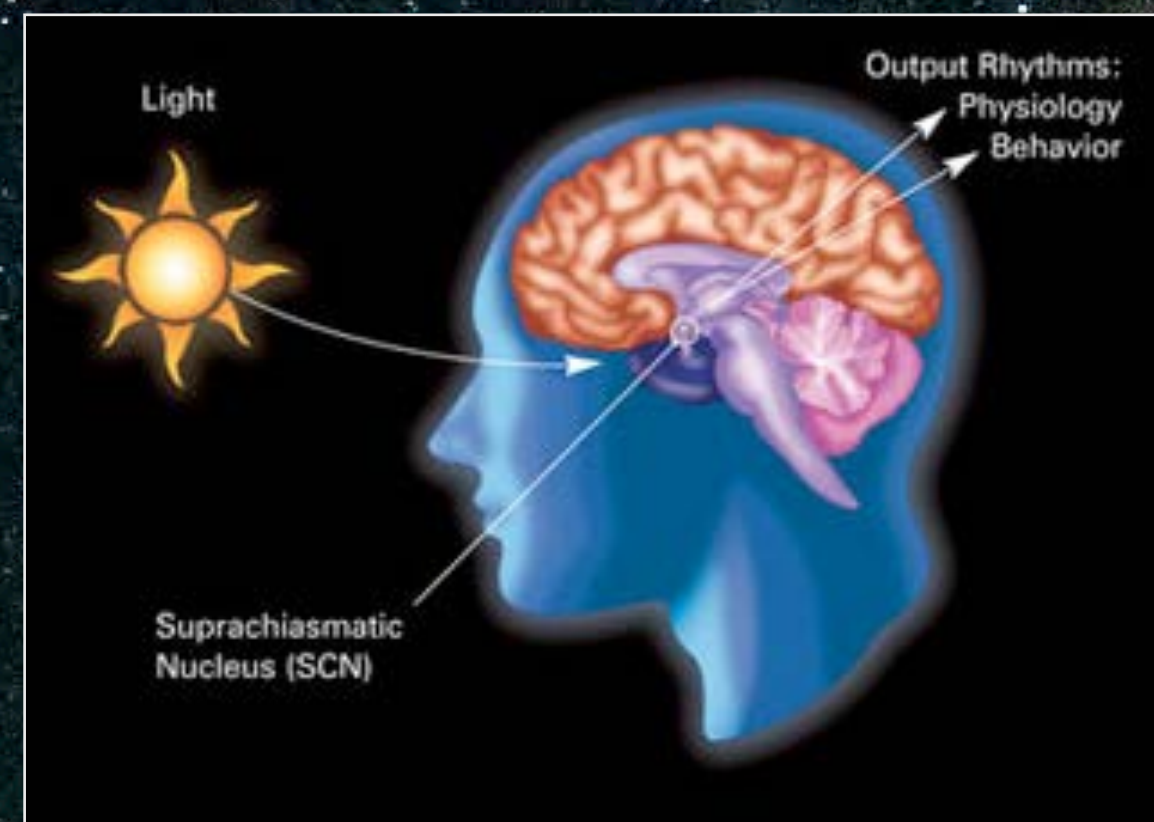
Effects Of Light Pollution



Nocturnal Life



Human Health



Astronomy



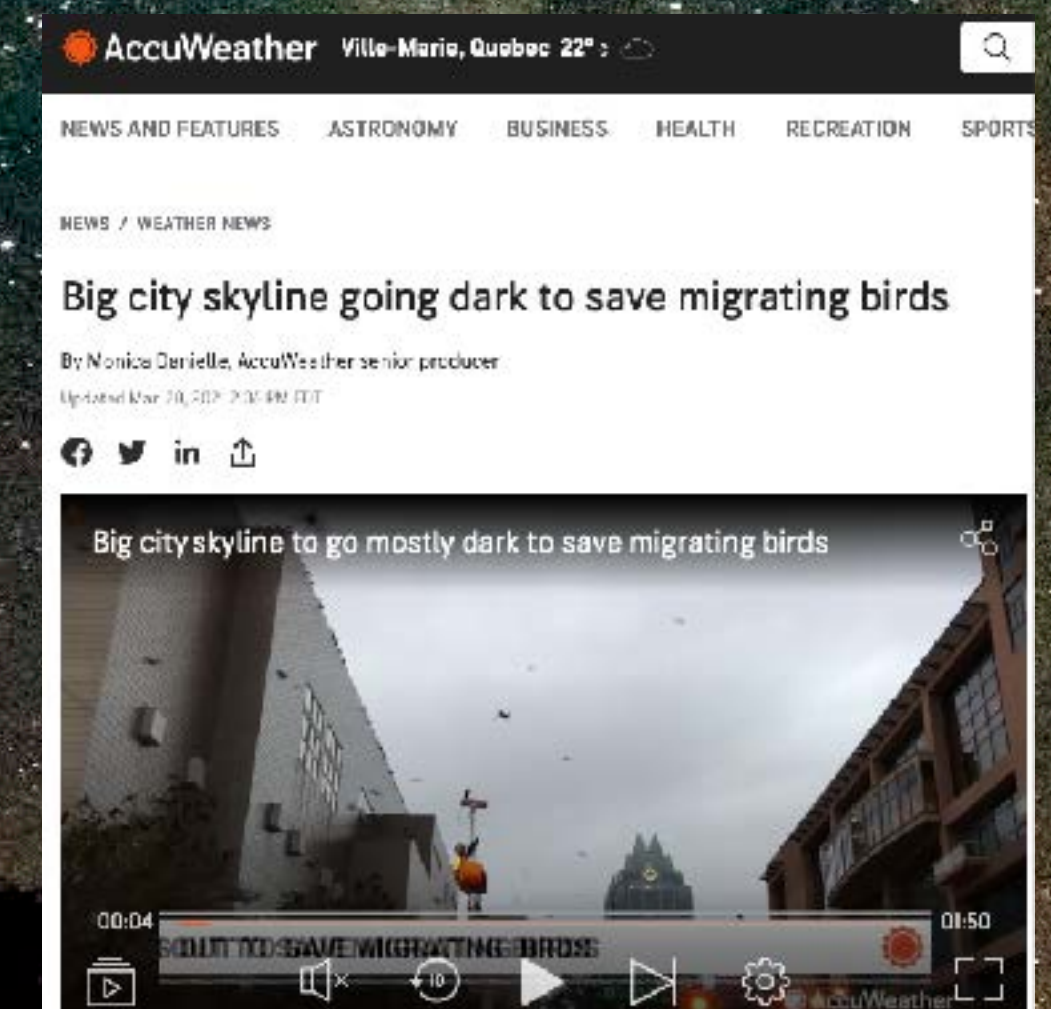
Species In Danger



Environment



Migratory Birds



Human Connection



Benefits To Clare

- ★ Tourism - Attract people to the area for stargazing.
PROVEN - NS Tourism, AirBnb, Starlight Foundation
- ★ Publicity world wide through other groups such as IDA & RASC and other environmental groups
- ★ Preserve our heritage and our way of life
- ★ Attract other businesses
- ★ Attract scientists and other large organizations such as NASA, to setup shop in our region.
- ★ Others yet to come.....

A night sky photograph showing the Milky Way galaxy stretching across the frame. The galaxy's core is visible as a bright, yellowish-white band of light, surrounded by a dense field of stars. The sky is dark, with many individual stars scattered throughout. In the foreground, the dark silhouettes of evergreen trees are visible, framing the sky. A small, bright red light is visible at the bottom center of the image, possibly a light source or a reflection.

How Can We Fix It ?



**To Be Clear
We Are Not Asking To Change
All The Lights In Clare.**

The Process

- 1. ASK #1:** Assign people to work with Starlight Development to work with council to:
 - 2. Make changes to Land Use Bylaw incorporate proper lighting practices for homes and businesses. (Argyle - DONE)**
 - 3. Educate building inspectors & the public on proper lighting practices. Include info with building permits.**
 - 4. Include lighting as part of the nuisance bylaw.**
 - 5. Enforce these regulations (easier than you think).**
- ★ Municipality of Argyle, Municipality Of Yarmouth, Town Of Yarmouth are in the process of making changes and are on board**

★ 2020 Argyle Land Use Bylaw

Protecting the night sky starts with you!

1 Light only what you need



2 Use energy efficient bulbs & only as bright as you need



3 Shield lights and direct them down



4 Only use light when you need it



5 Choose warm white light bulbs (Max 2700 Kelvin)



6 Check our Land-Use Bylaw to ensure compliance



What does our Land-Use Bylaw say?

Residential

- ✓ Fixtures cannot reflect on roads or other adjacent properties
- ✓ Fixtures should be cut-off fixtures, not emitting light above
- ✓ Fixtures should use a maximum color temperature of 2700 Kelvin

Commercial

- ✓ Same regulations as residential (listed above)
- ✓ Fixtures must use an automated timer and/or motion sensor
- ✓ Total install lumens of all outdoor lighting cannot exceed 250,000



Municipality of the District of Argyle Land Use By-law

4.5 SOLAR PANELS PERMITTED

Solar panels shall be permitted in all zones as an accessory use and shall not be considered as part of the height calculation for the building in which they are attached.

4.6 LIGHTING, ILLUMINATION & LIGHT POLLUTION

- Where lighting fixtures are used to illuminate accesses, parking areas, circulation roads and service areas of any commercial or industrial use, such fixtures shall be installed so as not to reflect light upon roads and adjacent residential, institutional and recreational uses.
- Outside illumination fixtures should be full cut-off fixtures, not emitting any light above a horizontal plane drawn through the bottom of the lighting fixture. Note that properly installed International Dark Sky Association compliant fixtures meets this requirement.
- Outside illumination fixtures shall use a maximum colour temperature of 2700 kelvin.
- The following lighting requirements shall apply to non-residential land uses:
 - Outdoor illumination fixtures shall have an automated timer and/or motion sensor to prevent the unnecessary transmission of light during the night-time when a premises is not in use.
 - The total installed initial luminaire lumens of all outdoor lighting shall not exceed 250,000 Lumens.

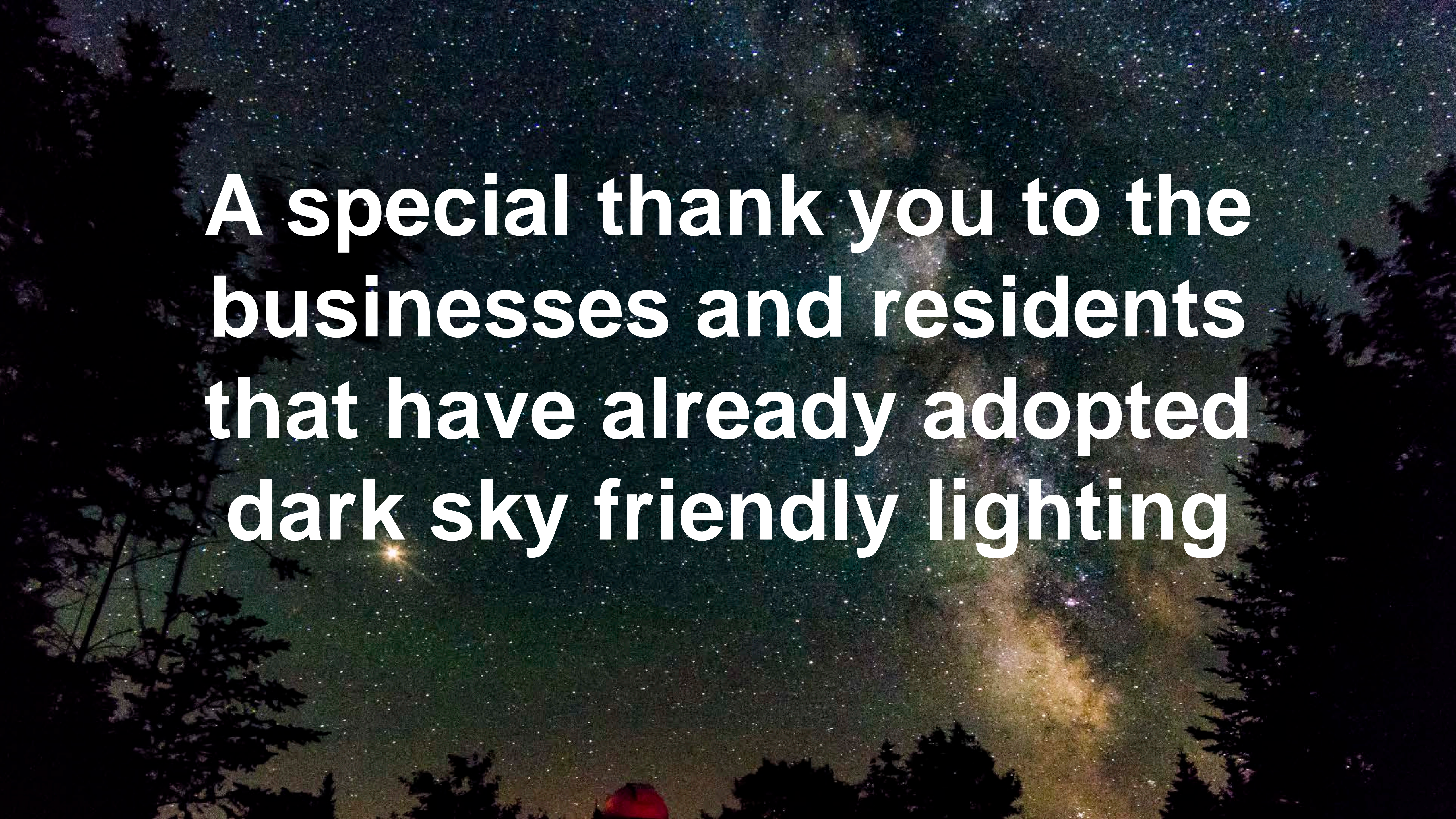
Re-Certification



- ★ Re-certification every 4 Years
- ★ Review every 2 years

- ★ 2014 Clare, Yarmouth, Argyle - Initial Certification
- ★ 2016 Argyle Paid for Review - \$2,200 EU
- ★ 2018 Argyle Paid for Re-Certification - \$3,500 EU
- ★ 2022 Recertification Cost: \$7,000 EU
- ★ **ASK #2: Clare Pay %**

Since 2014

A night sky photograph showing the Milky Way galaxy stretching across the frame. The stars are sharp and numerous, with a bright star visible in the lower-left quadrant. The foreground is dark, with the silhouettes of trees and a small red light source at the bottom center.

**A special thank you to the
businesses and residents
that have already adopted
dark sky friendly lighting**

A night sky with the Milky Way galaxy visible, framed by dark evergreen trees. The text is overlaid on the sky.

**Let's Protect Our Dark
Starry Night Skies For
Generations To Come**

Thank You!