

**MINUTES
CITY OF ST. CHARLES
NATURAL RESOURCES COMMISSION MEETING
LOREN NAGY, CHAIRMAN
OCTOBER 14, 2021**

Members Present: Kathy Brens, Angela Churchill, Tom Galante, Heather Goudreau, Lee Haggas, Ryan Johnson, Laura Miller Hill, Suzi Myers, Loren Nagy, Pam Otto, Daniella Taylor.

Members Absent: Callie Ramirez, Michael Stroud.

Others Present: Chris Adesso, Marcelline D'Argento.

Visitors Present: Morrighan Hayes, William Koehl, Deetya Solanki.

1. Call to Order & Pledge of Allegiance

The meeting was convened by Chair. Nagy at 7:00 p.m.

2. Introduction of Visitors, Comments and Concerns

The visitors introduced themselves to all present [please see below for visitor comments and concerns].

3. Minutes Review and Approval

Motion to approve and place into the public record the minutes of the September 9, 2021, Natural Resources Commission [NRC] meeting. Motion by Comm. Galante, second by Comm. Churchill to approve the minutes. Voice vote: unanimous; nays – none. Motion carried at 7:03 p.m.

4. Old Business

A. Joint Meetings

In follow-up to the September NRC meeting, Ms. D'Argento reported the last joint meeting with the Batavia Tree Commission, Geneva Natural Resources Committee and the NRC was hosted by Geneva on October 19, 2017. The Batavia Commission planned to host a joint meeting in spring 2019, but the meeting did not take place. Chair. Nagy and Comms. Myers and Otto proposed having the NRC host a joint meeting outdoors during 2022. This topic will be discussed again starting in January 2022.

B. Dark Skies Event Follow-up

Comm. Myers reported the attendance for this event on September 16th was disappointing. However, the presentations were very interesting and included information on the negative impacts of light pollution on plants, wildlife, circadian rhythm and public safety. Comm. Myers suggested having the NRC focus on this issue and possibly develop a proposal to present to City Council. Comm. Myers distributed information from the event from the International Dark Sky Association; copies of this information are attached to and made a part of these minutes.

C. Renewable Energy Sources/Naperville Sustainability Report

William Koehl, a representative of the League of Women Voters of Illinois Environmental Team, returned as a guest. Mr. Koehl stated he wanted to bring awareness to communities on energy-related issues including of where power comes from, costs of power, and contractual obligations. Mr. Koehl discussed the State of Illinois Climate and Equitable Jobs Act [the

Act] and its possible impacts including the availability of clean power and how rapidly changes can be made to convert to non-coal sources of energy.

Comm. Miller Hill discussed an article entitled “Naperville Residents Encourage City to Work Toward Switch to Renewable Energy Sources.” Comm. Miller Hill suggested the NRC consider this topic, and requested rate study data and contractual information between the city of St. Charles and Prairie State from city staff.

Mr. Adesso encouraged the NRC to review the city’s electric rate information, and discussed issues regarding future infrastructure needed to meet energy demands between now and when the Act becomes effective.

5. New Business

A. Prospective Student Commissioners

Ms. Hayes and Ms. Solanki introduced themselves to all present and expressed their interest in joining the NRC as Student members. Both Ms. Hayes and Ms. Solanki are members of the Eco-Minded Club at St. Charles East High School and are interested in the mission of the NRC.

Motion to appoint Ms. Hayes and Ms. Solanki as Student members of the NRC. Motion by Comm. Churchill, second by Comm. Miller Hill to appoint two new Student Commissioners. Voice vote: unanimous; nays – none. Motion carried at 7:40 p.m. Chair. Nagy welcomed the Student Commissioners to the NRC.

6. Committee Reports

A. Education Committee

Comm. Myers summarized upcoming NRC articles for *The Den* and encouraged the new Student Commissioners to participate in writing articles in the future.

B. Langum Woods Clean-Up Committee

Comm. Otto reported clean-up events would be planned during November through early March. Comm. Otto noted she is continuing to work with the Salvation Army’s after school program to have students visit Langum Woods.

C. Community Sustainability Committee

Comm. Goudreau reported volunteers are still needed for the upcoming pumpkin recycling event on November 6th. Additionally, the cooking oil collection is scheduled for the Saturday after Thanksgiving on November 27th; the event will be publicized in the November issue of *The Den*. Comm. Goudreau reported planning is continuing for the holiday lights recycling program. Comm. Brens stated she will volunteer to pick up lights for recycling.

D. Single-Use Bag Committee

None.

E. Greenest Region Compact Committee

Comm. Myers encouraged the Commissioners to review the items identified by the GRC Committee, and select something of interest to pursue.

F. Urban Forestry Management Plan

Chair. Nagy reported the city’s Urban Forestry Management Plan [Plan] remains under review, and noted some of the content with regard to private trees and property may be revised. Additional recommendations for amendments to the Plan, including the city’s

designated planting zone, will be discussed with the NRC when the review is completed by committee members Comms. Churchill, Johnson and Chair. Nagy.

7. Public Services Division Tree Activity Reports

Motion to approve and place into the public record the Public Services Division Tree Activity Reports for the month of September 2021. Motion by Comm. Myers, second by Comm. Churchill to approve the reports. Voice vote: unanimous; nays – none. Motion carried at 8:04 p.m.

8. Additional Items

A. Commissioners

Comm. Brens provided information on the St. Charles History Museum gala and fundraising event on December 10th.

Comm. Myers provided information on monthly work days at Tekakwitha Woods Forest Preserve every third Saturdays from 9:00 am to 12:00 pm.

Comm. Goudreau suggested the NRC facilitate a tour of St. Charles' solar power array for the community.

Comm. Miller Hill asked the Student Commissioners about some of the interests and projects the Eco-Minded Club is involved in currently. Student Comm. Taylor reported fund-raising and service projects are of interest to the club. Chair. Nagy explained the NRC is continuing to pursue the issue of single-use bags, which was a project initiated by two former Student Commissioners, and noted the importance of having input and support from St. Charles' high school students.

B. City Staff

None.

9. Adjournment

Motion to adjourn the meeting. Motion by Comm. Churchill, second by Comm. Haggas to adjourn the meeting. Voice vote: unanimous; nays – none. Motion carried at 8:15 p.m.



STOP
LIGHT POLLUTION
with easy outdoor lighting solutions.

USA
Mexico
Cuba
Gulf of Mexico

Join the **International Dark-Sky Association** to help us protect the night sky and promote environmentally responsible outdoor lighting.



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Protecting the night sky starts with YOU!

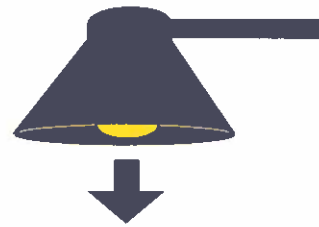
- 1 Light only what you need



- 2 Use energy efficient bulbs and 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



- 6 Join IDA!
We need your help to continue the fight against light pollution.

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Exposure to artificial light at night is unnatural.



In less than 100 years, humans have radically altered our nighttime environment, putting our health at risk. Due to the rapid growth of artificial light at night, most of us spend our nights bathed in light. But basking in all this light at night is not natural and it may be taking a serious toll on our health.

We are only just beginning to understand the negative consequences of this swift change in our environment. A growing body of scientific research suggests that artificial light at night can have lasting adverse effects on human health.

“The power to artificially override the natural cycle of light and dark is a recent event and represents a man-made self-experiment.”

—The American Medical Association

WHY DARK SKIES?

The need to protect and restore the natural nighttime environment is more urgent than ever. Light pollution, defined as light where it is not wanted or needed, affects our health, the environment, wildlife, and our ability to find awe in the natural night. Research indicates that light pollution is increasing at a global average rate of two percent per year.

ABOUT IDA

The International Dark-Sky Association, a 501(c)(3) nonprofit organization based in Tucson, Arizona, is dedicated to preserving and protecting the natural nighttime environment.



HELP US PROTECT THE NIGHT

Our work is made possible by support from IDA members. Become a member and support our work in protecting the natural nighttime environment. Please join us today!

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Light Pollution Can Put Your Health at Risk



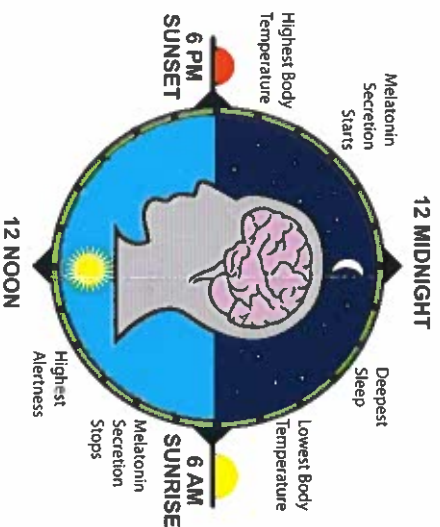
INTERNATIONAL DARK-SKY ASSOCIATION

HUMANS NEED THE NATURAL DAY/NIGHT CYCLE

Our Biological Clocks Help Keep Us Healthy

WHAT IS CIRCADIAN RHYTHM?

Humans evolved with the rhythms of the natural light-dark cycle of bright days and dark nights. Before the advent of artificial lighting, we spent our evenings in relative darkness. Like most life on Earth, humans adhere to a circadian rhythm — our master clock, which is crucial for our overall health. It interacts with our body systems, changes our hormone levels and even modifies our genetic code. Natural light helps keep our clock in tune with Earth's 24-hour cycle.



EFFECTS OF CIRCADIAN DISRUPTION

Circadian disruption may increase our risk of obesity, diabetes, mood disorders, reproductive problems and cancers. Numerous studies have linked working the night shift and exposure to light at night to increased risks for breast and prostate cancers and other health problems.

Circadian disruption can affect our natural sleep patterns, too. A good night's sleep helps reduce weight gain, stress, depression and the onset of diabetes.

WHAT IS MELATONIN?

We don't know why light at night appears to be so bad for us. But we do know that exposure to light at night — even if it's dim — can suppress the body's natural production of melatonin, a hormone that is important for our health including regulating our sleep-wake cycle, metabolism and immune system.

WHAT IS CIRCADIAN DISRUPTION?

When our master clock is out of sync with the day-night cycle, it's called circadian disruption. Altering or interrupting our normal circadian rhythm can put us at risk for physiological and behavioral impacts. Shift work almost always causes circadian disruption because it puts the internal body clock at odds with the shift schedule.

Glare Impairs Vision

Overly bright and poorly shielded outdoor lighting can create blinding glare. Aging eyes are especially at risk. The effects of glare are cumulative, meaning that every light source in view impacts our vision. Blue light, like that in many newer LED streetlights, is more likely than conventional light sources to impair our vision.



SAFE LIGHTING SOLUTIONS

- Use only fully shielded, IDA dark sky certified fixtures for all outdoor lighting, so lights shine down, not up.
- Use only the right amount of light needed. Too much light is wasteful and can create harsh shadows that impair vision.
- If you must use devices at night, install a color temperature app that automatically limits blue light at night based on your time zone.
- Keep your bedroom dark by using blackout curtains and cover or remove light sources such as clock radios and charging stations.
- If you need a nightlight, use one with dim red or amber light. Red light is least likely to be disruptive.
- Use indoor light bulbs that emit warm white light with a color temperature of 3000K or lower. All packaging for new CFL & LED light bulbs provide this information.
- Work with your neighbors and local government to keep light on the ground and the night skies natural.

Visit darksky.org for more information.

Energy use and its impact on our environment has become one of the top concerns facing humanity.



Poorly designed outdoor lighting wastes energy by not being shielded, emitting more light than necessary or shining when and where it's not needed. Wasting energy in this way has huge economic and environmental consequences.

Leaving lights on overnight – such as those in office buildings – wastes energy and contributes to the general skyglow of the city. Dark sky friendly lighting does not mean “no light.” It means using the light that you need for a specific task in the most efficient manner possible.

“We can create a more sustainable, cleaner and safer world by making wiser energy choices.”

— Robert Alan Silverstein,
children's science book author



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Light Pollution Wastes Energy and Money



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LIGHT POLLUTION COSTS MONEY AND WASTES RESOURCES

HOW DOES ENERGY WASTE HARM THE ENVIRONMENT?

Excess lighting pumps millions of tons of carbon into our atmosphere every year, and also causes light pollution.

Light pollution:

- Increases greenhouse gas emissions
- Contributes to climate change
- Increases our energy dependence

WHAT ABOUT OUR CARBON FOOTPRINT?

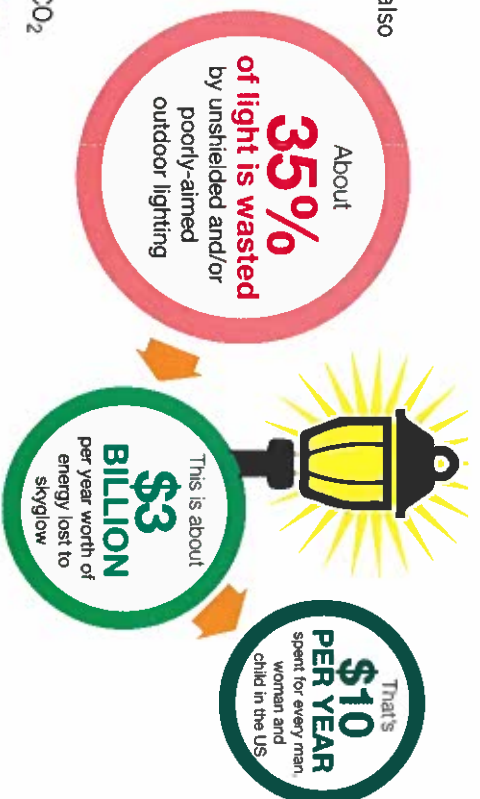
In the U.S. alone, about 15 million tons of CO₂

are emitted each year to power residential outdoor lighting. That equals the emissions of about 3 million passenger cars and adds up to 40,000 tons per day. To offset all that carbon dioxide, we'd need to plant about 600 million trees annually!



WHAT DOES LIGHT POLLUTION COST?

About \$3 billion dollars per year of energy is lost to bad lighting. This is about \$10 a year for every man, woman, and child in the U.S.



HOW MUCH ENERGY AM I WASTING?

The average house with poorly designed outdoor lighting wastes 0.5 kilowatt-hours (kWh) per night. A kilowatt-hour is a unit of energy equivalent to one kilowatt of power for an hour. It's enough energy to power a 50-inch plasma TV for one hour or run one load in your dishwasher!



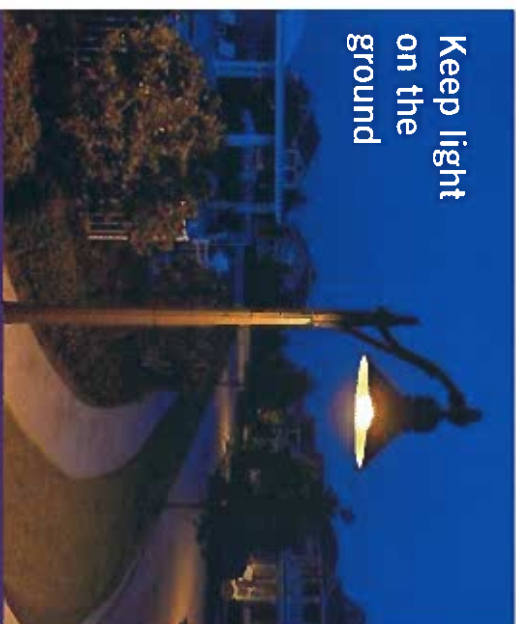
It just takes small changes to save energy, money and our night skies. You can make a difference today.

Good vs. Bad Lighting

This photo (right) shows examples of good and poor lighting design. The unshielded light fixture on the left throws light into the sky and creates glare, impairing visibility. The shielded light fixture on the right directs light to the ground where it is needed and does not create lighting pollution. To learn about light fixtures that are environmentally friendly, energy efficient and certified with the IDA Fixture Seal of Approval, visit darksky.org.



Keep light on the ground



ENERGY EFFICIENCY SOLUTIONS

Shielding outdoor lighting saves energy and money, reduces our carbon footprint and helps protect the natural nighttime environment. The solutions are easy. Work with your neighbors and local government to keep the light on the ground and the skies natural. It's a win-win for everyone. You save money while preserving a valuable natural resource.

Tips to help you conserve energy and use light efficiently:

- Install quality outdoor lighting to cut energy use by 60-70%, save money and cut carbon emissions.
- Fully shield all outdoor lighting — light should go down on the ground where it's needed, not up into the sky.
- Be aware that fully shielded fixtures can provide the same level of illumination as unshielded fixtures, but with lower cost and less energy waste.
- Turn off indoor lights in office buildings or homes when not in use to save money and energy.

Visit darksky.org for more information.

Bright outdoor lights are not as safe as they appear.



A U.S. National Institute of Justice study concluded: "We can have very little confidence that improved lighting prevents crime." In fact, poor or too much lighting can actually have the opposite effect.

Real security depends on the wise use of lighting. Visibility should always be the goal. Instead of more and brighter lights, we need smart lighting that directs light down where it is most useful. It is possible to protect the natural nighttime environment without compromising safety.

"[W]hen risks are carefully considered, local authorities can safely reduce street lighting saving both costs and energy ... without necessarily impacting negatively upon road traffic collisions and crime."

— 2015 study published in the *Journal of Epidemiology and Community Health*

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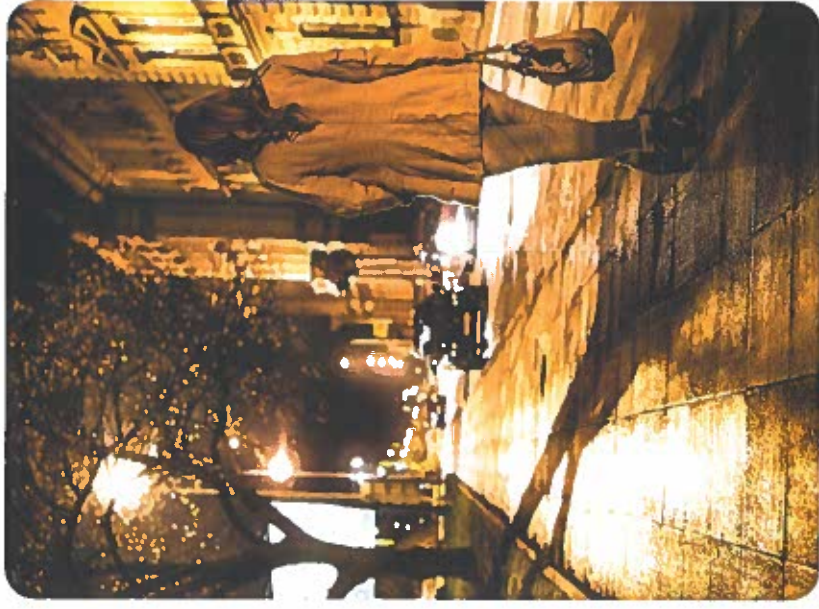
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Outdoor Lighting, Crime, and Safety



INTERNATIONAL DARK-SKY ASSOCIATION

BRIGHTER DOES NOT MEAN SAFER

Lighting up the nighttime environment does not necessarily improve safety or security. This may seem contradictory, but there is no clear scientific evidence that increased outdoor lighting deters crime and increases safety.

AT HOME: POOR LIGHTING CREATES A FALSE SENSE OF SECURITY



Keeping yourself and your property safe from theft and vandalism is a major priority. However, badly designed outdoor lighting can actually make you less safe because bright and poorly aimed lights can hide danger. Bad lighting creates deep shadows where criminals can hide.

Some crimes like vandalism and graffiti actually thrive on night lighting. For example, bright dusk-to-dawn lights allow criminals to see the contents of parked cars.

AROUND TOWN: LIGHT FOR LIGHT'S SAKE DOES NOT EQUAL SAFETY

Towns, cities, and businesses often install lighting in parks, shopping areas, parking lots, and other public places to improve safety.



Improperly aimed and poorly shielded lights can actually attract criminals and allow them to see what they're doing. Property damage may be exacerbated by too many lights, particularly dawn-to-dusk lighting. A study by the city of Chicago actually found a correlation between increased crime and brightly lit alleyways.

ON THE ROAD: BAD LIGHTING CREATES UNSAFE DRIVING CONDITIONS

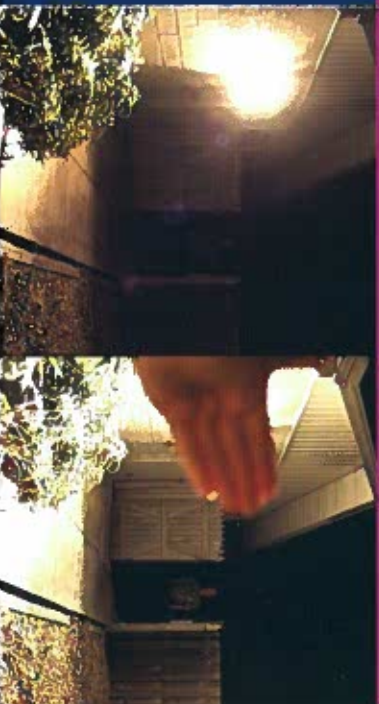
Poorly designed lighting on roadways and highways contributes to tragic accidents. Motorists and pedestrians can be temporarily blinded by glare from unshielded streetlights and electronic signs. The problem is more acute for older individuals.



A 2015 study published in the *Journal of Epidemiology and Community Health* found that streetlights don't prevent accidents or crime, but do cost a lot of money.

Poor Lighting Reduces Safety and Security

Glare from bright, unshielded lights actually decreases safety. See how glare in the closest photo makes it hard to see the man at the gate? Glare creates deep shadows, making it more difficult to see. The bright light shines into your eyes, constricting your pupils. This diminishes your eyes' ability to adapt to low-light conditions. So, is that bright light really making this area safer?



SAFE LIGHTING SOLUTIONS



Effective lighting that helps people be safe – not just feel safe – is a win-win situation for everyone. You can create a safer environment while preserving the natural night. Here are some simple rules to follow:

- Use fully shielded, dark-sky friendly fixtures. That means lights shine down, not up, and don't create glare and contrasts.
- Only use lights when and where needed. Install timers and dimmer switches, and turn off lights when not in use. If you must have security lighting, use motion sensors.
- Use the right amount of light. Too much light is wasteful and impairs vision.
- Use long-wavelength lights with a red or yellow tint to minimize negative health effects.
- Good lighting design can mitigate glare. Cities and towns can restrict the use of bright signs and flashing lights near roadways.

Visit darksky.org for more information.



Life on Earth needs both day and night.

For billions of years, life has evolved with Earth's predictable rhythm of light and dark controlled by the length of the day. In fact, it's encoded in the DNA of all plants and animals. Humans have radically disrupted this cycle by lighting up the night.

It used to be that when the sun went down, celestial sources like the moon, stars, planets and the Milky Way lit the sky. Life learned to operate under the glow of these objects. For many animals, the natural night sky signals when to eat, sleep, hunt, migrate and even when to reproduce. It is estimated that half of all species on Earth start their "daily" activities at sundown.

"Near cities, cloudy skies are now hundreds, or even thousands of times brighter than they were 200 years ago. We are only beginning to learn what a drastic effect this has had on nocturnal ecology."

— Christopher Kyba, light pollution research scientist

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Light Pollution Can Harm Wildlife



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ARTIFICIAL LIGHTS DISRUPT THE WORLD'S ECOSYSTEMS

Plants and animals depend on Earth's daily cycle of light and dark to govern life-sustaining behaviors such as reproduction, nourishment, sleep and protection from predators. Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures, including amphibians, birds, mammals, invertebrates, and plants.

CORAL

More than 130 different species of coral on the Great Barrier Reef spawn new life by moonlight. Bright urban lights can mask the moon's phases, throwing the corals' biological clocks out of sync.



FROGS AND TOADS

Glare from artificial lights can impact wetland habitats that are home to amphibians, such as frogs and toads, whose nighttime croaking is part of the breeding ritual. Artificial lights disrupt this nocturnal activity and interfere with reproduction, which reduces populations.



SEA TURTLES

Sea turtles live in the ocean but hatch at night on the beach. Hatchlings find the sea by detecting the bright horizon over the ocean. Artificial lights draw them away from the ocean. In Florida alone, millions of hatchlings die this way every year.



BIRDS

Birds that migrate or hunt at night navigate by moonlight and starlight. Artificial lights can cause them to wander off course towards dangerous nighttime landscapes of cities. Every year millions of birds die colliding with needlessly illuminated buildings and towers.



Other Wildlife Harmed by Light Pollution

We are only just beginning to understand the negative effects of artificial light at night on wildlife. Every year new research adds even more wildlife to the list of animals affected by too much light, including:

- Hummingbirds
- Wallabies
- Little penguin
- Zebrafish
- Sweat bees
- Seabirds
- Monarch butterflies
- Atlantic salmon
- Zooplankton
- European perch
- Songbirds
- Peahens
- Bats
- Owls
- Mice
- Insects
- Geckos
- Fireflies



SAFE LIGHTING SOLUTIONS

- Use only fully shielded, IDA dark sky certified fixtures for all outdoor lighting, so lights shine down, not up.
- Use only the right amount of light needed. Too much light is wasteful and harms wildlife.
- Install timers and dimmer switches and turn off lights when not in use. If you must have security lighting, use motion sensors.
- Turn off lights in office buildings and homes when not in use.
- Use only lighting with a color temperature of 3000K and below to reduce the blue (cool) light that is more harmful to many animal species.
- Work with your neighbors and local governments to ensure outdoor lighting isn't harming the wildlife in your area.

Visit darksky.org for more information.



5 Ways Light Pollution Hurts Our Planet

Artificial light not only prevents city dwellers from seeing the stars, it also harms the environment and human health.



Light Pollution Devastates Wildlife

Plants and animals depend on Earth's daily light and dark cycle to govern life-sustaining behaviors. Research shows that artificial light at night has negative and even deadly effects on many species.



Light Pollution May Harm Your Health

Studies suggest that artificial light at night negatively affects human health by increasing our risks for obesity, sleep disorders, depression, diabetes, breast cancer and more.



Less Safe

There is no clear scientific evidence that increased outdoor lighting deters crime. In fact, poor outdoor lighting can decrease personal safety by making victims and property more visible to criminals.



Light Pollution Wastes Energy and Money

As much as 50 percent of outdoor lighting is wasted, which increases greenhouse gas emissions, contributes to climate change, and renders us all more energy dependent.



Light Pollution Robs Us of Our Heritage

Our ancestors experienced a night sky that inspired science, religion, philosophy, art and literature. Now, millions of children across the globe will never know the wonder of the Milky Way.

Join Us in Protecting the Night!

Your dues and donations help us...

- **Protect Wildlife and Ecosystems**
We work with conservation experts and park officials to minimize the ecological impact of artificial lighting in natural areas, protecting habitats and wildlife.
- **Promote Eco-Friendly Outdoor Lighting**
Our Fixture Seal of Approval program certifies outdoor lighting fixtures that protect the night sky.



- **Recognize and Preserve Dark Sky Places**
The International Dark Sky Places conservation program recognizes and promotes excellent stewardship of the night sky. We have certified dozens of Places worldwide.
- **Foster Education and Outreach**
We educate communities and public officials about light pollution and provide specific solutions for minimizing its negative effects through our public outreach programs.
- **Assist Parks and Protected Areas**
IDA helps parks replace their bad lighting by providing eco-friendly options depending on need, and in some cases for free.

IDA is working to preserve our night sky for future generations.

Join IDA

Name: _____

Address: _____

City: _____

State: _____ Zip: _____ County: _____

Email: _____

Phone: _____

Pay by: Check (payable to IDA) Credit Card

Card Number: _____

Expiration Date: _____ Security _____

Card Holder: _____

Signature: _____

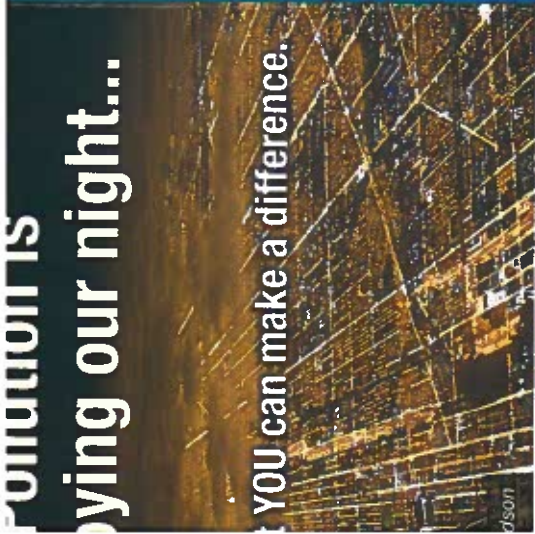
Membership Level:

<input type="checkbox"/> \$35	<input type="checkbox"/> \$250	<input type="checkbox"/> I would like an additional donation. \$ _____
<input type="checkbox"/> \$50	<input type="checkbox"/> \$500	
<input type="checkbox"/> \$100	<input type="checkbox"/> \$1,000	

I would like to make an additional donation. \$ _____

Your IDA membership is a tax-exempt donation.

Together we can save the night sky.
Thank you for



Light Pollution is Polluting our night....

YOU can make a difference.

Light Pollution?

Light pollution is familiar with air, water and land pollution, but what you may not know is that light can also be a pollutant?

Light pollution is the over-illumination or excessive use of artificial light - which can have serious environmental impacts on humans, wildlife and the environment.



Light pollution can help us protect our wallets, conserve energy and connect future generations to a clear night sky.

Light Pollution is Reversible!



Photo showing the effects of light pollution. Photos taken during the 2003 Northeast blackout, a massive power outage.

Light Pollution affects us all. 5 ways you can make a difference!

1. Install lighting only when and where it's needed. ★
2. Use energy saving features such as timers, dimmers and motion sensors on outdoor lights. ★
3. Make sure your lighting is shielded so light shines down, not up. Encourage good lighting at your workplace, too. ★
4. Educate your friends and neighbors about the importance of good lighting for our health, economy and environment. ★



5. Join IDA and visit darksky.org for more information and free resources.

About IDA

The International Dark Sky Association, a 501(c)(3) nonprofit organization based in Tucson, Arizona, is dedicated to preserving the natural nighttime environment by educating policymakers and the public about night sky conservation and promoting eco-friendly outdoor lighting.

Our Mission

To preserve and protect the nighttime environment and our heritage of dark skies through environmentally responsible outdoor lighting.

Our Goals

- Advocate for the protection of the night sky
- Educate the public and policymakers about night sky conservation
- Promote eco-friendly outdoor lighting
- Empower the public with tools and resources to help bring back the night

Protecting night skies for present and future generations



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