

Dark Sky Tourism Toolkit

Background information

What is Dark Sky Tourism?

Dark sky tourism - or Astro-tourism- is a low-impact, sustainable form of tourism focused on the viewing of celestial objects and space. With nearly 80 percent of North Americans unable to see the Milky Way at night, dark sky places offer a truly unique, memorable, and moving experience.

Utah is the Dark Sky capital of the world with four national parks, five national monuments, five state parks, and one town designated as International Dark Sky Places. In 2016, over 5.5 million people visited an International Dark Sky Park in Utah, with an estimated 621,875 visitors staying overnight in the parks and 61,500 participating in astronomy-related activities. Astro-tourism requires visitors to stay overnight and can increase the number of visitors during the off-peak season. In fact, night sky viewing is often better in winter due to longer, clearer nights.

Average Per-Party Spending Per-Day		
Day Trip	Non-NPS overnight lodging	NPS overnight lodging
\$40.63	\$290	\$430

Product Types and Definitions

- **Astronomy:** Night sky viewing of celestial objects and events. Using personal or rented equipment, individuals, families, and groups can explore the skies on their own terms. Localities can improve the visitor experience by designating astronomy spots and providing interpretation; implementing Dark Sky friendly lighting ordinances to reduce sky-glow; adding astronomy components to other visitor experiences (see below for examples); educating visitors about celestial events and optimal viewing times.
- **Light Pollution:** A term used to describe the inappropriate or excessive use of artificial light. Elements of Light pollution include:
 - Glare: excessive brightness that causes visual discomfort
 - Skyglow: brightening of the night sky over inhabited areas
 - Light trespass: light falling where it is not intended or needed
 - Clutter: bright, confusing and excessive groupings of light sources(darksky.org)
- **[Programmed events](#)/Dark Sky Parties:** Community events that bring visitors and residents together to socialize, learn about outer space, and watch the skies. Programmed events can be great products for local parks and recreation departments, libraries, or community groups. They provide opportunities for

volunteers to participate as “Astro ambassadors.” Programmed events can frequently be held in cooperation with other jurisdictions, such as NPS, BLM, and State Parks.

- **Storytelling:** Dark skies provide a fitting setting to campfire yarns. From ghost stories to cowboy poetry to local history and legends, storytelling under the stars can be a unique and enriching value-added experience to campgrounds, resorts, and cultural sites that promote overnight stays.
- **Guided tours:** Dark skies embody the Western outdoor experience. Guides and outfitters with dark skies knowledge add a unique and enriching value-added element to their experience.

Operations

Designations

The IDA's [International Dark Sky Places](#) conservation program recognizes and promotes excellent stewardship of the night sky in communities, parks, and protected areas around the world. There are currently six types of designations offered by the program which include; Communities, Parks, Reserves, Sanctuaries, Urban Places, and Developments of Distinction. Click [here](#) to find more information about the types of designations and distinctions.

Eligibility

Communities: Must have some type of legal organization that is officially recognized by outside groups. This can be in the form of a town, city, municipality or other legally organized community (such as an urban neighborhood or subdivisions). There is no night sky quality criterion associated with this category.

Parks: Must be public or private land, accessible to the public in part or whole, that is legally protected for scientific, natural, educational, cultural, heritage and/or public enjoyment purposes. The core area must provide an exceptional dark sky resource, relative to the communities and cities that surround it, where the night sky brightness is routinely equal to or darker than 20 magnitudes per square arc second.

Reserves: Must be a public or a private land of at least 700 km², accessible to the public in part or whole, that is legally protected for scientific, natural, educational, cultural, heritage and/or public enjoyment purposes. The core area must provide an exceptional dark sky resource, relative to the communities and cities that surround it, where the night sky brightness is routinely equal to or darker than 20 magnitudes per square arc second.

Sanctuaries: Must be a public or private land, accessible to the public in part or whole, that is legally protected for scientific, natural, educational, cultural, heritage and/or public enjoyment purposes. The site must provide an exceptional dark sky resource where the night sky brightness is routinely equal to or darker than 21.5 magnitudes per square arc second.

Urban Night Sky Places: Must be a a municipal park, open space, observing site, or other similar property, accessible to the public in part or whole, located within the region enclosed by a perimeter extending 50 km beyond the edge of the continuously-built area of a municipality with a permanent population of 10,000 or more people within its territorial jurisdiction, or 50,000 or more people if defined as a “metro area” of two or more adjoining municipalities. There is no night sky quality criterion associated with this category.

(Sourced from darksky.org)

Ordinances

Outdoor Lighting Dark skies do not mean dark town. IDA compliant outdoor lighting ordinances regulate the type of lighting installations that may be used in order to direct light and prevent spillover, frequently known as light pollution or skyglow. Outdoor lighting ordinances preserve the clarity and novelty of dark skies.

More information on Lighting Ordinances from The International Dark Sky Association can be found [here](#).

Resources

Funding Sources

- [The National Recreation and Parks Association](#) Periodically posts information on various grants and fundraising resources.
- Utah's [Business Resource Centers](#), mission is to contribute to state-wide economic growth through the development and support of federal, state, local, and private business service providers.

Partner Organizations and Associations

- [Dark Sky Planning: Guidance & Best Practices](#)- An introduction to dark sky planning for local communities.
- [Dark Sky Assessment Guide](#)- A simple self-assessment on a community's dark sky practices, along with instruction for improvement.

- [Utah Community Development Office](#)- The State of Utah Community Development Office can provide training, tools, and technical assistance regarding dark skies.
- [International Dark Sky Association \(IDA\)](#)- The recognized authority on light pollution and coordinating program of the International Dark Sky Places Program. IDA establishes dark sky guidelines, provides consultation, offers tools and resources, and certifies Dark Sky places.
- [The Colorado Plateau Dark Sky Cooperative](#)- A non-profit group that can assist with outreach, education, and dark sky events.
- [The Consortium for Dark Sky Studies](#)- The Consortium is dedicated to the discovery, development, communication, and application of dark sky knowledge across a wide range of disciplines and professional fields.
- [Timpanogos Storytelling Institute](#)- A non-profit organization dedicated to sharing and expanding the art of storytelling. The Institute hosts training, a marketplace for professional storytellers, and an annual festival.
- Local counties, municipalities, state governments, and non-profit organizations.

Supporting Amenities

Natural Assets

Unspoiled Night Sky

Dark Sky Tourism requires an undisturbed night sky, this means sky that is not polluted by excessive light from outdoor lighting fixtures or urban areas. The International Dark Sky Association offers more information on how to [measure light pollution](#) and eligibility requirements on designation to its [International Dark Sky places Program](#).

Human Capital and Skills

Maps & Guides

Direct visitors to prime sky-viewing locations, particularly those that are specially designated as such.

Astronomy equipment

Observatories, permanent telescopes, portable telescopes, and telescope accessories such as filters, pointers, and eyepieces, enhance the Astro-tourism experience. Portable telescopes can be available for rent or purchase from outdoor retailers, traditional retailers, libraries, or other government entities.

Hard Infrastructure

Accommodation

In order to capture more tourist dollars, a destination should possess some type of guest lodging whether that be hotels, bed and breakfasts, or campgrounds so that guests have

the option to stay longer in the destination and spend more. Also, those accommodations whether lodging or campgrounds should implement dark sky friendly directional lighting, as well as spaces for viewing the night sky.

Restaurants

Along with having accommodations for tourists, a destination should have restaurants and other food establishments in order to spread tourism dollars throughout the community.

Other Considerations

Festivals

Special celestial events, such as comets, eclipses, planetary transits, and equinoxes can be causes for larger events such as festivals. This is especially useful in drawing in visitors during the “offseason.” These events could also be targeted towards school groups for educational purposes.

Sustainable Tourism Practices

What is Sustainable Tourism?

Sustainable tourism development manages the impacts of tourism on the destination’s environment, economy and community and maintains and enhances the destination’s resources for the present and future needs of both tourists and the communities that host them (World Tourism Organization).

Dark sky tourism or Astro-tourism is considered a sustainable form of tourism for its supporting assets (the sky) doesn’t need to be maintained or developed. This type of tourism is a great option for rural communities to offer because not only does it not require the implementation of hard infrastructure, but many rural communities are already uniquely positioned to offer Astro-tourism because their locations are typically surrounded by desolate open land, which is less affected by light pollution compared to urban areas.

Certifications and Standards

- The IDA’s [International Dark Sky Places](#) conservation program recognizes and promotes excellent stewardship of the night sky in communities, parks, and protected areas around the world.
- [Global Sustainable Tourism Council’s Criteria for Destinations](#) and suggested performance indicators are the globally recognized standard for sustainable tourism, which serve as a basic guideline for destinations that want to become more sustainable.
- [TrainingAid](#) provides international training to travel and tourism professionals specifically focused on sustainable tourism. Their key training areas include destination marketing and management, business development, and other effective skills and tools in order to sustainably grow the tourism sector.

Sustainable Practices by Pillar

Tourism Management

- Astro-Tourism can help manage tourism seasonality by offering Astro-tourism events in the off-seasons.
 - Utah, in particular, has greater potential to offer year-round stargazing because it's dry climate allows for more clear night skies throughout the year compared to other international dark sky areas.
- Astro-tourism is an accessible form of tourism for many demographics because it does not require additional hard infrastructure or mechanisms in order to increase accessibility.

Environmental

- Opportunity to conserve energy by implementing lighting that is energy-efficient, effective, and not superfluous. The International Dark Sky Association provides guidelines on [effective lighting fixtures](#) and where to find [dark sky lighting](#).
- Increased protection to wildlife and sensitive natural areas by reducing harmful light pollution. The International Dark Sky Association provides more information on the harmful effects of light pollution and its specific impacts on [wildlife and ecosystems](#).

Social-Cultural

- The opportunity to increase education and awareness of the negative impact of excessive lighting as well as the economic benefits of Astro-tourism to regional stakeholders. The IDA provides [free educational materials](#) to help a destination spread awareness.
- Opportunities to increase public participation with the adoption of a new type of tourism that requires community input and consensus

Economic

- Benefits of energy savings from efficient lighting.
- Potential to increase tourism spending by increasing the number of overnight stays by offering dark sky tourism activities.
- Opportunities for the creation of local jobs with the adoption of a new type of tourism.

Successful Case Studies

Utah designated International Dark Sky Places consist of four national parks, five state parks, five national monuments, and one dark sky community. All the designated areas in Utah are listed below and categorized by designation type.

Dark Sky Communities

[Torrey](#) Located just eight miles from the west entrance of Capitol Reef National Park, Torrey is an idyllic little tree-lined, high-elevation town on the Capitol Reef Country Scenic Byway (S.R. 24) surrounded by rose-colored cliffs and green meadows. The town came together to protect its night skies by improving outdoor lighting ordinances and retrofitting dark-sky compliant outdoor lighting to minimize light pollution and strengthen the town's already close relationship with nature, place and the universe.

Dark Sky Parks

[Antelope Island State Park](#) beckons you to stargaze from the salty remnants of an ancient lake. The closest certified park to [Salt Lake City](#), Antelope Island offers fantastic sunset viewing from Buffalo Point and Frary Peak. Plan a quick escape from the city for a weekend camping trip that combines bison sightings, sunset hikes and incredible dark skies for astrophotography or getting lost in.

[Arches National Park](#) Check out a ranger-led stargazing program and Panorama Point for the best stargazing within [Arches National Park](#).

[Bryce Canyon National Park](#) is far from the light pollution of civilization and protected by a special force of park rangers and volunteer Utah astronomy enthusiasts, [Bryce Canyon](#) is known as the last grand sanctuary of natural darkness and has one of the [nation's oldest astronomy programs](#). For families visiting from the city, staying up for the star show is quite a reward. During moonless and clear nights, 7,500 stars will welcome you to their domain. Bryce Canyon also has an annual Astronomy Festival.

[Canyonlands National Park](#) Wave after wave of deep canyons, towering mesas, pinnacles, cliffs and spires stretch across 527 square miles. [Canyonlands National Park](#) is home to many different types of travel experiences, from sublime solitude in the more remote stretches of the park to moderate hikes through the Needles district to the opportunity to create your own version of one of the West's most photographed landforms, Mesa Arch.

[Capitol Reef National Park](#) is Utah's hidden gem of a national park, [Capitol Reef](#), which is almost like a planet unto itself. Here you get a real feel for what the earth might have been like millions of years before life appeared when nothing existed but earth and sky. Stay up for night skies in a land like no other. Pair your visit with a visit to Torrey, a certified Dark Sky Community.

[Cedar Breaks National Monument](#) is far from any metro light pollution and high in altitude makes sleeping under the stars at [Cedar Breaks National Monument's](#) updated campground first class. Rangers hold stargazing programs throughout the summer months.

[Dead Horse Point State Park](#) was the first Utah State Park to achieve IDA certification. Except in winter, the park offers multiple evening events each month, such as night hikes, telescope programs, and constellation tours. Even in poor weather conditions,

multimedia astronomy talks can be held inside the visitor center.

[Dinosaur National Monument](#) is located on the southeast edge of the Uinta Mountains on the Colorado Plateau on the border between Colorado and Utah at the confluence of the Green and Yampa Rivers. The park contains over 800 paleontological sites and is home to some of the most abundant and well-preserved dinosaur fossils in the world, providing a treasure trove for visitors and scientists alike since the fossil beds were found in 1909. The region was declared a national monument on October 4, 1915. Owing to the Monument's remote location, high elevation, and low humidity, enjoying Dinosaur National Monument's starry night skies today is like stepping back in time. (IDA.org)

[Goblin Valley State Park](#) is unlike any other place in the world — and a place that captures and stretches the imagination, challenging you with its geologic whimsy. Free of any significant sources of light pollution, Goblin Valley is home to one of the clearest, darkest night skies in the world. Open daily until 10:00 p.m. and home to 24 campsites and two yurts for overnight guests.

[Hovenweep National Monument](#) is off the beaten path but worth the journey. Hovenweep, the Ute Indian word meaning 'deserted valley,' stands as a sentinel of Ancestral Puebloan ruins in a landscape of sage and juniper. If you want to view dark skies amid ancient buildings this is the place to stargaze.

[Natural Bridges National Monument](#) was the world's first "Dark Sky Park" due to its remoteness and dedication to zero light pollution. The park's visitor center, exhibits, and campground are open year-round.

[Steinaker State Park](#) is the fourth Utah state park to receive an International Dark Sky Designation and an ideal place for remote adventure. A reservoir nestled between Ashley National Forest and [Dinosaur National Monument](#), there is no shortage of four-season beauty and exploration. Overnight in Vernal or the heated cabin and campgrounds at Steinaker State Park.

[Weber County North Fork Park](#) of Ogden Valley. The vibrant city of Ogden is a major hub toward the north end of Utah's urban corridor. Just over the ridgeline in the peaceful Ogden Valley lies a sprawling county park so ideally tucked away in a canyon the International Dark Sky Association added the park to its list of bronze-tier International Dark Sky Parks. Ogden is also home to another great planetarium in Utah—the Ott Planetarium at Weber University, which is "generally closed to the public" but open for special free events and by reservation. (Read: [A Closer Look at North Fork Park](#))

Dark Sky Sanctuaries

[Rainbow Bridge National Monument](#) is the first International Dark Sky Sanctuary in the National Park Service. The monument itself can only be accessed only by boat on Lake Powell or by backpacking from Navajo Mountain, but the entire Glen Canyon

National Recreation Area boasts dark skies.