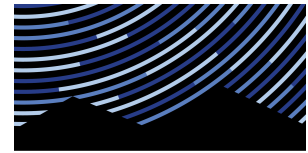


Greater Big Bend International Dark Sky Reserve



McDonald Observatory

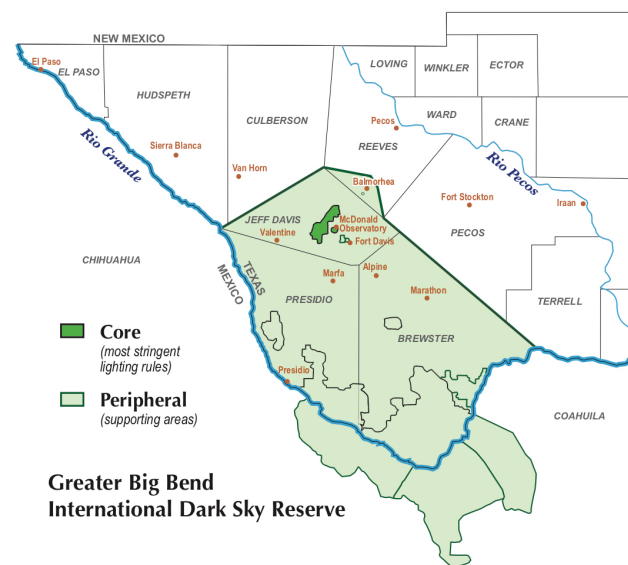
McDonald Observatory and many partners are working to establish the Greater Big Bend International Dark Sky Reserve (DSR) in the Big Bend region of Far West Texas and Northern Mexico. Once completed and certified by the International Dark Sky Association (IDA), the reserve will encompass over 9.8 million acres of land and be among the largest reserves of its kind in the world.

Overview

An IDA-designated Dark Sky Reserve is a public or private land possessing an exceptional or distinguished quality of starry nights and nocturnal environment that is specifically protected for its scientific, natural, educational, cultural, or heritage value. The Big Bend area of Texas and Mexico is home to some of the darkest night skies in North America. As light pollution grows worldwide, dark skies are becoming fewer and further between. If action is not taken, starry skies may become a thing of the past, even in rural and remote locations like Big Bend.

Benefits

- **Environment:** All life on Earth, including human beings, evolved to the rhythm of the day & night cycle. Light pollution disrupts this rhythm and can have severe negative consequences for ecosystems. The DSR will preserve nocturnal environments for plants, animals, and humans alike.
- **Safety:** Night sky friendly lighting designs provide more even illumination and eliminate glare, which means visibility is improved over traditional designs. The DSR will help make communities safer and more pleasant places to live and visit.
- **Energy:** Every year in the world, billions of dollars worth of electricity are wasted by shining light into the sky rather than directing it to where it is needed. Night-sky friendly lights keep light on the ground and out of the sky, and are more efficient than most common designs.
- **Research:** Astronomical research depends on having dark skies. At McDonald Observatory, highly sensitive equipment can detect as few as a dozen photons from distant galaxies billions of light years away. The DSR will ensure that astronomical research, as well as biological research into nocturnal ecosystems, can continue to be successful.



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- **Culture:** The night sky in the Big Bend region is as iconic as the silhouette of the Chisos mountains. It is a part of the identity of the region, and has been a part of human culture for countless generations. The DSR will ensure that this iconic feature is not relegated to history books.
- **Tourism:** Astro-tourism is an increasingly important part of the local economy, and growing in popularity worldwide. Hundreds of thousands of visitors come to the region each year and see the night sky. The DSR will ensure this continues in a sustainable manner.

Structure

The DSR will be composed of two types of areas: core areas and peripheral areas. Both areas have dark skies and are subject to lighting requirements.

The core areas are lands set aside for conservation, recreation, or research and are mostly intact ecosystems with little development. The core areas represent pristine nocturnal environments that need the most protection, and thus are subject to more stringent outdoor lighting requirements. Core areas must be surrounded by peripheral areas. The core areas will be the Nature Conservancy's Davis Mountains Preserve and the McDonald Observatory campus.

The peripheral areas serve as a buffer to the core areas. They include populated areas and towns, as well as numerous parks and protected lands in both Texas and Mexico. Some portions of the peripheral area may be just as dark as the core areas. Lighting ordinances are in place in the peripheral areas to help keep light pollution at a minimum, although the requirements are not as strict as in the core areas.

The reserve designation will overlap with other existing designations from the IDA's International Dark Sky Places program, which all have the same goal of helping to protect the night sky.

Action

In order to make the DSR a reality, McDonald Observatory and many partners are taking the following steps:

1. Monitoring light pollution levels and sky quality across the region
2. Taking inventory of public light fixtures
3. Replacing and retrofitting light fixtures where necessary
4. Recognizing businesses and organizations that demonstrate night-sky friendly practices
5. Creating demonstration projects to provide examples of good lighting for West Texas communities
6. Promoting awareness of night-sky friendly practices via events and social media
7. Working with counties and municipalities in the DSR to update existing lighting ordinances

Do you want to help make the DSR a reality? You can start by using night-sky friendly lights at home, and encourage your friends and neighbors to do the same. You can also help support our efforts by donating to the Dark Skies Initiative fund at McDonaldObservatory.org/DarkSkies. These funds will go towards upgrading and replacing light fixtures in the area, and promoting awareness of good lighting practices. You can also apply for our Night-Sky Friendly Lighting Recognition Program if you are in far west Texas.

Want to get more involved? Consider joining a chapter of the International Dark Skies Association, or local grassroots efforts such as the Big Bend Conservation Alliance and West Texas Friends of the Night Sky, or contact us (info@mcdonaldobservatory.org) to see what volunteer opportunities are available.