

HEADLANDS

International Dark Sky Park



2018 Annual Report

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General

The Headlands Emmet County, International Dark Sky Park, received accreditation as a Silver Tier International Dark Sky Park in May 2011. The 511-acre park is located on over two miles of Lake Michigan undeveloped shoreline in Michigan's lower peninsula, and marks the head land where the waters from Lake Michigan flow from the west through the Straights of Mackinac, to meet Lake Huron from the east.

The Headlands Park continues to operate 24 hours a day, 7 days a week. This past year we had very successful night sky programming. Interest in the Dark Sky Park and programming has been increasing in patronage and interest since its opening. Since 5/12/18 thru 9/12/18 there have been a total of 32,937 vehicles that have visited the Headlands Park. The vehicle totals do not include the nearly 60,000 visitors who walked the one-mile Discovery trail into the park this year.

We developed and hosted 18 highly successful events this year with 7 additional after the time of this report, for a total of 25 special program events for the year. 13 of the events highlighted a celestial theme with emphasis on the need for keeping our night sky free from the overuse of artificial light. Our most prominent event was our first annual Star Party which we collaborated with our local Astronomy Club, Northern Michigan Astronomy Club, NOMAC. This was a three-day event where we focused on solar viewing throughout the day and deep space viewing by night. Each night included several telescopes with amateur and professional astronomers who assisted guests in learning and observing our night sky. Nights and days also included presentations by astronomers with their vast and varied expertise. The culmination of this event was the peak of the Perseid Meteor shower which attracted over 1000 people.

In addition to our programmed events, the Headlands offered 27-night time observatory nights in conjunction with our telescopes that reached 3,187 visitors. We also held 18 daytime solar viewing programs where streamed live video from our solar telescope and projected the image to television screens in our event center for visitors to view. These daytime observing events reached 415 visitors.

General

We were able to collaborate with the NOMAC this year. They provided volunteers for our observatory times and assisted in guiding guests through the night sky. We provided a variety of different telescopes for guests to peer into the depths of space and see the wonders of the universe up close. NOMAC volunteers continue to be a valuable asset in educating the public on the importance of preserving the darkness. Through the volunteerism of the local community we have been able to educate more visitors from a variety of demographics. We have even had volunteers operating telescopes for the public to view as young as 8 years old.

New to the park this year was full-time, seasonal astronomer. While also assisting visitors at our observatory nights our astronomer was also on-site clear nights in our viewing area with a telescope or two for visitors to view and participate. He was able to answer questions from the thousands of guests who visited the park as well as give informational tours of the night sky for those who were interested. He would also use our observatory and the 20" Planewave telescope for research and to take long exposure images of numerous objects in the night sky. These beautiful images would be used as slide shows on our televisions as well as images in the presentations he would provide during inclement weather. He consistently provided excellent presentations on the continued efforts of night sky preservation.

As well as hiring a staff astronomer we also budgeted for additional staff, including a night park attendant. Our night attendant was on site most nights to patrol the grounds and assist in monitoring the park. He greets visitors, ensures the safety of guests, as well as enforces park ordinances which include but are not limited to the use of white lights in the viewing areas. This staff addition has been very helpful in ensuring that visitors to the park are able to enjoy a natural and peaceful environment.

Lighting

This year, as in the previous year, available parking near the designated viewing area was limited and many individuals had to walk from the overflow parking one mile away. To try to assist with this matter and accommodate the masses that frequent the park we applied for a grant to build additional parking two tenths of a mile from the designated viewing area. The natural woodland landscape and the distance, will continue to assist in shielding the designated viewing area from further incoming headlights. This project would also include pathways, with IDA compliant lighting, to the viewing area and the natural shoreline.

In November 2017, we planted four full size evergreen trees and a weeping willow between the parking area and the designated viewing area. These trees aid the current tree line on the premise in the effort to shield headlights. Moving into 2019, we will be developing a berm that includes natural landscaping to further assist in shielding from the incoming headlights.

The grounds and viewing areas at the Headlands are always open to the public. The Waterfront Event Center is open to the public during our scheduled programs and is available for private rental. To alleviate the issues, we previously had with the closing time for private rentals and shifting sunsets throughout the seasons, we now have staff close the blinds to seal out any light every evening at sunset. In addition, this past summer season we hired additional seasonal staffing including a night park attendant. This position allowed us to enforce proper dark sky etiquette on a regular basis.

On May 12, 2018, we held our grand opening of our new “Out of this World” gift shop. In our gift shop we sell red LED flashlights as well as many select novels and teaching tools of the night sky.

Sky Quality Meter

We have purchased our Sky Quality Meter and have plans to install the meter by the end of 2018. We plan to implement and start the documentation process next year in 2019.

Communities

There have been no changes made this year in the local areas outdoor lighting policies as well as no new lighting installations built in the area. We are very pleased that the message of preserving the night sky has reached far enough that staff fielded many questions over the course of the year for the interests of locals in the area could do to update their existing lighting to be more dark sky friendly. Our staff has been distributing IDA information to residents of the area as well as visitors from afar.

Conservation and research

The Headlands is currently part of an ongoing research project aimed at discovering variable stars. Will Niedbala, a staff member, uses the Planewave telescope to scan the sky in search of stars whose brightness varies over time (hence, “variable” stars). This summer was mainly used for collecting data, which will be analyzed over the coming months. If any new stars are discovered they will be entered into the catalogue of variable stars.

Funding

The Headlands Park is owned and operated by Emmet County through its Parks & Recreation Department. Staffing includes the Parks and Recreation Director, Park Manager, Program Coordinator, Astronomer, facilities and ground crew, security, and numerous volunteers. The Headlands is also supported by public donations from generous supporters.

This year we applied for a Michigan Natural Resources Trust Fund Grant to help develop an additional parking area. This area will be away from our designated viewing area. It will have connecting pathways to the natural shoreline and the designated viewing area. We are currently in the process of requesting additional grant funds.

Arts and Culture

This past year we teamed up with the local Native American community in our event center to celebrate the food, ceremony, and tradition of the people native to the region where the Headlands is located. Presenters educated attendees how the sky and seasons helped aid the indigenous people in their farming, fishing, and life. Our event center has also been used to house our celestial themed dances which feature local musicians and intermix outdoor sky viewing in the dark with indoor music, dance and fun. 2019 will also be a larger year of arts and culture programming by including “music under the stars” as well as painting the night sky events.

Outreach

In addition to regular monthly programs rooted in the celestial phenomena, the Headlands participates each year with Michigan State University and many other organizations throughout the state for Statewide Astronomy Night.

This past year we also hosted our annual lights-out community challenge again, where we invited local businesses, residents and tourists to turn the lights down low. The 'light's out challenge' is designed to help raise awareness about the effects of artificial light at night on nocturnal habitat, human health, and the way we use our energy resources. The Mackinac Bridge Authority participated as well by turning off the non-essential bridge cable lights to bring awareness to the effects of artificial light.

Additionally, our program coordinator has done outreach presentations with local groups including the Michigan Township Association to provide information and resources on the Headlands and IDA, while also emphasizing the importance of the Park and preserving the night sky. We also distributed 40,000 of our brochures with our scheduling and information to visitors as well as local business and other information centers.

Our event center has been host to numerous private events which draw increase interest and questions from attendees to our staff in telephone calls, emails, and through social media.

Community and Media Relations

The Headlands Dark Sky Park has had an overwhelming response to its presence on Facebook and our county website. We have over 18,686 loyal followers. We have increased full-time seasonal and salaried positions to assist with Headland's community relations. By contacting local public schools, universities, organizations and chamber groups throughout Northern Michigan. With our outreach and marketing, it is not uncommon for visitors from Brazil, India and China to visit our dark sky park. 2019 we will be requesting additional Highway markers and signage for those who travel the interstates. We will continue our strong partnership with our local news and print media outlets as well as providing the other larger city's requests for media coverage.

2019 Preview

For the 2019 season, the Headlands is working to further diversify and expand its programming to understand our celestial environment, building upon the natural and scientific environment while also continuing to encompass literature and arts to help engage and develop a deeper understanding of our night skies and the experiences we have with it.

One of our goals within programming for 2019 is to incorporate more youth focused experiences. To achieve this, we are in the process of developing a six-week junior night sky ranger program designed to spark the interests of youth focused around science based astronomy.

In 2019, we will continue to work with local tribe members of the Little Traverse Bay Odawa Band to further explore the deep heritage of the tribe and its connection to the celestial bodies and that of the native flora and fauna of our region.

Having over four miles of trails within the park is an asset we plan to utilize again this year as we host various hikes through the autumn, winter and spring months to engage our audiences and share the importance of dark skies to the natural environment and nocturnal habitat.

Our 2019 season of programs will also include music under the stars, night sky astrophotography workshops led by NOMAC, yoga in the park, lectures provided by various university physics and astronomy professors, astronomers and star lore historians. One of these programs will include professor Dr. Megan Donahue, the president of the American Astronomical Society. These monthly lectures and presentations will focus on current astronomy topics, light pollution, our solar system and the culture based on the celestial bodies. Other programs will focus on celestial calendar events, such as the solstices, meteor showers and eclipses.

Photos taken by Will Nibdala with the Planewave telescope at the Headlands Observatory



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