

**Keweenaw
Mountain Lodge**
Copper Harbor, MI



*Application for Dark Sky Park Designation
April 2021*

Keweenaw Dark Sky Wilderness

Picture taken by KML staff member, Nick Niffin, on April 4, 2021, on the 9th hole of the Keweenaw Mountain Lodge golf course

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The intent of this application is for the Keweenaw Mountain Lodge to extend its commitment to the International Dark-Sky Association to combat light pollution through public outreach and education, and become a designated Dark Sky Park in the northwoods of Michigan.

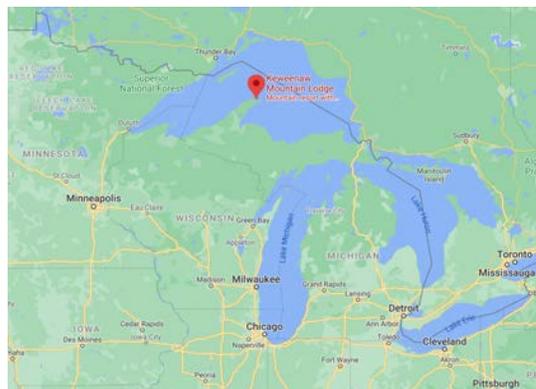
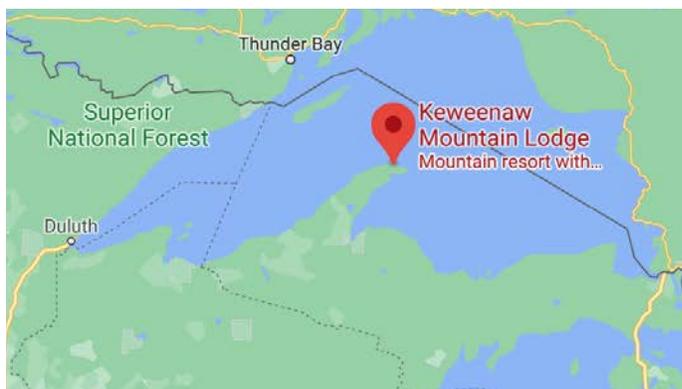
Name: Keweenaw Dark Sky Wilderness, 
headquartered at the Keweenaw Mountain Lodge

Applying for Category: Dark Sky Park

Address: 14252 US Hwy 41, Copper Harbor, Michigan 49918, USA

Main Contact: John Mueller | Maria Summers
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P: 906-289-4403
W: <https://keweenawmountainlodge.com>

Land Area: 177 acres, plus surrounding areas



Acknowledgments and Contributors

We would like to thank the individuals and organizations who wrote letters of support for the application and who we will be working with going forward in protecting the dark skies in the Keweenaw and educating visitors and residents about the importance of the night skies (you can find those individuals and organizations in the support letter section of our application). Their support of this initiative is important to ensuring that dark skies and stargazing are valued in the Keweenaw. These individuals and organizations understand the asset they have in the dark skies, and thus are committed to ensuring that the park's mission is achieved. As well, we would like to thank the staff at the Keweenaw Mountain Lodge for assisting in writing this application and supporting the Dark Sky initiative at the top of the Keweenaw. Thank you.

Contributors

Pam Dyl
Mike Miller
John Mueller
Mariah Summers

Mission of the Dark Sky Park

To provide a “headquarters” at the top of the Keweenaw which fosters the ability of individuals to see the stars and educate the public about the benefits of dark skies in the Northwoods of Michigan.



Nomination Letter

January 14, 2021



To the International Dark Sky Association:

As a Member of the International Dark Sky Association it is my pleasure to nominate the **Keweenaw Mountain Lodge** to receive recognition as a **Dark Sky Park**.

The Keweenaw Mountain Lodge is located in Copper Harbor, MI. Copper Harbor is a small tourist town at the tip of the Keweenaw peninsula, with approximately 100 year-round residents. Its remote setting and separation from the city means that residual city light is all but nonexistent, and makes it a great candidate for Dark Sky recognition. During the summer and fall months, the grounds offer biking and hiking trails, disc golf, and 9-hole golf course. During the winter and spring months, the grounds offer cross-country skiing and snow-shoeing. As such, there is great potential for Dark Sky community outreach programs and events year-round at the Lodge. The natural beauty and opportunity for adventure draws outdoor enthusiasts from all over, to the tune of 8,000+ visitors in a season.

Through intentional self promotion and light pollution management, the Keweenaw Mountain Lodge hopes to become known for its views of the cosmos. The Lodge has a strong team in place, and all involved will be educated to become a positive force towards the Dark Sky goal. I have no doubt that this dedication will benefit the promotion of the Lodge's dark skies and light pollution education.

Receiving Dark Sky Park recognition would be an honor that comes with many benefits. Like all worthy goals, the path will be challenging. I believe the Lodge has the personnel and perseverance to be the first Dark Sky Park in the Upper Peninsula of Michigan.

Regards,

A handwritten signature in black ink that reads "John Mueller '20".

John Mueller
Owner / Member
Keweenaw Resort, LLC

Keweenaw Mountain Lodge

Physical Address: 14252 US Hwy 41, Copper Harbor, MI 49918 | **Mailing Address:** P.O. Box 317, Mohawk, MI 49950
Phone: 906-289-4403 | Email: info@keweenawresort.com | Website: <http://keweenawmountainlodge.com>

John Mueller, IDA Member #: 24895

Executive Summary

The Keweenaw Mountain Lodge is applying to be designated as an International Dark Sky Park, named “Keweenaw Dark Sky Wilderness”. The Keweenaw Mountain Lodge is a mile from Copper Harbor, Michigan, the northernmost town in the state. Established in 1934, the Keweenaw Mountain Lodge is a WPA-era lodge that is on the National Registry of Historical Places, and consists of 177 acres. By establishing a designated dark sky park at the Lodge, we are looking to be the headquarters for night sky viewing and educational activities at the top of the Keweenaw.



In this application we have provided a history of the Lodge and the property, information about the surrounding areas and park resources, data on the level of light pollution and our data to show the quality level of our skies at the top of the Keweenaw in the northwoods of Michigan, and our educational and outreach initiatives. As well, you will see the support we have from the community, as exhibited in the support letters from individuals and organizations at the township, county, and state levels. As part of the deed restriction on the property, along with the Lodge being on the national register of historical places, the resort is accessible to the public for lodging, dining, and outdoor activities, including stargazing.

As for the name of the dark sky park, we are using only “Keweenaw” as opposed to “Keweenaw Mountain Lodge”. We could have applied as a stand alone location. However, we felt that applying as a wilderness area, with the Keweenaw Mountain Lodge being the headquarters for the park and dark sky activities, helps ensure that a larger area enjoys the dark skies and more individuals are educated about dark skies since there is a clear leadership to champion the cause.

With this application, we are applying to have the designated name be a “wilderness”, Keweenaw Dark Sky Wilderness, as opposed to being called Keweenaw Dark Sky Park. The Keweenaw peninsula, namely the top of the Keweenaw where the Lodge sits, is a raw and rustic wilderness. We feel that with the remoteness of the Lodge and the Keweenaw area, along with its relatively limited development, having visitors understand they are in the wilderness is important. Having “wilderness” in the title as opposed to “park” helps people have a better understanding that they can enjoy the wilderness atmosphere that the Lodge and the top of the Keweenaw offer.

We are proud and excited to be able to have organized a dark sky park initiative in the Keweenaw, where stargazing has been done for years (think Northern Lights / Aurora Borealis). This application is the result of this effort.

Notes:

Web page for this application: We have a web page on our website that is dedicated to this application. We set this page up earlier this year so we keep the general public abreast of our progress to become a designated International Dark Sky Park. This has been helpful in getting community support for the dark sky park initiative. The web page can be accessed at:

- <https://keweenawmountainlodge.com/projects/international-dark-sky-park-application/>

Dedicated web domain: We have registered the domain keweenawdarkskywilderness.com. We look to build out the domain to be a separate website dedicated solely to the dark sky initiatives that are laid out in this application. Currently the domain redirects to our Stargazing page on the keweenawmountainlodge.com web site.

- <https://darkskywilderness.com>
-

About the Keweenaw Mountain Lodge and Surrounding Areas

The Keweenaw Peninsula, known as the Copper Country, is on Reader's Digest 2020 "The Most Gorgeous Peninsulas in the US" list. This area is home to some of the oldest exposed rock in the world, one of two National Historic Parks in the country, lighthouses, waterfalls, and more. Known as "The Gem of the Keweenaw", the Keweenaw Mountain Lodge is in the heart of it all. With the resort's outdoor recreation activities now year round, outdoor enthusiasts can enjoy hiking and biking trails, disc golf, traditional golf, cross country skiing, snowshoeing, and the charm of the historic rustic cabins with family and friends. For the naturalists and the environmentally inclined, the Lodge grounds offer a wide variety of flora and fauna. Bald eagles, owls, woodpeckers, whitetail deer, wolves, bears, and coyotes add to the wildlife population. Old growth pine forests, wildflowers, maples, birch, and much more take root for nature lovers to explore. The Keweenaw wilderness is full of edible foods that foragers flock to. Among them are thimbleberries and morel mushrooms, both popular treats in the Keweenaw.

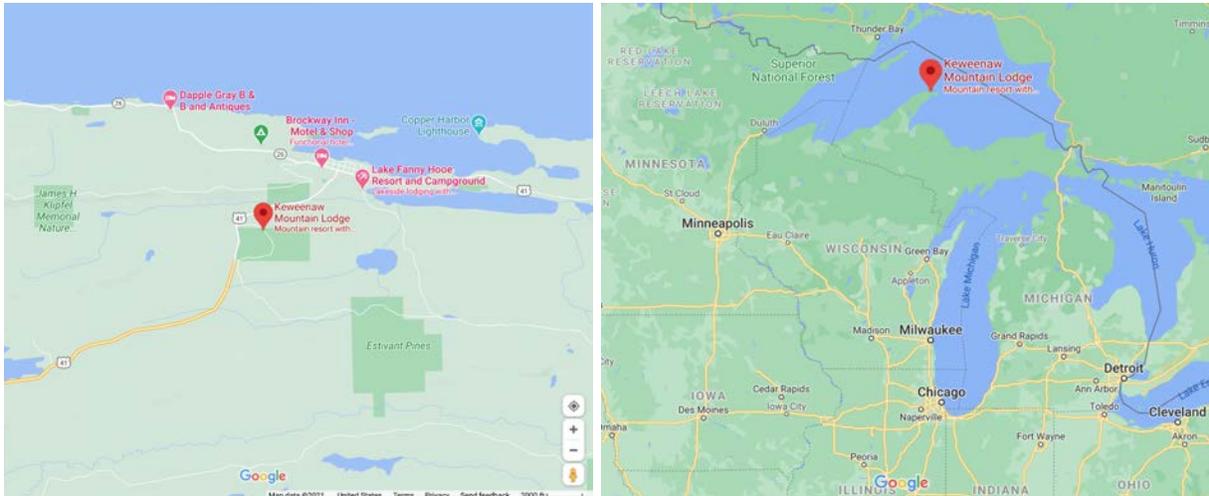
Now we hope another of our activities at the Lodge will take off: night sky viewing, stargazing. The realm of outdoor activities does not have to end when the sun drops below the horizon. Stargazing, meteor shower observations, and moon phases light up the night and are a unique way to bring together friends and family. With regular public night-time access, these activities will be prevalent in the unpolluted night sky of the Keweenaw Mountain Lodge. The Lodge will use this Dark Sky recognition to educate, entertain, and bring the public together for the greater good of the night sky. This application reveals the Lodge's intent to continue the commitment to preserving the night sky and offering the distinguished opportunity to view the darkest skies possible.

Location

The Keweenaw Mountain Lodge is located at the top of the Keweenaw peninsula in the northwoods of Michigan. The resort sits on US Hwy 41, which stretches from Copper Harbor, Michigan to Miami, Florida (1,990 miles)¹. The closest town, Copper Harbor, is a mile away. Copper Harbor is known for being the furthest city away from a US Interstate: 237 miles away (US Interstate 39, Wausau, WI)².

¹ Source: <https://k1025.com/copper-harbor-farthest-from-interstate/>

² Source: <https://www.bloomberg.com/news/articles/2012-10-11/how-far-can-you-live-from-an-interstate-highway>



History of the Keweenaw Mountain Lodge

Located at the top of the Keweenaw Peninsula of Michigan, the Keweenaw Mountain Lodge is a historic wilderness resort built in 1934 as part of the Works Progress Administration (WPA) and Civilian Conservation Corps (CCC) initiatives. The architecture of the buildings is similar to the architecture seen in many of the US National Parks.



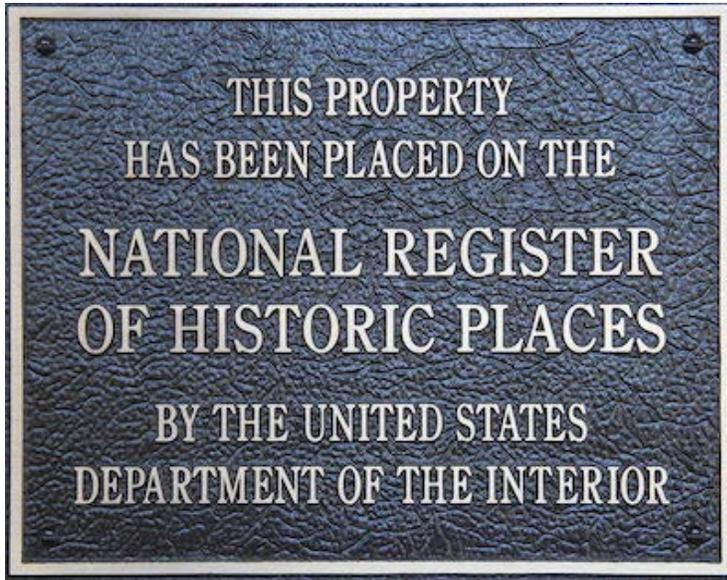
In October 1933, the Keweenaw County Road Commission reviewed several areas to build what was then known as the Keweenaw Park & Golf Course project. Initially, 167 acres was gifted by the Keweenaw Copper Company, formally known as Aetna Mining Company, to Keweenaw County. Keweenaw County owned and operated the resort from inception in 1934 until 2018 (for 84 years). In 2018 the resort was purchased by Keweenaw Resort, LLC, with a deed restriction that the resort be accessible to the public for a certain amount of days each year. Keweenaw Resort, LLC continues to be open to the public, offering cabins for rent, dining (food and beverage), events (e.g. wedding, corporate retreats), and outdoor activities (e.g. mountain biking, golf, hiking, trail running, cross-country skiing, snow shoeing, and more).



Construction started in 1933 under the guidance of architect Ocha Potter and a crew of 124 men. One team of horses was also used to assist with the hauling of trees while clearing what would become the golf course and using the logs for the construction of the Lodge and the cabins of what is now the present-day Keweenaw Mountain Lodge. Today it is under private ownership, and the outspoken character of the Lodge continues today stronger than ever.



The Keweenaw Mountain Lodge is on both the state (1976) and national (1980) registers of historic places.



PHS-200 (11-16)

United States Department of the Interior
Heritage Conservation and Recreation Service

**National Register of Historic Places
Inventory—Nomination Form**

See Instructions in How to Complete National Register Forms
Type all entries—complete applicable sections

For HCRS use only
Location: APR 8 1980
Date entered: JUN 18 80

1. Name
Name: Keweenaw Mountain Lodge and Golf Course Complex
and/or common:

2. Location *CVI of Ogeon Harbor on U.S. 91*
street & number: St of SW, Sec. 31, T59-S28 and N4, Sec. 6, not for publication
T59-S28
city, town: Grant Township X vicinity of congressional district 11
state: Michigan code 26 county: Keweenaw code 083

3. Classification

Category	Ownership	Status	Present Use
<input checked="" type="checkbox"/> building	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input type="checkbox"/> structure	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input checked="" type="checkbox"/> site	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> object	<input type="checkbox"/> Public Acquisition	<input type="checkbox"/> Accessible	<input checked="" type="checkbox"/> entertainment
	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes restricted	<input type="checkbox"/> government
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes unrestricted	<input type="checkbox"/> religious
		<input type="checkbox"/> no	<input type="checkbox"/> scientific
			<input type="checkbox"/> industrial
			<input type="checkbox"/> military
			<input type="checkbox"/> other:

4. Owner of Property
name: Keweenaw County
street & number: Keweenaw County Courthouse
city, town: Eagle River vicinity of: state: Michigan

5. Location of Legal Description
courthouse, registry of deeds, etc.: Keweenaw County Courthouse
street & number: Eagle River Courthouse Square
city, town: Eagle River state: Michigan

6. Representation in Existing Surveys
site: NUPFDR Historic Preservation has this property been determined eligible? yes no
Plan, 1977
date: Harrington HABS Study, 1975 federal state county local
depository for survey records: Michigan State History Division
city, town: Lansing state: Michigan

Night Sky Viewing Map

Below is the Night Sky Viewing map at the Keweenaw Mountain Lodge, with the designated dark sky viewing areas and vantage points shown. The entire golf course is set up to allow individuals to view the stars. As well, the tennis courts, two small fields, and the disc golf course are also designated areas for stargazing.

NIGHT SKY VIEWING AT THE KEWEENAW MOUNTAIN LODGE



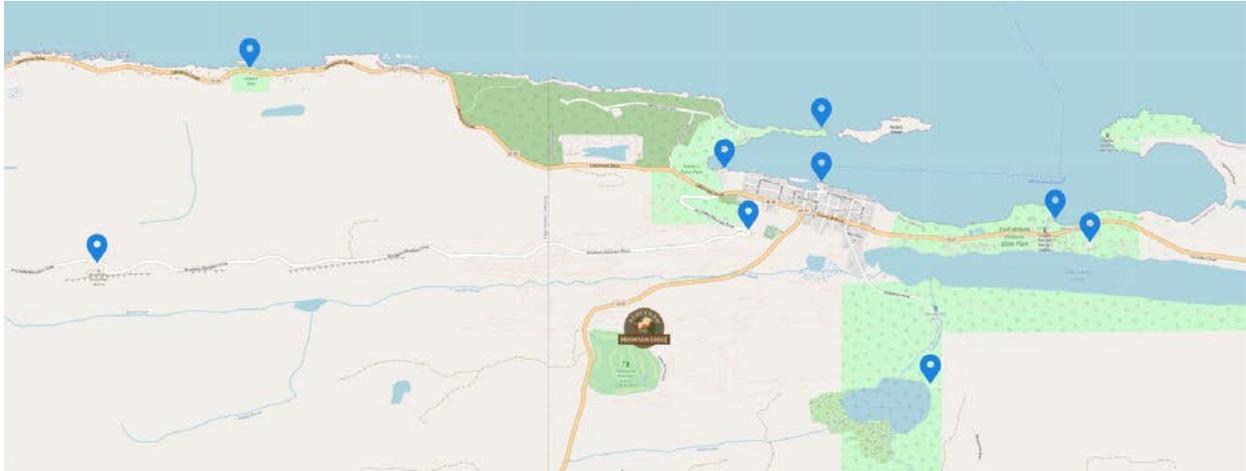
PLEASE BE RESPECTFUL OF LODGING GUESTS WHEN NEAR THE CABINS: KEEP NOISE TO A MINIMUM
 THE NIGHT SKY CAN BE EASILY VIEWED FROM MANY SPOTS ON THE PROPERTY. THIS MAP HIGHLIGHTS VANTAGE POINTS (📍) FOR THE BEST VIEWING OF THE STARS

The current size of the property is 177 acres, with additional acreage being added. See the Appendix for Additional Developments with Property in the Keweenaw to Increase the Dark Sky Initiatives.

Viewing Areas in the Surrounding Area

At the top of the Keweenaw, there are not very many areas that are developed. This offers stargazers multiple locations to look up and see the stars. This includes places along the Lake Superior lake front (on M-26 and US Hwy 41), in multiple county and state parks, and up Brockway Mountain; all of which are just a short jaunt from the Lodge.

Below is a map of several vantage points in surrounding areas which are easily accessible from the Lodge (*all within a 6 mile drive*).



Lake Manganese is due east of the Lodge. One can take a hiking trail from the Lodge to Lake Manganese or can drive down to the Lake.

Fort Wilkins State Park is located in Copper Harbor. It is a historical park operated by the Michigan Department of Natural Resources. The park preserves the restored 1844 army military outpost, Fort Wilkins, which was placed on the National Register of Historic Places in 1970.

Astor Shipwreck Park, which is across from Fort Wilkins, on Lake Superior. Walking a short distance from the parking lot, one is on the shores of Lake Superior looking out towards the North. Across the harbor, one will see the green light of the Lighthouse which adds a different vibe to looking up at the stars, but doesn't take away from the visibility and the atmosphere as the light is low to the ground.

In Copper Harbor, there is the **Jamsen's Bakery dock** and the **boardwalk** along Lake Superior. On the west side of Copper Harbor, there is **Copper Harbor State Harbor** and **Hunter's Point**, that offers similar views of the lake and the stars. Venturing further west along the shoreline, there is **Hebard Park**.

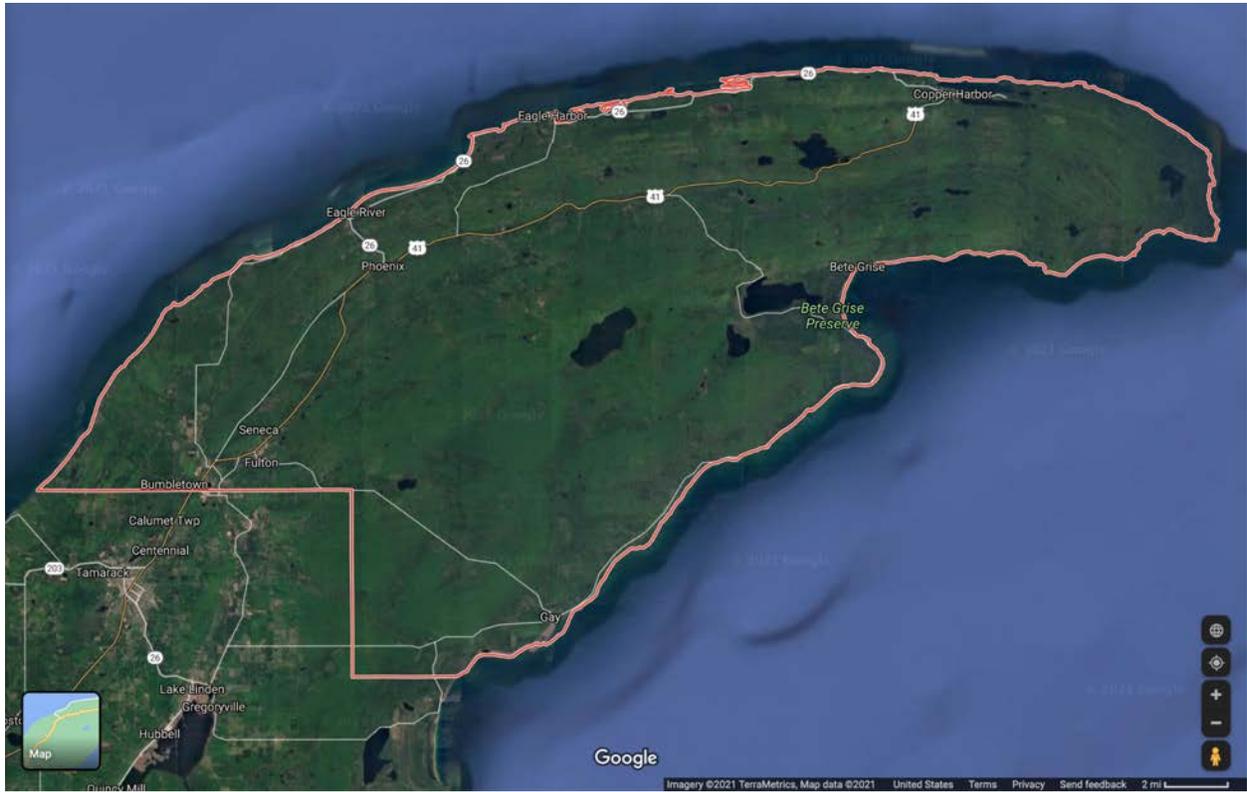
Elevation can be gained by going up **Brockway Mountain Drive**, which has a similar elevation as the Lodge (~1,100 feet above sea level). Along Brockway Mountain Drive, there are various pull-offs along the ridge road where one can stop and view the stars, including the Lookout and the Brockway Summit.

Many of these vantage points offer great opportunities for viewing the Northern Lights.



Photo taken by Pam Dyl

Other areas that could be of interest, and are just off the map, are the Keweenaw Point, Estivant Pines, the Lake Medora boat ramp, Esrey Park, Eagle Harbor Beach, the beach at Eagle River, Mt. Bohemia, Lac La Belle, and more. The two maps below show Keweenaw County outlined and how little development and light pollution there is in Keweenaw County.



Source: lightpollutionmap.info, using the VIIRS 2020 data for the map overlay

Keweenaw County and Keweenaw Outdoor Recreation (KORC) have submitted proposals to the Michigan Department of Natural Resources (DNR) to purchase close to 16,000 acres which would become a state park. This land is adjacent to the Lodge property. If that land purchase

takes place, it would create the 3rd largest state park in Michigan and would make most of the tip of the Keweenaw an outdoor destination. This will help protect the dark skies from light pollution. [More info is provided in the appendix]



Milkyway, at High Rock - Keweenaw Point (photo taken by Chris Guibert)

The Lodge is situated near two national parks, Keweenaw National Historical Park and Isle Royale National Park (an island). National parks are known for their ability to see the stars, as we have seen several US national parks be designated as dark sky parks by the International Dark-Sky Association. [16 as of April 15, 2021³]. These parks include both wilderness-oriented and historically-oriented national parks. In the Keweenaw we have both, with the Keweenaw Mountain Lodge situated between the two national parks. Since the Lodge has a similar feel to national parks being that the structures on the property have a WPA/CCC-era architecture, we relate to the national park philosophies.



In addition, we are also near several state parks at the top of the Keweenaw: Fort Wilkins State Park. Interestingly enough, there is legislation in Michigan that does not allow state parks in the Upper Peninsula of Michigan to apply for being a dark sky park⁴. However, state parks in the U.P.



offer wonderful night sky viewing. Thus, another reason that we are taking the initiative to champion this project and to educate state park visitors about viewing the dark sky. [Bob Wild, from Fort Wilkins has written a support letter]

Note: McClain State Park that is within a 45 minute drive of the Keweenaw Mountain Lodge, and offers views of the dark skies and the Northern Lights from the shores of Lake Superior.

All of these places provide additional locations that visitors can view the stars from, with the Lodge being the headquarters for the primary stargazing educational and outreach activities that are organized and championed at the top of the Keweenaw.

To conclude, the Upper Peninsula (U.P.) of Michigan is a wonderful place to take advantage of viewing the dark skies. Being a peninsula at the top of a peninsula, the Keweenaw offers endless opportunities to stargaze. This is illustrated in the letters of support from individuals and organizations, as well as in cases such as Megan Elwood Madden, Professor of Geochemistry at the University of Oklahoma. Originally from Illinois, Megan spent the summers in the Keweenaw. As a kid, looking up at the stars in Copper Harbor led Megan to pursue a career as a scientist interested in geochemistry:

“When I was a kid, I used to lie on our dock and stare up into space trying to grasp just how big the Universe was, how long ago the light left the stars before it reached me and

³ Source: <https://www.darksky.org/our-work/conservation/idsp/parks/>

⁴ Public Act 451 of 1994, as referenced in Dr. T.K. Lawless County Park application, page 61

much more. I knew then that I wanted to be [a] scientist and learn more about the world and the Universe around me.”

Source: <https://solarsystem.nasa.gov/people/2020/megan-elwood-madden/>

Park Resources

Natural Resources

The Keweenaw Mountain Lodge has about 3 miles of hiking and biking trails on property, with direct access to 35+ more miles of trails located in the Copper Harbor Trails System. In the winter, the property offers 6 miles of cross country ski trails and 2 miles of snowshoe trails. The mixed forests are made predominantly of tall white pines, birch, maple, and oak. The trails are lined with thimbleberries, huckleberries, and blueberries. Columbine, Milkweed, Big-Leaved Aster, and Black Eyed Susan make up some of the common wildflowers found on the grounds. These habitats are home to over 300 species of bird as well as deer, bear, porcupine, marten, coyote, rabbit, wolf and more.

Historic Resources

The Lodge building and rustic log cabins found at the Keweenaw Mountain Lodge are original to the development of the property in 1934 (*exceptions: Cabins 6 and 22 each were destroyed by fire and completely rebuilt, the conference room portion of the lodge building was added in 2007, the 6-room motel was built in 1984 and is currently employee housing*). The cabins and the lodge were built using the timber that was harvested from the 9 hole golf course.

The golf course was originally planned to be an 18 hole golf course, however was scaled back to 9 holes after it was found how much maintenance and time it took to upkeep. The back 9 was routed, but not built. They are now the on-property trail system called the Back 9 Trails that connect to the greater Copper Harbor Trails Club system. Along the trails you will find signs indicating where you are on the Back 9 had the back 9 holes been built.

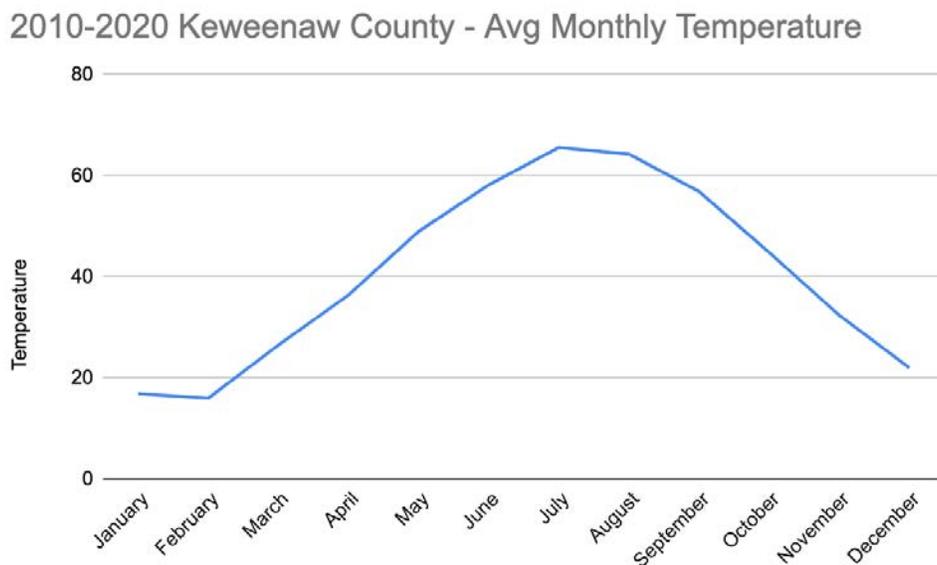
As mentioned earlier, the Keweenaw Mountain Lodge and cabins are protected under both the State (1976) and National (1980) registers of Historic Places.

Weather and Climate

The Keweenaw Peninsula is a finger of land that is surrounded by Lake Superior, and separated from the rest of the Upper Peninsula of Michigan by the Keweenaw Waterway. Lake Superior significantly controls the climate of the Keweenaw Peninsula, and keeps it notoriously unpredictable. Copious amounts of lake-effect snow will fall on the Keweenaw each winter as a result of cold air masses passing over the warmer air hovering above the lake. Average snowfall in the Keweenaw is 250 inches a winter season. Spring in the Keweenaw is a short and sweet

transition into a mild summer. Fall brings a gorgeous display of color as the trees begin to prepare for another winter season.

The average monthly temperature ranges from 16 to 67 degrees fahrenheit throughout the year. Below is a chart showing the average monthly temperatures in Keweenaw County for 11 years, from 2010 to 2020.



With the lake effect from Lake Superior, we see the variability of cloud cover and perception throughout the year. As such, we see an average of 150-160 days of sun / clear nights. This is not ideal for stargazing when compared to places like Colorado where they have 300-330 days of sun / clear nights. However, when the skies are clear, they are crystal clear. And this is one of the reasons that the Keweenaw is known for its heavy snow.

Artificial Light and Light Pollution

Light pollution is defined as “the brightening of the night sky caused by street lights and other man-made sources, which has a disruptive effect on natural cycles and inhibits the observation of stars and planets.”

Man-made or artificial light is used excessively and inappropriately in many situations. Poorly shielded lights not only waste electricity, but also waste the light itself by letting it escape into the night sky instead of focusing it down on the area or objects it is intended to illuminate. Light pollution disrupts wildlife and ecosystems, and has an impact on human health.



This map shows an excerpt from www.lightpollutionmap.info. It shows the most recent (2019) measurement of light pollution on a panned out map of the Keweenaw Peninsula, with Keweenaw Mountain Lodge being the red pin. It also shows that the Keweenaw Mountain Lodge is 35 miles from any significant light pollution.



This map shows a closer view of the Keweenaw Mountain Lodge and surrounding Copper Harbor area, with the Keweenaw Mountain Lodge being the red pin.

These images from www.lightpollutionmap.info use data from 2019. Since then we have been working on decreasing the light pollution as you will read in the light management plan. For example, we embarked on replacing the street lights on the property over the past year, with the majority of the street lights on property being dark sky compliant and LED as of February 2021).

The street lights being replaced January / February 2021, showing the older lights



The new street lights that were installed, in January and February 2021



RWL2-S-30-30-D-7P7-3-G- ALUM ARM
When ordered in 3K this is dark sky rated

RWL™ G2

Cobrahead

DESCRIPTION

The RWL™ G2 fixture from TGS represents a new performance-based, forward-thinking design for roadway lighting for residential/commercial streets, intersections, and high-speed roadways. Designed for both retrofit and new construction, RWL™ G2 provides multiple lumen packages with field adjustability and distribution options. A Comfort view optic lens is applied to minimize glare and backlight while maximizing luminaire efficacy. RWL™ G2 has tool-less entry providing quick access for installation and maintenance. A variety of control options are available for future upgrades.



APPLICATION

Roadway, Parking Lots, Walkways and General Outdoor Spaces



Here are the before-and-after pictures for when the street lights were replaced with dark-sky compliant street lights in the Lodge parking lot and along the cabin road on property (via our webcams from our web site).

Hole 1 / Brockway Webcam, with the old street lights in place. Hole 1 street light pole is where the cameras are installed



Hole 1 / Brockway Webcam, with the Hole 1 street light replaced with Dark-Sky Compliant light fixtures, but the cabin road street lights not yet changed out



Hole 1 / Brockway Webcam, with the Hole 1 street light and cabin road street lights replaced with Dark-Sky Compliant light fixture (note: event with more street lights working on the cabin road, there is less light pollution on the golf course)



Hole 1 / Brockway Mountain Webcam, looking at lights along the cabin road, after installing dark-sky compliant street lights (fully-shielded, LED lights) -- the Northern Lights are on the upper-right of the picture



Lodge Webcam, before changing out the street light next to the Lodge and before changing out the corner light with a dark-sky compliant light fixtures



Lodge Webcam, after changing out the street light next to the Lodge and before changing out the corner light with a dark-sky compliant light fixtures



Lodge Webcam, after changing out the street light next to the Lodge and before changing out the corner light with a dark-sky compliant light fixtures



Lodge Webcam, after changing out the street light next to the Lodge and before changing out the corner light with a dark-sky compliant light fixtures, and without holiday lights (and the snow has melted)



With these changes to the exterior lighting, we should see a lower artificial light impact in the next update of the data on www.lightpollutionmap.info.

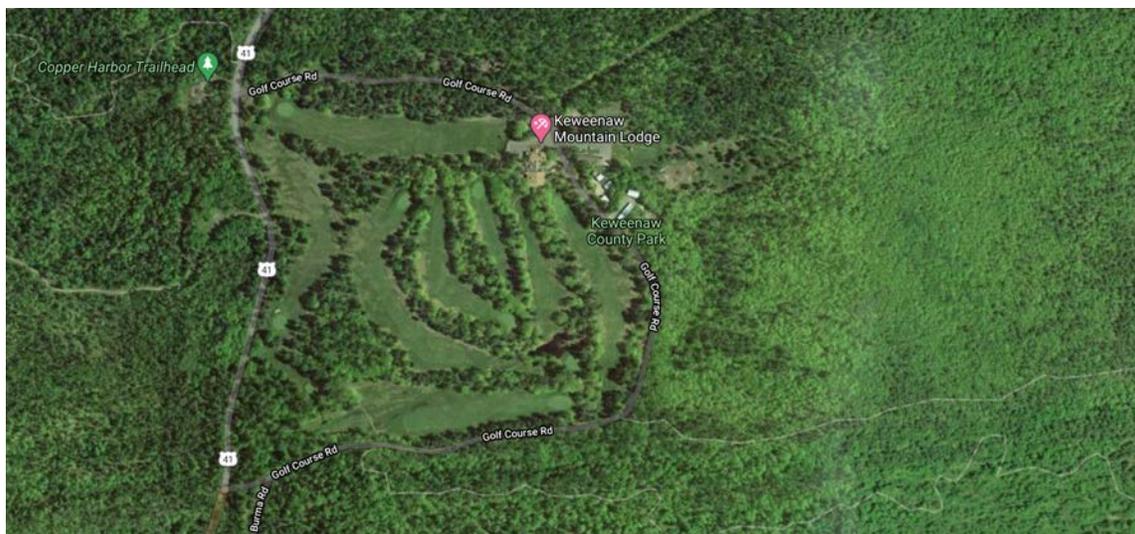
Note: The webcam of the Lodge and of Hole 1 / Brockway Mountain can be viewed at any time by going to our website, <https://keweenawmountainlodge.com/about/webcams/>

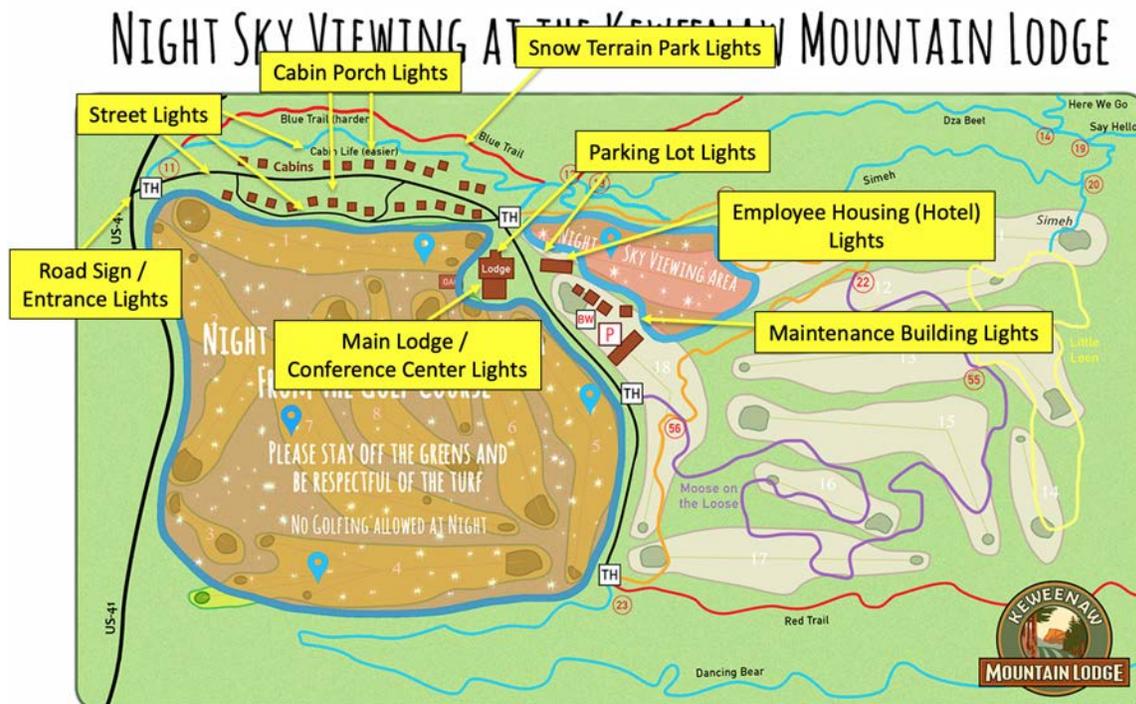
Lightscape Management Plan

The Lodge was run by Keweenaw County for 84 years until it was purchased by Keweenaw Resort, LLC in 2018 (a private company). Since the ownership change, leadership has focused on moving step-by-step towards energy-efficient operations, as well as inventorying and minimizing light population in order to magnify the beauty of the skies above us. Our overall philosophy of light management on the Lodge property is to only use lighting where and when it is needed, and when it is needed do so in an appropriate amount for the specified task required. When needed, outdoor lighting fixtures are fully shielded, 3,000K color temperature or less, and we make use of timers and motion sensors. This is for the purpose of protecting and preserving the current dark skies within the Keweenaw Mountain Lodge grounds, and to lead by example by promoting good outdoor lighting practices to the surrounding communities.

Property Map with Lighting

Below are property maps of the resort. The first map shows a satellite view of the entire 177 acres. The second map indicates the vicinity of each of the lighting groupings mentioned in the lighting inventory table, including the street lights we changed this past winter (changed to LED and fully shielded -- dark sky compliant).





PLEASE BE RESPECTFUL OF LODGING GUESTS WHEN NEAR THE CABINS: KEEP NOISE TO A MINIMUM

THE NIGHT SKY CAN BE EASILY VIEWED FROM MANY SPOTS ON THE PROPERTY. THIS MAP HIGHLIGHTS VANTAGE POINTS (📍) FOR THE BEST VIEWING OF THE STARS

Lighting Inventory

Less than 8% of the Lodge property has lighting (<14 acres of the 177 acres). The light fixtures within that area are documented in the lighting inventory table. However, ideal viewing areas are outside the range of the lighting that is on property (as illustrated by the “Night Sky Viewing at the Keweenaw Mountain Lodge” map above).

Below is a table showing the lighting inventory on the Keweenaw Mountain Lodge property as of March 28, 2021. We inventoried 164 outside lights, with 137 of them (84%) being dark-sky compliant. Lights are grouped together based upon the different types of light fixtures and bulbs used. We have been working the past 2.5 years to install lights that are dark sky compliant: fully shielded, less than 3,000K color temperature, and energy efficient (e.g. LED). There are several light types that we still need to improve as it relates to being dark sky compliant. Those are lights in the employee housing / hotel parking lot, the maintenance area, snow terrain park, and several around the conference center area of the main lodge building (e.g. wall packs). The employee housing / hotel parking lot and snow terrain park lights are turned off. There is enough light in the rest of the Lodge’s parking lot that we do not need to use them in the remaining portion of the parking lot which is near the employee housing / hotel area. For the snow terrain park, those lights will only be turned on when the terrain park is used (which isn’t later than

10pm on any given night), and it is not being used at this time⁵. Taking this into consideration, it could be argued that 92% of the outside lighting on the Lodge property is dark-sky compliant, which would put the Lodge at this time above the 90% threshold for designated Dark Sky places. That said, we do have a plan to improve the light fixtures that are currently not dark-sky compliant.

Location	Fixture	Fully Shielded?	Operable?	Special Purpose, <500 Lumens	Application	Conformity w/LMP	
Street/Parking Lots	A. x27 Fixtures on 25' Poles, 30W LED 3000K	YES	YES	NO	Parking Lots, Entrance Road, Photocell Operated	YES	
	B. x6 Fixtures on 25' Poles, 250W Metal Halide, 20,000lm	YES	YES	NO	Parking Lots, Photocell Operated	NO (see note 1)	
Main Lodge/Conference Center	A. x2 Fixtures 8.5W LED, 2700K, 800lm	YES	YES	NO	Conference Center Entrances	YES	
	B. x5 Fixtures 8.5W LED, 2700K, 800lm	YES	YES	NO	Main Lodge Corners	YES	
	C. x3 Fixtures 50W LED, 3000K, 6,000lm	YES	YES	NO	Conference Center Entrances/ Carport, Manually Operated	YES	
	D. x2 Wall Packs 250W HID, 20,000lm	NO	YES	NO	Conference Center Walls, Photocell Operated	NO (see note 2)	

⁵ The Snow Terrain Park isn't operable at this time. Snow Terrain Park was built and used for two winters, 2009-2010 and 2010-2011, and closed after that. The Terrain Park is planned to be used again in the near future, so we have included the lights in our inventory.

Road Sign / Entrance	A. x2 Fixtures 300W Type T Halogen, 5,200lm	NO	YES	NO	Road Sign Illumination, Photocell Operated	NO (see note 3)	
	B. x2 Fixtures 6W LED, 2700K, 500lm	YES	YES	NO	Entrance Gate, Photocell Operated	YES	
Cabin Porches	A. x41 Fixtures 9.5W LED, 2700K, 800lm	YES	YES	NO	Cabin Entrances, Motion Sensor Operated	YES	
	B. x52 Solar Fixtures "0W Equiv." LED, 3500K, 5lm	YES	YES	NO	Cabin Signs, Solar, Photocell Operated	YES	
Employee Housing (Hotel)	A. x5 Fixtures 8.5W LED, 2700K, 800lm	YES	YES	NO	Hotel Doors, Photocell Operated	YES	
Maintenance Buildings	A. x2 Fixtures 250W HID, 20,000lm	NO	YES	NO	Garage Doors, Photocell Operated	NO (see note 4)	
	B. x1 Wall Pack 250W HID, 20,000lm	NO	YES	NO	Door, Photocell Operated	NO (see note 5)	

Snow Terrain Park	A. x14 250W HID, 20,000 lm	YES	YES	NO	Tree Mount, Only operated when in use	NO (see note 6)	
Holiday/Event Lighting	A. xVariable. Christmas Lights	NO	YES	YES	Front of Lodge, Holiday/Wedding use only	YES	

Notes referred to in the lighting inventory spreadsheet above:

- Note 1: Even though the street light fixture is fully shielded, it does not meet our requirements for energy efficiency and LED lighting at this time. As with lighting that does not meet our lighting requirements, we have it in our development plans to replace these fixtures, which amount to 5 current street lights: 1 street light fixture next to the east side of the main lodge building, 3 street light fixtures in the hotel / employee housing parking lot (which are not turned on), and 1 street light next to the tennis courts (which is not turned on).
- Note 2: There are two wall back lights, 1 on the south side of the Main Lodge / Conference Center and 1 at the service entrance of the Main Lodge / Conference Center, that are 3,000K or less in color temperature. However, they are not fully shielded and are not energy efficient. We are researching lights that can replace these two light figures, and that fit our lighting requirements and still provide safety lights for their respective areas of the building.
- Note 3: On the entrance sign of the Keweenaw Mountain Lodge (on US Hwy 41), we have two light fixtures that are not fully shielded, and don't point completely downward. As well, the two light fixtures use halogen light bulbs. We are working to move the location of the lights so they are downward facing, and to replace the lights with fully shielded fixtures, be 3,000K color temperature, and energy efficient (e.g. LED light bulbs).
- Note 4: The two light fixtures are on the cart barn and one of our maintenance shop buildings. They are older street lights, like we replaced along Golf Course Road and the parking lot earlier this year. We look to replace them with LED lighting that is fully shielded with 3,000K color temperature or less.
- Note 5: The wall pack light fixture on the water treatment building is not fully shielded. We will replace it with a similar light fixture that we will use on the Main Lodge / Conference Center (see Note 2).
- Note 6: The 14 light fixtures that are on trees in the Snow Terrain Park are fully shielded, but do not meet our requirements for energy efficiency and LED lighting at this time.

They are turned off when the terrain park isn't used. We plan to replace these light fixtures to be in line with our lighting requirements. However, they are our lowest priority for changing at this time because they are not heavily used, and when they are used, they are only used for a very limited time period. Once the Snow Terrain Park is open more, the priority to change these light fixtures will be greater, and we will change them to be more energy efficient.

Lighting Requirements

We have the following guidelines when evaluating new lighting on Lodge property:

- Outside lighting be dark-sky compliant: fully shielded, 3,000K color temperature or less. Where it is an option, use timers and motion sensors
- Reduction of energy consumption using energy saving light fixtures, minimizing the time lights are on, and the removal of unnecessary lighting
- Provide a safe observing area for dark sky viewing where the public can enjoy the beauty of the stars
- As part of our education and outreach initiatives, we will work with individuals and organizations in the area to educate them about what we have learned regarding artificial lighting as it relates to dark skies.

Our lighting meets or surpasses the lighting ordinances for Keweenaw County. Per the county's ordinance, all lighting shall be down-shining and shielded from adjoining properties and roadway per the requirements of Section 15.2. Here is an excerpt of the Section 15.2 where lighting is referred to:

Section 15.2 LIGHTING REQUIREMENTS

A. All outdoor lighting above 150 watts, including illuminated signs, shall be placed, and shielded to reduce glare and reflect light away from adjacent Residential Districts and adjacent dwelling units as well as to prevent interference with the vision of persons on adjacent highways.

B. All freestanding outdoor lighting shall not exceed thirty (30) feet in height except to light a public athletic field, except for lighting located in public rights-of-way used to light public streets.

C. All off-street commercial parking areas open to the public shall be illuminated by natural or artificial light during all hours of operation, and not more than thirty (30) minutes after the business closes.

D. All lighting in business districts used for the external illumination of buildings, so as to feature said buildings, shall be placed and shielded so as not to interfere with the vision of persons on adjacent roads and streets or adjacent property.

E. Illumination of signs shall be directed or shaded downward so as not to interfere with the vision of persons on the adjacent roads and streets or adjacent property.

The full zoning ordinance can be found online at:

<http://keweenawcountyonline.org/docs/ZoningOrdinance.pdf>

Individuals on Lodge staff who oversee facilities maintenance are educated on the lighting guidelines. As a team, they work on the maintenance of outdoor lighting within the park and strive to meet or exceed the benchmarks prescribed for Dark Sky Parks as indicated by the International Dark-Sky Association.

By following our lead, individuals and organizations in the community can find ways to reduce their energy consumption and artificial light usage.

Night Sky Measurements

Measurements of the Keweenaw Mountain Lodge's dark skies were taken at numerous locations throughout the property using a Unihedron SQM. The results are shown below (*median of the readings, which included 3 to 6 each*). Readings were taken on property, and at various surrounding areas that were mentioned in an earlier section. A map of where the readings were taken is also included.

On the Lodge Property, Sky Quality Measurements

17 sky-quality readings were taken on the Lodge property from February to April 2021. The average Zenith readings on the Lodge Property was 21.30.

Location	Zenith Readings	Date	Time	Temperature
Hole 1 Tee Box	20.78	2/18/2021	12:00am	6 *
	21.11	3/6/2021	11:15pm	13 *
	21.14	3/12/2021	9:00pm	20 *
	21.51	4/3/2021	10:11pm	47
	21.51	4/10/2021	10:40pm	48

Hole 8 Fairway	21.53	3/6/2021	11.30pm	13 *
Back 9 Trailhead	21.16	2/18/2021	12:14am	6 *
	20.19	2/20/2021	6:35am	4 *
	21.49	3/12/2021	9:00pm	20 *
	21.63	4/3/2021	9:55pm	47
	21.24	4/15/2021	10:59pm	32
Tennis Court	21.42	4/3/2021	10:20pm	47
Open Field, East of Tennis Court	21.80	4/3/2021	10:25pm	47
Behind Cabin 23	20.78	3/19/2021	10:00pm	35
	21.91	4/3/2021	10:42pm	47
In Front of Cabin 7, on Golf Course	21.53	4/3/2021	10:34pm	47
Lodge Roof	21.34	4/10/2021	10:00pm	48

* We did not take the temperature reading at the time of taking the SQM reading, so this temperature is the average for that day in the Keweenaw (taken from the Houghton Memorial County airport, from wunderground.com)

Below is a map of where the readings were taken, as indicated by the red pins.

NIGHT SKY VIEWING AT THE KEWEENAW MOUNTAIN LODGE



PLEASE BE RESPECTFUL OF LODGING GUESTS WHEN NEAR THE CABINS: KEEP NOISE TO A MINIMUM
 THE NIGHT SKY CAN BE EASILY VIEWED FROM MANY SPOTS ON THE PROPERTY. THIS MAP HIGHLIGHTS VANTAGE POINTS (📍) FOR THE BEST VIEWING OF THE STARS

Horizon Photos on Lodge Property

Pictures were taken of the horizon from the Lodge property to indicate the various views from the Lodge property looking north, east, west, south.

Horizon Photo, looking north, from the disc golf course, Hole 1, taken April 9, 2021



Horizon Photo, looking east, from the tennis course, taken April 17, 2021



Horizon Photo, looking west, from Hole 1 tee box, taken April 17, 2021



Horizon Photo, looking south, from Hole 9 green, taken April 4, 2021



Surrounding Areas, Sky Quality Measurements

Six (6) sky-quality readings were taken from surrounding areas in April 2021. The average Zenith readings from surrounding areas was 21.34.

Location	Zenith Readings	Date	Time	Temperature
Hebard Park	20.91	4/15/2021	10:08pm	40
Copper Harbor State Park	21.39	4/15/2021	10:20pm	40
Astor Shipwreck Park	21.49	4/15/2021	10:30pm	40
Fort Wilkins State Park	21.57	4/15/2021	10:36pm	40
Lake Superior at Jamsen's Bakery Dock	21.33	4/15/2021	10:43pm	40
Copper Harbor Community Center	21.34	4/15/2021	10:48pm	40

Night Sky Educational Program and Outreach Initiatives

Nearby Astronomy Clubs

The Keweenaw Mountain Lodge is working on putting education and outreach activities into place with astronomy clubs. Programs will encourage interest in astronomy and valuing the preservation of the Lodge's dark skies for future generations. The Marquette Amateur Astronomers who strive to further the public's interest and wonder of the cosmos, and Michigan Technical University AMJOCH Observatory⁶ where Michigan Tech students use the observatory to grow their own knowledge base of the night sky and offer community outreach events have both expressed interest in a partnership. One of the support letters is from a student in the Michigan



⁶ Source of image of the observatory: <https://www.mtu.edu/physics/research/amjoch.html> . The Observatory is in Atlantic Mine, near Michigan Tech University's campus, 50 miles from the Keweenaw Mountain Lodge.

Tech club, Troy Morris, who is a co-founder of a company (Kall Morris, Inc) that is focusing on cleaning up trash in space.

Dark Sky Calendar of Events 2021-2022

The Keweenaw Mountain Lodge has created a stargazing calendar of events for 2021 and 2022 with a focus on stargazing. These events will excite and educate guests about the benefits of eliminating light pollution and preserving the dark sky.

Night Sky Interpretive Talks: Join Lodge staff once a month throughout the summer, learn about and view the cosmos above you.

Night Time and Northern Lights Photography Workshops: Join Lodge staff (Pam Dyl) and guest instructors in learning how to take night time photos (e.g. meteor storms, the Milky Way, Northern Lights). The Night Time Photography workshops will be held once a month during the summer (e.g. June, July, August), and the Northern Lights Photography Workshops (2 or 3 of them, will be held between October and April, when the Northern Lights are more likely to be seen in the Keweenaw)

Lighting Management Workshop: Join Lodge staff (Mike Miller) in learning about how light pollution occurs, and how you can make changes to lighting on your own property to keep your skies dark. Working with the residents and local organizations with this event.

Date	Event	Notes
April 12, 2021	New Moon Star Party [did not take place, raining]	View the night sky under a New Moon
April 21 & 22, 2021	Stargazing: Lyrids Meteor Shower	View the meteor shower
May 6 & 7, 2021	Eta Aquarids Meteor Shower	View the meteor shower
June 10, 2021	New Moon and Solar Eclipse viewing party	View the night sky and solar eclipse under a New Moon
July 10, 2021	New Moon Star Party and Night Sky photography clinic	View the night sky under a New Moon and learn how to take the best night sky photos
August 12 & 13, 2021	Perseids Meteor Shower	View the meteor shower
October 6, 2021	New Moon Star Party	View the Night sky under a New Moon
January 2, 2022	New Moon Star Party	View the Night sky under a New Moon

March 2, 2022	New Moon Star Party	View the Night sky under a New Moon
April 30, 2022	New Moon Star Party	View the Night sky under a New Moon
May 30, 2022	New Moon Star Party	View the Night sky under a New Moon
June 28, 2022	New Moon Star Party	View the Night sky under a New Moon
July 28, 2022	New Moon Star Party	View the Night sky under a New Moon

As we build out our stargazing activities, we look to partner with more and more dark sky enthusiasts and organizations to help build out the educational and outreach initiatives in the Keweenaw. For example, there are individuals in the area that have a passion for night sky photography, namely the Northern Lights (e.g. Clayton Anderson, George Bailey, Steve Brimm, Jeremy Rowe).

Below are two fliers from several of our dark sky events.



International Dark Sky Park Support Letters

Individuals and organizations have graciously written support letters for this application. These letters are herein, listed in order of the date they were received.

Letter from Keweenaw Convention & Visitors Bureau, Brad Barnett



Keweenaw Convention & Visitors Bureau
56638 Calumet Avenue Calumet, MI 49913
Phone: (906) 337-4579 Fax: (906) 337-4285
Website: www.keweenaw.info Email: info@keweenaw.info

January 19, 2020

To the International Dark Sky Association:

It is my pleasure to write a letter in support of the Keweenaw Mountain Lodge to become an International Dark-Sky certified park.

Michigan's Keweenaw Peninsula is renowned for its incredible outdoor amenities and attracts visitors from across the United States seeking to connect with nature and participate in outdoor recreation. Because of the Keweenaw's northern geography and low levels of ambient light pollution, dark sky viewing (particularly of the Aurora Borealis) is popular activity for those drawn to the region, including photographers, star-chasers, campers, and the lay traveler. Creating a certified Dark-Sky park would build upon and amplify these activities for visitors.

Tourism is a critical component of the Keweenaw economy, and the park's creation will add to the existing visitor economy which supports more than 70% of employment in Keweenaw County. Keweenaw County includes nationally and internationally recognized attractions such as Isle Royale National Park, the Copper Harbor Mountain Bike Trails (IMBA Silver Level Ride Center) and Mount Bohemia Resort. Additionally, the County is home to numerous conversation sites allowing the public and visitors to experience the Great Outdoors year-round. The Keweenaw Mountain Lodge, located in Copper Harbor, is also an historic attraction and its ownership's philosophy of community partnership and public access to outdoor recreation make it a fantastic location for dark sky viewing.

In short, creating a certified Dark-Sky park at the Keweenaw Mountain Lodge would build upon the region's outdoor assets *and* help preserve one of the area's most precious characteristics: access to impeccable dark-sky viewing. We strongly encourage the International Dark-Sky Association to support the Keweenaw Mountain Lodge's efforts.

Sincerely,

Brad Barnett
Executive Director, Keweenaw Convention & Visitors Bureau

Letter from Keweenaw Adventure Company, Sam Raymond

April 1, 2021

To the International Dark Sky Association,

We at the Keweenaw Adventure Company – located in Copper Harbor, MI – are writing to nominate the Keweenaw Mountain Lodge (our neighbor) as a Dark Sky Park destination.

For over two-and-a-half-decades, the Keweenaw Adventure Company has been enacting ethical business practices that today are being defined on an international scale as sustainable and/or responsible tourism. We're a guide & outfitter company that truly values, respects and supports our pristine natural areas, our culturally rich heritage, our local community and economy. We understand our crucial role in facilitating experiences that "connect people with awe and respect to the Keweenaw Peninsula" — ultimately supporting regional sustainable tourism while maintaining the region's character and sense of place.

With that, having a Dark Sky Park destination in Copper Harbor would be an awesome attraction for the vast majority of our visitors looking to recreate in remote, pure regions unhindered by over-development. We annually host 5,000+ customers on our sea kayaking and mountain biking adventures each season – while an additional 5,000+ customers frequent our retail and bike repair shop – and a Dark Sky Park would undoubtedly complement efforts to attract yet more outdoor enthusiasts and adventures to the area.

Regards,

A handwritten signature in black ink, appearing to read "Sam Raymond".

Sam Raymond
Owner
Keweenaw Adventure Company

Letter from Copper Harbor Trails Club, Nathan Miller

April 3, 2021

Dear International Dark Sky Park Association,

On behalf of the Copper Harbor Trails Club, I would like to offer this letter of support for the Keweenaw Mountain Lodge's application to become a Dark Sky Park. We believe that the Keweenaw Mountain Lodge and the Copper Harbor area would be a perfect addition to the program. Our excellent dark skies offer visitors the opportunity to regularly glimpse the northern lights, Milky Way, meteor showers, and more.

Surrounded by Lake Superior on three sides, the undeveloped landscape surrounding the Keweenaw Mountain Lodge serves as an excellent backdrop for stargazing. We have been impressed with the efforts that have been put in to improve night sky viewing opportunities at the Lodge and look forward to seeing what they come up with next.

The Copper Harbor Trails Club maintains over 37 miles of non-motorized, human powered trails, many of which cross Keweenaw Mountain Lodge property. A big reason our visitors love hiking, mountain biking, and camping in the Copper Harbor area is the potential to see the northern lights and a far greater abundance of stars than they would back home under light-polluted skies. This designation would recognize the Lodge for its efforts and help to attract even more people keen on seeing the unmarred night.

On a personal level, I grew up about twenty minutes from one of the first International Dark Sky Parks, Cherry Springs State Park in Pennsylvania. I loved attending their astronomy events and grew to appreciate the beautiful nighttime views. The night skies here in the Keweenaw are easily comparable to Cherry Springs and are one of the reasons I came to live here. I believe that similar programs, events, and community benefits could be gleaned from accepting the Keweenaw Mountain Lodge as a Dark Sky Park.

A handwritten signature in black ink, appearing to read "Nathan Miller".

Nathan Miller
Executive Director, Copper Harbor Trails Club
www.copperharbortrails.org

Letter from Keweenaw Economic Development Alliance, Jeff Ratcliffe



March 31, 2021

International Dark Sky Association
5049 E. Broadway Blvd #105
Tucson AZ, 85711

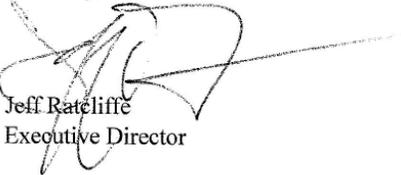
To Whom It May Concern:

On behalf of the Keweenaw Economic Development (KEDA) board of directors, the local economic development organization working in Keweenaw, Houghton, and Baraga counties, I am writing to support the Keweenaw Mountain Lodge's nomination as a Dark Sky Park.

John Mueller's acquisition of the Keweenaw Mountain Lodge has had a transformative effect on the lodge and the surrounding community with his embrace of outdoor adventure recreation and appreciation and promotion the Keweenaw's natural beauty. The Mountain Lodge is a unique and historic lodging establishment that blends perfectly with its beautiful surroundings. The Mountain Lodge not only provides a one-of-a-kind lodging experience that is a respite from busy lives but also offers a serene place to disconnect from the world and re-connect with nature. The Dark Sky Park will complement not only this experience but add to the experience of other visitors to the area and our residents.

Becoming a Dark Sky Park is a perfect next step to the Mountain Lodge's establishment as a unique destination in the Keweenaw and KEDA is excited to support this effort.

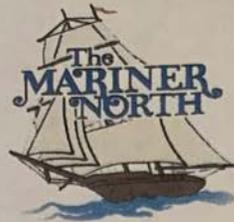
Sincerely,



Jeff Ratcliffe
Executive Director

902 College Avenue • P.O. Box 724 • Houghton, Michigan 49931 • 906-482-6817 • www.kedabiz.com

Letter from Mariner North, Don and Peg Kauppi



P.O. Box 85 • Copper Harbor, Michigan 49918 • (906) 289-4637

**Re: Keweenaw Mountain Lodge
Dark Sky Nomination**

International Dark Sky Association:

We, at The Mariner North LLC, send this letter to show our strong support for the application/nomination of the Keweenaw Mountain Lodge, Copper Harbor, MI, as an International Dark Sky Park.

We have been in business here for 44 years and have seen our small, remote tourist town strive hard to offer our beautiful ancient geology, fresh Lake Superior water, gorgeous vistas and exposure to nature for public access, while still maintaining an environment that allows our customer base to enjoy world renowned trails...hiking, biking, kayaking, skiing etc in a natural, pristine setting.

The success of the Keweenaw Mountain Lodge nomination holds benefits not just for their business, but for the community of Copper Harbor and the other businesses as well. Our population is small however, our visiting tourists find our ability to service them very strong. International Dark Sky Association members will find the views from the Keweenaw Mountain Lodge grounds extraordinary, and will also have access to various locations, some easy to access and others worth the effort, on the Keweenaw Peninsula where they can continue to enjoy a complete connection with the cosmos.

The Keweenaw Mountain Lodge is open year round and with neighboring businesses has marketing abilities already in place for every season that would facilitate the Dark Sky membership enjoying our natural, unreal world in all seasons.

Thank you,

The block contains two handwritten signatures in dark ink. The first signature is 'Don Kauppi' and the second is 'Peg Kauppi'. The signatures are written in a cursive, flowing style. Below the signatures, the names 'Don and Peg Kauppi' are printed in a bold, sans-serif font.

Don and Peg Kauppi

Owners

Letter from Fort Wilkins, Bob WildGRETCHEN WHITMER
GOVERNORSTATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSINGDANIEL EICHINGER
DIRECTOR

April 05, 2021

To International Dark Sky Association:

Fort Wilkins Historic State Park is pleased to provide this letter of support for a nomination of the Keweenaw Mountain Lodge to receive recognition as a Dark Sky Park.

Keweenaw Mountain Lodge is nestled in Copper Harbor, Michigan's northern most county. Far from urban areas, Northern Michigan has quality dark sky conditions. Keweenaw Mountain Lodge is a great candidate for a dark sky park for numerous reasons.

First, the location is great for night sky viewing because of its location, elevation, and view scape. It is just far enough from the nearby Lake Superior shoreline and the exposed bedrock cliffs (both of which can alter quality dark sky "seeing" conditions when using a telescope) and it offers expansive open sky views even for sights near the horizon which is often difficult to find around here.

Secondly, the staff at the Keweenaw Mountain Lodge fully embraces the concept of dark sky preservation.

Third is there is a definite need. Out of town visitors are often awed by the quality dark sky conditions Northern Michigan has to offer. This region's economy relies on tourism and we have plenty of tourists looking for a quality location for night sky viewing. Keweenaw Mountain Lodge is a great location to serve as a dark sky park.

Thank you for providing us with the opportunity to voice our enthusiasm and support for this proposal.

Sincerely,

*Robert Wild*Bob Wild
Park Supervisor
Fort Wilkins Historic State Park
Copper Harbor, Mi 49918

Letter from Grant Township, Scott Wendt

April 5, 2021

To the International Dark Sky Association:

It is the pleasure of the Grant Township Board, Keweenaw County Michigan, to support the nomination of the Keweenaw Mountain Lodge, the celebrated jewel of Grant Township, to receive recognition as a Dark Sky Park.

The historic Keweenaw Mountain Lodge, built by the WPA (Works Progress Administration) during the depths of the depression, is a designated Michigan State Historic Site and on the National Register of Historic Places. Nestled among topography that is reminiscent of mountainous northern New England, the Keweenaw Mountain Lodge is cradled by remote boreal forests, the deep waters of Lake Superior, and time worn conglomerate peaks. The ruggedness and natural beauty of the area has attracted visitors for generations to experience one of the most unique and treasured corners of the Midwest.

Known for the beauty of its intense Northern Light and Milky Way displays, the direct area surrounding the Keweenaw Mountain Lodge has long benefited from the Night Sky Tourism industry. With the advent of Night Sky Predictor Apps, visitors flock to the tip of the Keweenaw Peninsula to view the wonders the night holds. Set against the backdrop of passing freighters far out on the lake and nearly pristine dark skies, the viewing wonders of the Keweenaw Mountain Lodge and the surrounding area is truly a breath-taking adventure.

Receiving the Dark Sky Park recognition would be a great honor for the Keweenaw Mountain Lodge, one that will involve in-depth education and local preservation focus. The Keweenaw Mountain Lodge team has the drive, ambition, and passion to accept and foster a coveted Night Sky Park Designation to maintain and preserve the unique Upper Peninsula night sky viewing for generations yet to come.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Wendt", is written over a horizontal line.

Scott Wendt, Grant Township Supervisor

KEWEENAW COUNTY
230 Gratiot Street | P.O. Box 76, Copper Harbor, MI 49918 | P: 906.289.4292 | F: 906.289.1029 | TTY: 800-469-3777
granttownshipmi.org

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Letter from Michigan Nature Association, Julie Stoneman

April 7, 2021

To the International Dark Sky Association:

The Michigan Nature Association (MNA) enthusiastically endorses the Keweenaw Mountain Lodge's (KML) application for Dark Sky Park designation.

MNA is a statewide, nonprofit land trust dedicated to permanently protecting natural lands throughout the state to provide habitat for rare, threatened, and endangered species; imperiled natural communities; and unique geologic features. We have permanently protected hundreds of acres at the tip of Michigan's Keweenaw peninsula in close proximity to KLM and can attest to the singular quality and clarity of the night sky in this rugged and beautiful area.

Many of the lands we protect in the area are part of an important flyway for raptors and other migratory birds. These lands connect to a larger network of conservation lands held by both public and private entities, contributing to important wildlife corridors for a number of species. We know the importance of dark skies for wildlife movement and migration, and we applaud KML for working to not only manage and limit light pollution but to also pursue Dark Sky Park designation.

It is exciting to know that KML will provide sky watching programs and events that celebrate dark skies; educate about the negative impacts of light pollution on birds, wildlife, and people; and provide access for thousands to a wondrous natural resource that is becoming increasingly difficult to find—a truly dark sky.

We hope you will give KML's application your most serious consideration.

Thank you,

Julie Stoneman

Julie Stoneman
Director of Outreach and Education

www.michigannature.org

Letter from Keweenaw Community Forest Company (dba, KORC), Gina Nicholas**KEWEENAW
COMMUNITY
FOREST
COMPANY**

A Michigan 501(c)3
13992 Smith Fishery Road
Mohawk, MI 49950

April 8, 2021

Mr. John Mueller
Keweenaw Mountain Lodge
14252 US Highway 41
Copper Harbor, MI 49918

RE: Keweenaw Mountain Lodge Dark Sky Park Application

Dear John:

The purpose of this letter is to indicate the Keweenaw Community Forest Company (KCFC), a non-profit conservation and outdoor recreation company operating primarily in Keweenaw County, Michigan, strongly supports your application to the International Dark Sky Association for designation of the Keweenaw Mountain Lodge as a Dark Sky Park.

The major industry of Keweenaw County is tourism and there is increasing interest in conserving the dark night sky and providing safe viewing locations for visitors and residents. The Keweenaw Mountain Lodge is an ideal destination for a Dark Sky Park because it is accessible by everyone in all seasons. While Keweenaw is fortunate to have several great locations for viewing the night sky including planets, meteor showers, satellites, stars, constellations and the northern lights, several locations are only accessible on a seasonal basis.

Designating the Keweenaw Mountain Lodge as a Dark Sky Park would also enhance education opportunities for our area. In the past, conservation organizations have sponsored night sky events with astronomy professors from Michigan Technological University, but have not done so in recent years due to safety and liability concerns of the landowners. The Keweenaw Mountain Lodge is a great location for hosting educational events as well as expanding visitor opportunities.

KCFC supports your application for a Dark Sky Park at Keweenaw Mountain Lodge and looks forward to a favorable decision by the International Dark Sky Association.

Sincerely,

Gina M. Nicholas
President, Keweenaw Community Forest Company

Note: Keweenaw Community Forest Company is the legal entity for Keweenaw Outdoor Recreation Coalition (KORC). KORC's mission is to bring together individuals, businesses, and outdoor recreation, conservation, and community organizations to secure permanent public access to at-risk land in the Keweenaw.

Letter from Charlie Eschbach, Estivant Pines

The Keweenaw Traveler
110 Quincy St.
Hancock. Mi. 40031

Subject: Keweenaw Mountain Lodge and Resort Dark Sky nomination.

In the last 31 years I have been editor and publisher of the Keweenaw Traveler which is our area tourist information publication. We feature the Keweenaw in all it's natural wonders with detail hikes, water routes, mountain biking and how to visit our natural attractions. Each year we cover the Perseid meteor showers and the frequent Aurora displays..

The Keweenaw Mountain Lodge and Resort (which we refer to as the “Jewel of the Keweenaw”) is positioned on the spine of the Keweenaw Peninsula. That combined with the Peninsula's exposure to the dark sky and black expanse of Lake Superior, make the Resort perfect as a Dark Sky observatory.

When you combine the Dark Sky attractions with the comfort of the Resort as your base camp, the countless outdoor adventures during the day will complete what we call PURE KEWEENAW.

Long Time Keweenaw Traveler

Charles Eshbach

Letter from Keweenaw County, Don Piche

5095 4th Street, Eagle River, MI 49950
(906) 337-2229

To the International Dark Sky Association:

Keweenaw County is writing in support of the Keweenaw Mountain Lodge's request for recognition as a Dark Sky Park.

The Mountain Lodge was owned by Keweenaw County from the time of its construction in the 1930(s) until it was sold to Keweenaw Resort, a private company headed by John Mueller, in 2018. The County has been delighted with the progress of the Mountain Lodge under Keweenaw Resort's ownership. Significant rehabilitation and maintenance measures and upgrades have been undertaken at the Mountain Lodge without any adverse impact to the historic nature of the property and its wilderness ambience. Notably, with reference to the Dark Sky application, street lighting and some interior lights were recently modernized to mitigate any upward glare toward the sky.

Under its new ownership, the Mountain Lodge has been transformed from a seasonal to year-round destination to the benefit of the Mountain Lodge and other local businesses. The Mountain Lodge remains welcoming to the public and cooperative with local organizations, such as the Copper Harbor Trails Club, in jointly-promoting adventure and wilderness tourism and related events. New walking, skiing, and snow shoe trails have been established at the Mountain Lodge, and horse trails may be established on nearby property that the Mountain Lodge is seeking to acquire from the County. Additional activities, such as a winter snow park, are expected in the future.

Designation as a Dark Sky Park is wholly consistent with Keweenaw Resort's vision and local residents' aspirations for their community. Star gazers and night photographers are the types of persons that are drawn to the northern portion of Keweenaw County, along with like-minded nature, silent sports, and adventure enthusiasts.

Maintaining a dark sky in northern Keweenaw County at the Mountain Lodge and elsewhere will help keep the County a wonderful and largely unspoiled destination for present and future generations of visitors. The County strongly encourages approval of the Mountain Lodge's application.

Sincerely,

A handwritten signature in cursive script that reads "Donald Piche".

Donald Piche, Chairman
Keweenaw County Board of Commissioners

Letter from Kall Morris Inc, Troy Morris

KALL MORRIS INC

KEEPING SPACE CLEAR FOR ALL

April 16, 2021

To the International Dark Sky Association:

With pleasure we write this letter of support for the Keweenaw Mountain Lodge to become an International Dark Sky Park.

The Keweenaw Peninsula is remarkable to residents and visitors, as it stands out among the Upper Peninsula, let alone Michigan, the entire Midwest, and as a highlight of the United States for its access to nature and availability of outdoor recreation. The abundance of natural beauty extends from the stones and shores to the skies above it, as Lake Superior shields the Keweenaw from the far-off cities that visitors flock from. With this northern and remote position coupled with low light pollution, daytime visitors have been treated to nighttime vistas overhead for decades, enjoying otherwise-unavailable views of the Milky Way, natural constellations, and the conveniently located Aurora Borealis. The identification of this outdoor abundance by the Dark Sky certification of Keweenaw Mountain Lodge would help promote these properties while securing them for future visitors and generations.

As a relatively undisturbed and remote segment of the American continent, tourism to the area is as important to the education of visitors as it is vital to the area economy. The Keweenaw is home to an amazing array of nationally and internationally renowned environmental attractions, building on the prestige of the entire Upper Peninsula for both the casual and committed adventurers. With the Keweenaw Mountain Lodge's location in famed Copper Harbor, this Dark Sky park will join as a jewel in the crown among Isle Royale National Park, the repeatedly awarded Copper Harbor Mountain Bike Trails, and the distinguished Mount Bohemia Resort. These already-present natural attractions demonstrate the community partnership philosophy that extends these outdoor opportunities to residents and visitors alike.

In conclusion, the certification of Keweenaw Mountain Lodge as an International Dark Sky Park would preserve the present potential of unobstructed and undiluted views for visitors of the near and continued future. We strongly encourage the International Dark Sky Association to support the Keweenaw Mountain Lodge's efforts and appreciate your consideration.

Sincerely,



Troy M. Morris, Director of Operations

www.kallmorris.com

Email: troy@kallmorris.com Phone: (815) 528-8665



Letter from Pure Michigan, Dave Lorenz

April 19, 2021

To the International Dark Sky Association:

It is my pleasure to write a letter in support of the Keweenaw Mountain Lodge's application for International Dark-Sky Park designation.

Michigan's Keweenaw Peninsula is renowned for its incredible outdoor amenities and attracts visitors from all over the world seeking to connect with nature and participate in outdoor recreation. Because of the Keweenaw's northern geography and low levels of ambient light pollution, dark sky viewing (particularly of the Aurora Borealis) is a popular activity for those drawn to the region, including photographers, star-chasers, campers, and lay travelers. Creating a certified Dark-Sky park would build upon and amplify these activities for visitors.

Tourism is a critical component of the Keweenaw economy, and the park's creation will add to the existing visitor economy supporting more than 70% of employment in Keweenaw County. Keweenaw County includes nationally and internationally recognized attractions such as Isle Royale National Park, the Copper Harbor Mountain Bike Trails (IMBA Silver Level Ride Center) and Mount Bohemia Resort. Additionally, the County is home to numerous sites allowing visitors to experience the Great Outdoors year-round. The Keweenaw Mountain Lodge, located in Copper Harbor, is also a historic attraction and its ownership's philosophy of community partnership and public access to outdoor recreation make it a fantastic location for dark sky viewing.

Creating a certified Dark-Sky park at the Keweenaw Mountain Lodge would build upon the region's outdoor assets *and* help preserve one of the area's most precious characteristics: access to breathtaking dark-sky viewing. I strongly support International Dark-Sky designation for the Keweenaw Mountain Lodge, Copper Harbor, Michigan.

Sincerely,

A handwritten signature in black ink that reads "Dave Lorenz". The signature is written in a cursive style with a large, looped "D" and "L".

Dave Lorenz, Vice President
MEDC - Travel Michigan
300 N. Washington Square
Lansing, MI 48913
(517) 243-3073

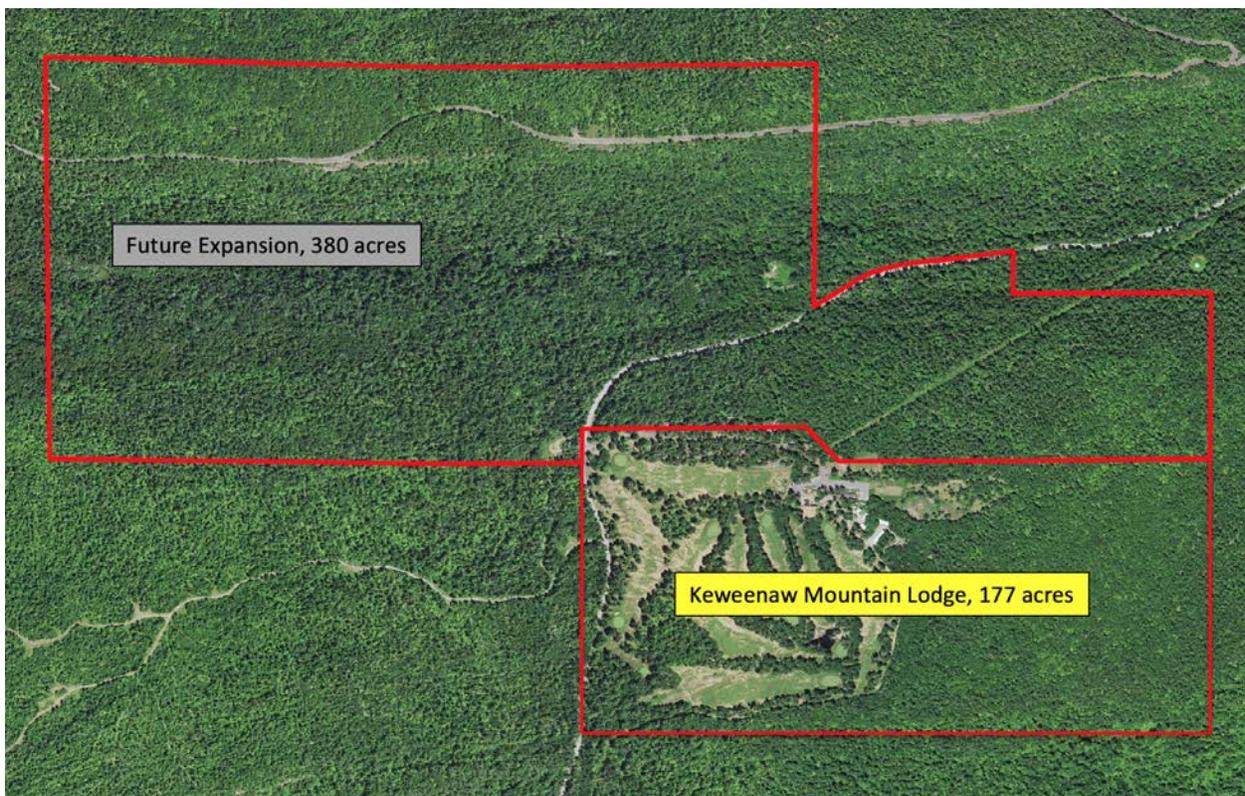
Michigan Economic Development Corporation

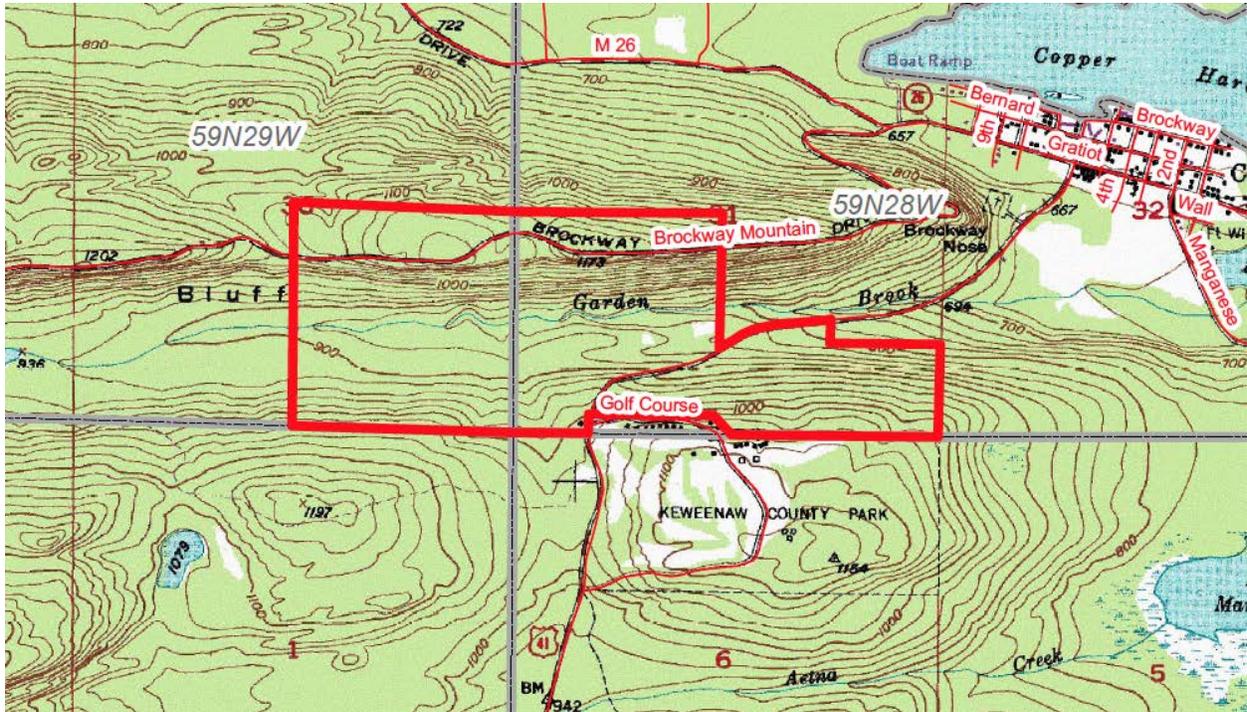
300 North Washington Square | Lansing, MI 48913 | 888.522.0103 | michiganbusiness.org | michigan.org

Appendix

Additional Developments with Property in the Keweenaw to Increase the Dark Sky Initiatives in the Area

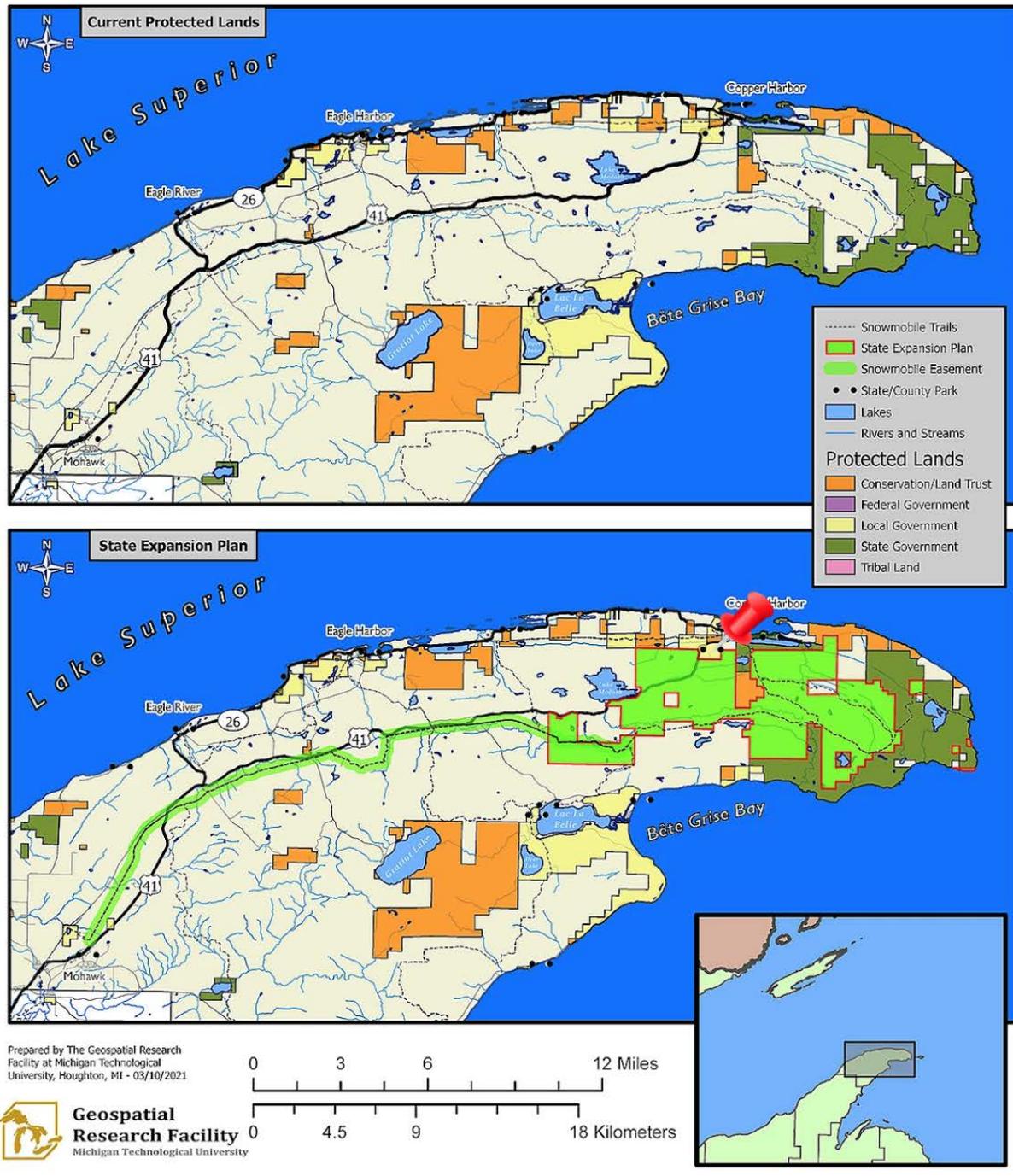
The Lodge also has under contract another 380 acres adjacent to the lodge property. This would increase the Lodge property from 177 acres to 557 acres. On the property there is 310 acres of conservation easement, which will help protect the dark skies from light population. Any development in the 70 development envelope on that property will take in consideration the dark sky compliant lighting.





Keweenaw County and Keweenaw Outdoor Recreational Coalition (KORC) have submitted proposals for the Michigan Department of Natural Resources (DNR) to purchase ~15,800 acres at the top of the Keweenaw. If approved by the DNR, this would create the 3rd largest state park in the state of Michigan. The Lodge sits adjacent to the proposed land purchase (see the map below; the red pin indicates the location of the Lodge property).

Keweenaw Outdoor Recreation Coalition (KORC) Keweenaw Tip Recreation Area Expansion



Source: <https://www.keweenawoutdoorrecreation.org/>