Dear, Mr. John Barentine,

As an International Dark-sky Park (approved in 2011), Hortobágy National Park Directorate - as its managing agency - have the obligation of providing an annual report from the Park's activities. You can find our report about the year of 2017 (until now) below:

1. Public programs, interpretation
   Until today we had 20 different programs (open air school programs, presentations, star-gazing tours, museums' night, workshops, observatory programs) for the public, dedicated to the Starry-sky Park. Participants all together were about 1000 people. We shall have an estimated 10 more such programs (planned) this year.
   We would like to raise two programs: the first is the Hungarian Astronomical Society's Messier Marathon which was held in Hortobágy (end of March) and next year they plan to come back. The other was the meeting of the hungarian national parks’ environmental educators (March). One important topic was the link between dark sky and environmental education.

2. Lighting
   Within the park we achieved the reducing light emission of two -formerly disturbing-light sources („Alföldi hodály” and the Fishing Company’s new office.). We have also negotiations with more landusers to decrease their light emission.

   There were public lighting modernizations with LED in three surrounding settlements (Balmazújváros, Tiszacsege, Egyek). The new lighting fixtures are full cut-off ones but unfortunately the color temperature is too cold (4000 K). We sent letters to the mayors asking them to dim the intensity of lighting after 11 pm.
   With the help of Lukas Schuler (Dark Sky Switzerland) evaluation was made about the changes - comparing before and after the new lighting installed- of Tiszacsege. According to the evaluation except some spots there was not significant change in the light pollution of the settlement. (Annex. 1.)

3. Public observatory
   We operate a public observatory at Máta „Open air school”. It is accessible for the public and we use it for astronomical and environmental education programs.
   The Debrecen Television made a report about the observatory, and they also helped us to create a video message for the Warrumbungle Dark-sky Park (Australia) for its opening ceremony.

4. Camps
   We had three camps where astronomy and dark-sky park was part of the curriculum:
   Camp of the Rónaőrzső Society at Góres (July) and National Park children camps (July, August).
5. Other events
- We joined to the Night Light Interreg Project. In this project regional authorities from The Netherlands, Hungary, Spain, Luxemburg, Denmark, Slovenia and Italy join forces to improve their regional policies for the prevention of light pollution, preservation of dark skies and the sustainable exploitation of dark sky places. The project will introduce packages of regional policy measures for each of the partner regions that will result in a lasting reduction of light pollution, the designation of nature areas where dark skies are protected and the introduction of new services and facilities to attract eco-tourism to these dark sky areas. The project’s website: https://www.interregurope.eu/nightlight/
We took part in two workshops (Luxemburg and Denmark) and in September an expert group visited us („peer review”). The group’s report will be published soon, we shall send it to you.
According to the project a dark-sky expert and stakeholder group was formed with the leadership of the Hajdú-Bihar County Council.
- We continued the visits of the operators of the main light pollution sources in the surrounding area. We have had negotiations about the mitigation possibilities.
- We continued our „nighttime patrols” with the National Park’s ranger service and the Environmental Inspectorate’s representative. We bought a Lux-meter to measure the light level of different lighting fixtures.
- We are preparing the submission document for the the UNESCO’s „Astronomy and World Heritage” thematic study.

6. Public information
- The dark-sky park has a separate sub-site on the Hortobágy National Park’s website: http://www.hnp.hu/csillagpark which is regularly updated.
- We wrote an article in the International Journal of Sustainable Lighting about Hortobágy Starry-sky Park: http://lightingjournal.org/index.php/path/issue/view/5
- We put new signs to the borders of the park. (Annex 2.)

7. Reducing light pollution, concrete actions
- Hortobágy village submitted (in August) a proposal with our help to the RO-HU Interreg Program to renew the public lighting of the village. The main goal of the modernization is to reduce light pollution.
- We sent a circular (in March) to all the surrounding settlements and all major stakeholders with the main lighting regulations and recommendations related to the Starry-sky park.
- We contacted (in April) the spatial planning agencies to start a common program to reduce the light pollution of Hortobágy area.

8. Monitoring

9. Other information
Since this year we have been seeing and managing the whole protected territory of Hortobágy National Park (82000 hectares) as a Starry Sky (Dark Sky) park. We started to survey all the facilities and make an up-to-date inventory of all lighting fixtures. If it will be completed, we shall submit it for approval for the IDA.

Kind regards,

Dr. Kovács Zita
Director