DARK SKY PRESERVES IN HUNGARY

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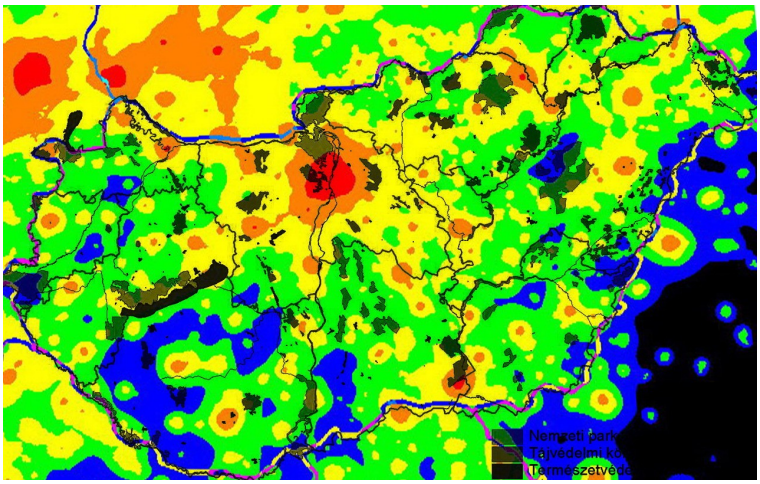
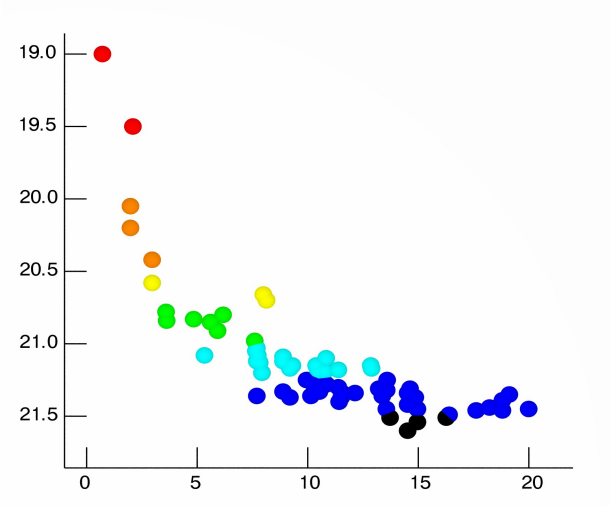
The hungarian protected area network (national parks, wildlife reserves) almost overlaps with the dark -sky areas – according to the satellite evaulation (P. Cinzano*). This fact indicates their mission in protecting dark skies as nature conservation is deeply interrelated with protecting the nocturnal landscape. Our goal was to identify those areas which could be suitable for the nomination to be dark sky preserves.



Protected areas (brown) and light pollution (growing from black-blue-green-yellow to red)

The first steps in establishing a dark sky preserve in Hungary have finished. The project was initiated at the 2nd Light Pollution Meeting in Hungary, October 27, 2006. At this occasion the director of the Duna-Dráva National Park Directorate and the president of the Hungarian Astronomical Association signed an agreement on the formation of a Dark Sky Preserve at the Zselic Landscape Protection Area. Our preliminary data on sky back ground demonstrate the excellent sky quality of the region.



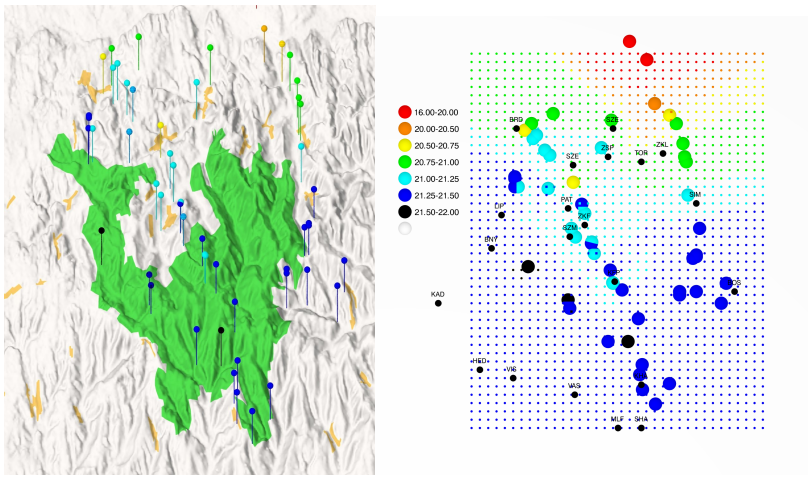
The brightness of the night sky vs. the distance from the city center of Kaposvár. The sky brightness is measured in magnitudes per square arcsecond. It is clearly visible that the largest light pollution source is Kaposvár. However, its effect is considerable only within a circle with 7 km radius. Note that some of low sky brightness measurements are taken close to the smaller settlements of the region - the light pollution from these villages is negligible .

According to the agreement, signed at the 2nd Light Pollution Meeting in Hungary, the Duna-Dráva National Park Directorate (DDNPD) includes the conservation of the night sky in its management plan and the Hungarian Astronomical Association (HAA) performs a night sky monitoring at the Zselic Landscape Protection Area (ZLPA) and its neighborhood. An educational footpath is planned in the region which gives information on astronomy, light pollution and the nocturnal habitat of local species. The DDNPD and HAA also agreed to contact the neighboring municipalities to involve them in the project.
The Zselic region, which is located at the South -West part of Hungary, is one of the best locations for dark skies in Hungary. The are a of the ZLPA is 9042 hectares, and its major part is woodland.

The woodland at the Zselic region provides perfect habitat for different species. The population of invertebrate animals is particularly diverse due to the tranquil environment

The plans of the dark sky preserve had a very good press coverage in Hungary; most of the major newspapers, television and radio stations reported the related events.
Since the signing of the agreement we have negotiated with the mayors of the neighboring villages. We have received positive reactions form all the 17 municipalities. We plan to sign an agreement with the mayors, to include a night sky friendly lighting code in their regulatory plans. In this agreement the Lighting Society of Hungary will be involved, too. Inside the ZLPA there is only a limited volume of artificial light source . The outdoor lighting fixtures are related to the recreational buildings of the local forestry. During the renovation and extension of these buildings the lighting system will be replaced with a night sky friendly system.

We have started the monitoring of the night sky background in the region. We will construct a detailed light pollution map of the ZLPA and its neighborhood. Our preliminary results suggest that on clear nights the quality of the sky is better than 21 magnitudes per square seconds.



Sky background measurements in the Zselic region. The average brightness of the night sky around the zenith was measured by an Unihedron Sky Quality Meter. The sky brightness is given in magnitudes per square arcsecond. The small black dots with three -letter-codes shows the settlements in the region.

It is estimated that the requirements of IDA for dark sky parks will be satisfied within a year, and the ZLPA will be nominated as a silver level dark sky park.

The 'Zselic Starry Sky Preserve' plays role also as a pilot project for further similar initiatives. Preliminary Plans exist at the Hortobágy National Park, to continue our joint efforts for protecting dark sky in Hungary.

The Hortobágy National Park – the biggest Hungarian biosphere reserve, part of the World Heritage - has mainly dry, mostly alkaline grasslands, and has also wet-marshy habitats, both forming a peculiar mosaicsturctured natural habitatplace.

The National Park is one of the darkest areas in Hungary, which would be a good candidate to be the second national “Dark Sky Preserve ”. Its significance is mostly related to the protection of the high biodiversity. A special monitoring program is going to start to survey the nocturnal species. We have also started negotiations with the local stakeholders, and with the regional regulatory boards. We do hope that Hortobágy can be nominated as a dark sky park in a year too.

* Cinzano, P; Falchi, F.; Elvidge, C.D., 2001,
'The first World Atlas of the artificial night sky brightness'
Monthly Notices of the Royal Astronomical Society, Volume 328, Issue 3, pp. 689-707.