

Measuring habitat loss in the Kiskunság based on historical and actual habitat maps

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One of the biggest threats to biodiversity is the loss and fragmentation of (semi) natural habitats. Based on a site condition map (developed from the AGROTOPO database, TAKI), the botanical interpretation of historical maps (I. Military Survey, III. Military Survey), and the actual vegetation map of the region (D-TMap, MÉTA database), we calculated the loss of area for the main habitat types.

In 1783 sand dunes and wet habitats were mainly in a semi-natural state, while only about 4% of the landscape was covered with (semi) natural woodlands. Compared to their natural, potential area at present, 99% of the steppe grasslands, 93–94% of the open sand vegetation (incl. juniper-poplar thickets), 82% of the flood-plain vegetation, 56% of the alkali vegetation, and 55% of the fen vegetation was destroyed by human activities.

The habitat loss is an on-going process which continues. By comparing the Gauss-Krüger topographic map (1985), and a satellite image (SPOT4, 1999), we have documented the loss of 40 074 hectares of (semi) natural habitat in the last 15 years (18% of the total). Of the destroyed habitats, 60% were fen vegetation, 25% alkali vegetation, 8% dry sand vegetation, 1.3% steppe vegetation, and 6% flood-plain vegetation (see maps in the inside covers).

The detailed evaluation of landscape changes between 1883 and the present, respectively, have also began (Figure 1).

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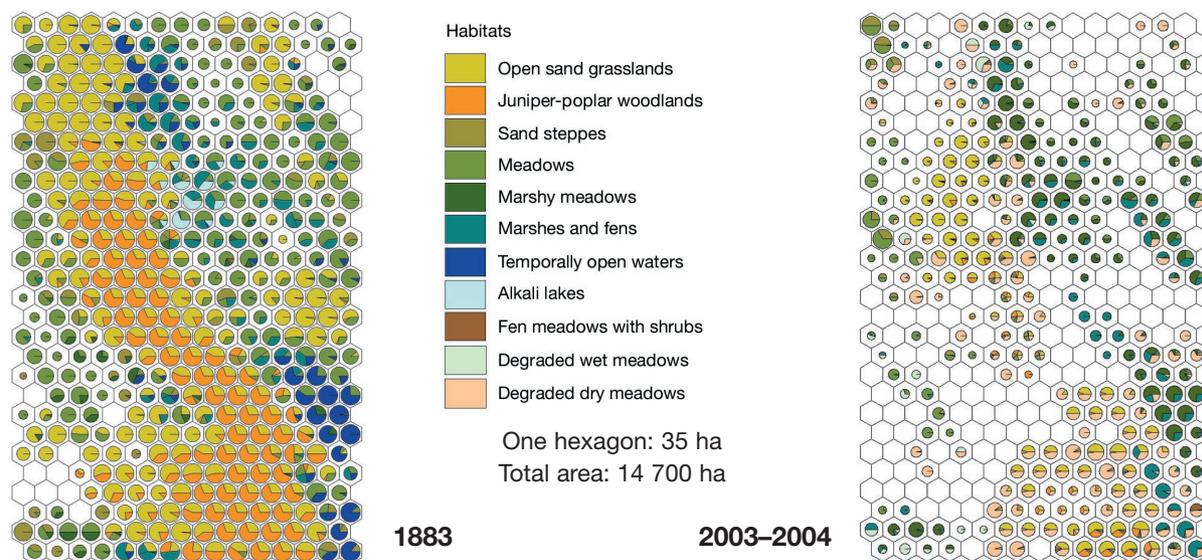


Figure 1. The high spatial detail of the III. Military Survey (1883) hinders the digitalization of the original historical map. To compare the past and present habitat pattern, the hexagon grid of the MÉTA database was overlaid onto the historical map, and the vegetation pattern was coded by visual interpretation. Results show that 84% of dry grasslands and woodlands and 51% of wet habitats disappeared from the landscape near Fülöpháza and Orgovány, as a result of arable farming, afforestation, and drainage, and another 20% of marshy habitat turned into degraded dry grasslands after the drainages and improvements in the 1980s.