

Background: Burial mounds (kurgans) of Eurasian steppes are man-made habitat islands that have the potential to harbour rich plant diversity due to micro-habitats associated with their topography.

Aims: We assessed whether kurgan micro-habitats harboured different species pools and functional groups from those found on the surrounding steppes. In addition, we asked if these mounds were affected by different grazing intensities from those on the surrounding vegetation.

Methods: We surveyed kurgan micro-habitats (northern and southern slopes, surrounding ditch) and adjacent steppe plains in non-grazed, moderately grazed and heavily grazed sites in northern Kazakhstan. We analysed differences in species composition of four habitats under three grazing regimes using Generalised Linear Mixed Models, PCA ordination and indicator species analysis.

Results: Kurgan micro-habitats had diverse vegetation and supported the co-existence of plant species with different environmental needs. We identified 16 steppe specialists confined to kurgan micro-habitats. Steppe vegetation was well-adapted to extensive grazing, although heavy grazing supported ruderals and a decline in steppe specialists. There was a significant interaction between grazing intensity and habitat type: heavy grazing supported ruderals and suppressed steppe specialists especially on the slopes.

Conclusions: We highlighted that kurgans play an important role as maintaining high plant diversity locally in extensive steppe plains in Central-Asia by increasing environmental heterogeneity and supporting specialist species confined to these micro-habitats.