

Impacts of surface water changes around lake Tengiz on breeding ecology of steppe birds

Lake Tengiz is one of the major sources of surface water in the dry steppe plains of central Kazakhstan. Recharged annually by the snow-melt in spring, lake Tengiz shows high seasonal variation in surface water area and is highly sensitive to both, climatic and anthropogenic factors such as precipitation, temperature, irrigation and household usage. The steppe plains surrounding lake Tengiz are one of the crucial breeding habitats for many steppe birds, including the ‘critically endangered’ Sociable lapwing (*Vanellus gregarius*). Very little is known about the impacts of fluctuations in lake Tengiz and surrounding smaller surface water bodies, on steppe bird populations.

We are looking to close this knowledge gap by asking the following questions –

1. What are the impacts of changing climate conditions, snow melt and precipitation on surface water level in lake Tengiz and surrounding area in the past 20 years?
2. How are surface water fluctuations impacting steppe habitat around lake Tengiz?
3. How has changes in surface water availability impacted steppe bird populations?

Remote sensing data

- Global surface water layers (<https://global-surface-water.appspot.com/>)
- Global water pack maintained by the German Aerospace Center (Deutsches Zentrum für Luft und Raumfahrt)

Expected output

- a) Mapping of surface water change hotspots surrounding lake Tengiz based on remote sensing data
- b) Breeding habitat suitability assessment based on interplay between seasonal surface water extent and vegetation during the peak bird activity (Mid-July – Mid October)
- c) Inferences regarding impacts of surface water fluctuations on other passage migrants from the Arctic?

Interested?

Contact – Tejas Bhagwat

tejas.bhagwat@biologie.uni-goettingen.de

