2nd International Convention on

Geosciences and Remote Sensing

November 08-09, 2017 | Las Vegas, USA

Modelling the seasonal distribution of wild Bactrian camels of Mongolia in relation to changes of the environmental conditions

Odonkhuu Daria

Education for Sustainable Development project, GIZ, Mongolia

 $\boldsymbol{\gamma}$ ild Bactrian camel (Camelus bactrianus ferus) is a critically endangered large ungulate species. Only three distinct populations **V** remained in the Desert of Central Asia. Population size in Mongolia is approximately 500 and distribution range has been shrinking. Application of GIS and remote sensing has not been used to study its distribution. The main objective was to identify the environmental factors influencing the distribution of the species in the study area. Distribution was predicted by MaxEnt modelling approach using presence only data with integrating the selected environmental predictors. Land surface temperature, NDVI, water sources, vegetation and soil types were used as main predictors in the modelling. Data set was separated into four seasons and model outputs were compared. Both the results of t-test (p<0.0001) and model prediction revealed that land surface temperature in summer has a significant influence on camel that preferring cooler areas avoiding hot temperatures of surrounding environment. Biomass abundance did not affect the camel distribution strongly. Camel preference to intermediate level of NDVI in most seasons can imply that food intake is based on forage quantity but not quality. Positive relationship of camel probability to higher NDVI in summer suggests that they prefer to herbaceous species which appear after rainfall. Model predicts that distance to the water sources is critical for camel distribution in all seasons and high probability of camel occurrence was predicted near water sources. Shallow mountain soils were predicted as desired soil types for distribution in summer. Spatial coexistence of herbaceous plants, mountain soils and areas of lower temperature are the favourable conditions in camel distribution during summer. There was a common distribution range predicted in spring, summer and autumn which can be considered as core distribution areas of annual range. Distribution of winter range is differed from other seasons. Distribution range predicted from the MaxEnt modelling was similar to the camel ranges described by other researchers. It can justify that there is a consistency between survey data and satellite tracking data to model the species distribution.

Biography

Odonkhuu Daria is a Researcher from Mongolia who has completed his Master of Science degree in 2012 at University of Twente, the Netherlands in the field of Natural Resources Management. He is the Scientist in Animal Ecology and specialized his carrier in studying biodiversity distribution by GIS and Remote sensing application. He has published 5 articles on wildlife ecology and distribution in major scientific journals.

odonkhuu@gmail.com

Notes: