

Predicting the distribution of vulnerable fishing cat *Prionailurus viverrinus* in Nepal

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Abstract

The fishing cat *Prionailurus viverrinus* is a wetland specialist endemic to South and Southeast Asia. Nepal represents the northern limit of its biogeographic range, but comprehensive information on fishing cat distribution in Nepal is lacking. We compiled fishing cat occurrence records (n=154) from Nepal, available in published literature and unpublished data (2009 – 2020), to assess their distribution. Bioclimatic and environmental variables associated with their occurrence were used to predict the potential fishing cat range using MaxEnt modeling. Fishing cat distribution was influenced by elevation, precipitation of the warmest quarter (18_bio), precipitation of the driest month (14_bio) and land cover. Wetlands and forest cover were the important predictors of fishing cat distribution. The model predicted an area of 4.4% (6,679 km²) of Nepal as potential habitat for the fishing cat. About two third of the predicted potentially suitable habitat lies outside protected areas, however a large part of the highly suitable habitat (67%) falls within protected areas. The predicted habitat map serves as a reference for future investigation into fishing cat distribution as well as formulating and implementing effective conservation programs for fishing cats in Nepal. Fishing cat conservation initiatives should include habitats both inside and outside the protected areas to ensure long-term survival. We recommend conservation of wetland sites, surveys of fishing cats in the identified potential habitats, and study of their genetic connectivity and population status.

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