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Trans-boundary conservation of Tibetan antelope by identifying its potential movement corridors in the alpine desert of Qinghai-Tibetan Plateau**Xiaowen Li, Jianbin Shi, Haijing Zhuge and Jiaxun Li**
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The alpine desert of Qinghai-Tibet Plateau (QTP) provides the world's largest habitats for the endangered Tibetan antelope (*Pantholops hodgsonii*, also known as chiru). Most female Tibetan antelope populations are seasonal long-distance migrants, but their migration routes (corridors) remain mysterious in the alpine desert of QTP. Three contiguous nature reserves (i.e. Altun, Kekexili, Qiangtang nature reserves) have been established to protect the endangered ungulate species and their habitats in QTP, but they are delineated and managed according to administrative boundaries. In this study, we employed a GIS-based model (i.e., Linkage Mapper) to identify potential movement corridors of chiru according to principle of the least-cost path. We also examined the impacts of human disturbance on the spatial patterns and conservation status of the identified corridors of chiru. Our results indicated that only 66% of the movement corridors for chiru were covered by the existing reserves, whilst 76% of the corridors were disturbed by human activities with a high overall disturbance index. The human disturbance index within the existing reserves was much lower than that outside the reserves, indicating the conservation efficacy of the reserves. More efforts and priority should be given to protect those corridors connecting the existing reserves for better movement and gene flow of chiru populations in different reserves. Our research developed the conservation strategy for different categories of the corridors (inside, outside, inter-reserve, opening) for chiru considering their spatial relationship with the existing nature reserves and highlighted urgent needs to implement trans-boundary conservation strategy between the three nature reserves across the alpine desert of QTP.

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