

EGU2020-1745

<https://doi.org/10.5194/egusphere-egu2020-1745>

EGU General Assembly 2020

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Characteristics of blown sand activities in sandy land on the eastern shore of the Qinghai Lake

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Wind regime, sand drift potential and sand transport amount are important indicators to evaluate regional blown sand activities. This paper took Ketu sandy land on the eastern shore of Qinghai Lake as study area. The sand transport amount data were collected monthly in 2013-2014 and 2016-2017 with 16-azimuth sand collector, and data of local wind velocity and direction were used to compare and analyze the typical blown sand activities. The results were as follows: (1) In 2013-2014, the mean wind velocity in the study area was 2.79m/s and the frequency of sand-driving wind was 6.76%. While they were 2.63m/s and 6.13% in 2016-2017, respectively. (2) The directions of the sand-driving wind in two years were similar, clearly from WSW-WNW and ESE-SSE. The frequency of western wind increased whereas the frequency of southeastern wind decreased. (3) The seasonal variation of sand drift potential in two years were similar with the largest in spring and the smallest in summer. According to the annual variation trend of sand drift potential, the study area was belonging to low wind energy environment. (4) There is a significant difference in sand transport amount between the two years. The amount in 2016-2017 was 77.18kg less than that in 2013-2014, while the distribution of sand transport amount was similar. The increase of vegetation coverage in this area is the main reason for the decrease of sand transport amount.