

Spatial-temporal evolution of blowout on the southeastern fringe of Otindag sandy land in recent decade

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In Otindag sandy land, the activation of stabilized sand dunes caused by climate change and human activities is the main reason of the development of desertification, and the activation of stabilized sand dunes is main manifested by the formation and evolution of blowouts. This paper explores historical evolution of blowouts in Otindag sandy land —a site that hosts a large number of active and stabilized blowouts. The multi-period high-resolution image data is applied to extract patterns of morphometric changes in erosional deflation basins. Blowout development in Otindag sandy land is characterized by several geometric and movement, including: i) generation, ii) extension, iii) union. Between 2010 and 2019, the area of blowout increased by 6.47hm^2 from 2010 to 2013. During 2013-2016, the area increased by 4.89hm^2 , following by the next three years, it continued growing by 3.04hm^2 . With little disturbance of human activity, the growth of blowouts in this area is largely affected by the change of climate factors. As the dynamic factor of blowouts, the reduction in sand drift potential, only decreases the development rate and slows down the process. The shapes of the blowout themselves also work as the main influencing factor.

Keywords: Blowout, Drift Potential, Otindag Sandy Land