

## 2. Natural hazards - NH

2.2. Ecosystem services of erosion regulation - research methods, historical and statistical trends, value assessment

### **Wind regime of the southeast of the West Siberian Plain as a risk factor for the development of soil deflation in agricultural landscapes**

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The article analyzes in detail the wind regime of the cold period of the year (CPY) (october-april) and assesses the deflationary danger of soils in the southern part of the Tomsk region. The source materials were historical-geographical, cartographic, literary sources, wind speed data for the cold period of the weather stations Tomsk, Pervomayskoye located in the subtaiga zone and Bakchar - in the southern taiga subzone. For the key section (20 km to the south-east of Tomsk), were used data from observations of the Tomsk aerometric station, located among agricultural land in an open area (1991-2015). Hourly data on wind speed and direction were analyzed for 2006-2015. The ratio of the percentage composition of physical clay (less than 0.01 mm) and physical sand (0.01-1.0 mm) was proposed to be called the deflationary hazard indicator (DHI). This indicator is determined for the upper soil horizons (0-10, 10-20 cm). The value of the DHI is distributed as follows: 0-0.3 - very much pliable; 0.3-0.6 - very pliable; 0.6-1.2 - moderately pliable; 1.2-2.0 or more - slightly pliable. Soil deflation occurs unevenly in time and space and is cyclical in nature from 1-2 to 5-6 years. In the snow layer, up to 824-1848 g/m<sup>2</sup> of aeolian particles accumulate during the years of active manifestation (2012). Deflation is most intense in the cold period of the year in the little-snowy winter during blowing snow. In addition, the process develops unevenly due to the influence of the meso-and micro-relief of arable land. Aeolian deposits in the snow layer are closely related to the soils of the region, the humus content reaches in them 5.1%.