First of all, we have to define the features we will use. Researching different papers I came to conclusion that the best features that can be constructed based on remote sensing images are: the topographic wetness index (TWI), Normalized Difference Vegetation Index (NDVI), Normalized Difference Soil Index (NDSI), form index (FI), coloration index (CI), brightness index (BI), nitrogen reflectance index, yellow leaf index, bare soil index and slope.

TWI is an index that measures soil moisture and changes with elevation. The TWI indicates areas with a greater risk of erosion [1]. NDVI (NDSI is pretty similar) uses the NIR and red channels to identify the land cover (ranges from -1 to 1, negative value - water, positive - green leaves) [2]. As for FI, CI, and BI, color is an essential indicator of condition of the soil. Soils that have undergone erosion exhibit a lower humus content and a lighter shade, resulting in a decreased coloration index [3]. Nitrogen reflectance index, yellow leaf index and bare soil index indicate such factors relevant to forest soil erosion, as vegetation density, vegetation health status, and soil exposure intensity [4]. An increase in slope results in a higher runoff speed, increasing the erosive capacity and facilitating sediment transport to watercourses. Therefore, we can use slope as an indicator of future potential spread of erosion and its prevention.

Works Cited

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