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Assessment of landscape diversity and determination of landscape hotspots – a case of Slovenia

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Areas with high landscape diversity can be regarded as landscape hotspots, and vice versa areas with low landscape diversity can be marked as landscape coldspots. The main purpose of this paper is to use quantitative geoinformatical approach and identify parts of our test area (the country of Slovenia) that can be described as very diverse according to natural landscapes and natural elements.

We used different digital raster data of natural elements and landscape classifications and defined landscape diversity and landscape hotspots. We defined diversity for each raster pixel by counting the number of different unique types of landscape elements and types of landscapes in its neighborhood. Namely, the method was used separately to define diversity according to natural elements (types of relief forms, rocks, and vegetation) and diversity according to existing geographical landscape classifications of Slovenia (types of landscapes). In both cases one-tenth of Slovenia's surface with the highest landscape diversity was defined as landscape hotspots. The same applies to the coldspots.

Additionally we tested the same method of counting different types of landscapes in certain radius also for the area of Europe in order to find areas that are more diverse at continental level. By doing so we were able to find areas that have similar level of diversity as Slovenia according to different European landscape classifications.

Areas with landscape diversity may have an advantage in economic development, especially in tourism. Such areas are also important for biodiversity, habitat, and species diversity. On the other hand, localities where various natural influences mix can also be areas where it is hard to transfer best practices from one place to another because of the varying responses of the landscapes to human intervention. Thus it is important to know where areas with high landscape diversity are.