Edge Density ED
(Landscape heterogeneity – Landscape Shape Index)

Layer Description

Definition: To define capacity of step stones for migration of species in an area.
Landscape Shape Index (LSI): Ratio of sum of edge lengths to minimum total length of edge of a constant reference area. LSI has the minimum value of one if the examined area consists of one single landscape patch and increases with the number of different patches.

$$LSI = \frac{\sum edges}{edge_{min}}$$

Realization: LSI was calculated by the Fragstats Tool for ArcGIS. The Analysis Type Moving Window was applied. Thereby a continuous surface is calculated. Whereas all the natural and semi natural landscape patches are considered for the calculation.
Type of Landscape Patches:
- natural landcover types: different wood types, biotope mappings, hedges, shrubs, water bodies
- agriculture landcover types: extensive and low intensive agriculture types
Applied with the moving window method the meaning of LSI corresponds with Edge Density (ED).

$$ED = \frac{E}{A} * 10000$$

The ED values are more suitable for the classification. Therefore ED was applied instead of LSI in this indicator.

Classification: The classification of ED values is based on reference areas. For this, some areas known for their high quantity of structure elements were chosen. These were areas within the Tyrol and the Engadine region.
Current classification:

ED	Indicator Value (1-100)
0	1
20	10
40	20
60	30
80	40
100	50
125	60
145	70
170	80
300	90
400	100

Layer Legend

■ 1
■ 10
■ 20
■ 30
■ 40
■ 50
■ 60
■ 70
■ 80
■ 90
■ 100