Ecological Distance

Within major types

Within major types, mapping units exist in an ecological space along local complex environmental gradients (LCEs). Their values for each relevant LCE are given by the major type adapted steps they occur on. If it occurs on more than one step it is given the value of the midpoint between the steps. The Ecological Distance (ED) between two mapping units within a major type is given as the sum of the absolute differences for all LCEs relevant to a major type.

Between major types

Gradients

When calculating the ED between two mapping units between major types, the mapping unit’s values for each of the LCEs are given by the basic step they occur on. Basic steps are in NiN given as letters, but are converted to numbers, so that a=1, b=2, and so on. ED between two mapping units from different major types is added as the sum of the absolute differences, weighted by one half, for all LCEs relevant to both mapping units (i.e. it has a value of more than zero for the basic step).

The mapping units are also given values for major type adapted steps along defining LCEs (dLCEs). The difference according to the dLCEs is added to the ED between mapping units from different major types. Firm ground mapping unit’s values for the dLCEs drought duration (TV), water disturbance intensity (VF), and spring water influence (KI) are subtracted from the ED to wetland, freshwater and marine mapping units.

Characteristics

In addition to LCEs, a set of characteristics is used to calculate the ED between mapping units form different major types. The mapping units are assigned values according to their characteristics and ED between the mapping units from different major types is added as the difference between the values for the characteristics. The characteristics and their values include:

* Position relative to forest line (only below=0, only above=1, can be both=0.5)
* Presence of soil (yes=0,no=2)
* Anthropogenic influence (natural=0, semi-natural=2, strongly modified=4)

Two ED units are added between mapping units from different major type groups, and between mapping units with different ecosystem engineering groups (or absence of such groups). The same rules of calculating ED applies to all spatial scales. ED that is not an integer value is rounded down (i.e. between mapping units that only occur below the forest line and those occurring bot below and above the ED is zero).