Developing an ecological continuum suitability index for the Alps – Acting with indicators, geodata and web based map tools.

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Several studies in the Alps in the last years have shown to experts the need maintain or rather to restore missing links between small and large scaled habitats. They are aware of the specific needs of a particular plant or animal. Nevertheless, the action or measurement to support migration must be done on the landscape functionality. Each landscape patch has to fulfil a specific requirement concerning the ecological continuum. But often we struggle with the required patch size compared with the study area as well as with a lack of public awareness of all these facts and components.

This study shows a possible solution for these aspects: A web based mapping tool was developed combining an ecological continuum suitability index (CSI) with the visualisation of migration probability of specific species. The CSI is built with nine environmental indices derived from a heterogeneous set of geodata in seven pilot regions in the Alps and weighted with different approaches combining known landscape indexes and expert opinions using the multi criteria approach.

The web map tool allows a user to analyse the CSI and compare the results in different areas as well as to simulate cost paths for a virtual migration of an individual. It also offers uploading data to compare the simulation with real observations. Using GIS functionality and the Google Maps API for ArcGIS Server it supports a seamless zoom from the alpine wide view to a very local insight only restricted by the data resolution varying between 1 ha and 1 km^2.

The availability of the tool in the World Wide Web and the user friendly interface offers the public a new view into ecological connectivity – so far restricted to experts - and will help to raise the awareness in this important aspect for the future of the Alps.