

Riparian landscapes: Linking geodiversity with habitat and biodiversity

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River landscapes of all scales originally showed a high diversity of structures and habitats at a small spatial entity, such as the stream beds, terrasses, sand and gravel banks. This variety, with a lot of different elements, patches and patterns, represents not only a variety of geoelements or geomorphological features but also a large biodiversity, both of habitats and species. Riparian landscapes are both, a natural as well as a geoheritage, often even a cultural heritage (sustainable land use practices). Embankments, utilization for agriculture, constructions for navigation, management measures lead to a strong loss of these structures. This impacts the value of the landscape as well ecosystem functions, not only the biodiversity and the geodiversity but also the recreation function or the aesthetic values.

A case study from the National Park Lower Oder Valley in the Northeastern part of Germany, which is also part of a Geopark („Eiszeitland am Oderrand“) presents the connections of the diversity of geomorphological features with biodiversity and shows the loss of features (loss of values) due to intensive utilisation by using GIS-analysis and landscape-metrics.

The Northern part of the Oder valley (National Park, transnational protection area of Germany and Poland) have been modified by man since centuries but even so remained in near-natural state that allows semi-(natural) stream dynamics. While the Oder's riparian zone is marked by the stream itself, by its bayous, reed beds, periodically flooded wet meadows and by its natural riparian forest the mineral morainic plateaus are marked by semi-natural forests and dry grasslands.

Two areas of different degradation states, a) near-natural and wilderness area and b) grassland area will be compared in order to identify:
quantity and extent of features,
relation of measure and coverage,
connectivity with other features,
quantity and types of habitats (with evaluation according to Natura2000 habitat types).

First results of that survey will be presented.