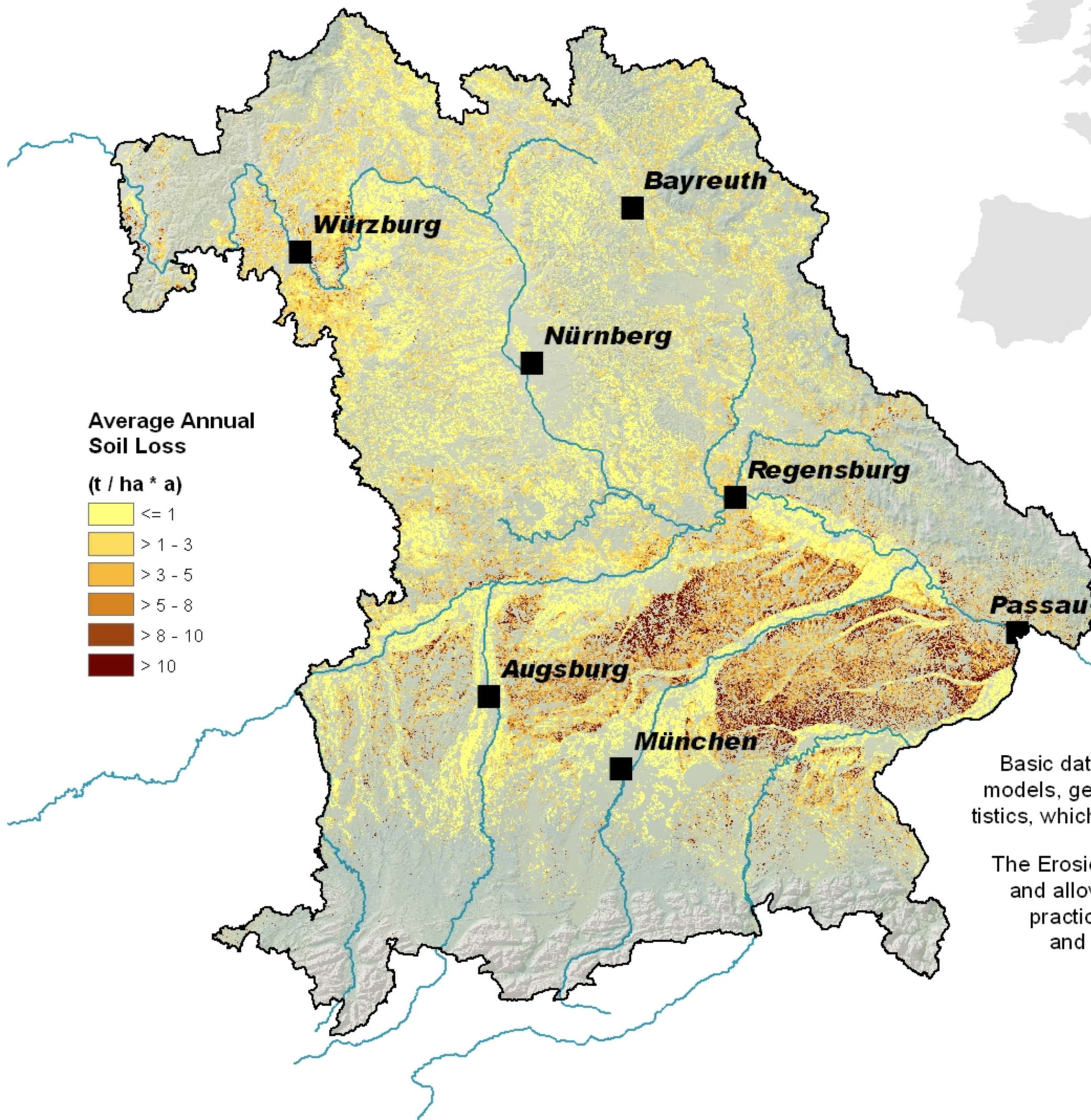


Estimation of Soil Loss in Bavaria

A GIS-based application of the USLE*



The Bavarian Atlas of Water Erosion Risk is based on the USLE (Universal Soil Loss Equation), developed in the USA by Wischmeier and Smith in the 1950s/60s as an empiric model capable of predicting the long-term soil loss on arable land.

The calculation is accomplished with the ESRI Software ArcGIS 10 and considers every agricultural used field in Bavaria.

Basic data used as input to the equation are digital elevation models, geological maps, precipitation maps and cropping statistics, which are available in a consistent Bavarian wide quality.

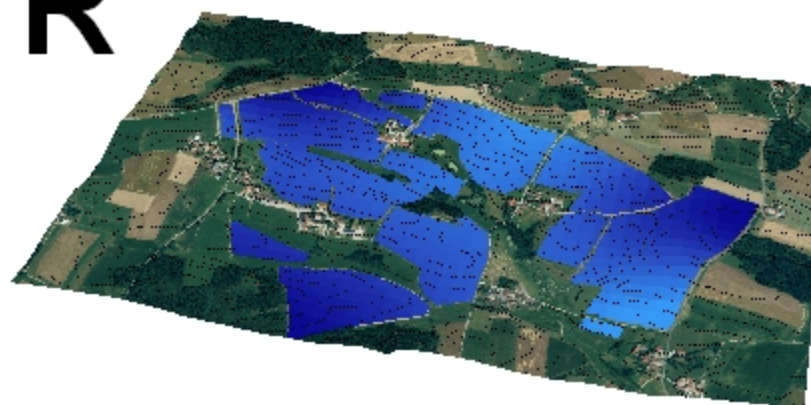
The Erosion Atlas points out the regions with high erosion risk and allows an assessment of the effectivity of soil protection practices. The maps are useful for agricultural consultants and landscape planners and are employed to reach the aims of the Water Framework directive.

*Universal Soil Loss Equation: $A = R * K * S * L * C * P$

A = average annual soil loss



R = rainfall index



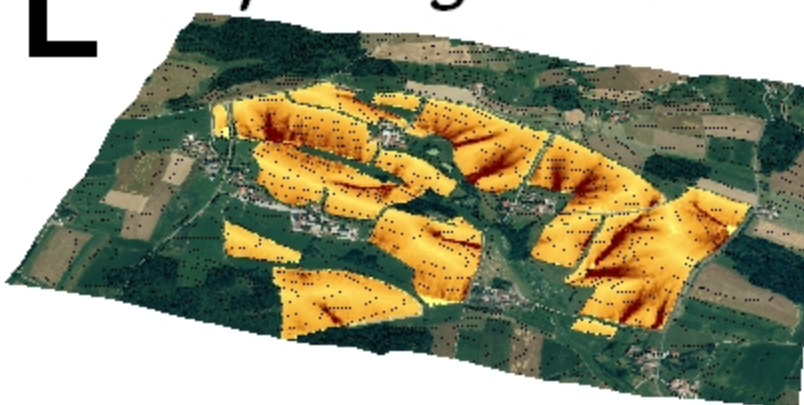
K = soil erodibility factor



S = slope factor



L = slope length factor



C = cropping factor



P = conservation practice factor
(here treated as a constant value in the equation)