

**EFFECTS OF URANIUM MINING ON LANDSCAPE ECOLOGY IN
EASTERN THURINGIA MINING DUMPS AND FLOODPLAINS AS
SINKS
AND SOURCES OF MINING RELATED SUBSTANCES**

NICOLE BECKERS, REGENSBURG

SUMMARY

Uranium mining activities caused a widespread dispersion of mining related substances in eastern Thuringia which had a strong impact on landscape and soil contamination. The function of soils as sources or sinks for mining related substances was assessed by geochemical analyses of soil and soil water samples from a covered mining dump and from a floodplain. The accumulation of carbon, heavy metals, and sulphur in the lower part of the covering caused by capillary ascending water was identified. Additionally an enrichment of carbon and other mining related substances close to the surface of the covered heap was found, Carbon proved to be the most important sink for mining related pollutants. Thus the accumulation in the covering has to be rated positively. In the floodplain there is a negative gradient of heavy metal contents in the soils. A long term fixation is highly likely at unchanged environmental conditions, except for uranium. High concentrations of uranium detected in the soil water indicated that polluted floodplains release uranium. Furthermore, it was possible to prove an input of mining related salts from mill tailings ponds. A connection between salt transport and hydrological regime in the floodplain was determined by the distribution of the salts.