

Effects of Climate Change on Ecosystems and Nature Protection Areas

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Objective: Assessment of effects of the prognosticated Climate Change on Ecosystems and Nature Protection Areas and realisation of measures for the improvement of this situation.

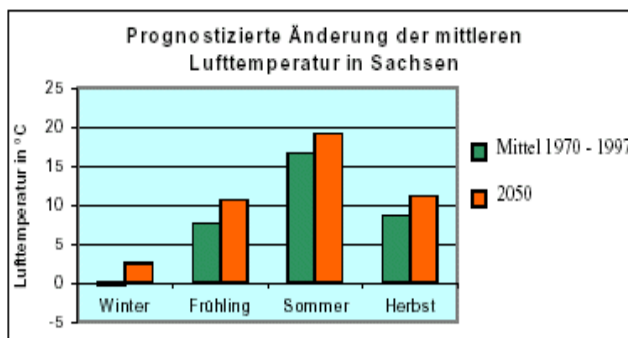
Location: Saxony

Client: Environmental Authority of Saxony

Partner: Büro für Ökologische Studien

Year: 2004-2006

Initial Situation:



In this study hydrological models have been developed to estimate the impact of climate change on the natural vegetation in Saxony. The estimations are based on a regional climate scenario for the free state of Saxony. According to the ECHAM4-OPYC3 climate scenario, the observed increase in air temperature will continue in the next decades. Thus, the annual growth period of individual trees will be further extended, mainly because of the shift of spring phases. Frequent droughts in summer and in autumn can compensate for the earlier leafing of trees, because in this case leaf colouring and leaf fall would start some weeks earlier. In such cases, the growing period would not be really extended, but shifted to the beginning of the year. Vegetation zones will change and water dependent ecosystems will be affected.



Services provided:

- Climate diagnosis for the free state Saxony (18.415 km²), Regional climate prognosis for the time span of 2010 to 2050 and 2050 to 2100 using ECHAM data base and climate scenarios
- Water balance prognosis for the time span of 2010 to 2050 and 2050 to 2100
- Analysis of current situation and prognosis of future impacts
- Evaluation of concerned ecosystems and nature protection areas, risk assessment for all types of ecosystems with special topic on water dependent ecosystems
- elaboration of an conception of mitigation measures and action plan
- Establishment of GIS and a database to collect, to archive and to demonstrate the climate change effects, the risks and the proposed measures for mitigation