

## **HUMBOLDT Application Scenario Forest**

**Assessment of the state of health of forest stands is a part of sustainable forest management. One of the results of this assessment are risk zones of pollutants which were created by the Forestry and Game Management Research Institute Jiloviste-Strnady as a differentiation tool in forest management in 1958. The system was created in response to changing environmental conditions as a consequence of negative anthropogenic factors. The level of tree damage was defined as defoliation; the level of forest stand damage was defined as a ratio of badly damaged trees in relation to the total amount. The risk zones are defined as an area with analogous dynamics of degradation of forest health. It is characterized as the degree of damage the stands suffer from pollutants. For the purpose of forest management the aim of the HUMBOLDT Scenario Forest is to integrate relevant data sources into one harmonized view.**

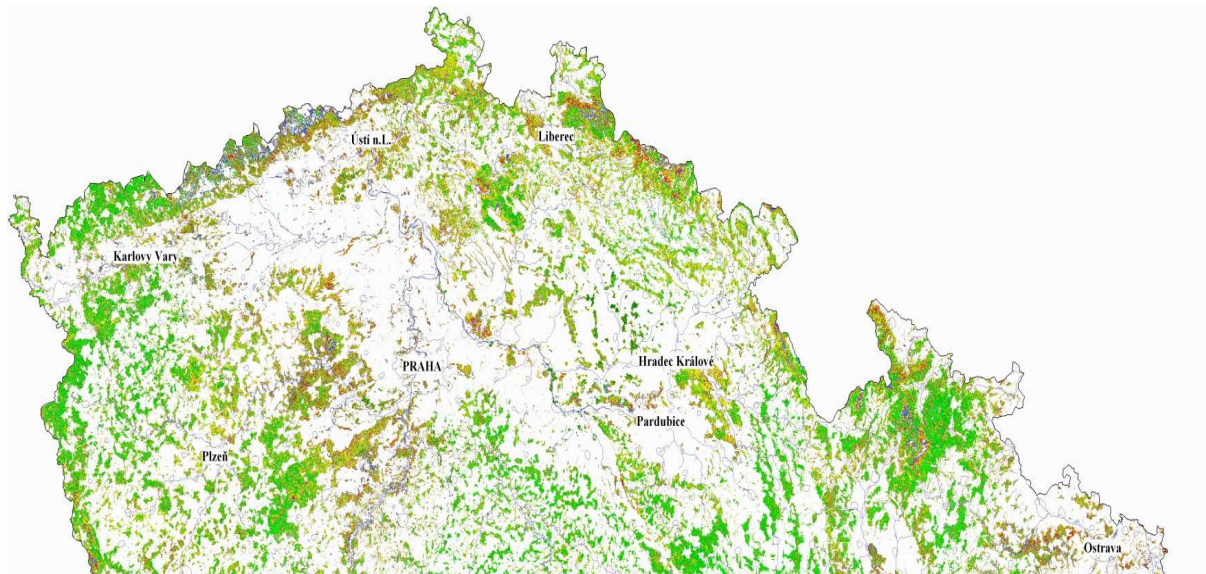
The assessment is based on data records (satellite images) from LANDSAT TM-5. The time series of status maps "Forest health status maps" is a combination of joint scenes for the periods: 1984–85, 1986–1988, 1990–1992, 1993–1994, 1994–2007 produced as a seamless map composition for the entire Czech Republic.

The Regional Plans of Forest Development (RPF) is the next data source for harmonization. It is the base dataset for the decision making process of government forest administration. These datasets evaluate the potentials of forest stands in relation to forest protection, functions, and the transportation network. RPF is valid from 1998–2001 for a period of 20 years.

Forest Management Institute (FMI) provides a web application based on Mapserver from 2005 with support for web services. Both datasets are accessible by WMS.

The third dataset is CORINE Land Cover 2006 (CLC2006) which provides a detailed representation of landscape and its categories including forested areas. In addition it describes the dynamics of change between CLC2006 and 2000.

Previous two datasets (administrated by FMI) offer more exact information about areas with forest management in combination with CLC2006. The data models of these datasets will be harmonized by the Humboldt harmonization tools.



*Forest health status map, CZ (FMI 2007)*

The Czech Ministry of Agriculture (founder of FMI) provides and establishes geo-information products and services to support GMES, utilize available Earth Observation resources, integrating them with existing models to form pre-operational end-user applications.

The web applications “Forest health status maps“ and “Regional Plan of Forest Development” will help to fulfil the strategic goals of GMES by supporting data source harmonization in the field of natural resource monitoring and providing data systems for timely warning as well as adaptation according to the information needs of the regional users. The output will contribute to the identification of possible threats, fast response and provision of relevant analytic data within the GMES forestry sector with the objective of achieving sustainable forest management.

**Contact:**

Karel Charvat  
kch@bnhelp.cz

**HUMBOLDT Project Office:**

zeitform Internet Dienste  
Fraunhoferstrasse 5  
64283 Darmstadt  
Germany  
Phone: +49 6151 155 637  
Fax: +49 6151 155 634  
Email: po@esdi-humboldt.eu  
<http://www.esdi-humboldt.eu>