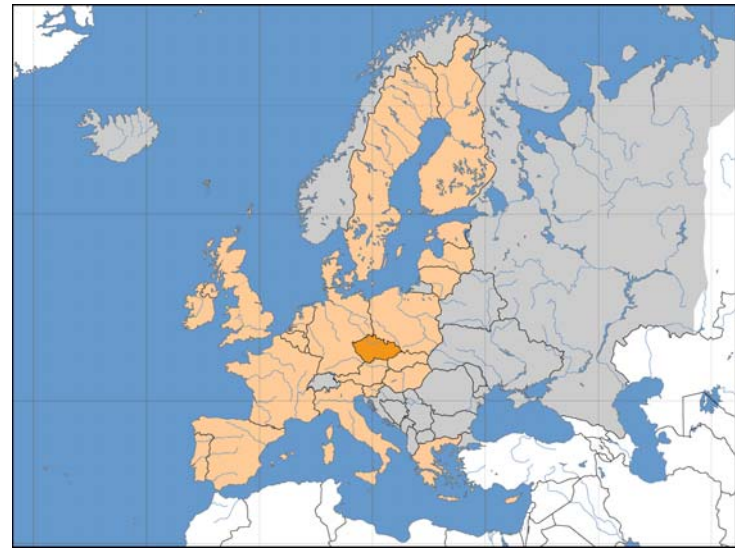


MANAGING MOUNTAIN WATERSHEDS IN THE CZECH REPUBLIC

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GEOGRAPHY



- 48 – 51 °N, 12 – 19 °E
- Area of 79,000 km²
- Rolling plains, hills, and plateaus surrounded by low mountains (Sudeten)
- Elevation extremes are 115 m (Elbe River outlet) and 1,602 m (Giant Mts.)
- **Mountain watersheds:** 40 % of the country's territory (gradients from 300 to 600 m)
- Timber line: 1,300 m

CLIMATE

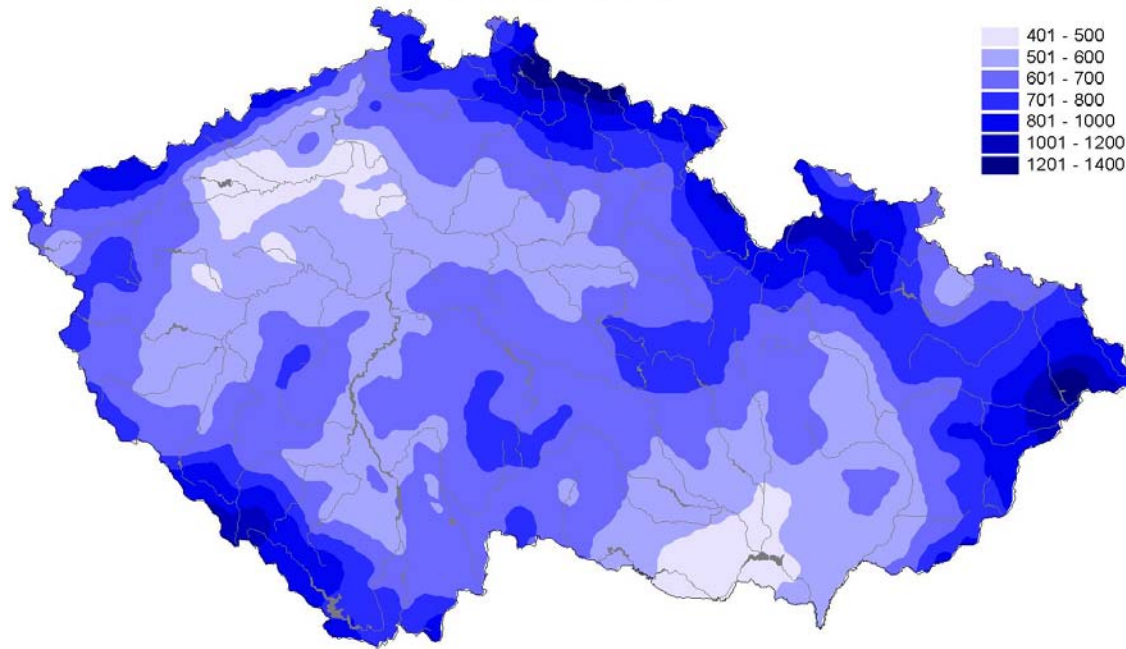


Temperate climate with hot summers and cold, cloudy and white winters;
Köppen classification: Cfb – marine west coast, Dfb – humid continental,
Dfc – sub-arctic.

WATER BUDGET

Normály ročních srážkových úhrnů 1961 - 90 [mm]

(Metoda splinngu dr. Kočlonář a ing. Retta)



Long-term mean annual precipitation: 693 mm,

evaporation: 499 mm,

runoff: 194 mm

(climate normal of 1961-1990)

WATER SUPPLY

- Mainly exploitation of surface waters (80 %)
- The water availability per person and year is about 1,450 m³/person.year
- Safe water availability: 1,700 m³/person.year
- Potential water resources exploited by cca 50 %
- 150 managed water reservoirs and 21,000 fish-ponds, (total volume of water reservoirs: 5,800 million m³)

LAND-USE DEVELOPMENT

- Since the 13th century, stable forest percentage (34 %).
- Native forests in mountain watersheds: Common beech (*Fagus sylvatica*), Norway spruce (*Picea abies*) and Common silver fir (*Abies alba*).
- From wildlife reserves to commercial forestry.
- Native forests converted to spruce plantations (namely during the 18 - 19th century): low ecological stability.
- Forest dieback (1980s) and recent recovery.

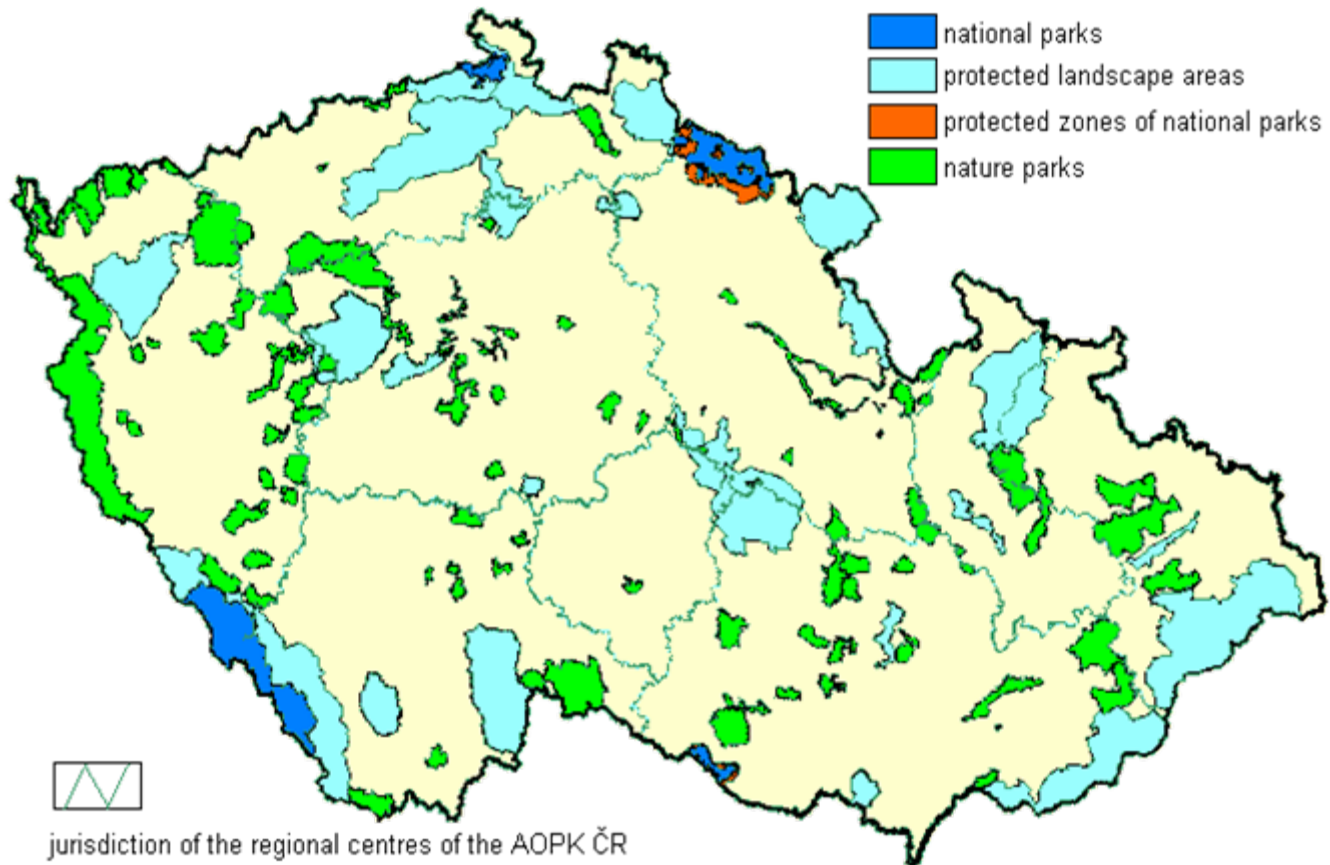
WATERSHED HAZARD

- Natural process of flooding.
- Pollution of water resources, acid atmospheric deposition and acidification.
- Risk of potential climate change:
 - Reduced snow-pack (cca 30%) and water yield (15 – 40 %),
 - Increased flood-probability,
 - Forest stands more exposed to the stress from dry episodes,
 - 45 % of spruce forests endangered.

POLICY

- *Water Act (254/2001)*.
- 16 % of the country's territory proclaimed as the *Protected Headwater Regions* (governmental decrees 40/1978 and 10/1979).
- *Forest Act (289/1995)* controlling small headwater streams, categories of “Protective Forests” on steep slopes or wetlands and “Special Forests” (hygienic buffer zones of drinking water supply), torrent control and soil amelioration.
- *Law on the Environment (17/1992)*: EIA and SEA procedures.
- *Act on Nature protection (114/1992)*: conservation of wetlands and controlling the processes of revitalization in watercourses.

PROTECTED AREAS



RECENT PROGRESS

- Decreased emissions of sulphur into the air.
- Revitalization of mountain watersheds:
 - “NATURA 2000” (revitalization of streams, wetlands etc.)
 - Countryside Renewal Program 2006” (increasing stability of mountain settlements by restoring socio-economy, culture, landscape and environment of small villages).
- “Czech National Forestry Program”: Forest planning to support retention capacity of mountain watersheds by increasing percentage of deciduous trees from recent 23 to original 65.
- Discussing subsidies for forest owners according to “environmental services”.