

# FORESTS AND CLIMATE CHANGE

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1. Seminar Overview, Introductions, History of US Forests
  - a. Pre Columbus
  - b. Columbus to depression
  - c. Post depression recovery
  - d. Ownership patterns – public, private, state vs fed
  - e. Current topics in US forest management, including planning for climate change
2. Status and recent trends in European forests
  - a. Forest area, coverage, growth/mortality/removals
  - b. Role of forests in global carbon cycle
  - c. International players – IPCC, FAO, EFI, World Bank, individual countries
  - d. Current state of forest regulation in Hungary, Europe
  - e. Sectors/players in forest management, management philosophies
  - f. Recent findings of IPCC
  - g. Forest carbon partnership fund (FCPF)
3. Climate change and forest health
  - a. Insects
  - b. Diseases
  - c. Species distribution (plant and wildlife)
  - d. Invasive species
  - e. Deposition and nutrients
  - f. Temperature, growing season, CO<sub>2</sub> enrichment
  - g. Adaptation and mitigation strategies
4. Ecosystem goods and services and climate change
  - a. Concept of ecosystem goods and services
  - b. Contributions of forests to human wellness
  - c. Potential implications of climate change to EGS
5. Fires and forests
  - a. Natural role of fire in forested ecosystems
  - b. Landscape hazards and disturbance related to fires (erosion, debris flows, nutrient export)
  - c. US experience – successful suppression interferes with natural fire cycles, eventually leads to increasing catastrophic fires
  - d. Urbanization and forest fires
  - e. Future trends – climate change and forest fires
  - f. NIFC concept for preventing, reducing, managing fire
6. Forest Hydrology and climate change
  - a. Water and forests – effects of forest management on hydrology
  - b. Climate, precipitation, temporal and quantity distribution
7. Forest sustainability
  - a. US history – management, NEPA,
  - b. Forest stewardship, land ethic – Aldo Leopold - , Gifford Pinchot, John Muir
  - c. Bruntland commission, Montreal Declaration, Santiago criteria
  - d. Current systems thinking – lifecycle assessment, sector model

8. Ecological risk assessment (ERA) concepts
  - a. Risk paradigm – hazard, effect, exposure, assessment, management
  - b. Ecological risk assessment
  - c. Causal diagnostics
9. Forest policy for mitigating and adapting to climate change – future directions for Hungary
  - a. What are the biggest risks to Hungary's people, forests?
  - b. Key strategies to protect against risk
  - c. How could forest policy and practices help mitigate, adapt to reduce harm