

Theme issues to FSE of Forestry

Forest Management

1. Data gathering and mensuration
2. Methods of determination of standing volume
3. Growth and increment
4. Empirical growth models
5. Mechanistic (process) growth models
6. Morphological (structural) and Functional-Structural growth models
7. Normal forest
8. Selection forest
9. Temporal arrangement of the forest
10. Spatial arrangement of the forest
11. Cutting control and allowable cut
12. Forest Management Plan and Forest Management Guidelines in Czech Republic
13. Optimization in forest management: general frameworks and background theory
14. Application of optimization in forest management: practical cases and examples

Forest Economy and Forest Harvesting

1. General information on timber production in the Czech Republic
2. Wood assortments its quality and defects
3. Logging technologies and their progression in last decades
4. Forest machinery for the logging and skidding – moto-manual techniques
5. Fully mechanized logging and transport techniques - harvesters and forwarders
6. Animal transport
7. Timber hauling - history and current situation in selected European country (-ies).
8. Ergonomics and occupational safety of forest operations
9. Environmental impact of machines for forest harvesting and timber transport
10. Non-wood forest production
11. Instruments of the forest policy. Forest taxation.
12. Is forest economy unique? Forest enterprise goals.
13. Forestry and free market.
14. Positive and negative externalities (forestry).
15. The forest and capital.
16. Net present value. Inflation.
17. Optimal timber stocking.
18. Valuing forest outputs.
19. Risk analysis.
20. Multiple use forestry

Forest Ecology and Forest (Stand) Classifications

1. Forest ecology, ecosystem, biomes, main biomes on the Earth
2. Natural forest dynamics, disturbance regimes, forest development cycles, forest dynamics in vegetation zones, post-glacial forest development
3. Water cycles and forest ecosystem, forest ecosystems and soils, forest ecosystem and atmosphere, forest ecosystem and environment
4. Primary and secondary production in forest ecosystems, biomass production in Forest Ecosystem
5. Main nutrient cycles in forest ecosystems
6. Approaches to the vegetation classification in the World (general principles, classification principles in selected European countries, USA and Canada)
7. Survey of phytosociological classification system in Central Europe (Zürich-Montpellier school: principles, methodology, survey of vegetation units with woody taxa distinguished in the Czech Republic at the level of vegetation classes and alliances, their diagnostic plant species)
8. Acid series: soil characteristics, herb species indicators, edaphic categories – characteristics (topography, soil, herb species, production values)
9. Fertile series: soil characteristics, herb species indicators, edaphic categories – characteristics (topography, soil, herb species, production values)
10. Extreme series: soil characteristics, herb species indicators, edaphic categories – characteristics (topography, soil, herb species, production values)
11. Enriched with humus series (maple-rich): soil characteristics, herb species indicators, edaphic categories – characteristics (topography, soil, herb species, production values)
12. Enriched with water series (ash-rich): soil characteristics, herb species indicators, edaphic categories – characteristics (topography, soil, herb species, production values)
13. Gleyic series: soil characteristics, herb species indicators, edaphic categories – characteristics (topography, soil, herb species, production values)
14. Waterlogged series: soil characteristics, herb species indicators, edaphic categories – characteristics (topography, soil, herb species, production values)
15. Peaty series: soil characteristics, herb species indicators, edaphic categories – characteristics (topography, soil, herb species, production values)
16. Management complexes (assembly principle, ecological series, vegetation grades, usage, importance, disadvantages)