

# Contribution to Sustainable Forest Management from the perspective of **Biodiversity Protection and Climate Change**



GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET



Food and Agriculture  
Organization of the  
United Nations



Ministry of Agriculture and  
Environmental Protection  
of the Republic of Serbia

**Gordana Jancic**

Srbijasume

**Karina S Kitnaes**

Orbicon A/S

# Overview of Gaps and Barriers

to be addressed by the project

- ☐ Gaps in the former National Forest Inventory
- ☐ Gaps in current Forest Management Planning
- ☐ Gaps in implementing Natura 2000 requirements
- ☐ Legal / Institutional barriers
- ☐ Technical capacity
- ☐ Information availability / access





# Assessing biodiversity in forests

*Biodiversity data gathering should:*

- ✓ Relate to conditions for forest-dependent flora and fauna
- ✓ Be easy to detect in the field during all seasons
- ✓ Be easy to identify with a minimum training

*... If the habitat of a species is present,  
the species is likely to be there!*





## *The Information needs...*



- ☐ International Sustainable Forest Management Standards  
*(Forest Europe / PEFC™ / FSC®)*
- ☐ The European Natura 2000 Network  
*(Birds and Habitats Directives)*
- ☐ Global Climate Change Mitigation and Adaption  
*(UNFCCC "the Paris Agreement" / Renewable Energy Directive, Emission Trading System Directive)*



# *The Information Needs..*



## *International Sustainable Forest Management Standards*

### **Forest Europe / PEFC™**

- ✓ Threatened forest species
- ✓ Protected forests
- ✓ Deadwood
- ✓ Regeneration
- ✓ Alien and introduced species
- ✓ Landscape patterns / structures
- ✓ Naturelness
- ✓ Genetic resources

### **Forest Stewardship Council® / FSC®**

- ✓ Rare and endangered forest species
- ✓ Protected Areas
- ✓ Deadwood
- ✓ Regeneration
- ✓ Invasive and introduced species
- ✓ Landscape values and cultural values
- ✓ Nature values, valueable trees and biotopes
- ✓ High Conservation Value Forest
- ✓ Water
- ✓ Mitigation of climate change



# *The Information Needs...*

## The European Natura 2000 Network

- ✓ Natural range of each habitat type and species
- ✓ Distribution of each habitat type and species for each bio-geographical region
- ✓ Selection of sites based on presence and distribution of habitat types and species
- ✓ Monitoring and reporting conservation status for each habitat type and species
- ✓ Secure Favourable Conservation Status of each habitat type and species
  - Areal cover / Population size
  - Characteristic species
  - Structures and functions
  - Threats and Impacts
  - Future prospects

# *The Information Needs...*

## Climate Change Mitigation and Adaption

- ✓ Maintain or increase forest cover
- ✓ Secure forest regeneration
- ✓ Report on forest cover, production and use
- ✓ Report on forest health





## *Translated into forest biodiversity data*

- ☐ Structures and Composition
- ☐ Focal Habitats / Key Biotopes
- ☐ Focal Species
- ☐ Impacts and Threats

*Data to be collected via:*

- *National Forest Inventory*
- *Forest Management Planning for FMU*
- *(National Biodiversity Monitoring)*



## Composition:

- Regeneration
- Tree Species composition
- Dead wood, standing / laying
- Dying wood / coarse bark
- Vegetation cover
- Vegetation diversity

## Valuable biodiversity trees:

- Large and old trees
- Trees with broken top / damaged
- Trees with epiphytic plants /parasites
- Nesting trees
- Trees with edible fruits, nuts, berries, nectar
- Trees with mosses, lichens, fungi on stem
- Solitary, sun-exposed trees with wide crown
- Hollow trees

## Focal habitats

- Old growth forest
- Structural diversity
- Wetlands, bogs, marshes, fens
- Springs, ponds, lakes
- Seasonal / permanent streams, rivers
- Steep slopes, cliffs, ravines, Caves
- Grasslands, meadows

## Impacts and Threats

- Unauthorised logging
- Constructions, buildings
- Lack of / Removed deadwood
- Land use change
- Absence of undergrowth
- Invasive species / introduced species

## Focal species

- Nationally protected species
- IUCN rare, threatened, endangered species
- Characteristic species of N2K habitat types
- Natura 2000 species



# Analysing current data collection



Focal habitats / Key biotopes	NFI	FMP	FSC FMP	BD monit.
Old growth forest (age structure)	(X)	(X)	(X)	-
Structural diversity	(X)	(X)	(X)	-
Wetlands, Bogs, marshes, fens	X	X	X	-
Springs	-	-	-	-
Ponds	X	X	X	-
Lakes	X	X	X	-
Seasonal / permanent streams (operational plan)	-	-	(X)	-
Rivers	X	X	X	-
Steep slopes, cliffs, ravines	X	X	X	-
Caves	-	-	-	-
Landscape patterns	X	X	X	-
Grasslands, meadows	X	X	X	-

# Gaps in NFI:

Presence of regeneration > 3 meters

Dying wood / coarse bark

Trees with epiphytic plants /parasites

Nesting trees

Trees with mosses, lichens, fungi on stem

Solitary, sun-exposed trees wide crown

Hollow trees (cavities)

Scrub and vegetation diversity (no. of species)

Old growth forest

Springs

Seasonal / permanent streams

Unauthorised logging

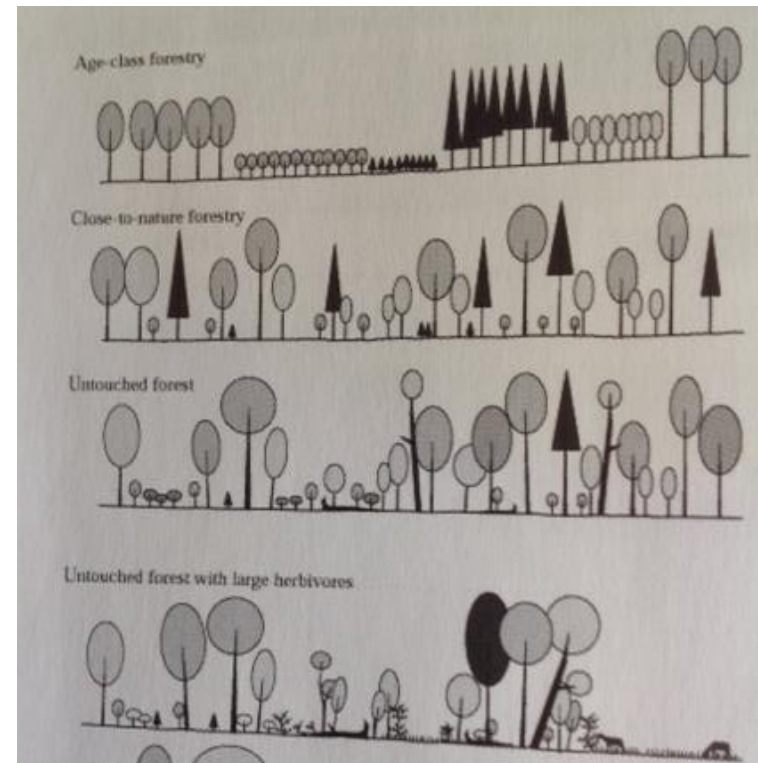
Removal of deadwood

10 Invasive forest species

10 focal species

*Characteristic species of Natura 2000 habitat types*

*Natura 2000 species*



# Gaps in Forest Management Planning:



Dead wood, standing / laying  
Dying wood / coarse bark  
Trees with epiphytic plants /parasites  
Nesting trees  
Trees with mosses, lichens, fungi on stem  
Solitary, sun-exposed trees wide crown  
Hollow trees (cavities)  
Scrub and vegetation diversity (no. of species)

Old growth forest

Springs

Seasonal / permanent streams

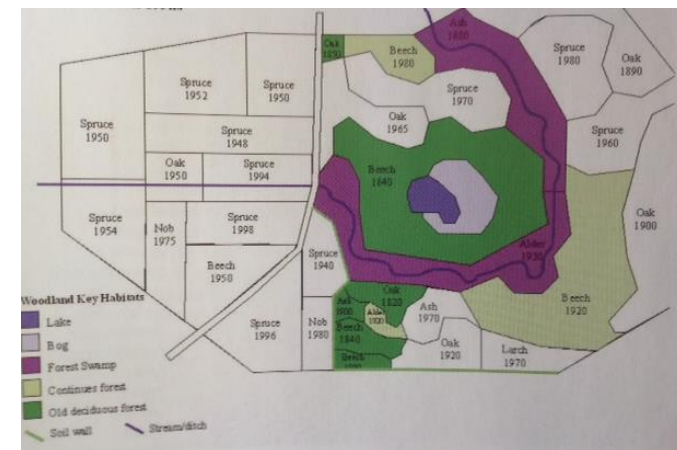
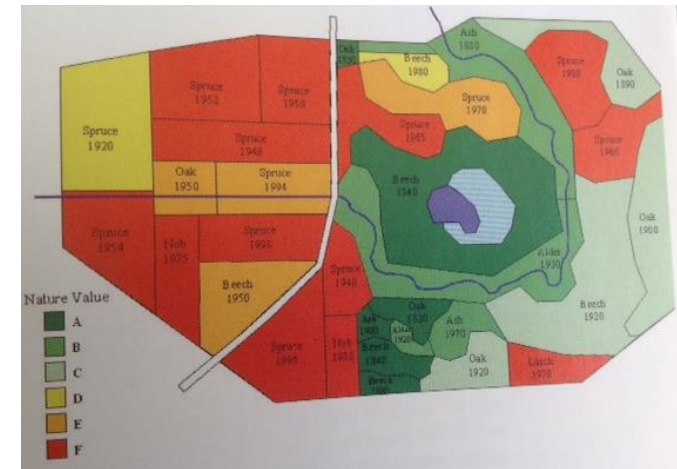
Unauthorised logging

Lack/Removal of deadwood

Invasive species - plants, scrubs, etc.

Characteristic species of Natura 2000 habitat types

Natura 2000 species





## *Output 1.1.1: Methodology for biodiversity information collection and management*

### **Activities:**

- Design methodology to include the identified gaps into:
  - **National Forest Inventory** (data that helps Serbia to report to UNFCCC, Forest Europe and to prepare distribution maps of N2K habitat types and species)
  - **Forest Management Planning** (data to help FMP meet the requirements of the SFM standards: FSC/PEFC and data to help FMP to contribute to assessing conservation status and preparing conservation actions to achieve favourable conservation status)
- Assess and identify available organisational and human capacities
- Prepare field mapping manual and field forms for
  - Nature value / biodiversity assessment
  - Survey of key biotopes

## *Output 1.1.2: National Forest Inventory: Information collection relevant to biodiversity*

### **Activities:**

- Prepare list of nature and biodiversity gaps to be included in the NFI
- Prepare field maps and manual and train the mappers
- Analyse data on naturalness and biodiversity and crosslink with habitat classification to identify potential:
  - High Conservation Value Forest
  - Natura 2000 habitat types
  - other key biotops/focal habitats
  - Old growth forest

## *Output 1.2.1: 120 staff/members trained in SFM techniques and BD management*

### **Activities:**

- Assess the training needs
- Develop guidelines for biodiversity protection in forest management
- Design the biodiversity training programme and curricula
  - How to assess nature values and biodiversity
  - How to protect and secure the nature values and biodiversity
- Design a train-the-trainers programme for biodiversity measures



