Balancing wood production and biodiversity conservation in Pan-European boreal forests

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International Symposium „Forestry and Biodiversity: International Perspectives on Trade-offs, Problems, and Solutions”
Riga 05-06 December 2018
Outline

Boreal forest
Competing benefits
Wood production

Biodiversity conservation
Birds as focal species

Solutions???
Ecosystem services

**Provisioning services** - products obtained from ecosystems such as food, fresh water, wood, fiber, genetic resources and medicines

**Supporting services** - importance of ecosystems to provide habitat for species and human wellbeing

**Regulating services** - processes such as climate regulation, natural hazard regulation, water purification and waste management, pollination or pest control

**Cultural services** - non-material benefits that people obtain from ecosystems such as spiritual enrichment, intellectual development, recreation and aesthetic values
European Boreal Forest

Many different types
Very diverse
Diverse range of management

Sustainable forests management
Different development trajectories of forest production

Angelstam et al. 2016.
Mean wood production M³/y 2000-2010 (EFI 2015)
Good example of different forest intensification

(94% of all loss is logging)
Forest age distribution

Black bars = Coniferous
White bars = Deciduous
Intensity of wood production

Indicators
- Biomass
- Accessible biomass
- Coniferous forest
- Accessible coniferous forest

Naumov et al. 2018
Current harvesting/wood mining in Komi
Another story in Lithuania

Wood production, independence and reforms
Forestry in Lithuania

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LT wood production trends since independence

Volume of harvesting (million m³/yr)

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- State forests
- Private forests
- Total
LT Wood production trends since independence

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Wood development opportunities in Lithuania

• Current harvesting levels in Lithuania are below the maximum sustainable removal

• Intensive forest management would make it possible to increase the maximum sustainable removal by 15%

• There is room for expansion of industry and energy uses of wood
Wood development opportunities in Lithuania

WHAT ABOUT US???
Consequences on biodiversity?

- Land degradation
- Losses in biodiversity
- Changes in species composition
- Triggered policies
- International, national and local initiatives
- EU Green Infrastructure policy
- Convention of Biological Diversity
- Sveaskog Ekoparks in Sweden
Green Infrastructure

• **Strategically planned network of natural and semi-natural areas**

• **Managed to deliver a wide range of ecosystem services**

• **GI is present in rural and urban settings**

• **Includes forest for wood production and the conservation of biodiversity**

EU 2013
Convention of Biological Diversity
Aichi targets

Target 7
By 2020 areas under agriculture, aquaculture and **forestry are managed sustainably**, ensuring conservation of biodiversity

Target 11
By 2020, at least **17 %** of terrestrial areas of importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, **ecologically representative** and **well-connected systems of protected areas** and other effective area-based conservation measures
Sveaskog Ekoparks

37 Large contiguous landscapes (approx. 5000 ha each)

High conservation values

High ecological ambitions (> 50 %)

Active management

Yes forestry is permitted (< 50 %)
Birds as focal species

Naumov et al. 2018

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Naumov et al. 2018
Wood production vs. biodiversity

[Graph showing Wood production vs. biodiversity with data for Bergslagen-Mälardalen, Latvia, Vitebsk, and Pskov.]

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Modelling high conservation value forest in Sweden

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Conclusions

Intensive forestry and biodiversity conservation are competing objectives.

The net effect of biodiversity conservation efforts (tree retention, voluntary set-asides, protected areas) are not enough.

Europe provides researches and managers a real playground to learn.

Collaborative learning is needed (=landscape approach), combined with all policy implementation tools.

Land sparing vs. land sharing approaches.
Forest ponderings

What do we want?

What does society want?

Are forest more than just EUROs?

What is biodiversity worth?

What holds for our grandchildren?
An example - Bavarian State Forestry Germany 2005

Conserve nature – Improve profits – Serve society

No clear cutting and minimise planting
Selective cutting with natural regeneration
Revenue is stable
Forests are returning natural mixed stands
Increased biodiversity
Large predator occurrence

Resident species

1
2
3

Boreal biome

Study area

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Large herbivore occurrence

Resident species
- 1
- 2
- 3
- Boreal biome
- Study area

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Need a multiple target approach
Thank you & Question


Angelstam, P., V. Naumov, M. Elbakidze, M. Manton, J. Priednieks, and Z. Rendentieks. 2018. Wood production and biodiversity conservation are rival forestry objectives in Europe's Baltic Sea Region. Ecosphere 9
