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From Forest to Sea

The Impact of Forestry on the Baltic Sea and How Nature-based Forestry Can Contribute to Nutrient Uptake

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Natur och Miljö's new campaign:

" From Forest to Sea "

ÖSTERSJÖPROJEKTET
BALTICSEAPROJECT
ITÄMERIPROJEKTI

SLS
SVENSKA
LITTERATURSÄLLSKAPET
I FINLAND

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Nature-based solutions

Nature-based forestry

Sustainable and circular reed management

Restoration of coastal environments

WHY IS IT IMPORTANT?

- The Baltic Sea maintains a unique ecosystem
- The Baltic Sea provides us with many ecosystem services
- The status of the Baltic Sea is not good
- Main threats:
  - Pollutants
  - Eutrophication
  - Climate change
- Human pressuers need to stop to save the Baltic Sea

EUTROPHICATION

- Excess of nutrients → increased growth of organic material
- The Baltic Sea catchment area is over 1,7 million km2
- Leads to *algal blooms, oxygen depletion* and *dead zones*
- Exacerbated by climate change

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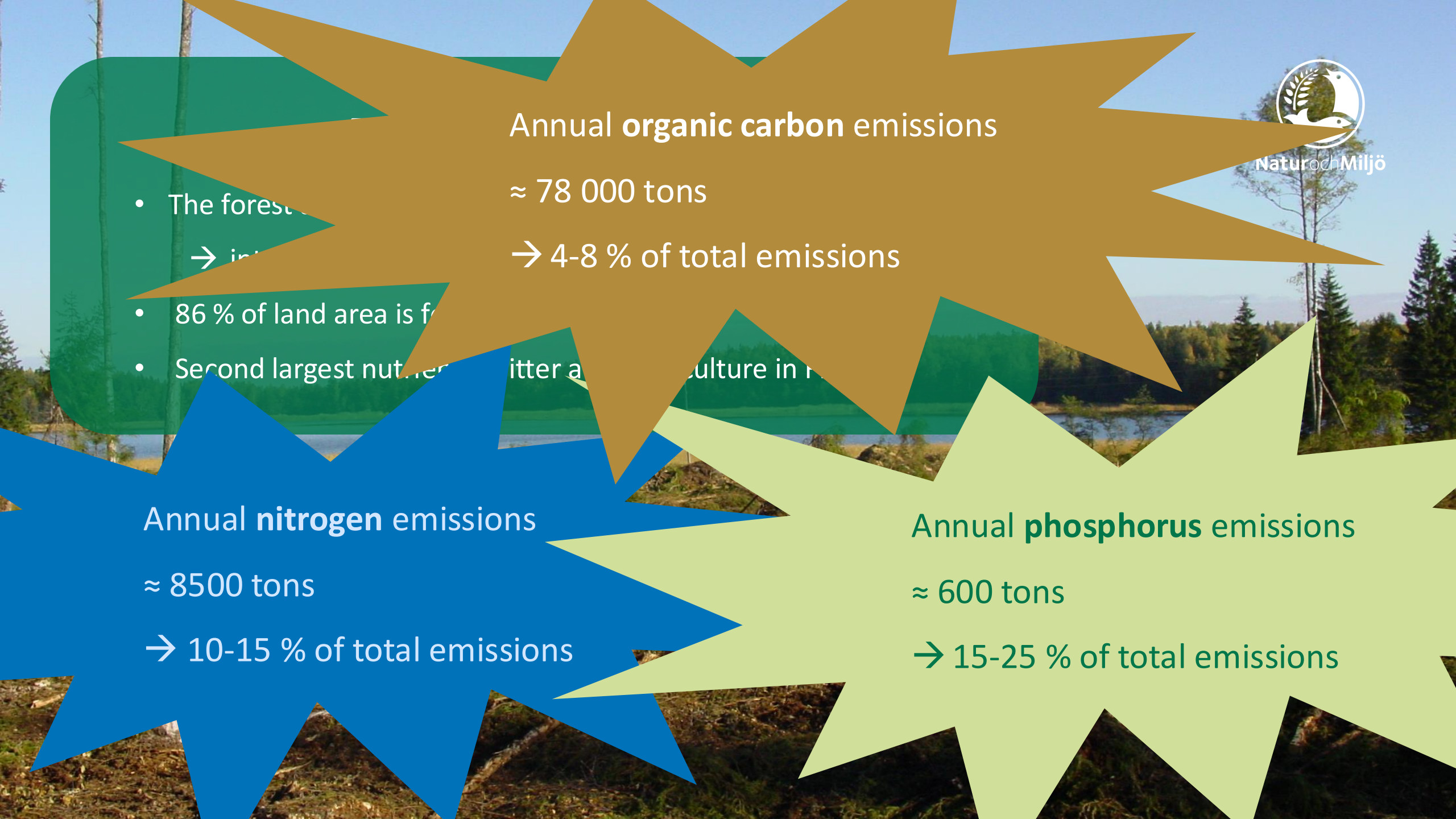
BROWNIFICATION

- Caused by organic matter, such as humus, dissolved organic carbon and iron runoff
- Mainly driven by anthropogenic factors: climate change, ditching, land use change etc.
- Affects species' life cycles and interactions, and hence ecosystems at large

WHAT IS THE ROOT OF THE ISSUE?

- Antropogenic activites:
  - Agriculture
  - **Forestry**
  - Point emissions from society and industries
  - Scattered settlements
- Nutrient emissions have decreased since the 90’s (nitrogen 12%, phosphorus 28%)



- The forest
  → in
- 86 % of land area is f
- Second largest nut
itter a
ulture in

Annual **organic carbon** emissions

≈ 78 000 tons

→ 4-8 % of total emissions

Annual **nitrogen** emissions

≈ 8500 tons

→ 10-15 % of total emissions

Annual **phosphorus** emissions

≈ 600 tons

→ 15-25 % of total emissions

NUTRIENT LOADING FROM FORESTRY

- Mainly caused by *ditching* and *drainge* of peatlands (drained peatlands makes up ¼ of the Finnish forestry)
- Other factors:
  - fertilisation
  - clear-cutting
  - clearing of buffer zones
- Problem area is Osterbothnia and middle of Finland

  → big impact on Bothnian Bay
- Impacts are amplififed by climate change
- Bioeconomy risks an intesification of industries such as forestry

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NATURE BASED SOLUTIONS

- Ecosystem based solutions
- Solutions inspierd by nature to tackle environmental and societal issues
- In practice = protect, restore and maintain ecosystems that contribute to creating a healthy and resilient enivronment as well as sustainable society

NATURE-BASED SOLUTIONS WITHIN FORESTRY:

- Creating bufferzones around watercourses
- Avoiding ditching and draining
- Avoiding ”cleaning” ditches
- Filling old ditches to allow for the ground water level to stabilize
- Applying continuous cover and nature based forestry
- Avoiding forest fertilization (or use tree ash)
- Avoiding invasive ground preparation methods (e.g. plowing)
- Protect, restore and create wetlands

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Thank you for listening!

Questions?

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