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# Stora Enso Biodiversity teach-in

Online event for investors and analysts  
3 November 2021

THE RENEWABLE MATERIALS COMPANY





# Agenda and presenters



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15:00	<b>Welcome and introduction</b>	Anna-Lena Åström <i>SVP Investor Relations</i>
15:05	<b>Our sustainability priorities and their value-add to business</b>	Annette Stube <i>EVP Sustainability</i>
15:15	<b>Forest division's sustainability strategy</b>	Jari Suominen <i>EVP Forest Division</i>
15:25	<b>General perspectives on biodiversity in Nordic forests</b>	Annika Nordin <i>VP Sustainable Forest Management</i>
15:40	<b>Our approach on biodiversity</b>	Johan Lindman <i>SVP Global Forests and Sustainability</i>
15:55	<b>Q&amp;A</b>	Anna-Lena Åström <i>SVP Investor Relations</i>
16:30	<b>Closing</b>	





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# Our sustainability priorities and their value-add to business

Annette Stube  
EVP Sustainability Stora Enso

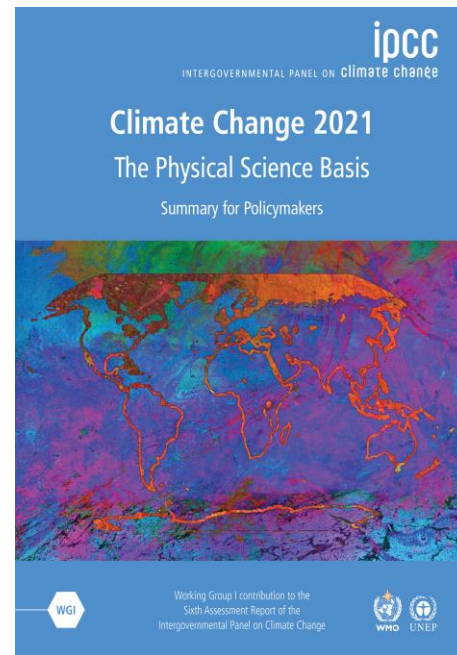
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# Step-up change is needed



- Acceleration of the sustainability agenda
- Targets are based on science and what is needed to do
- Leaders are addressing the systemic changes needed, moving beyond their industry
- Clear expectations from our stakeholders to step up and take lead on identified issues



# We help our customers become regenerative



**100%**  
regenerative solutions  
by 2050

- 100% circular
- Biodiversity net positive
- Carbon net positive

Sustainable development is at the heart of  
our **business strategy**



# New 2030 sustainability targets



## CO<sub>2</sub> Upgraded Science Based Target

- Aligned with a 1.5-degrees scenario
- Scope 1, 2 & 3: **50% absolute reductions** (2019 baseline)



## Circular Products and value chains

- Full adoptions of Circular Design Guidelines by 2025
- **100% of our products recyclable** by 2030



## Biodiversity Expanding scope and actions

- Detailed **action plan** towards 2030
- **Active biodiversity management with >15 indicators**





## In summary



- Delivering on customers' demands and helping our customers become regenerative
- Direction for innovation
- Long term perspective of capital allocation
- More acceptance of current offerings and more time for the transition
- Licence to be a credible system shaper and a solid seat at the table
- Early signs of change





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# Forest division's sustainability strategy

Jari Suominen  
EVP Forest Division Stora Enso

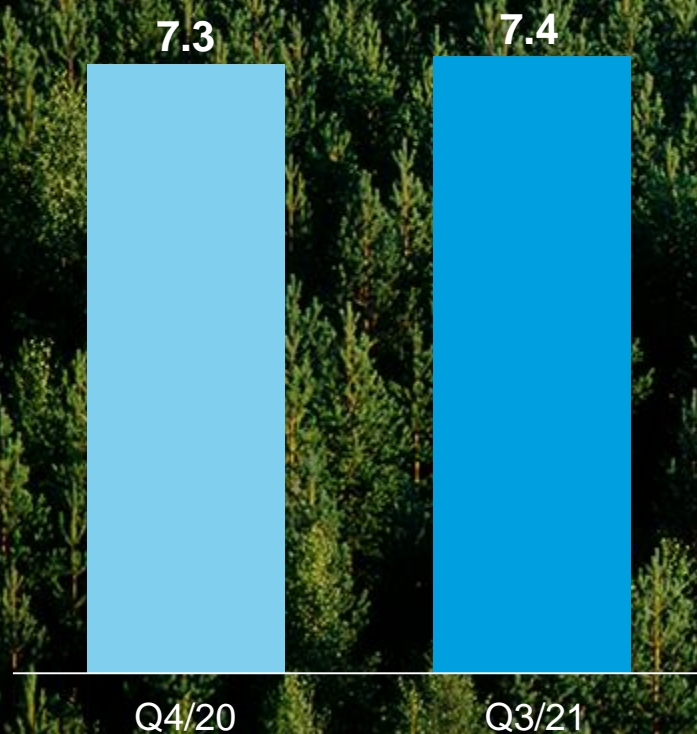




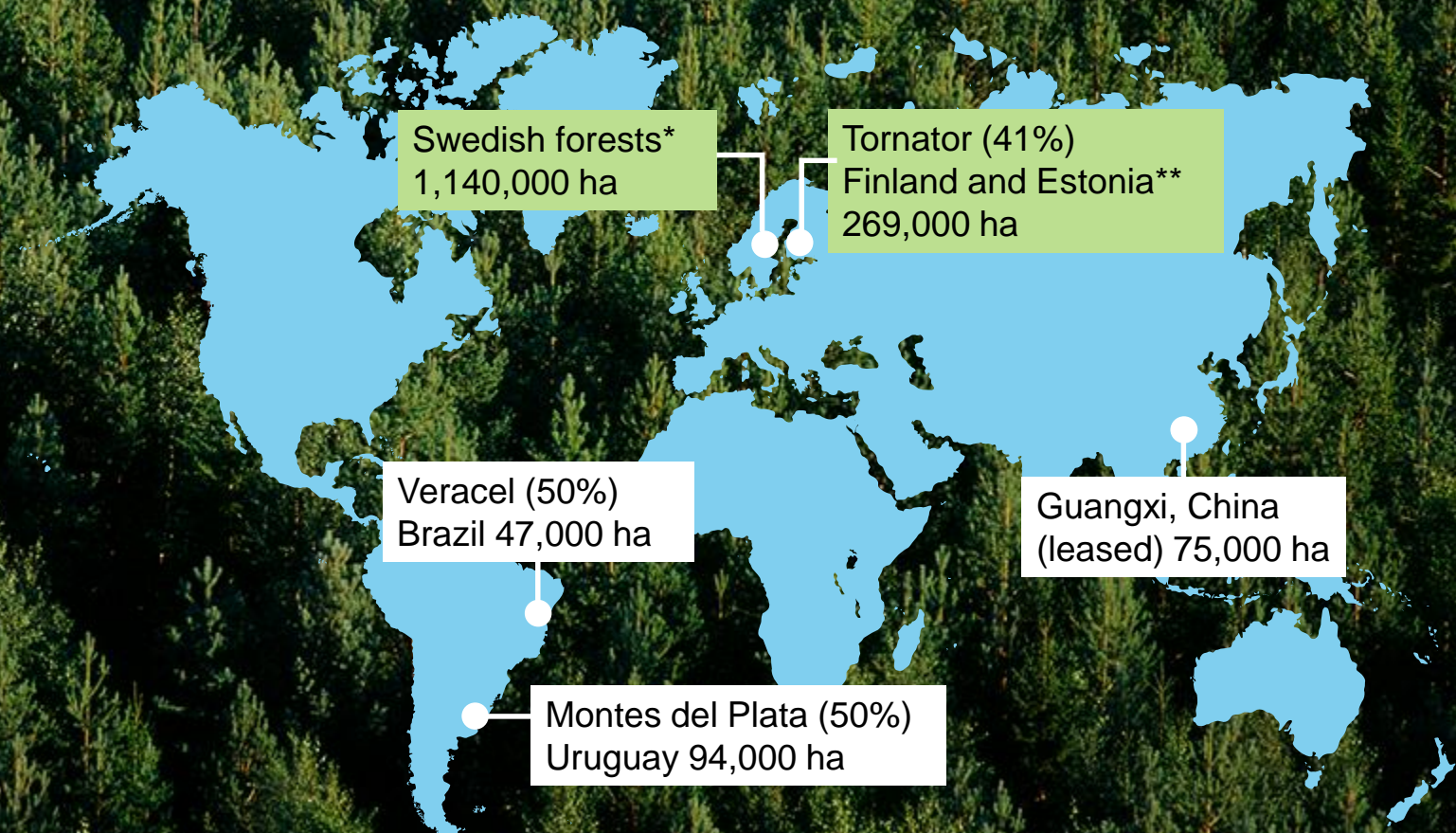
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# Global forest owner with 7.4 BEUR of forest assets in the balance sheet

Group forest assets fair value  
BEUR



Stora Enso productive forest land areas at end of 2020



\*After divestment of 5,200 hectares of forest land in southern Sweden (Q1 2021)

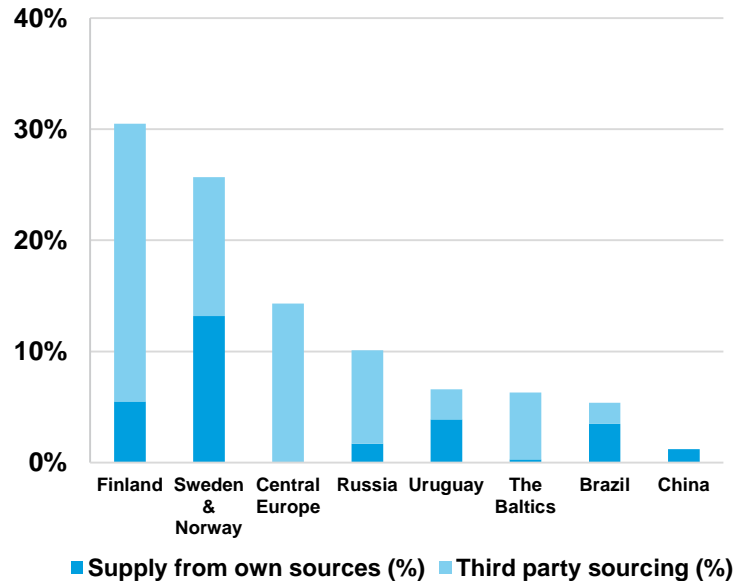
\*\*Forest assets also in Romania



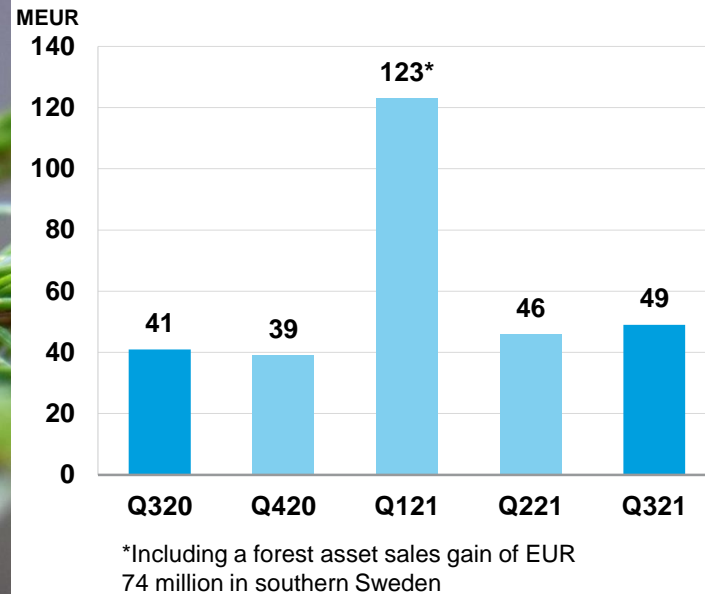
# One of the largest forest owners and wood supply organisations in the world



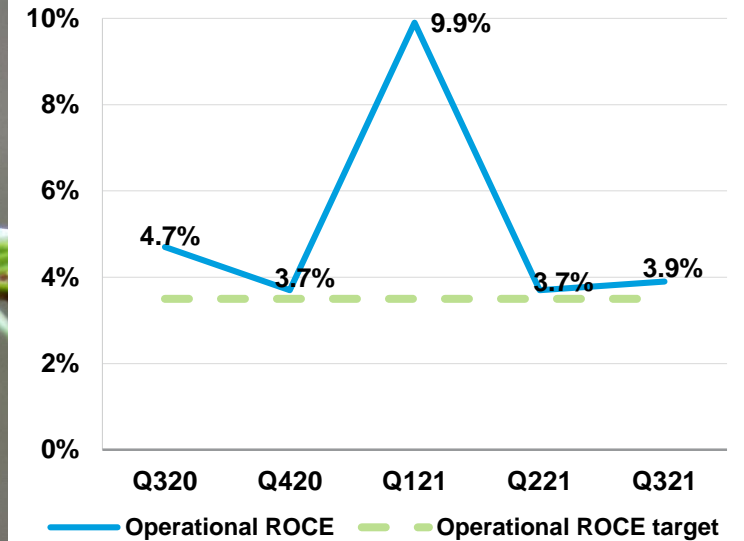
## Wood procurement by region



## Forest: Operational EBIT



## Forest: Operational ROCE





# Our strategy – We create value with competitive wood supply, sustainable forest management and innovation



## Own forest

- Yield improvement
- Active land portfolio management
- Base for developing sustainable forestry and new technologies



## Wood Supply

- Wood supply network design  
→ secured and cost-efficient wood supply



## Sustainability

- Special focus on biodiversity



## Public Affairs

- EU Biodiversity strategy
- EU Forest strategy
- Carbon removal

Innovation and development, capability development

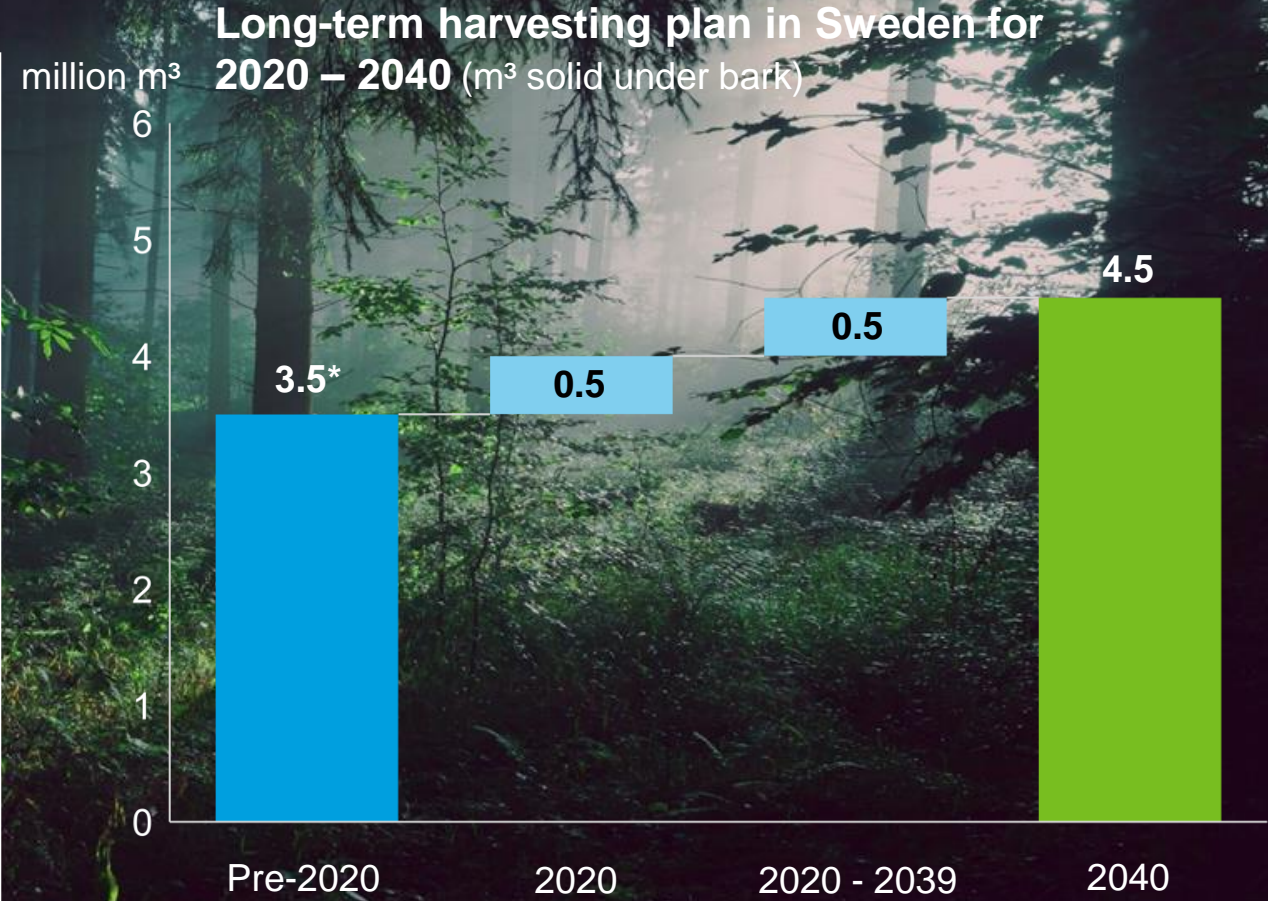
Stakeholder views and public opinion



# Target to increase sustainable harvesting by 10 - 15% in Sweden



- Increased wood production through innovation and sustainable forest management
- Optimised land use for higher yield
- Active land and forest owner – additional value streams
- Secured availability of reasonably priced wood for the Swedish mills
- Flexibility and synergies in wood supply



\*Adjusted to current land area



# Sustainability focus areas in the Forest Division



## STORA ENSO'S SUSTAINABILITY APPROACH

**TRANSFORMATION TO THE REGENERATIVE MATERIALS SYSTEM**

**Biodiversity**      **Climate change**      **Circularity**

**OUR FOUNDATION IS IN RESPONSIBLE BUSINESS PRACTICES**

**Environmental responsibility**      **Social responsibility**

## FOREST DIVISION SUSTAINABILITY FOCUS AREAS

**Biodiversity**  
Active and adaptive biodiversity management

**Carbon**  
Superior climate benefits for end customers

**Land use**  
Safeguard ecosystem functions, efficient land use

**Communities**  
Prosperity of communities close to our operations

RESPONSIBLE BUSINESS PRACTICES – human rights and business ethics

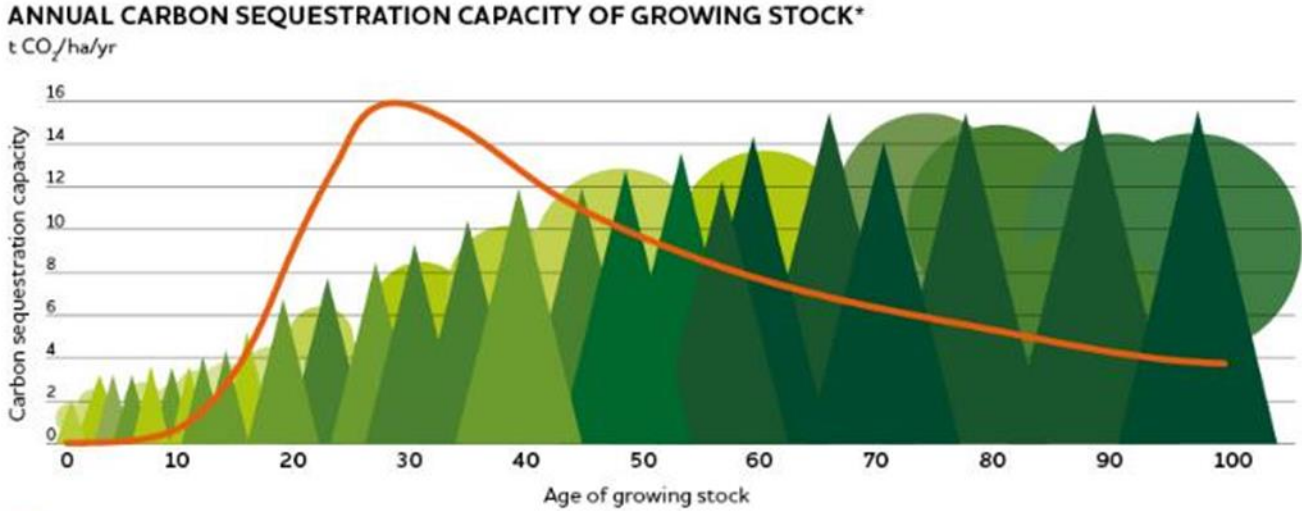
- Environmental**  
Materials, water and energy
- Economic**  
Customers, suppliers, investors
- Social**  
Employees and partners



# Only growing forests absorb carbon – mitigating climate change impacts with healthy forests



## Forest growth



— Carbon sequestration capacity of forest

\* Average situation in southern Finland when forest is managed according to the Best Practices for Sustainable Forest Management, using improved seedlings and periodic cover silviculture.

## Resilience







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## **Biodiversity ambition 2050**

We commit to achieve a net positive impact on biodiversity within and beyond our own forests and plantations around the world through active biodiversity management.





# Biodiversity target for 2030 – 40 actions developed and initiated, own forest as a development platform



## Our ambition for 2050

Net positive impact  
on biodiversity within  
own forests and plantations  
through active biodiversity  
management.



Active and adaptive  
biodiversity management

Biodiversity research  
and knowledge sharing



>15 indicators  
for holistic measuring

Attractive biodiversity  
management services



Precision forestry  
for granular data

Online reporting  
during 2022





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# General perspectives on biodiversity in Nordic forests

Annika Nordin  
VP Sustainable Forest Management Stora Enso

Professor Forest Science, Swedish University  
of Agricultural Sciences



# **Biodiversity is the variability of life on Earth**

**It is a measure of  
variation at the  
genetic, species and  
ecosystem levels**





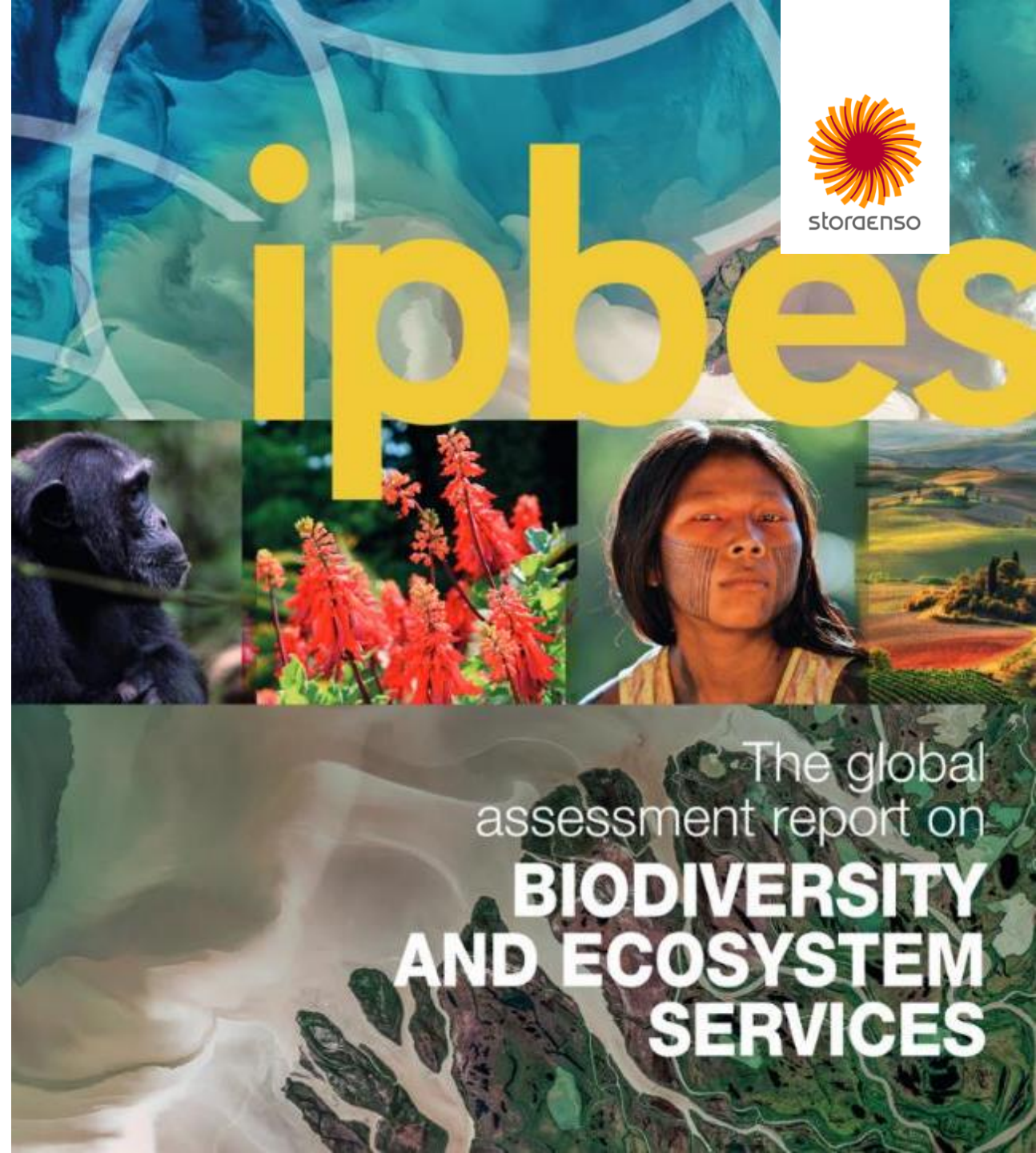
# Sustaining ecosystems' proper functions and respecting all forms of life



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# IPBES - Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services





# The red-list is a tool for knowledge on rare species

- There are about 30,000 species in the Swedish forests
- About 8% of these are red-listed



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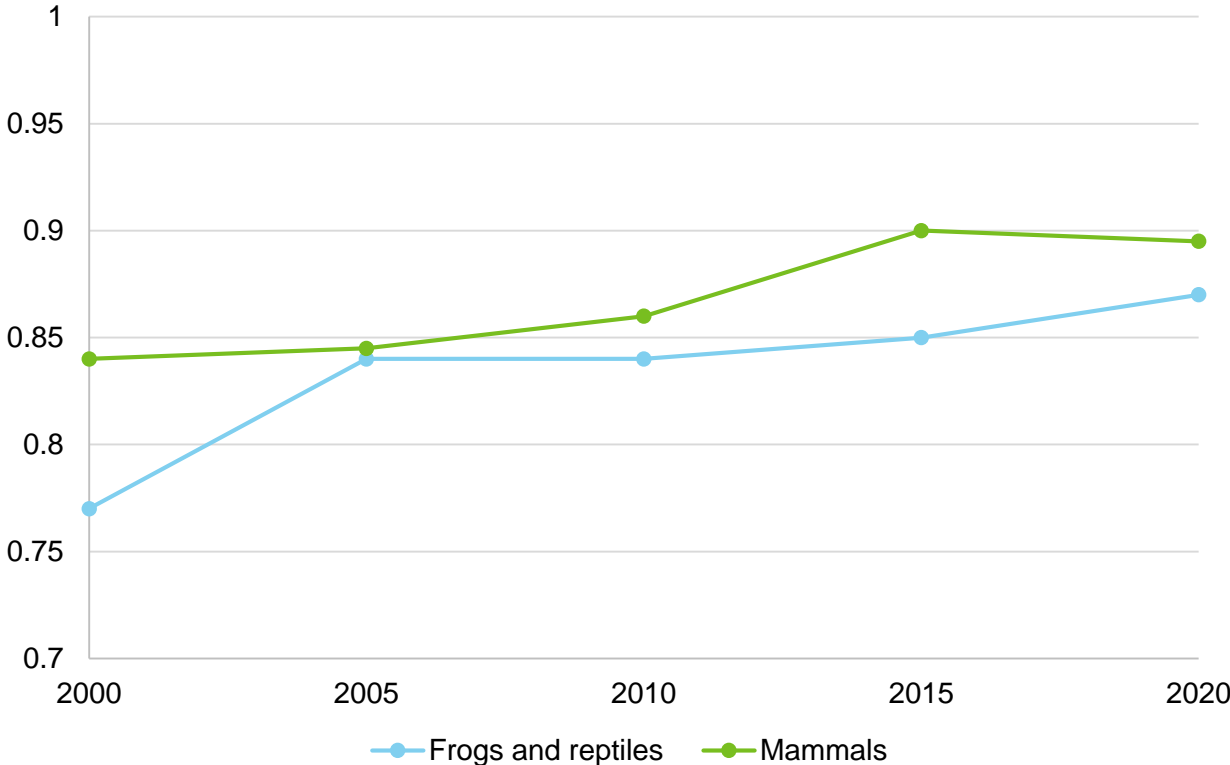
*Usnea longissima* is a red-listed epiphytic lichen species in Swedish forests with a circumboreal distribution, being common e.g. in the moist Norwegian coastal forest.



# Examples of red-listed species improving over time



Red-list index of trends in 2000–2020 on selected species groups



Examples of re-emerged previously extinct species



***Chrysopilus asiliformis***  
little snipefly inhabits various environments such as scrub, woodland edges, wetlands and gardens.



***Agrochola lychnidis***  
beaded chestnut inhabits grasslands, pastures, forest edges, final harvested forest areas, embankments and also occurs occasionally in gardens.





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**Forests rich in  
structural variation  
are rich in  
biodiversity**



# Variation by nature and people sustains biodiversity



A forest wildfire promotes fire dependent species of, for instance, vascular plants and insects. Forest fires were much more common historically than today due to modern and effective fire prevention methods.



Cattle grazing in forests promote structural variation and low intensity disturbance, enhancing habitats for many rare vascular plant species like some Orchidaceae spp.



# The legacy of history is tangible in forests and influences today's biodiversity



Final harvest in the 1960s



Selectively cut forest in the early 1900s



Final harvest with retention forestry in the 2020s





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# Our approach on biodiversity

Johan Lindman

SVP Global Forests and Sustainability Stora Enso



# Our starting point

Biodiversity must be adaptively managed and monitored on landscape, habitat and species levels to ensure a holistic approach due to biodiversity's inherent complexity

- We consider biodiversity throughout the forest life cycle  
→ silviculture, thinning and harvesting
- Solid track-record of achievements and development since the 1990s  
→ more must be done and now is the time to step up our ambitions
- Our biodiversity programme is based on science and continuously developed by our engagement in ongoing research
- We foster close collaboration with external stakeholders
  - Environmental NGOs input to our programme
  - Ambitious programme with university researchers to ensure a science-based approach
- Our forest experts and forest managers are deeply committed to preserving biodiversity and developing our operations further





# Biodiversity management preserves and enhances specific structural features throughout the forest lifecycle



## New forest

- Planting native tree species adapted to the site and soil
- Seedlings are produced in breeding programmes in order to adapt trees to future climate



## Growing forest

- Thinnings promote vital trees and open up the tree canopy enhancing ground-vegetation biodiversity
- Deciduous trees from spontaneous regeneration are promoted
- Deadwood is conserved and also created



## Harvesting

- Careful planning of harvesting; leave areas due to nature values
- Nature value trees are identified and conserved
- Special attention to deadwood conservation and creation
- No damage to waters and soils



# Holistic and adaptive biodiversity monitoring and management



The state of forest biodiversity is monitored through selected indicators



Our operations are monitored through performance indicators in order to minimise negative impact on biodiversity



We apply active biodiversity management, such as controlled burning, to enhance biodiversity



# Examples of biodiversity management on an operational level in Nordic forests





# Biodiversity indicators for landscape, habitat and species – examples



**Landscape level:** Cohesive green infrastructures are needed to support abundance and dispersal of many species.

## Indicators

- Area of old forest
- Forest age class distribution
- Protected set-aside areas on own land
- Tree species composition (%)



**Habitat level:** A variation of different habitats with relevant structures are required for a thriving forest biodiversity.

## Indicators

- Deadwood volume in different stages of decomposition, standing and lying on the ground in both sun exposed and shadowed environments
- Large old trees, mainly deciduous but also coniferous species



**Species level:** The occurrence and abundance of species reflect biodiversity. Since it is difficult to monitor all species, we focus on those that can indicate the presence of other ones.

## Indicators

- Monitoring of selected species, both rare and endangered ones and more common ones



# Stora Enso's biodiversity indicators

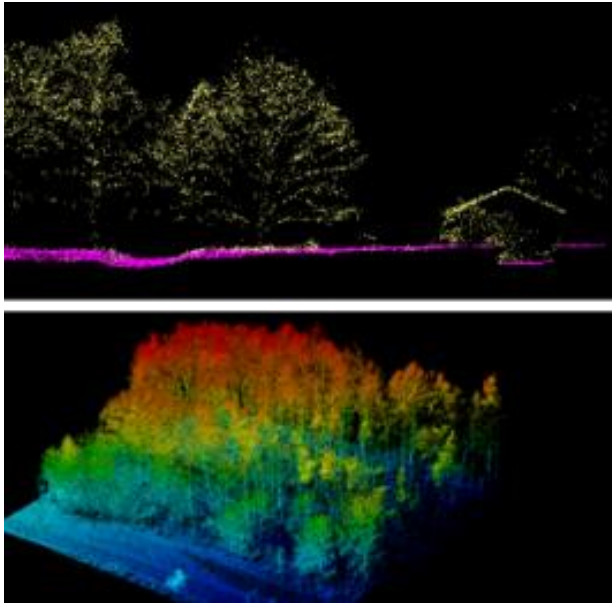


Indicator		Measure
<b>Quality of our work</b>		
• Soil damage close to water (crossings + damage to edge/buffer zones)		% of affected streams/lakes/wetlands
• Damages to retention trees, prioritised habitats or their edge zones during harvesting		% of affected habitats/zones
• Damage to deadwood		% of affected logs >15 cm
• Retention at felling		% of volume/area left
• Creation of new deadwood as high stumps		Number ha-1
<b>State of biodiversity</b>		
• Forest age class distribution	<i>Landscape</i>	% of area in 20-year age classes or as an index
• Streams with high nature quality	<i>Landscape</i>	Length of stream
• Dispersal barriers in streams	<i>Landscape</i>	Number of barriers in nature quality streams
• Stands with high age	<i>Habitat</i>	Area of % above 120 and 140 years
• Prioritised habitats	<i>Habitat</i>	Area (ha) of defined habitat
• Deciduous rich/dominated stands	<i>Habitat</i>	Area of deciduous dominated and /or rich stands
• Mixed species stands	<i>Habitat</i>	Area of mixed species forests
• Nature value trees	<i>Habitat</i>	Number/ha (mean)
• Amount of deadwood	<i>Habitat</i>	Volume/ha (mean)
• Vertical layering	<i>Habitat</i>	% of plots in different layering classes
• Abundance of selected keystone species	<i>Species</i>	Species abundance habitat-1
<b>Active biodiversity management</b>		
		Area (ha) managed each year



# Moving forward – examples of ongoing development

## Precision biodiversity



By biodiversity relevant applications based on precision forestry tools and digital twin of forests

## Future-fit forests



By breeding trees adapted to the changing climate without compromising biodiversity

## Science-based framework



By collaboration with universities and institutes





# Biodiversity target for 2030 – 40 actions developed and initiated, own forest as a development platform



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