Supply Base Report: DSHwood A/S

First Surveillance Audit

www.sbp-cert.org



Completed in accordance with the Supply Base Report Template Version 1.5

For further information on the SBP Framework and to view the full set of documentation see www.sbp-cert.org

Document history

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Contents

1 Overview

2 Description of the Supply Base

2.1 General description

2.2 Description of countries included in the Supply Base

2.3 Actions taken to promote certification amongst feedstock supplier

2.4 Quantification of the Supply Base

3 Requirement for a Supply Base Evaluation

4 Supply Base Evaluation

4.1 Scope

4.2 Justification

4.3 Results of risk assessment and Supplier Verification Programme

4.4 Conclusion

5 Supply Base Evaluation process

6 Stakeholder consultation

6.1 Response to stakeholder comments

7 Mitigation measures

7.1 Mitigation measures

7.2 Monitoring and outcomes

8 Detailed findings for indicators

9 Review of report

9.1 Peer review

9.2 Public or additional reviews

10 Approval of report

Annex 1: Detailed findings for Supply Base Evaluation indicators

Annex 2: Detailed findings for REDII

1 Overview

Producer name: DSHwood A/S

Producer address: Glarmestervej 7, 7000 Fredericia, Denmark

SBP Certificate Code: SBP-01-91

Geographic position: 55.545300, 9.692200

Primary contact: Erik T Kjær, +45 74 55 26 36,etk@dshwood.com

Company website: www.dshwood.com

Date report finalised: 28 Sep 2023

Close of last CB audit: 27 Oct 2022

Name of CB: Preferred by Nature OÜ

SBP Standard(s) used: SBP Standard 2: Verification of SBP-compliant Feedstock, SBP Standard 1: Feedstock Compliance Standard, SBP Standard 4: Chain of Custody, SBP Standard 5: Collection and Communication of Data Instruction, Instruction Document 5E: Collection and Communication of Energy and Carbon Data 1.5

Weblink to Standard(s) used: https://sbp-cert.org/documents/standards-documents/standards

SBP Endorsed Regional Risk Assessment: Denmark

Weblink to SBR on Company website: N/A

Indicate how the current evaluation fits within the cycle of Supply Base Evaluations					
Main (Initial) Evaluation	**First Surveillance**	**Second Surveillance**	**Third Surveillance**	**Fourth Surveillance**	**Re-assessment**
☐	☒	☐	☐	☐	☐

2 Description of the Supply Base

2.1 General description

Feedstock types: Primary

Includes Supply Base evaluation (SBE): Yes

Includes REDII: No

Includes REDII SBE: No

Feedstock origin (countries): Denmark, Germany, Sweden, United Kingdom, Finland, Latvia, Estonia, Lithuania, Norway

2.2 Description of countries included in the Supply Base

Country: Denmark

Area/Region: Denmark

Sub-Scope: N/A

Exclusions: No

DSHwood consider all of Denmark as it´s Supply Base. DSHwood have app. 150 suppliers which deliver feedstock which are either FSC/PEFC certified, which DSHwood mitigate via its SBE or which is controlled feedstock. Denmark has been in DSHwoods Supply Base from its initial SBP certification in 2017.

DSHwood's wood chip resource Denmark
DSHwood is dealing with all kinds of raw wood, wood chips and sawlogs from the Danish forests. Through our own purchasing and sales organization, we strive to buy wood directly from the forest or contractor and sell directly to the end user. DSHwood is a pure trading company and does not own the own industry or forests.
The feedstock is primary and supplied as wood chips produced in the forest of origin. DSH is purchasing the wood chip form Danish contractors. The contractor is performing the harvesting and chipping operations. DSHwood is supplying the produced wood chips directly from the forest via truck to the customers (heat /power plants/district heating plants)

The wood which is used for wood chips, is the utilization of low-quality wood which cannot be used for high quality products such as timber or pulpwood.

The resource of Danish woodchip has an origin from forests across the country. Suppliers are a wide section of the Danish forest owners. The chips are typically sourced from the following suppliers: 1) PEFC / FSC certified forests; 2) private non-certified forests 3) forest contractors who buy the wood standing from different non-forest origins.

Certified feedstock will be sourced from the PEFC / FSC certified forests and from forest contractors being SBP certified or evaluated according to Preferred by Natures Responsible Biomass Program. Finally

DSHwood has it own trained SBP supplier program with a number of suppliers.

Forest resources
According to Nord-Larsen et. al. (2021), the Danish forest area measures 640.811 ha, equivalent to 14,9 % of the country's total area. Approximately 75% of forest land is owned by private, and the last 25% owned by public organizations.

The total growing stock in the Danish forest is 143 million m3 equivalent to 224 m3/ha. The largest share of the total growing stock is hardwood (58%), while softwood is 42%.

Of the total amount of wood in the forests, the largest part is found in the deciduous forests (75 million m3) and the coniferous forests (54 million m3), while the mixed deciduous and coniferous forests contain 14 million m3.

Broken down by tree species, hardwood makes up 58 per cent. of the total wood mass, while conifers make up 42 per cent. Beech is the most woody species expressed in relation to its total wood mass (25 %). In comparison, Norway spruce constitutes 16 per cent of the total wood mass. The forest area distributed to individual tree species based on their share of the total area cover is as follows: The most common tree species in Denmark are norway spruce (13 %), beech (13 %) and oak (12 %).

Since the beginning of the measurements with Denmark's Forest statistics in 2002, the area with especially norway spruce has been decreasing (4 %), while it has been increasing for especially oak, birch and other broadlevead species. For ash there has been a sharp decline as a result of the fungal disease affecting ash, which has plagued the European ash trees.

Forest Management
Forrest management practices are based on the Danish specific forestry laws, forestry guidelines, and forest management planning practices. Even-aged forestry is the dominant method. The forest rotation period is 60-100 years, containing mostly tending of the young seedling stands, two thinning’s, a final harvesting and regeneration of a mature stand. Planting or natural seeding can be used in regeneration. Recently, un-even-aged forestry has become more popular and applied to the extent possible.

The terrestrial environment of Denmark is divided between two EU biogeographical regions by means of a north-south divide through the middle of the Jutland Peninsula: 1) the Atlantic region, covering the western part of Jutland and the Continental region, and 2) the Continental region covering the eastern part of Jutland and Denmark’s islands. These regions are used by the Danish Nature Agency under the Ministry of the Environment and Food to the EU Commission to report on the status and management results of Natura 2000 conservation areas.

In the early 1800’s, the forest cover in Denmark is estimated to have been as low as 3-4% of the total land area. Deforestation was caused by logging for timber and firewood and for animal grazing areas. Denmark’s first forest legislation came into force in 1805. Its main objective and as wells as following Danish forest acts, have been to maintain the forest covered area and to protect the existing forest from overexploitation, premature felling and grazing by farm animals. In the mid nineteenth century, intensive forest management became widespread and large afforestation projects were carried out.

Of Denmark’s 640,000 hectares of forest, 446,000 hectares are managed as forest reserves (called ‘fredskov’ in Danish) governed under the Danish Forest Act. The Forest Act permits forest management activities within these areas; however, Article 8 requires the managed area shall maintain continuous forest cover, that a maximum of 10 % of the forest area can be used for short rotation Christmas trees or greenery production (e.g., cuttings typically from Abies procera), and another maximum of 10 % of the area can be used for coppicing or for animal forest grazing. The Forest Act also protects streams and wetlands in forests that are not covered by the Nature Protection Act nor under the Ministry of Environment or local authorities. It stipulates that lakes, bogs, heaths, species-rich grasslands, coastal grasslands and swamps

located in “fredskov” forest reserve may not be planted or cultivated, drained or in other way changed. It is also important to note the Forest Act does not include many measures relating to forest techniques, e.g. harvesting, planting or thinning.

Part of the Danish forest area is covered by the Natura 2000 areas. Within these areas, special rules apply for the protection of habitats for animals and plants. There are 250 Natura 2000 areas designated in Denmark, covering a total of approx. 76,500 ha of forest or 12 per cent. of the forest area.

In relation to FSC HCV category 3, it is worth noting that although the Forest Act §25 sets provisions for registering ‘especially valuable forests’ i.e., valuable in terms of their biodiversity and conservation value, and accompanying appropriate conservation management activities for these areas, these areas have not yet been registered by the Danish Nature Agency. Danish forests biodiversity and conservation values have been surveyed by Department of Geosciences and Natural Resource Management at Copenhagen University through a sampling methodological approach. Therefore, not all forest areas have been systematically surveyed, particularly not small privately forests areas. The task of systematically surveying ‘especially valuable forests’ was supposed to be carried out by the Danish Nature Agency in the years 2016 - 2019. This initiative was re-initiated in 2022 and is expected to finish around 2024. .

Ownership
Forest ownership in Denmark are divided by private forests owners, (71%), State and Municipal owners (22%), trust funds or foundations (5%) and unknown owners (2%).

Biodiversity and protected areas
Due to its historical context, most Danish forests have been exposed to some level of forest management activities, varying from low impact to very intensive forestry. Today the majority of Denmark’s forests are semi-natural ecosystems composing of either native or exotic tree species, interspersed with a few small pockets of (recovered or remnant) natural forest-like stands. Although the forests area has increased over the last two centuries from 3-4% to nearly 15 %, the nature value of the pre-1800 forest stands have decreased significantly. This is due to intensive forest management practices aiming to manage even-aged, single-tree species stands. Examples of some the detrimental effects of intensive forest management practices include depleting or draining natural hydrology levels, extensive soil cultivation, eutrophication, removal of mature and over-mature trees and deadwood, semi or natural forest stand replacement with exotic species, coppicing and animal grazing.

Since the mid-1990s, forestry practices in Denmark, especially in State and Municipality owned forest, have shifted from traditional, production oriented forest management towards management regimes with a wider set of goals for conservation, biodiversity, recreation and addressing other social needs such as preserving cultural heritage sites.
Danish forest has been surveyed by Department of Geosciences and Natural Resource Management at Copenhagen University by means of a sample methodology and their biodiversity and conservation values have been documented under the Danish National Forest Inventory (NFI) hosted by the Danish Nature Agency.

In the Biodiversity Council's annual report 2022, it is estimated that no more than 2.3% of the Danish land area, including lakes and streams, can be safely regarded as protected and can thereby contribute to the EU's 30% land area protection target. A further 5.3% of the Danish land area can potentially also contribute, but the precise extent requires a more detailed individual assessment of the individual areas. No land area can currently be said to meet the requirements to be strictly protected, but up to 2.3% of the land area can potentially be considered.

Redlist assessment: In the period 2014 to 2019, 25 species experts have carried out a review of 12,000 species at risk of extinction from Danish nature. With an additional 1,300 species from the previous red list, the Danish Red List now includes 13,300 species. The experts' assessments have been professionally quality assured by a further 20 experts as well as formally and methodically by DCE - National Center for

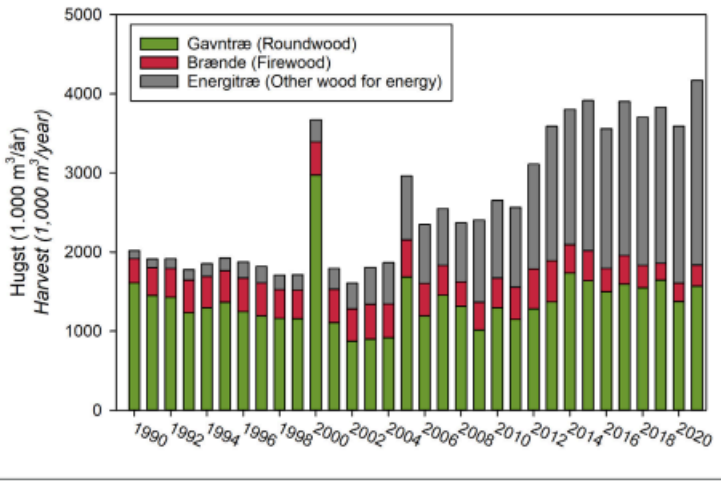
the Environment and Energy. The Red List assessments have documented that a large part of Denmark's wild animals, plants and fungi are still at risk of extinction from the country. The result is that 4,439 species, corresponding to 41.6% of all assessed species, are red-listed species and thus assigned to one of the categories: Regionally extinct (RE), critically endangered (CR), endangered (EN), vulnerable (VU), near threatened (NT) or where data is insufficient (DD). This overall picture largely corresponds to the result of the last red list assessment from 2010. A comparison of the assessments in Red List 2010 and Red List 2019 based on the IUCN's Red List Index shows that the species have generally become more threatened during the period, and the experts' assessment of the current development trends for the Red Listed species also shows that there are more species in decline than in progress . If you compare the Red List 2010 and the Red List 2019, it can be seen that the proportion of endangered species that are classified as critically endangered (CR), endangered (EN) or vulnerable (VU) has fallen from 18.7 to 17.3% of the assessed species. However, this cannot be interpreted as a sign of positive development for the species. More species than in the Red List 2010 have now ended up in the insufficient data (DD) category due to insufficient knowledge, so the change is rather an expression of a tightening of the documentation requirements for the distribution and development of the species. For some species, the above changes are due to the fact that we have gained new and better knowledge about the species or that the taxonomy or expert interpretation of data has changed. As in 2010, the most important habitats for red-listed species are forests and grasslands, somewhat surprisingly followed by arable land. However, this is not because the endangered species live on cultivated fields, but especially because many species of red-listed lichens have important habitats on farmland's solitary trees in avenues and fences as well as on stone fences with boulders. Here, the lichens still hold their own because there is enough light, unlike in the forests. Otherwise, there are many red-listed species in bogs, dunes, heaths and lakes/waterholes. There are also a number of red-listed species linked to the cities – especially bees, which use the city's grids, and lichens, which live on the city's stony surfaces and on the trunks of old trees. As something new, we have a special focus in the Red List 2019 on the carbon sources that the species live on – for example living plants, dead wood, excrement and flowers – for many species it is the carbon sources that are missing. So although there are still forests and grasslands, veteran trees, dead wood and flowers may be missing. The new red list thus confirms results from the national nature monitoring program NOVANA and the assessment of the conservation status of species and habitat types according to the Habitats Directive, which shows that there is continued loss and deterioration of habitats for wild animals, plants and fungi in all the most important ecosystems. However, there are signs of progress for a species group linked to streams, namely the goldsmiths.

Furthermore, areas enjoying protection under the Forest Act, Natura 2000 and/or the Nature Protection Act are also mapped and available online via the Danish Nature Agency’s digital nature map. Biodiversity data is updated regularly by the Danish Nature Agency. There is one forest area in North Zealand which is listed as UNESCO world heritage due to its historical significance as royal ’Parforce’ (a type of hunting system) hunting grounds landscape as, the site demonstrates the application of Baroque landscaping principles to forested areas.

Production of roundwood, firewood and wood for energy

Logging in the Danish forests is registered by Denmark's Statistics on the basis of questionnaires circulated to the Danish forest owners. The foresters report the processed quantities of wood and therefore, in contrast to the figures from Denmark's Forest Statistics, only include the part of the wood that has been taken out of the forest. The difference in the methods used must therefore be expected to result in differences in the calculated felling quantities, as some wood is left in the forest in connection with felling.

In the latest report from Statistics Denmark (2021), the total felling is calculated at 4.2 million m3 of which 66 percent was softwood and 34 percent hardwood. The felling is thus the largest in Denmark's history, which is connected to the fact that the forest area is also the largest ever and generally increasing prices for wood. The harvest calculated by Statistics Denmark is thus close to the quantities calculated by field measurements in Denmark's Forest Statistics. The felling volumes calculated by Statistics Denmark are rising quite a bit strongly from 2012 (figure below), which is partly due to a change in method at Danmarks Statistics.



Figur 3.2. Hugsten fordelt på løv- og nåletræ (øverst) og sortimenter (nederst) (Statistikbanken.dk/SKOV6: Hugsten i skove og plantager i Danmark efter tid, areal, område og træsort).

Figure 3.2. Harvested volume of broadleaves and conifers (top) and according to assortments (bottom) (Statistikbanken.dk/SKOV6: Felling in forests and plantations in Denmark by region, species of wood and area.

Of the total amount harvested in 2021, 38 percent was used for useful wood (for construction, furniture, floors, etc.) and 62 percent was used for energy in the form of firewood, wood chips or roundwood for energy.

Forest production and employment

Forestry's contribution to Denmark's gross domestic product (gross value added) is DKK 1.6 billion kroner, while the production value of forest is DKK 3.9 billion kroner. For more than 30 years, gross value added has been increasing measured in constant prices, but has been decreasing in recent years.
Forestry employs around 5,500 people in forestry and forest management. In addition, there are employees in the associated wood and paper industry. The number of people employed in the forestry sector has been stable over many years, while there has been a large decrease in the number of people employed in the sawmill and paper industry.

The forests and outdoor life

The forests hold the sovereign first place as a destination for outdoor life for the past 30 years despite many new possibilities for leisure and experience. A questionnaire survey conducted in 2007-08 showed that 90 percent of the population spent time in the forest at least once a year, and that the total annual number of forest visits was approx. 70 million.

References:

- Nord-Larsen, T., Johannsen, V. K., Riis-Nielsen, T., Thomsen, I. M., Bentsen, N. S., & Jørgensen, B. B. (2023). Skovstatistik 2021. Institut for Geovidenskab og Naturforvaltning, Københavns Universitet.
- Vejledning til Skovloven: https://mst.dk/erhverv/groen-produktion-og-affald/skovbrug/lovgivning-om-skovbrug/vejledning-om-skovloven
- Vejledning om Naturbeskyttelseslovens §3 beskyttede naturtyper: https://www2.mst.dk/Udgiv/publikationer/2019/12/978-87-7038-139-0.pdf
- Arealopgørelse over §3 natur: https://mst.dk/erhverv/rig-natur/naturbeskyttelse/3-beskyttede-naturtyper/arealopgoerelse
- Natura 2000: https://mst.dk/erhverv/rig-natur/naturindsatser/natura-2000
- Rødliste https://ecos.au.dk/forskningraadgivning/temasider/redlistframe/roedliste-2019
- Biodiversitetsrådet https://api.biodiversitetsraadet.dk/wp-content/uploads/2023/05/Notat_Fordelingen_mellem_eksisterende_og_planlagte_omraader.pdf
- Parforce: https://parforce.dk

Country: Sweden

Area/Region: Sweden

Sub-Scope: N/A

Exclusions: No

Scope:
DSHwood consider all of Sweden in it supply base. In Sweden DSHwood have 5-10 suppliers and all volumes are purchased FSC and PEFC certified. Feedstock is primary or secondary.

Forest cover
Most of Sweden is covered by boreal forest which in its natural state contains a patchwork of habitats shaped by various disturbance regimes, notably fires, storms and flooding. Owing to the large North-South extent of the country, there is a considerably variation in climate and soil conditions, and both conditions favour tree growth in the South. Sweden´s forests are among the most northerly in the world. The warming effect of the Gulf Stream permits forest growth at the latitudes that are characterized by treeless tundra in other parts of the world. Most of the country is covered by coniferous forests, but there is a small zone of mainly deciduous forests in the south.
According to the latest forest inventory “Riksskogstakseringen” from 2021 the total area of Sweden is 40.7 mill ha’s (100%). Of these 27.9 mill ha’s (69 %) are forest area and 23.5 mill ha’s are defined as productive forests[1]. See the figures below for i) the different boreal regions of Sweden and ii) the land area used by the traditional land use classes.
The predominant tree species by growing stock in Sweden are: Norway spruce 39.7 %, Scots pine, 39.3 %, Birch 12.9 %, Aspen 1.8 %, Alder 1.7 %, lodgepole pine 1.3 %, oak 1.3 %, other 2.0 %[2]

https://www.skogsstyrelsen.se/globalassets/in-english/forests-and-forestry-in-sweden_2015.pdf
Ownership
In Sweden there are at least 3 layers of tenure regimes influencing forest use and forestry: Private land tenure, rights to use the land held by the Sami people in the northern parts of Sweden and the right of public access. While the private ownership of forest is based on possession rights, the two other forms relate to user rights.
Private ownership has been important, first and foremost as a basis for sustainable land use and long-term planning and investments in the regeneration of forests. About half of all forest land in Sweden is owned by private enterprises. There are some 200,000 families with forest areas bigger than 5 ha’s and most farms are passed on from one generation to the next. The average holding is 50 ha’s. Some 100,000 family forest entities are members of a forest cooperative. All the cooperatives together form a National Federation of Family Forest Owners, who seeks to influence national and international forest policies.
A small number of large private sector industrial forest enterprises own approx. 25 % of all forest land in Sweden. Only a few Swedish companies have forest holdings combined with industrial capacity. Industrial enterprises tend to buy wood on stumpage basis from private forest owners.
There are 23 pulp and paper enterprises with 50 production facilities in total and 60 sawmill enterprises with around 115 mills in Sweden. Sawmills, which for the most part are owned by private sector enterprises, do not normally have forest on their own.
Most of the state forest belongs to the state-owned company Sveaskog, which accounts for 14 % of all forest land. Sveaskog is Sweden’s largest single forest owner and supply logs, pulp wood and biofuel for 130 large industrial customers.

Management Practices
National Forest Policy
The main intention of the Swedish National Forest Policy is to ensure sustainable forest management and it focuses on three major objectives, one for production, one for environmental concerns and one for social concerns.
Sweden believes that active, sustainable forestry can play an important role and contribute to mitigation of climate change through replacing fossil fuels and fossil intensive materials and through increasing the long-

term storage of carbon in forest land, while relevant national environmental quality objectives must be met. Sufficient availability of sustainable biomass from the Swedish forest alongside continued profitability and willingness to invest in the entire forest value chain will be ensured through sustainable forest management and forest growth and within the framework of the Swedish environmental quality objectives. Therefore, Sweden will not take any measures to reduce harvesting levels even if Sweden, due to sharply increased fellings, would risk reporting emissions from managed forest land.
Instead, possible reported emissions will be offset by the uptake of carbon dioxide that can be expected to occur in other land categories. If fellings increase to a level where further measures are required, emissions will be fully compensated for by other flexibilities in the regulation. Measures for increased growth can also increase the maximum harvesting levels. Sweden would like to underline that an ever increasing standing volume in the production forest land is not reconcilable with long term sustainable forest policy since mortality from natural disturbances will increase and lead to comprehensive biomass losses[3].
The legal demands on forestry are mainly set by the Forestry Act and the Environmental Code.
The forest sector is considered a commercial sector which should be economically self-sustained and not subsidized. There are, however some state subsidies to enhance the forest sector's environmental value.
The National Forest Policy is influenced by several international regulations and agreements:

- EU Timber Regulation
- The Habitat Directive
- The Water Framework Directive
- Convention on Biological Diversity (CBD)
- UN Framework Convention on Climate Change (UNFCCC)
- United Nations Forum on Forests (UNFF)

Forest management
High and long-term sustainable production of forest raw material combined with social and environmental considerations are the primary goal for most forest owners.
Swedish forest management is highly influenced by marked-driven processes of forest-certification following the schemes of FSC and PEFC.
Scots pine (Pinus sylvestris) and Norway spruce (Picea abies) are the dominant tree species in all Sweden. Lodgepole pine (Pinus contorta) and the deciduous species Birch (Betula pendula), Aspen (Populus tremula) and Alder (Alnus glutinosa) are used to some extent in northern Sweden.
European larch (Larix decidua), Douglas fir (Pseudotsuga menziesii) and Sitka spruce (Picea sitchensis) and oak (Quercus robur) and Beech (Fagus sylvatica) is used in the south. The main part of the deciduous forest cover is naturally regenerated.
Forest management planning is extensively used by forest managers in everyday forestry as a tool for production planning and for implementing conservation measures.
The most used regeneration method is planting. Almost 400 mill seedlings are planted each year and soil preparation is often a prerequisite for successful regeneration. The planting operation is mostly carried out manually, but research on mechanized tree planting is ongoing. The seedlings have traditionally been treated with pesticides to protect against pests, but nowadays more environment friendly mechanical protection is used to a greater extent.
More than half of the annual industrial supply originates from private forest entities. More than 70 % of the yearly wood volume procured in Sweden originates from final felling, with the rest coming from thinning operations.
Harvest operations are usually planned with consideration to natural and cultural features. The harvesting is almost totally mechanized and is carried out with single grip harvesters that measures both length and diameter and thus optimizing the wood revenue
More than 90 % of the forest operations, -planting, cleaning, logging and transportation, are carried out by contractors.

Bioenergy from boreal forests – Swedish approach to sustainable use[4]

In 2019 The International Renewable Energy Agency (IRENA) published the report "Bioenergy from boreal forest: Swedish approach to sustainable wood use". The report provides relevant background information when considering the existing and future use of biomass in Sweden.

The report concludes the following for the potential on bioenergy from slash and stumps:

• Slash – tops, branches, bushes and small trees – can be collected, but a certain amount needs to be left at the site, typically around 20% to 25%. To avoid soil damage, slash can be used to reinforce tracks for machinery.
• At a national level, a harvesting rate of 50% of all slash is probably a practical maximum, when considering both economic and ecological restrictions.
• Stumps can be harvested on at least 20% of the final felling area with limited negative effects on biodiversity.

In the report it is argued that on the grand scale the increased collection of slash and stumps can increase the collection of logging residue nearly five-fold, from 10 TWh to 50 TWh. If it was possible to collect 70% of slash and 30% of stumps sustainably, comprising roughly half of all logging residues, the collection of logging residues could increase to 71 TWh.

Socio-Economic setting
Sweden is a country dominated by forests and it has a rather low population density with only 25[5] inhabitants per square kilometer. The country covers 450 thousand km2 and stretches 1574 km North to South. Sweden is the third largest country in EU by area and has a population of 10.2 mill inhabitants.
The country holds almost 1 % of the world's commercial forests, but provides 10 % of the sawn timber, pulp and paper that is traded on the global market.
Facts and figure by the Swedish forest industry[6]:
Economic significance
World's 3rd largest exporter of pulp, paper and sawn timber

- Export value, 2018: SEK 145 billion
- 80% of the products are exported
- A little over SEK 15,4 billion was invested in 2018

Production volumes, 2018

- 11.9 million tonnes of pulp (of which 4.3 million tonnes market pulp)
- 10.1 million tonnes of paper
- 18.3 million cubic metres of sawn timber

Employment

- 70,000 employees in forestry
- A further 50,000 one-man businesses active in forestry

Conservation CITES or IUCN species
The primary focus for conservation of Swedish forests is to protect high conservation value forests and include sufficient biodiversity measures in all forests.
Of Sweden's 28 mill ha's of forest land, approx. two mill ha´s are protected for conservation purposes, mostly in national parks and nature reserves. In these areas, timber extraction is not allowed unless it is to specifically improve the value of the land or nature and/or for cultural conservation.
Unproductive forest land which accounts for some 4 mill ha's are protected through the Forestry Act. On the remaining land the forests are managed with equal respect to biomass production and environmental and social goals.
https://www.skogsstyrelsen.se/globalassets/in-english/forests-and-forestry-in-sweden_2015.pdf

Species	CITES status	IUCN classification
Oak (*Quercus robur, Quercus petraea*)	Not on the list	Least concern (LC)
Oak (*Quercus rubra*)	Not on the list	Least concern (LC)
Birch (*Betula spp*)	Not on the list	Least concern (LC)
Beech (*Fagus silvatica*)	Not on the list	Least concern (LC)
Common Ash (*Fraxinus excelsior*)	Not on the list	Near threatened (NT) Reason: The Ash dieback is an infectious disease that has caused severe dieback of Common Ash throughout much of its range
Alder (*Alnus glutinosa, Alnus incana*)	Not on the list	Least concern (LC)
Pine (*Pinus Silvestris*)	Not on the list	Least concern (LC)
Spruce (*Picea abies, Picea sitchensis*)	Not on the list	Least concern (LC)
Maple (*Acer spp.*)	Not on the list	Least concern (LC)
Larch (*Larix decidua, Larix eurolepis*)	Not on the list	Stable
Poplar (*Populus trichocarpa, Populus tremula*)	Not on the list	Least concern (LC)
Oregon pine (*Pseudotsuga menziesii;*)	Not on the list	Least concern (LC)
Linden (*Tilia spp.;*)	Not on the list	Least concern (LC)

DSHwood is aware of the threats towards common ash (Fraxinus excelsior)

Sweden has a number of IUCN categories mapped and registered:
- Strict nature reserves
- National parks
- Habitat / species management areas
- Protected landscapes
- Habitat Directive sites and Bird Directive sites

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[1] Petersson, H. (2021): ”Skogsdata 2021”, SLU Institutionen for skoglig resurshushallning, Umeå, Sweden.
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[3] https://www.government.se/4a9f07/contentassets/730d6345a5d745b1bc5f084e2f00fff7/revised-national-forestry-accounting-plan-for-sweden
[4] IRENA (2019), *Bioenergy from boreal forests: Swedish approach to sustainable wood use,* International Renewable Energy Agency, Abu Dhabi.
International Renewable Energy Agency, Abu Dhabi.
[5] https://www.worldometers.info/world-population/sweden-population/
[6] https://www.forestindustries.se/forest-industry/facts-and-figures/

Country: Germany

Area/Region: Germany

Sub-Scope: N/A

Exclusions: No

DSHwood consider all of Germany as it´s Supply Base. DSHwood have 5-10 suppliers which deliver material which is either FSC 100% or 100% PEFC certified. Feedstock is primary or secondary. Germany has been included in DSHwood Supply Base by 2020.

Accordig to the National Forest Inventory (2012) the forest in Germany covers 11.4 million hectares equivalent to 32 % of the total landarea of the country. The forest distribution in Germany is quite diverse. The percentage of land covered with forest are low on North German plains due to agricultural activity, and the Southern low mountain ranges are particularly rich in forests. The percentage of deciduous trees is steadily increasing (Period 2002-2012). Four species dominate in the forests of Germany:

- Spruce, covering approx. 2.8 mill ha's (25 % of the forest area). Decreased with 8%.
- Pine covers approx. 2.4 mill ha's (22 % of the forest area). Decreased with 3 %.
- Beech covers approx. 1.7 mill ha's (15 % of the forest area). Increased with 6 %.
- Oak covers approx. 1.1 mill ha's (10 % of the forest area). Increased with 7 %.

Almost all forests in Germany are influenced by humans ("semi-natural"). But structural diversity and naturalness have increased through active forest management. Almost natural or semi-natural tree species composition covers 36% of the forest area (51% in the young forest stands, i.e. trees up to four metres high). Introduced tree species cover 5 % of the forest area. The most common introduced species are Douglas fir (2 %), Japanese larch (0.8 %) and red oak (0.5 %)
Overall mixed stands cover 78% of the forest area and multiple-storied forest stands cover 68% of the forest area. Furthermore natural rejuvenation is used on 85% of the forest area.
Both total standing timber volume and the total forest cover is increasing in Germany. Annual increment in German forests is in average 11.2 m3 per ha and year. In total 121.6 mill m3 per year. Annual harvest represents 62.5 % of annual increment corresponding to an average of 7 m3 per ha and year. In total 76 mill m3 raw timber per year.

Ownership
The Federal Republic of Germany is a federal state. Responsibility for the forests thus mainly lies with the Länder. While the Federal Government merely sets the forest policy framework, the Länder are responsible for the formulation and implementation of forest policy targets. Private persons, corporate entities (mostly municipalities) and the state, i.e. mainly the Länder, own woodlands. Private forest entities own an average forest area size of 5 ha's, that are frequently spread over several smaller areas.
The forest entities with less than 20 ha's of forests represent half of the privately-owned forest area. The largest entities in terms of woodland cover are owned by the state. A state forest entity manages typically between 8.000 and 15.000 ha's and often also performs forest management tasks for private and communal forests. The Federal Government (State forest – National Property) currently owns around 400.000 ha's, which accounts for approximately 3.5 % of the forest area. These are predominantly forests used for military purposes. State forests of the Länder own approximately 29 % of the German forests.
Many forest owners in Germany own small and fragmented forests that are hard to manage. Approximately 430.000 forest owners are organized in 3.600 forestry associations to better deal with the specific disadvantages of the fragmented property structures.

Management practices
National forest
policy

Germany's Forest policies define the framework and rules related to management of forests and timber utilisation. The main forestry regulations at Federal level can be found in the Federal Forest Act. One of the Federal Government's political guidelines is the Forest Strategy 2020. Its aim is to develop an adapted, lasting balance between increasing timber demands on one hand and sustainability on the other hand. The implementation of the Forest Strategy 2020 focus on the following thematic areas:

- Climate change mitigation and climate adaption
- Promotional programmes for small and micro private forest owners to ensure operational objectives within the framework of existing legal forest regulations.
- Promotion of timber as technically and ecologically excellent renewable resource

Another focus area in the German National Forest Policy is to improve forest biological diversity through the following approaches:

- Integrated forest management
- Intensifying the dialogue between forest owners, forestry and nature conservation
- Taking the dynamics of forest ecosystems and unique local features into account
- Balancing the interests of the general public and forest owners
- Creating incentives for nature conservation
- Linking biotope to allow animal and plant species to move from one region to another
- Strengthening environmental protection to counter global and large-area environmental changes
- Implementing biodiversity objectives in federal forest areas

The core disciplines of German silviculture are

- Maintaining forest area
- Increasing the stability, productivity and diversity of the forests
- Adaption to climate change
- Preserving forest genetic resources
- Strictly limited use of chemical plant protection.

Protection of soil and water resources is another important focus area of the German National Forest Policy. Research and education are also emphasised, and the Federal government promotes research through a wide range of funding programmes targeted at national and international level.

Socio economic setting

Germany is a densely populated country. Over 80 mill people live on 35.7 mill ha's. For centuries people have inhabited and cultivated Germany intensively. 13 % of the national area is used for settlements and transportation. 52 % of the area is used for agriculture, making it the largest land use form in Germany followed by forests or forestry with 32 %. In recent decades, there has been an increasing competition between different types of land use, like production of timber for consumption and nature conservation and recreation.

In communal forests 96 % of all income is generated by sale of timber. In private forests this figure is as high as 98 %. The socially desired protective and recreational functions of forests in Germany are financed almost entirely from this income. In the state forest of the Länder the additional costs and diminished proceeds are largely compensated by subsidies from the state budgets (up to 150 EUR/ha's). In the case of private and municipal forest holdings public support has so far been comparatively low in this area (4 EUR and 9 EUR respectively).

Economy of the forest sector

In the period 2008-2014, German forestry was a profitable economic sector. The companies in the domestic timber industry are highly concentrated in rural regions and at the same time highly integrated in the global economy.

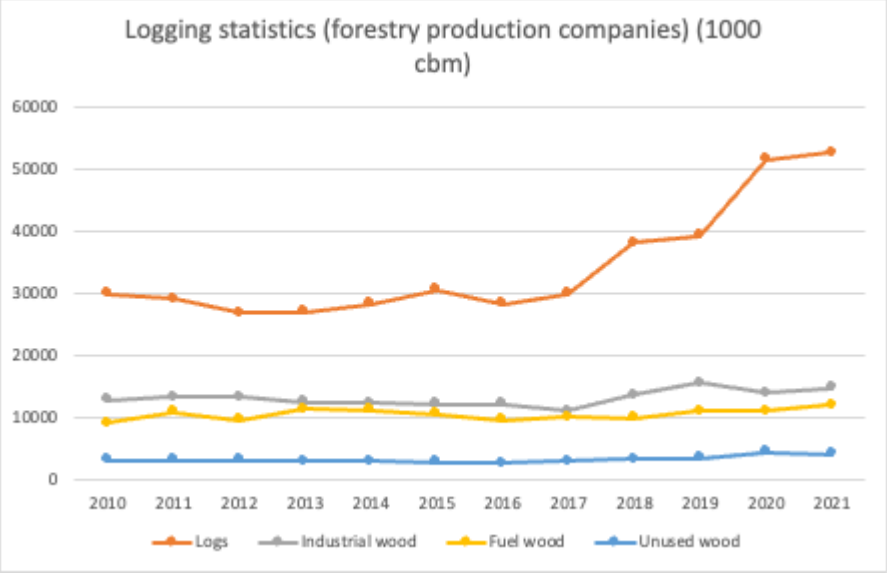
- In 2012, net business profits exceeded 1 billion EUR/year
- The German national cluster of forestry and timber generated sales of 178 billion EUR and a gross added value of 55 billion EUR in 2014
- EU countries are the primary trade partners accounting for approx. 80 % of total trade.
- Germany is the third largest exporter (by value) of timber and timber-based products worldwide
- In Germany, a total of approx. 132 mill m3 timber are consumed per year. 58 % of this originates from raw forest timber
- Per capita consumption of timber is approx. 1.4 m3 annually.
- Two thirds of timber harvested in Germany are used for construction, timber-based materials and paper. One third are used for energy production.
- 1.1 mill people are employed in the German forest and timber industry (3.4 % of total) in some 25,000 companies.

Rising temperature and drought, strongly increased harvest of logs, fuelwood stable or small increase in harvest.

Rising temperatures and persistent drought are increasingly affecting the forests in Germany. This not only favors the outbreak of forest fires, but also the spread of pests such as the bark beetle. In 2021, almost 41.1 million cubic meters of damaged wood were felled due to insect damage. As reported by the Federal Statistical Office (Destatis), this corresponds to 81.4% of the felling caused by forest damage - a new record value. The proportion has more than quadrupled in the past ten years: In 2011, insect damage was still responsible for 18.4% of the damaged wood felled. Infestation by pests is now the main reason for the felling of damaged wood in German forests. Other causes of felling that are ultimately decisive for the death of the trees, such as drought (7.9%) and wind or storm (4.6%), played only a minor role in 2021.

Coniferous trees such as spruce, fir or pine are particularly affected by insect infestation: in 2021, these tree species accounted for almost all of the insect-related damaged wood felling, at 99.3%. This corresponds to around 40.8 million cubic meters of damaged wood. One reason for this is the rapid spread of the bark beetle in the local forests. This primarily affects spruces, which are also often planted in monocultures.

As can be seen from the figure below, the harvest of logs has increased significantly, but it can also be seen that fuel wood has a stable or small increasing tendency in 2020 and 2021.



Conservation CITES or IUCN species
CITES habitat species are present in Germany but do not include species traded by DSHwood.

Germany has a number of IUCN categories, covering the following categories:
- *Strict nature reserves*
- *National Parks*
- *Habitat / species management areas*
- *Protected landscapes*

Large areas are also designated as Natura 2000 protected Habitat Directive Sites or Bird Directive sites.
Natura 2000
The ecological value of forest in Germany has improved significantly in recent decades. The Red List of endangered biotope types of Germany shows that development has stabilised in many forest biotopes. However, Germany's Red Lists for the forests still show species of animals, fungi and plants that are considered endangered and threatened with extinction. These include many species that are dependent on old forest stands, undisturbed forest development and deadwood components.
The last monitoring of the NATURA 2000 network (period 2007-2012) shoved that 79 % of forest habitat types have a "favourable" conservation status, 12 % were rated "unfavourable-insufficient" and 9% "unfavourable-poor".

Forest use in areas that are protected by the German Federal Nature Conservation Act is generally limited to the extent necessary to achieve the respective protection objectives. ***[1]***

- *NATURA 2000 protected areas in forests: 2.7 mill has or 24% of the forest area*
- *Forest protected areas with specific use restrictions: 1.9% of the forest area*

Species traded by DSHwood in Germany

Species traded	*Latin*	Danish	Cites Status[2]	IUCN[3]
Silver Fir	*Abies alba*	Ædelgran	Not on the list	Least concern (LC)
Grand Fir	*Abies grandis*	Kæmpegran	Not on the list	Least concern (LC)
Caucasian Fir	*Abies nordmanniana*	Nordmannsgran	Not on the list	Least concern (LC)
Noble Fir	*Abies procera*	Nobilis	Not on the list	Least concern (LC)
Norway Maple	*Acer platanoides*	Spidsløn	Not on the list	Least concern (LC)
Maple	*Acer pseudoplatanus*	Ahorn	Not on the list	Least concern (LC)
Common Alder	*Alnus glutinosa*	Rødel	Not on the list	Least concern (LC)
Grey alder	*Alnus incana*	Grå-el	Not on the list	Least concern (LC)
Silver Birch	*Betula pendula*	Vortebirk	Not on the list	Least concern (LC)
Downy Birch	*Betula pubescens*	Dunbirk	Not on the list	Least concern (LC)
Common Hornbeam	*Carpinus betulus*	Avnbøg	Not on the list	Least concern (LC)
Mediterranean Cypress	*Cupressus sempervirens*	Almindelig cypres	Not on the list	Least concern (LC)
European Beech	*Fagus sylvatica*	Bøg	Not on the list	Least concern (LC)
Common Ash	*Fraxinus excelsior*	Ask	Not on the list	*Near Threantened (NT)* Common Ash is classified as Least Concern in Germany
European Larch	*Larix decidua*	Europæisk lærk	Not on the list	Least concern (LC)
-	*Larix eurolepis*	Hybridlærk	Not on the list	*Not on the list*
Japanese Larch	*Larix kaempferi*	Japansk lærk	Not on the list	Least concern (LC)
Norway Spruce	*Picea abies*	Rødgran	Not on the list	Least concern (LC)
White Spruce	*Picea glauca*	Hvidgran	Not on the list	Least concern (LC)
Serbian Spruce	*Picea omorika*	Søjlegran	Not on the list	Endangered (EN)
Sitka Spruce	*Picea sitchensis*	Sitkagran	Not on the list	Least concern (LC)
Lodgepole Pine	*Pinus contorta*	Klitfyr	Not on the list	Least concern (LC)
Austrian Pine	*Pinus nigra*	Østrigsk bjergfyr	Not on the list	Least concern (LC)
Ponderosa Pine	*Pinus ponderosa*	Gul fyr	Not on the list	Least concern (LC)
Eastern White Pine	*Pinus strobus*	Weymouth fyr	Not on the list	Least concern (LC)
Scots Pine	*Pinus Sylvestris*	Skovfyr	Not on the list	Least concern (LC)
Eurasian Aspen	*Populus tremula*	Bævreasp	Not on the list	Least concern (LC)
Gray poplar	*Populus x canescens*	Gråpoppel	Not on the list	-
Sweet Cherry	*Prunus avium*	Kirsebær	Not on the list	Least concern (LC)
Douglas-fir	*Pseudotsuga menziesii*	Grøn douglasgran	Not on the list	Least concern (LC)
Sessile Oak	*Quercus petraea*	Vintereg	Not on the list	Least concern (LC)
European Oak	*Quercus robur*	Stilkeg	Not on the list	Least concern (LC)
Northern Red Oak	*Quercus rubra*	Rødeg	Not on the list	Least concern (LC)
Willow	*Salix spp*	Pileslægten	Not on the list	Least concern (LC)
Northern White Cedar	*Thuja occidentalis*	Almindelig thuja	Not on the list	Least concern (LC)
Western Red-cedar	*Thuja plicata*	Kæmpethuja	Not on the list	Least concern (LC)
Western Hemlock	*Tsuga heterophylla*	Vestamerikansk hemlock	Not on the list	Least concern (LC)

IUCN, Critically endangered, forests in Germany, include:

Name (English/German)	Latin	Cites Status[4]
Green Ash	*Fraxinus pennsylvanica*	Not on the list
Fruchtbares Schlafmoos	*Hypnum fertile*	Not on the list
Bavarian Pine Vole	*Microtus bavaricus*	Not on the list
Mehlbeere sp.	*Sorbus algoviensis*	Not on the list
Eichstätter Mehlbeere	*Sorbus eustettensis*	Not on the list
Gaucklers Mehlbeere	*Sorbus gauckleri*	Not on the list
Harz Mehlbeere	*Sorbus harziana*	Not on the list
Würzbuerger Mehlbeere	*Sorbus herbipolitana*	Not on the list
Mehlbeere sp.	*Sorbus lonetalensis*	Not on the list
Meierotts Mehlbeere	*Sorbus meierottii*	Not on the list
Mergenthalers Mehlbeere	*Sorbus mergenthaleriana*	Not on the list
Langblättrige Mehlbeere	*Sorbus perlonga*	Not on the list
Gössweinsteiner Mehlbeere	*Sorbus pulchra*	Not on the list
Schnizleins Mehlbeere	*Sorbus schnizleiniana*	Not on the list
Schuwerk Mehlbeere	*Sorbus schuwerkiorum*	Not on the list
Schwarz Mehlbeere	*Sorbus schwarziana*	Not on the list
Seybold Mehlbere	*Sorbus seyboldiana*	Not on the list

IUCN, Endangered, forests in Germany, include:

Name (English/German)	Latin	Cites Status[5]
Insecta sp.	*Ampedus quadrisignatus*	Not on the list
Insecta sp.	*Buprestis splendens*	Not on the list
Insecta sp.	Corticeus bicolorides	Not on the list
Insecta sp.	*Corticeus versipellis*	Not on the list
Bryopsida sp.	*Distichophyllum carinatum*	Not on the list
Liliopsida sp.	*Epiactis greuteri*	Not on the list
Insecta sp.	*Lasiglossum breviventre*	Not on the list
Insecta sp.	Limoniscus violaceus	Not on the list
European rabbit	*Oryctolagus cuniculus*	Not on the list
Insecta sp.	*Ropalopus ungaricus*	Not on the list
Ade-Mehlbere	*Sorbus Adeana*	Not on the list
Kordigast Mehlbeere	*Sorbus cordigastensis*	Not on the list
Dörrs Mehlbeere	*Sorbus doerriana*	Not on the list
Ries Mehlbeere	*Sorbus fischeri*	Not on the list
Thüngersheimer Mehlbeere	*Sorbus haesitans*	Not on the list
Mehlbeere sp.	*Sorbus hoppeana*	Not on the list
Mehlbeere sp.	*Sorbus pseudothuringiaca*	Not on the list
Mädchen Mehlbeere	*Sorbus puellarum*	Not on the list
Regensburger Mehlbere	*Sorbus ratisbonensis*	Not on the list
Moss	*Ulota macrospora*	Not on the list

[1] https://www.eea.europa.eu/data-and-maps/explore-interactive-maps/european-protected-areas-1
https://www.umweltbundesamt.de/daten/land-forstwirtschaft/forstwirtschaft#textpart-1

[2] http://checklist.cites.org/#/en
[3] https://www.iucnredlist.org/search
[4] http://checklist.cites.org/#/en
[5] http://checklist.cites.org/#/en
https://www.destatis.de/DE/Presse/Pressemitteilungen/Zahl-der-Woche/2022/PD22_29_p002.html
https://www-genesis.destatis.de/genesis/online?operation=abruftabelleBearbeiten&levelindex=1&levelid=1662453026299&auswahloperation=abruftabelleAuspraegungAuswaehlen&auswahlverzeichnis=ordnungsstruktur&ausw

ahlziel=werteabruf&code=41261-0002&auswahltext=&werteabruf=Werteabruf#abreadcrumb

Country: United Kingdom

Area/Region: United Kingdom

Sub-Scope: N/A

Exclusions: No

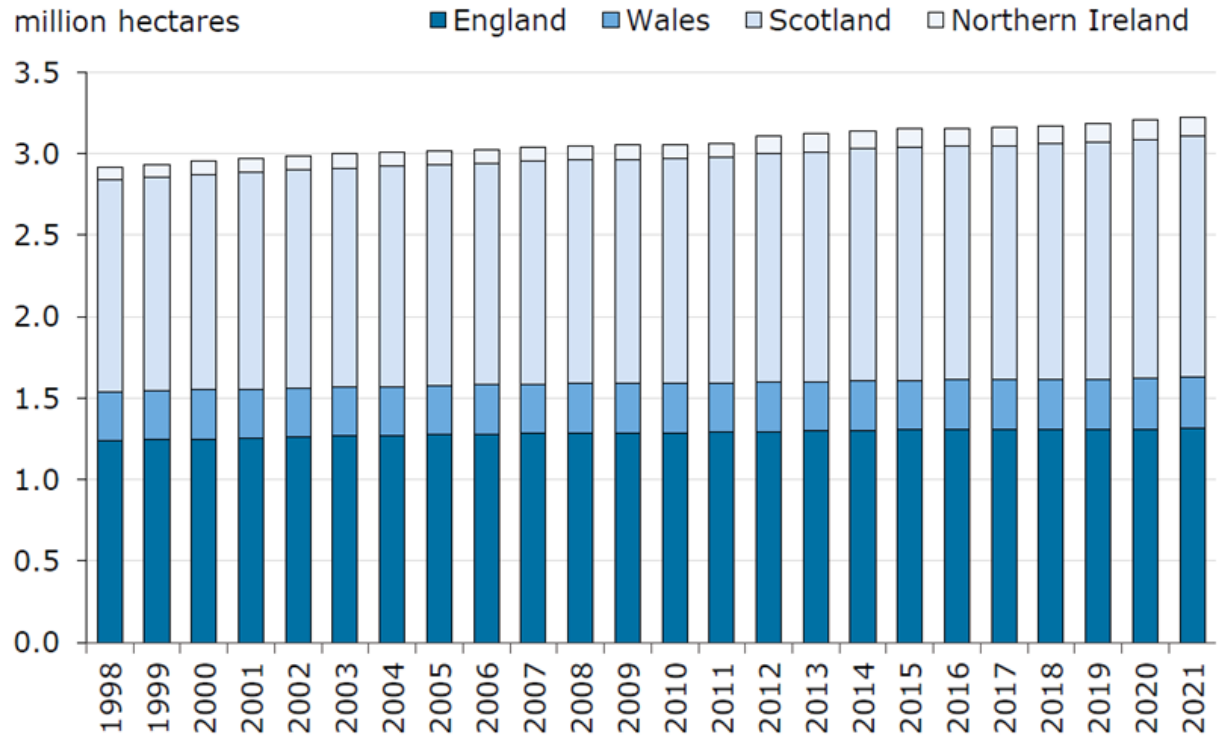
Scope
DSHwood consider all of the United Kingdom (UK) as its supply base. From UK the following species are sourced:

Alnus glutinosa.	Black alder
Alnus incana	Italian alder
Betula pubescens *Betula pendula*	Birch
Fagus sylvatica	Beech
Fraxinus excelsionr	Common ash
Larix decidua	European larch
Larix eurolepis	Larch
Picea abies;	Norway Spruce
Picea sitchensis	Sitka spruce
Pinus sylvestris;	Scots Pine
Pinus nigra	Corsican pine
Pinus contorta	Lodgepole pine
Populus trichocarpa	Poplar
Populus tremula.;	European aspen
Pseudotsuga menziesii;	Oregon pine, Douglas fir OK

Quergus rubra	American red oak
Quergus petrea	Mountain oak
Quercus robur;	European oak
Tsuga heterophylla	Western hemlock OK

From UK DSHwood only source feedstock which is FSC or PEFC certified – primary and secondary feedstock. Non-forest primary feedstock is not included in the scope. Additionally DSHwood does generally not source primary feedstock from peat soils, see details in section about peatlands.
DSHwood A/S has a subsidiary (DSHwood Ltd) in UK which is SBP, FSC and PEFC CoC certified. Some feedstock will be sourced via intercompany trade where DSHwood ltd sells the SBP, FSC and PEFC certified material to DSHwood A/S.

Forest cover
The area of woodland in the UK at 31 March 2021 is estimated to be 3.2 million hectares. This represents 13% of the total land area in the UK, 10% in England, 15% in Wales, 19% in Scotland and 9% in Northern Ireland. The area of woodland is estimated to be 1.5 million hectares in Scotland, 1.3 million hectares in England, 0.3 million hectares is in Wales and 0.1 million hectares is in Northern Ireland. The figure below shows woodland area by country since 1998. Woodland area in the UK has risen by around 300 thousand hectares since 1998, an increase of 11% over the period.
Area of woodland, 1998-2021



Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Welsh Government, Natural Resources Wales, Forest Service, National Forest Inventory.
Notes:
1. Woodland areas for England, Wales and Scotland shown in this figure are based on data from the National Forest Inventory. The trends shown take account of areas of new planting and identifiable

permanent woodland loss. Areas of woodland loss that are not yet identifiable (e.g. conversion of woodland for the restoration of open habitats) are not accounted for. Further information on the National Forest Inventory is available at www.forestresearch.gov.uk/toolsand-resources/national-forest-inventory/.
2. Figures for 1998 to 2009 for England, Wales and Scotland were revised from those initially published, to produce results that are consistent with the National Forest Inventory and enable comparisons over time.

Species
Conifers account for around one half (51%) of the UK woodland area, although this proportion varies from around one quarter (26%) in England to around three quarters (74%) in Scotland.

Conifers:
Sitka spruce accounts for around one half (51%) of the conifer area in Great Britain, followed by Scots pine (17%) and larches (10%). Sitka spruce is less dominant in England, accounting for just one quarter (26%) of the conifer area there.

Broadleaves
The most commonly occurring broadleaved species in Great Britain are birch (accounting for 18% of broadleaf woodland), oak (16%) and ash (12%). Birch is more dominant in Scotland, accounting for 43% of the broadleaf area there.

LULUCF
The rate of build-up of CO2 in the atmosphere can be reduced by taking advantage of the fact that atmospheric CO2 can accumulate as carbon in vegetation and soils in terrestrial ecosystems. Under the United Nations Framework Convention on Climate Change any process, activity or mechanism which removes a greenhouse gas from the atmosphere is referred to as a "sink". Human activities impact terrestrial sinks, through land use, land-use change and forestry (LULUCF) activities, consequently, the exchange of CO2 (carbon cycle) between the terrestrial biosphere system and the atmosphere is altered. The role of LULUCF activities in the mitigation of climate change has long been recognized. Human activities affect changes in carbon stocks between the carbon pools of the terrestrial ecosystem and between the terrestrial ecosystem and the atmosphere. Mitigation can be achieved through activities in the LULUCF sector that increase the removals of greenhouse gases (GHGs) from the atmosphere or decrease emissions by halting the loss of carbon stocks. In its Special Report on Climate Change and Land, the IPCC identifies many land-related climate change mitigation options that have co-benefits for climate change adaptation. At the same time the report also recognizes that some activities can have adverse side-effect on other ecosystem services such as through increased competition for land and water if not implemented with due consideration to the local conditions including current use of the land.
The IPCC identifies agriculture, forestry and other land use (AFOLU) as a significant net source of GHG emissions, contributing to about 23% of anthropogenic emissions of carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O) combined as CO2 equivalents in 2007–2016. Forests present a significant global carbon stock accumulated through growth of trees and an increase in soil carbon. Conversion of primary to managed forests, illegal logging and unsustainable forest management result in GHG emissions and can have additional physical effects on the regional climate including those arising from albedo shifts. Conversely, in areas of degraded forests, sustainable forest management can increase carbon stocks and biodiversity. In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit. Carbon storage in long-lived wood products and reductions of emissions from use of wood products to substitute for emissions-intensive materials also contribute to mitigation objectives.

The Renewable Energy Directive II encompass the following LULUCF demands:
a) The country or regional economic integration organization from which forest biomass originates is party to the Paris Agreement and
i) has submitted a nationally determined reduction target (NDC) to the UN that includes the land sector (LULUCF) or

ii) has laws to preserve / increase carbon stocks and drains and it is documented that emissions from LULUCF do not exceed uptake
b) Systems have been put in place at the forestry source area level to ensure that the level of carbon stocks and drains in the forests are maintained or improved in the long term.
The RED II directive requirements concerning LULUCF can be considered fulfilled if the entire biomass is certified according to an approved voluntary scheme.

REDII and LULUCF for United Kingdom
UK ratified the Paris Agreement on 18 November 2016 and DSHwood conclude that UK fulfills the REDII requirements for LULUCF as described below.

UK´s NDS and its scope
On 12/12/2020 UK submitted its NDC Nationally Determined Contribution to the United Nations Framework Convention on Climate Change (UNFCCC) in line with Article 4 of the Paris Agreement. In its NDC, the UK is committing to reduce economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels
In section 3 in the NDC, the scope and coverage of the NDC is described with the following sectors, gases and pools covered:
• Sectors: Energy (including transport); Industrial Processes and Product Use (IPPU); Agriculture; Land-use, Land-Use Change and Forestry (LULUCF); and Waste.
• Gases: CO2, CH4, N2O, HFCs, PFCs, SF6 and NF3.
• Pools covered: All LULUCF pools are included in the NDC: above ground biomass, below ground biomass, litter, deadwood soil organic carbon and stocks of harvested wood products

Some of the national or regional laws specifically designed to preserve and enhance forest carbon stocks and drains that are mentioned in the NDC section 4 are:
Institutional arrangements
• The Department for Business, Energy and Industrial Strategy (BEIS) is responsible for the strategic oversight of the UK's international climate and energy policy, and for the UK Government's domestic climate and energy policy. The Devolved Administrations in Scotland, Wales and Northern Ireland have control over certain policy areas to deliver emissions reductions, while the UK Government retains control over a number of other policy areas. The approach taken by each government will differ, drawing on the range of powers at their disposal.
• The legally binding Climate Change Act (2008) sets a framework for the UK to reduce GHG emissions and build capacity to adapt and strengthen resilience to climate risks.9 The Act originally committed the UK to cut its emissions by at least 80% below the 1990 baseline level by 2050.10 In 27 June 2019, this target was amended, committing the UK to a legally-binding target of net zero emissions by 2050, set on a whole-economy basis.
• The Climate Change Act introduced carbon budgets for the UK Government, which cap emissions over successive five-year periods and must be set 12 years in advance. The first five carbon budgets cover the period from 2008-32, with the sixth carbon budget (2033-38) due to be set by mid-2021.
• The Act also established the CCC – the independent statutory body that advises the UK Government and Devolved Administrations on climate change mitigation and adaptation, including emissions reduction targets. When providing advice, the CCC considers the UK's international obligations under the Paris Agreement and the UNFCCC.
• As climate change policy is devolved, the Devolved Administrations in Scotland and Wales have their own statutory emissions reduction targets. Progress towards these targets also contributes to achievement of UK-wide targets.
• The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 amends the Climate Change (Scotland) Act 2009, raising the ambition of Scotland's domestic targets. This sets in law Scotland's target to reach net zero GHG emissions by 2045, and interim targets of 56%, 75% and 90% reductions in emissions by 2020, 2030 and 2040 respectively, relative to a 1990/1995 baseline. Scotland sets annual targets, in contrast to the five-yearly carbon budgets set by the UK and Welsh Governments.

• The Environment (Wales) Act (2016)11 requires Welsh Ministers to reduce all emissions in Wales by at least 80% by 2050, against a 1990/1995 baseline. In 2018 the Senedd endorsed the CCC's recommendations and set Wales's targets for 2020 (27%), 2030 (45%) and 2040 (67%), as well as Wales's first two carbon budgets (2016-20 and 2021-25). Following further advice from the CCC, in 2021 the Welsh Government will ask the Senedd to legislate more ambitious targets to 2050, including for 2030.
• Northern Ireland contributes to UK-wide carbon budgets. Northern Ireland's current energy strategy is set out in the Strategic Energy Framework for the period 2010-20.12 Northern Ireland's Department for the Economy is progressing the development of a new longer-term energy strategy to cover the period 2020 to 2050 within the context of achieving net zero emissions by 2050.
• For more information on the UK and Devolved Administrations approach to tackling climate change, please see Sections 3.1, 3.2 and 4 of the UK's Fourth Biennial Report and the CCC's Insight Briefings.14
• The decision on the UK's NDC headline target was led by BEIS and agreed through UK Government governance structures at official and ministerial levels. The target level in the UK's NDC was informed by the UK's commitments under the Paris Agreement, the legally-binding net zero commitment, and guidance from the CCC. The ICTU was prepared in collaboration with UK Government departments and the Devolved Administrations.

Terrestrial biodiversity

• The UK will fulfil its responsibilities under the Convention on Biological Diversity, the Ramsar Convention and the Leaders' Pledge for Nature; and implement the Convention on Biological Diversity's vision that by 2050 biodiversity is valued, conserved, restored and wisely used, maintains ecosystem services, sustains a healthy planet and delivers benefits essential for all people. This will provide significant climate mitigation and adaptation benefits.
• UK domestic biodiversity policy is devolved. In England, the UK Government's 25 Year Environment Plan (25YEP)45 set out the aim to support nature's recovery and restore historical losses, including for the marine environment. Since then, the government has brought forward the Environment Bill, with measures to restore and enhance nature in England, and is developing a new Environmental Land Management scheme to achieve the 25YEP goals for nature and the net zero target. In England, the government will publish a new strategy for nature following agreement of new global biodiversity targets under the Convention on Biological Diversity, expected in 2021.
• The Scottish Government is committed to delivering improved and enduring benefits to the natural environment through the Environment Strategy for Scotland. Sitting beneath this, the Scottish Biodiversity Strategy will take account of the new post-2020 global biodiversity framework and targets for the Convention on Biological Diversity's 2050 vision. The Scottish Biodiversity Programme has been created to coordinate all activity on biodiversity including the development of a future strategic framework for biodiversity in Scotland.
• The Nature Recovery Action Plan (NRAP) is the National Biodiversity Strategy and Action Plan for Wales. It sets out how the Convention on Biological Diversity's Strategic Plan for Biodiversity and the associated Aichi Biodiversity Targets are addressed in Wales. The NRAP has been refreshed for 2020-21 to prioritise the maintenance and improvement of resilient ecological networks and transformative change. Relevant actions include developing the new Sustainable Land Management scheme and the National Forest for Wales, work to improve the condition of Protected Sites Network, and the National Peatland Action Programme. The NRAP will be realigned to address the post-2020 framework for the Convention on Biological Diversity in line with commitments made under the Edinburgh Declaration and the Leaders' Pledge for Nature.
• In Northern Ireland, the Department of Agriculture, Environment and Rural Affairs (DAERA) completed a public discussion exercise on a future Environment Strategy for Northern Ireland in February 2020. This will be Northern Ireland's first overarching Environment Strategy and the findings of the public discussion will inform its development. The Department intends to issue the draft strategy for public consultation in spring 2021.

Emissions CO2 emissions/removals from LULUCF sector

As can be seen from the table below, net emissions for 10 year average are negative, thereby indicating a net removal of CO2.

Time Series - Net CO_2 emissions/removals from LULUCF, in kt											
Party	2010	2011	2012	2013	2014	2015	2016	2017	2018	Last Inver	ry Year (20
United Kingd	-797,95	-1.299,15	-1.207,59	-1.096,10	-1.481,84	-1.121,42	-1.481,71	-1.773,61	-1.286,38	-937,58	
Source: UNFCCC GHG Data Interface								10 year average		-1.248,33	
Note 1: The reporting and review requirements for GHG inventories are different for Annex I and non-Annex I Parties. The definition format of data for emissi											
Note 2: Base year data in the data interface relate to the base year under the Climate Change Convention (UNFCCC). The base year under the Convention is											
Note 3: – means "No data available"											
Note 4: Data displayed on the data interface are "as received" from Parties. The publication of Party submissions on this website does not imply the expressio											
Report produced on Monday, 7 March 2022 12:53:00 CET											

Carbon stock

Forest carbon stock is the amount of carbon that has been sequestered from the atmosphere and is now stored within the forest ecosystem, mainly within living biomass and soil, and to a lesser extent also in dead wood and litter. The table below presents estimates of UK forest carbon stock that were compiled in 2018. The total carbon stock stored within UK forests is estimated to have increased, around 3.2 billion tonnes of carbon dioxide equivalent in 1990 to 4.0 billion tonnes of carbon dioxide equivalent in 2020. The carbon stored in forest soils accounts for around 70% of total forest carbon stock.

million tonnes of carbon dioxide equivalent

	1990	2000	2010	2015	2020
Carbon in above-ground biomass	376	482	586	630	674
Carbon in below-ground biomass	135	174	211	227	242
Carbon in dead wood	130	138	143	147	149
Carbon in litter	165	175	182	188	190
Soil carbon[1, 3]	2,366	2,533	2,629	2,726	2,761
Total forest carbon	3,172	3,502	3,750	3,918	4,016

Source: Forest Research

Notes

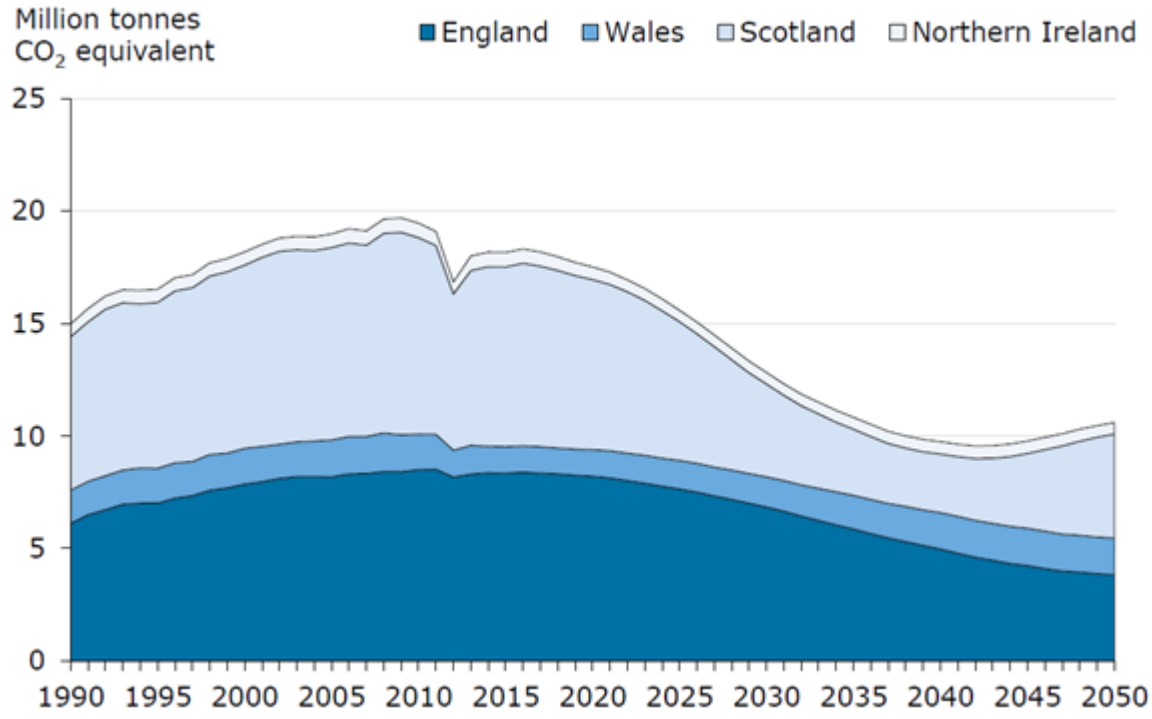
1. Carbon in soil depth 0 to 100 cm.
2. To convert tonnes carbon dioxide equivalent (CO2e) to tonnes carbon (C), multiply by 12/44.
3. Changes in soil carbon stocks over the period can be attributed to changes in UK forest area.

Around one half (51%) of the estimated total UK forest carbon stock in 2020 is in Scotland (2.0 billion tonnes of carbon dioxide equivalent), 36% in England (1.5 billion tonnes), 8% in Wales (0.3 billion tonnes) and 4% in Northern Ireland (0.2 billion tonnes).

Carbon sequestration

Forest carbon sequestration is the process of increasing the carbon content of the forest through processes that remove carbon dioxide from the atmosphere (i.e. photosynthesis). The net annual rate of carbon dioxide accumulation by UK forests is projected to fall from around 18 million tonnes CO2 in total in 2020 to around 10 million tonnes CO2 by 2040 under a central scenario, see the figure below.

Net annual change in carbon (CO2 equivalent) in UK woodlands.

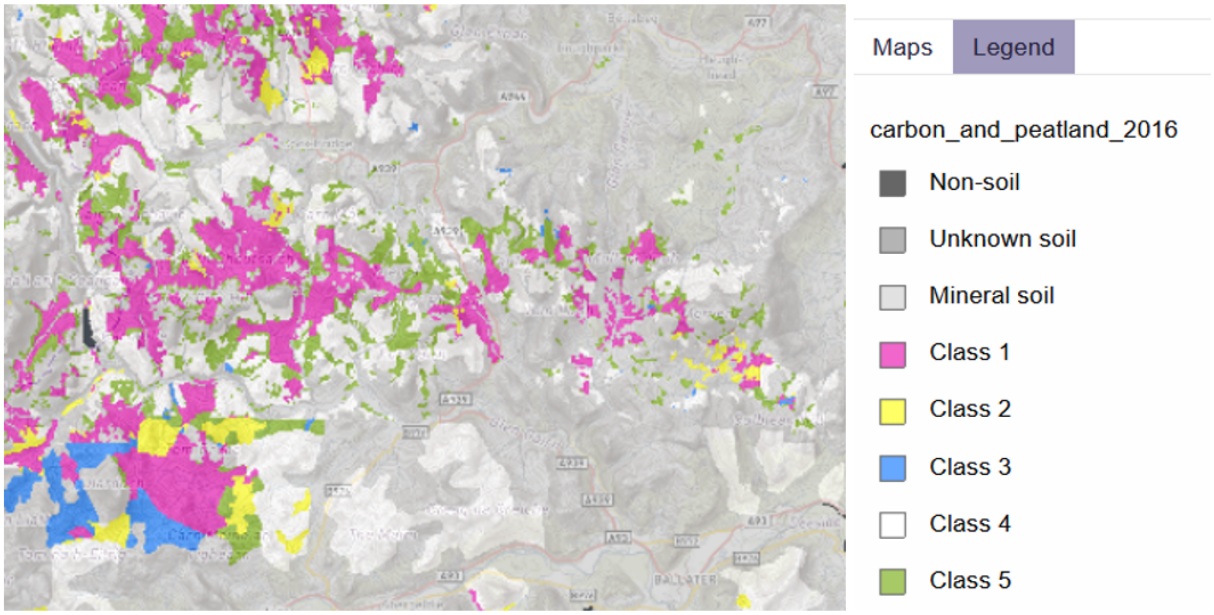


Source: UK Greenhouse gas inventory: inventory and projections dataset (June 2020)
Notes:
1. Net annual accumulation of carbon in forests by woody biomass, soils and litter. Adjusted for losses from deforestation and forest wildfires. Excludes changes in UK harvested wood products.
2. Emissions and sequestration can be presented as tonnes carbon or tonnes carbon dioxide (CO2). To convert from tonnes CO2 to tonnes carbon multiply by 12/44.
3. Future predictions of carbon uptake assume that commercial conifer plantations will be replanted when felled, and that planting of new woodland will follow a central projection (as used for the Energy and Emissions projections) whereby future planting is only included where policy and funding are in place.

Natural England, which is the governments adviser for the natural environment in England argue that the biggest problem of the present carbon storage is the destruction of peatlands . Peatlands are the largest stores of carbon, and when in a healthy condition they sequester carbon slowly but do so indefinitely. Peat depths can be ten or more metres deep, representing many millennia of development. However, England's peatlands have been drained and modified for agriculture, forestry, and peat extraction and are the largest source of GHG emissions from land in England. Restoring upland and lowland peatlands to a natural condition is therefore a top priority if England are to reach its net zero emissions target.

Peatlands
Covering around 10% of the UK land area – nearly three million hectares, peatland habitat can be discovered in the most remote corners of the country, but also near the major centres of human population with livelihoods often intimately connected to their fate.
Whether managed for farming, sport or as a nature reserve, peatlands can provide a tranquil retreat and include some of the country's most important protected areas for their species and outstanding natural beauty.
Appreciation of the wide ranging impacts and benefits of peatlands is relatively recent and as a consequence the majority have been historically managed in a way that has left them in a damaged state, with an estimated 80% of UK peatlands in some way affected.
Peatlands have been mapped and procedures to protect soils are part of the UK forestry standard . Currently (2021) the UK Forestry Standard excludes planting on deep peat soils (over 50 cm peat depth) and on sites that would compromise the hydrology of adjacent bog or wetland habitats . Class 1 -5 soils are peat soils and biomass will generally not be sourced from soils registered as such. However, if the Forestry

Commission in the felling license describe that the felling of the trees and that non-replanting is part of restoration of the peatland, then the biomass will be included in the scope.



Management practices
The United Kingdom Forestry Standard (UKFS) is the reference standard for sustainable forest management in the UK. It outlines the context for forestry, sets out the approach of the UK governments to sustainable forest management, defines standards and requirements, and provides a basis for regulation and monitoring – including national and international reporting.
The UKFS Requirements are divided into legal requirements and good forestry practice requirements. The Requirements are categorised into different elements of sustainable forest management, each supported by Guidelines for managers. The elements are:
• General Forestry Practice
• Biodiversity
• Climate Change
• Historic Environment
• Landscape
• People
• Soil
• Water

The legal structure is the Forestry Act from 1967 and the Forestry and Land Management Act (Scotland) 2018. It is illegal to fell trees in Great Britain without prior approval, although there are a few exceptions (for trees below a specified size, dangerous trees, and very small scale felling operations). There is a presumption against removal of woodland and loss of forest cover in the UK, so felling licences issued under the Forestry Act (or felling permissions under the Forestry and Land Management Act in Scotland) will normally be conditional (where felling approval is granted subject to restocking). However, the permanent removal of trees may be granted (through an unconditional felling licence) for thinning woodland (a standard woodland management practice) or if there are overriding environmental considerations, for example to enable the restoration of important habitats (and consent may be required under the relevant Environmental Impact Assessment Regulations). The removal of trees may also be authorised under planning regulations, to enable development (including for windfarms). In this case, a felling licence is not required. The Forestry commission, Scottish Forestry, Natural Resources Wales and the Northern Ireland Forest Service may also require trees to be felled to prevent the spread of pests and diseases, by serving a Statutory Plant Health Notice (SPHN) on the affected site.

By 2020 FAO categorized 344.000 ha as natural regeneration forest and 2.846.000 hectares as planted forest
Some info from the most recent storm “Arwen” can be found here:
https://forestryandland.gov.scot/blog/storm-arwen-aftermath

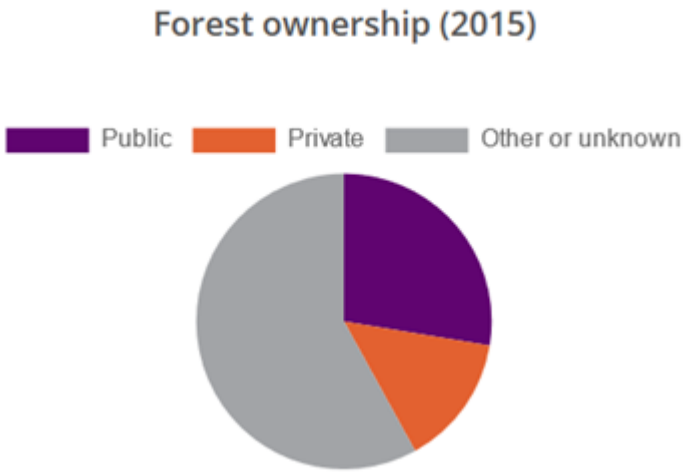
Ownership
Forestry England, Forestry and Land Scotland, Natural Resources Wales and the Forest Service in Northern Ireland owned or managed 27% of the total woodland area in the UK in 2021 (see table below). This proportion ranged from 16% of the woodland area in England to 53% in Northern Ireland.

thousand hectares

Ownership	England	Wales	Scotland	Northern Ireland	UK
FE/FLS/NRW/FS woodland[1]					
2017	214	117	469	62	863
2018	214	117	470	62	863
2019	215	117	470	62	864
2020	215	117	470	62	864
2021	212	115	467	62	856
Private sector woodland[2]					
2017	1,092	191	968	50	2,301
2018	1,093	192	976	50	2,311
2019	1,101	193	989	51	2,334
2020	1,104	193	999	56	2,352
2021	1,109	195	1,012	56	2,372
Total woodland					
2017	1,306	308	1,438	112	3,164
2018	1,307	309	1,446	113	3,175
2019	1,316	310	1,459	113	3,198
2020	1,318	310	1,469	118	3,216
2021	1,320	310	1,480	119	3,229

Source: Forestry Commission, Forestry England, Scottish Forestry, Forestry and Land Scotland, Welsh Government, Natural Resources Wales, Forest Service, National Forest Inventory.

Ownerships groups as assessed by FAO in 2015



Biomass – woodfuel and pellets

Figures for deliveries relate to the quantity of UK-grown roundwood that is delivered to wood processors and other users. Statistics on roundwood deliveries are used to monitor trends in the supply of, and demand for, UK-grown wood. In 2020, deliveries of UK roundwood totalled 10.8 million green tonnes (Tables 2 and 3), a 2% decrease from the previous year. Most roundwood deliveries (92%) were softwood. Softwood deliveries totalled 10.0 million green tonnes in 2020 (Table 2). Sawmills used a total of 5.9 million green tonnes (59%) of UK softwood deliveries. A further 1.9 million green tonnes were used for woodfuel, 1.2 million green tonnes to produce wood-based panels, 0.4 million green tonnes by integrated pulp and paper mills, and 0.6 million green tonnes for all other uses (including round fencing, shavings and softwood exports).

Table 2 UK softwood deliveries

thousand green tonnes

Year	Saw-mills	Pulp mills	Wood-based panels	Fencing	Wood-fuel[1]	Other[2]	Soft-wood exports	Total
2016	6,504	423	1,248	277	1,550	178	231	10,412
2017	6,568	442	1,059	283	1,600	170	331	10,453
2018	6,319	486	1,210	255	1,900	174	264	10,608
2019	5,880	464	1,316	262	1,900	183	201	10,207
2020	5,922	383	1,248	257	1,850	188	140	9,987

Source: industry surveys, industry associations. Note: 1. Woodfuel derived from stemwood. Includes estimates of roundwood use for biomass energy. The figures are estimated by the Expert Group on Timber and Trade Statistics and make use of wood fuel data reported in the Private Sector Softwood Removals Survey. 2. Includes shavings and poles. Quantities for some uses are estimates by the Expert Group on Timber and Trade Statistics.

Wood pellets and briquettes are processed wood products that can be made from roundwood, sawmill products and/ or recycled wood. Some of the wood used to make wood pellets and briquettes will be accounted for elsewhere in this release. Wood pellets and briquettes are often used for woodfuel, but pellets may also be used for other purposes (such as horse bedding or cat litter). A total of 301 thousand tonnes of wood pellets and briquettes are estimated to have been made in the UK in 2020 (Table 10). This represents an increase of 1% from the 2019 production level.

Table 10 Wood pellets and briquettes production

thousand tonnes

Year	Wood pellets and briquettes production
2016	329
2017	287
2018	279
2019	298
2020	301

Source: Survey of UK Pellet and Briquette Production

Socio-Economic setting

Key trade data are as follows:

UK imports:

• 7.2 million cubic metres of sawnwood in 2020, a 3% increase from 2019;
• 3.3 million cubic metres of wood-based panels in 2020, a 10% decrease from 2019;
• 9.1 million tonnes of wood pellets in 2020, an increase of 2% from 2019;
• 4.4 million tonnes of paper in 2020, a 14% decrease from 2019.
• The total value of wood product imports in 2020 was £7.5 billion, representing a 10% decrease from 2019; of which £3.4 billion was pulp and paper.
• Sawn softwood, particleboard, fibreboard, and paper and paperboard were overwhelmingly imported from EU countries in 2020.
• Sawn hardwood and wood pulp imports originated from a range of both EU and non-EU countries in 2020.
• The vast majority of UK imports of plywood and wood pellets in 2020 came from countries outside the EU.
• Apparent consumption of wood in the UK was 54.8 million m3 wood raw material equivalent underbark in 2020, representing a 1% decrease from the previous year.

UK exports:

• The total value of wood product exports in 2020 was £1.5 billion, a 10% decrease from 2019; of which £1.3 billion was pulp and paper.

Employment:

• The Annual Business Survey (May 2021) reported average employment in 2019 of 18 thousand in forestry, 7 thousand in sawmilling and 5 thousand in panel mills.
• There was estimated to be a total of 7.1 thousand full time equivalent staff employed by primary wood processors in the UK in 2020 a 3% decrease from the total for 2019.
• The latest major accident rates for Great Britain, covering 2019-2020, show levels similar or lower to 2018-2019 rates for both the forestry and wood products sectors, whilst the major accident rate for the pulp and paper sector has increased.
• There were 200 establishments in the primary wood processing industries in the UK using UK-grown roundwood in 2020.

thousands

Standard Industrial Classification (SIC)[1]	2015	2016	2017	2018	2019
Forestry	**17**	**17**	**..**	**16**	**18**
Wood products					
Sawmilling	8	9	9	10	7
Panels	5	5	5	6	5
Secondary products	56	67	60	73	62
Total	**69**	**81**	**74**	**89**	**75**
Pulp, paper & paper products	**56**	**56**	**55**	**62**	**56**

Source: Annual Business Survey - average employment in year (Office for National Statistics, May 2021). Notes:

1. Categories are based on the UK Standard Industrial Classification (SIC 2007) categories. Further details on the SIC codes used are provided in the Sources: Employment and businesses page.
2. Excludes other wood-using industries.
3. Pulp, paper & paper products breakdowns for all years have been suppressed in the figures released by ONS. Data produced by the Confederation of Paper Industries, presenting estimates on a different basis are provided in table 7.2b.
4. .. denotes data not available.

Public Opinion of Forestry – climate change

Forest Research has conducted similar surveys of public attitudes to forestry and forestry-related issues every two years since 1995. The most recent set of surveys was conducted in 2021 (in Scotland, Wales, and across the UK as a whole) and 2019 (in Northern Ireland). The full results are available on the website:
www.forestresearch.gov.uk/tools-and-resources/statistics/statistics-by-topic/publicopinion-of-forestry/.

In the UK survey in 2021, questions were asked to gauge the public's agreement on climate change issues, including on the management of UK forests in response to the threat of climate change. There were high levels of agreement (respondents stating that they agreed or strongly agreed) with the statements:

"A lot more trees should be planted", supported by 83% of the UK public in 2021; and

"Different types of trees should be planted that will be more suited to future climates", supported by 72% in 2021.

Conversely, there were much lower levels of agreement with the statements:

"No action is needed, let nature take its course", supported by 30% in 2021; and

"Trees should not be felled under any circumstances, even if they are replaced", supported by 36% in 2021.

The figure below presents the findings:

percent of respondents who agree or strongly agree

	2013	2015	2017	2019	2021
A lot more trees should be planted	86	80	84	88	83
Different types of trees should be planted that will be more suited to future climates	71	67	76	78	72
Trees should not be felled in any circumstances, even if they are replaced	22	25	26	29	36
No action is needed, let nature take its course	18	22	24	26	30

Conservation: CITES or IUCN species

The United Kingdom of Great Britain and Northern Ireland has a long history of nature conservation in policy and practice, reflected in numerous pieces of legislation and in the high numbers of conservation organisations and their memberships totalling millions of UK citizens. In fact, Britain is widely accepted as "having the most comprehensive and the most advanced system of nature conservation in the world. In no other country is there so comprehensive a network and nowhere else is the cause of conservation so widespread, and indeed, so passionate, a measure of public support" (Vesey-Fitzgerald, 1969 from 'A History of Nature Conservation in Britain' 2nd ed. 1997 by David Evans, Published by Routledge.

Although lacking in extremes—there are no high mountains, no true deserts and no major rivers—the UK is, in fact, remarkably variable biophysically, ecologically and socially, with complex underlying geology, a wide climatic range (from very wet to semi-arid), and large variations in the distribution of the human population, from extensive areas of near-wilderness (in Scotland) to one of the world's largest metropolitan areas (Greater London). In the UK National Ecosystem Assessment, this diversity has been captured in eight Broad Habitat types: mountains, moorlands and heaths, semi-natural grasslands, enclosed farmland, woodlands, freshwaters (open waters, wetlands and floodplains), urban, coastal waters and marine.
IUCN National Committee UK has one of the largest memberships in the Union made up from 44 international organisations, NGOs, and a state member (Department of Environment, Food and Rural Affairs, DEFRA) representing a number of government departments and state agencies (the United Kingdom comprises four countries: England, Wales, Scotland and Northern Ireland, where biodiversity and the natural environment are 'devolved responsibilities').

The UK ratified CITES in August 1976.

Species	CITES status	IUCN classification
Alder (*Alnus glutinosa, Alnus incana*)	Not on the list OK	Least concern (LC)
Beech (*Fagus silvatica*)	Not on the list OK	Least concern (LC)
Beech *(Fagus silvatica)*	Not on the list OK	Least concern (LC)
Birch (*Betula spp*)	Not on the list OK	Least concern (LC)
Common Ash (*Fraxinus excelsior*)	Not on the list OK	Near threatened (NT) Reason: The Ash dieback is an infectious disease that has caused severe dieback of Common Ash throughout much of its range
Larch (*Larix decidua, Larix eurolepis*)	Not on the list OK	Least concern (LC)
Maple (*Acer spp.*)	Not on the list OK	Least concern (LC)
Oak (*Quercus robur, Quercus petraea*)	Not on the list OK	Least concern (LC)
Oak (*Quercus rubra*)	Not on the list OK	Least concern (LC)
Oregon pine (*Pseudotsuga menziesii;*)	Not on the list OK	Least concern (LC)
Pine (*Pinus Silvestris, Pinus nigra, Pinus contorta*)	Not on the list OK	Least concern (LC)
Poplar (*Populus trichocarpa, Populus tremula*)	Not on the list OK	Least concern (LC)
Spruce (*Picea abies, Picea sitchensis*)	Not on the list OK	Least concern (LC)
Western hemlock *(Tsuga heterophylla)*	Not on the list OK	Least concern (LC)

Country: Finland

Area/Region: Finland

Sub-Scope: N/A

Exclusions: No

Scope:
DSHwood consider all of Finland in it supply base. In Finland DSHwood have 1-5 suppliers and all volumes are purchased FSC and PEFC certified. Feedstock is primary or secondary.

Forest cover
Forests cover more than 75 per cent of the land area of Finland. Measured by the proportional share of forest land, Finland is the most forested country in Europe. A total of 20.3 million hectares is available for wood production, of which 61 per cent is privately owned. Finland has the fifth largest wood resources in Europe, after Russia, France, Sweden and Germany.
The volume of growing stock and the state of forests have been monitored in Finland since the 1920's. The growing stock volume in Finland's forests totals 2.5 billion cubic meters. This is 1.7 times the volume recorded in the 1920's.

In the past decades, the volume of wood harvested has been clearly below the growth, which means that the wood resources keep on growing. The total annual growth of Finnish forests is approximately 103,5 million cubic metres (NFI 13). In 2021 roundwood removal was about 76 million cubic metres, 87 percent of which was used by the forest industry and 13 percent for fuelwood consumed in private homes or small-diameter roundwood used as forest chips. In 2021, total drain from Finnish forests was approximately 92 million cubic metres. Total drain from the forest includes roundwood removals as well as roundwood left in the forests as unrecovered logging residues and trees that die for natural causes.

Forest is one of the dominating elements of Finnish natureand its diversity. Almost three million hectares of the Finnish forests are protected or under restricted use, which represents 12,6 per cent of the forest area. This is the highest share in Europe. By a wise combination of utilisation and protection, healthy and diverse forests will be preserved for future generations as well. Forests contribute to the climate change by sequestering carbon, but climate change also poses various new risks for forests that need to be considered in forest management.

Primary species
The most common tree species in Finland are Scots pine (50% of growing stock volume on forest land), Norway spruce (30%) and birches (17 %).

Ownership
Private forest owners own 60 percent, the state owns 26 percent, companies (including forest industry) own nine percent and other entities own five percent of productive forest land. State forests are managed by the state forest company Metsähallitus.

Forest legislation and the forest act
Forest legislation covers among many other law and regulations, the Forest Act, Act on the Financing of Sustainable Forestry, the Forest Management Associations Act, the Act on Metsähallitus and the Act on the Finnish Forestry Centre.
The Forest Act is the main law regulating the use of managed forests. Its implementation is monitored by the Finnish Forest Center. Finland has a forest regeneration obligation which is defined in the Forest Act and applies to all forest owners. The purpose of the Forest Act is to promote economically, ecologically and socially sustainable management and utilisation of forests in order that the forests produce a good output in a sustainable way while their biological diversity is being preserved. The Forest Act sets standards for wood harvesting, forest regeneration and safeguarding the biodiversity of forests. On this basis, forest owners make detailed forest management decisions in accordance with their objectives. In addition to the Forest Act, the use of forest in Finland is also regulated, for example, by the Government Decree on Sustainable Management and Use of Forests and by the Forest Damages Prevention Act. Also environmental legislation, such as the Nature Conservation Act, has implications for forestry.

Nature management in commercial forests
The most commonly used methods of nature management in commercial forests include leaving retention trees in regeneration fellings and preserving key habitats, such as the habitats of special importance for biological diversity that are defined in the Forest Act. These habitats of special importance are usually in their virgin state or slightly modified and they are small in size. Forest management practices have to be carried out in such a way that the special features of these habitats are maintained.

The majority of the threatened forest species live in heathland forests or they depend on decaying wood of different degrees. Efforts are made to increase the amount of decaying wood in commercial forests by green tree retention and leaving decaying wood on the stand after harvesting. A special feature of natural boreal forest is occurrence of fire and the organisms living in burned wood. Use of prescribed burning should be increased to revive these species in commercial forests.
The management of forest nature has improved considerably during the past decade. The measures taken are monitored annually both in state, company and private forests. Monitoring provides information of the level of nature management and knowledge on the preservation of habitats of special importance in harvesting. Monitoring gives detailed information on quality and amount of retention trees that have been left on harvesting sites. It also tells what kind of water protection measures and soil preparation methods have been taken, and how the landscape management aspects have been taken into account. Monitoring also provides data on costs of nature management.

Socio economic importance
In **Finland**, the forest sector (forestry and manufacturing of wood and paper products) contributed 4.2% to the GDP in 2015. The employment in the forest sector accounted to 124 thousand people in 1990 and to 64 thousand people in 2015.

Main trends for Finlands forest

FOREST EUROPE indicator name	Unit	1990	2000	2010	Recent
Forest area as proportion of total land area	%	72.0	73.9	73.2	73.7*
Forest area annual net change rate	%	n/a	0.26	-0.09	0.08*
Growing stock	miillion m³ o.b.	1 881	2 085	2 343	2 449
Growing stock per ha	m³	86	93	105	109*
Annual average change in above ground biomass stock in forest	%	n/a	1.2	0.9	1.2*
Carbon stock in harvested wood products	million tonnes	72	85	94	97
Proportion of forest area with damage	%	n/a	n/a	0.2	0.1
Fellings as % of net annual increment on forest available for wood supply	%	68.6	81.1	68.5	80.4
Total industrial roundwood removals	1 000 m³	43 230	54 262	50 952	63 279
Natural regeneration or natural expansion	1 000 ha	17 748	17 346	15 334	15 040
Plantations	1 000 ha	4 149	5 112	6 908	7 368
Area of forest undisturbed by man	1 000 ha	n/a	n/a	234	203
Dead wood	m³/ha	n/a	5.6	5.8	6
Proportion of forest and other wooded land included in MCPFE Classes 1 and 2 - forests protected for biodiversity	%	n/a	13.2	18.8	18.3
Proportion of forest and other wooded land included in MCPFE Class 3- protection forests	%	n/a	3.1	0.9	1.1
Employment in forest sector: forestry, wood processing, pulp and paper (ISIC/NACE 02. 16. 17)	1 000 persons	124	93	69	64
Energy supply from wood as % of total primary energy supply (2007, 2009, 2011 ja 2015)	%	25.1	22.2	25.8	29.3
Source: National reply to pan-European enquiries (quantitative and qualitative indicators) "Most recent" data are data for the year 2015 or forecasts for the year 2020 (marked with "*"), prepared in 2019, unless otherwise indicated.					

Fuelwood importance

In Finland bioenergy has a key role in the production of renewable energy. Bioenergy production is largely integrated into forestry and forest industry. In recent years energy derived from wood fuels has accounted for around one fourth of Finland's total energy consumption. Major share of wood fuels are derived from the by-products of the forest industry, including black liquor derived from the pulp-making process and bark, sawdust and other industrial wood residues. Also logging residues or other low value biomass from silvicultural and harvesting operations are used for energy generation. According to data of Statistics Finland, in 2020 the total consumption of wood fuels was 99 terawatt-hours (TWh). Wood fuels represented the most important energy source in Finland, covering 28 per cent of the total energy consumption.

Energy is produced from forest industry black liquor and other by-products. Modern paper and pulp factories and sawmills operate with integrated approach using waste liquors and residues such as black liquor, bark, sawdust and process waste and recycled wood, for the production of heat and power or biofuels and bioliquids. As a result of the positive trend in the forest industries, the consumption of roundwood in Finland is higher than before, meaning that more by-products are also available for energy production. In recent years, the growth in the consumption of wood fuels in Finland has been based especially on an increase in burning forest industry by-products and wood residues.

Power and heat is generated from bark, sawdust and forest chips. Solid wood fuels are an important source for heat and power generation in Finland. According to the preliminary data of the Natural Resources Institute Finland (Luke), heating and power plants consumed a total of 23.5 million solid cubic metres (45.7 terawatt hours) of solid wood fuels in 2021. The main industrial by-product was bark, accounting nearly for two thirds (7.7 million cubic meters) and the rest were sawdusts (3.3 million cubic meters) and industrial chips (1.5 million cubic meters). Amount of bark, sawdust and industrial chips is related to consumption of roundwood in the forest industry.

Forest chips are also a remarkable source of energy in Finland. The branches, crowns and stumps of harvested trees cannot be used by industry to produce timber goods or pulp and paper but they can be chipped to make wood-chip fuels that can then be used to generate energy. The use of forest chips has eightfolded since 2000. In recent years the amount has remained practically unchanged. According to the preliminary data of the Natural Resources Institute Finland (Luke), in 2021 consumption of forest chips in heat and power plants totalled 9.4 million cubic metres. The consumption of forest chips in the combined production of heat and power was 5.8 million cubic metres and in heat production 3.6 million cubic metres. Combined with forest chips burnt in small-scale housing (0.6 million cubic metres), the total consumption of forest chips reached 10 million cubic metres.

Forest chips are obtained from small-sized trees and logging residues. The main fraction of the forest chips in Finland comes from the tending of young stands. The share of these small-sized trees as raw material for forest chips at heating and power plants is already more than half of the forest chips. In 2021, the consumption of forest chips at heating and power plants was 9.4 million cubic metres. The majority of the forest chips, 5.8 million cubic metres, was manufactured from small-sized trees and use of logging residues was 2.7 million cubic metres. Use of stumps has been decreasing in past years and was 0.3 million cubic metres in 2021. The use of large-sized, mainly decayed and rotten roundwood, was 0.6 million cubic metres. In addition, the small-scale use of wood for heating in residential houses, farms and summer cottages is also a significant part of the bioenergy mix.

Nearly 38 percent of total energy consumption comes from renewable sources in Finland

Wood fuels have a crucial role also in the future in targets and means for increasing the share of renewable energy in Finland. In 2019 nearly 38 per cent of total energy consumption were covered with renewable energy sources. As late as 1990, the share of renewable energy in total consumption was just 18 per cent, after which it has grown steadily.

The aim set in the National Energy and Climate Strategy is to increase the share of renewable energy to more than 50% in the 2020's. The key target in promoting renewable energy is to reduce greenhouse gas emissions and move away from the energy system that is based on fossil fuels. Use of renewable energy

also improves our energy self-sufficiency and employment and supports the development of technologies in the sector.
In the EU the targets for renewable energy are established in relation to energy end-consumption, and in 2019 share of renewables was already as high as 43 per cent of end-energy consumption.

Biodiversity protection
In **Finland**, forests protected for biodiversity and landscape account in 2015 to 3.7 million ha or 16% of forest area, of which 2.8 million ha of forests (or 12.6% of forest area) were protected with the main objective of *protecting biodiversity*, and 922 thousand ha aimed at the *protection of landscapes and specific natural elements*.

IUCN redlist assessment
The results of the extensive assessment for the Red List of all of Finland's terrestrial and aquatic ecosystems were published in December 2018. The threat status of ecosystem or habitat types in Finland was now evaluated for the second time, using this time the new assessment methodology called IUCN Red List of Ecosystems Categories and Criteria.

Almost half (48%) of the nearly 400 habitat types were assessed as threatened. The status of habitat types has not improved in Finland since the first assessment which took place ten years ago. Instead, assessments show that the trend among many habitat types is declining. However, hope is not lost, and altogether 70 proposals for measures are listed in the final report.

Among the RLEs finalized so far in different countries, the Finnish Red List of Ecosystems (RLE) is exceptionally comprehensive in its habitat coverage and in the application of the IUCN RLE Criteria. Each of the five criteria, reflecting either the distributional or functional symptoms of ecosystems risk, were considered for each of the nearly 400 habitat types.

Changes were examined during the past 50 years, and over a longer time span, with a comparison to the pre-industrial era of the 1750s. Attempts were also made to predict future changes.
In the assessment, Finnish habitat types were divided into eight main groups: the Baltic Sea, the Baltic Sea coast, inland waters and shores, mires, forests, rocky habitats, seminatural grasslands, and fell habitats.

All the seminatural grasslands were assessed as threatened: most of them are Critically Endangered (CR). Forest habitat types account for the second largest proportion (76%) of threatened habitats, while the lowest proportions were found in inland waters (20%), the Baltic Sea (24%) and rocky habitats (25%).

IUCN / CITES list

Species	CITES status	IUCN classification
Alder (*Alnus glutinosa, Alnus incana*)	Not on the list OK	Least concern (LC)
Beech (*Fagus silvatica*)	Not on the list OK	Least concern (LC)
Birch (*Betula spp*)	Not on the list OK	Least concern (LC)
Common Ash (*Fraxinus excelsior*)	Not on the list OK	Near threatened (NT) Reason: The Ash dieback is an infectious disease that has caused severe dieback of Common Ash throughout much of its range
Larch (*Larix decidua, Larix eurolepis*)	Not on the list OK	Least concern (LC)
Maple (*Acer spp.*)	Not on the list OK	Least concern (LC)
Oak (*Quercus robur, Quercus petraea*)	Not on the list OK	Least concern (LC)
Oak (*Quercus rubra*)	Not on the list OK	Least concern (LC)
Oregon pine (*Pseudotsuga menziesii;*)	Not on the list OK	Least concern (LC)
Pine (*Pinus Silvestris, Pinus nigra, Pinus contorta*)	Not on the list OK	Least concern (LC)
Poplar (*Populus trichocarpa, Populus tremula*)	Not on the list OK	Least concern (LC)
Spruce (*Picea abies, Picea sitchensis*)	Not on the list OK	Least concern (LC)
Western hemlock *(Tsuga heterophylla)*	Not on the list OK	Least concern (LC)

References:
https://mmm.fi/en/forests/forestry/forest-resources
https://www.iucn.org/news/europe/201903/finland-publishes-most-comprehensive-red-list-ecosystems-world

Country: Latvia

Area/Region: Latvia

Sub-Scope: N/A

Exclusions: No

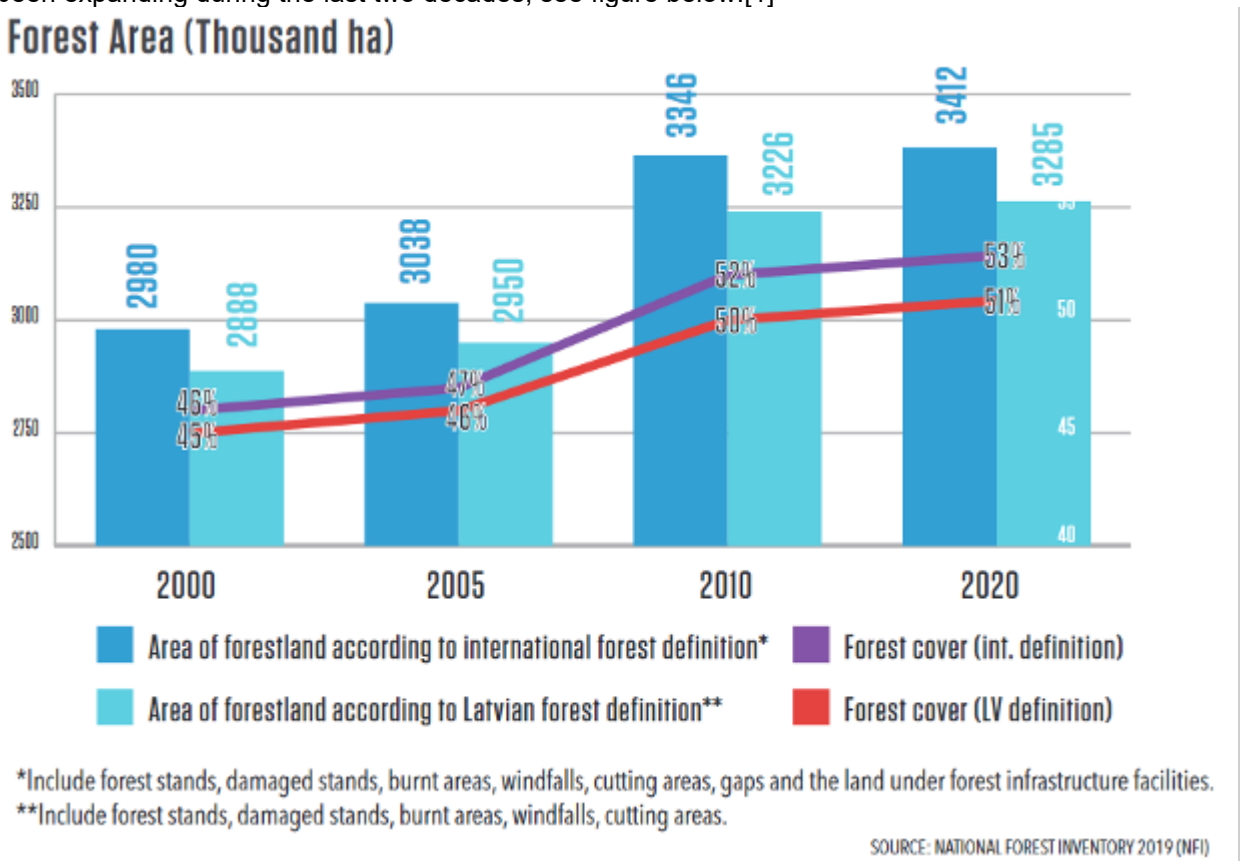
From Latvia, DSHwood source primary feedstock in the form of wood chips or fuelwood logs bought with an FSC 100% or 100% PEFC certified certified claim. DSHwood also source secondary feedstock which is FSC or PEFC certified. DSHwood have 1-5 suppliers in Latvia.

The following species are sourced

Oak (*Quercus robur, Quercus petraea*)	Alder (*Alnus glutinosa, Alnus incana*)	Poplar (*Populus trichocarpa, Populus tremula*)
Oak (*Quercus rubra*)	Pine (*Pinus Silvestris*)	Oregon pine (*Pseudotsuga menziesii;*)
Birch (*Betula spp*)	Spruce (*Picea abies, Picea sitchensis*)	Linden (*Tilia spp.;*)
Beech (*Fagus silvatica*)	Maple (*Acer spp.*)	Elm (*Ulmus spp.*)
Common Ash (*Fraxinus excelsior*)	Larch (*Larix decidua, Larix eurolepis*)	

Forest cover

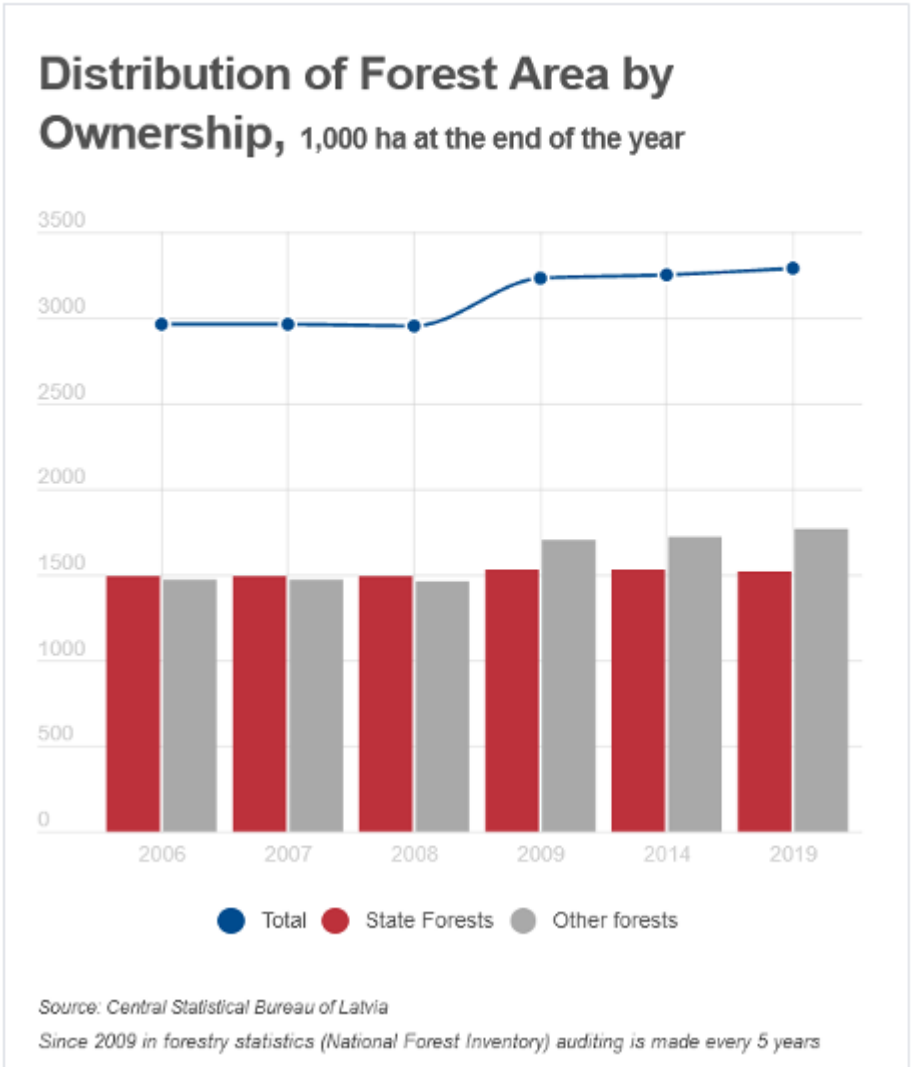
Forests in Latvia take up 3.412 mill ha's of land, or 53 % of the country's territory and the forest cover has been expanding during the last two decades, see figure below.[1]



55 % of all trees in Latvian forests are deciduous trees[2]. The number of stands of young birch trees and aspen has increased rapidly in the past few years. The predominant forest species in Latvia are: Pine 34,0 %, Birch 30,9 %, Spruce 17,9 %, Grey Alder 7.5 %, Aspen 5.6 %, Black Alder 3 %, Ash, Oak and Other Species 1,1 %[3]

Ownership
About 49 % of the forests are owned by the state and managed by state stock company *Latvijas Valsts Meži* (Latvian State Forests)[4].

Distribution of Forest Area by Ownership, 1,000 ha at the end of the year

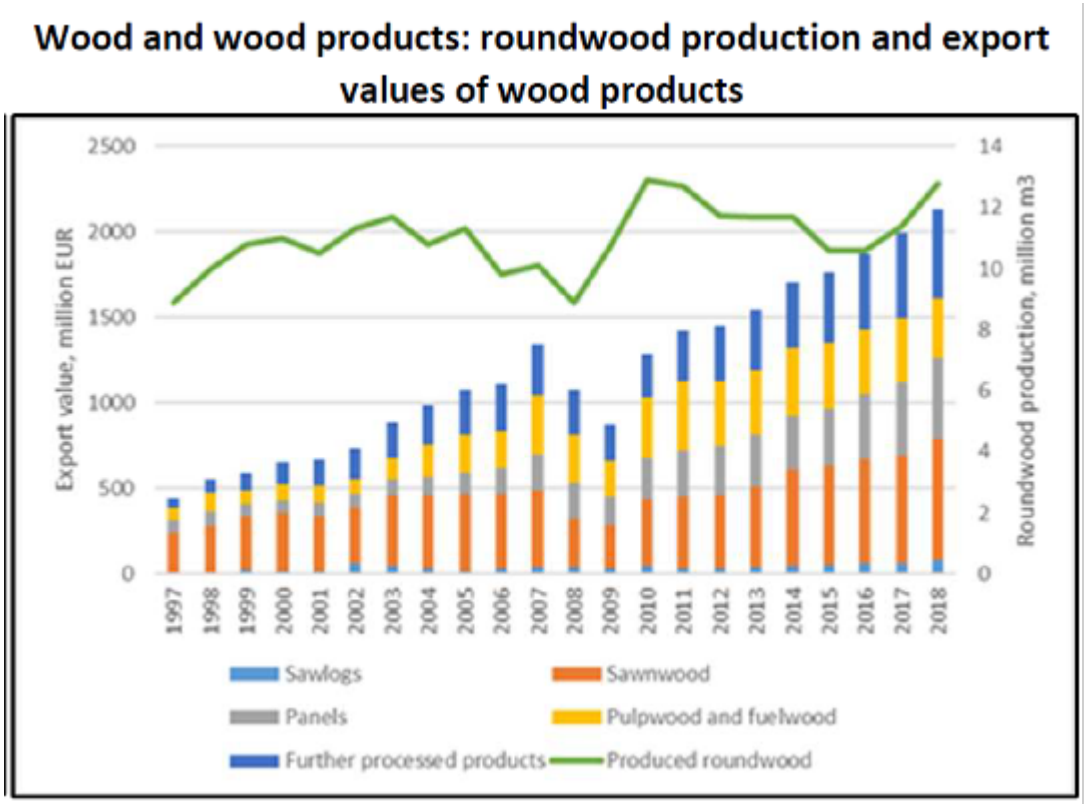


Management practices
The forest sector in Latvia is under the supervision of the Ministry of Agriculture. It works with stakeholders to draft forest policies, development strategies for the sector, as well as regulations on forest management, the use of forest resources, environment protection and hunting. The State Forest Service, under the Ministry of Agriculture, is the responsible agency for supervising how the provisions of the laws and regulations are observed in forest management irrespective of the ownership type. State-owned forests are managed by Stock Company “Latvian State Forests”, which was established in 1999. It implements the state’s interests in terms of preserving and increasing the value of the forest and enhancing the contributions of the forest to the national economy.
In order to realise the environmental goals of JSC “Latvia's State Forests” (LVM), over 16% of the total forest area and over 20% of the total land area (forests, wetlands, agricultural lands, water) are managed for reasons of nature conservation.

The state protected nature conservation territories under LVM management include: nature parks and nature reserves, protected landscape areas, nature monuments, biosphere reserve, microreserves for protected species and habitats, water body protection zones, Baltic sea and gulf of Riga coastal protection zone, protection zones around marshes, etc., as well as areas identified and protect by LVM for wildlife protection (eco-forests, places for wood grouse to etc.).
www.lvm.lv

Biomass [5]

Latvian forest sector is export oriented (positive export – import balance). In 2019 timber and wood products dominated in export (20.3% of the total export value, 2.635 billion EUR). Also exports of fuelwood increased simultaneously.



Sustainability is a very important issue for the whole sector not only for certain products such as biomass (wood for energy production). Even more – fuelwood is not the driver for forest management – it is only by-product.

Latvia has quite detailed legislation on forest management based on sustainable forest management principles. Forest management is regularly evaluated according to the national sustainable forest management criteria and indicators (based on Pan European criteria and indicators). This basis ensure that biomass meets sustainability criteria at state level.

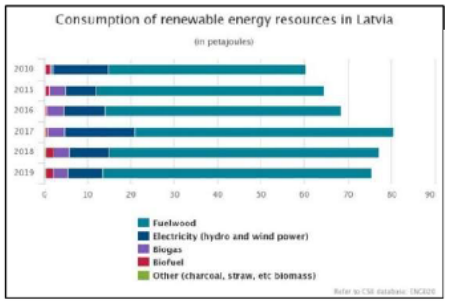
In 2019 gross consumption of RES (Renewable Energy Sources) in Latvia amounted to 75.5 PJ that is 16.7% increase in 2015–2019. Fuelwood is 82 % of the RES consumption. During the last five years, gross consumption of fuelwood increased by 9.3 PJ 2019.

In 2018-2019, the volume of wood chips produced went up by 5.8 % and 39.1 PJ of pelleted wood were exported - 26.4 % more than in 2018; during the last five years exports of pelleted wood increased by 40 %. The largest share of export of all kinds of fuelwood are to Estonia, Denmark, UK and Sweden.

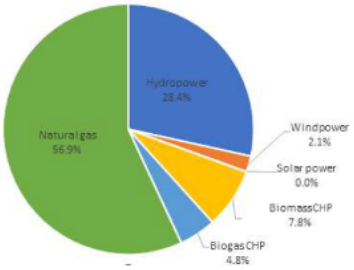
The main use of the fuelwood is in H&C. According to Shares data in 2018 92% of RES-H&C share is ensured by biomass, but in RES-E – 14% (as a by-product of high efficient CHP).

35.4 % of fuelwood is consumed in transformation sector in 2019 (>53% of heat energy is produced from fuelwood). Fuelwood consumption in households comprised 34.4 %.

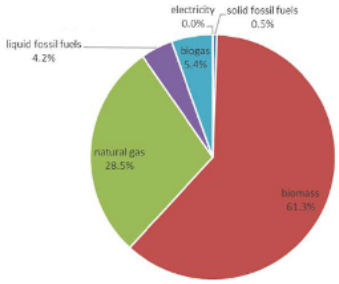
Consumption of renewable energy resources in Latvia (PJ)



Electricity production in 2019



Fuel consumption in heating in 2019



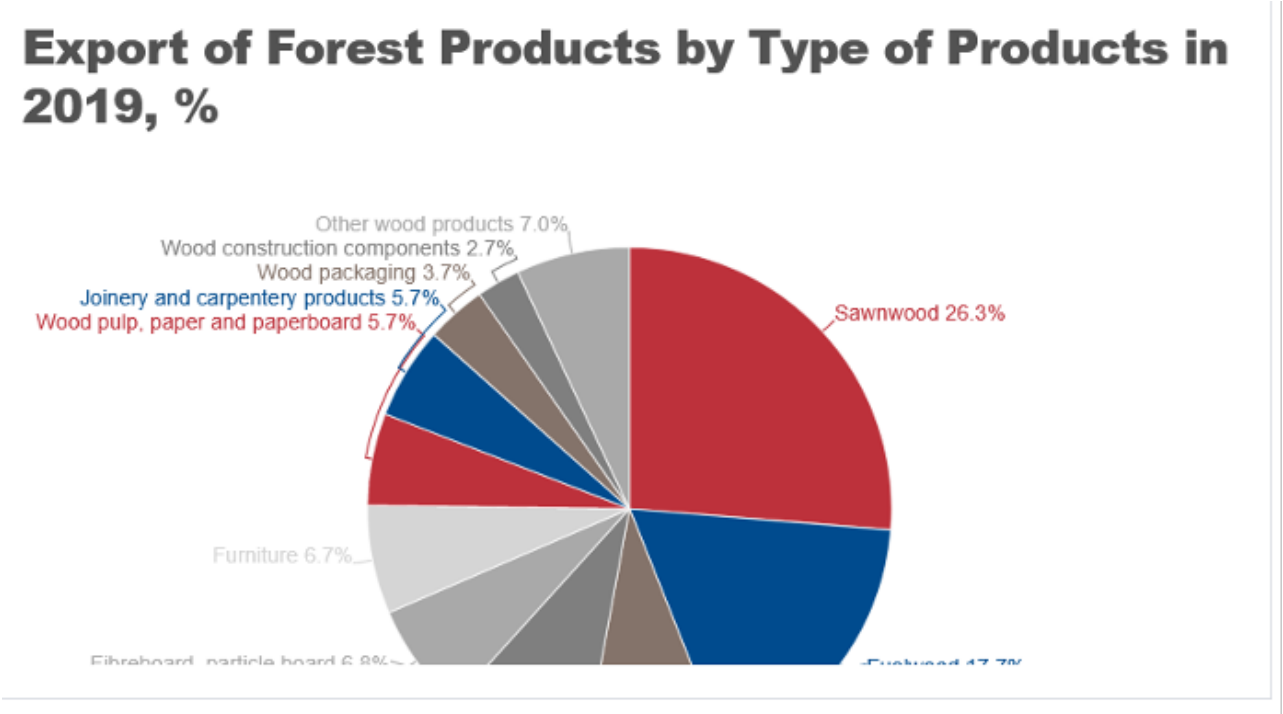
Socio-Economic setting[6]

The forestry industry has always been Latvia's export leader. Exports of wood and its products was the most significant export sector in 2019, comprising 20 % of total export value. About 71 % of forestry-sector output is exported.

The foreign trade balance of the Latvian woodworking industry is positive, having reached EUR 1.7 billion in 2019. In 2019, the value of forest product exports was EUR 2.6 billion, almost the same as in 2018. In 2019, the value of forest products import was EUR 939 million.

The main export destinations traditionally are EU countries: the United Kingdom, Estonia, Sweden and Germany

Export of forest products, by type, is presented below.

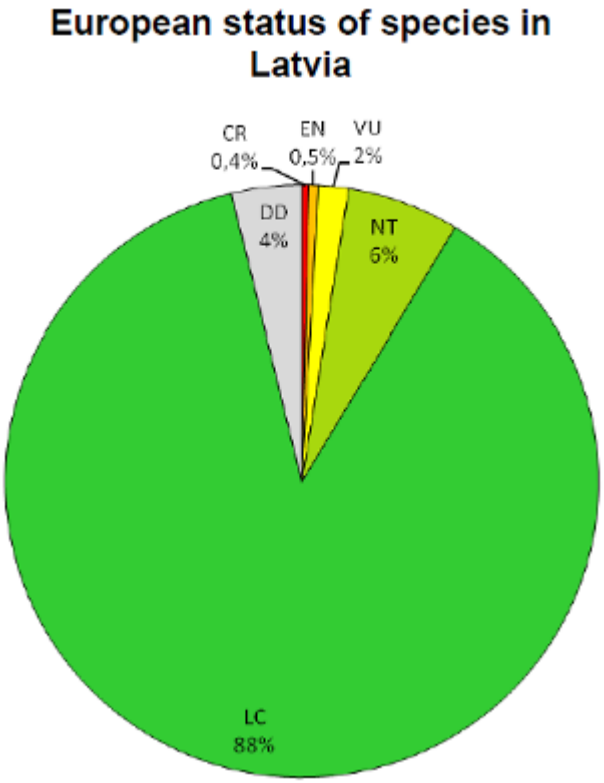


According to FAO, the 3 years average for 2014 to 2016 on number of full time equivalent in the forestry and logging sector was 17.130 full time equivalent positions. The number of full time equivalent positions has been decreasing since 2009-2011 where the number of full time equivalent positions were 18.400.[7]

Conservation CITES or IUCN species

Latvia is host to an estimated 27,443 species of animals and plants. This number represents 17% of the total species described for Europe and could represent more than 2% of the species in the world. According to the table below, approximately 13% of the species assessed by the European Red List of Species are present in Latvia. For some of the taxonomic groups, the percentages of European species that occur in Latvia are particularly high; such as dragonflies, saproxylic beetles, mammals and butterflies.

Of the 786 species assessed that occur in Latvia, the groups comprising the highest number of species are vascular plants, saproxylic beetles and butterflies. Of the total number of species assessed in the country 3%* are considered threatened and at least 6% are Near Threatened at the European level. Many of these species are endemic to Europe and are found nowhere else in the world.
Species that are considered threatened at the European level and occur in Latvia are found mostly in wetlands, forests and grasslands. These ecosystems require particular attention in order to ensure the habitats of these sensitive species remain.
Major threats at the European level to species occurring



Number of species assessed within each IUCN Red List category at the European level

Species group	No. of sp. in Europe	No. of sp. in Latvia	% of European sp. occurring in Latvia	No. of threatened sp. in Latvia (status at European level)		
				CR	EN	VU
Mammals	233	61	26%	1	0	2
Reptiles	140	7	5%	0	0	0
Amphibians	83	12	14%	0	0	0
Freshwater fishes	522	47	9%	1	0	1
Butterflies	435	107	25%	0	2	5
Dragonflies	137	58	42%	0	0	0
Saproxylic beetles**	431	127	29%	0	1	2
Terrestrial molluscs**	1,233	35	3%	0	0	1
Freshwater molluscs	854	70	8%	1	0	1
Vascular plants**	1,826	262	14%	0	1	1
TOTAL	**5,894**	**786**	**13%**	**3**	**4**	**13**

**Not comprehensively assessed, selected species only.
This table does not include the Not Applicable (NA) species in Europe (species introduced after AD 1500 or species of marginal occurrence.
The data are based on the results of the European Red List (European region wide assessment).

Major Threats

Habitat loss, fragmentation and degradation are the most significant threats at the European level to species that occur in Latvia. For freshwater species, major threats include water pollution caused by agricultural and forestry effluents, natural systems modifications and agricultural expansion and intensification. Other major threats come from logging and wood harvesting and urban and touristic development.

Reference: IUCN Latvia, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwia75b87vn2AhUHSPEDHUhcCIwQFnoECAUQAQ&url=http%3A%2F%2Fwww.iucn.org%2Fsites%2Fdev%2Ffiles%2Fcontent%2Fdocuments%2Flatvia_s_biodiversity_at_risk_fact_sheet_may_2013.pdf&usg=AOvVaw1R4HSliEcomM7bkfNcwokj

Species	CITES status	IUCN classification
Oak (*Quercus robur, Quercus petraea*)	Not on the list	Least concern (LC)
Oak (*Quercus rubra*)	Not on the list	Least concern (LC)
Birch (*Betula spp*)	Not on the list	Least concern (LC)
Beech (*Fagus silvatica*)	Not on the list	Least concern (LC)
Common Ash (*Fraxinus excelsior*)	Not on the list	Near threatened (NT) Reason: The Ash dieback is an infectious disease that has caused severe dieback of Common Ash throughout much of its range Region: Sweden: Endangered
Alder (*Alnus glutinosa, Alnus incana*)	Not on the list	Least concern (LC)
Pine (*Pinus Silvestris*)	Not on the list	Least concern (LC)
Spruce (*Picea abies, Picea sitchensis*)	Not on the list	Least concern (LC)
Maple (*Acer spp.*)	Not on the list	Least concern (LC)
Larch (*Larix decidua, Larix eurolepis*)	Not on the list	Least concern (LC)
Poplar (*Populus trichocarpa, Populus tremula*)	Not on the list	Least concern (LC)
Oregon pine (*Pseudotsuga menziesii;*)	Not on the list	Least concern (LC)
Linden (*Tilia spp.;*)	Not on the list	Least concern (LC)
Elm (*Ulmus spp.*)	Not on the list	Least concern (LC)

[1] https://www.zm.gov.lv/public/ck/files/ZM/mezhi/buklets/skaitlifakti_ENG_2021.pdf
[2] https://www.liaa.gov.lv/en/trade/industries/forest
[3] https://www.zm.gov.lv/public/ck/files/Meza_nozare_25_en_.pdf
[4] https://www.liaa.gov.lv/en/trade/industries/forest

[5] https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjUw9rr_fD2AhWVSPEDHfCcB9cQFnoECAIQAQ&url=https%3A%2F%2Fwww.em.gov.lv%2Fsites%2Fem%2Ffiles%2Fcontent%2Ffact-sheet-on-forest-biomass-in-latvia.pdf&usg=AOvVaw0iXTpPtc9seeWuvyMp9VeV

[6] https://www.liaa.gov.lv/en/trade/industries/forest
[7] http://www.fao.org/3/cb0024en/cb0024en.pdf

Country: Estonia

Area/Region: Estonia

Sub-Scope: N/A

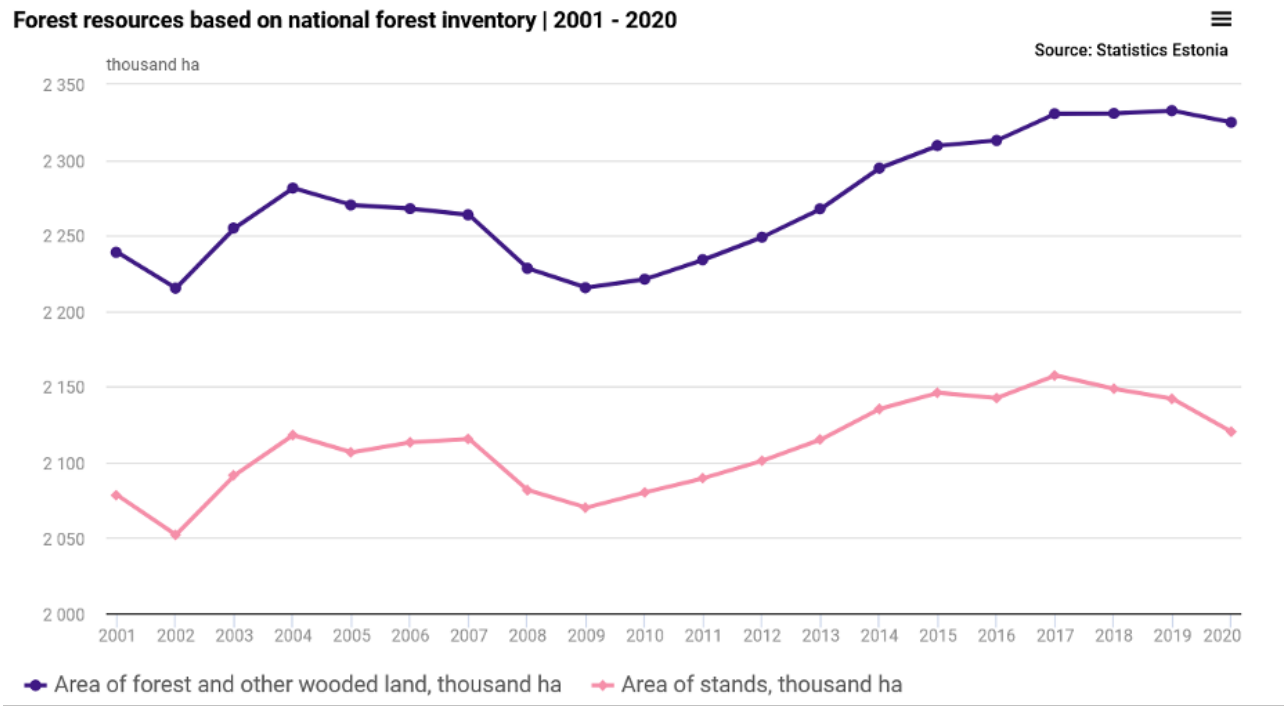
Exclusions: No

DSHwood consider all of Estonia as its Supply Base. From Estonia, DSHwood source primary feedstock in the form of wood chips or fuelwood logs bought with an FSC 100% or 100% PEFC certified certified claim. DSHwood also source secondary feedstock which is FSC or PEFC certified. DSHwood have 1-5 suppliers in Estonia.

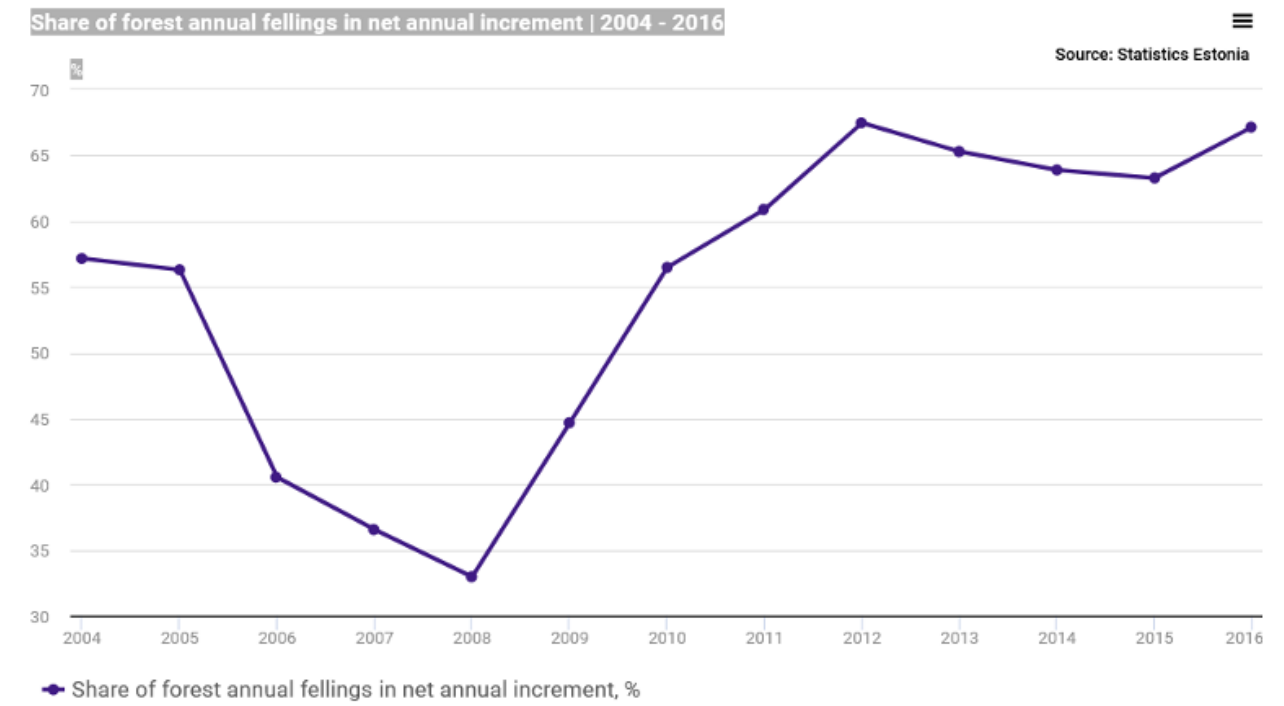
The following species are sourced:

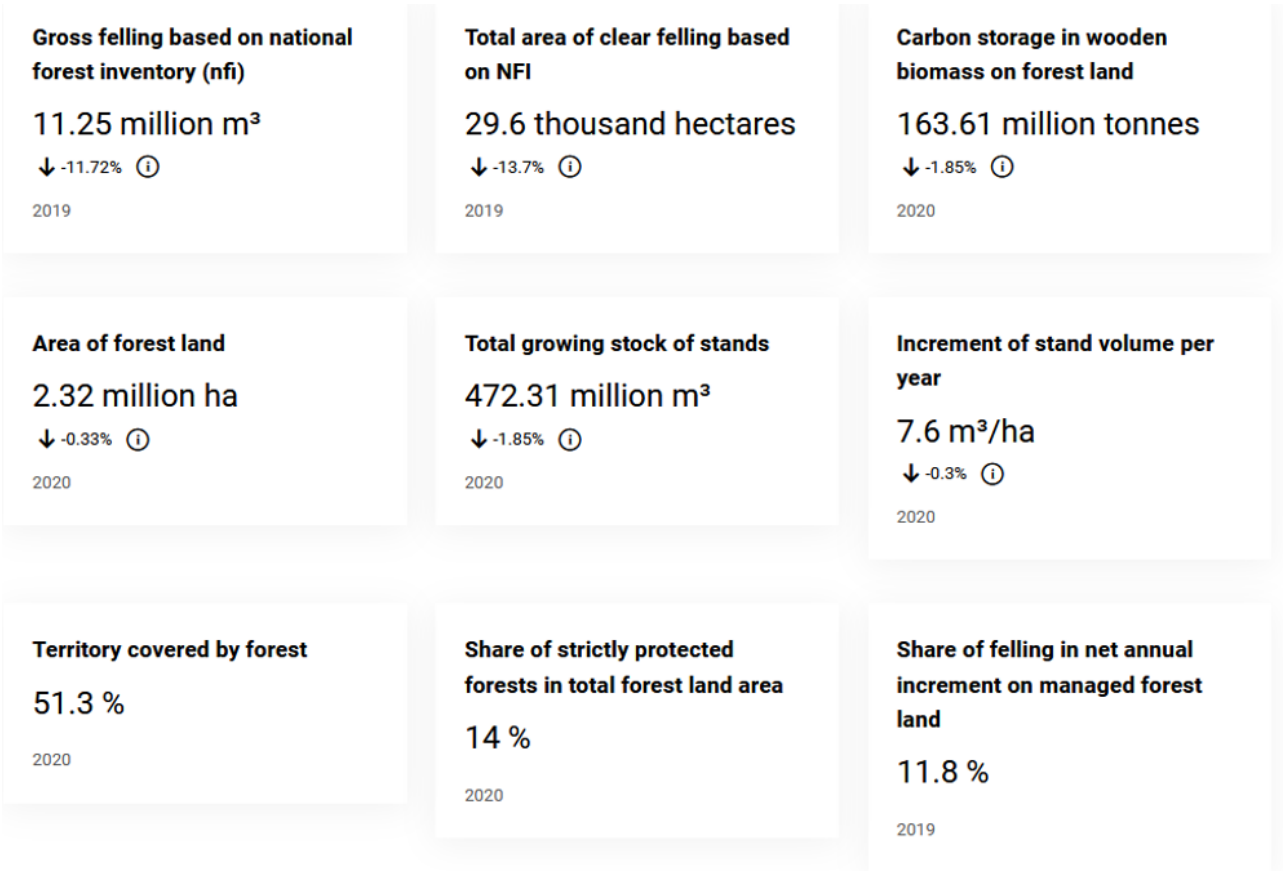
Oak (*Quercus robur, Quercus petraea*)	Alder (*Alnus glutinosa, Alnus incana*)	Poplar (*Populus trichocarpa, Populus tremula*)
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Forest cover
Currently more than 2,44 mill ha, equal to 51,3 % of the Estonian land territory, is covered by forest and the share of forest land has been decreasing between 2019 and 2020[1].



Despite the decreasing forest cover between 2017 and 2020, the annual fellings have been below increment as seen in the figure below. However, DSHwood is aware of concerns (see national statistics below[1]) of forests in Estonia turning into a net carbon source by 2030, focusing DSHwood to purchase PEFC or FSC certified material.[2]





The predominant species by area in Estonia are: Scots pine 42 %, Birch 30.7 %, Norway spruce 20.2 %, aspen 3.6, grey and black alder 3.2 and other 0.3[3].

About 0.3 mill ha's are planted, 1.1 mill ha is managed naturally, and 1,0 mill ha is primary forest. The area of protected forests accounts for 14 % of the total forest area. The majority of protected forests are located on state property. The main regulation governing the preservation of biodiversity and the sustainable use of natural resources is the Nature Conservation Act.

Management practices

Estonia is a member of the European Union since 2004. The Estonian legislation is in compliance with the EU's legislative framework and directives. National legislative acts make references to the international framework. All legislation is drawn up within a democratic system, subject to free comment by all stakeholders[4].

The Estonian Ministry of Environment lists four aspects of importance for its forests, as follow:

- economic – forest as a source of revenue;
- social – forest as an ensurer of employment and provider of forest vocation;
- ecological – forest as a preserver of population diversity;
- cultural – forest as a part of Estonian culture.

In 2020 the Estonian Government was criticized by 27 international NGO´s, calling on the Estonian government to ensure that its aims for forest management to 2030 and beyond to centre climate and biodiversity as priorities[5].

The Ministry of the Environment coordinates the fulfilment of state duties in forestry. The implementation of environmental policies and its supervision is carried out by two separate entities operating under its governance. The Estonian Environmental Board monitors the work carried out in Estonia's forests whereas the Environmental Inspectorate exercises supervision in all areas of environmental protection. The forest

categories are defined in the Forest Act. There are three main forest categories described in this legislation: commercial forests, protection forests and protected forests.
For logging in any type of forest, it is required that a valid forest inventory or forest management plan, along with a felling permit issued by the Environmental Board, is available. All issued felling permits and forest inventory data is available in the public forest registry online database (https://register.metsad.ee/#/).
Ownership
According to FAO 2020 the ownership of Estonian forest in 2015 was as follows[6]:

FRA 2020 report, Estonia

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	0.00	951.25	1 058.50	1 133.33
...of which owned by individuals	0.00	791.55	799.76	732.62
...of which owned by private business entities and institutions	0.00	159.71	258.74	400.71
...of which owned by local, tribal and indigenous communities	0.00	0.00	0.00	0.00
Public ownership (b)	2 205.90	897.35	931.24	1 176.85
Unknown/other (specify in comments) (c)	**0.00**	**390.29**	**346.28**	**110.83**
Total forest area	**2 205.90**	**2 238.89**	**2 336.02**	**2 421.01**

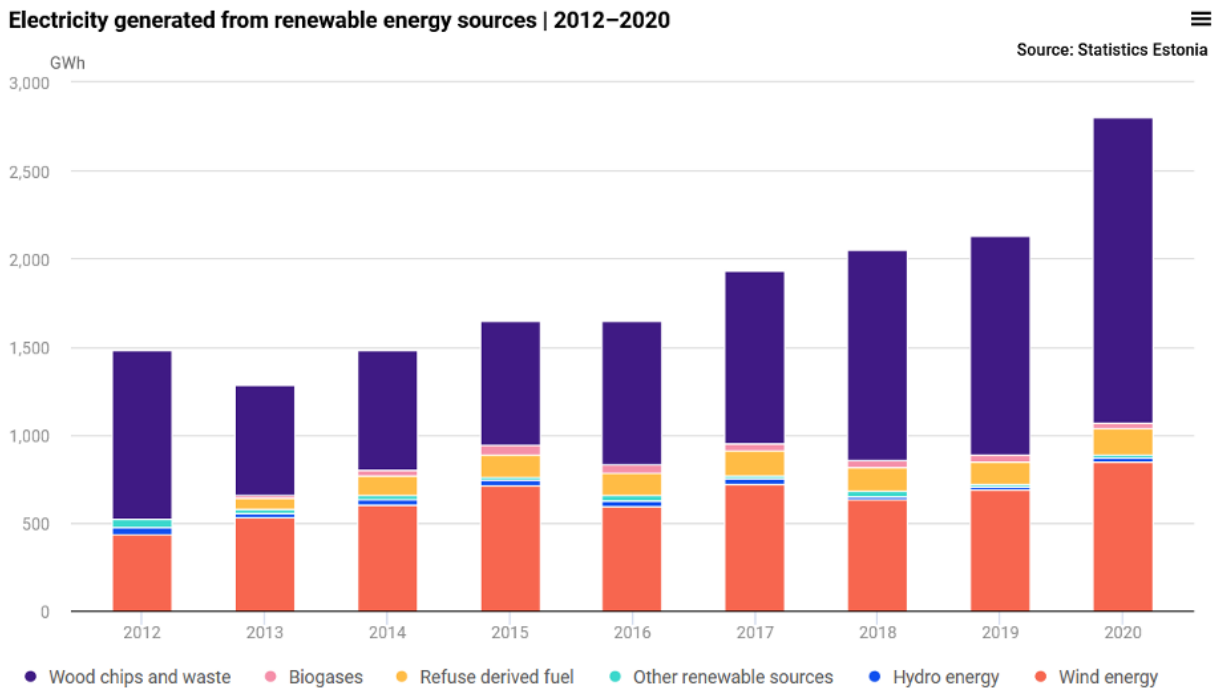
By 2015: 46,8% private ownership, 48,6% public ownership, and 4,6% unknown/other ownership. State forest is managed by the State Forest Management Centre (RMK), which is a profitmaking state agency founded on the basis of the Forest Act, and its main duty lies in sustainable and efficient management of state forest. State forests are certified according to FSC and PEFC forest management and chain of custody standards in which the indicators related to forest management planning, maps and availability of forest inventory records are being constantly evaluated and addressed[7].

Biomass
There is an increased awareness on biomass exports from Estonia, see the following articles:
- https://eandt.theiet.org/content/articles/2020/12/why-british-biomass-energy-is-a-burning-issue-for-estonia-s-forests/
- https://www.theguardian.com/world/2021/jan/14/carbon-neutrality-is-a-fairy-tale-how-the-race-for-renewables-is-burning-europes-forests
- https://www.eby.ee/2021/12/
- https://energywatch.com/EnergyNews/Policy___Trading/article12307937.ece
- https://www.vpro.nl/argos/lees/onderwerpen/money-to-burn/2020/how-estonian-trees-fuel-our-biomass-plants.html

The production of wood pellets, which have found a place as an important type of fuel on the energy market, continues to grow. In 2019, nearly 1.6 million tonnes of wood pellets were produced, which is nearly a fifth more than the year before. Due to the continued demand on the external market, most of the production was exported. The main destination countries were Denmark, Belgium and the Netherlands.[8]

Biomass statistics
To produce energy statistics, Statistics Estonia collects the following data:
· production volumes by type of energy;
· energy consumption volumes of household and industrial clients;
· stocks of energy products, imports and exports.
In Estonia[9], a large share of energy is still produced from non-renewable resources such as oil shale. At the same time, renewable energy is receiving more attention in the world and in Estonia – it is necessary to make sure that natural resources are preserved for future generations as well. A gradual transition to renewable energy is important for economic progress in the future. Statistics Estonia publishes annual energy efficiency indicators, which allow assessments of the share of renewable energy and energy

savings.
From the graph below it can be seen that a larger and larger share of electricity is generated from wood chips and waste, leading to the need to focus on FSC and PEFC certified biomass.



Socio-Economic setting
According to the Forestry Yearbook 2016[10] the wood, paper and furniture industry (751,1 mill euro) contributed 26,6 % to the total sector, providing 4,2% of the total value added. Forestry accounted for 1.1% of the value added. In Estonia, it is permitted to access natural and cultural landscapes on foot, by bicycle, ski, boat or on horseback. Unmarked and unrestricted private property may be accessed any time to pick berries, mushrooms, medicinal plants, fallen or dried branches, unless the owner forbids it. On unmarked and unrestricted private property camping is allowed for 24 hours. RMK creates exercising and recreational opportunities in nature and in recreational and protection zones and provides education about nature. Approximately 5 % (equivalent of 33.800 persons) of the total number of employees in Estonia are employed in the forestry sector, with 52 % employed in the furniture industry, 30 % in the wood processing industry, 16 % in the pulp and paper industry and 2 % in forest management.

Conservation: CITES or IUCN species
Estonia is home to more than 28 thousand species. To date, 1,523 species present in Estonia have been assessed for the IUCN European Red List. Due to its geographical position, Estonia is on the edge of the range of many species, making them vulnerable to changes. Populations of wolves, bears and lynxes have remained resilient in Estonia despite periods of hostility.
The country lies on the crossroads of the Eastern Atlantic migratory flyway for millions of Arctic waterbirds. The long and indented coastline, shallow and sheltered bays, coastal meadows and lagoons are also crucial feeding and stopover sites during migrations.
In addition to wilderness areas, semi-natural habitats, such as alvars or meadows, are one of Estonia’s nature protection priorities as the sustainable use of these areas provides a good basis for biodiversity protection. For example, 76 different plant species have been counted in 1m2 of a wooded meadow (on the 59o latitude).
The history of nature conservation in Estonia dates to more than 100 years ago, when the first bird sanctuary was established on the western archipelago in 1910.

A total of 18.7% of the Estonian land territory, 27% of the territorial waters and 28% of the whole aquatory is protected. Considering both land and water areas, a total of 22.2% of the Estonian territory is protected, with more than 900 protected areas, including 5 national parks. A total of 18% of forest land is protected (including 8.5% in conservation zones and strict nature reserves), 65% of meadows and 69% of mires. Regarding IUCN protected area categories, the greatest share of protected areas in Estonia is comprised of areas with a regime corresponding to IUCN category VI (ca 50%) followed by III (30%) and Ib (11%). Management effectiveness of Protected Areas has been evaluated using METT metodology during 2010 -2013 (38 protected areas covering ca 50% of the total area of the nature reserves and national parks) Estonia has signed the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1992 and joined the International Union for Conservation of Nature (IUCN) in 2007[11]

Species	**CITES status**	**IUCN classification**
Oak (*Quercus robur, Quercus petraea*)	Not on the list	Least concern (LC)
Oak (*Quercus rubra*)	Not on the list	Least concern (LC)
Birch (*Betula spp*)	Not on the list	Least concern (LC)
Beech (*Fagus silvatica*)	Not on the list	Least concern (LC)
Common Ash (*Fraxinus excelsior*)	Not on the list	Near threatened (NT) Reason: The Ash dieback is an infectious disease that has caused severe dieback of Common Ash throughout much of its range Region: Sweden: Endangered
Alder (*Alnus glutinosa, Alnus incana*)	Not on the list	Least concern (LC)
Pine (*Pinus Silvestris*)	Not on the list	Least concern (LC)
Spruce (*Picea abies, Picea sitchensis*)	Not on the list	Least concern (LC)
Maple (*Acer spp.*)	Not on the list	Least concern (LC)
Larch (*Larix decidua, Larix eurolepis*)	Not on the list	Least concern (LC)
Poplar (*Populus trichocarpa, Populus tremula*)	Not on the list	Least concern (LC)
Oregon pine (*Pseudotsuga menziesii;*)	Not on the list	Least concern (LC)
Linden (*Tilia spp.;*)	Not on the list	Least concern (LC)
Elm (*Ulmus spp.*)	Not on the list	Least concern (LC)

[1] https://www.stat.ee/en/find-statistics/statistics-theme/environment/forest
[2] https://www.climatechangenews.com/2018/01/16/logging-surge-threatens-quarter-estonias-forest-warn-conservationists/
[3] https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Wood%20Sector%20in%20Estonia_Warsaw_Estonia_12-20-2016.pdf
[4] https://europa.eu/european-union/about-eu/countries/member-countries/estonia_en#estonia-in-the-eu
[5] https://globalforestcoalition.org/wp-content/uploads/2020/04/NGO-letter-to-Estonian-Ministry-of-Environment-3.pdf
[6] http://www.fao.org/3/ca9989en/ca9989en.pdf
[7] https://www.rmk.ee/organisation/environmental-policy-of-rmk/certificates
[8] https://www.stat.ee/en/uudised/eesti-elektritootmine-liigub-keskkonnasobralikus-suunas
[9] https://www.stat.ee/en/find-statistics/statistics-theme/energy-and-transport/energy
[10] https://keskkonnaagentuur.ee/en/goals-activities/publications#forestry
[11] https://www.iucn.org/regions/europe/about/our-members

[1] https://www.stat.ee/en/find-statistics/statistics-theme/environment/forest

Country: Lithuania

Area/Region: Lithuania

Sub-Scope: N/A

Exclusions: No

Supply base Lithuania
DSHwood consider all of Lithuania as its Supply Base. From Lithuania, DSHwood source primary feedstock in the form of wood chips or fuelwood logs bought with an FSC 100% or 100% PEFC certified certified claim. DSHwood also source secondary feedstock sourced as FSC or PEFC certified. DSHwood have 1-5 suppliers in Lithuania.

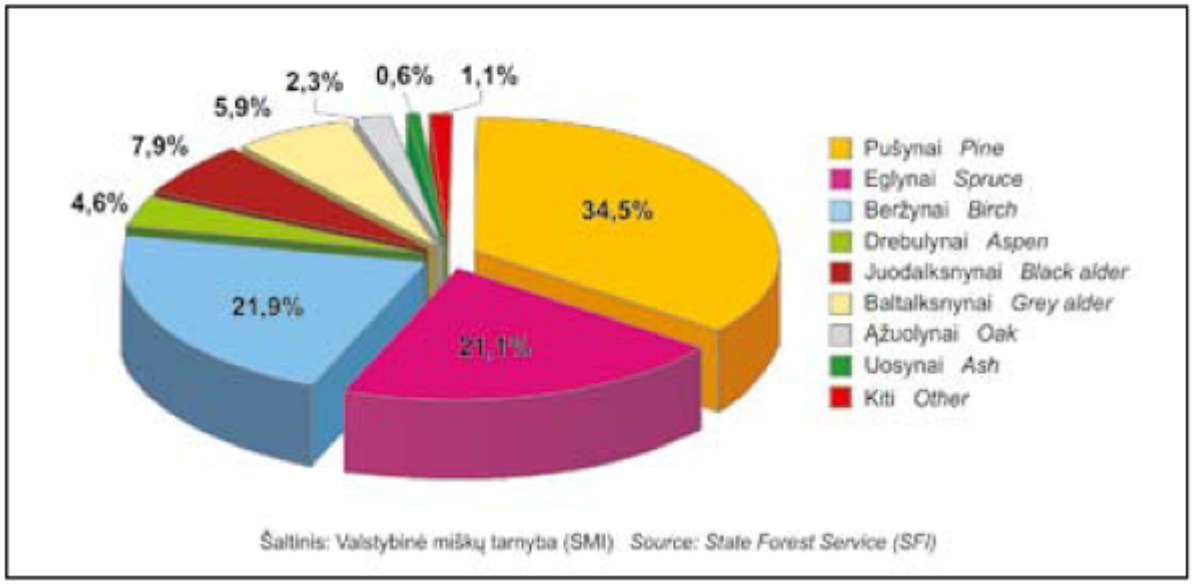
The following species are sourced:

Oak (*Quercus robur, Quercus petraea*)	Alder (*Alnus glutinosa, Alnus incana*)	Poplar (*Populus trichocarpa, Populus tremula*)
Oak (*Quercus rubra*)	Pine (*Pinus Silvestris*)	Oregon pine (*Pseudotsuga menziesii;*)
Birch (*Betula spp*)	Spruce (*Picea abies, Picea sitchensis*)	Linden (*Tilia spp.;*)
Beech (*Fagus silvatica*)	Maple (*Acer spp.*)	Elm (*Ulmus spp.*)
Common Ash (*Fraxinus excelsior*)	Larch (*Larix decidua, Larix eurolepis*)	

Forest cover[1]

The forested land occupies 33,5 % of the country´s territory or 2,200 mill ha.[2] (FAO estimates the forested land in Lithuania to be 35,13%). Coniferous stands prevail in Lithuania, occupying 1,147,400 ha and covering 55.7% of all forest area. They are followed by softwood deciduous forests covering 845,700 ha (41.0%), with hardwood deciduous forests occupying 68,700 ha (3.3%). Over the last seventeen years, softwood deciduous forest land area has increased by 147,300 ha. Whereas the area of hardwood deciduous decreased by 23,900 ha (mainly due to dieback of ash stands) and coniferous forest by 12,500 ha.
Occupying the biggest share in Lithuanian forests is Scots pine covering an area of 710,300 ha. Compared to 2003, the area of pine decreased by 1,200 ha. Norway spruce stands cover 434,800 ha, which is a reduction of 10,500 ha.

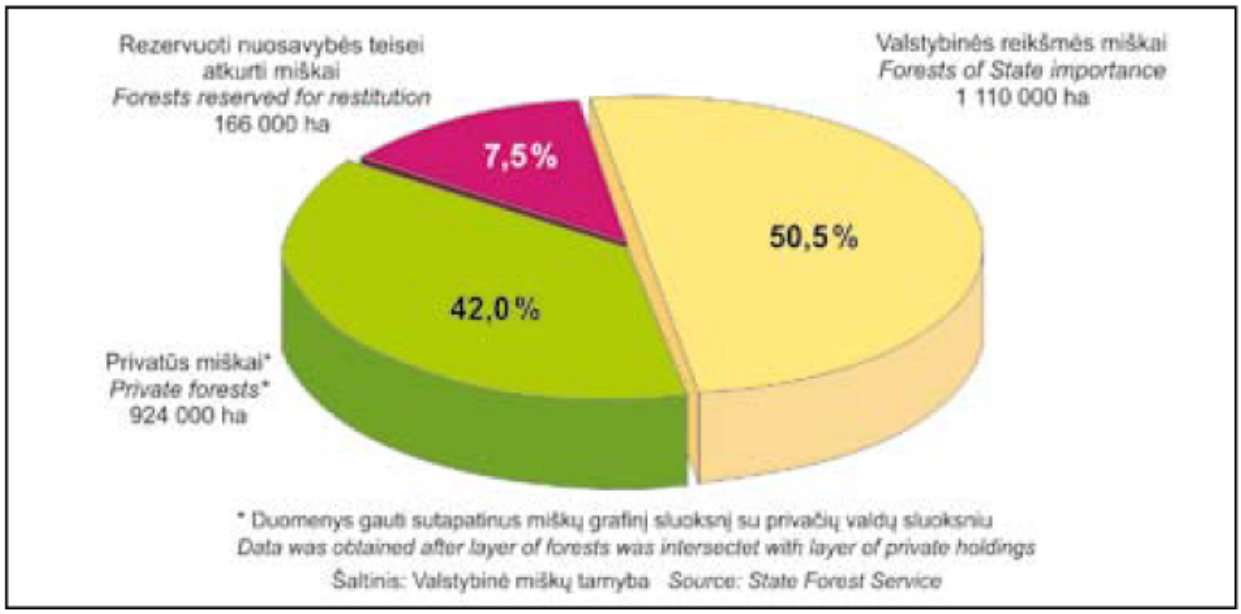
1.4 MEDYNŲ PLOTAI PAGAL VYRAUJANČIĄ MEDŽIŲ RŪŠĮ 2020 01 01
FOREST STANDS AREA BY DOMINANT TREE SPECIES 01.01.2020



Šaltinis: Valstybinė miškų tarnyba (SMI) *Source: State Forest Service (SFI)*

Ownership
By January 1st 2020, around a half of all forest land in Lithuania, totalling1,110,400 ha, was considered to be of state importance. In the State Enterprise Centre of Registers a total of
857,500 ha of private forests were registered, but after the intersection of layers of all forests and private holdings, the estimated area of private forests was 923,800 ha.
The State Forest Enterprise managed 1,074,900 ha of forest land, and each of its 26 regional subdivisions managed an average of 41,300 ha of forest land. Territorial subdivisions were divided into 338 forest districts, each managing an average forest district area of 3,300 ha.

2.1 MIŠKO ŽEMĖS PASISKIRSTYMAS PAGAL NUOSAVYBĘ 2020 01 01
FOREST LAND BY OWNERSHIP 01.01.2020



Management practices
At the beginning of 2020, the distribution of forests by functional groups was as follows: Group I (strict nature reserves) – 27,100 ha (1.2%); Group II (ecosystem protection and recreational) - 256,000 ha (11.6%); Group III (protective) - 281,300 ha (12.8%); and Group IV (commercial) - 1,635,800 ha (74.3%). State forest of Lithuania are FSC certified.

Fellings
During 2019, the amount of merchantable roundwood prepared in Lithuanian forests decreased by 4% to 6.9 million m³. There was 3.6 million m³ of merchantable roundwood prepared in state forests, lower than the previous five years average of 3.8 million. m³.
The volume of felling this year increased by just 1% compared to 2018. The State Forest Enterprise prepared 3.5 million m³ of roundwood in the forests under its management (either on its own or by hiring contractors) and stumpage sales made up 48,000 m³ The volume from the final felling was 2.8 million m³. A part of roundwood (103,000 m³) prepared by selective salvage felling was included in this quantity. The share of the final felling constituted 77% of the total harvest. Fellings in pine stands showed a relative increase in 2019. The prepared volume of wood amounted to 702,000 m³ or 51% of the total amount in coniferous stands. Harvest in spruce stands was 679,000 m³.
The felling rate in private forests decreased from 3.7 million m³ to 3.4 million m³. Private forest owners received cutting permissions for 2.7 million m³, with half of this issued to cut in coniferous stands. The allowable cut in pine stands decreased by 6% from 745,000 m³ in 2018 to 698,000 m³ in 2019. The allowable cut in spruce stands decreased by 7% to 629,000 m³. Felling in birch stands decreased by 10% to 715,000 m³.

Biomass[3]
Forest biomass is a strategically important renewable resource for the energy sector in Lithuania. The political and economic goal of gaining independence from natural gas, which was supplied from a single source at a very high price, encouraged the transformation of the sector. Today (2020), renewables are used economically and effectively for energy production and the energy price for end consumers has been significantly reduced. Further reduction in imports of primary fossil energy sources is certainly possible but not desirable. The National Energy Independence Strategy ambitiously indicates that the share of renewables in the total final energy consumption will reach 45% by 2030, and, in the long-term, goals have been set for the Lithuanian energy sector to be fossil-fuel free by 2050. The increased use of renewables in

the energy sector in place of natural gas means national energy independence for Lithuania.
A favourable legal network has been created for the development of biomass energy, which has facilitated rapid and efficient restructuring of the energy sector since 2010, especially in district heating. However, the legislation does not provide long-term guidelines for the development of renewable energy, which would allow investors to forecast the needed expansion of the sector and apply for the needed financial support from EU Structural Funds.
The replacement of natural gas by renewable resources, especially forest biomass used in heat production, has resulted in a significant price reduction for end consumers. The reduction in central heat prices was mainly influenced by the increased use of locally available forest biomass and the emergence of the biofuel exchange, which is one of the main market instruments licensed by the National Control Commission for Prices and Energy for the exchange of energy resources within the Baltic region and promotes the use of biomass for heat production. Since 2016, all biomass for energy production has been purchased on the biomass exchange. It is legally regulated but allows biomass to be bought outside the exchange if the price is lower than on the exchange. The established system of energy biomass auctions ensures a lower price and prevents unjustified price increases. The Lithuanian forest biomass market is strongly influenced by cheaper wood chips supplied from neighbouring Belarus.
Lithuania must consider the ecological impacts of increased forest biomass use for energy. Intensive forest biomass harvesting must be balanced with the requirements of sustainable forest management. Specifically, nutritional balance and soil fertility can be ensured without undesired environmental impacts through the strict regulatory mechanism now in place which allows compensatory wood ash recycling in commercial forests.
Recent work has shown that the Lithuanian energy sector is moving towards a more sustainable development, with several strengths of the structures in place today, which include abundant forest biomass resources from land under sustainable forest management, appropriate legislation and supportive financial instruments in the district heating sector. The most critical weakness for sustainable development is the high amount of imported forest biomass for energy from Belarus.

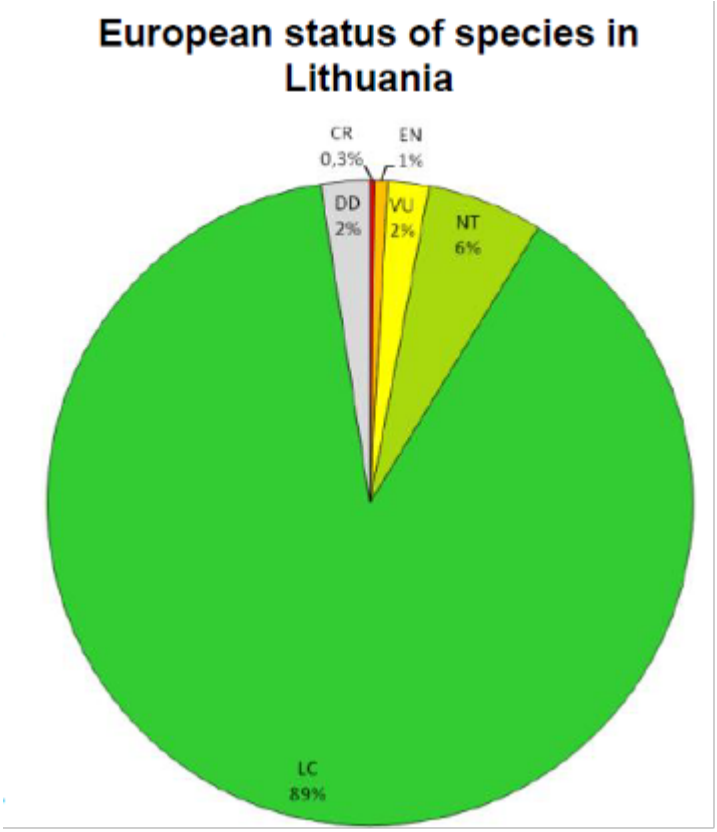
Socio-economic setting

According to provisional data, gross domestic product (GDP) increased by 4.3% in 2019 compared to 4.0% GDP in 2018. The unemployment rate increased from 6.0% in the IV quarter of 2018 to 6.4% in the IV quarter of 2019. The total value added in the forest sector (including the manufacture of furniture) reached EUR 1.9 billion in 2018. Total value added (at current prices) increased by 9% over the year. The sector share in the total national value added was 4.7% (4.6% in 2017). The biggest share of the value added in the sector (EUR 891 million) was generated by the furniture industry. Its value added at current prices increased by 8% compared with 2017. The value added in the woodworking industry increased by 5%, up to EUR 536 million. The pulp and paper industry increase was more significant at 7%, amounting to EUR 232 million. Forestry and logging generated EUR 268 million of the value added, 27% higher compared to 2017. The total Lithuanian industry sales (at current prices) amounted to EUR 23.3 billion in 2019, an increase of 3% compared with 2018. The wood industry sales (including the manufacture of furniture) increased by 6% to EUR 3.50 billion, compared with 2018.
The number of operating forestry and logging companies increased by 1%, the same as the number of companies in the woodworking industry. The increase in the pulp and paper industry was 2%, and there was a more significant increase of 4% recorded in the number of operating furniture producers.

Biodiversity conservation[4]

Lithuania hosts a large proportion of the species that are threatened at the European level, and has the important responsibility for protecting these species within its territory. Species in Lithuania require greater action to improve their status. While many species already receive some conservation attention, others do not. Species can be saved from extinction but this requires a combination of sound research and carefully coordinated efforts. Lithuania as an EU Member State has committed to halting biodiversity loss by 2020 but urgent action is needed to meet this target and better monitoring capacity is required to measure if the target is met.
Considerable conservation investment is needed from Lithuania to ensure that the status of European species improves in the long term. This document provides an overview of the conservation status of species in Lithuania based on the results of all European Red Lists completed to date. It does not provide the status of the species in the country, therefore we invite the reader to cross check national and sub-

national Red Lists. Together, they can be used to help guide policies and local conservation strategies.
Lithuania is host to an estimated 30,000 species of animals and plants. This number represents 19% of the total species described for Europe and could represent more than 2% of the species in the world.
According to the table below, approximately 13% of the species assessed by the European Red List of Species are present in Lithuania. For some of the taxonomic groups, the percentages of European species that occur in Lithuania are particularly high; such as dragonflies, butterflies and mammals.
Of the 779 species assessed that occur in Lithuania, the groups comprising the highest number of species are vascular plants, dragonflies, butterflies and saproxylic beetles. Of the total number of species assessed in the country 3%* are considered threatened and at least 6% are Near Threatened at the European level. Many of these species are endemic to Europe and are found nowhere else in the world.
Species that are considered threatened at the European level and occur in Lithuania are found mostly in wetlands, forests and grasslands. These ecosystems require particular attention in order to ensure the habitats of these sensitive species remain.
Reference: IUCN Lithuania



Number of species assessed within each IUCN Red List category at the European level

Species group	No. of sp. in Europe	No. of sp. in Lithuania	% of European sp. occurring in Lithuania	No. of threatened sp. in Lithuania (status at European level)		
				CR	EN	VU
Mammals	233	63	27%	0	1	3
Reptiles	140	7	5%	0	0	0
Amphibians	83	11	13%	0	0	0
Freshwater fishes	522	50	10%	1	0	1
Butterflies	435	116	27%	0	2	5
Dragonflies	137	137	45%	0	0	1
Saproxylic beetles**	431	107	25%	0	1	2
Terrestrial molluscs**	1,233	36	3%	0	0	2
Freshwater molluscs	854	64	7%	1	0	1
Vascular plants**	1,826	264	14%	0	1	1
TOTAL	**5,894**	**779**	**13%**	**2**	**5**	**16**

**Not comprehensively assessed, selected species only.
This table does not include the Not Applicable (NA) species in Europe (species introduced after AD 1500 or species of marginal occurrence).
The data are based on the results of the European Red List (European region wide assessment).

Species	CITES status	IUCN classification
Oak (*Quercus robur, Quercus petraea*)	Not on the list	Least concern (LC)
Oak (*Quercus rubra*)	Not on the list	Least concern (LC)
Birch (*Betula spp*)	Not on the list	Least concern (LC)
Beech (*Fagus silvatica*)	Not on the list	Least concern (LC)
Common Ash (*Fraxinus excelsior*)	Not on the list	Near threatened (NT) Reason: The Ash dieback is an infectious disease that has caused severe dieback of Common Ash throughout much of its range Region: Sweden: Endangered
Alder (*Alnus glutinosa, Alnus incana*)	Not on the list	Least concern (LC)
Pine (*Pinus Silvestris*)	Not on the list	Least concern (LC)
Spruce (*Picea abies, Picea sitchensis*)	Not on the list	Least concern (LC)
Maple (*Acer spp.*)	Not on the list	Least concern (LC)
Larch (*Larix decidua, Larix eurolepis*)	Not on the list	Least concern (LC)
Poplar (*Populus trichocarpa, Populus tremula*)	Not on the list	Least concern (LC)
Oregon pine (*Pseudotsuga menziesii;*)	Not on the list	Least concern (LC)
Linden (*Tilia spp.;*)	Not on the list	Least concern (LC)
Elm (*Ulmus spp.*)	Not on the list	Least concern (LC)

[1] https://osp.stat.gov.lt/en/statistikos-leidiniu-katalogas#
[2] https://fra-data.fao.org/LTU/fra2020/home/
Lithuanian Statistical Yearbook of forestry 2020

[3] https://energsustainsoc.biomedcentral.com/articles/10.1186/s13705-019-0229-9

[4]
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjnjJTqh_H2AhXhsIsKHQvVC2MQFnoECAQQAQ&url=http%3A%2F%2Fwww.iucn.org%2Fsites%2Fdev%2Ffiles%2Fcontent%2Fdocuments%2Flithuania_s_biodiversity_at_risk_fact_sheet_may_2013.pdf&usg=AOvVaw26kACLmhsHFjd0EsASsV3h

Country: Norway

Area/Region: Norway

Sub-Scope: N/A

Exclusions: No

DSHwood consider all of Norway in its supply base, feestock is primary or secondary and all feedstock is FSC or PEFC certified. DSHwood have 1-5 suppliers in Norway.

Forest cover
Forest covers approx. 12 million ha, or approximately 38% of Norway's total area. Conifers cover about 57% of the area, leaves 41% and without trees account for 2%. National parks and nature reserves cover approximately 4.3% of the forest area. The annual increment is about 26 million cubic metres and the most important species are Norway spruce (44 %), Scots pine (31 %) and birch and other broadleaves (25 %) (Rognstad et. al, 2015). Around 70% of annual felling is used by domestic industry (sawmills and pulpwood industry). The remaining volume is exported to forest-related industries abroad, mainly Sweden, Germany and the Baltics.

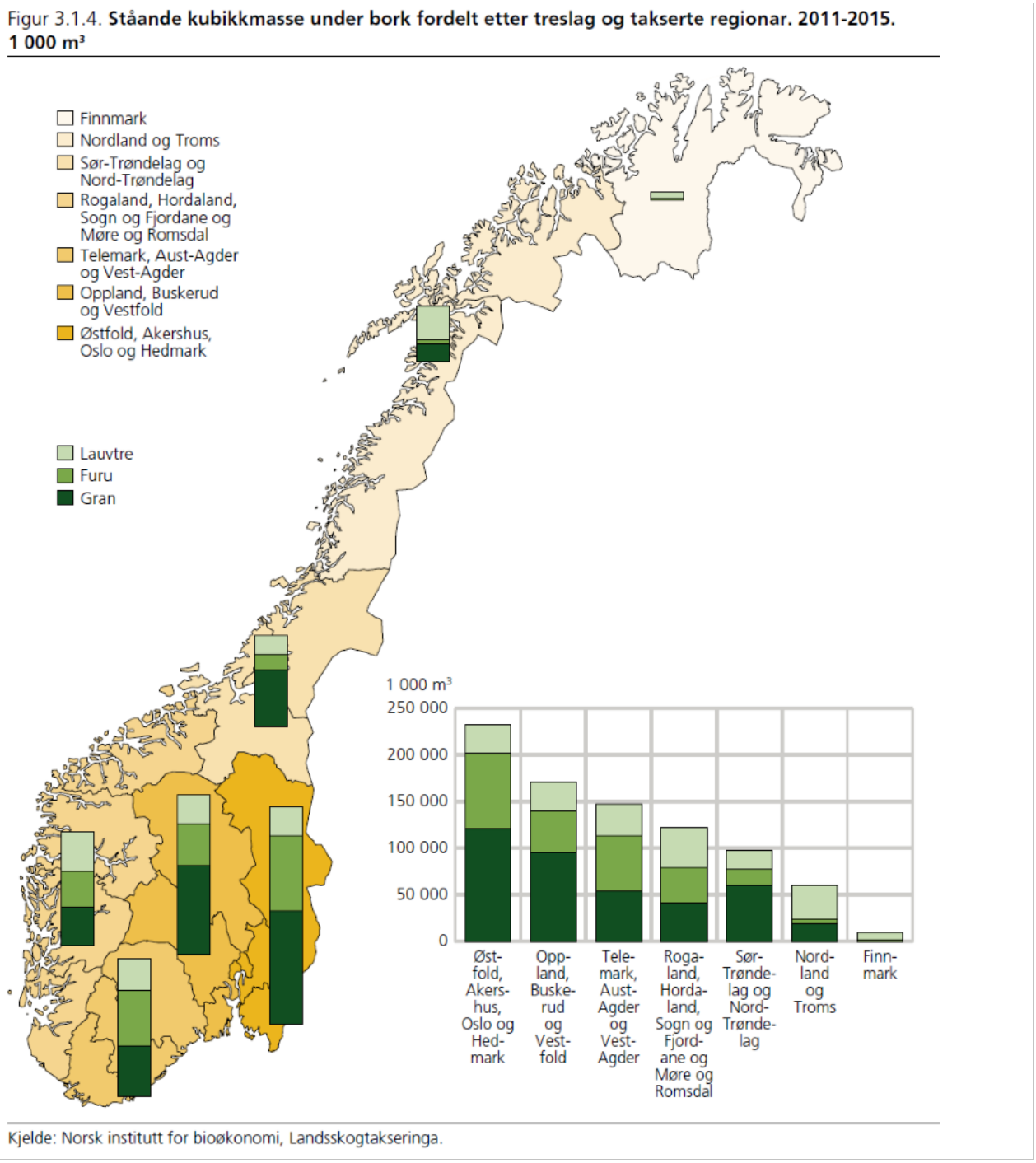


Figure 4: Forest regions and main species in Norway: Gran = Picea spp; Furu = Pinus sylvestris; Lauvtre = broadleaves

Management

Forest management in Norway. The purpose of the Forestry Act (the Forestry Act) is to promote the sustainable management of forest resources in the country with a view to active, local and national value creation, while at the same time safeguarding the landscape, outdoor life and cultural values in the forest. The Ministry of Agriculture and Food is the highest governing body and the law applies to all forests and forest land. The forest owner is given responsibility in the law to ensure that all measures in the forest are implemented in accordance with law and regulations. The forest owner must have an overview of the

environmental values in his own forest and take these into account when implementing all measures in the forest. The forest owner is also responsible for ensuring that those who do work in the forest follow laws and regulations. In practice, this means that in order for the forest owner to comply with laws and regulations, as well as be able to document this to the authorities, practically all Norwegian forests are environmentally certified.

Norway is also a member of and follows CITES (https://cites.org/eng/parties/country-profiles/no).

Norway has many species that are red-listed that can be found here:
https://www.biodiversity.no/Pages/135380/Norwegian_Red_List_for_Species

The Parliament in Norway has decided that 10% of the forest areas in Norway shall be protected. As of January 2021, 5.1 percent of the forest area in Norway is protected. For the productive forest area, the conservation share is 3.9 per cent. In addition, we have voluntary forest protection, which is a scheme where the forest owner himself offers forest area for protection. If the area has natural and environmental qualities that warrant protection and the protection authorities accept the offer, the area can be protected as a nature reserve in accordance with the Natural Diversity Act §37. An agreement will then be negotiated between the forest owner and the state, which contains the delimitation of the area, protection regulations that regulate the use of the area and compensation.

Fuelwood
The total consumption of energy in Norway was 214 TWh in 2019. Use and production of biofuels in Norway was 18.3 TWh, of which 6.4 TWh was imported consumption. Firewood accounted for approximately 5.1 TWh. Chips, bark and wood accounted for approximately 2.5 TWh in 2019.
Background
Bioenergy is energy that originates in ongoing and renewable processes. Bioenergy is often grouped by type of fuel, i.e. solid or liquid. The most important solid biofuels for direct use are firewood, bark, chips and pellets. The origin is wood from the forest, including logging waste and residual products from the wood processing and wood industry.
Firewood
Wood dominates the consumption of biofuels. The use of wood amounted to approximately 5.1 TWh in 2019, or approximately 1.8 million solid cubic meters of wood. The use of firewood depends on the winter temperature. The consumption of firewood has been between 5 and 6 TWh in recent years.

Ownership
Most of forests in Norway are owned by private individuals/families 72 % and the state only with 11 % (figure 5). Rold Skov Savværk source its material from one private company. From figure 6 it can be seen that there are many owners of smaller forests 25-249 Dekar (10 dekar = 1 ha).

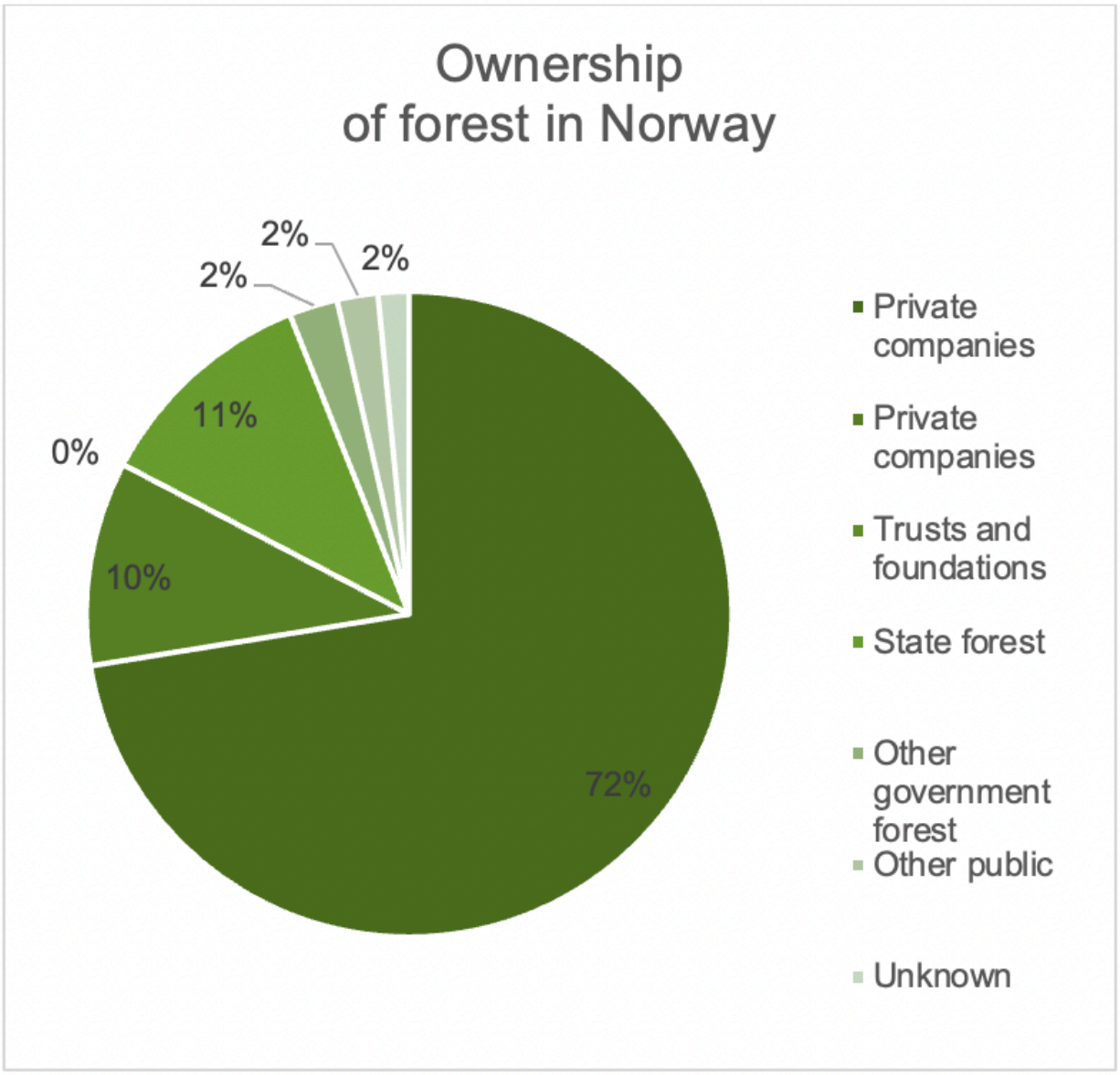


Figure 5: Forest ownership in Norway (Rognstad et al (2015))

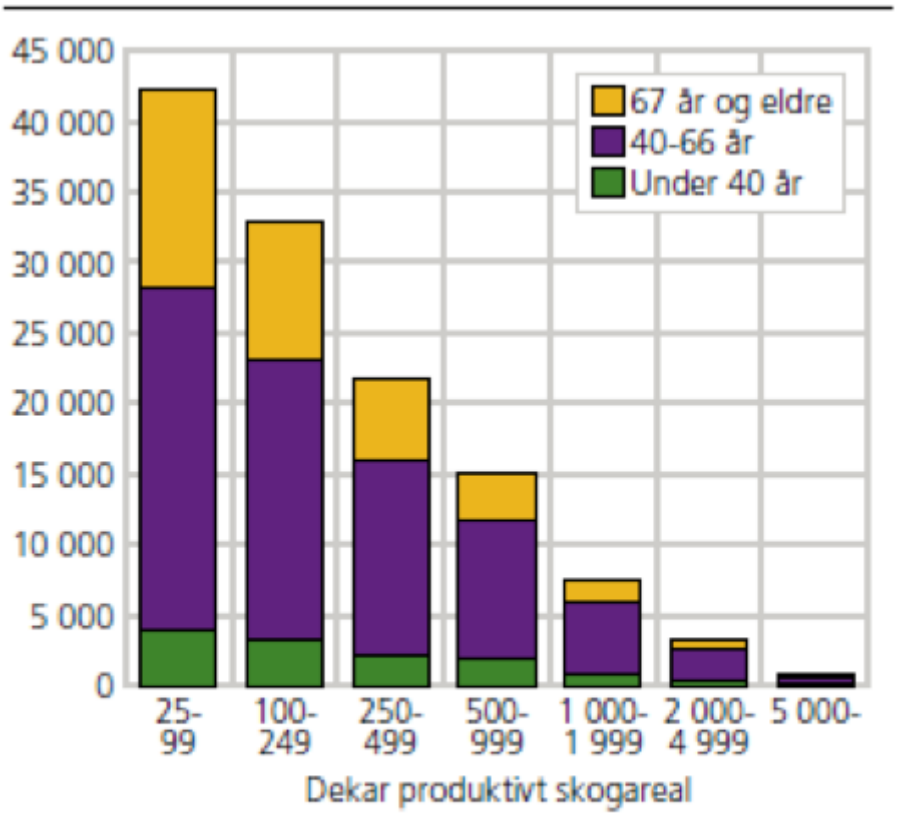


Figure 6: Ownership and size of forests in Norway (Rognstad et al (2015))

Socio economic setting

Total occupation within the forestry sector amount to 6.400 full time employees per year in 2015 (Rognstad et. al, 2015). The forestry sector contributed in 2015 with 0,3 % of BNP, corresponding to 10,2 billion Nkr, of these 1,5 billion Nkr originated from export of Roundwood, the major forest export value coming from export of cellulose and paper with 5,6 billion Nkr.

Redlist

Cites species are present in Norway but do not include threatened softwood or deciduous species. Norway has a considerable number of IUCN categories, see figure 7.

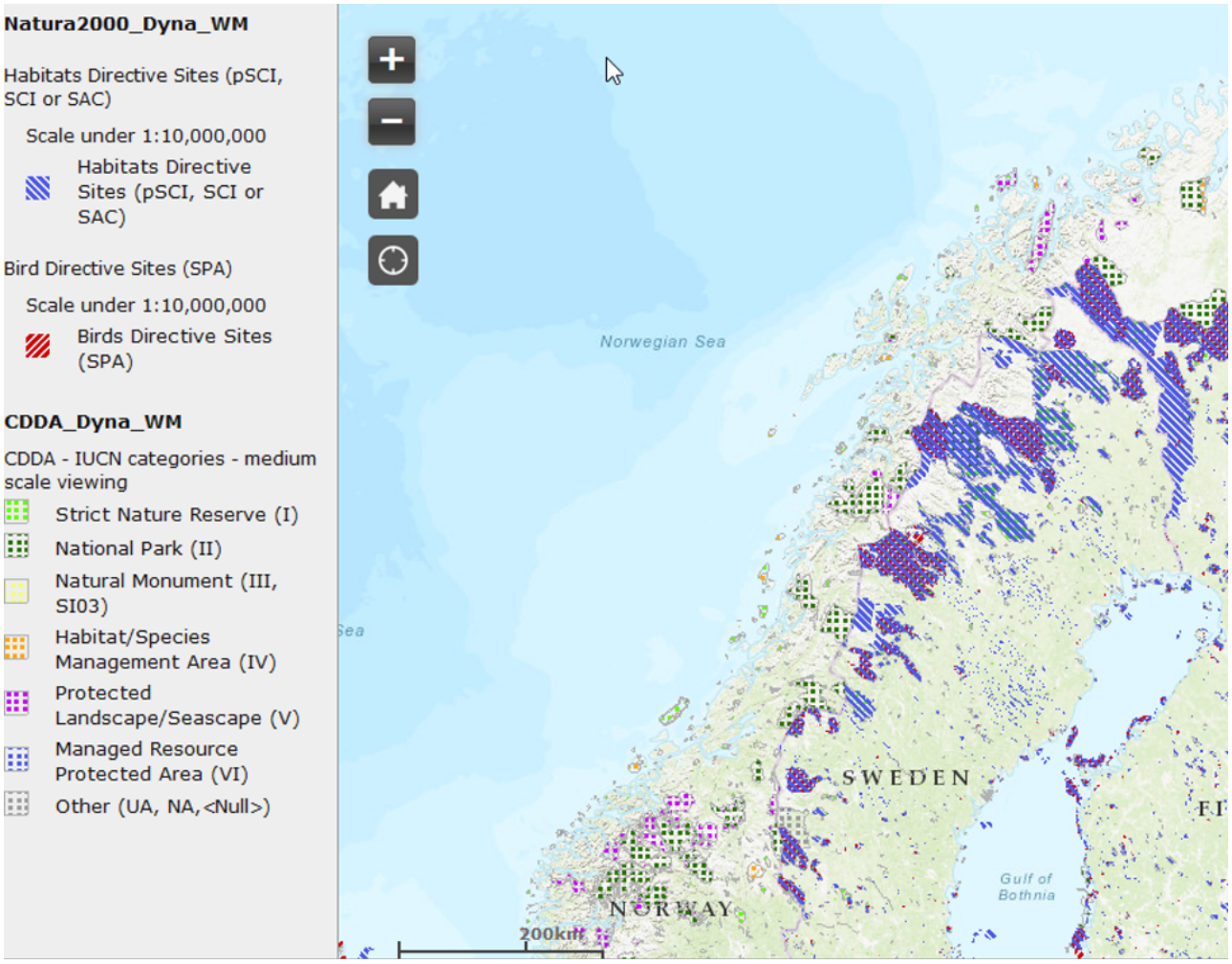


Figure 7: IUCN categories and locations in Norway[1]

In Norway, reported threats to any Red List species are not from forestry or farming paractices. Land Use Change provides the gratest threat[2], an example being construction activites. Norway is party to several international agreements that deal with the protection of threatened species and cover forestry and land management practices. The most important of these are the Convention on Biological Diversity, the Bern Convention, the CITES Convention and the Ramsar Convention.

[1] http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/european-protected-areas-1
[2] http://www.biodiversity.no/Pages/230699

2.3 Actions taken to promote certification amongst feedstock supplier

In Estonia, Finland, Germany, Latvia, Lithuania, Norway, Sweden and UK DSHwood has 1-5 suppliers in each country. From these countries DSHwood only source FSC 100%, FSC MIX Credit, FSC Controlled Wood, 100% PEFC certified, PEFC Controlled sources, SBP compliant or SBP controlled feedstock.

In Denmark DSHwood is purchasing wood chip and energy wood from suppliers who are certified by FSC and / or PEFC schemes to support responsible forestry. DSH invite all itss supplier to be certified to secure their future sales, as the industry requires more and more certification.

In addition DSHwood urge its suppliers to become evaluated according to the Responsible Biomass Program.

2.4 Quantification of the Supply Base

Supply Base

a. **Total Supply Base area (million ha)**: 85.87
b. **Tenure by type (million ha):**58.80 (Privately owned), 25.81 (Public), 1.26 (Community concession)
c. **Forest by type (million ha):**55.80 (Boreal), 30.07 (Temperate)
d. **Forest by management type (million ha):**0.79 (Plantation), 30.87 (Managed natural), 54.21 (Natural)
e. **Certified forest by scheme (million ha):**29.60 (FSC), 57.11 (PEFC)

Describe the harvesting type which best describes how your material is sourced: Mix of the above
Explanation: DSHwood´s suppliers only use a limited amount of clear cutting. i.e. logging of larger contiguous areas. Instead the forest is managed according to nature principles. DSHwood suppliers in Denmark also supply thinning and clearfelling material (10-20% of volume) from Trees Outside Forest origin.
Was the forest in the Supply Base managed for a purpose other than for energy markets? Yes - Majority
Explanation: Market prices encourage forest owners to produce high quality wood, this can be seen from the historic price statistics on timber, pulpwood and energy wood. Price statistics are e.g. available at The Danish Forest Association. However, as can be seen from description of the supply base for Denmark where the majority of DSHwood´s feedstock originate, then, of the total amount harvested in 2021, 38 percent was used for useful wood (for construction, furniture, floors, etc.) and 62 percent was used for energy in the form of firewood, wood chips or roundwood for energy which makes it important to keep a close eye on the quality of wood used for energy in the coming years.

For the forests in the Supply Base, is there an intention to retain, restock or encourage natural regeneration within 5 years of felling? Yes - Majority
Explanation: Normal practice is to replant the year after clearcutting, however the Danish Forest Act require replanting within 10 years for forest based feedstock and 3 years for landscape feedstock requiring replantning - according to the 'Order on Handbook on the fulfilment of sustainability requirements and requirements for saving greenhouse gas emissions for biomass fuels for energy purposes'.

Was the feedstock used in the biomass removed from a forest as part of a pest/disease control measure or a salvage operation? Yes - Minority
Explanation: Beetle problems in Germany and forests damaged due to storms in UK. Ash dieback in Denmark also lead to some pest/disease control.

What is the estimated amount of REDII-compliant sustainable feedstock that could be harvested annually in a Supply Base (estimated): N/A
Explanation:N/A

Feedstock

Reporting period from: 01 Jul 2022

Reporting period to: 30 Jun 2023

a. **Total volume of Feedstock**: 200,000-400,000 tonnes
b. **Volume of primary feedstoc**k: 200,000-400,000 tonnes

c. **List percentage of primary feedstock, by the following categories.**
   - Certified to an SBP-approved Forest Management Scheme: 20% - 39%
   - Not certified to an SBP-approved Forest Management Scheme: 60% - 79%

d. **List of all the species in primary feedstock, including scientific name:** Abies alba (Silver Fir / Ædelgran); Abies grandis (Grand Fir / Grandis); Abies nordmanniana (Caucasian Fir / Normannsgran); Abies procera (Nobel Fir / Nobilis); Abies spp (Fir spp); Larix spp (Larch / Lærk); Picea abies (Norway Spruce / Rødgran); Picea glauca (White Spruce / Hvidgran); Picea sitchensis (Sitka Spruce / Sitkagran); Pinus contorta (Lodgepole Pine / Klitfyr); Pinus nigra (Austrian Pine / Østrisk Fyr); Pinus ponderosa (Ponderosa Pine / Gul Fyr); Pinus strobus (Eastern White Pine / Weymouth fyr); Pinus sylvestris (Scots Pine / Skovfyr); Pinus spp (Pine / Fyr); Pseudotsuga menziesii (Douglas fir / Douglasgran); Thuja plicata (Western Red Cedar / Kæmpe Thuja); Tsuga heterophylla (Western Hemlock / Vestamerikansk Hemlock); Acer platanoides (Norway Maple / Spidsløn); Acer pseudoplatanus (Maple / Ahorn); Alnus glutinosa (Common Alder / Rødel); Betula pendula (Silver Birch / Vortebirk); Betula pubescens (Downy Birch / Dunbirk); Carpinus betulus (Common Hornbeam / Avnbøg); Fagus sylvatica (European Beech / Bøg); Fraxinus excelsior (Common Ash / Ask); Populus tremula (European Aspen / Bævreasp); Populus spp (Aspen / Asp); Prunus avium (Sweet Cherry / Kirsebær); Quercus petraea (Sessile Oak / Vintereg); Quercus robur (European Oak / Stilkeeg); Quercus rubra (Northern Red Oak / Rødeg); Salix spp (Willow / Pil); Sorbus spp (Rowan / Røn);

e. **Is any of the feedstock used likely to have come from protected or threatened species?** No
   - Name of species: N/A
   - Biomass proportion, by weight, that is likely to be composed of that species (%):

f. **Hardwood (i.e. broadleaf trees): specify proportion of biomass from (%):** 10.00

g. **Softwood (i.e. coniferous trees): specify proportion of biomass from (%):** 90.00

h. **Proportion of biomass composed of or derived from saw logs (%):** 5

i. **Specify the local regulations or industry standards that define saw logs:** CLASSIFICATION, SURVEYING AND SETTLEMENT PRINCIPLES IN DANISH FORESTRY https://www.skovforeningen.dk/media/010208%20R%C3%A5tr%C3%A6h%C3%A6ftet.pdf

j. **Roundwood from final fellings from forests with > 40 yr rotation times - Average % volume of fellings delivered to BP (%):** 5.00

k. **Volume of primary feedstock from primary forest:** 0 N/A

l. **List percentage of primary feedstock from primary forest, by the following categories. Subdivide by SBP-approved Forest Management Schemes**:
   - Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme: N/A
   - Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme: N/A

m. **Volume of secondary feedstock**: 1-200,000 tonnes
   - Physical form of the feedstock: Chips, Sawdust, Offcuts

n. **Volume of tertiary feedstock**: 1-200,000 tonnes
   - Physical form of the feedstock: Shavings, Sawdust (dry)

o. **Estimated amount of REDII-compliant sustainable feedstock that could be collected annually by the BP:** N/A

Proportion of feedstock sourced per type of claim during the reporting period				
Feedstock type	**Sourced by using Supply Base**	**FSC %**	**PEFC %**	**SFI %**

	Evaluation (SBE) %			
Primary	50.00	25.00	25.00	0.00
Secondary	0.00	50.00	50.00	0.00
Tertiary	0.00	0.00	0.00	0.00
Other	0.00	0.00	0.00	0.00

3 Requirement for a Supply Base Evaluation

Note: Annex 1 is generated by the system if the SBE is used without Region Risk Assessment(s). Annex 2 is generated if RED II SBE is in the scope.

Is Supply Base Evaluation (SBE) is completed? Yes

The scope of this evaluation is based on SPB standards 1, 2, 4 and 5 and applies to Denmark. DSH purchase all its SBE evaluated feedstock in Denmark. The majority of supply is traded with contractors and originate from private land. The contractors are buying the feedstock as standing volume, or in stacks in the forest of origin. The contractor is chipping in the forest and the chipped wood is transported directly to the heating Plant. This means that DSH has a short supply chain and that the traceability is easy to get.

Almost all off the supply comes from private forest owners. Some of the forest owners are larger holdings which are certified but there are many smaller forest owners that are not.

To ensure that our supply chain complies with the SBP Standard 1 we have focused on, how we ensure that
our contractors/suppliers and our purchasers are ensuring the areas we are trading our chip wood from.

Material originating from the Danish part of DSHwoods Supply Base (where SBE is performed), is sourced, assessed and mitigated through three supply chain programs:
1) Suppliers/contractors with third party evaluation as 1) PEFC, FSC, SBP Certified Supplier; 2) “Program for Responsible Biomass”/"Godkendt Biomasseproducent" and 3) DSHwoods Supplier evaluation program.
2)
The feedstock is divided into the following categories:
1. Primary feedstock from FSC or PEFC certified forests
2. Primary feedstock from forests with a green management plan
3. Primary feedstock from even-aged stands of coniferous trees
4. Primary feedstock from thinnings of first generation forest estates
5. Primary feedstock from unevenaged forest stands or stands of broadleaved trees
6. Primary feedstock from windbreaks, non-forest areas such as city and park areas, nature projects

DSHwood has implemented procedures for traceability, risk assessment and risk management.

Note:
DSHwood has experience as a SBP certificate holder since 2017. Se former SBR on the company website.

New Danish regulations (VE direktiv + extra Danish requirements) were introduced 30/06/2021 and are fully effective by 1/1/2022. The regulation is based on the EU RED II directive. In order to meet the requierments DSHwood will adapt biomass catagories and reporting in compliance with the new legislation. DSHwood holds Responsible Biomass Programme (RBP) (cert no. PBN-RBP-011786, since October 2022) for evaluation of primary feedstock with non-forest origin.

DSHwood has from 2022 included primary and secondary feedstock in the form of sawdust, wood chips or fuel wood logs from Estonia, Latvia, Lithuania, Finland, United Kingdom and Norway in its Supply Base. The feedstock from these countries will only be sourced with an FSC 100% or 100% PEFC claim. This feedstock will according to SBP standard 2 section 8.2 be excluded from Supply Base Evaluation.

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[1] https://www.nepcon.org/da/library/standard/krav-til-alternativ-dokumentation-sbp

Is REDII SBE completed? N/A

N/A

4 Supply Base Evaluation

Note: Annex 2 is generated if RED II is in the scope.

4.1 Scope

Feedstock types included in SBE: Primary

SBP-endorsed Regional Risk Assessments used: Denmark

List of countries and regions included in the SBE:

Country: Denmark

Indicator with specified risk in the risk assessment used:
2.1.1 The BP has implemented appropriate control systems and procedures for verifying that forests and other areas with high conservation value in the Supply Base are identified and mapped.

Specific risk description:
See RRA for Denmark here: https://sbp-cert.org/documents/standards-documents/risk-assessments/denmark/

Country: Denmark

Indicator with specified risk in the risk assessment used:
2.1.2 The BP has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.

Specific risk description:
See RRA for Denmark here: https://sbp-cert.org/documents/standards-documents/risk-assessments/denmark/

Country: Denmark

Indicator with specified risk in the risk assessment used:
2.2.3 The BP has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state (CPET S8b).

Specific risk description:
See RRA for Denmark here: https://sbp-cert.org/documents/standards-documents/risk-assessments/denmark/

Country: Denmark

Indicator with specified risk in the risk assessment used:
2.2.4 The BP has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).

Specific risk description:
See RRA for Denmark here: https://sbp-cert.org/documents/standards-documents/risk-assessments/denmark/

4.2 Justification

DSHwood adopts the 'The Regional Risk Assessment for Denmark' – SBP endorsed June 29 2017. The RRA is prepared according to SBP Regional Risk Assessment Procedure Version 1.0 and is a thorough investigation / evaluation of relevant risks in a Danish forest management context.

The RRA concludes that there is a specified risk for 4 indicators, all related to mapping and protection of areas of high conservation values (HCV) in the supply base. When an area of high conservation value is mapped and defined, it is possible to identify and address potential threats from forest harvest operations, and hence conserve and protect key ecosystems and the associated biodiversity.

However, in a Danish context coniferous species are all imported and therefore not a part of a natural forest type. The biodiversity is sparse and in case of thinning operations there is no negative impact on the biodiversity. This justifies making a sub-scope categorising all feedstock sourced from coniferous thinning operations as low risk.

In the same way, first generation afforestation holds no high conservation values that can be negatively affected by a harvest operation. Therefore, harvesting operations in forests established as first generation afforestation are all categorised as low risk.

A forest holding with a FSC/PEFC forest management certificate has a detailed description of the forest including detailed maps with areas in the forest that has high conservation values (specific HCV map). All risks are low when consulting the maps and initiating necessary mitigations actions prior to sourcing biomass from broadleaved stands or clear cuts.

A forest holding with a green management plan has a detailed description of the forest. The plan includes detailed maps with areas in the forests that have high conservation values (specific HCV map). The HCV registration is mandatory. All risks are low when consulting the HCV maps and initiating necessary mitigations actions prior to sourcing biomass from broadleaved stands or clear cuts.

The last "source type" in the scope consists of areas without a forest management certificate or a green management plan. There is a specified risk that areas of high conservation value have not been mapped. A further consultation of the HNV forest map is needed, possibly complemented by field visits prior to sourcing biomass from thinning in broadleaved stands or clear cuts from areas that are not first generation afforestation. If HCV´s are identified, mitigating actions are made.

DSHwood has implemented a procedure where all harvesting areas are assessed according to the above sub-scopes prior to biomass production. The procedure is described in the management system and relevant staff is educated in the procedures.

4.3 Results of risk assessment and Supplier Verification Programme

DSH has used the SBP-endorsed Regional Risk Assessment for Denmark which covers all Denmark (our Primary Feedstock). This Risk Assessment has been in consultation with Danish stakeholders and has been approved. The RRA for Denmark has been prepared with a number of Danish organizations supporting the process economically. DSH has contributed to this and has used the RRA as the basis for our RA.

The SBP risk assessment Denmark concluded that most aspects are classified as “Low Risk” in the feedstock area.
Indicator 2.1.1, 2.1.2, 2.2.3 and 2.2.4 are classified as “Specified Risk”

The “Specified Risk” concerns the subscopes "feedstock from forest with green management plan" and "feedstock from uneven-aged stands or stands of broadleaf species”

The goal of our mitigation measures is to ensure that any HCV and key biotopes in the area within the Danish Supply Base are identified and sufficiently mapped before sourcing of feedstock for biomass production begins, so that the information about any HCVs and key biotopes can be securely passed on to staff carrying out the felling and chipping operation.

Based on the National Risk Assessment, DSH conclude that the supply base can be divided into the following sub-scopes:
1. Primary feedstock from FSC or PEFC certified forests - always low risk

2. Primary feedstock from forests with a green management plan - specified risk

3. Primary Feedstock from thinning in even-aged stands of conifer- always low risk
4. Primary feedstock from thinnings of first generation forest estates - always low risk
5. Primary Feedstock from uneven-aged stands or stands of broadleaf species - specified risk

6. Primary feedstock from windbreaks, non-forest areas such as city and park areas, nature projects - always low risk

All indicators in the RRA for Denmark has been settled as “specified risk” and “low risk”. Therefore, and according to SBP standard 2 section 9.2, no Supplier Verification Programme has been developed.

4.4 Conclusion

There is “low risk” to all indicators of the SBP standard 1 apart from four: 2.1.1, 2.1.2, 2.2.3 and 2.2.4. based on the SBP-endorsed Regional Risk Assessment for Denmark. In this document, there is an identification of the four indicators with specified risk and clear risk mitigation measures to get these four specified risk indicators down to low risk.
DSH will get the overview to control and monitor the forest operations and meet SPB requirements on basis of our procedures and DSHwood SBP Supplier Program. The most important element in our supply chain is to follow our checklist together with the screening. That will ensure that all consideration points are checked. Also, we can control and trust that the collaborators we have been working with for many years all following the same guidelines, which is to ensure that all specified risk feedstock is mitgated to low risk, in full compliance with SBP Standards.
DSHwood consider that there is a risk related to the “supply chain” distance to the forest supplier, typically DSHwood has tier 2 suppliers and does not manage forests itself. Therefore DSHwood collaborate with 10-15 different contractors/supplier whom DSHwood has been trading with for many years, the majority of these have also been part of DSHwood SBP Supplier Program during the last 5 years, and DSHwood have insight into the resources which these suppliers have in terms of forest professional knowhow.

5 Supply Base Evaluation process

DSHwood have used the SBP-endorsed Regional Risk Assessment for Denmark which is covering all Denmark (our Primary Feedstock). This risk assessment is a result of an open stakeholder process and was initially conducted by NEPCon in 2017.

For the re-assessment in 2022 the Supply Base Evaluation is based on the Regional Risk Assessment from 29.06.2017 for Denmark with a stakeholder consultation process and an internal control (conducted by a external company) leading to a set of updated procedures for the same mitigation measures as for the initial 5 years.

DSHwoods process for the Supply Base Evaluation was performed “in house”. The personnel chosen to work within the evaluation team have been working with the SBP procedures and program during 1 to 5 years. Evidence collected and work performed to achieve and maintain existing certification programs was used in the SBE. Further DSHwood has been assisted by en external party, B4Trees ApS which has prior experience in working with SBP, FSC, PEFC.

The SBP team includes employees with education within Forest & landscape engineer, Master of Forestry and Logistics. The personnel who have an education within Forest & landscape engineer and Master of Forestry have the skills to evaluate the areas, train participating forest contractors and the skills necessary to assess a forest operation within our supply base. The personnel working in Logistics know the procedure in the office, and can collect, file and store the documentation, so that the documentation can be found at any time.

DSHwood has implemented a set of working procedures of risk-reducing control measures that meets the standard due diligence requirements. The working procedures including the risk mitigation measures can be found described in detail in the company´s Management System.

Machine operators and subcontractors at DSHwood have a high level of competence after several years of work with sustainable wood chip production.

Monitoring
Both the functionality of the mitigation measures as well as projects will be monitored on a pending and annual basis via the internal monitoring program.
Mitigation measures will be checked on a pending basis. Especially, DSHwood will follow the developments in the RRA for Denmark and the procedures developed for “Responsible Biomass Program”/"Godkendt biomasseproducent" in order assure that its suppliers fully mitigate the specified risks identified.

DSHwood has from May to September 2023 evaluated its SBE (DK) mitigation measures for feedstock with origin inside and outside the forest. The scores (bad - medium - good) which contractors got in 2022 where used to focus training of contractors and subsequent evaluation of performance and thereby also mitigation measures. DSHwood has during the past year 2022-2023 gained better project control via implementation of the Tradenda App which contractors and hauliers use. DSHwood conclude that the mitigation measure are effective but also conclude that continued annual training of contractors is necessary. DSHwood will during the next year 2023-2024 also focus training on implementation of new SBP standards and EUDR implementation.

6 Stakeholder consultation

An email consultation was sent to a total of 18 Danish stakeholder organisations on 14th of September 2022. The group of stakeholders was based on the list normally used at FSC and PEFC FM consultations plus additional stakeholders identified from the energy sector.

List of stakeholders contacted: 18

Stakeholder	Contact person	E-mail
BAT Kartellet	Gunde Odgaard	gunde.odgaard@batkartellet.dk
Danmarks Naturfredningsforening	Lars Midtiby	lars@dn.dk
Dansk Energi	-	de@danskenergi.dk
Dansk Fjernvarme	Maria Hedegaard	mh@danskfjernvarme.dk
Dansk Ornitologisk Forening	Henrik Wejdling	henrik@wejdling.dk
Dansk Skovforening	Marie-Louise Bretner	mlb@skovforeningen.dk
¤ Dansk Træforening	-	dktimber@dktimber.dk
Energistyrelsen	Nora Skjernaa	nshn@ens.dk
Friluftsrådet	Thorbjørn Eriksen	toe@friluftsraadet.dk
FSC Danmark	Kristian Jørgensen	k.jorgensen@dk.fsc.org
HOFOR	Sune Balle Hansen	subh@hofor.dk
PEFC Danmark	Peter Bæk	pb@pefc.dk
Preferred by Nature	Michael Jakobsen	mjakobsen@preferredbynature.org
Miljøstyrelsen	-	mst@mst.dk
Vedvarende Energi	Bjarke Rambøll	br@ve.dk
Verdens Skove	Jens Holm Kanstrup	jhk@verdensskove.org
WWF (Verdensnaturfonden)	Sofie Tind Nielsen	s.tind@wwf.dk
Ørsted	Lisbeth Sevel	lisls@orsted.com

No feedback was received.

6.1 Response to stakeholder comments

7 Mitigation measures

7.1 Mitigation measures

Country:
Denmark

Specified risk indicator:
2.1.1 The BP has implemented appropriate control systems and procedures for verifying that forests and other areas with high conservation value in the Supply Base are identified and mapped.

Specific risk description:
See RRA for Denmark here: https://sbp-cert.org/documents/standards-documents/risk-assessments/denmark/

Mitigation measure:
DSHwoods SBP Supply Chain Programs

DSHwood assess and mitigate the risk on feedstock from its suppliers with the following supply chain programs:

1. Suppliers/contractors with third party evaluation as PEFC, FSC, SBP certification or "Responsible Biomass Program"/"Godkendt Biomasseproducent" evaluation: Feedstock originating from FSC, PEFC or SBP certified forests within the Supply Base is identified and sufficiently mapped before sourcing of feedstock for biomass production begins. Correct claims (FSC 100%, FSC MIX CREDIT, 100% PEFC certified and 100% PEFC ORIGIN) justify SBP compliant feedstock on basis of valid certificate number´s and will mitigate the identified risks. Feedstock sourced from producers evaluated according to the "Responsible Biomass Program"/"Godkendt Biomasseproducent" will also be accepted as these producers have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operators according to the guidelines for SBP regulations. This means that the machine operators are aware of information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info's are recorded for every project, which is controlled and stored. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with.

2. The Supplier/contractor has completed "DSHwoods SBP Supplier Program", if the suppliers/contractors have completed DSHwoods SBP Supplier Program, then the suppliers will have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operator according to the guidelines for SBP regulations. That means that the forest workers are aware of Information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info's are recorded for every project, which is controlled and stored. To make sure that HCVs, key biotopes and habitats are identified and mapped the supplier/contractor have followed the SBP guidelines and made a checklist to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets

with. DSH is collaborating with 10-15 different contractors/supplier who are all registered in the Danish company registry. The contractors have between 1 and 5 years experience of working with SBP mitigation measures.

3. The Supplier/ contractor has not completed "DSHwoods SBP Supplier Program", for these suppliers/contractors DSHwood cannot be sure that HCVs, key biotopes and habitats have been identified, mapped and risks mitigated. For the forests with a green management plan, HCVs, key biotopes and habitats have been identified and mapped, but since there is no requirement for independent evaluation of adherence to limitations in the green management plan, the plan including the maps must be consulted and planned and activities must be compared to HCV, key Biotopes and habitats identified in the green management plan. For forests without a green management plan, HCVs, key Biotopes and habitats in the area where feedstock for biomass production is sourced must first be identified and mapped, and sufficient maps and instruction prepared – for personnel in charge of the felling or other activities – to ensure that HCVs, key Biotopes and habitats will not be threatened by forest management activities. To make sure that HCVs, key biotopes and habitats are identified and mapped DSHwood send a trained forest professional to screen the area and complete the checklist, to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected and that biologically valuable dead and decaying and deadwood is left on the forest floor.

Feedstock which passes the mitigation measures in either of the three supply chain programs is classified as SBP compliant. If the mitigation measures cannot be assessed positively the feedstock will be classified as controlled or in rare cases as not legal.

Suppliers trained in "DSHwoods SBP Supplier Program" undergo annual training in order to assure administrative as well as field implementation. Suppliers not following DSHwood guidelines correctly will be assessed and assisted thoroughly.

Country:
Denmark

Specified risk indicator:
2.1.2 The BP has implemented appropriate control systems and procedures to identify and address potential threats to forests and other areas with high conservation values from forest management activities.

Specific risk description:
See RRA for Denmark here: https://sbp-cert.org/documents/standards-documents/risk-assessments/denmark/

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decaying and deadwood on the forest floor. Risk assessment and risk minimization info's are recorded for every project, which is controlled and stored. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with.

2. The Supplier/contractor has completed "DSHwoods SBP Supplier Program", if the suppliers/contractors have completed DSHwoods SBP Supplier Program, then the suppliers will have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operator according to the guidelines for SBP regulations. That means that the forest workers are aware of Information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info's are recorded for every project, which is controlled and stored. To make sure that HCVs, key biotopes and habitats are identified and mapped the supplier/contractor have followed the SBP guidelines and made a checklist to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with. DSH is collaborating with 10-15 different contractors/supplier who are all registered in the Danish company registry. The contractors have between 1 and 5 years experience of working with SBP mitigation measures.

3. The Supplier/ contractor has not completed "DSHwoods SBP Supplier Program", for these suppliers/contractors DSHwood cannot be sure that HCVs, key biotopes and habitats have been identified, mapped and risks mitigated. For the forests with a green management plan, HCVs, key biotopes and habitats have been identified and mapped, but since there is no requirement for independent evaluation of adherence to limitations in the green management plan, the plan including the maps must be consulted and planned and activities must be compared to HCV, key Biotopes and habitats identified in the green management plan. For forests without a green management plan, HCVs, key Biotopes and habitats in the area where feedstock for biomass production is sourced must first be identified and mapped, and sufficient maps and instruction prepared – for personnel in charge of the felling or other activities – to ensure that HCVs, key Biotopes and habitats will not be threatened by forest management activities. To make sure that HCVs, key biotopes and habitats are identified and mapped DSHwood send a trained forest professional to screen the area and complete the checklist, to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected and that biologically valuable dead and decaying and deadwood is left on the forest floor.

Feedstock which passes the mitigation measures in either of the three supply chain programs is classified as SBP compliant. If the mitigation measures cannot be assessed positively the feedstock will be classified as controlled or in rare cases as not legal.

Suppliers trained in "DSHwoods SBP Supplier Program" undergo annual training in order to assure administrative as well as field implementation. Suppliers not following DSHwood guidelines correctly will be assessed and assisted thoroughly.

Country:
Denmark

Specified risk indicator:
2.2.3 The BP has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state (CPET S8b).

Specific risk description:
See RRA for Denmark here: https://sbp-cert.org/documents/standards-documents/risk-assessments/denmark/

Mitigation measure:
DSHwoods SBP Supply Chain Programs

DSHwood assess and mitigate the risk on feedstock from its suppliers with the following supply chain programs:

1. Suppliers/contractors with third party evaluation as PEFC, FSC, SBP certification or "Responsible Biomass Program"/"Godkendt Biomasseproducent" evaluation: Feedstock originating from FSC, PEFC or SBP certified forests within the Supply Base is identified and sufficiently mapped before sourcing of feedstock for biomass production begins. Correct claims (FSC 100%, FSC MIX CREDIT, 100% PEFC certified and 100% PEFC ORIGIN) justify SBP compliant feedstock on basis of valid certificate number´s and will mitigate the identified risks. Feedstock sourced from producers evaluated according to the "Responsible Biomass Program"/"Godkendt Biomasseproducent" will also be accepted as these producers have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operators according to the guidelines for SBP regulations. This means that the machine operators are aware of information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info's are recorded for every project, which is controlled and stored. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with.

2. The Supplier/contractor has completed "DSHwoods SBP Supplier Program", if the suppliers/contractors have completed DSHwoods SBP Supplier Program, then the suppliers will have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operator according to the guidelines for SBP regulations. That means that the forest workers are aware of Information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info's are recorded for every project, which is controlled and stored. To make sure that HCVs, key biotopes and habitats are identified and mapped the supplier/contractor have followed the SBP guidelines and made a checklist to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with. DSH is collaborating with 10-15 different contractors/supplier who are all registered in the Danish company registry. The contractors have between 1 and 5 years experience of working with SBP mitigation measures.

3. The Supplier/ contractor has not completed "DSHwoods SBP Supplier Program", for these suppliers/contractors DSHwood cannot be sure that HCVs, key biotopes and habitats have been identified, mapped and risks mitigated. For the forests with a green management plan, HCVs, key biotopes and habitats have been identified and mapped, but since there is no requirement for independent evaluation of adherence to limitations in the green management plan, the plan including the maps must be consulted and planned and activities must be compared to HCV, key Biotopes and habitats identified in the green management plan. For forests without a green management plan, HCVs, key Biotopes and habitats in the area where feedstock for biomass production is sourced must first be identified and mapped, and sufficient maps and instruction prepared – for personnel in charge of the felling or other activities – to ensure that HCVs, key Biotopes and habitats will not be threatened by forest management activities. To make sure that HCVs, key biotopes and habitats are identified and mapped DSHwood send a trained forest professional to screen the area and complete the checklist, to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected and that biologically valuable dead and decaying and deadwood is left on the forest floor.

Feedstock which passes the mitigation measures in either of the three supply chain programs is classified as SBP compliant. If the mitigation measures cannot be assessed positively the feedstock will be classified as controlled or in rare cases as not legal.

Suppliers trained in “DSHwoods SBP Supplier Program” undergo annual training in order to assure administrative as well as field implementation. Suppliers not following DSHwood guidelines correctly will be assessed and assisted thoroughly.

Country:
Denmark

Specified risk indicator:
2.2.4 The BP has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).

Specific risk description:
See RRA for Denmark here: https://sbp-cert.org/documents/standards-documents/risk-assessments/denmark/

Mitigation measure:
DSHwoods SBP Supply Chain Programs

DSHwood assess and mitigate the risk on feedstock from its suppliers with the following supply chain programs:

1. Suppliers/contractors with third party evaluation as PEFC, FSC, SBP certification or “Responsible Biomass Program”/“Godkendt Biomasseproducent” evaluation: Feedstock originating from FSC, PEFC or SBP certified forests within the Supply Base is identified and sufficiently mapped before sourcing of feedstock for biomass production begins. Correct claims (FSC 100%, FSC MIX CREDIT, 100% PEFC certified and 100% PEFC ORIGIN) justify SBP compliant feedstock on basis of valid certificate number´s and will mitigate the identified risks. Feedstock sourced from producers evaluated according to the “Responsible Biomass Program”/“Godkendt Biomasseproducent” will also be accepted as these producers have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operators according to the guidelines for SBP regulations. This means that the machine operators are aware of information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info’s are recorded for every project, which is controlled and stored. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with.

2. The Supplier/contractor has completed “DSHwoods SBP Supplier Program”, if the suppliers/contractors have completed DSHwoods SBP Supplier Program, then the suppliers will have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operator according to the guidelines for SBP regulations. That means that the forest workers are aware of Information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info’s are recorded for every project, which is controlled and stored. To make sure that HCVs, key biotopes and habitats are identified and mapped the supplier/contractor have followed the SBP guidelines and made a checklist to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with. DSH is collaborating with 10-15 different contractors/supplier who are all registered in the Danish company registry. The contractors have between 1 and 5 years experience of working with SBP mitigation

measures.

3. The Supplier/ contractor has not completed "DSHwoods SBP Supplier Program", for these suppliers/contractors DSHwood cannot be sure that HCVs, key biotopes and habitats have been identified, mapped and risks mitigated. For the forests with a green management plan, HCVs, key biotopes and habitats have been identified and mapped, but since there is no requirement for independent evaluation of adherence to limitations in the green management plan, the plan including the maps must be consulted and planned and activities must be compared to HCV, key Biotopes and habitats identified in the green management plan. For forests without a green management plan, HCVs, key Biotopes and habitats in the area where feedstock for biomass production is sourced must first be identified and mapped, and sufficient maps and instruction prepared – for personnel in charge of the felling or other activities – to ensure that HCVs, key Biotopes and habitats will not be threatened by forest management activities. To make sure that HCVs, key biotopes and habitats are identified and mapped DSHwood send a trained forest professional to screen the area and complete the checklist, to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected and that biologically valuable dead and decaying and deadwood is left on the forest floor.

Feedstock which passes the mitigation measures in either of the three supply chain programs is classified as SBP compliant. If the mitigation measures cannot be assessed positively the feedstock will be classified as controlled or in rare cases as not legal.

Suppliers trained in "DSHwoods SBP Supplier Program" undergo annual training in order to assure administrative as well as field implementation. Suppliers not following DSHwood guidelines correctly will be assessed and assisted thoroughly.

Country:
Denmark

Specified risk indicator:
2.2.4 The BP has implemented appropriate control systems and procedures to ensure that biodiversity is protected (CPET S5b).

Specific risk description:
N/A

Mitigation measure:
DSHwoods SBP Supply Chain Programs

DSHwood assess and mitigate the risk on feedstock from its suppliers with the following supply chain programs:

1. Suppliers/contractors with third party evaluation as PEFC, FSC, SBP certification or "Responsible Biomass Program"/"Godkendt Biomasseproducent" evaluation: Feedstock originating from FSC, PEFC or SBP certified forests within the Supply Base is identified and sufficiently mapped before sourcing of feedstock for biomass production begins. Correct claims (FSC 100%, FSC MIX CREDIT, 100% PEFC certified and 100% PEFC ORIGIN) justify SBP compliant feedstock on basis of valid certificate number´s and will mitigate the identified risks. Feedstock sourced from producers evaluated according to the "Responsible Biomass Program"/"Godkendt Biomasseproducent" will also be accepted as these producers have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operators according to the guidelines for SBP regulations. This means that the machine operators are aware of information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info's are recorded for every project, which is controlled and stored. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within

DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with.

2. The Supplier/contractor has completed "DSHwoods SBP Supplier Program", if the suppliers/contractors have completed DSHwoods SBP Supplier Program, then the suppliers will have adjusted their working procedure, educated the machine operators, forest workers, chipper and harvester operator according to the guidelines for SBP regulations. That means that the forest workers are aware of Information about area(mapping), what to avoid, source type, species, chipper, where and when the chips are delivered and have procedures to leave biologically valuable dead and decaying and deadwood on the forest floor. Risk assessment and risk minimization info's are recorded for every project, which is controlled and stored. To make sure that HCVs, key biotopes and habitats are identified and mapped the supplier/contractor have followed the SBP guidelines and made a checklist to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected. For monitoring and evaluation DSHwood samples per square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of projects within DSHwood, in the current year, that the supplier/contractor/DSHwood budgets with. DSH is collaborating with 10-15 different contractors/supplier who are all registered in the Danish company registry. The contractors have between 1 and 5 years experience of working with SBP mitigation measures.

3. The Supplier/ contractor has not completed "DSHwoods SBP Supplier Program", for these suppliers/contractors DSHwood cannot be sure that HCVs, key biotopes and habitats have been identified, mapped and risks mitigated. For the forests with a green management plan, HCVs, key biotopes and habitats have been identified and mapped, but since there is no requirement for independent evaluation of adherence to limitations in the green management plan, the plan including the maps must be consulted and planned and activities must be compared to HCV, key Biotopes and habitats identified in the green management plan. For forests without a green management plan, HCVs, key Biotopes and habitats in the area where feedstock for biomass production is sourced must first be identified and mapped, and sufficient maps and instruction prepared – for personnel in charge of the felling or other activities – to ensure that HCVs, key Biotopes and habitats will not be threatened by forest management activities. To make sure that HCVs, key biotopes and habitats are identified and mapped DSHwood send a trained forest professional to screen the area and complete the checklist, to make sure that the right procedure are followed and HCVs, key biotopes and habitats are protected and that biologically valuable dead and decaying and deadwood is left on the forest floor.

Feedstock which passes the mitigation measures in either of the three supply chain programs is classified as SBP compliant. If the mitigation measures cannot be assessed positively the feedstock will be classified as controlled or in rare cases as not legal.

Suppliers trained in "DSHwoods SBP Supplier Program" undergo annual training in order to assure administrative as well as field implementation. Suppliers not following DSHwood guidelines correctly will be assessed and assisted thoroughly.

7.2 Monitoring and outcomes

Mitigation Measures

Introductory remarks:
Material originating from the Danish part of DSHwoods Supply Base (where SBE is performed), is sourced, assessed and mitigated through three supply chain programs:
1) Suppliers/contractors with third party evaluation as PEFC, FSC, SBP Certified Supplier, "Godkendt Biomasseproducent"/Approved Biomass Producer or Alternative documentation sustainable biomass[1]
2) The Supplier/contractor has completed "DSHwoods SBP Evalution Program"
3) The Supplier/ contractors has not completed "DSHwood SBP Evaluation Program"

DSHwood mitigation measures are based on evaluation of the sub-scopes with mitigation measures for the specified risks identified in the RRA for Denmark[2]

Supplies from Supply Chain Program 1, 2 and 3 (exempt supplies SBP claims, 100% PEFC certified, 100% PEFC orgin, FSC 100% or FSC MIX CREDIT) will be monitored strictly by DSHwood internal monitoring program.

Risk assessment
In all new biomass projects the areas on which biomass is harvested will be screened according to the following indicators: 2.1.1, 2.1.2, 2.2.3 and 2.2.4 where a specified risk has been identified. The risk assessment is based on available map material and databases as well as a review of the area before startup. A map and checklist is prepared for each job to ensure that the machine operator is aware of protected or preserved nature/culture.

The risk assessment is divided into six categories:
1. Primary feedstock from FSC or PEFC certified forests - always low risk
2. Primary feedstock from forests with a green management plan - specified risk
3. Primary Feedstock from thinning in even-aged stands of conifer- always low risk
4. Primary feedstock from thinnings of first generation forest estates - always low risk
5. Primary Feedstock from uneven-aged stands or stands of broadleaf species - specified risk
6. Primary feedstock from windbreaks, non-forest areas such as city and park areas, nature projects - always low risk

The risk assessment is carried out by the supplier according to which supply chain program he/she is in. If a specified risk is identified then an assessment performed by a forester/biologist/graduate in forestry will be conducted. The forester/biologist/graduate shall be familiar with identifying key biotopes according to the key biotope type catalogue or similar.

Risk Mitigation procedures
DSH use the checklist which is part of its procedures to get an overview of the risk of the working area. If any consideration points are found in the work area, DSH will take the necessary mitigations measures to ensure that any high conservation value is identified, protected and addressed.
2.1.1. DSH has implemented appropriate control systems and procedures for verifying that forest and other areas with high conservation value in the Supply Base are identified and mapped.
2.1.2. DSH has implemented appropriate control systems and procedures to identify and address potential treats to forests and other areas with high conservation values from forest management activities.
2.2.3. DSH has implemented appropriate control systems and procedures to ensure that key ecosystems and habitats are conserved or set aside in their natural state.
2.2.4. DSH has implemented appropriate control systems and procedures to ensure that biodiversity is protected.
The four specified risk indicators are all related to appropriate control systems and procedures to identify and
address potential threats and avoid damage to nature values during forest operations.

DSH intend to ensure that biodiversity is sufficiently protected. The supplier/contractor must leave biologically valuable dead and decaying and deadwood on the forest floor. To ensure that biologically valuable dead and decaying and deadwood is not removed or chipped DSH will inform and control our suppliers/contractors with guidance and supervision of forest workers/contractors. DSH only intends to use wood suitable for wood chips production, and therefore leave biologically valuable dead and decaying and deadwood in the forest.

The risk mitigation measures covering all four indicators are described in detail in DSHwoods SBP Supplier Program. Feedstock which passes the mitigation measures in either of the three supply chain programs is

classified as SBP compliant. If the mitigation measures cannot be assessed positively the feedstock will be classified as controlled or in rare cases as not legal.

Monitoring and outcomes
Both the functionality of the mitigation measures as well as projects will be monitored on a pending and annual basis via the internal monitoring program.

Mitigation Measures
Mitigation measures will be checked on a pending basis. Especially, DSHwood will follow the developments in the RRA for Denmark and the procedures developed for “Responsible Biomass Program”/”Godkendt Biomasseproducent” in order assure that its suppliers fully mitigate the specified risks identified.

SBP Feedstock monitoring
Suppliers and deliveries are monitored on the following basis:
- All suppliers (though not SBP approved forest management and chain of custody supplies) are monitored
- For every supplier the square root multiplied by 0,5 to 0,6 (+ assess contractors historic performance) of the number of project supplied by the supplier is targeted.
- The sampling intensity will be adjusted according to the track-record of the supplier, it can go up and it can go down.
- Combination of desk and field monitoring is performed

Conclusion from internal audit and management review 2022
Thorough evaluation of DSHwoods SBP supplier program in 2022 has given rise to identification of needed improvements for the documentation of risk mitigation measures by DSHwood suppliers. Field evaluations have overall been positive but issues related to professional forest assessment and splitting projects into more biomass types remain (REDII). DSHwood have initiated a relevant range of actions to improve its SBP Supplier Program and procedures. Suppliers will still be offered access to DSHwood SBP Supplier Program but some suppliers may be offered an alternative solution by joining either the Responsible Biomass Program or joining the “Godkendt Biomasseproducent” program.

Conclusion from internal audit and management review 2023
DSHwood has from May to September 2023 evaluated its SBE (DK) mitigation measures for feedstock with origin inside and outside the forest. The scores (bad - medium - good) which contractors got in 2022 where used to focus training of contractors and subsequent evaluation of performance and thereby also mitigation measures. DSHwood has during the past year 2022-2023 gained better project control via implementation of the Tradenda App which contractors and hauliers use. DSHwood conclude that the mitigation measure are effective but also conclude that continued annual training of contractors is necessary. DSHwood will during the next year 2023-2024 also focus training on implementation of new SBP standards and EUDR implementation.

8 Detailed findings for indicators

Detailed findings for each Indicator are given in Annex 1 in case the Regional Risk Assessment (RRA) is not used.

Is RRA used? Yes

9 Review of report

9.1 Peer review

Kathryn Fernholz

9.2 Public or additional reviews

Stakeholder consultation was undertaken as part of the recertification process. No comments were received.

10 Approval of report

Approval of Supply Base Report by senior management			
Report Prepared by:	**Erik Kjær**	**Biomass Manager**	**28 Sep 2023**
	Name	**Title**	**Date**
Report Prepared by:	**Anders Bjørnkjær-Nielsen**	**Certification consultant (B4trees Aps)**	**28 Sep 2023**
	Name	**Title**	**Date**
The undersigned persons confirm that I/we are members of the organisation's senior management and do hereby affirm that the contents of this evaluation report were duly acknowledged by senior management as being accurate prior to approval and finalisation of the report.			
Report approved by:	**Sten Fähnø Thomsen**	**Group CFO**	**28 Sep 2023**
	Name	**Title**	**Date**

Annex 1: Detailed findings for Supply Base Evaluation indicators

Annex 2: Detailed findings for REDII Supply Base Evaluation

Section 1. RED II

Section 2. RED II detailed findings for secondary and tertiary feedstock

10.1 Verification and monitoring of suppliers

N/A

10.2 Feedstock inspection and classification upon receipt

N/A

10.3 Supplier audit for secondary and tertiary feedstock

N/A