Use of the National mapping of forest habitats of Community interest in identification of primary and old-growth forests.

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Strict and regulatory regime zone of nature reserves - Territories untouched by human activities or nearly natural, where unhindered development of natural processes is ensured,

For FAO reporting by the Ministry of Agriculture, the primary forest area is identified by area of forest under a strict or regulatory protection regime, and not by survey of primary forest.

- Strict regime zone of reserves: 5330.69 ha, including 5186.37 ha forest land, 5131.51 ha EU habitats of which **170.14 ha are EU forest habitats** and **4805.25 ha EU mire habitats**.
- Regulatory regime zone of reserves: 19620.38 ha, including 18123.59 ha forest land, 14132.67 ha EU habitat, **3635.66 ha EU forest habitats** and **9232.52 ha EU mire habitats**.
- Strict and regulatory regime in National parks: 13596,00 ha, including, 13214,9 ha forest land, 11522,98 ha EU habitat, **6414,83 ha EU forest habitats** and **4700.36 ha EU mire habitats**.

Most of the area of the strictly protected zones in Latvia are also mapped EU habitats of Community interest – the larger part are EU mire habitats

But only a small portion of EU habitats are within strictly protected areas

Suggests that the EU habitat inventory can be used for identification of Primary and OGF.

Assumptions:

Primary and old-growth forests will be a subset of identified and mapped EU forest habitats of importance.

Not all identified EU forest habitats of importance will be primary or old-growth forests

Nature census project –
determine distribution and quality assessment of Habitats of Community Interest

Survey and mapping 2017-2021
274 experts participated in field survey (including also from Lithuania, Estonia and Belarus)

Training and calibration

Maps of quadrats and GPS with links to various relevant maps and layers

Area of forest surveyed – 854426 ha (as of 07.05.2021.)

Area of mapped forest habitats of EU importance– 331760 ha, 10% of the forest area of Latvia (29% of this area is in NATURA areas, with different zoning for protection)

Primary and old-growth forest will be a subset of this

Structures and processes assessed in EU habitat field data sheets – These are also indicators of old-growth forest

- Multi-age tree structure with at least 3 age cohorts
- Self thinning)
- Large diameter (DBH > 25 cm) standing snags + tall stumps number/ha in classes: 0, 1–5, 6–10, >10.
- Large diameter (DBH > 25 cm) logs
- Old and large trees (DBH >50 cm)
- Standing living and dead trees with polypores
- Pine trees with fires scars
- Canopy gaps
- Small slow-growing trees
- Living and dead trees with woodpecker hollows and signs
- Forest specialist species in WKH (moss, lichens, fungi, herbs, snails, invertebrates, birds)
- Invasive species
- Expansive ruderal species
- Area of Natural disturbance (wind, insect)
- Anthropogenic disturbance to ground layer
- Recent floods or raised groundwater level
- Recently cut trees

Habitat quality estimated by points scored based on indicators selected by best model

Based on the information in the field data sheets, stands identified as EU habitats of importance are ranked along a quality scale using an algorithm.

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Model Summary - pca1

Model	Deviance	AIC	BIC	df	X^2	p
H_o	12777.734	17320.627	17333.428	4447		
H_1	15.194	-12614.579	-12537.776	4437	12762.539	< .001

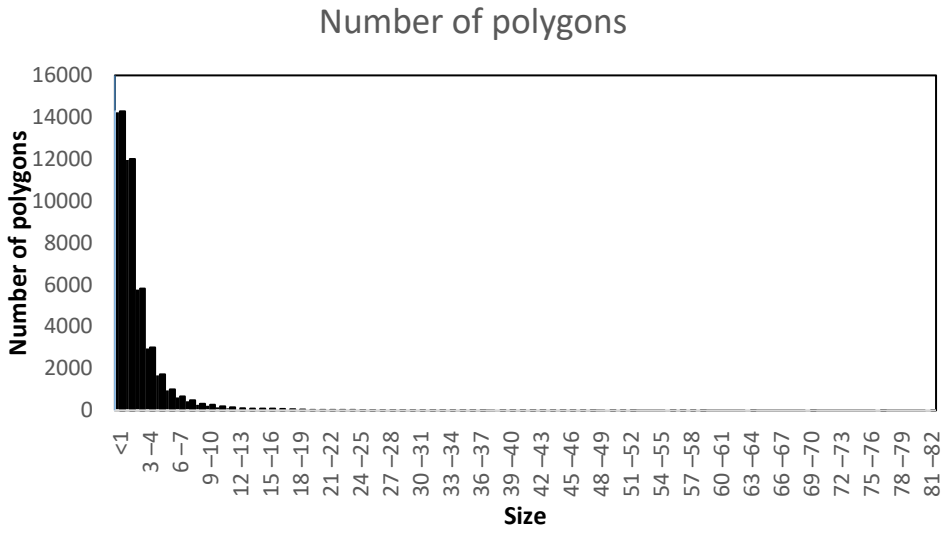
Coefficients

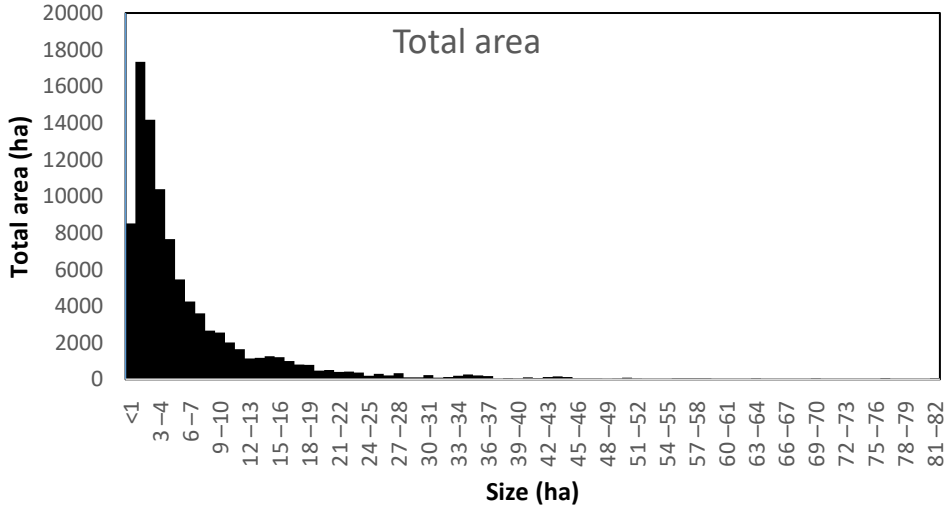
	Estimate	Standard Error	t	p
(Intercept)	6.691	0.006	1069.185	< .001
Self-thinning	-0.679	0.002	-375.307	< .001
Logs	-0.572	0.001	-401.539	< .001
Dead trees	-0.461	0.001	-379.095	< .001
Gaps	-0.506	0.001	-373.597	< .001
Snags	-0.513	0.001	-378.669	< .001
Polypores	-0.246	0.001	-222.849	< .001
Indicator and rare species	-0.162	7.333×10^{-4}	-220.489	< .001
Area wind disturbance	-0.206	9.776×10^{-4}	-210.660	< .001
Uneven aged	-0.327	0.002	-161.704	< .001
Cut stunps	0.254	0.002	104.331	< .001

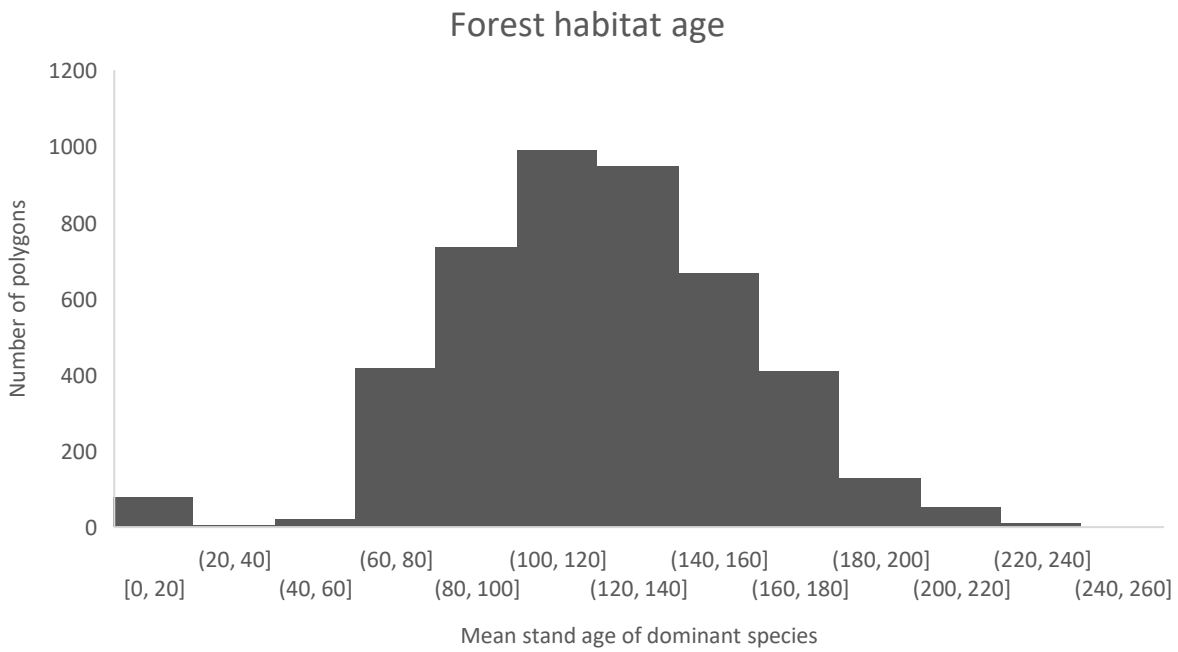
Information on primary and old-growth forests in Latvia is available from the survey of forest habitats of Community interest.

If high quality forest habitats of Community interest are protected, then it is highly probable that that old growth forests will be protected. But forest habitats of Community interest are still being harvested. Also, richer forests have better habitat quality than pine forests on poor soils – if only high quality forests are protected then these poor forests, which may be old growth, may be left out.

Forest habitats of Community interest, and hence old-growth forests are small. Are old-growth forests <40 or 50 ha in size not old-growth?







How to estimate stand age? Mean age of tree species with largest wood volume or age of oldest cohort?

If an old-growth stand suffers wind damage and the mean age of the dominant tree species decreases from 180 to 80 years, is it no longer an old-growth stand?

Old-growth stands can have low numbers of very old trees.

It is important that experts from the Latvian State Forest Research Institute "Silava" work together with experts from the Nature Conservation Agency to develop a scientifically based definition of European primary and old-growth boreal forests?

If the strictly protected forest area increases from 4% to 10%, assuming that the new area is composed of habitats of European interest, then the old growth will probably be included.

Thank you for your attention

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