

## Baltic ForBio, WP 2, GA 2.4

### Information about thinnings demonstrating biofuel and roundwood production

#### Information about stand

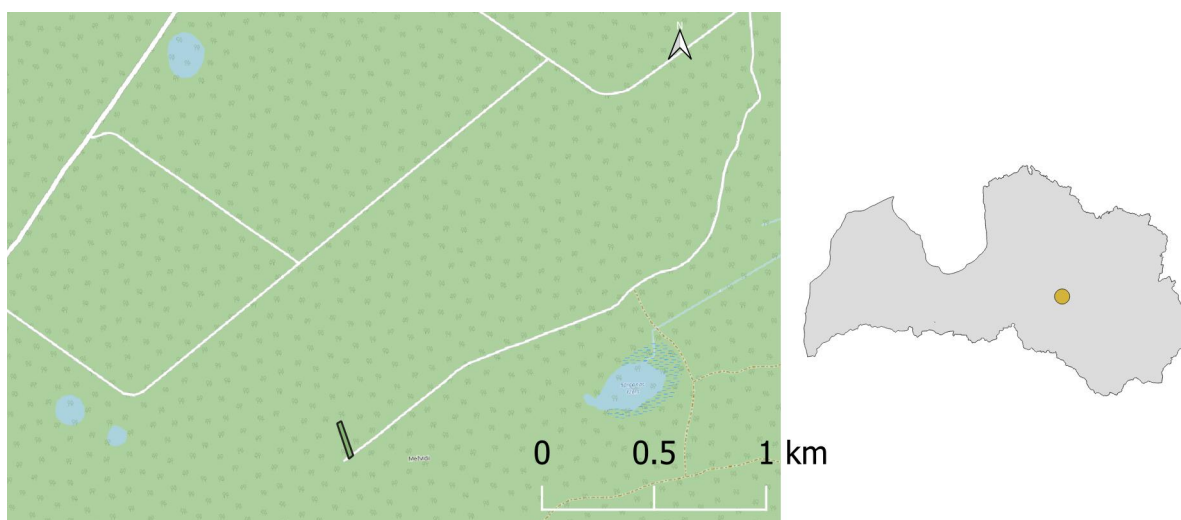
##### *Basic information*

<b>State</b>	Latvia
<b>Region</b>	Vidzemes
<b>Stand ID</b>	163-26, <i>Pļaviņu region</i>
<b>Area (ha)</b>	0.36
<b>Thinning year / season</b>	2020
<b>Topic</b>	Thinning using Malwa harvester

##### *Characteristics of work environment and soil bearing capacity*

Poor logging conditions.

##### *Location of demo site*



Coordinates of plot centre: X - 611981 Y - 282548 (LKS92)

**Figure 42: Location of compartment<sup>52</sup>.**

##### *Stand characteristics before harvesting*

<b>Average DBH (cm)</b>	12
<b>Average height (m)</b>	11
<b>Number of trees (trees per ha<sup>-1</sup>)</b>	1860

<sup>52</sup> Background map from Google maps and map of Latvia from [www.envirotech.lv](http://www.envirotech.lv)

<b>Growing stock (m<sup>3</sup> ha<sup>-1</sup>)</b>	116
<b>Stand composition</b>	10E
<b>Stand age during thinning</b>	30
<b>Dominant species</b>	Spruce
<b>Stand type</b>	As ( <i>Myrtillosa mel.</i> )

### ***Stand management targets***

To increase forest value by extraction of damaged and small size trees and to ensure favourable growth conditions in the stand. Harvesting is done so to reduce negative impact to environment (avoid ruts formation, mechanical damages of remaining trees and soil compaction). Small dimension trees should be used for biofuel production and from bigger trees standard roundwood assortments (small logs and pulpwood) should be produced.

### **Stand characteristics after thinning**

<b>Average DBH (cm)</b>	18
<b>Average height (m)</b>	16
<b>Number of trees (trees per ha<sup>-1</sup>)</b>	1100
<b>Growing stock (m<sup>3</sup> ha<sup>-1</sup>)</b>	70
<b>Stand composition</b>	10E
<b>Dominant species</b>	Spruce



Figure 43: Stand characteristics after thinning<sup>53</sup>.

### ***Mechanical damages due to thinning***

Damage to the remaining trees does not exceed 2%, no ruts have been detected.

### ***Applied work method in thinning***

Work order considers thinning to minimal basal area or number of trees according to average tree height after thinning.

Distance between technological corridors 20 m with "ghost paths" between the corridors, which are used only by harvester.

Logs are located along the technological corridors. Undergrowth trees are not extracted before mechanized thinning.

Harvesting is done using compact class harvester Malwa. Forwarding is done using compact class machine Malwa.

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<sup>53</sup> Photo G. Saule.



**Figure 44: Harvester Malwa and forwarder Malwa<sup>54</sup>.**

### **Harvesting productivity**

While producing biofuel in pre-commercial thinning (average extracted tree  $D_{1.3}$  9 cm), average productivity of harvester is  $4.2 \text{ m}^3 \text{ h}^{-1}$ .

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<sup>54</sup> Photo G. Saule.