

Baltic ForBio, WP 2, GA 2.4

Information about Demonstration Site and Demonstration of Early Thinning for Wood Fuel/Energy

Country	Germany
Region	Federal Country Brandenburg, Northern Brandenburg
Demonstration Site ID	Landesbetrieb Forst Brandenburg 12I55I8I65Ia1 ¹
Year/Date of the Thinning	2021
Topic	Thinning of mixed forest stand with harvester and mid-field

Information about the Forest Stand

General Information

Forest Stand ID	12I55I8I65Ia1
Area [ha]	3,08 ha
Age [years]	Canopy layer: 92 years Intermeditate layer: 48 - 68 years (currently growing into the canopy layer) Understory layer/undergrowth: 1 – 10 years (currently growing into the intermediate layer)

Tree Species

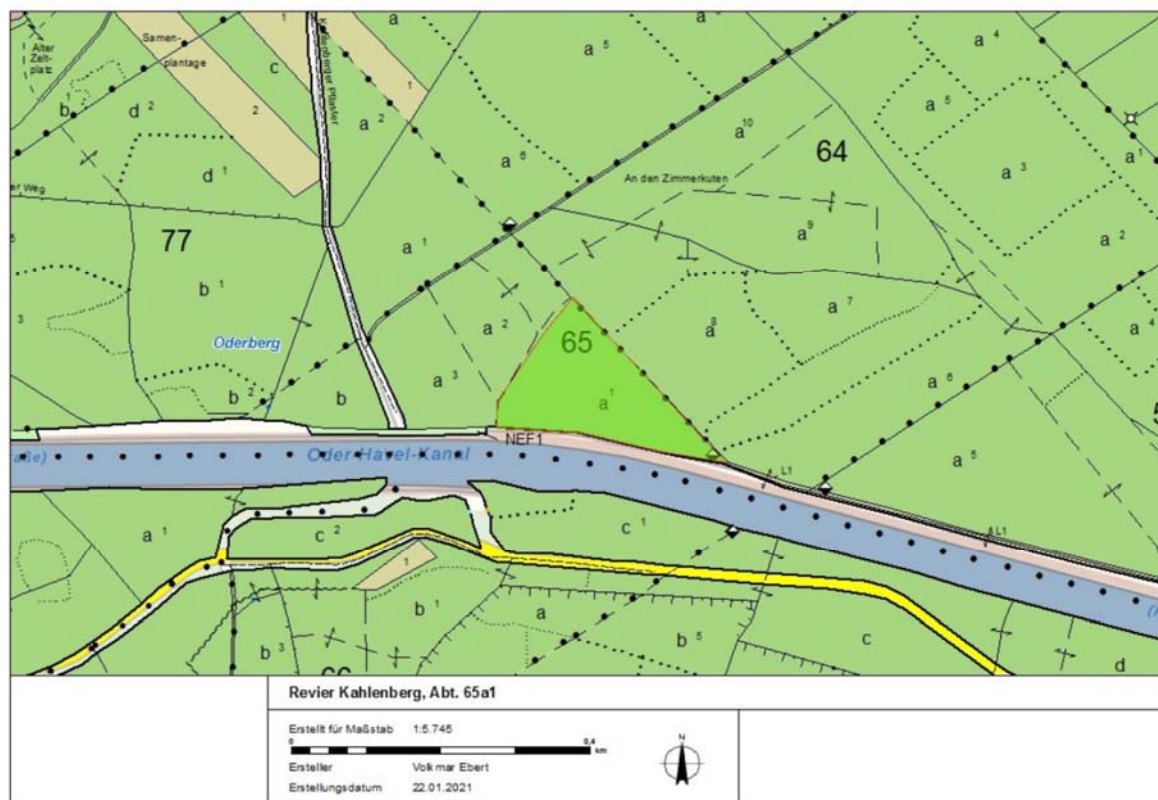
- Canopy and intermediate layer: 60% pine, 40% beech
- Understory layer/undergrowth (growing into the intermediate layer):
50% spruce, 30% beech, hornbeam 20%

Terrain and Soil Conditions:

- Landscape formed by end moraine during the last glacial period
- Sandy soil, moderate nutrient and water supply,
- Flat terrain, easy conditions for harvesting and forwarding

¹ Landesbetrieb Forst Brandenburg, Landeswaldoberförsterei Chorin, Revier Kahlenberg, Abt. 65a1

Map with the Location of the Demonstration Site



Stand Description Before Thinning

Dbh (arithmetic mean) [cm]	pine: 35 cm; beech: 25 cm
Tree height [m]	pine: 27 m; beech: 21 m
Number of trees per hectare [N/ha]	360
Volume [m ³ /ha]	pine: 351 m ³ /ha; beech: 131 m ³ /ha

Objectives of Forest Management

- Thinning from above and giving room to the best trees (selection of best phenotypes) in the canopy layer (pine) and the intermediate layer (beech) ,
- Removing / thinning of spruce (not fit to the growing conditions on the location and heavily damaged by red deer), giving room to naturally grown beech, hornbeam and birch trees of good quality.

Distance of logging trails: 35 - 40 m

Expected effects:

- Improvement of stability and quality of forest stand
- Increased growth of best pine and beech trees
- Improvement of tree quality in intermediate and understory layer
- Giving room to naturally grown beech, hornbeam and birch trees
- Income from sale of timber and pulpwood

Pictures *Before* Thinning:



Stand Description After Thinning:

Dbh (arithmetic mean) [cm]	pine: 38cm; beech: 26 cm
Tree height [m]	pine: 27 m; beech: 22 m
Number of trees per hectare [N/ha]	270
Volume [m ³ /ha]	pine: 266 m ³ /ha; beech: 100 m ³ /ha

Pictures After Thinning





Wood Production

Coniferous and deciduous roundwood of inferior quality, sold as industrial roundwood or as energywood according market conditions.



Damages to Trees and Soil

Thinning Method

Description of Working Process:

Thinning with harvester and motormanual felling in the midfield:

1. Harvester removes all trees he can reach
2. Motormanual felling in the midfiels
3. Forwarding by forwarder

Reasons for choosing thinning method:

- Standard thinning method for distance of logging trails > 20m
- Advantage: logging trails only every 35 – 40 m necessary
- Disadvantage: less cost efficient than harvesting by harvester without midfield
- most cost efficient harvesting method for this forest stand

Machines:

Allorund-Harvester Komatsu 911.5 with felling head Kommtasu C93.



All machines owned by one forest entrepreneur, who is responsible for the whole thinning treatment.