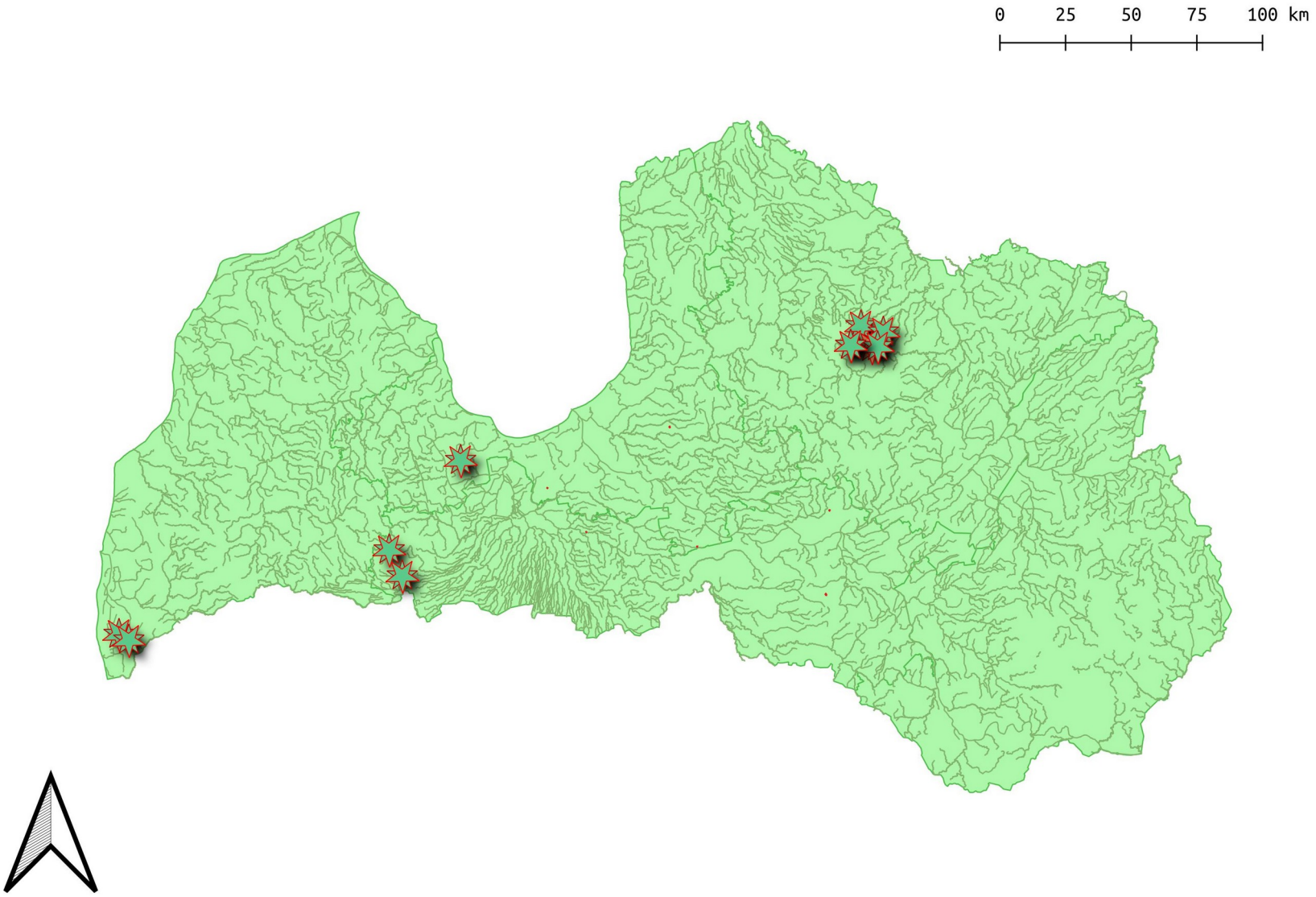
Demo sites in Latvia – where we stand

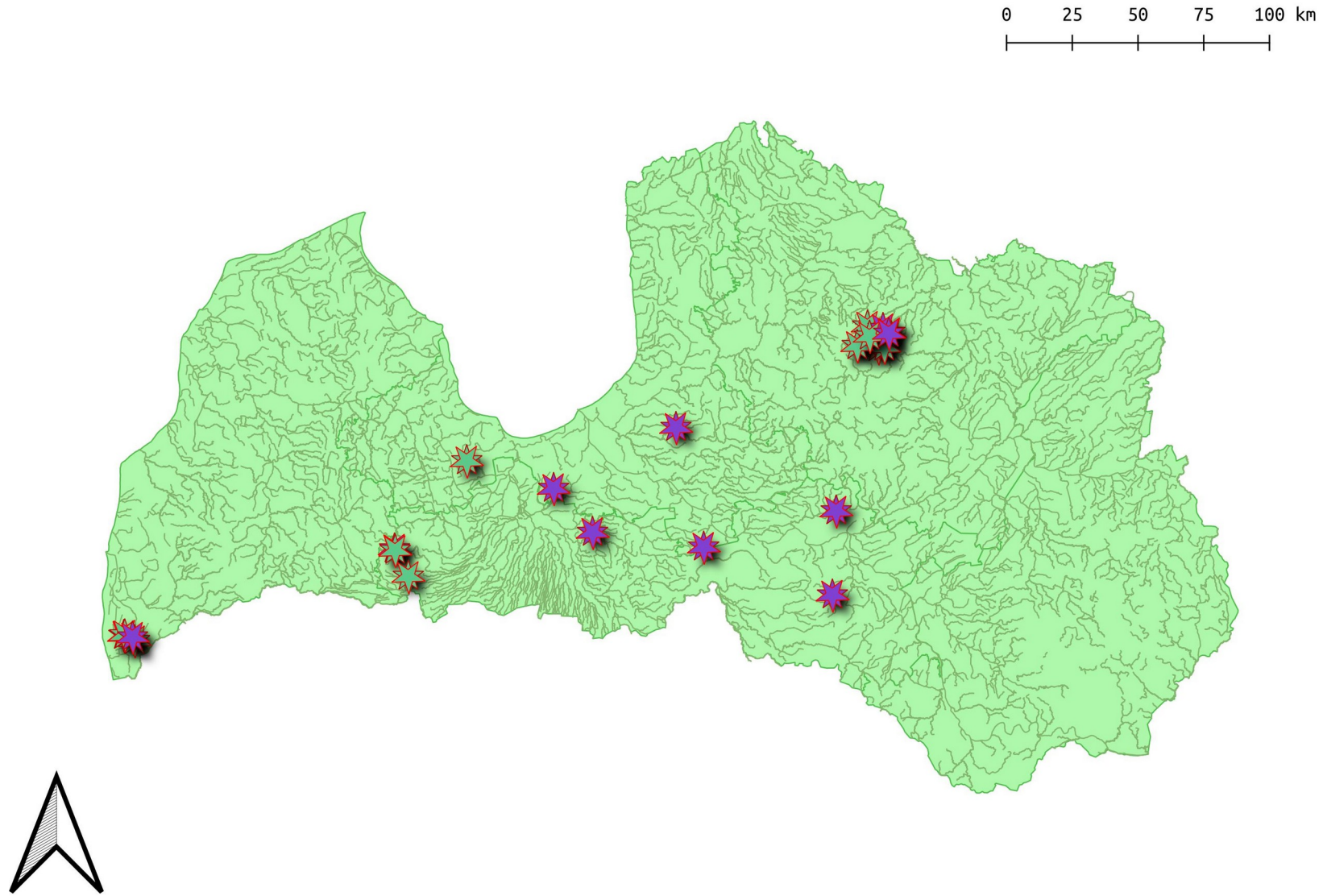
LIFE OrgBalt: «Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland»
LIFE18 CCM/LV/001158
3rd Steering group meeting
Date: 4 February 2021, 10:00 – 12:00 (EET time)
Venue: Remote meeting (Teams platform)

EU LIFE Programme project
"Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland"

Location of demo sites in Latvia



Location of demo and reference sites in Latvia

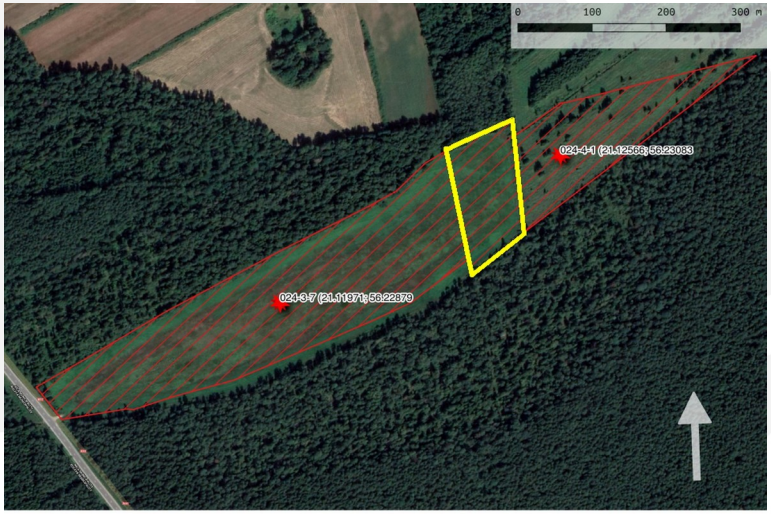


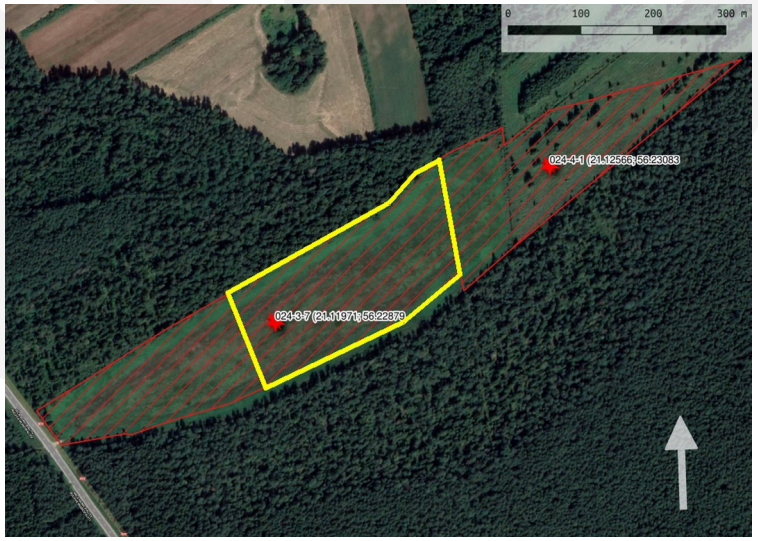
Conversion of cropland with organic soil to grassland (LVC301 & LVC306, LVC310)

- Land owner: ZS "Andrupēni", LLU.
- Site description: cropland managed for cereals production, peat depth > 30 cm; groundwater depth during vegetation season < 30 cm; well functioning drainage system.
- Proposed management activities: ploughing and sowing of mixture of grasses including legumes, extraction of grass for fodder production, fertilization dosages as recommended for integrated systems *(to be done by contractors of LLU)*.
- Reference sites in Latvia before implementation – LVC101.
- Reference sites *(steady stage)* in Latvia after implementation – LVC102 and LVC103.

Afforestation grassland with organic soils (LVC302)

- Land owner: Forest Research Station (FRS).
- Site description: grassland managed for fodder production, peat depth > 30 cm; groundwater depth during vegetation season < 30 cm; partly functioning drainage system.
- Proposed management activities: soil preparation by mounding, cleaning of drainage ditches, planting of spruce, weed control during 2 seasons; plant protection from animals if necessary *(to be done by FRS)*.
- Reference sites in Latvia before implementation – LVC102 and LVC103.
- Reference sites *(steady stage)* in Latvia after implementation – LVC104, LVC106 and LVC105 *(to evaluate additional impact of wood ash)*.



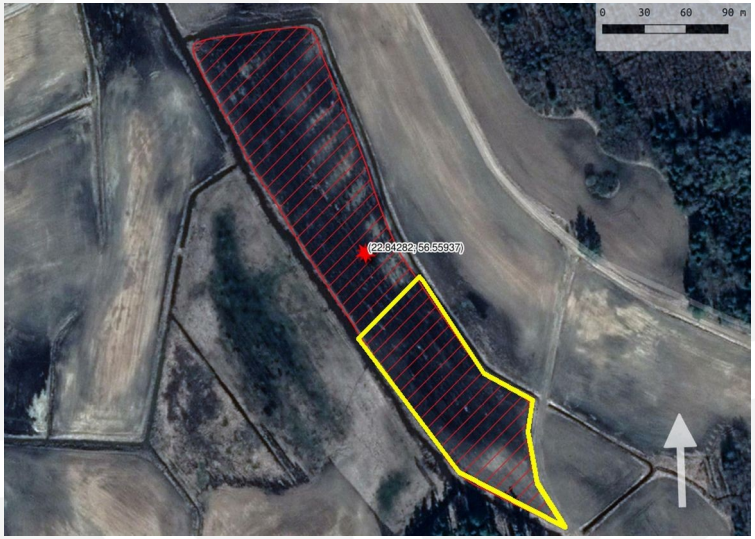


Black alder forest paludiculture (LVC303)

- Land owner: FRS.
- Site description: forest meadow, peat depth > 80 cm; groundwater depth during vegetation season > 30 cm; non-functioning drainage system.
- Proposed management activities: soil preparation by mounding *(large mounds)*, cleaning of drainage ditches and shallow ditching inside stand, planting of black alder, weed control during 2 seasons *(to be done by FRS)*.
- Reference sites in Latvia before implementation – LVC102 and LVC103.
- Reference sites *(steady stage)* in Latvia after implementation – LVC109 and LVC111.

Growing of legumes in the integrated cropping system to increase carbon input and reduce N_2O emissions (LVC304 & LVC103)

- Land owner: SIA "Latvijas grauds" and SIA "Jaunkaudzītes".
- Site description: cropland used in the integrated management system for cereal production, peat depth > 30 cm; groundwater depth during vegetation season < 30 cm; well-functioning drainage system.
- Proposed management activities: management of area for cereals and legumes production according to recommendations for the integrated systems *(to be done by LLU contractors)*.
- Reference sites in Latvia before implementation – LVC101.
- Reference sites *(steady stage)* in Latvia after implementation – LVC102 and LVC103.



OrgBalt LIFE project

EU LIFE Programme project **"Demonstration of climate change mitigation potential of nutrients rich organic soils in Baltic States and Finland"**

Regulation of groundwater level in farmland (LVC305)

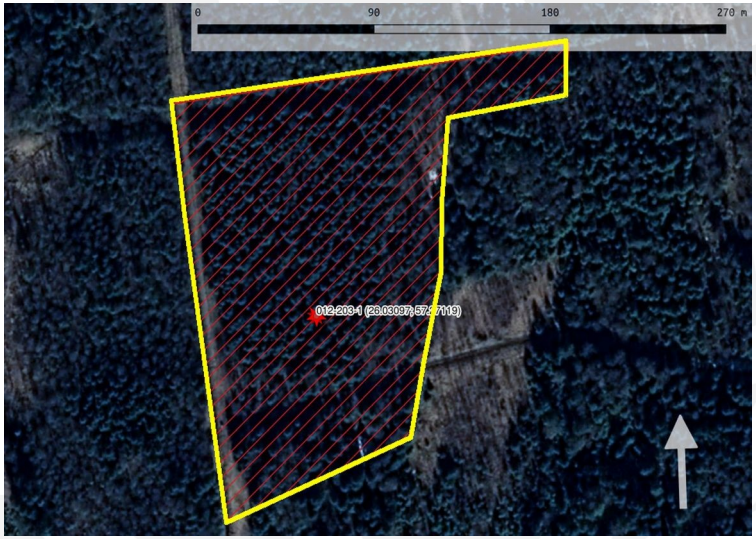
- Land owner: LLU / Ministry of Agriculture.
- Site description: grassland previously used for crop production, peat depth > 30 cm; groundwater depth during vegetation season < 30 cm; well-functioning closed drainage system.
- Proposed management activities: establishment of water level regulation facilities, management of area for fodder production according to recommendations for the integrated systems *(to be done by LLU contractors)*.
- Reference sites in Latvia before implementation – LVC102 and LVC301.
- Reference sites *(steady stage)* in Latvia after implementation – LVC305, literature review.

Short rotation woody crops in cropland with organic soil (LVC306 & LVC310, LVC301)

- Land owner: ZS "Andrupēni".
- Site description: cropland used for cereal production, peat depth > 30 cm; groundwater depth during vegetation season > 30 cm; well-functioning drainage system.
- Proposed management activities: soil preparation, cleaning of drainage ditches, mechanized planting of hybrid poplar, weed control and restocking during wing season *(to be done by LLU contractor)*.
- Reference sites in Latvia before implementation – LVC101.
- Reference sites *(steady stage)* in Latvia after implementation – LVC115 *(birch plantation in cropland)*.

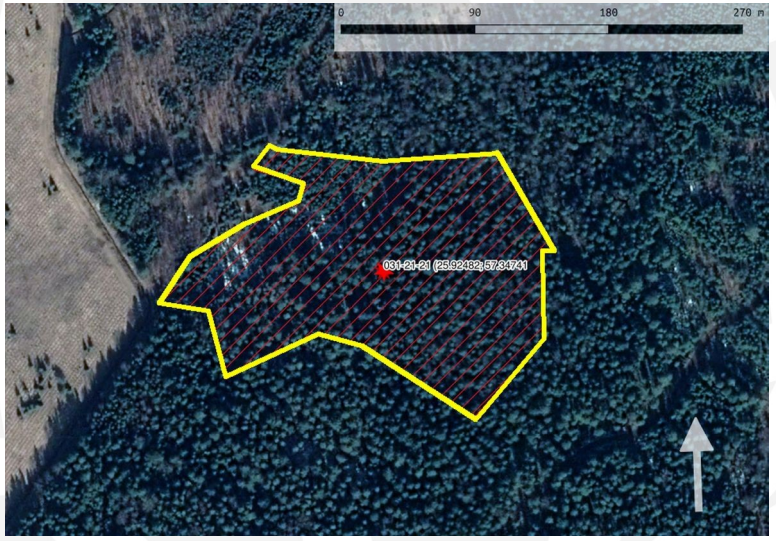
Wood ash application in spruce forest after commercial thinning (LVC307 & LVC113)

- Land owner: FRS.
- Site description: peat depth > 30 cm; groundwater depth during vegetation season < 30 cm; partly-functioning drainage system, dominant species – spruce *(H 16 m, D 15 cm, G 30 m^3 ha^{-1}, V 240 m^3 ha^{-1})*.
- Proposed management activities: commercial thinning to permitted basal area, cleaning of drainage ditches, spreading of wood ash *(to be done by FRS)*.
- Reference sites in Latvia before implementation – LVC104 and LVC113 *(area where wood ash is not applied)*.
- Reference sites *(steady stage)* in Latvia after implementation – LVC307, LVC105 and LVC106.



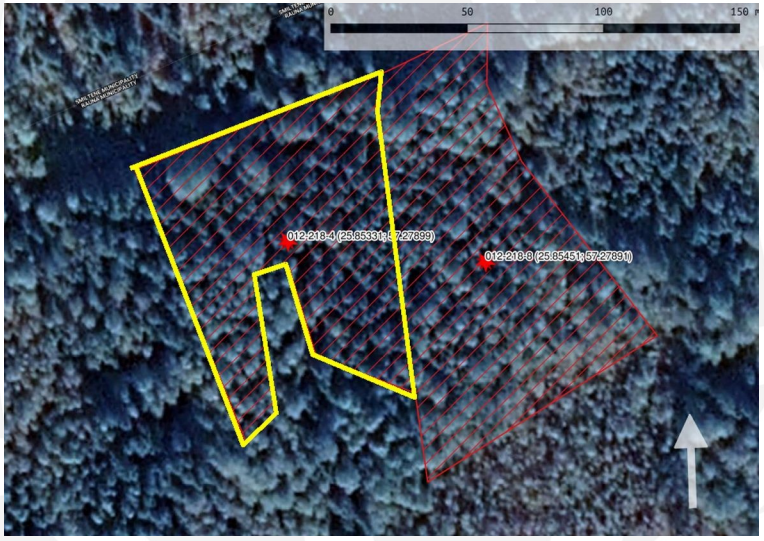
Selective harvest as alternative to clear-felling in spruce forest (LVC308)

- Land owner: FRS.
- Site description: peat depth > 30 cm; groundwater depth during vegetation season < 30 cm; partly-functioning drainage system, dominant species – spruce at maturity age *(H 26 m, D 30 cm, G 29 m^3 ha^{-1}, V 341 m^3 ha^{-1})*.
- Proposed management activities: selective felling to permitted basal area, cleaning of drainage ditches *(to be done by FRS)*.
- Reference sites in Latvia before implementation – LVC308 *(before harvest)*, LVC104 and LVC106.
- Reference sites *(steady stage)* in Latvia after implementation – LVC109 and LVC111.



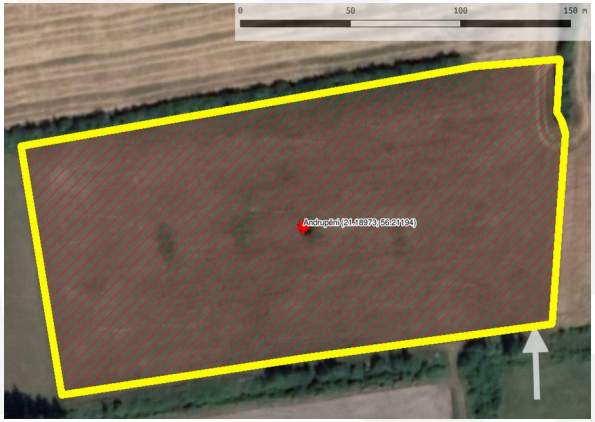
Regeneration of forest stand with wet organic soil by mounding and planting of black alder – forest paludiculture (LVC309)

- Land owner: FRS.
- Site description: peat depth > 80 cm; groundwater depth during vegetation season > 30 cm; non-functioning drainage system, dominant species – spruce at maturity age *(H 21 m, D 21 cm, G 31 m^3 ha^{-1}, V 320 m^3 ha^{-1})*.
- Proposed management activities: clear-felling, establishment of network of shallow furrows and mounding, planting of black alder, weed control during vegetation season, plant protection if necessary *(to be done by FRS)*.
- Reference sites in Latvia before implementation – LVC309 *(before harvest)*.
- Reference sites *(steady stage)* in Latvia after implementation – LVC309 and LVC109.



Short rotation woody crops in buffer zone of drainage systems of farmlands (LVC310 & LVC301, LVC306)

- Land owner: ZS "Andrupēni".
- Site description: cropland used for cereal production, peat depth > 30 cm; groundwater depth during vegetation season > 30 cm; well-functioning drainage system.
- Proposed management activities: soil preparation, mechanized planting of hybrid poplar and willows, weed control and restocking during wing season *(to be done by LLU contractor)*.
- Reference sites in Latvia before implementation – LVC101.
- Reference sites *(steady stage)* in Latvia after implementation – literature data and LVC115 *(birch plantation in cropland)*.

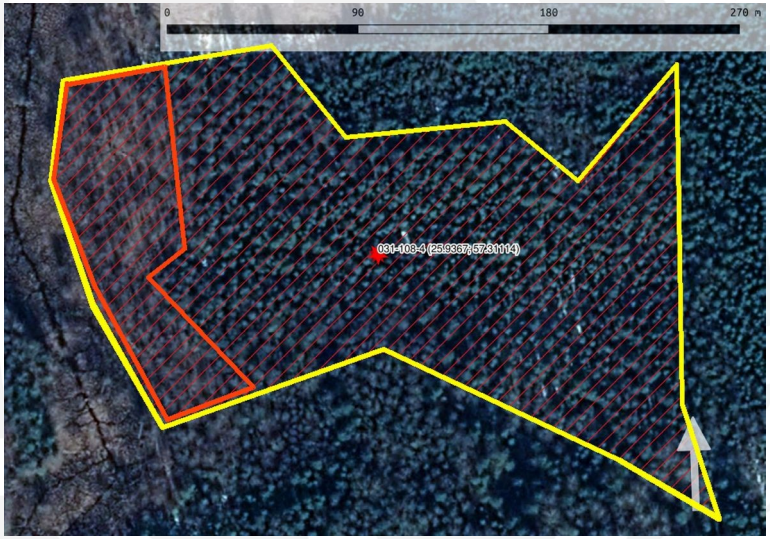


Planting of black alder on mounds nearby buffer zones of natural streams – forest paludiculture (LVC311)

- Land owner: FRS.
- Site description: peat depth > 80 cm; groundwater depth during vegetation season < 30 cm; non-functioning drainage system, dominant species – spruce at maturity age *(H 24 m, D 26 cm, G 40 m^3 ha^{-1}, V 475 m^3 ha^{-1})*.
- Proposed management activities: clear-felling, establishment of network of shallow furrows and mounding, planting of black alder, weed control during vegetation season, plant protection if necessary *(to be done by FRS)*.
- Reference sites in Latvia before implementation – LVC311, LVC303 and LVC109.
- Reference sites *(steady stage)* in Latvia after implementation – LVC119 and LVC111.

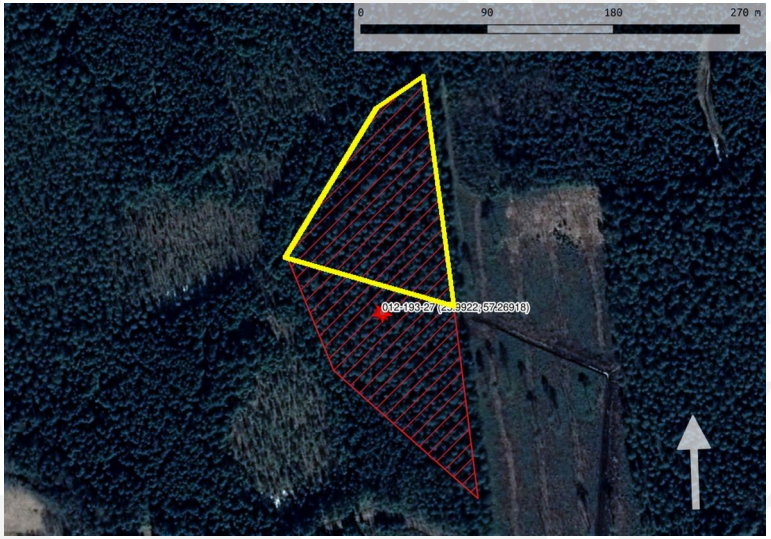
Regeneration of forest stand with wet organic soil by mounding and planting of spruce – forest paludiculture (LVC312)

- Land owner: FRS.
- Site description: peat depth > 80 cm; groundwater depth during vegetation season > 30 cm; non-functioning drainage system, dominant species – spruce at maturity age *(H 20 m, D 28 cm, G 21 m^3 ha^{-1}, V 212 m^3 ha^{-1})*.
- Proposed management activities: clear-felling, establishment of network of shallow furrows and mounding, planting of spruce, weed control during vegetation season, plant protection if necessary *(to be done by FRS)*.
- *Site can also characterize GHG emissions from buffer zones.*
- Reference sites in Latvia before implementation – LVC312, LVC309 and LVC109.
- Reference sites *(steady stage)* in Latvia after implementation – LVC110 and LVC111.



Strip harvesting as alternative to clear-felling in pine forest (LVC313 & LVC116)

- Land owner: FRS.
- Site description: peat depth > 30 cm; groundwater depth during vegetation season < 30 cm; partly-functioning drainage system, dominant species – pine at maturity age *(H 22 m, D 33 cm, G 26 m^3 ha^{-1}, V 350 m^3 ha^{-1})*.
- Proposed management activities: strip harvesting *(50% of basal area)*, cleaning of drainage ditches, soil scarification by mounding, planting of pine, weed control for 2 seasons *(to be done by FRS)*.
- Reference sites in Latvia before implementation – LVC116 *(clear-felling)*, LVC107.
- Reference sites *(steady stage)* in Latvia after implementation – LVC313 *(and data from Finland)*.



Time for questions!

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