

TreProX: Innovations in Training and Exchange of Standards for Wood Processing

PLANTING AND MAINTENANCE OF PRODUCTION FOREST

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TREPROX WORKSHOP – ICELAND - OCTOBER 2021



Planting and maintenance of Production Forest in IS

Lecture held at Hvanneiry, Island, October 2021

KØBENHAVNS UNIVERSITET



Why are we planting?

Shelter:



Protection of drinking water



Soil stabilisation:



Hafnarsandur

Recreational:



Decoration:



Production forest:

- Christmas Trees:
- Firewood:
- Energy (i.e. chip)



Production forest:

- Christmas Trees:
- Firewood:
- Last, but not least:
- Timber for lumber:



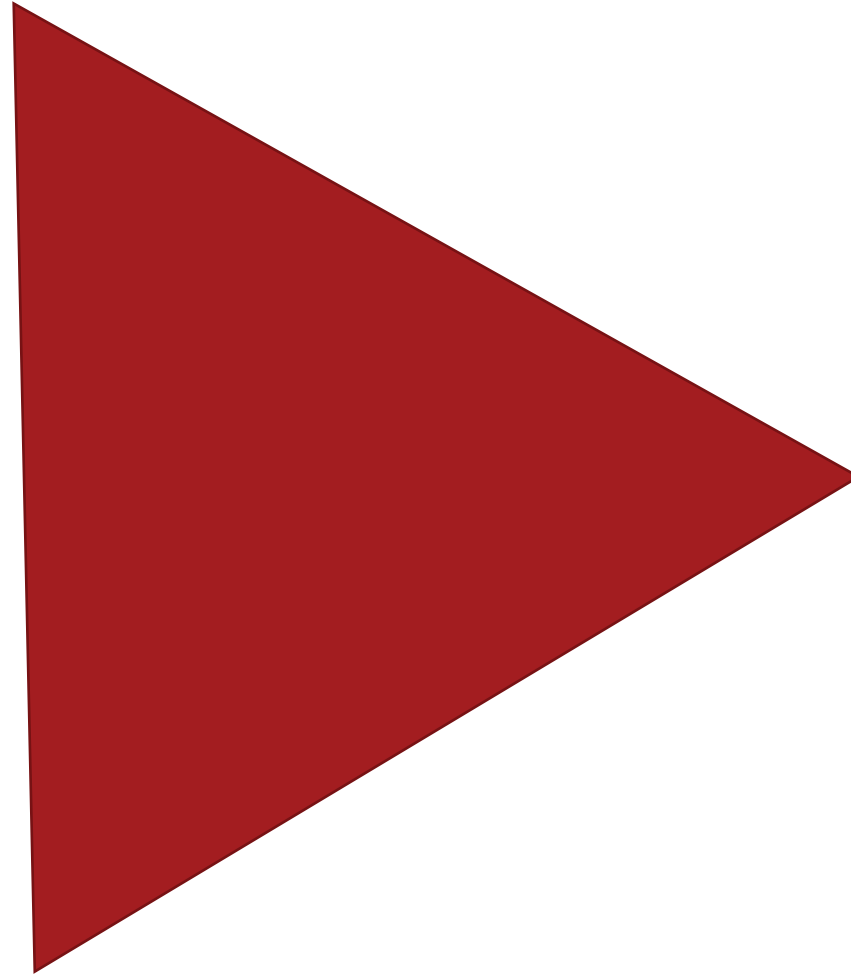
How to begin?

The Triangle of Choices:

Where to plant?

Which species

What is
the purpose?



What purpose?

Should be clear by now:

But in between?



Lumber



Firewood

or



Biodiversity

or



New ideas

Where to plant:

Location:

- Flat / Hilly / Steep?
- Soggy / Wet / Dry?
- Stormy / Windy / Calm?
- Near the Ocean (Salt) / Inland?
- Size of area.
- Budget!
- Environment.
 - Legislation

• Vegetation:

- Grass.
- Shrubs.
- Existing growth.

• Soil condition

• Frost

• Animals

• Access

Planting stock:

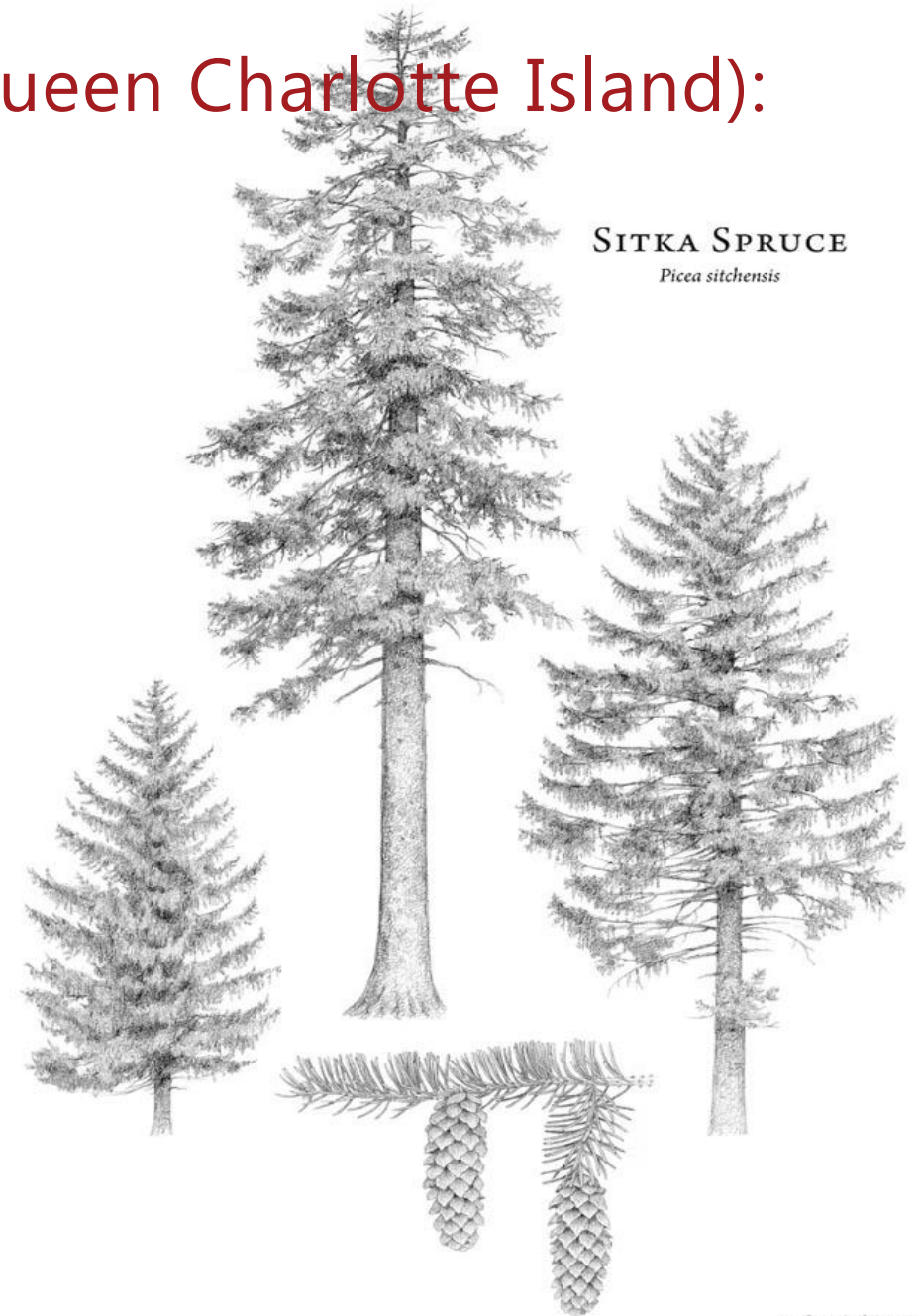
- Plant quality
- Plant size
 - Container.
 - Open root.
 - Cuttings (Poplar).
- Number of plants:

15 Spacing guide for all species

Distance between rows (m)	Distance between trees within the row (m)											
	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5
2.0	2500											
2.5	2000	1600										
3.0	1667	1333	1111									
3.5	1426	1143	952	816								
4.0	1250	1000	833	714	625							
4.5	1111	889	741	635	556	494						
5.0	1000	800	667	571	500	444	400					
5.5	909	727	606	519	455	404	364	331				
6.0	833	667	556	476	417	370	333	303	278			
6.5	769	615	513	440	385	342	308	280	256	237		
7.0	714	571	476	408	357	317	286	260	238	220	204	
7.5	667	533	444	381	333	296	267	242	222	205	190	178
8.0	625	500	417	357	313	278	250	227	208	192	179	167
8.5	588	471	392	336	294	261	235	214	196	181	168	157
9.0	555	444	370	317	278	247	222	202	185	171	159	148
9.5	526	421	351	301	263	234	211	191	175	162	150	140
10.0	500	400	333	286	250	222	200	182	167	154	143	133

Species: Sitka spruce (*Picea sitchensis*)(Queen Charlotte Island):

- Excellent construction lumber.
- Known standards.
- Sawable, easy to work
- Common Use: Interior trim, cabinetry, and construction lumber.
- Withstand salty air.
- Sensitive to spring frost.
- Prone to windthrow when overthinned.
- Forest workers nightmare



Origin:





Closed stand of old-growth sitka



Old bark on sitka





Sitka, Reykjavik Domestic Airport

Lumber:

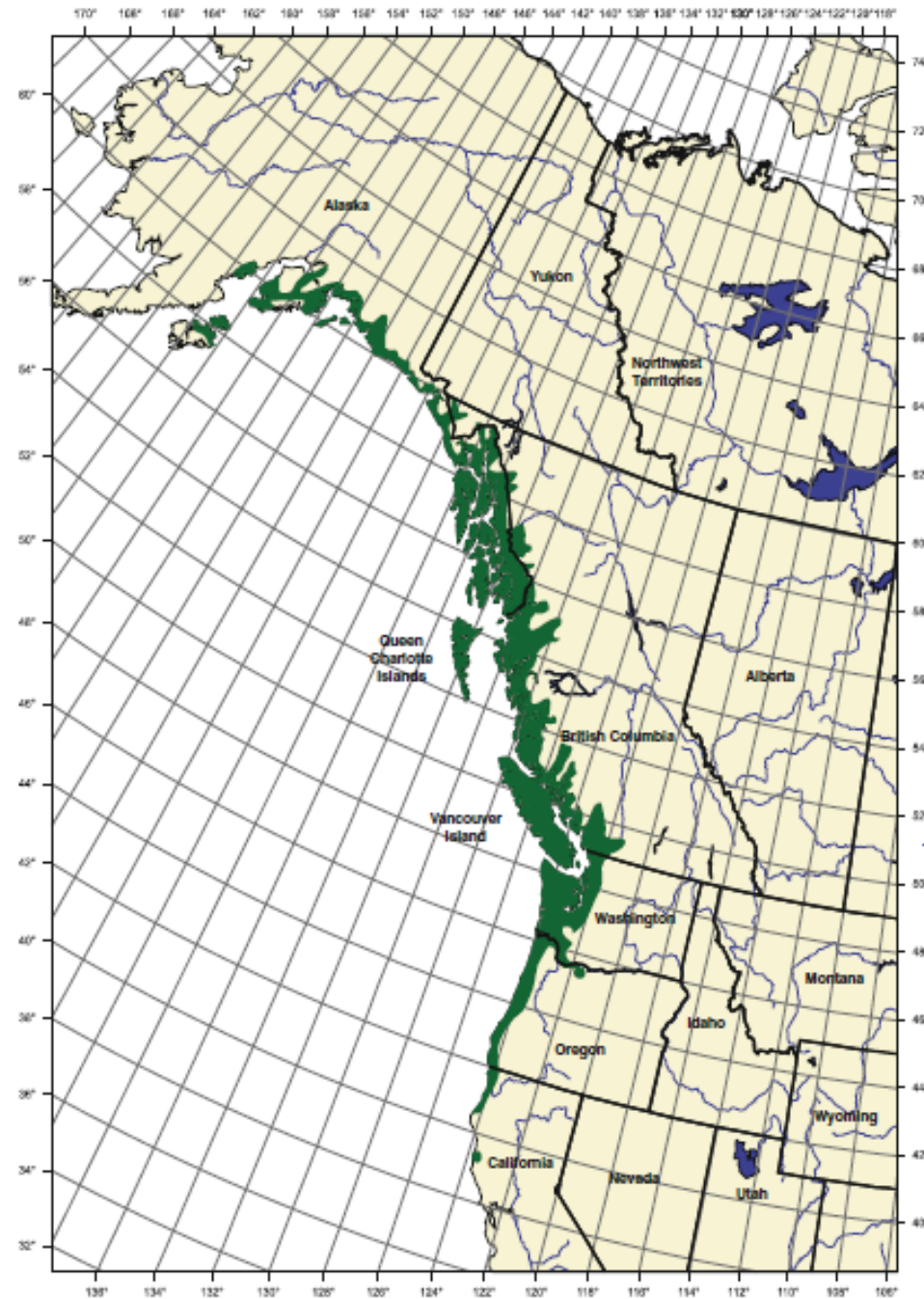


Species: Contorta Pine or Lodgepole Pine (*Pinus contorta*)

- Good construction lumber.
- Known standards.
- Works well with tools.
- Prone to windthrow.
- Common use: Veneer, plywood, sheathing, subflooring, boxes, crates, posts/poles, interior trim, cabinetry, and construction lumber. Flooring.

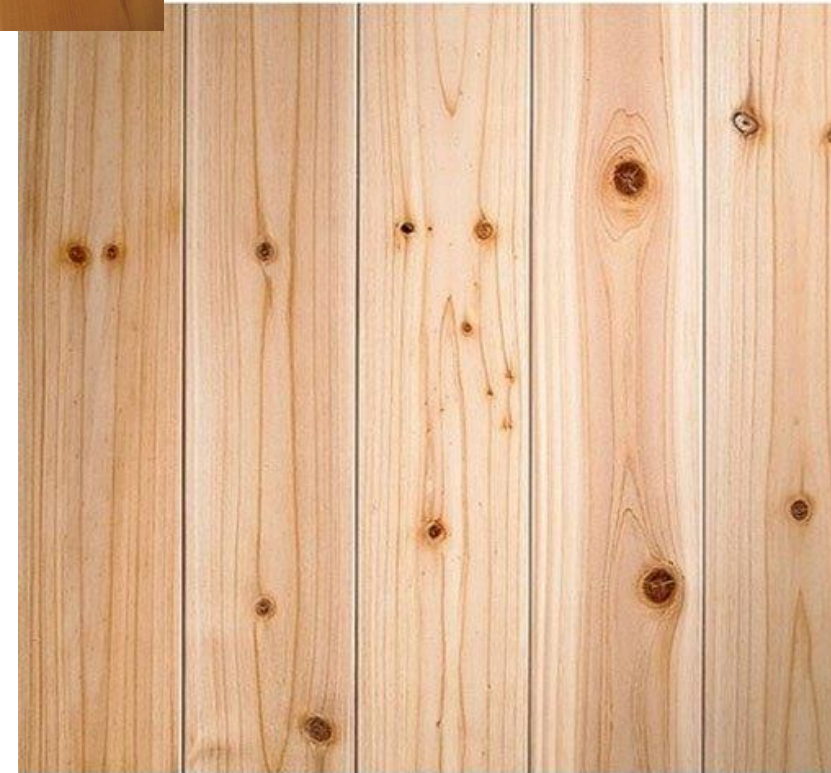


Natural distribution of Sitka spruce



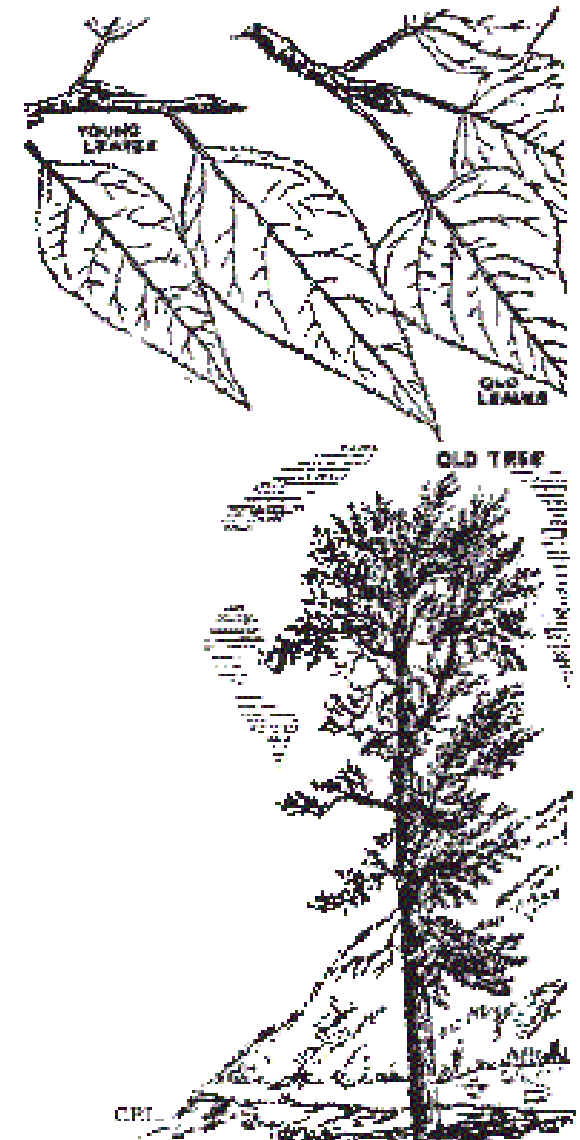


Sitka Lumber:



Species: Black cottonwood/*Western Balsam Poplar* (*Populus trichocarpa*):

- Good as nurse tree.
- Wind resistant.
- Non-rot resistant.
- Easily processed – but requires sharp tools.
- Common use: Boxes/crates, veneer, plywood, and various utility purposes.







Gunnarsholt



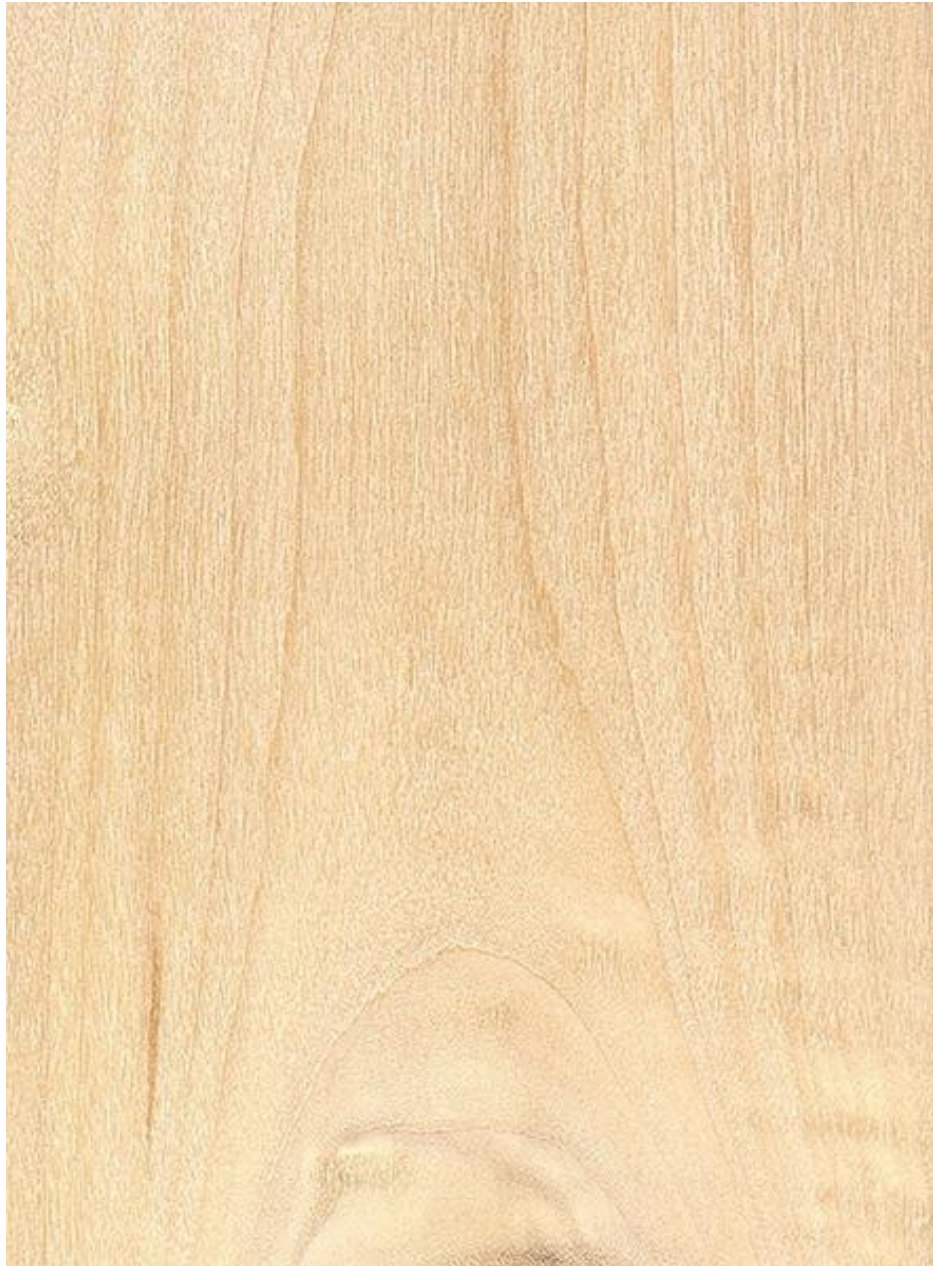
Gunnarsholt



Interior table made from slab of windblown poplar



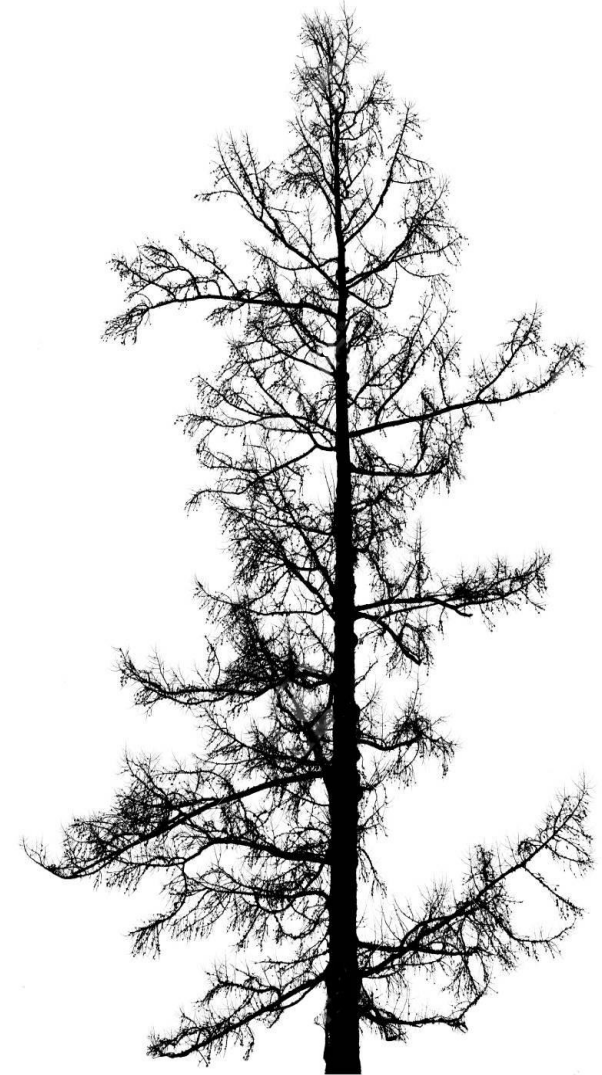
Two poplar slabs paired with resin





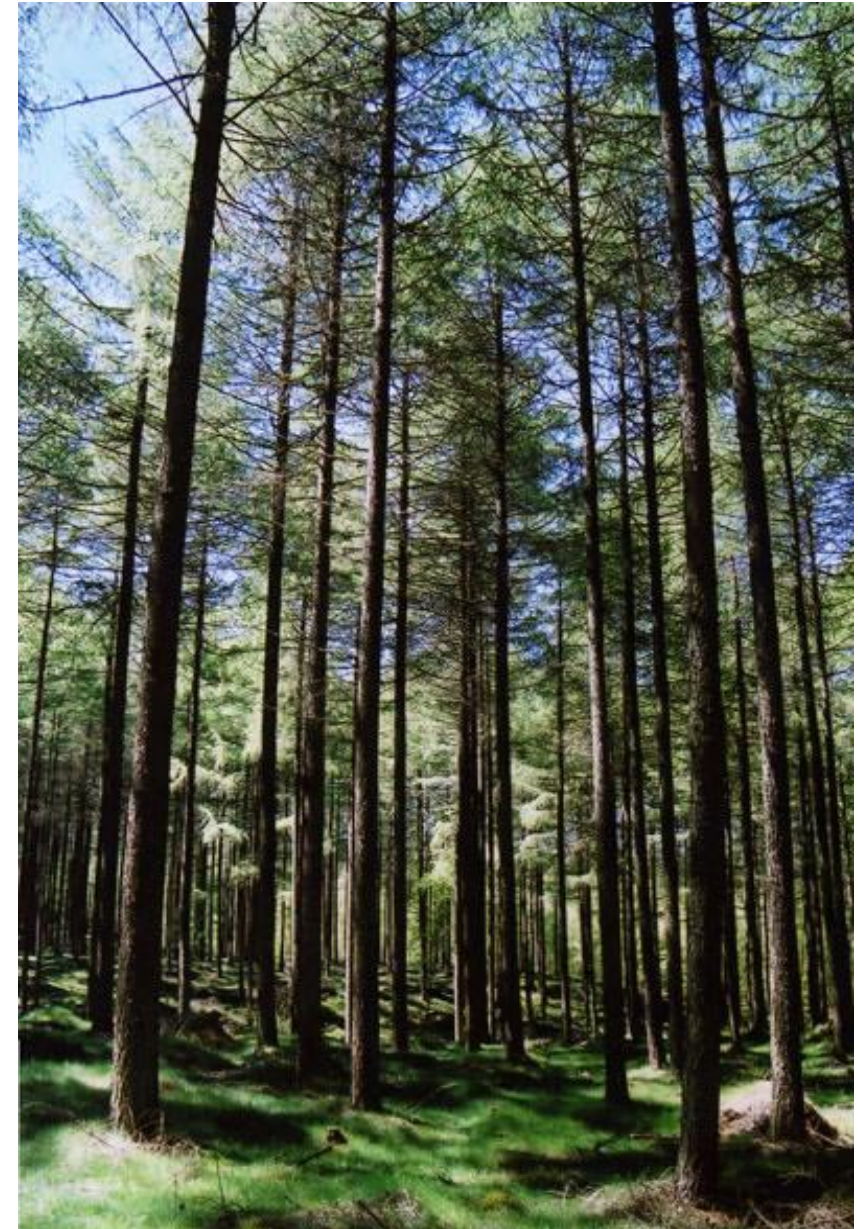
Species: Larch (*Larix decidua* x *Larix sibirica*)

- Fast juvenile growth – good as nurse tree.
- Overall good stem architecture.
- Wind, snow, fire and air-pollution resistant.
- Fair construction lumber.
- Moderately rot resistant.
- Tendency to warp during drying.
- Most hand and machine operations produce good results. Resins in the wood have a tendency to gum up saw blades.
- Common uses: Veneer, utility poles, fence posts, flooring, boatbuilding, and construction lumber.





Stand of medium aged larch – winter appearance

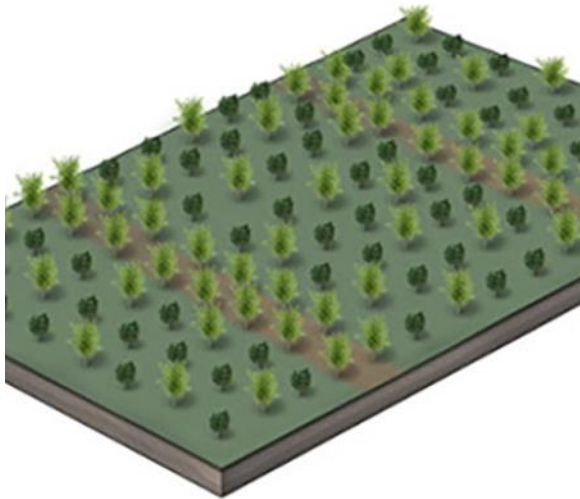


Mature stand of larch – Central Jutland

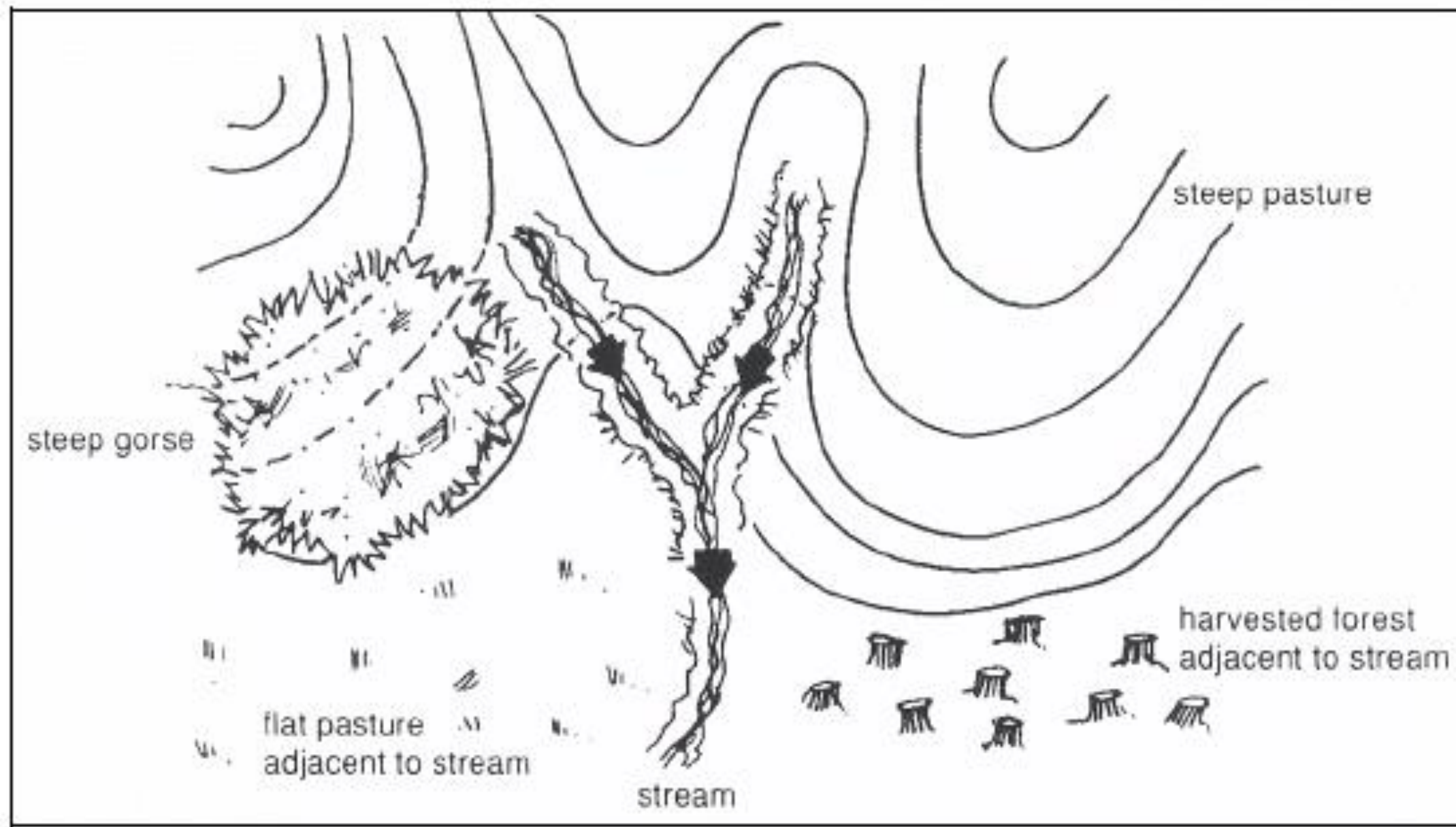


Veranda planks from larch

Planning:



- Species:
 - Nurse trees.
 - Main crop.
- Area:
 - Preparation.
 - Number of plants/ha.
 - Row distance.
 - Plant distance.
 - Extraction tracks.
- Thinning regime/Pruning.

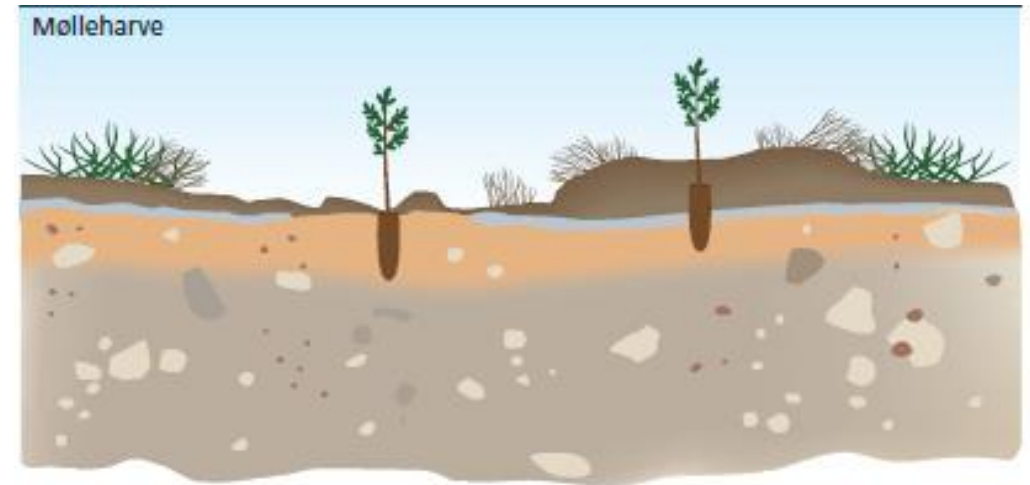


Preparation - Machinery (>10ha):

- Removal of turf/grass-pelt
- Exposure of soil



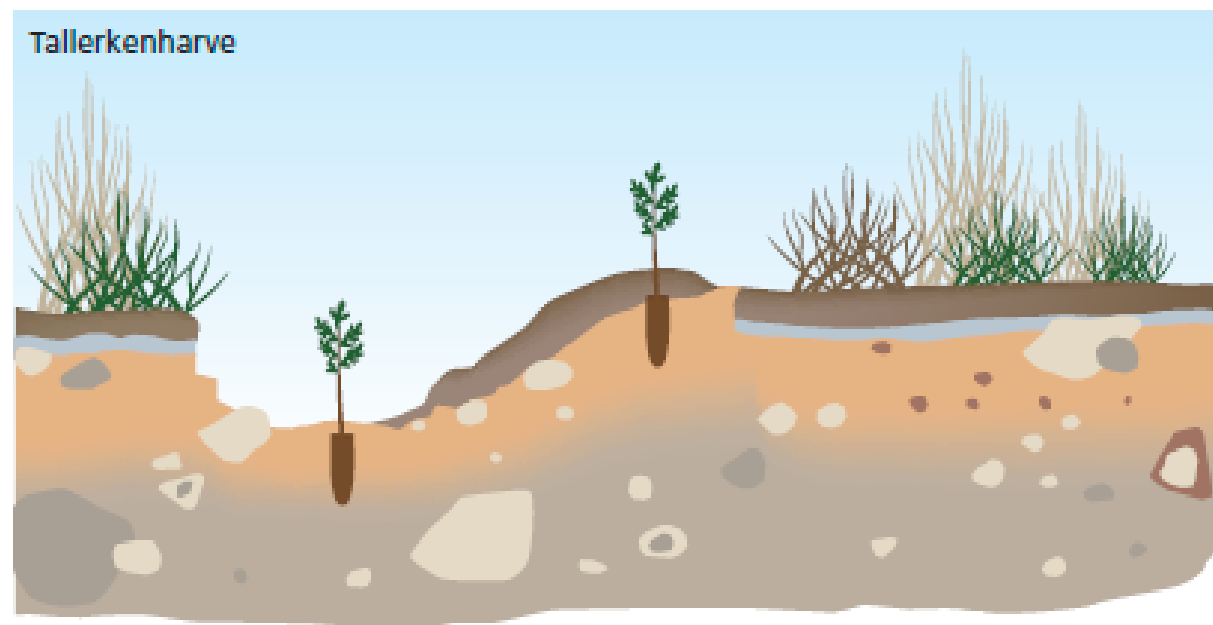
Rotary harrow



Each plant requires 30x40x>25cm

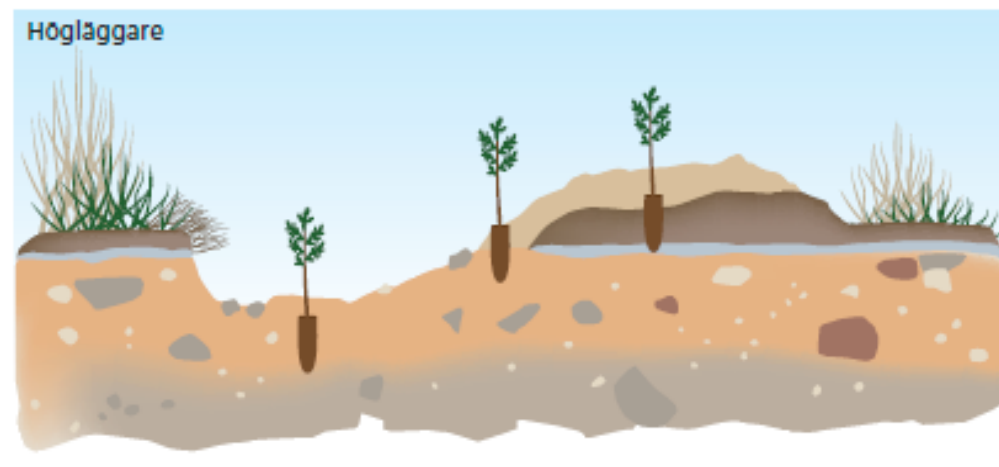


Disc-plow





“Högläggar”



<10ha:



Planting spades, heavy

Preparation:

- $1,50 \times 1,50 \text{ m} = 4,444 \text{ pl/ha}$
- $1,75 \times 1,75 \text{ m} = 3,265 \text{ pl/ha}$
- Tracs for modern machinery:
- 4m wide

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Do you want this:



Or this:



Aiming at the latter:

Do we want this:



Outdoor panelling "Wilderness-cladding"

This:



Construction timber

Or do we
want this:



Inside panelling