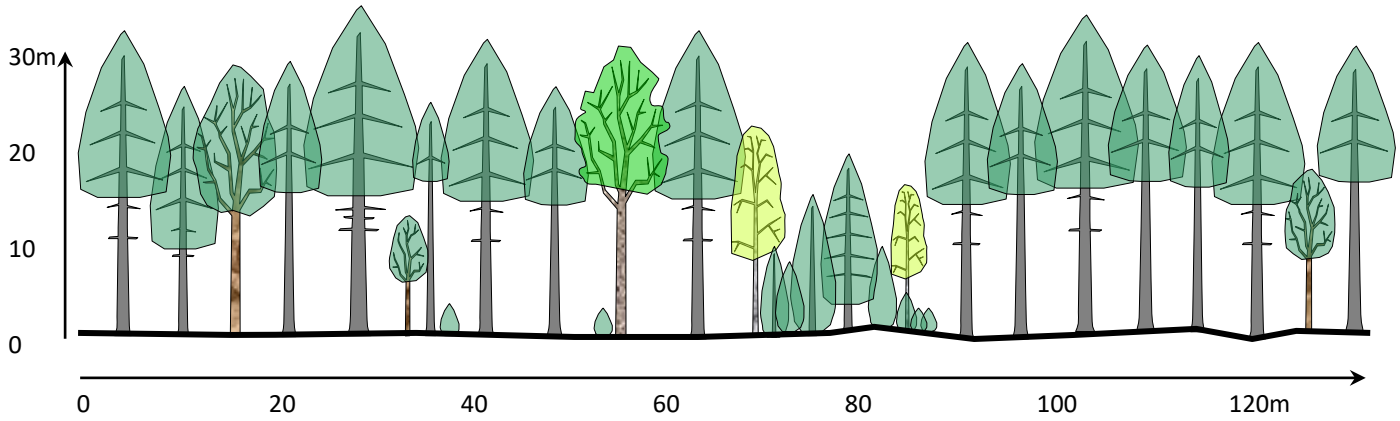
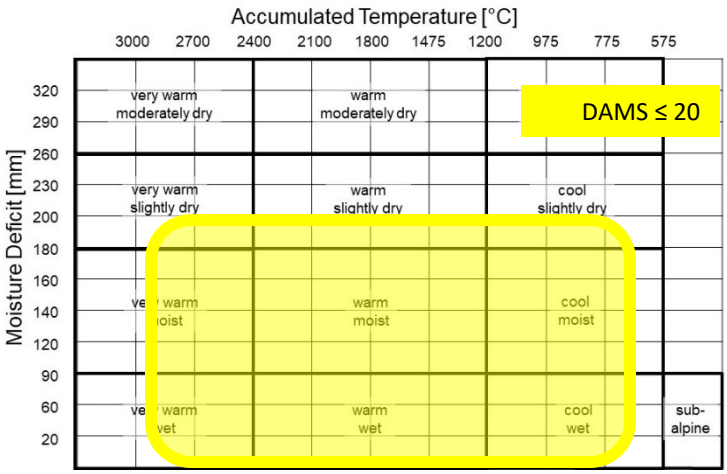
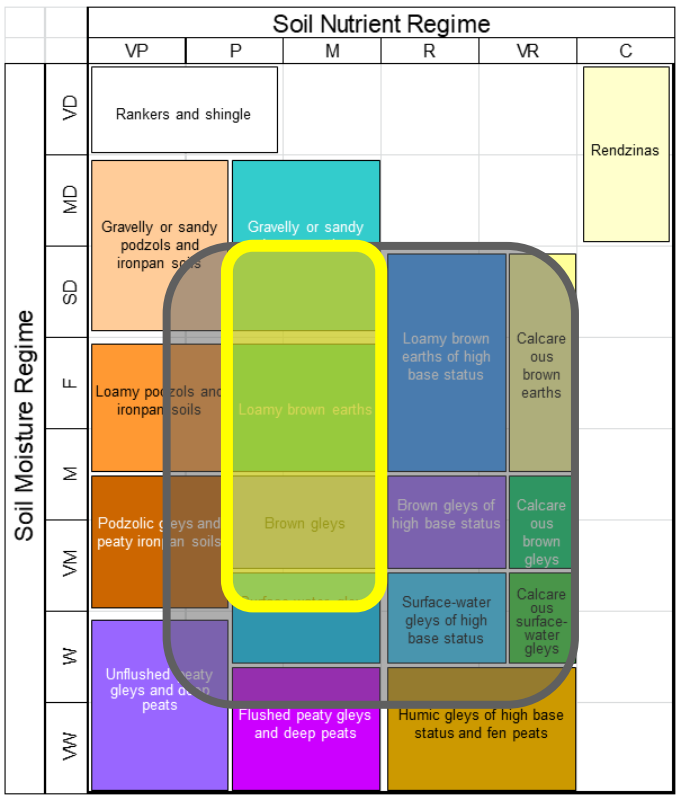
FDT 1.1.2 SS



1. Structure and dynamics:
Single to multiple-storeyed SS stands with category A minor species which are mixed in individually or in groups and mostly occupy suitable microsites and areas of difficult access.
Species distribution: SS 80 – 90% minor species: 10 – 20%
Stands are managed under LIMA / CCF regimes, with management aiming to create a diverse structure and using natural regeneration wherever practical.

2. Ecological suitability:
Represents no NVC type but provides niches for elements of W4, W7, W11 and W17. Suitable for more fertile soils (GYC > 14) where admixed species add to diversity and site productivity.





3. Management objectives:

Economic (GYC > 14):	SS – sawlogs, target DBH > 50cm in 60 – 100yrs
Environmental and social:	Mixed forest structure provides more diverse habitats for a range of species and improves stability with regard to risk factors over pure SS stands. Sustainable protection of water courses and option for CCF where exposure of forest soil by clearfelling is undesirable. High landscape and amenity value due to mixed components and more diverse stand structure.

4. General management principles for the FDT

This FDT is for stands of SS growing on better sites than FDT 1.1.1 where there are more options for using LIMA / CCF. Target diameter harvesting and complex stand structures may be considered in sheltered conditions; simple structures and CCF management methods such as strip felling may be preferable on more exposed sites. Management of young stands must aim to develop vigour and stability of individual trees in order to allow flexible management of stand structure later on. Dense natural regeneration of SS should be respaced so that no further interventions become necessary until the first thinning. Admixed species are to be promoted according to management objectives. SS will respond well to thinning throughout its lifetime but in order to maintain good tree stability thinning must not be unduly delayed. Thinning should start at around 10 – 12m top height, generally as crown thinning. Crown thinning should be used as long as necessary to develop good individual tree stability, however the thinning type may eventually shift towards low thinning, particularly in areas of high wind risk. Final harvesting should be accompanied by establishment and differentiation of natural regeneration.

5. Timeline

stage	H_{100} [m]	intervention
Establishment		• Planting of 2000 – 3000 trees/ha or natural regeneration
Young stand	< 3	• Protection against animals / plants as necessary. • Respacing if N > 3000 trees/ha at 1 – 2m tree height. Reduce N to 1500 – 2500 trees/ha; in areas of difficult access, along exposed edges and on sites of high wind damage risk reduce N to 800 – 1000 trees/ha. • Clearing of any damage caused by felling / extraction of overstorey trees. • Promotion of minor species as required.
Thicket stage	3 – 10	• Generally no interventions, except for: • Release 300 – 400 FC tree candidates/ha in areas of difficult access or high wind hazard if respacing in the previous stage has been missed.
Pole stage	10 – 12	• First selective thinning (crown thinning), mainly removing dominant / co-dominant trees with visible defects, coarse branching or poor shape. • Selection of 150 – 250 FC trees/ha (optional).
Pole to small timber stage	12 – 20	• Continue crown thinning at height growth intervals of 3m, focussing on the competition status of FC trees.
Timber stage		• Monitor species composition, stand density, stability and health, and thin accordingly. Apply crown thinning as long as necessary for the benefits of FC trees, otherwise thinning type may gradually change to low. • Plan for final harvesting when dominant / FC trees approach target DBH. • Decide on LIMA / CCF method to be used and assess potential for natural regeneration – improve conditions if necessary.
Final harvesting and regeneration stage		• Carry out harvesting operations according to agreed LIMA / CCF method. • In shelterwood scenarios, reduce BA to 30m^2/ha initially, and then further once regeneration has established. • Design strip systems with regard to prevailing wind direction and climatic requirements of SS regeneration; keep strip width < 50m. • Monitor light level, seedbed conditions, occurrence and growth rate of regeneration, supplement by planting if necessary.