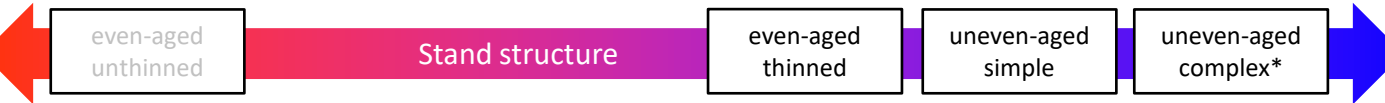
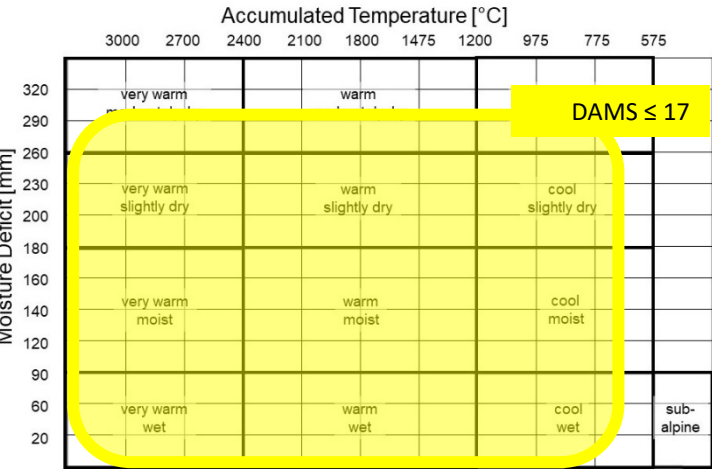


1. Structure and dynamics:
Mosaic of single-storied small groups to small areas of SP and BI of variable age, with individual trees or small groups of category B minor species.
Species distribution: SP 60 – 90% BI: 10 – 40% minor species: < 10%
Stands will likely have developed from incomplete SP restocking with BI infill. Different rotation lengths for SP and BI is likely to diversify the stand structure further. BI and minor species will propagate via natural regeneration, SP may need to be planted if regeneration is insufficient.



2. Ecological suitability:
Represents NVC type W18 with strong presence of BI and niches for elements of W4, W17, W16 and W15. This FDT is suitable for the poorest soils where SP GYC is below 12 and BI is abundant. SBI will be more common on freely draining soils but is likely to be replaced by DBI on wetter sites.



		Soil Nutrient Regime					
		VP	P	M	R	VR	C
Soil Moisture Regime	VD	Rankers and shingle					Rendzinas
	MD	Gravelly or sandy podzols and iron soils					
	SD	Gravelly or sandy podzols and iron soils		Gravelly or sandy brown earths			
	F	Loamy podzols and iron soils		Loamy brown earths		Loamy brown earths of high base status	Calcareous brown earths
	M	Podzols: gleys and peaty iron soils		Brown gleys		Brown gleys of high base status	Calcareous brown gleys
	VM	Podzols: gleys and peaty iron soils		Brown gleys		Brown gleys of high base status	Calcareous brown gleys
	W	Unflushed peaty gleys and deep peats		Surface-water gleys		Surface-water gleys of high base status	Calcareous surface-water gleys
	WW	Unflushed peaty gleys and deep peats		Flushed peaty gleys and deep peats		Humic gleys of high base status and fen peats	

3. Management objectives:
Economic: SP – sawlogs, target DBH > 40cm in 100 – 140yrs
BI – optional, sawlogs / pulp / chip
Environmental and social: Open woodland of natural appearance, providing habitats for light demanding species. Presence of veteran trees and deadwood, attractive spring and autumn aspect. BI adds diversity and acts as soil improver.

4. General management principles for the FDT

This FDT is for productive SP stands of high timber quality and on low fertility sites where higher structural and species diversity is desirable and SP shows good potential to regenerate naturally. The role of BI in this FDT is mainly for environmental and social benefits, however economic opportunities arising from biomass / timber production should be used wherever possible. As pioneer species SP and BI are quite compatible (CS = 2) to grow in mixtures, with growth rates peaking early in life and diminishing rapidly thereafter. SP management according to FDT 2.1.2. If BI is to be grown to sawlog dimensions respacing and thinning must ensure that the relative length of the live crown never drops below 60% of tree height. As a general rule, SBI should be preferred over DBI, and seed grown trees over coppice in tree selection. Thinning should start at around 10 – 14m top height, generally as crown thinning, and focus on pole and small timber stage. Thinning at later stages must aim to maintain tree stability and steady growth. BI will likely be managed on a shorter rotation than SP; LIMA / CCF methods should be used to introduce and maintain the desired horizontal and vertical stand structure.

5. Timeline

stage	H ₁₀₀ [m]	intervention
Establishment		<ul style="list-style-type: none"> SP: Planting of 3000 – 8000 trees/ha or natural regeneration. BI: Planting of 2000 – 3000 trees/ha or natural regeneration.
Young stand	< 3	<ul style="list-style-type: none"> Protection against animals / plants as necessary. SP: Negative selective respacing (removal of wolf tree candidates). SP: Respacing if N > 8000 trees/ha (or lower if tree stability is a concern) at 1 – 2m tree height. BI: Systematic respacing to about 2000 trees/ha at 2 – 4m tree height. Clearing of any damage caused by felling / extraction of overstorey trees. Regulation of species composition and minor species as required.
Thicket stage	3 – 10	<ul style="list-style-type: none"> Generally no interventions, except for: Negative selective (SP) / systematic (BI) respacing and careful promotion of 400 – 600 FC tree candidates/ha if respacing in the previous stage has been missed.
Pole stage	10 – 14	<ul style="list-style-type: none"> First selective crown thinning, mainly removing dominant / co-dominant trees with visible defects, coarse branching or poor shape. Selection of 200 – 300 FC trees/ha (SP + BI). Pruning of some FC trees may be considered.
Pole to small timber stage	14 – 20	<ul style="list-style-type: none"> Continue crown thinning at height growth intervals of 3m. Monitor competition between SP and BI and adjust thinning accordingly. Focus on competition status of FC trees; maintain species composition.
Timber stage		<ul style="list-style-type: none"> Monitor species composition, stand density, stability and health, and thin accordingly. Apply crown thinning as long as necessary for the benefits of FC trees. Reduce thinning intensity and / or lengthen thinning cycles as SP / BI become less responsive to thinning. Plan for final harvesting when FC trees approach target DBH. Decide on LIMA / CCF methods to be used and assess potential for natural regeneration – improve conditions if necessary.
Final harvesting and regeneration stage		<ul style="list-style-type: none"> Carry out harvesting / restocking operations according to agreed method. Follow species specific guidance for SP / BI dominated components. Monitor light level, ground vegetation conditions, occurrence and growth rate of regeneration, supplement by planting if necessary, or restock.