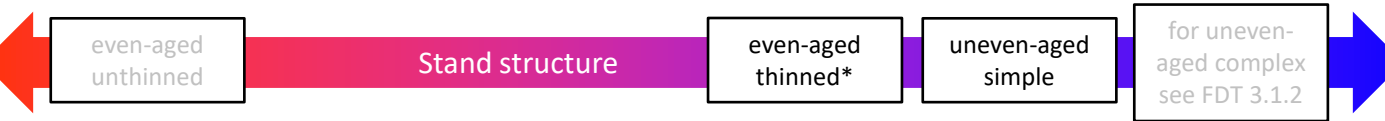
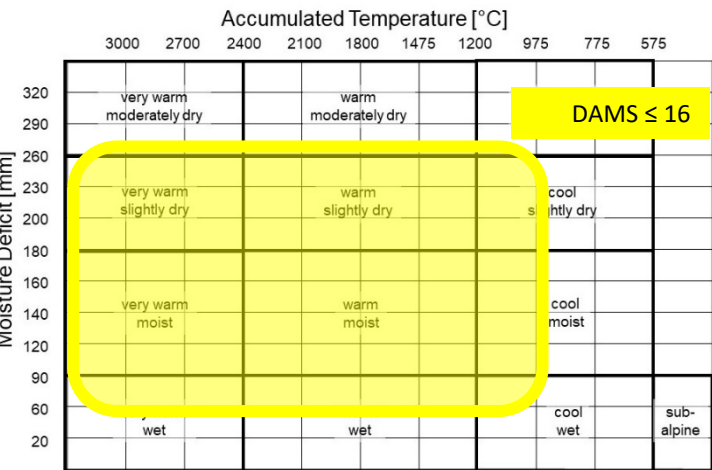


**1. Structure and dynamics:**  
 Single-storeyed DF stands with category A minor species, admixed individually or in groups on microsites unsuitable for DF.  
 Species distribution: DF 90 – 100% minor species: < 10%  
 Stands will largely be managed under clearfell-and-restock regime, with minor species regenerating naturally. Natural regeneration of DF should be used wherever possible, and CCF / LIMA options are a practical alternative to clearfelling if conditions are favourable.



**2. Ecological suitability:**  
 Represents no NVC type but provides niches for elements of W10, W11, W15, W16 and W17.  
 Appropriate on sheltered sites with well aerated soils of sandy to loamy texture, suitable for droughty soils.  
 Unsuitable for exposed sites and frost hollows.



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

**3. Management objectives:**  
**Economic:** DF – sawlogs, target DBH > 60cm in 60 – 100yrs  
**Environmental and social:** Soil and water retention may be an important objective on droughty sites. Mature stands are attractive and popular for amenity and recreation. Minor species elements increase habitat diversity and improve soil quality.

#### 4. General management principles for the FDT

This FDT should be used where clearfell-and-restock scenarios with DF are envisaged, either because this suits the site specific management objectives or because sufficient natural regeneration of DF cannot be expected. In the latter case a review of the FDT may be required. 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. Stands originating from dense natural regeneration are likely to require respacing. DF 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 more exposed areas. DF can regenerate well under its own canopy if conditions are right and therefore LIMA / CCF methods should be considered for final harvesting / restocking on suitable sites. During the rotation there may be opportunities for species diversification and, if taken, the FDT may need to be reviewed.

#### 5. Timeline

stage	H <sub>100</sub> [m]	intervention
Establishment		<ul style="list-style-type: none"> <li>Planting of 2000 – 3000 trees/ha or natural regeneration. Due to the wide natural range of DF careful choice of provenance is important.</li> </ul>
Young stand	< 3	<ul style="list-style-type: none"> <li>Protection against animals / plants as necessary.</li> <li>Respacing if N &gt; 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.</li> <li>Clearing of any damage caused by felling / extraction of overstorey trees.</li> <li>Promotion of minor species as required.</li> </ul>
Thicket stage	3 – 10	<ul style="list-style-type: none"> <li>Generally no interventions, except for:</li> <li>Release 200 – 300 FC tree candidates/ha in areas of difficult access or high wind hazard if respacing in the previous stage has been missed.</li> </ul>
Pole stage	10 – 12	<ul style="list-style-type: none"> <li>First selective crown thinning, mainly removing dominant / co-dominant trees with visible defects, coarse branching or poor shape.</li> <li>Selection of 100 – 150 FC trees/ha.</li> </ul>
Pole to small timber stage	12 – 20	<ul style="list-style-type: none"> <li>Continue crown thinning at height growth intervals of 3m, focussing on competition status of FC trees.</li> </ul>
Timber stage		<ul style="list-style-type: none"> <li>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.</li> <li>Plan for final harvesting when FC trees approach target DBH.</li> <li>Assess potential for natural regeneration and consider LIMA / CCF methods, improve conditions if necessary.</li> </ul>
Final harvesting and regeneration stage		<ul style="list-style-type: none"> <li>Carry out harvesting / restocking operations according to agreed method.</li> <li>In shelterwood scenarios, reduce BA to 30 m<sup>2</sup>/ha initially and then further once regeneration has established itself.</li> <li>Design strip systems with regard to prevailing wind direction and climatic requirements of DF regeneration; keep strip width &lt; 50m.</li> <li>Monitor light level, ground vegetation, occurrence and growth rate of regeneration, supplement by planting if necessary, or restock.</li> </ul>