






Target Conditions for Conifer Moist


89 hectares – 34% of forest

Maturity Class	Photo	Species Composition (% of Canopy)	Understory	Canopy
<p>Juvenile 0 to 20 yrs</p> <p>12Ha (5 %)</p>		<p>50 to 70% Cw 10 to 35% Hw 5 to 15% Ss 0 to 15% Fd 0 to 15% Mb 0 to 5% Ac 0 to 20% Dr</p>	<p>Understory will develop rapidly during stand establishment, and compete strongly with establishing trees.</p> <p>Dense tall shrub mixture will dominate wherever light levels are adequate. Shrubs reach 2-3m height (vine maple up to 10m). Common shrub species include salmonberry, red elderberry, thimbleberry, currant species, vine maple and beaked hazelnut.</p> <p>Sword fern may be common, with some spiny wood fern, lady fern and deer fern.</p> <p>Red huckleberry and salal may occur, but are confined to well decomposed, coniferous coarse woody debris substrates.</p> <p>Devil's club and skunk cabbage will occur on the wettest sites (depending on drainage and soil aeration).</p>	<p>Stands will be primarily even-aged with the exception of legacy trees left from stands that occurred prior to the last major disturbance.</p> <p>The spatial pattern will be moderately to strongly clumped and will be strongly influenced by micro-topography. Douglas-fir, western hemlock, bigleaf maple and grand fir will only occur on raised hummocks with well aerated soils.</p> <p>Conifers will be distinctly clumped both to promote long term desired structural variation and to allow growing space for short-lived hardwoods and shrubs.</p> <p>Western redcedar prevalence will increase with increasing soil moisture. The Douglas-fir component can be increased where these patches are large in area.</p> <p>Total trees/ha expected to progress beyond this stage will range from 400 to 800 ,with a modal value of 500</p>

<p>Immature 20 to 100 yrs</p> <p>20 Ha (8 %)</p>		<p>60 to 80% Cw 10 to 30% Hw 5 to 15% Ss 0 to 15% Fd 0 to 15% Mb 0 to 5% Ac 0 to 20% Dr</p>	<p>The understory will diminish during this stage where the conifer overstorey forms a closed canopy.</p> <p>The tall shrub mixture will persist only where understory light levels remain adequate, and may remain dense and vigorous under deciduous patches. Shrub height 2-3m (vine maple up to 10m).</p>	<p>Stands will continue to be primarily even-aged, but will be stratified in height by species (Dr, Mb, Ac > Fd Ss > Cw Hw). Red alder may form a significant portion of the canopy at younger ages in a patchy distribution, but will start to disappear beyond 70 to 100 years of age.</p> <p>These stands will have high levels of instability, particularly at higher stand densities.</p> <p>Total canopy cover may reach as high as 80 to 90% in areas dominated primarily by upland soil types, but may be as low as 40 to 50% where the water table is at or near the surface.</p> <p>Total trees/ha expected to progress beyond this stage will range from 200 to 400, with a modal value of 250</p>
<p>Mature > 100 yrs</p> <p>57 Ha (22 %)</p>		<p>60 to 90% Cw 10 to 30% Hw 5 to 15% Ss 0 to 15% Fd 0 to 20% Mb 0 to 5% Ac</p>	<p>Tall shrubs (salmonberry, thimbleberry, red elderberry vine maple) will be less prevalent than in juvenile stage, but will recover where previously diminished by closed conifer canopies.</p> <p>Diverse herbaceous plants increase over time in a patchy distribution. Common species include western trillium, false lily-of-the-valley, vanilla leaf, three-leafed foamflower, Indian pipe and twistedstalk.</p> <p>Swordferns and mosses may establish over extensive areas.</p> <p>Red huckleberry and salal continue to be present only on large coniferous coarse woody debris.</p> <p>Devil's club and skunk cabbage persist on wettest sites.</p>	<p>Stands ideally will be developing a multi-layered structure with the largest trees greater than 1 m diameter and ongoing patterns of gradual recruitment in the understory.</p> <p>The earliest gaps for new regeneration will occur in growing space recently vacated by windthrown conifers and dying red alder.</p> <p>Continuing patterns of natural random mortality will open further gaps over a period of many decades.</p> <p>Total canopy cover should range from 35 to 75%.</p> <p>Ideally, these stands will have 50 to 150 very large trees/ha, and 200 to 600 trees/ha in smaller size classes</p>



Target Conditions for Conifer Mesic (112 hectares – 43% of forest)


Maturity Class	Photo	Species Composition (% of Canopy)	Understory	Canopy
<p>Juvenile 0 to 20 yrs</p> <p>12 Ha (5 %)</p>		<p>40 to 70% Fd 5 to 20% Cw 10 to 30% Hw 0 to 15% Bg 0 to 15% Mb 0 to 5% Ss 0 to 25% Decid*</p>	<p>Red huckleberry is common, with salal becoming more dense and competitive on drier sites. Dull Oregon grape and rose species may occur. Common snowberry, black raspberry and trailing blackberry are likely on more disturbed soils.</p> <p>Bracken fern patches may occur, especially on more disturbed soils.</p> <p>Sword fern and tall shrubs (salmonberry, thimbleberry, red elderberry, currant species and vine maple) common on the more moist and nutrient enriched mesic sites. Herbaceous plants may include western starflower, twinflower, and bleeding heart.</p>	<p>Stands will be primarily even-aged with the exception of legacy trees left from stands that occurred prior to the last major disturbance.</p> <p>The spatial pattern of conifers will be moderately clumped based on planting pattern with natural regeneration of broadleaves between clumps.</p> <p>Clumps size will range from 4 to 20 trees.</p> <p>Total trees/ha expected to progress beyond this stage will range from 400 to 1000 , with a modal value of 500.</p>
<p>Immature 20 to 100 yrs</p> <p>41 Ha (16 %)</p>		<p>50 to 70% Fd 5 to 20% Cw 10 to 30% Hw 0 to 15% Bg 0 to 15% Mb 0 to 5% Ss 0 to 20% Decid*</p>	<p>Shrubs and ferns (see Juvenile Stands, above), persist mainly in open gaps, or under broadleaf canopy. Understorey shrubs and herbs may almost totally excluded where a conifer canopy becomes tightly closed. Mosses such as step moss, Oregon beaked moss and flat moss tend to dominate under such conditions.</p>	<p>Stands will continue to be primarily even-aged.</p> <p>Red alder and other broadleaves may form a significant portion of the canopy at younger ages in a patchy distribution, but will start to disappear beyond 70 to 100 years of age.</p> <p>Total canopy cover may reach as high as 80 to 90% at age 40 to 50, but should be starting to decline toward 65 to 75% thereafter.</p> <p>Total trees/ha expected to progress beyond this stage will range from 200 to 500, with a modal value of 250</p>

<p>Mature > 100 yrs</p> <p>59 Ha (23 %)</p>		<p>50 to 80% Fd 5 to 20% Cw 10 to 30% Hw 0 to 15% Bg 0 to 10% Mb 0 to 5% Ss 0 to 5% Decid*</p>	<p>Red huckleberry is common, with salal increasing on drier sites. Mosses are abundant. Dull Oregon grape and rose species may occur.</p> <p>Sword fern and tall shrubs (salmonberry, thimbleberry, red elderberry, currant species, vine maple) are less abundant as compared to juvenile stage, but are replenished where previously excluded by closed conifer canopies. These species are common on relatively moist and nutrient enriched mesic sites, in open gaps with adequate light.</p> <p>Rattlesnake plantain and coral root may occur.</p>	<p>Stands ideally will be developing a multi-layered structure with the largest trees greater than 80 cm diameter and ongoing patterns of gradual recruitment in the understory.</p> <p>The earliest gaps for new regeneration will occur in growing space recently vacated by dying red alder.</p> <p>Continuing patterns of natural random mortality will open further gaps over a period of many decades.</p> <p>Total canopy cover should range from 65 to 75%.</p> <p>Ideally, these stands will have 50 to 200 very large trees/ha, and 300 to 700 trees/ha in smaller size classes</p>
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* Decid refers to a mix of broadleaves such as bitter cherry, cascara, pacific crabapple, birch, pacific dogwood, vine maple, and willow



Target Conditions for Alder Forest (16 hectares – 6% of forest)


Maturity Class	Photo	Species Composition (% of Canopy)	Understory	Canopy
<p>Juvenile 0 to 20 yrs</p> <p>2 Ha (1 %)</p>		<p>70 to 100% Dr 0 to 20% Ac 0 to 20% Conifer 0 to 20% Decid*</p>	<p>Tall shrub mixture will develop on most (especially wetter) sites, reaching 2-3m height. Salmonberry will tend to dominate. Red elderberry, Indian plum, snowberry and trailing blackberry are also common.</p> <p>Sword fern may occur, with spiny wood fern, lady fern and deer fern, depending on moisture and presence in the previous stand.</p> <p>Herbaceous plants may be present, such as piggy-back plant, western starflower, and bleeding heart.</p>	<p>Stands will be primarily even-aged with the exception of legacy trees left from stands that occurred prior to the last major disturbance.</p> <p>The spatial pattern will be relatively uniform, with patchy distribution of conifers where they occur.</p> <p>A full canopy with near 100% cover will develop by age 10.</p> <p>Total trees/ha expected to progress beyond this stage will range from 500 to 2500, with a modal value of 2000.</p>
<p>Immature 20 to 70 yrs</p> <p>10 Ha (4 %)</p>		<p>70 to 100% Dr 0 to 20% Ac 0 to 20% Conifer 0 to 20% Decid*</p>	<p>Understorey species as above for Juvenile Stands.</p>	<p>Stands will continue to be primarily even-aged.</p> <p>A successional pattern toward a conifer stand will follow, possibly facilitated by planting.</p> <p>The broadleaved canopy will maintain near 100% canopy cover until age 60 to 70, after which it will slowly decrease as trees start to die.</p> <p>Total trees/ha expected to progress beyond this stage will range from 300 to 700, with a modal value of 600</p>

<p>Mature > 70 yrs</p> <p>4 Ha (2 %)</p>		<p>0 to 40% Dr/Ac/Decid*</p> <p>60 to 100% Conifer</p>	<p>Understorey species as above for Juvenile Stands.</p>	<p>The slow transition to a shade tolerant conifer stand (Cw, Hw, Bg) will be underway, with most of the broadleaved trees dying by age 120 to 140. In the absence of further disturbance, long term stand targets will evolve to those for conifer stands on similar sites.</p>
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Target Conditions for Mixed Forest (39 hectares – 15% of forest)



Maturity Class	Photo	Species Composition (% of Canopy)	Understory	Canopy
<p>Juvenile* 0 to 30 yrs</p> <p>15 Ha (6 %)</p>		<p>50 to 100% Mb 0 to 30% Conifer 0 to 20% Dr 0 to 20% Decid.**</p>	<p>Tall shrub mixture will develop, reaching 2-3m height. Salmonberry, red elderberry and trailing blackberry are common.</p> <p>Sword fern may occur, and may be accompanied by scattered spiny wood fern, lady fern and deer fern, depending on moisture and presence in the previous stand.</p> <p>Herbaceous plants may be present, such as western trillium, and bleeding heart.</p>	<p>Stands will be primarily even-aged with the exception of legacy trees left from stands that occurred prior to the last major disturbance.</p> <p>Mb will develop rapidly from stump sprouts with a spatial pattern dictated by the previous stand</p> <p>Shade tolerant conifers (Cw, Hw, Bg) will regenerated in a clumpy pattern either naturally or as facilitated by planting.</p> <p>Douglas-fir may be planted if large gaps occur in the maple cover.</p> <p>A full canopy with near 70 to 100% cover will develop by age 20.</p> <p>Total trees/ha expected to progress beyond this stage will range from 500 to 2500, with a modal value of 2000.</p>
<p>Immature 30 to 100 yrs</p> <p>15 Ha (6%)</p>		<p>50 to 100% Mb 0 to 30% Conifer 0 to 20% Dr 0 to 20% Decid.**</p>	<p>Understory species as above for Juvenile Stands; however tall shrub cover is often reduced over time. Swordfern will tend to persist. Licorice fern becomes established as an epiphyte on mature maple, and may occur on raised microsites underneath mature trees.</p>	<p>Stands will continue to be primarily even-aged, with height stratification by species.</p> <p>Some conifers may make it to the upper canopy, but these will be susceptible to windthrow.</p> <p>The broadleaved canopy will maintain near 100% canopy cover until age 60 to 70, after which it will slowly decrease as trees succumb to periodic wind breakage.</p> <p>Total trees/ha expected to progress beyond this stage will range from 300 to 700, with a modal value of 600.</p>


<p>Mature > 100 yrs</p> <p>9 Ha (3 %)</p>		<p>50 to 100% Mb 0 to 30% Conifer</p>	<p>Understory species as above for Immature Stands. Sword fern and Licorice fern are well established.</p>	<p>Large Mb with vase shaped crowns and epiphytes will develop, but may be subject to periodic wind breakage at a wide range of severity levels.</p> <p>The stand may be dominated by Mb for a very long period of time, with gradual infilling of a conifer understorey and recruitment of conifers into a canopy emergent layer.</p>
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* Fully juvenile stands of this type may be rare, as these stands will largely replace themselves through a process of coppicing as individual large trees are damaged by wind storms.

** Decid refers to a mix of broadleaves such as bitter cherry, cascara, pacific crabapple, birch, pacific dogwood, vine maple, and willow

Target Conditions for Dry, Exposed Ridge (4.5 hectares – 2% of forest)

Maturity Class	Photo	Species Composition (% of Canopy)	Understory	Canopy
<p>Juvenile* 0 to 30 yrs</p> <p>0.7 Ha (0.3 %)</p>		<p>50 to 80% Fd 0 to 30% Ra 0 to 30% Plc 0 to 20% Cw 0 to 10% Mb 0 to 10% Pw</p>	<p>Shrubs include salal and ocean spray, if present in the stand prior to disturbance. Oregon grape, red huckleberry, snowberry and rose species, kinnikinnick and hairy manzanita may be present.</p> <p>Grasses such as western fescue and common sweetgrass are typical, along with lichen species such as Cladina.</p>	<p>Stands will be primarily even-aged with the exception of legacy trees left from stands that occurred prior to the last major disturbance.</p> <p>The spatial distribution should be clumped to promote wind firmness, with trees in clusters of 5 to 20 trees.</p> <p>Open patches will promote development of tall shrubs.</p> <p>Arbutus in particular should be grown without close tree competition to avoid tall, slender trunks.</p> <p>Total trees/ha expected to progress beyond this stage will range from 300 to 800 , with a modal value of 400.</p>
<p>Immature 30 to 100 yrs</p> <p>0.4 Ha (0.2 %)</p>		<p>50 to 80% Fd 0 to 30% Ra 0 to 30% Plc 0 to 20% Cw 0 to 10% Mb 0 to 10% Pw</p>	<p>Shrubs, grasses and lichen continue to be present (as above for Juvenile Stands), but may decrease in vigour where tree canopy and root systems increase. Lichens become well established, along with mosses including step moss and Oregon beaked moss.</p>	<p>Stands will continue to be primarily even-aged with height stratification by species.</p> <p>Total canopy cover may reach as high as 60 to 70% at age 40 to 50, but should be declining toward 50 to 60% thereafter.</p> <p>Total trees/ha expected to progress beyond this stage will range from 200 to 400, with a modal value of 250.</p>

<p>Mature > 100 yrs</p> <p>3.4 Ha (1.3 %)</p>		<p>50 to 80% Fd 0 to 30% Ra 0 to 20% Plc 0 to 20% Cw 0 to 10% Mb 0 to 10% Pw</p>	<p>Understorey species as above for Immature Stands.</p>	<p>Stands ideally will be developing a multi-layered structure with the largest trees greater than 70 cm diameter and ongoing patterns of gradual recruitment in the understorey.</p> <p>Continuing patterns of natural random mortality will open further gaps over a period of many decades.</p> <p>Total canopy cover should range from 40 to 60%.</p> <p>Total trees/ha is expected to range from 150 to 350 trees/ha, with only rare very large trees.</p>
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