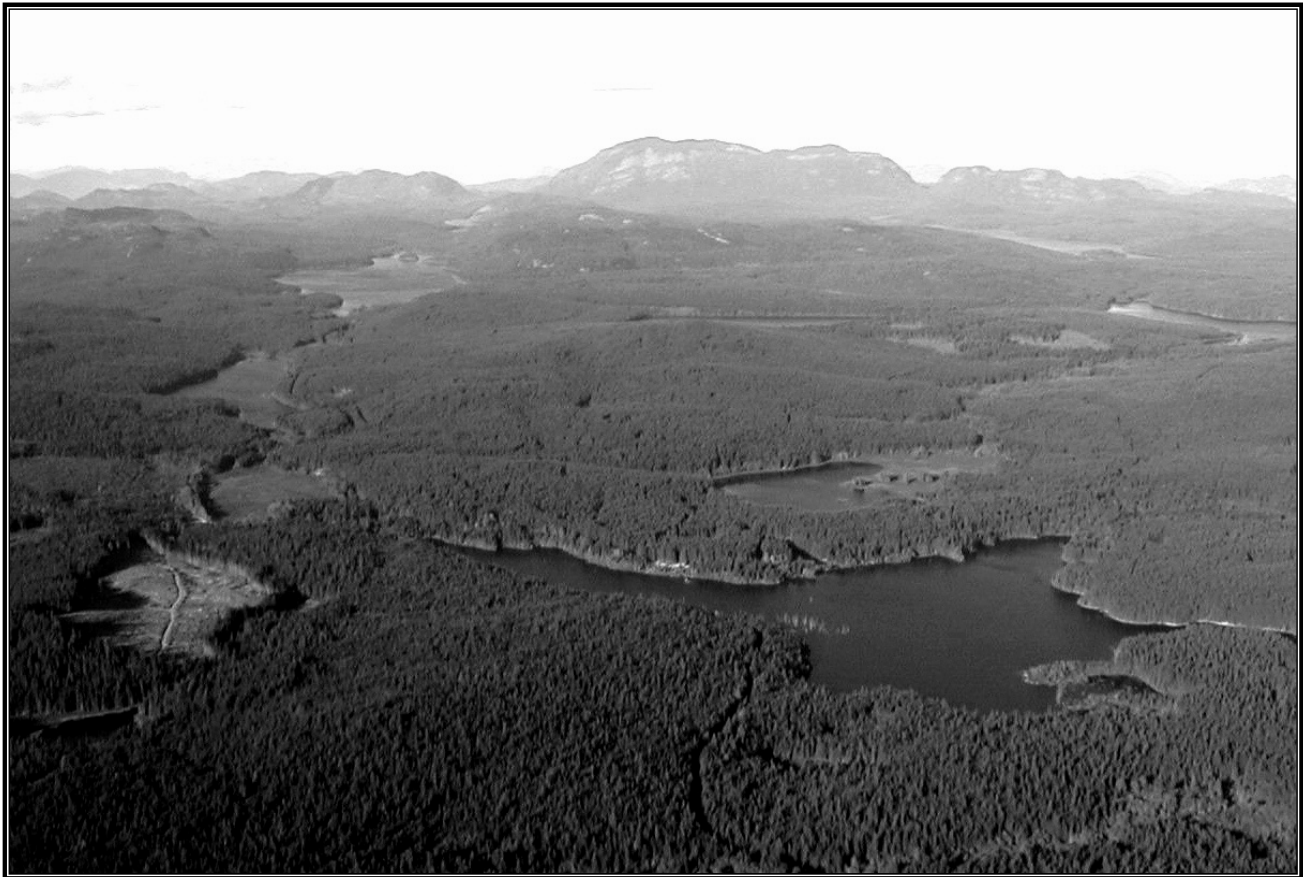


# **Ministry of Sustainable Resource Management**

## **Sayward Landscape Unit Plan February 27, 2003**



**Prepared by District Staff of the  
Ministry of Forests  
Ministry of Sustainable Resource Management  
Ministry of Water, Land and Air Protection**

**Sayward Landscape Unit Plan  
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## **1 Introduction**

### **1.1 Description of the Plan Area**

The Sayward Landscape Unit (LU) is located on the east coast of Vancouver Island extending north from Campbell River to the Village of Sayward and includes the following main drainages: Campbell River (excluding Quinsam), Mohun, Menzies, Pye, and Amor De Cosmos Creeks. This LU is bounded to the north and east by the Johnstone Strait and Discovery Passage, on the west by the Salmon River drainage, and on the south it is generally defined by the 50<sup>th</sup> parallel.

The majority of the area is lower elevation, gently rolling forested terrain interspersed with numerous lakes and streams. Biogeoclimatic mapping identifies the lower elevation areas as drier variants of the Coastal Western Hemlock Zone. A relatively small proportion of this LU, in the Mount Menzies and Prince of Wales Range areas north of Highway 19; is mapped as the Mountain Hemlock and Alpine Tundra Zones where higher elevations have lower mean temperatures and a more limited growing season. Douglas-fir forests are predominant in this LU reflecting the terrain and comparatively warm and dry growing seasons which occur here however, western hemlock forests are also common in cooler and moister marine-influenced and higher elevation areas. Other tree species found in this LU include red alder, western redcedar, yellow cedar, amabilis and grand fir, lodgepole pine, western white pine, sitka spruce, bigleaf maple, and black cottonwood.

The total area of this LU is 112,000 hectares and of this total, approximately 76,000 hectares are Crown ownership productive forest land. TFL 39, held by Weyerhaeuser, comprises approximately 6,000 hectares of this productive forest land total, while the remaining 70,000 hectares falls within the Strathcona Timber Supply Area (TSA). Interfor, Weyerhaeuser, and the Small Business Forest Enterprise Program are the major licensees currently operating within the TSA portion of the Sayward LU.

With the exception of higher elevation areas, logging or fire has disturbed most forests in the Sayward LU over the past century. Lower elevation areas were extensively harvested or burned over in the 1930s and 40s and the subsequent second growth forests have now reached the age where they are available for harvest. In these low elevation areas, old growth forests are limited to about two per cent of the land base; for the most part, these stands have been reserved from harvest until the Sayward Landscape Unit Plan has been completed. Old growth stands not reserved as a result of this Landscape Unit plan will become available for harvest after plan approval.

### **1.2 Purpose and Priority for Planning**

Landscape unit planning is being undertaken across the province of British Columbia. It is an important part of the Forest Practices Code of British Columbia Act (FPC), and is used to address landscape level biodiversity.

In addition to biodiversity considerations, the Sayward LU also includes, recreation, visual landscape, timber, domestic water supplies, and mineral values. Until recently, forest harvesting activities had a smaller presence while other values, including recreational uses and wildlife habitat, predominated. This existing balance is now anticipated to change as the old growth in the western portions of the Strathcona Timber Supply Area (TSA) decrease with harvest, and harvest levels in the Sayward LU area increase with the maturation of second growth.

In the absence of planning, this mix of uses and values continues to exist however there would be no planning framework to help find an appropriate balance among these values or to provide strategic-level guidance for operational planning where these values conflict with one another. In the most recent round of timber supply review for the Strathcona TSA, the Chief Forester of British Columbia acknowledged the priority to complete planning for this area in stating: "An early and comprehensive approach to land use and operational planning in the Sayward and Loughborough supply blocks is urgently required to accommodate the additional harvesting that must begin to take place in these areas consistent with the planned decline in the level of operations in the Kyuquot area."

### **1.3 Relationship to First Nations' Interests**

The Sayward Landscape Unit falls within the area of interest of the Hamatla Treaty Society and the asserted traditional territories of the Campbell River, Cape Mudge, Comox and Homalco First Nations. This planning process also acknowledges that First Nations may have important perspectives and information to offer for consideration with respect to resource management, particularly in relation to cultural heritage and traditional uses.

### **1.4 Planning Process, Consultation, and Timelines**

For the most part, this plan was developed in-house over a three year period by district staff of the Ministries of Forests, Sustainable Resource Management, and Water, Land and Air Protection. The only exception is for the TFL 39 portion of the Sayward LU, where the licensee, Weyerhaeuser, has participated in conjunction with government staff in undertaking this comprehensive landscape-level plan.

Over this period of time, there was consultation with First Nations and forest licence holders of the Strathcona TSA however there was no formal solicitation of public comment prior to advertising.

This plan was advertised for public, First Nations, licensee, and agency review and comment for a period of 60 days ending June 3, 2002. 48 submissions totalling more than 100 pages were submitted during the 60 day review period. All input was considered for incorporation into this plan. One outcome of this plan is the creation of the final Higher Level Plan Order (objectives denoted as "HLP") that has been approved by the Delegated Decision Maker from the Ministry of Sustainable Resource Management or the Statutory Decision Maker from the Ministry of Forests (see Appendix 4, Section 1). Upon filing of the Higher Level Plan Order a Notice of Impending Order will be published in local newspapers advising of the establishment of this Landscape Unit and its objectives and also the date upon which the Higher Level Plan Order takes effect, typically 4 months from the date of filing. In addition to this Higher Level Plan Order there are several legal objectives (objectives denoted as "LO") as determined by the Statutory Decision Maker from the Ministry of Forests (see Appendix 4, Section 2). Finally, there are other resource values, described in this plan as Plan Objectives, (objectives denoted as "PO"), that cannot be designated as legal objectives under current legislation (see Appendix 4, Section 3). These resource values are included in the plan text and endorsed by the Ministry of Forests; Ministry of Sustainable Resource Management; and Ministry of Water, Land, and Air Protection as best available information or strategies to be strongly considered when proposing resource development and/or alteration.

### **1.5 Relationship to Other Plans**

The legislative framework provides that operational plans, such as Forest Development Plans, must be consistent with objectives established under a Higher Level Plan Order for Landscape Units. In addition, these Landscape Unit objectives must be consistent with those established under a Higher Level Plan Order for Regional plans such as the Vancouver Island Land Use Plan (VILUP).

The Sayward LU falls within Resource Management Zone #31 (Sayward) of the VILUP. Under VILUP, this area was described as a General Management Zone for which there would be no specific Higher Level Plan direction and it was anticipated that general Forest Practices Code provisions would apply to this area. This area was described in some detail in the VILUP Summary document that emphasised integration of second growth timber values with non-timber values and noted that landscape level planning should identify opportunities for enhanced timber harvesting and second growth management.

This plan describes goals and objectives for Biodiversity, Wildlife, Timber, Recreation, Visual Resources, Fisheries, and Drinking Water resources found within the Sayward LU. It is important to note, however, that legislation directs that only those objectives noted in the plan that are established under the Higher Level Plan Order or that are made known under the FPC shall provide legislated direction to forest management activities on Crown Land. Any other information contained in the plan should be considered as highly recommended advice only.

### **1.6 Plan Review and Amendment**

This plan describes a desired future condition for each of the resource values within the Sayward LU. It is expected that the desired future condition will change as new and better information arises or as a result of changing social values.

In response to these concerns, objectives within the Sayward Higher Level Plan Order may be reviewed as necessary, and will be reviewed and updated at a time period no greater than five years from the date of establishment.

## 2 Goals, Objectives and Strategies

### 2.1 Biodiversity

The Sayward Landscape unit is comprised of six biogeoclimatic units, listed by the increased elevation at which they are located: CWHxm1, CWHxm2, CWHmm1, CWHmm2, MHmm1, and ATp. These ecosystems support a wide diversity of floral and faunal species. The dominant biogeoclimatic unit(s) by area in this landscape unit is the CWHxm1 and CWHxm2. These two variants display little differentiation in the field and consequently a decision was made to manage these two units as one, henceforth described as the CWHxm. The CWHxm has warm, dry summers and moist winters with relatively little snowfall. The other biogeoclimatic units have cooler summers and increased snowfall as elevation increases. The landscape unit is dominated by 40 – 80 year old forests, largely due to logging history. Old growth forests, greater than 250 years of age, are found most commonly at the higher elevations.

Age distribution (ha) of productive forest land within the Sayward Landscape Unit, TSA portion

BEC	Age Groups				Total
	0 - 40	41 – 80	81 - 250	251+	
CWHmm1	5006	2468	797	1392	9663 (14%)
CWHmm2	1851	240	151	1966	4208 (6%)
CWHxm	8985	41237	3214	1447	54883 (78%)
MHmm1	108	37	53	1106	1305 (2%)
Total	15950 (23%)	43987 (63%)	4224 (6%)	5920 (8%)	70082

The majority of the forested area in the Sayward landscape unit is described as being Natural Disturbance Type 2, as illustrated in the Biodiversity Guidebook and the *Forest Practices Code of BC Act*. These ecosystems are characterized as having infrequent stand initiating events such as wildfire or large scale windthrow. The forests of the Sayward, somewhat uniquely to the east coast ecosystems found on Vancouver Island, are also characterised by numerous streams and lakes

Following government policy, all landscape units on Vancouver Island have draft boundaries and a Biodiversity Emphasis Option (BEO) of low, intermediate, or high. The ranking of BEO for each LU determines, as per the Biodiversity Guidebook, the level of retention of area in Old Growth Management Areas. The following table shows the percent area retained by Biogeoclimatic Unit within the Sayward LU.

	Biogeoclimatic Unit			
	CWHmm1	CWHmm2	CWHxm	MHmm1
% retention	9%	9%	9%	19%

The Landscape Unit Planning Guide indicates that the OGMA percentages should be met, wherever possible, by selecting old growth stands (age > 250 years) from those portions of the landbase that do not contribute to timber supply. The majority of OGMA's selected (73%) in the Sayward LU are derived from Ungulate Winter Ranges (UWR's). Although these UWR's are not yet confirmed, it is expected that the boundaries will be confirmed as displayed on the Sayward Landscape Unit Map titled, Biodiversity and Wildlife. The OGMA polygons, as depicted, may change should the UWR boundaries change significantly during the confirmation process. Where OGMA's cannot be captured from the non-contributing landbase, old growth may be captured from the contributing- or timber-harvesting landbase. In the event that there is insufficient old growth to meet the prescribed targets described in the Biodiversity Guidebook younger, representative stands will be selected. This process has led to the areas described by the Sayward Landscape Unit Map titled, Biodiversity and Wildlife, and as shown in the data displayed in the following tables:

OGMA delineation in the Sayward Landscape Unit, by Biogeoclimatic Unit and tenure

BEC	TFL		TSA		Total	
	Target	Mapped	Target	Mapped	Target	Mapped
CWHmm1	47	40	870	882	917	922
CWHmm2	22	51	379	344	401	395
CWHxm	488	460	4944	4957	5432	5417
MHmm1	5	1	248	247	253	248
Total	562	552	6441	6430	7003	6982

OGMA delineation in the Sayward Landscape Unit, TSA portion, by Biogeoclimatic unit and age class

BEC	Age class				Total
	0 - 40	41 - 80	81 - 250	251+	
CWHmm1	256	223	94	309	882
CWHmm2	57	7	11	268	332
CWHxm	382	3512	395	668	4956
MHmm1	4	2	0	241	247
Total	699	3744	501	1486	6430

It is important to note that other landscape unit objectives for biodiversity, other than retention of old forest, are described in government policy such as the Landscape Unit Planning Guide. These include:

- Stand structure;
- Seral stage distribution;
- Landscape connectivity;
- Species composition; and
- Temporal and spatial distribution of cutblocks.

In addition to the initial focus on retention of old growth forest at the landscape level, we also propose in this plan to maintain stand structure through the retention of Wildlife Tree Patches (WTP's) at the stand level. We have calculated WTP's as follows:

<b>BEC Variant</b>	<b>Total PFL Area (ha)</b>	<b>THLB Area (ha)</b>	<b>THLB as % of Total PFL</b>	<b>THLB Area &lt; 81 yrs</b>	<b>THLB % &lt;81 yrs</b>	<b>WTP Targets</b>
CWHmm1	9,663	6,582	<b>68%</b>	5,890	<b>90%</b>	13%
CWHmm2	4,208	2,231	<b>53%</b>	1,696	<b>77%</b>	10%
CWHxm	54,883	43,758	<b>80%</b>	41,147	<b>94%</b>	14%
MHmm1	1,305	190	<b>15%</b>	87	<b>47%</b>	2%
<b>TOTAL</b>	<b>70,059</b>	<b>52,761</b>		<b>48,820</b>		

- BEC Variant WTP Targets are calculated assuming that all stands 80 yrs and younger have been harvested with no wildlife tree retention
- PFL = productive forest land;
- THLB = timber harvesting land base;
- WTP Targets = wildlife tree patch targets calculated using table A3.1 from Landscape Unit Planning Guidebook

According to existing government policy and direction the remaining four elements of biodiversity, seral stage distribution, landscape connectivity, species composition, and the temporal and spatial distribution of cutblocks, may be fully or partially implemented in the future provided that there are no additional impacts to timber supplies.

Although it is intended that OGMA's be maintained in perpetuity, it is also understood that the establishment of an OGMA will not have an impact on the status of existing aggregate, mineral and gas permits or tenures. Exploration and development activities are permitted in OGMA's. The preference is to proceed with this exploration and development in a way that is sensitive to the old growth values of the OGMA; however if exploration and development proceeds to the point of significantly impacting old growth values, then the OGMA will be moved.

### **Biodiversity Goals:**

1. Maintain or restore old forest structural elements
2. Maintain the diversity of habitats and ecosystems

### **Biodiversity Objectives:**

#### **Objective 1 (HLP)**

1. Maintain or recruit old growth forest attributes in designated old growth management areas (OGMA, OGMA/UWR for Deer, and OGMA/UWR for Elk), as shown on the attached Sayward Landscape Unit map, titled Biodiversity and Wildlife. Timber harvesting, including salvage, single tree selection, topping for cone harvesting, and commercial gathering of botanical forest products, will not be permitted within OGMA's except as specified in sections 2 and 3 below.
2. The Delegated Decision Maker (DDM) may allow operations to occur within an OGMA that are not be established as UWR for Deer or Elk for reasons such as but not limited to the following:



- (1) To prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMA's. This will be done in a manner that retains as many old growth forest attributes as possible.
  - (2) Construction of roads if no other practicable option exists.
  - (3) Partial-cut timber harvesting within immature (<100 years old) portions of OGMA's, where it can be demonstrated that harvesting will accelerate development of old growth forest attributes and improve the stand for biodiversity purposes, without compromising other resource values.
3. The following do not require the approval of the Delegated Decision Maker before proceeding:
- (1) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.
  - (2) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value live wildlife trees<sup>1</sup>) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements. These trees are to be retained on site for coarse woody debris.
  - (3) Intrusions<sup>2</sup>, less than 0.5 hectare in size for OGMA's that are not to be established as UWR for Deer or Elk.
  - (4) OGMA's that are not to be established as UWR for Deer or Elk that are >10 ha in size may be modified for operational reasons provided that replacement OGMA of like or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA such that OGMA ecological attributes and spatial distribution are maintained or improved in one of the following categories:
    - i) OGMA's  $\geq 10$  ha to <50 ha in size where the proposed development affects the OGMA by <5 ha,
    - ii) OGMA's  $\geq 50$  ha to <100 ha in size where the proposed development affects the OGMA by <10ha,
    - iii) OGMA's  $\geq 100$  ha in size where the proposed development affects the OGMA by <10%.
    - iv) Construction of  $\leq 500$ m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may deactivate or rehabilitate a temporary road or bridge site within four years after construction.
    - v) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by <0.5 ha.

### **Objective 2 (HLP)**

Maintain stand level structural diversity by retaining wildlife tree patches (WTP). Cutblocks for which harvesting has been completed by each licensee by tenure will maintain adequate amounts of wildlife tree patches to ensure that over any 5 year period, commencing on the date the objectives are established, the target percentage as noted in Table A is achieved. In addition:

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<sup>1</sup> High value live wildlife trees are characterised as having the presence of black bear dens or visible, large stick nests.

<sup>2</sup> Intrusions will occur where field engineering more precisely locates OGMA boundaries.

- (1) WTPs must be well distributed across the BEC subzone or variant.
- (2) No timber harvesting, including salvage or single tree selection, is to occur within Wildlife Tree Patches.
- (3) WTPs must include, if present, live or dead veteran trees (excluding danger trees), or remnant old growth patches.
- (4) WTPs must include larger trees for the stand and any existing moderate to high value wildlife trees (excluding danger trees).
- (5) BEC subzones and/or variants will be determined by site plan information.

**Table A. Wildlife Tree Retention by BEC subzone in the Sayward Landscape Unit.**

<b>BEC Subzone/Variant</b>	<b>% Wildlife Tree Retention</b>
CWHmm1 (Coastal Western Hemlock, Submontane moist maritime)	13%
CWHmm2 (Coastal Western Hemlock, Montane moist maritime)	10%
CWHxm (Coastal Western Hemlock Very Dry Maritime)	14%
MHmm1 (Mountain Hemlock, Windward moist maritime)	2%

## 2.2 Wildlife

The area of the Sayward LU supports a wide variety of wildlife species. Management of habitat for Roosevelt elk and black-tailed deer is a particular focus for this landscape unit plan as is reflected in the significant percentage of old growth management area which is mapped to protect critical winter ranges for deer and elk (approximately 73%). Spring forage management for black-tailed deer, and elk visual cover areas are also proposed.

Queen Charlotte goshawks have been found nesting within this LU, and one territory in particular, located at Paterson Lake, is one of the most successfully used nesting territories on Vancouver Island. This particular territory has been designated as a Wildlife Habitat Area under a process which is separate from this landscape unit plan. Areas near Pye and Surprise Lakes are also currently being evaluated for inclusion as WHA's under this separate process.

Marbled Murrelets are also found within this area. However, extensive harvest and forest fire history throughout much of the Sayward landscape unit has resulted in very few large patches of remnant old seral forest in the CWH xm1, xm2, mm1 and mm2 biogeoclimatic units. This paucity of old forest limits the opportunity to identify and conserve significant areas of potential marbled murrelet nesting habitat. The overall management strategy for marbled murrelets in the Sayward landscape unit is clearly a long term one of habitat recruitment. Exceptions are for a few old seral OGMA's which may contain some potentially suitable nesting habitat, particularly OGMA's located on Menzies Mountain and in the Prince of Wales Range. These may be identified through more detailed air photo and field assessment. In addition, many of the valley bottom mid-seral elk winter ranges will likely form large tree limbs with suitable moss-covered nesting platforms for marbled murrelets, as old growth attributes are developed.

Habitat for all other wildlife species is to be more generally managed based upon the stand and landscape level biodiversity objectives outlined in section 2.1 (Biodiversity) of this plan, and consistent with the coarse filter approach to managing for biodiversity.

**Wildlife Goal:**

1. To provide critical habitat attributes for deer and elk populations

**Wildlife Objectives:****Objective 3 (PO)**

Maintain or recruit forest structure important as ungulate winter range<sup>3</sup>, in Old Growth Management Areas designated as Ungulate Winter Ranges and identified on the Sayward Landscape Unit map titled, Biodiversity and Wildlife. Timber harvesting, including salvage, single tree selection, topping for cone harvesting, and commercial gathering of botanical forest products will not be permitted within OGMA's identified as UWR's, except as allowed by the Statutory Decision Maker after these areas are confirmed under Section 69 of the Forest Practices Code, Operational Planning Regulation.

**Objective 4 (HLP)**

Provide for spring forage adjacent to Ungulate Winter Ranges/Deer, as indicated on the Sayward Landscape Unit map, titled Biodiversity and Wildlife by managing seral stages as follows:

- Identifying Ungulate Winter Ranges/Deer within the Strathcona Timber Supply Area and determining all areas within 2 km that are on slopes 40 to 100% and with an aspect of exposure from 90 through 270 degrees and, ensuring that no more than 25% of this area be younger than 20 years old at any point in time; or
- Identifying Ungulate Winter Ranges/Deer within Tree Farm Licence 39 and managing as per the Weyerhaeuser Standard Operating Procedure for the management of critical spring forage adjacent to black-tailed deer winter ranges, dated and approved July 9, 2001.

**Objective 5 (HLP)**

Manage stand structure and provide hiding cover for elk in the Elk Visual Cover Areas as identified on the attached Sayward Landscape Unit map, titled Biodiversity and Wildlife, by:

- Maintaining at least 50% of the forested area of each Elk Visual Cover Area at greater than 5 metres in height; and
- Prohibiting further harvesting adjacent to the major riparian feature (swamp, lake or stream) identified on the Sayward Landscape Unit map, titled Biodiversity and Wildlife, within the Elk Visual Cover Areas until the forest on the opposite side of the riparian feature exceeds the 5 metre height requirement for a lateral distance of 100 m from the riparian feature.

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<sup>3</sup> Forest structure important to the function of an ungulate winter range is defined by large tree canopies effective in intercepting and retaining snowfall, clumped groups of conifers, rock outcrops, and scattered openings with herb and shrub layers present. Also, refer to, *Deer and Elk Habitats in Coastal Forests of Southern British Columbia*, Ministry of Forests and Ministry of Environment, 1990.

## 2.3 Recreation

The Sayward Forest is an extremely valuable recreation resource. It contains the largest concentration of lakes and the only circular canoe route on Vancouver Island, world class marine activities, karst/cave areas, numerous recreation features, cultural and heritage resources and significant scenic values. The Sayward Landscape Unit currently has 3 Provincial Parks, 1 BC Hydro Recreation Area, 42 developed Forest Service Recreation Sites, 25 undeveloped sites, and numerous trails. In addition, there are hundreds of kilometres of logging road and old railway logging grades that make this area accessible to a wide range of users.

The forests of the Sayward Landscape Unit are the first significantly sized areas of accessible Crown land north of Victoria on the east side of Vancouver Island. This area, with the completion of the new Inland Island Highway in 2001, has been made more accessible to potential users. Population growth in communities on the east coast of Vancouver Island is projected to be between 20 and 50% in the next decade (Vancouver Sun Business Section March 22, 2002), and public demand is expected to increase accordingly.

This increase in recreation demand coincides with resource dependant communities like Campbell River seeking to diversify their economies by promoting and supporting recreation and tourism for sustainable economic development.

The large fire of 1938 burned a large area of the Sayward Forest. This resulted in large areas of immature forest which, for a time, saw relatively little timber harvesting, however as these stands reach maturity, and as harvest shifts in the Strathcona TSA from the west- to east-coast areas, harvesting levels are expected to increase. Hence, the public will experience change from the minimal alteration and interference with their activities that has occurred over the last 60 years. Public demand is for a range and diversity of recreation settings and opportunities. Increased timber harvesting will inevitably change the existing ratios of these values. New logging roads and improved access increase use levels and change is evident by visible alteration to the landscapes. The long-term vision for the recreation component of the Sayward LU plan is to manage, protect and conserve recreation resources by proposing objectives that provide a ratio of diverse recreation opportunities, settings and experiences.

The key building blocks to this approach were as follows:

- Resource inventories were conducted to identify Recreation Features, Scenic Areas, Karst/Cave values, and Fisheries Resources;
- Key areas of recreation significance in the Sayward Forest have been identified and divided into Recreation Resource Units (RRU's) and the existing recreation settings and experiences mapped;
- User profiles were developed and demand studies were conducted;
- This information was then combined with the Recommended Visual Quality Classes (RVQC's), access management concerns, economic and environmental factors to determine the proposed settings and experiences;
- Each unit has been assigned a recommended experience and setting management objective;
- Recreation settings for the lakes are consistent with the recommended fisheries management objectives assigned by the Ministry of Water, Land and Air Protection. Recreation values of lesser significance will be captured under the Recreation Features Inventory; and

- Areas of constraint to development consistent with the Timber Supply Review have been mapped. They identify areas where timber harvesting and road building will be restricted unless it is consistent with the recreation objectives.

### Recreation Goals:

1. To manage, protect and conserve the public recreation resources.
2. To maintain an appropriate ratio and distribution of opportunities, settings and experiences relative to public demand.
3. To ensure that public recreation resources are integrated into resource development planning.

### Recreation Objectives:

#### **Objective 6 (PO)**

To provide and maintain a range of recreation experiences and settings as shown on the Sayward Landscape Unit map, titled Recreation Resource Units and as described in the following table;

RRU setting & experience	Description
natural	<ul style="list-style-type: none"> <li>• trail or boat access only with nil to very low level of developed or directed access to the recreation feature;</li> <li>• nil to minimal level of public recreation site development;</li> <li>• nil to very low level of commercial recreation tenures; and</li> <li>• RVQC range of Preservation to Retention.</li> </ul>
natural roaded	<ul style="list-style-type: none"> <li>• very low to low level of developed or directed access to the recreation feature;</li> <li>• minimal to basic level of public recreation site development;</li> <li>• very low to low level of commercial recreation tenures; and</li> <li>• RVQC range of Retention to Partial Retention</li> </ul>
modified	<ul style="list-style-type: none"> <li>• low to moderate level of developed or directed access to the recreation feature;</li> <li>• basic to standard level of public recreation site development; and</li> <li>• low to moderate level of commercial recreation tenures; RVQC range of Retention to Partial Retention</li> </ul>
developed	<ul style="list-style-type: none"> <li>• moderate to high level of developed or directed access to the recreation feature;</li> <li>• standard to enhanced level of public recreation site development;</li> <li>• moderate to high level of commercial recreation tenures; and</li> <li>• RVQC range of Partial Retention to Modification</li> </ul>

**Objective 7 (PO)**

Manage for recreation values within those areas shown as 100% Recreation Netdown polygons on the Sayward Landscape Unit Map titled, Recreation Constraints, by:

- Prohibiting timber harvesting, including salvage, unless such activities are complementary to the recreation setting and experience as determined by the Statutory Decision Maker; and
- Avoiding road construction unless no other practicable options exist as determined by the Statutory Decision Maker.

**Objective 8 (HLP)**

Harvesting and/or road building within 10 m of the running surface of existing trails within the Snowden Forest, as shown on the Sayward Landscape Unit Map titled, Recreation Constraints, requires the prior approval of the Delegated Decision Maker.

**2.4 Visual Landscape**

The *Operational Planning Regulations* (OPR) defines "scenic area" as any visually sensitive area or scenic landscape identified through a visual landscape inventory (VLI) or planning process carried out or approved by the district manager.

We are currently managing visual resource values under the Forest Practices Code as "Known Scenic Areas" with Recommended Visual Quality Classes (RVQCs) or Recommended Visual Quality Objectives (RVQOs). This has provided operational flexibility while ensuring visual values remain important. Recent changes to the Forest Practices Code show a move to "results based" performance measures. Previously, development plans dealt with visuals; now they are done at the stand level. There is a new emphasis on monitoring and enforcement to achieve compliance. This new approach will lead to less flexible and more restrictive management which fits with Known Scenic Areas with Established Visual Quality Objectives (VQOs). Meeting the established VQO requires cutblock design that follows line and form of the visual landscape units. The Visual Impact Assessment Guidebook describes procedures to be used in cutblock design.

The plan is recommending that the District Manager establish VQO's for all known scenic areas in the Sayward Forest Landscape Unit. The legislation and regulations require assessments and other actions for known scenic areas with established VQOs. This provides clear direction to licensees, staff and the public.

The recommended visual quality objectives are consistent with the Recreation Resource Unit objectives of this LU plan as well the short- and long-term vision for recreation management and development. The VQO's also assist in providing management for fisheries values by regulating the rate of harvest and potential impact in riparian areas proximate to lakes to the equivalent of a four(or greater)-pass harvest system.

**Visual Landscape Goal:**

1. To manage the visual resources with consideration to socio-economic interests and concerns.

**Visual Landscape Objective:****Objective 9 (LO)**

To manage visual resources, as shown on the Sayward Landscape Unit map, titled Visual Quality Objectives, and described in the following table, as known scenic areas with established visual quality objectives.

Visual Quality Objective	Brief Definition	Perspective View Denudation %
Preservation (P)	No visible logging	0%
Retention (R)	Logging is visible but not evident	0 – 1.5%
Partial Retention (PR)	Logging is visible but subordinate to landscape character	1.6 – 7.0%
Modification (M)	Logging is dominant but naturally appealing	7.1 – 18%

**Visual Landscape Strategy:**

- Identify harvest opportunities that would open up or enhance the views along main road systems.

**2.5 Fisheries/Riparian**

The fisheries resources in the area of the Sayward Landscape Unit have been extensively inventoried over the past 10 years. From a strategic planning perspective, some of the more important outcomes of this inventory process have been: a lakes inventory which identifies fish species, genetically unique populations, and a general measure of the capability of these lakes to support a fishery and also, the identification of stream reaches which are important for spawning fish. Lake stocking records also record which fish species had been planted in various lakes. Using this inventory data, the lakes within the Sayward LU have been placed into one of five classes.

Genetic Refuge – Approximately ten lakes in the plan area are identified for special management to protect rare or genetically isolated populations of fish species. These are typically small lakes located at the headwaters of drainages; records indicate that these lakes have never been stocked. From a biological perspective, these populations are important to manage in order to maintain species diversity and to ensure options are maintained for future fisheries management. The general goal for management is to limit access to these lakes in order to prevent accidental introduction of non-native fish populations and to minimize angler pressure on their fish populations.

Unique Species Assemblage – Approximately seven lakes in this area support rare or unique assemblages of two or more fish species. Examples of these rare combinations are cut-throat/kokanee and cut-throat/dolly varden. Most of these lakes could be classed as small to medium in size and with one exception, have not been stocked with hatchery fish. From a biological perspective, these populations are important to manage in order to maintain species diversity and to ensure options are maintained for future fisheries management. The general goal for management is to maintain limited access to these lakes in order to minimize angler pressure on their fish populations.

Quality Fishery – Approximately six small lakes in this area have been identified as priority areas to manage a quality fishery. These lakes do not support biologically unique populations. However, they have been identified as having capability to support a unique fishery experience. The general goal for management is to provide and maintain a limited fishery for larger than average sized wild fish in a natural setting.

Hatchery Augmented– Approximately 17 lakes of various sizes within this area are or have been managed to provide a hatchery augmented fishing experience. The general goal for management is to provide a variety of angling opportunities in a range of settings where high angling use exceeds the natural recruitment capability of the lake.

General Fishery - Approximately 40 lakes of various sizes are managed as a general fishery where the overall goal for management is to provide a variety of angling opportunities in a range of settings in lakes that rely on natural recruitment.

Barren– These are all small lakes where sampling did not record the presence of any fish species.

Critical Spawning Reaches – Critical spawning reaches have been identified on Miller, Greenstone, Patterson, Mohun, Amor de Cosmos and Roberts Creeks. The general goal for management of these reaches is to maintain the quality and quantity of both water and spawning gravels.

#### **Fishery/Riparian Goals:**

1. Conserve wild fish stocks
2. Protect and manage fish habitat
3. Manage angler demand for a variety of angling experiences, within the context of wild fish conservation.

#### **Fisheries Objectives:**

##### **Objective 10 (LO)**

To manage for fisheries values within those areas noted as Riparian Reserve Zones as shown on the Sayward Landscape Unit map, titled Lakeshore Management by:

- Prohibiting timber harvesting, including salvage, unless such activities occur within established recreation sites and/or trails and are complementary to the recreation setting and experience as determined by the Statutory Decision Maker; and
- Prohibiting road construction unless no other practicable options exist as determined by the Statutory Decision Maker

And:

To establish Riparian Management Zones for the following lakes within the Sayward Landscape Unit: Mclvor, Beaver, Comeback, Hemp, Lawnchair, Lily, Little Mud, Pocket, Reed, Sedge, Shadow, Smolt, Star, and Whistlepunk; and:

- To ensure that for a distance of 50 metres from the timbered edge surrounding the following lakes within the Sayward Landscape Unit: Mclvor, Beaver, Comeback, Hemp, Lawnchair, Lily, Little Mud, Pocket, Reed, Sedge, Shadow, Smolt, Star, and Whistlepunk, that no more than 25% of the forested area be less than 5 metres in height.



**Objective 11 (PO)**

To manage for fisheries values for those lakes shown on the Sayward Landscape Unit map titled, Lakes Classification, and as described in the following Table:

Classification	Objective(s)
Genetic Refuge	<p>To protect isolated populations of red and blue listed fish species by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 3 angler days per hectare of lake surface per season;</li> <li>• Maintaining a no kill fishery;</li> <li>• Ensuring no stocking in lake waters or lake tributaries;</li> <li>• Ensuring no commercial fishing;</li> <li>• Disallowing new permanent access within 200 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker;</li> <li>• Disallowing new temporary access within 50 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker;</li> <li>• Preventing direct vehicle access to the lakeshore perimeter; and</li> <li>• Preventing commercial development or commercial recreation within the Riparian Reserve Zone, as depicted on the Sayward Landscape Unit Map titled, Lakeshore Management.</li> </ul>
Unique Species Assemblage	<p>To protect assemblages of two or more species of fish in rare or unique combinations in the same waterbody by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 3 angler days per hectare of lake surface per season;</li> <li>• Maintaining a no kill fishery;</li> <li>• Ensuring no stocking in lake waters or lake tributaries;</li> <li>• Ensuring no commercial fishing;</li> <li>• Disallowing new permanent access within 200 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker;</li> <li>• Disallowing new temporary access within 50 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker;</li> <li>• Preventing direct vehicle access to the lakeshore perimeter; and</li> <li>• Preventing commercial development or commercial recreation within the Riparian Reserve Zone, as depicted on the Sayward Landscape Unit Map titled, Lakeshore Management</li> </ul>
Quality Fishery	<p>To provide for and maintain a fishery for larger than average size wild fish in a natural setting by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 15 angler days per hectare of lake surface per season;</li> <li>• Preventing angling guide use exceeding 15% of total angling use;</li> </ul>

	<ul style="list-style-type: none"> <li>• Preventing direct vehicle access to the lakeshore perimeter;</li> <li>• Ensuring no stocking in lake waters or lake tributaries; and</li> <li>• Disallowing new permanent access within 200 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker.</li> </ul>
Hatchery Augmented	<p>To provide for a variety of angling opportunities where angling use exceeds the natural recruitment capability by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 25 angler days per hectare of lake surface per season;</li> <li>• Preventing angler guide use exceeding 20% of total angling use;</li> <li>• Continuing to stock in waters accessible to fish; and</li> <li>• Disallowing new permanent access within 50 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker.</li> </ul>
General Fishery	<p>To provide a variety of angling opportunities for public recreation in lakes that rely on natural recruitment by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 25 angler days per hectare of lake surface per season;</li> <li>• Preventing angler guide use exceeding 20% of total angling use;</li> <li>• Ensuring no stocking in lake waters or lake tributaries; and</li> <li>• Disallowing new permanent access within 50 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker</li> </ul>

### **Objective 12 (HLP)**

To manage stand structure and protect Critical Stream Reaches, as shown on the Sayward Landscape Unit map, titled Lakes Classification, and Small Spawning and Rearing Streams (S4) by:

- Retaining all windfirm trees with roots embedded in the bank; and
- For S4 streams, retaining 50% of the stems, representative of species, age and size, within 10 m of the channel.

### **Fisheries Strategies:**

- Conduct a thorough inventory of small fish-bearing streams adjacent to lake sin the Sayward Landscape Unit;
- Ensure that stream inventories are conducted when streams are likely to be flowing (November – April);
- Minimise debris deposition in the stream by falling and yarding away from the channel unless it is determined to be non-practicable by the Statutory Decision Maker;
- Consider retention of an enhanced, undisturbed riparian reserve zone along stream reaches displaying very high productivity for fish;
- Restrict water allocation and non-forest uses along critical stream reaches;
- Implement special angling restrictions or total closures to protect fish populations; and

- Prevent public or commercial recreation development or use in the riparian management area of critical stream reaches.

## 2.6 Drinking Water

It is critical to note that, ***“British Columbians are used to having safe drinking water at a low cost, and we tend to take this for granted. Other jurisdictions are not so fortunate. Many have to subject their drinking water to intensive purification processes, because their sources are polluted. Certainly, failure to protect drinking water sources carries a large price tag in terms of capital and maintenance expenditures for treatment systems”*** excerpt from “Protecting Drinking Water Sources”, George L. Morfitt, FCA, Auditor General, British Columbia, March 1999.

The largest and most significant licensed drinking water source in the area encompassed by the Sayward LU plan is John Hart Lake. It supplies the District of Campbell River with water for water for a population of approximately 35,000. John Hart Lake is part of the Campbell River drainage and is also used as a storage reservoir for BC Hydro’s power generation facility.

In May 2001, John Hart Lake was designated as a community watershed under Section 41(10) of the Forest Practices Code Act (FPC). The FPC community watershed designation applies to the drainage area between Ladore Dam at the outlet to Lower Campbell Lake and the John Hart Dam where the community water supply is withdrawn. As forest activities within this area may have impacts on drinking water quality, community watershed protection was required.

In July 2001, the District of Campbell River finalized a watershed management plan that identifies risks to source drinking water quality and recommends strategies to ensure a high quality supply. Although the District has regulatory responsibility for providing safe drinking water, they have neither jurisdiction over activities or land ownership within this large multi-use watershed. Therefore, the District engaged public land managers, private land owners, and other stakeholders to develop strategies to minimize risks while recognizing their interests. The aforementioned community watershed designation with subsequent provincial forest access and recreation standards was one of the recommended strategies.

As of September, 2002, the only other FPC designated community watershed within the Sayward Sustainable Resource Management Plan is Barron Creek serving Race Point residential area. With the exception of the Island Highway, the watershed is privately owned, primarily within the Forest Land Reserve.

In addition to FPC designated community watersheds, there are also drinking water supply areas that may fall under evolving drinking water protection legislation. These areas could include water systems for mobile home parks, resorts and work-camps that did not meet the FPC community watershed definition. FPC regulations require known licensed domestic water supply intakes and related water supply infrastructure to be identified and considered in forest activities on FPC regulated lands. It is anticipated that evolving legislation would provide further direction to legislative authorities, landowners, water purveyors and other stakeholders of their rights and responsibilities in protecting all important drinking water sources.

Community watersheds designated under the FPC and water supply intakes licensed for human consumption under the Water Act are shown on the Sayward Landscape Unit plan map titled, Drinking Water.

**Drinking Water Goal**

1. Maintain or improve drinking water quality

NOTE: These objectives and strategies only apply to forestry activities on Crown lands or lands regulated under provincial jurisdiction.

**Drinking Water Objectives:****Objective 13 (PO)**

Identify community watersheds designated under the Forest Practices Code of British Columbia Act and other water supply areas defined by drinking water protection legislation and as depicted on the Sayward Landscape Unit Map titled, Drinking Water.

**Objective 14 (PO)**

Ensure that activities in community watersheds identified in Objective 13 of this Landscape Unit Plan occur (i.e., planned, conducted, and monitored) such that they are complementary to the maintenance or improvement of drinking water quality by:

- Preparing and implementing access management and deactivation plans;
- Managing recreational uses on Crown land so that drinking water quality is the primary objective; and
- Applying drinking water protection measures occurring in legislation.

**Objective 15 (PO)**

Identify individual domestic water supply intakes and other water supplies licensed for human consumption that are not identified in Objective 13 of this Higher Level Plan Order.

**Drinking Water Strategies:**

- Review the District of Campbell River Watershed Management Plan for approval as a drinking water protection plan under the Drinking Water Protection Act.
- Review the District of Campbell River Watershed Management Plan for risk reduction measures to be employed in Risk Zones A, B, and C, as depicted on the Sayward Landscape Unit Plan map titled, Drinking Water.
- Manage recreation as per the Campbell River Watershed Management Plan.
- Provide updated data and spatial coverage of community watersheds and water supply areas for Internet access or download.
- For areas outside of Crown Lands or provincial jurisdiction, water purveyors should undertake a risk assessment and develop partnerships with landowners or users to maintain or improve drinking water quality.
- Direct forest oriented public recreation activities away from the shoreland around John Hart Lake between the Ladore Dam and John Hart Dam.
- Enforce the “no camping zone” and road closures around the shoreland of John Hart Lake as established by the District Manager under Section 105 of the FPC, effective October 15, 2001.
- Manage recreation trails within the John Hart Lake CWS so as to limit the creation of water-borne sediments.
- Provide updated data and spatial coverage of water users licensed under the Water Act.
- Reduce the impact of forest development on streams licensed for human consumption by applying the stream side management provisions to S5 and S6 streams as per the following:

- a) Stream side management provisions:
  - i) the stream side management zone will extend from the edge of the stream channel bank or the outer edge of the active floodplain, to a minimum distance of 30 metres on each side of the stream, or to the top of the inner gorge whichever is greater; and
  - ii) specific measures to safeguard water for human consumption must be described for activities in the stream side management zone.
  
- b) The provisions apply to:
  - i) a stream on which there is a water intake that is licensed for human consumption and is being utilized for human consumption; and
  - ii) a stream on which the location of the water intake that is licensed for human consumption has been made known.

## 2.7 Timber

The Sayward landscape unit comprises a significant contribution to timber supply and local employment. Lower elevations are dominated by Douglas-fir and Western hemlock, with smaller amounts of western red cedar and red alder. Increasing elevation results in shifts to higher densities of western hemlock, Amabilis fir, and yellow cedar. Timber Supply projections for this area show an increasing amount of harvest being derived from this area. The current harvest level of approximately 300 000 m<sup>3</sup> (year 2001) is expected to increase with a decreased reliance on harvest in the Kyuquot Supply Block of the Strathcona Timber Supply Area.

As a result of past harvesting, the Sayward landscape unit has approximately 90% of the forested area in second growth. Many of the more productive sites at lower elevations have had spacing, fertilizing, and commercial thinning treatments applied to them. These investments in stand quality and growth and yield make these areas increasingly valuable for harvest.

The most recent harvest development within the Sayward LU has been concentrated north and east of Highway 19, which generally bisects the landscape unit into a northern and southern half. Future harvest development, as envisioned under this plan, is expected to occur across the entire landscape unit area, capturing the maximum value from the timber harvesting landbase while managing and protecting for biological and social values.

In concert with direction from the VILUP, this plan investigated the potential to increase maximum cutblock size in those areas not encompassed by an OGMA, Community Watershed, Visual Quality Objective, Ungulate Winter Range, Elk Hiding Cover Area, Recreation Resource Unit, Recreation Constraint Area, or Lakeshore Management Zone. In the Sayward LU, 26131 ha in the TSA portion and 3645 ha in the TFL 39 portion would be potentially subject to cutblocks larger than 40 ha. This represents approximately 52% and 36% of the Timber Harvesting Landbase and Productive Forest area respectively.

The net result of this planning exercise, from a timber supply perspective, was to reduce the Timber Harvesting Landbase, relative to the TSR2 standard, by approximately 80 hectares. This represents a reduction in the Timber Harvesting Landbase of approximately 0.15%.

**Timber Goal:**

To maximize timber harvest while considering the range of spatial and temporal constraints to timber supplies.

**Timber Objective:**

**Objective 16 (HLP)**

To establish a patch size objective and pursue enhanced timber harvesting opportunities, within areas not subject to integrated resource management (i.e., ungulate winter ranges, elk hiding cover areas, old growth management areas, recreation resource units, visually sensitive landscapes<sup>4</sup>, recreation constraint areas, lakeshore management zones, and designated community watersheds) and as shown as Non-constraint Areas on the Sayward Landscape Unit map titled, Non-constraint Areas, by allowing cutblocks up to, but not exceeding 80 ha in size<sup>5</sup>.

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<sup>4</sup> Visually sensitive landscapes refers to areas with an established VQO of Preservation, Retention, or Partial Retention. Where a proposed cutblock is not entirely within the Non-constraint Areas the portion of the cutblock within the area subject to integrated resource management is restricted to an upper limit of 40 ha within the cutblock size limit of 80 ha

<sup>5</sup> Size refers to the net area to be reforested..

## Appendices

### Appendix A Old Growth Management Area Descriptions

OGMA Number	Forested Area (ha)	Deer/Elk UWR	Location and Description
3	21		<ul style="list-style-type: none"> <li>Above Camp Point - steeper north facing slope, representation within CWH mm2 (high elevation)</li> </ul>
5	14		<ul style="list-style-type: none"> <li>Near Palmer Bay - Windfirm (?) patch of old growth adjacent to rocky beach</li> </ul>
6	112	Deer	<ul style="list-style-type: none"> <li>Bear Bight area - Higher elevation forest on suitable slope &amp; aspect; old growth remnants</li> </ul>
7	69	Deer	<ul style="list-style-type: none"> <li>Bear Bight area - Higher elevation forest on suitable slope &amp; aspect; old growth remnants</li> </ul>
8	103		<ul style="list-style-type: none"> <li>Above Palmer Bay - Steeper north-east facing slopes; representation within CWH mm2</li> </ul>
9	81	Deer	<ul style="list-style-type: none"> <li>Ripple Point area - Higher elevation; predominantly young second growth on suitable slope and aspect; old growth remnants at upper elevations</li> </ul>
10	29	Deer	<ul style="list-style-type: none"> <li>Ripple Point area - Higher elevation; predominantly young second growth on very suitable slope and aspect; old growth remnants at upper elevations</li> </ul>
11	12		<ul style="list-style-type: none"> <li>Little Bear Bay - taller, predominantly old growth forest</li> </ul>
12	4		<ul style="list-style-type: none"> <li>Ripple Point Area – small old growth patch adjacent to small lake</li> </ul>
13	27		<ul style="list-style-type: none"> <li>Complex of old growth and second growth on lower Pye Creek, estuary, waterfall, adjacent to Little Bear Bay recreation site</li> <li>Includes large specimen Fir vets which have significant recreational values</li> </ul>
14	60	Deer	<ul style="list-style-type: none"> <li>East of McCreight Lake – predominantly second growth; old growth remnants at higher elevations</li> </ul>
16	123	Deer/Elk	<ul style="list-style-type: none"> <li>Pye Creek – Predominantly upland forest; old growth remnants and veteran Fir scattered throughout.</li> </ul>
17	18		<ul style="list-style-type: none"> <li>Little Bear Bay area - good quality old growth Fir stand on knoll</li> </ul>
18	12	Deer	<ul style="list-style-type: none"> <li>Pye Creek – Good quality old growth Fir stand on suitable slope and aspect</li> </ul>
19	49	Deer	<ul style="list-style-type: none"> <li>South of Rock Bay – Ridgeline stands of old growth</li> </ul>
20	27	Deer	<ul style="list-style-type: none"> <li>Below Mt Kitchener - Contiguous with OGMA 15</li> </ul>
23	28	Deer	<ul style="list-style-type: none"> <li>South of Rock Bay – Ridgeline stands of old growth</li> </ul>
24	30		<ul style="list-style-type: none"> <li>Below Mt Kitchener – trees in south portion have very large crowns ... small portion may provide nesting habitat for marbled murrelets; captures forest on either side of snow avalanche track; representation within CWH mm2</li> </ul>
25	25	Deer	<ul style="list-style-type: none"> <li>South of Rock Bay – Ridgeline stands of old growth</li> </ul>
26	3		<ul style="list-style-type: none"> <li>Pye Lake - Small old growth patch, retain for</li> </ul>

			representation and distribution
27	142	Deer	<ul style="list-style-type: none"> <li>West side of McCreight Lake - Second growth forest with numerous Fir veterans; rec. values associated with old growth cedar along the beach</li> </ul>
28	84	Deer	<ul style="list-style-type: none"> <li>Stella Lake – significant areas of old growth captured within this UWR</li> </ul>
29	2		<ul style="list-style-type: none"> <li>Lower Stella Lake - Small old growth patch; retain for representation and distribution</li> </ul>
30	3		<ul style="list-style-type: none"> <li>McCreight Lake - Small old growth patch, retain for representation and distribution</li> </ul>
31	118	Deer	<ul style="list-style-type: none"> <li>McCreight Lake – steeper rocky slopes with associated old growth at higher elevations</li> </ul>
32	46	Deer	<ul style="list-style-type: none"> <li>rock &amp; forest complex on south aspect above Stella Lake</li> </ul>
33	16		<ul style="list-style-type: none"> <li>Elk Point - older second growth forest with very large vet Douglas Firs; recreation values associated with trail to Elk Point &amp; old growth viewing</li> </ul>
34	61	Elk	<ul style="list-style-type: none"> <li>Amor de Cosmos floodplain - rich floodplain area with older sitka spruce forest; high recreation values associated with beaches at south end of McCreight Lake; connects to OGMA within TFL 39</li> </ul>
35	62	Deer	<ul style="list-style-type: none"> <li>rock &amp; forest complex on south aspect above Stella Lake</li> </ul>
36	6	Deer	<ul style="list-style-type: none"> <li>Pye Lake West – old growth forest on suitable slope and aspect</li> </ul>
37	22	Deer	<ul style="list-style-type: none"> <li>Pye Lake West – suitable slope and aspect; numerous Fir vets</li> </ul>
38	73	Deer	<ul style="list-style-type: none"> <li>steep slopes above Mackie &amp; Pye Lakes with significant terrain issues; predominantly old growth</li> </ul>
39	7		<ul style="list-style-type: none"> <li>south-east of Stella Lake - good quality old growth stand; retain for representation and distribution</li> </ul>
40	69	Deer	<ul style="list-style-type: none"> <li>Stella Lake - good slope &amp; aspect; boundary configured to include small OG stand &amp; vet component; contiguous with OGMA 41</li> </ul>
41	71	Elk	<ul style="list-style-type: none"> <li>rich floodplain area on S2 stream entering at SE corner of Stella Lake; connects upslope to UWR 40; beach with significant recreation values at northern end</li> </ul>
42	146	Deer	<ul style="list-style-type: none"> <li>Roberts Creek – includes small areas of good quality old growth</li> </ul>
46	5		<ul style="list-style-type: none"> <li>East of Mackie Lake– small old growth patch; retain for representation and distribution</li> </ul>
47	19		<ul style="list-style-type: none"> <li>Northeast of Mt Menzies - old growth stands with Cy component</li> </ul>
49	61	Deer	<ul style="list-style-type: none"> <li>Cecil Lake - good slope &amp; aspect; predominantly old growth associated with steeper rocky terrain</li> </ul>
50	36		<ul style="list-style-type: none"> <li>McMullen Point - Rich valley bottom dominated by older maple stands; associated beach has high recreation potential; captures growth and yield plots</li> </ul>
51	76		<ul style="list-style-type: none"> <li>includes old growth in gully above Cecil Lake; elevational linkage up to CWHmm2 in Mt Menzies area</li> </ul>



52	12		<ul style="list-style-type: none"> <li>above McMullen Point - Stand mistyped as age class 4 ... appears more likely to be old growth; located within incised gully – terrain issues likely; connects with OGMA 54 (UWR )</li> </ul>
53	10	Deer	<ul style="list-style-type: none"> <li>old growth stand on upper slope above Cecil Lake</li> </ul>
54	31	Deer	<ul style="list-style-type: none"> <li>East of Mt Menzies - higher to lower elevation linkage; minor amounts of old growth</li> </ul>
55	16	Deer	<ul style="list-style-type: none"> <li>SE to SW aspect above McNair Lake; connects to UWR within TFL 39</li> </ul>
56	23		<ul style="list-style-type: none"> <li>forest located in MH zone immediately below peak of Menzies Mtn</li> </ul>
59	42	Deer	<ul style="list-style-type: none"> <li>good slope &amp; aspect; along east shoreline of Roberts Lake; located below yarding break; scattered Fir veterans</li> </ul>
60	213		<ul style="list-style-type: none"> <li>Predominantly located in MH zone in Mt Menzies area; part of high elevation to low elevation linkage; contiguous with OGMA 63, 65, 66</li> <li>recreation values associated with high elevation lakes and open alpine forest interspersed with height class 3&amp; 4 forest</li> </ul>
61	18		<ul style="list-style-type: none"> <li>Mt Menzies - high elevation forest on north-east aspect</li> </ul>
62	29	Deer	<ul style="list-style-type: none"> <li>SW facing slope above Cedar Lake</li> </ul>
63	106	Deer	<ul style="list-style-type: none"> <li>Mt Menzies - good slope and aspect, portion of area was subject to slash burning &amp; has been slow to re-vegetate</li> </ul>
64	27	Deer	<ul style="list-style-type: none"> <li>Muskeg Lake - SW slope, second growth Fir may be amenable to treatment; adjacent to roadside</li> </ul>
65	49	Deer	<ul style="list-style-type: none"> <li>Mt Menzies area – higher elevation; good slope &amp; aspect; predominantly old growth stands</li> </ul>
66	44		<ul style="list-style-type: none"> <li>Mt Menzies area – predominantly higher elevation forest; some lower elevation portions may offer potential nesting habitat for marbled murrelets; Contiguous with OGMA 65</li> </ul>
68	62	Deer	<ul style="list-style-type: none"> <li>Mt Menzies area - good slope and aspect. Old growth remnant, known deer use</li> </ul>
69	10		<ul style="list-style-type: none"> <li>Discovery Creek – old growth remnant retained for distribution</li> </ul>
70	106	Deer	<ul style="list-style-type: none"> <li>Good slope and aspect on knoll to north of Amor Lake</li> <li>Significant associated visual landscape issues</li> </ul>
71	51	Deer	<ul style="list-style-type: none"> <li>Menzies Mt south - Good slope and aspect; OG remnants</li> <li>Recreation feature – includes old FS lookout</li> </ul>
72	4		<ul style="list-style-type: none"> <li>Discovery Creek - old growth remnant retained for distribution</li> </ul>
73	34	Deer	<ul style="list-style-type: none"> <li>Menzies Mt south - Good slope and aspect; OG remnants; contiguous with OGMA/UWR 203</li> </ul>
74	27		<ul style="list-style-type: none"> <li>Captures small old growth patches and veteran Firs along the Twin-Amor L. portage trail</li> </ul>
75	59	Deer	<ul style="list-style-type: none"> <li>Located on knoll to NW of Jasper Lake – old growth Fir stands</li> </ul>
76	146	Deer	<ul style="list-style-type: none"> <li>Menzies Creek – steeper rocky south facing slope; old growth remnants</li> </ul>

			<ul style="list-style-type: none"> <li>includes significant recruitment of young forest on upper slopes</li> </ul>
77	30	Deer	<ul style="list-style-type: none"> <li>small knoll on west side of Amor Lake</li> </ul>
78	80	Deer	<ul style="list-style-type: none"> <li>located along ridgeline above Browns Bay – suitable slope and aspect; includes old growth remnants; future potential for mineral tenures in this area.</li> </ul>
79	10	Elk	<ul style="list-style-type: none"> <li>small old growth patch SW of Blackwater Lake</li> </ul>
80	24	Elk	<ul style="list-style-type: none"> <li>west of Amor Lake - good elk WR in lower area with swamp complex, etc; associated old growth values</li> </ul>
81	60	Deer	<ul style="list-style-type: none"> <li>west side of Surprise Lake - good slope and aspect; recreation &amp; scenic values</li> </ul>
82	32	Deer	<ul style="list-style-type: none"> <li>Ridgeline above Crane Lake – south-east aspect</li> </ul>
83	11	Deer	<ul style="list-style-type: none"> <li>Ridgeline above Menzies Creek - SW facing old growth stand located along upper part of ridgeline</li> </ul>
85	21		<ul style="list-style-type: none"> <li>Seymour Narrows – good quality lower elevation old growth</li> </ul>
86	113	Elk	<ul style="list-style-type: none"> <li>Captures three significant patches of old growth along or adjacent to portage trail between Surprise &amp; Brewster Lakes; elk winter range; some richer valley bottom stands &amp; swamp complexes .</li> </ul>
87	6		<ul style="list-style-type: none"> <li>Seymour Narrows – good quality lower elevation old growth</li> </ul>
88	59	Deer/Elk	<ul style="list-style-type: none"> <li>East of Mohun Lake – includes small patches of old growth associated with Goose Lake which is proposed as a ‘Quality Fishery’ lake under the fisheries/riparian portion of this report.</li> </ul>
89	21	Elk	<ul style="list-style-type: none"> <li>NW of Brewster Lake - Includes OG remnant, variable aspects; swamp complex</li> </ul>
90	5		<ul style="list-style-type: none"> <li>Seymour Narrows – good quality lower elevation old growth</li> </ul>
91	19	Deer	<ul style="list-style-type: none"> <li>NE of Brewster Lake – located on south-west aspect immediately below small knoll</li> </ul>
92	46	Deer/Elk	<ul style="list-style-type: none"> <li>NW of Brewster Lake – predominantly younger forest ...emphasis on recruitment; connects to UWR candidate within the Salmon LU</li> </ul>
93	9	Deer	<ul style="list-style-type: none"> <li>Old growth stand adjacent to Crescent Lake (proposed as ‘Genetic Refuge’ under the fisheries/riparian portion of this report); high value deer winter range.</li> </ul>
94	39	Deer	<ul style="list-style-type: none"> <li>East of Brewster Lake - forest with west to south-west aspect; located along slope break; captures old growth remnant</li> </ul>
95	51	Deer/Elk	<ul style="list-style-type: none"> <li>Mary Lake area - small steeper rocky knoll</li> </ul>
96	13	Deer	<ul style="list-style-type: none"> <li>Old growth patch on north shore of Brewster Lake; South aspect slope; residual area of old Timber Licence</li> </ul>
97	12		<ul style="list-style-type: none"> <li>SW of Crescent Lake – ridgeline old growth patch</li> </ul>
98	8		<ul style="list-style-type: none"> <li>SW of Crescent Lake – ridgeline old growth patch</li> </ul>
99	119	Deer/Elk	<ul style="list-style-type: none"> <li>Favourable slope and aspect down to Mohun Lake -</li> </ul>

			remnant old growth stands around higher-elevation lakes
100	49	Elk	<ul style="list-style-type: none"> <li>• Patterson – Salmon junction – richer valley bottom stand with diversity of habitat types, vets, large swamp</li> <li>• Contained within Patterson Lake WHA</li> </ul>
101	27	Deer/Elk	<ul style="list-style-type: none"> <li>• high quality EWR (K. Brunt) above Mohun Creek floodplain</li> </ul>
102	190	Elk	<ul style="list-style-type: none"> <li>• Good elk WR in Mohun floodplain; complex valley bottom with variety of timber types &amp; terrain types</li> </ul>
103	148	Elk	<ul style="list-style-type: none"> <li>• Menzies M/L near Patterson Lake – forest and swamp along base of slope; includes small area of OG</li> <li>• Contained within Patterson Lake WHA</li> </ul>
104	5		<ul style="list-style-type: none"> <li>• Patterson Creek - Recreation feature: railway trestle; confined landscape</li> <li>• within Patterson Lake WHA</li> </ul>
105	100	Deer/Elk	<ul style="list-style-type: none"> <li>• Cranberry Lake area – mix of upland and lower slope forest</li> </ul>
106	35	Deer	<ul style="list-style-type: none"> <li>• South &amp; south-west aspect at end of ridge above Brewster Lake</li> </ul>
107	283	Elk	<ul style="list-style-type: none"> <li>• Loveland Bay to Menzies M/L – complex of lower slope forest associated with small creeks, lakes and wetlands; includes Snake and Lil Lakes, proposed as 'Quality Fishery' in the fisheries/riparian section of this report.</li> </ul>
108	3		<ul style="list-style-type: none"> <li>• Cranberry Lake – wildlife tree patch along margin of larger cutblock</li> </ul>
109	5		<ul style="list-style-type: none"> <li>• Small old growth patch within Patterson Lake WHA</li> </ul>
110	4		<ul style="list-style-type: none"> <li>• North of Merrill Lake - small old growth patch; retain for distribution and representation</li> </ul>
111	3		<ul style="list-style-type: none"> <li>• North of Merrill Lake - small old growth patch; retain for distribution and representation</li> </ul>
112	4		<ul style="list-style-type: none"> <li>• North of Merrill Lake - small old growth patch; retain for distribution and representation</li> </ul>
113	14	Deer	<ul style="list-style-type: none"> <li>• Good slope &amp; aspect; within Patterson Lake WHA</li> </ul>
114	3		<ul style="list-style-type: none"> <li>• within Patterson Lake WHA; small OG patch on Patterson Lake; recreation values</li> </ul>
115	29	Deer	<ul style="list-style-type: none"> <li>• Good slope &amp; aspect; adjacent to Hayes Lake; within Patterson Lake WHA</li> </ul>
116	47		<ul style="list-style-type: none"> <li>• within Patterson Lake WHA; captures high concentration of karst features in Patterson Lake area; connects UWRs in the Hayes Lake area</li> </ul>
117	50	Deer/Elk	<ul style="list-style-type: none"> <li>• Merrill Lake – upland and lower slope forest</li> </ul>
118	48	Deer	<ul style="list-style-type: none"> <li>• Snowden Creek – south facing D-fir slope with rocky outcrops</li> </ul>
119	24	Deer	<ul style="list-style-type: none"> <li>• within Patterson Lake WHA; good slope &amp; aspect</li> </ul>
120	86	Elk	<ul style="list-style-type: none"> <li>• Snowden Forest/Elmer Lake area – forest associated with significant wetland areas ; minor old growth remnants</li> </ul>
121	4		<ul style="list-style-type: none"> <li>• Boot Lake area - old growth adj to small lake</li> </ul>
122	3		<ul style="list-style-type: none"> <li>• Boot Lake area - old growth adj to small lake</li> </ul>

123	8	Deer	<ul style="list-style-type: none"> <li>Gosling Lake area – small rocky knoll</li> </ul>
124	14	Deer	<ul style="list-style-type: none"> <li>Boot Lake – suitable slope and aspect</li> </ul>
125	14	Deer	<ul style="list-style-type: none"> <li>East of Gosling Lake – small knoll with old growth remnant</li> </ul>
126	259	Elk	<ul style="list-style-type: none"> <li>Large OGMA provides valley bottom connectivity between Campbell/Fry – Lawson – Whymper - Boot - Merrill Lakes; significant wetland complex; some older (120 yrs) second growth</li> </ul>
127	35	Elk	<ul style="list-style-type: none"> <li>Loveland Bay – complex of lower slope forest associated with small creeks, lakes and wetlands; high capability EWR</li> </ul>
128	18	Deer	<ul style="list-style-type: none"> <li>West side of Gosling Lake, small swamps assoc.</li> </ul>
129	343	Elk	<ul style="list-style-type: none"> <li>Large floodplain at the head of Patterson Lake; within Patterson Lake WHA; significant potential spawning habitat; high value elk WR associated with swamp complexes; Martha Lake contained entirely within, dominantly Abies forest types probably associated with cold air drainage</li> </ul>
131	5		<ul style="list-style-type: none"> <li>West of Whymper Lake - small cottonwood stand – rare in this area; retain old growth patches</li> </ul>
132	79	Deer	<ul style="list-style-type: none"> <li>Big Bay area of Campbell Lake –old growth forest on predominantly flatter terrain; second growth forest on suitable slope and aspect</li> </ul>
133	68	Deer	<ul style="list-style-type: none"> <li>South of Boot Lake – complex of old growth and second growth on ridgeline</li> </ul>
136	23		<ul style="list-style-type: none"> <li>within Patterson Lake WHA; karst features</li> </ul>
137	37	Elk	<ul style="list-style-type: none"> <li>Little Loveland Bay - high capability elk winter range</li> </ul>
138	16	Deer/Elk	<ul style="list-style-type: none"> <li>West of Fry Lake – upland forest on good slope &amp; aspect associated with small lake &amp; swamp complex</li> </ul>
139	33	Elk	<ul style="list-style-type: none"> <li>Southwest of Patterson Lake - mid-elevation old growth forest sitting in small basin with 3 small lakes; includes minor residual area of old timber licence</li> </ul>
140	53	Deer	<ul style="list-style-type: none"> <li>Big Bay area of Campbell Lake – complex of old growth and second growth forest on suitable slope and aspect</li> </ul>
141	11		<ul style="list-style-type: none"> <li>Enhanced riparian area on Greenstone Creek tributary, OG remnant, incised gully; elk feeding area</li> </ul>
142	10	Deer	<ul style="list-style-type: none"> <li>Big Bay area of Campbell Lake – second growth forest with numerous Fir vets on suitable slope and aspect; associated wetland</li> </ul>
143	66	Elk	<ul style="list-style-type: none"> <li>Greenstone Creek floodplain area – important spawning habitat; complex terrain with variety of timber types &amp; aspects; important elk WR</li> </ul>
144	4	Deer	<ul style="list-style-type: none"> <li>Big Bay area of Campbell Lake – second growth forest with vets on suitable slope and aspect</li> </ul>
145	43		<ul style="list-style-type: none"> <li>Captures lower reaches of Miller Creek at confluence with Lower Campbell Lake; important spawning habitat; rich complex of forest types; this unit lies over top of the Quinsam coal basin and while there are no existing mineral tenures, future exploration or development may occur within this area.</li> </ul>
201	25	Deer	<ul style="list-style-type: none"> <li>East of Stella Lake; second growth on suitable slope and</li> </ul>

			aspect.
202	18	Deer	<ul style="list-style-type: none"> <li>Upper reaches of McMullen Creek; contiguous with OGMA 302.</li> </ul>
203	18	Deer	<ul style="list-style-type: none"> <li>Menzies Mt south - Good slope and aspect; OG remnants; contiguous with OGMA/UWR 73 and OGMA 307.</li> </ul>
204	43	Elk	<ul style="list-style-type: none"> <li>East of and contiguous with Twin Lakes; significant wetland complexes; second growth high productivity stands.</li> </ul>
205	3	Elk	<ul style="list-style-type: none"> <li>Adjacent to Reed Lake and OGMA/UWR 206; second growth.</li> </ul>
206	5	Elk	<ul style="list-style-type: none"> <li>Adjacent to Reed Lake and OGMA/UWR 206; old growth.</li> </ul>
301	9		<ul style="list-style-type: none"> <li>Incised gully west of Palmer Bay with good quality old growth.</li> </ul>
302	37		<ul style="list-style-type: none"> <li>Upper reaches of McMullen Creek, mix of old growth and second growth for representation; contiguous with OGMA/UWR 202.</li> </ul>
304	36		<ul style="list-style-type: none"> <li>Mouth of Discovery Creek; higher productivity second growth; significant marine and upland recreation values.</li> </ul>
306	20		<ul style="list-style-type: none"> <li>Peninsula on Amor Lake; mix of veterans and second growth.</li> </ul>
307	18		<ul style="list-style-type: none"> <li>Mt Menzies area – predominantly higher elevation forest; some lower elevation portions may offer potential nesting habitat for marbled murrelets; contiguous with OGMA/UWR 203.</li> </ul>
309	11		<ul style="list-style-type: none"> <li>East of Mount Menzies, high elevation Old growth stand with secondary Cw and Yc component selected for representation.</li> </ul>
310	5	Deer	<ul style="list-style-type: none"> <li>East of Big Bay, second growth on suitable slope and aspect adjacent to small lake.</li> </ul>

**Appendix B            Old Growth Management Area Selection Criteria**Biological Criteria

- Old growth characteristics:
- Old growth: – height, diameter, large diameter limbs,
- Second growth: # vets/ ha, developing old growth characteristics in second growth component of stand
- Snags – estimated #/ha, species, height, diameter, stage of decay
- Logs on the ground – size, species, stage of decay
- Species diversity
- Rare or significant species – white pine, bigleaf maple, cottonwood, western yew
- Multiple canopy layers, understory development
- Proximity to biologically significant features – larger rivers, swamps, lakes, NPBrush, important spawning or rearing areas, areas of stream convergence, rare ecosystems,
- Wildlife use – capability & suitability
- Ability to maintain in an undisturbed (isolated) condition over time
- Interior forest habitat
- High to low elevation connectivity

Operational Criteria

- Already constrained for other values
- Tree species or trees on site have lower commercial value
- Difficult operating area
  - slope steepness
  - yarding breaks
  - high soil disturbance hazard
- Road location conflicts
- Proposed within FDP – Category ‘A’ Proposed/Approved, Category ‘I’

Other Criteria

- Significant recreation values
- Candidate refugia lakes to protect unique fish populations
- Wildlife habitat
- Growth & yield plots
- Archaeological sites

**Appendix C            List of Acronyms**

BEC	Biogeoclimatic (classification)
CWAP	Coastal Watershed Assessment Procedure
CWH	Coastal Western Hemlock – (Biogeoclimatic Zone)
MH	Mountain Hemlock – (Biogeoclimatic Zone)
CWS	(designated) Community Watershed
FDP	Forest Development Plan
LU	Landscape Unit
OGMA	Old Growth Management Area
RRU	Recreation Resource Unit
SBFEP	Small Business Forest Development Plan
SDM	Statutory Decision Maker
TFL	Tree Farm Licence
TSA	Timber Supply Area
UWR	Ungulate Winter Range
VILUP	Vancouver Island Land Use Plan
VQO	Visual Quality Objective
WHA	Wildlife Habitat Area
WTP	Wildlife Tree Patch
DDM	Delegated Decision Maker

## Appendix D

### Section 1 – Higher Level Plan Objectives

#### Objective 1 (HLP)

1. Maintain or recruit old growth forest attributes in designated old growth management areas (OGMA, OGMA/UWR for Deer, and OGMA/UWR for Elk), as shown on the attached Sayward Landscape Unit map, titled Biodiversity and Wildlife. Timber harvesting, including salvage, single tree selection, topping for cone harvesting, and commercial gathering of botanical forest products, will not be permitted within OGMA's except as specified in sections 2 and 3 below.
2. The Delegated Decision Maker (DDM) may allow operations to occur within an OGMA that are not be established as UWR for Deer or Elk for reasons such as but not limited to the following:
  - (1) To prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMA's. This will be done in a manner that retains as many old growth forest attributes as possible.
  - (2) Construction of roads if no other practicable option exists.
  - (3) Partial-cut timber harvesting within immature (<100 years old) portions of OGMA's, where it can be demonstrated that harvesting will accelerate development of old growth forest attributes and improve the stand for biodiversity purposes, without compromising other resource values.
3. The following do not require the approval of the Delegated Decision Maker before proceeding:
  - (1) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.
  - (2) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value live wildlife trees<sup>6</sup>) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements. These trees are to be retained on site for coarse woody debris.
  - (3) Intrusions<sup>7</sup>, less than 0.5 hectare in size for OGMA's that are not to be established as UWR for Deer or Elk.
  - (4) OGMA's that are not to be established as UWR for Deer or Elk that are >10 ha in size may be modified for operational reasons provided that replacement OGMA of like or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA such that OGMA ecological attributes and spatial distribution are maintained or improved in one of the following categories:
    - vi) OGMA's  $\geq 10$  ha to <50 ha in size where the proposed development affects the OGMA by <5 ha,
    - vii) OGMA's  $\geq 50$  ha to <100 ha in size where the proposed development affects the OGMA by <10ha,
    - viii) OGMA's  $\geq 100$  ha in size where the proposed development affects the OGMA by <10%.

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<sup>6</sup> High value live wildlife trees are characterised as having the presence of black bear dens or visible, large stick nests.

<sup>7</sup> Intrusions will occur where field engineering more precisely locates OGMA boundaries.



- ix) Construction of  $\leq 500\text{m}$  of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may deactivate or rehabilitate a temporary road or bridge site within four years after construction.
- x) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by  $< 0.5$  ha.

### **Objective 2 (HLP)**

Maintain stand level structural diversity by retaining wildlife tree patches (WTP). Cutblocks for which harvesting has been completed by each licensee by tenure will maintain adequate amounts of wildlife tree patches to ensure that over any 5 year period, commencing on the date the objectives are established, the target percentage as noted in Table A is achieved. In addition:

- (6) WTPs must be well distributed across the BEC subzone or variant.
- (7) No timber harvesting, including salvage or single tree selection, is to occur within Wildlife Tree Patches.
- (8) WTPs must include, if present, live or dead veteran trees (excluding danger trees), or remnant old growth patches.
- (9) WTPs must include larger trees for the stand and any existing moderate to high value wildlife trees (excluding danger trees).
- (10) BEC subzones and/or variants will be determined by site plan information.

**Table A. Wildlife Tree Retention by BEC subzone in the Sayward Landscape Unit.**

<b>BEC Subzone/Variant</b>	<b>% Wildlife Tree Retention</b>
CWHmm1 (Coastal Western Hemlock, Submontane moist maritime)	13%
CWHmm2 (Coastal Western Hemlock, Montane moist maritime)	10%
CWHxm (Coastal Western Hemlock Very Dry Maritime)	14%
MHmm1 (Mountain Hemlock, Windward moist maritime)	2%

### **Objective 4 (HLP)**

Provide for spring forage adjacent to Ungulate Winter Ranges/Deer, as indicated on the Sayward Landscape Unit map, titled Biodiversity and Wildlife by managing seral stages as follows:

- Identifying Ungulate Winter Ranges/Deer within the Strathcona Timber Supply Area and determining all areas within 2 km that are on slopes 40 to 100% and with an aspect of exposure from 90 through 270 degrees and, ensuring that no more than 25% of this area be younger than 20 years old at any point in time; or
- Identifying Ungulate Winter Ranges/Deer within Tree Farm Licence 39 and managing as per the Weyerhaeuser Standard Operating Procedure for the management of critical spring forage adjacent to black-tailed deer winter ranges, dated and approved July 9, 2001.

**Objective 5 (HLP)**

Manage stand structure and provide hiding cover for elk in the Elk Visual Cover Areas as identified on the attached Sayward Landscape Unit map, titled Biodiversity and Wildlife, by:

- Maintaining at least 50% of the forested area of each Elk Visual Cover Area at greater than 5 metres in height; and
- Prohibiting further harvesting adjacent to the major riparian feature (swamp, lake or stream) identified on the Sayward Landscape Unit map, titled Biodiversity and Wildlife, within the Elk Visual Cover Areas until the forest on the opposite side of the riparian feature exceeds the 5 metre height requirement for a lateral distance of 100 m from the riparian feature.

**Objective 8 (HLP)**

Harvesting and/or road building within 10 m of the running surface of existing trails within the Snowden Forest, as shown on the Sayward Landscape Unit Map titled, Recreation Constraints, requires the prior approval of the Delegated Decision Maker.

**Objective 12 (HLP)**

To manage stand structure and protect Critical Stream Reaches, as shown on the Sayward Landscape Unit map, titled Lakes Classification, and Small Spawning and Rearing Streams (S4) by:

- Retaining all windfirm trees with roots embedded in the bank; and
- For S4 streams, retaining 50% of the stems, representative of species, age and size, within 10 m of the channel.

**Objective 16 (HLP)**

To establish a patch size objective and pursue enhanced timber harvesting opportunities, within areas not subject to integrated resource management (i.e., ungulate winter ranges, elk hiding cover areas, old growth management areas, recreation resource units, visually sensitive landscapes<sup>8</sup>, recreation constraint areas, lakeshore management zones, and designated community watersheds) and as shown as Non-constraint Areas on the Sayward Landscape Unit map titled, Non-constraint Areas, by allowing cutblocks up to, but not exceeding 80 ha in size<sup>9</sup>.

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<sup>8</sup> Visually sensitive landscapes refer to areas with an established VQO of Preservation, Retention, or Partial Retention. Where a proposed cutblock is not entirely within the Non-constraint Areas the portion of the cutblock within the area subject to integrated resource management is restricted to an upper limit of 40 ha within the cutblock size limit of 80 ha

<sup>9</sup> Size refers to the net area to be reforested.

## Section 2 – Legal Objectives

### **Objective 9 (LO)**

To manage visual resources, as shown on the Sayward Landscape Unit map, titled Visual Quality Objectives, and described in the following table, as known scenic areas with established visual quality objectives.

Visual Quality Objective	Brief Definition	Perspective View Denudation %
Preservation (P)	No visible logging	0%
Retention (R)	Logging is visible but not evident	0 – 1.5%
Partial Retention (PR)	Logging is visible but subordinate to landscape character	1.6 – 7.0%
Modification (M)	Logging is dominant but naturally appealing	7.1 – 18%

### **Objective 10 (LO)**

To manage for fisheries values within those areas noted as Riparian Reserve Zones as shown on the Sayward Landscape Unit map, titled Lakeshore Management by:

- Prohibiting timber harvesting, including salvage, unless such activities occur within established recreation sites and/or trails and are complementary to the recreation setting and experience as determined by the Statutory Decision Maker; and
- Prohibiting road construction unless no other practicable options exist as determined by the Statutory Decision Maker

And:

To establish Riparian Management Zones for the following lakes within the Sayward Landscape Unit: Mclvor, Beaver, Comeback, Hemp, Lawnchair, Lily, Little Mud, Pocket, Reed, Sedge, Shadow, Smolt, Star, and Whistlepunk; and:

To ensure that for a distance of 50 metres from the timbered edge surrounding the following lakes within the Sayward Landscape Unit: Mclvor, Beaver, Comeback, Hemp, Lawnchair, Lily, Little Mud, Pocket, Reed, Sedge, Shadow, Smolt, Star, and Whistlepunk, that no more than 25% of the forested area be less than 5 metres in height.

### Section 3 – Plan Objectives

#### **Objective 3 (PO)**

Maintain or recruit forest structure important as ungulate winter range<sup>10</sup>, in Old Growth Management Areas designated as Ungulate Winter Ranges and identified on the Sayward Landscape Unit map titled, Biodiversity and Wildlife. Timber harvesting, including salvage, single tree selection, topping for cone harvesting, and commercial gathering of botanical forest products will not be permitted within OGMA's identified as UWR's, except as allowed by the Statutory Decision Maker after these areas are confirmed under Section 69 of the Forest Practices Code, Operational Planning Regulation.

#### **Objective 6 (PO)**

To provide and maintain a range of recreation experiences and settings as shown on the Sayward Landscape Unit map, titled Recreation Resource Units and as described in the following table;

RRU setting & experience	Description
natural	<ul style="list-style-type: none"> <li>• trail or boat access only with nil to very low level of developed or directed access to the recreation feature;</li> <li>• nil to minimal level of public recreation site development;</li> <li>• nil to very low level of commercial recreation tenures; and</li> <li>• RVQC range of Preservation to Retention.</li> </ul>
natural roaded	<ul style="list-style-type: none"> <li>• very low to low level of developed or directed access to the recreation feature;</li> <li>• minimal to basic level of public recreation site development;</li> <li>• very low to low level of commercial recreation tenures; and</li> <li>• RVQC range of Retention to Partial Retention</li> </ul>
modified	<ul style="list-style-type: none"> <li>• low to moderate level of developed or directed access to the recreation feature;</li> <li>• basic to standard level of public recreation site development; and</li> <li>• low to moderate level of commercial recreation tenures; RVQC range of Retention to Partial Retention</li> </ul>
developed	<ul style="list-style-type: none"> <li>• moderate to high level of developed or directed access to the recreation feature;</li> <li>• standard to enhanced level of public recreation site development;</li> <li>• moderate to high level of commercial recreation tenures; and</li> <li>• RVQC range of Partial Retention to Modification</li> </ul>

<sup>10</sup> Forest structure important to the function of an ungulate winter range is defined by large tree canopies effective in intercepting and retaining snowfall, clumped groups of conifers, rock outcrops, and scattered openings with herb and shrub layers present. Also, refer to, *Deer and Elk Habitats in Coastal Forests of Southern British Columbia*, Ministry of Forests and Ministry of Environment, 1990.

**Objective 7 (PO)**

Manage for recreation values within those areas shown as 100% Recreation Netdown polygons on the Sayward Landscape Unit Map titled, Recreation Constraints, by:

- Prohibiting timber harvesting, including salvage, unless such activities are complementary to the recreation setting and experience as determined by the Statutory Decision Maker; and
- Avoiding road construction unless no other practicable options exist as determined by the Statutory Decision Maker.

**Objective 11 (PO)**

To manage for fisheries values for those lakes shown on the Sayward Landscape Unit map titled, Lakes Classification, and as described in the following Table:

Classification	Objective(s)
Genetic Refuge	<p>To protect isolated populations of red and blue listed fish species by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 3 angler days per hectare of lake surface per season;</li> <li>• Maintaining a no kill fishery;</li> <li>• Ensuring no stocking in lake waters or lake tributaries;</li> <li>• Ensuring no commercial fishing;</li> <li>• Disallowing new permanent access within 200 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker;</li> <li>• Disallowing new temporary access within 50 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker;</li> <li>• Preventing direct vehicle access to the lakeshore perimeter; and</li> <li>• Preventing commercial development or commercial recreation within the Riparian Reserve Zone, as depicted on the Sayward Landscape Unit Map titled, Lakeshore Management.</li> </ul>
Unique Species Assemblage	<p>To protect assemblages of two or more species of fish in rare or unique combinations in the same waterbody by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 3 angler days per hectare of lake surface per season;</li> <li>• Maintaining a no kill fishery;</li> <li>• Ensuring no stocking in lake waters or lake tributaries;</li> <li>• Ensuring no commercial fishing;</li> <li>• Disallowing new permanent access within 200 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker;</li> <li>• Disallowing new temporary access within 50 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker;</li> </ul>

	<ul style="list-style-type: none"> <li>• Preventing direct vehicle access to the lakeshore perimeter; and</li> <li>• Preventing commercial development or commercial recreation within the Riparian Reserve Zone, as depicted on the Sayward Landscape Unit Map titled, Lakeshore Management</li> </ul>
Quality Fishery	<p>To provide for and maintain a fishery for larger than average size wild fish in a natural setting by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 15 angler days per hectare of lake surface per season;</li> <li>• Preventing angling guide use exceeding 15% of total angling use;</li> <li>• Preventing direct vehicle access to the lakeshore perimeter;</li> <li>• Ensuring no stocking in lake waters or lake tributaries; and</li> <li>• Disallowing new permanent access within 200 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker.</li> </ul>
Hatchery Augmented	<p>To provide for a variety of angling opportunities where angling use exceeds the natural recruitment capability by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 25 angler days per hectare of lake surface per season;</li> <li>• Preventing angler guide use exceeding 20% of total angling use;</li> <li>• Continuing to stock in waters accessible to fish; and</li> <li>• Disallowing new permanent access within 50 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker.</li> </ul>
General Fishery	<p>To provide a variety of angling opportunities for public recreation in lakes that rely on natural recruitment by:</p> <ul style="list-style-type: none"> <li>• Maintaining an angler density at less than 25 angler days per hectare of lake surface per season;</li> <li>• Preventing angler guide use exceeding 20% of total angling use;</li> <li>• Ensuring no stocking in lake waters or lake tributaries; and</li> <li>• Disallowing new permanent access within 50 metres of the lakeshore perimeter unless there are no practicable options as determined by the Statutory Decision Maker</li> </ul>

**Objective 13 (PO)**

Identify community watersheds designated under the Forest Practices Code of British Columbia Act and other water supply areas defined by drinking water protection legislation and as depicted on the Sayward Landscape Unit Map titled, Drinking Water.

**Objective 14 (PO)**

Ensure that activities in community watersheds identified in Objective 13 of this Landscape Unit Plan occur (i.e., planned, conducted, and monitored) such that they are complementary to the maintenance or improvement of drinking water quality by:

- Preparing and implementing access management and deactivation plans;
- Managing recreational uses on Crown land so that drinking water quality is the primary objective; and
- Applying drinking water protection measures occurring in legislation.

**Objective 15 (PO)**

Identify individual domestic water supply intakes and other water supplies licensed for human consumption that are not identified in Objective 13 of this Higher Level Plan Order.