



File: 12600-20/SPOTTED OWL

July 23, 1999

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Dear Sir or Madam:

Re: Spotted Owl Resource Management Plans

Please find enclosed the resource management plans for the Chilliwack or Squamish Forest Districts. It is recognized that the resource management plans have been jointly developed by Ministry of Forests, Ministry of Environment, Lands and Parks and the licensee operational staff.

The resource management plans now provide the user the guidance for the development of operational plans in all of the spotted owl Special Resource Management Zones.

The next step to meet the intention of the May 1997 Cabinet approved Spotted Owl Management Plan will be to develop the Higher Level Plan Objectives, which will provide the legal framework for auditing the results of the plans.

This process will begin immediately by the two agencies to develop the draft Higher Level Plan Objectives. Stakeholders will have the opportunity to review and provide input in this process. The objectives that are developed will be analyzed to ensure that the timber supply impacts will not exceed the current projections and that there will be a reasonable probability to stabilize or recover the spotted owl.

We would like to acknowledge the considerable work that has been done by the Spotted Owl Management Inter-agency Team and the licensee staff for their involvement in completing the resource management plans for Chilliwack and Squamish Forest Districts.



.../2

Ministry of
Forests

Chilliwack Forest District

Location:
9880 South McGrath Road
Rosedale

Mailing Address:
PO Box 159
Rosedale V0X 1X0

Tel: 604-794-2100
Fax: 604-794-2111

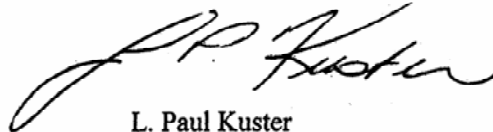
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Yours truly,



G. L. (Jerry) Kennah
District Manager
Chilliwack Forest District



L. Paul Kuster
District Manager
Squamish Forest District



Brian Clark
Regional Manager
Fish, Wildlife and Habitat Protection
Lower Mainland Region
Ministry of Environment, Lands and Parks

Enclosure

SPOTTED OWL MANAGEMENT PLAN

Resource Management Plans

Chilliwack Forest District

Squamish Forest District

May 1999



BRITISH
COLUMBIA

Ministry of Environment,
Lands and Parks

Ministry of Forests

Acknowledgments

The Spotted Owl Management Inter-agency Team (SOMIT) would like to express its gratitude to everyone who participated in the development of Resource Management Plans for the Chilliwack and Squamish Forest Districts. Specifically we would like to recognize John Guillemaud, Mike Crane, Ed McWaters, Jan Jonker, John Gow, Tim Napier, Jim Gilliam, Julian Grzybowski, Norbert Greinacher, Steve Rochetta, Jim Roberts, Bill Jex, Guy Fried, Andrew Meyer, Mike Fenger, Liz Williams, John Deal, Jim Neuman, Holly Meagher, Bill Rosenburg, Len Blackstock, Todd Ewing, Mike Campbell, Dave Minhas, Dave Woodgate, Julie MacDougall, Mike Wallace and Ron Manke. The above list is undoubtedly incomplete, and SOMIT regrets any omissions.

SOMIT would also like to express its gratitude to Forest Renewal BC, Crown Land Use Planning Enhancement, Corporate Resource Inventory Initiative, Land Use Coordination Office and the Lower Mainland Inter-Agency Management Committee for their financial contribution for the development on this document.

Without all of your support, this document would not have been completed.

Prepared by:

Spotted Owl Management Inter-agency Team:

Ian Blackburn
Gene MacInnes
Carla Lenihan

Technical Assistants/Advisors:

Stephen Godwin
Judy Kwan
Toby Jones
Reed Hentze
Peter Mennel
Jack Sweeten
Andre Germain
Jeff Fournier
Greg George

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Introduction

In May 1997, the Provincial Government approved the Spotted Owl Management Plan “to provide a reasonable probability that the spotted owl population would stabilize and possibly improve its status over the long-term without significant impacts on timber supply and forestry employment”. The Spotted Owl Management Plan relies on twenty-one management areas distributed throughout the range of spotted owls within the Chilliwack and Squamish Forest Districts (Figure 1). Of the approximately 363,000 hectares of forested area included in the plan, about 159,000 hectares is existing and new protected areas while the remaining approximate 204,000 hectares is provincial crown forest.

The twenty-one management areas were designed to maintain multiple breeding spotted owl pairs and are located to provide a reasonable probability for successful owl movement between these areas. The long-term stabilization, and possible improvement, of the spotted owl population is dependent upon maintaining sufficient quantity and quality of suitable owl habitat within these management areas.

Within the twenty-one management areas, sixteen Special Resource Management Zones (SRMZs) are identified to manage forests located within the provincial crown forest¹. The provincial government has made a commitment to legally establish the SRMZs as Resource Management Zones (RMZs) under the *Forest Practices Code of BC Act* (FPC). The primary goal within SRMZs is to integrate and implement the spotted owl and forest management objectives identified in the *Spotted Owl Management Plan Strategic Component* and *Managing Spotted Owl Habitat - Operational Guidelines Component*. To achieve this goal, key objectives will be established as Resource Management Zone Objectives under the FPC. Once established, these objectives become FPC higher level plans and accordingly all operational plans (as defined in the FPC) and forest practices within SRMZs must comply with their conditions and intent².

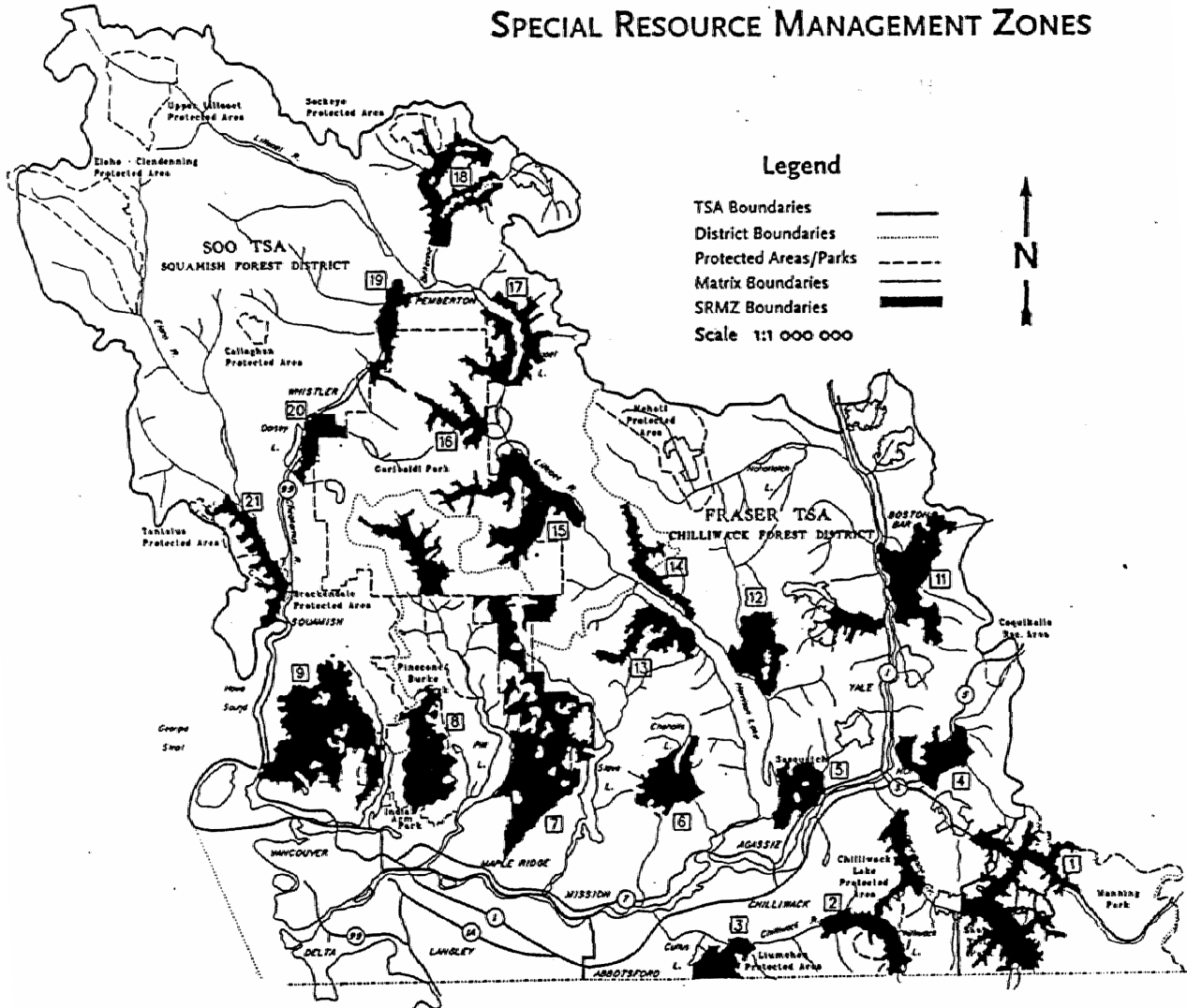
Resource Management Plan

Resource Management Plans (RMPs) demonstrate how, over a long-term planning horizon of one or more forest rotations, the resource management zone objectives will be achieved in each SRMZ. RMPs identify landscape and stand level management strategies that are expected to best protect suitable owl habitat and to provide forestry, economic and employment opportunities. The RMP and Operational Guidelines provide the District Manager (DM) and Designated Environment Official (DEO) with approved bench marks, strategies and best practices for forest management within SRMZs that will

¹ Three management areas are found exclusively within protected areas and two management areas are found within the Greater Vancouver Watersheds.

² Higher Level Plan objectives are currently being developed. Once approved, the Resource Management Plan will be revised to reflect these HLP objectives.

Figure 1. Map of SRMZs in the Chilliwack and Squamish forest districts.



be used in the approval of operational plans per Section 41 of the FPC. Deviation from the RMP and Operational Guidelines is not recommended unless there is sound biological information that supports the deviation, and there is concurrence from the DM and DEO.

The RMP is based on the best available spotted owl ecology information, management approaches and professional judgment. It is expected that the RMP and associated management practices will need to adapt as new information becomes available. This adaptive management approach will be used to improve the protection of spotted owls while improving the economic efficiencies and effectiveness of forest management operations within spotted owl areas. Inherent to this, is the willingness of government agencies, the forest industry and other interested parties to seek out and operationally implement a wide range of biologically plausible and economically possible management approaches. Equally important is a monitoring and feed back process to determine if management practices have achieved their objectives, whether or not those activities should be implemented again or how they should be modified.

In support of this plan, the Spotted Owl Research and Inventory Advisory Committee (SORIAC) has been established by the provincial government to provide direction for research and operational inventories. SORIAC will provide advice on changes to the Spotted Owl Management Plan, Resource Management Plan and Operational Guidelines to the Spotted Owl Management Inter-agency Team (SOMIT) for consideration.

Spotted Owl Management

Spotted Owl Habitat Requirements

Key Resource Management Plan Strategy #1

Maintain a minimum 67% of the gross forested area as suitable owl habitat in each Long-Term Activity Center identified on Map 1 within the SRMZ:

- Suitable owl habitat will be identified as:
 - A) forests that are greater than 100 years old and taller than 19.4 metres; or
 - B) forests less than 100 years old with suitable owl habitat attributes (as described in Table 1)

Where less than 67% of the gross forested area within the Long-Term Activity Centre consists of suitable owl habitat, then the next oldest age class and/or stands that achieve spotted owl habitat distribution objectives will be recruited.

Within the 67% suitable owl habitat requirement in each Long-term Activity Centre, achieve or maintain a long-term target of 75% superior owl habitat.

- Superior owl habitat will be identified as forests that are greater than 140 years old and taller than 19.4 metres.

The primary spotted owl management objective is to provide a reasonable probability that the spotted owl population will stabilize, and possibly improve its status, over the long-term in the Chilliwack and Squamish Forest Districts. This will be achieved largely by maintaining a minimum 67% of the gross forested land as suitable owl habitat in each long-term activity centre within SRMZs.

Within SRMZs, each long-term activity centre is designed to maintain at minimum one breeding pair of spotted owls. To the greatest extent possible, each activity centre was delineated to be circular in shape to minimize the amount of edge. Ideally, these long-term activity centres were based around currently known nesting or roosting sites. However, due to the size and structure of SRMZs, long-term activity centres established may be more evenly distributed, edge to edge, throughout the SRMZ. Although these long-term activity centres may not be currently occupied by spotted owls, each activity centre will be managed to provide sufficient habitat to maintain existing owls or recruit new territorial owls.

The quality of suitable owl habitat ranges from superior to poor, with superior habitats providing for all of the needs of the owl and poor habitats generally only providing for dispersal. Superior owl habitats are strongly selected for by spotted owls in greater proportion than their availability in the landscape, and support higher densities of prey, nests and roost structures than lesser quality habitats. Low levels of superior suitable habitats may reduce adult survival and productivity. Studies in Washington State have indicated that about 50% of the forested area within activity centres are composed of

Table 1. Suitable Owl Habitat Description

The quality of suitable owl habitats used by owls is variable and can be graded from superior to poor, and varies from ecosystem to ecosystem and site to site. This table describes the quality of suitable owl habitat as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. Variation in habitat structure exists between coastal and interior forest types.

Habitat Type	Type B - Moderate quality (Foraging, dispersal, and roosting)	Type A - Superior quality (Nesting, roosting, foraging and dispersal)
Wetter maritime ecosystems (CWHdm, CWHvm1, CWH vm2, MHmm1) (NDT 1, 2: Rare to infrequent stand initiating events)		
Suitable habitat characteristics	<ul style="list-style-type: none"> • two or more canopy layers, multi-species canopy dominated by large (>50 cm dbh) overstorey trees (typically 247-457 stems/ha, although densities as low as 86 stems/ha are possible where large diameter trees are present). • moderate to high (60-80%) canopy closure. • some large trees (>50 cm dbh) with various deformities (e.g., large cavities, broken tops, dwarf mistletoe infections). • five or more large (>50 cm dbh) snags/ha. • accumulations ($\geq 100 \text{ m}^3/\text{ha}$) of fallen trees and other coarse woody debris on the ground. 	<ul style="list-style-type: none"> • three or more canopy layers, multi-species canopy dominated by large (>75 cm dbh) overstorey trees (typically 37-185 stems/ha) • moderate to high (60-80%) canopy closure. • five or more large trees with various deformities (e.g., large cavities, broken tops, dwarf mistletoe infections). • five or more large (>75 cm dbh) snags/ha. • accumulations ($\geq 268 \text{ m}^3/\text{ha}$) of fallen trees and other coarse woody debris on the ground.
Dryer subaritime ecosystems (CWHds1, CWHms1, CWHms2, MHmm2, ESSFmw and IDFww) (NDT 2, 4: Infrequent stand initiating events to frequent stand maintaining fires)		
Suitable habitat characteristics	<ul style="list-style-type: none"> • two or more canopy layers, multi-species canopy dominated by large (>30 cm dbh) overstorey trees (typically greater than 247 stems/ha). • stands must contain 20% Fd and/or Hw in the overstorey. • greater than 50% canopy closure. • some large trees (>30 cm dbh) with various deformities (e.g., large cavities, broken tops, dwarf mistletoe infections). • five or more large (>30 cm dbh) snags/ha. • accumulations ($\geq 100 \text{ m}^3/\text{ha}$) of fallen trees and other coarse woody debris on the ground. 	<ul style="list-style-type: none"> • three or more canopy layers, multi-species canopy dominated by large (>50 cm dbh) overstorey trees (typically 173-247 stems/ha, although densities as low as 86 stems/ha are possible where large diameter trees are present). • moderate to high (60 - 85%) canopy closure. • five or more large trees with various deformities (e.g., large cavities, broken tops, dwarf mistletoe infections). • seven or more large (>50 cm dbh) snags/ha. • accumulations ($\geq 268 \text{ m}^3/\text{ha}$) of fallen trees and other coarse woody debris on the ground.

Note: The stand characteristics listed above for suitable and superior owl habitats are based on inventory information from Washington State.

superior suitable habitat. Therefore to increase the likelihood of owl survival and productivity, the quality of suitable owl habitat within each activity centre should maintain a minimum target of 50% of the gross forested area as superior owl habitat within each Long-Term Activity Centre. This is to be accomplished by achieving or maintaining a long-term target of 75% superior owl habitat within the 67% suitable owl habitat requirement in each Long-Term Activity Center.

For the most part, the superior habitat target in British Columbia will be achieved through existing protected areas and other heavily constrained forests such as inoperable forests, riparian management areas, biodiversity requirements, environmentally sensitive areas and other forests managed over long rotations. In addition, a key component of this management plan is to accelerate the development of superior suitable habitats through intensive silvicultural and harvesting techniques.

Distribution of Suitable Owl Habitat

Key Resource Management Plan Strategy #2

Over the long-term, distribute the 67% suitable owl habitat requirement in large unfragmented patches greater than 500 ha that are connected by movement corridors that are a minimum of 1 km wide.

Increasing forest fragmentation or reducing habitat connectivity is associated with lower owl productivity, lower juvenile dispersal success, increasing competition with other species, increasing predation, and may result in an increasing susceptibility of the forest stand to natural disturbance (e.g. windthrow).

During the breeding season, spotted owls generally forage within a minimum 500 ha of suitable owl habitat found adjacent to the nest. The more fragmented the forests are adjacent to the nest, the greater the distance the adults must travel to find sufficient numbers of prey and the greater risk of predation. Although nest selection by spotted owls is random, maintaining several large patches greater than 500 ha in each activity centre should provide areas ideal for nesting. Therefore to increase the likelihood of owl survival and productivity, the distribution of suitable owl habitat within each activity centre should maintain large patches greater than 500 ha of suitable owl habitat.

Spotted owls may be considered an interior forest species and generally avoid traveling through open areas to access suitable habitats. Instead, owls generally fly around these open areas within and underneath a forest canopy. It is believed that spotted owls avoid these open areas to reduce the risk of predation by great-horned owls and other predators that utilize these forest edge habitats. Although spotted owls will travel through corridors of suitable habitat that are less than 1 km wide, the use of these narrow areas for travel or foraging may increase the risk of predation. Therefore, maintaining corridors greater than 1 km wide should minimize the risk of predation, and provide interior forest conditions

Nest or Critical Roost Sites

Key Resource Management Plan Strategy #3

Protect identified nesting and critical roosting sites within each Long-Term Activity Center in each SRMZ by maintaining a minimum 80 ha reserve zone of suitable owl habitat around these sites.

Spotted owls do not create their nests, but rely on pre-formed structures such as cavities, platforms or other raptor nests. Nest tree selection is random and may change from year to year, and owl to owl. However, in general, spotted owls utilize the same nest for the duration of their life. In non-reproductive years, spotted owls may still utilize the nesting area as a roosting area. The loss of the nesting area may reduce the productivity of the resident owls as other less suitable nest sites (e.g. due to climate, predation) may be utilized. Therefore, to ensure that adequate protection is given to identified spotted owl nest sites and critical roost sites, a minimum 80 ha reserve of suitable owl habitat must be protected around identified nest sites and critical roost sites.

The reserve zone should reduce the amount of exposed forest edge and forest fragmentation. As a result, this should reduce the risk of predation on juvenile owls and the susceptibility of the nest tree falling down due to strong winds. The reserve zone may be removed provided that a minimum two year monitoring of the zone indicates the area is no longer utilized for nesting/roosting and is approved by the DEO.

Forest Management

The primary goal of forest management within SRMZs is to optimize forest resource values while maintaining a sufficient quantity and quality of suitable owl habitat. To date there is little information to determine how to best achieve this goal in forest ecosystems found in British Columbia. However, it is believed that conventional silviculture and harvesting systems that maximize tree volume growth or create uniform single canopy forest structures generally produce stands that lack the habitat complexity needed to support spotted owls. It is therefore expected that innovative enhanced forestry activities and non-clearcut intermediate and/or final harvesting approaches will be required to achieve the habitat objectives within each activity centre. These management approaches need to be innovative and flexible enough to deal with the diversity of site conditions, operational constraints and economic realities that exist in the field setting.

In addition to this RMP, forest resource managers need to consult a variety of information sources when preparing a forest management prescription but special consideration should be given to information in the following documents:

- *Spotted Owl Management Plan Strategic Component and Managing Spotted Owl Habitat Operational Guidelines Component*
- *Forest Practices Code Operational Planning Regulation*
- *Forest Practices Code Timber Harvesting Practices Regulation*
- *Windthrow Handbook for British Columbia*
- *Establishment to Free Growing Guidebook: Vancouver Forest Region*
- *A Field Guide For Site Identification and Interpretation for the Vancouver Forest Region*
- *Inventory Procedures and Standards for Sampling Stand Attributes in Northern Spotted Owl Habitat*

Innovative Management Regimes

Innovative approaches to applying alternate silviculture systems are required to create stand attributes desired for owls while providing economically viable harvesting options. Innovative approaches need to encompass the nature of stand entries and the extent of the modifications. As an example, partial cut harvesting to create spotted owl habitat may require the removal of greater volumes and creation of greater structural diversity (e.g. deformed trees, snags, deciduous trees) than with conventional partial cutting approaches. The greater volume removal is required to provide sufficient amounts of light to the forest floor to stimulate vegetative growth of lower tree, shrub and herb layers. Also, to maintain these light levels reaching the lower canopy and forest floor, additional stand entries may be required. Site specific prescription regimes are required to modify existing stands to achieve or maintain the structural complexity required by the spotted owl.

Regarding the extent of modification, the application of conventional maximum cut block size (40 ha) and green-up adjacency rules under the FPC is designed to disperse harvesting activities and impacts over large areas. Unfortunately, this dispersal pattern creates landscapes that are non-contiguous and ultimately less suitable for spotted owls. Therefore, to minimize forest fragmentation and maintain large contiguous patches of suitable owl habitat, it is desirable that, where appropriate, the District Manager exercise his authority to: 1) relax the 40 ha maximum cutblock requirement (*Operational Planning Regulation* Section 11) and/or 2) relax the green-up requirements of adjacent blocks (*Operational Planning Regulation* Section 68 and *Timber Harvest Practices Regulation* Section 9). Relaxing these requirements will allow for the maintenance of large patches of suitable owl habitat greater than 500 hectares and wide corridors of suitable owl habitat. Achieving these management objectives will increase the probability of stabilizing the owl population and provides greater harvest opportunities.

Management Areas

Key Resource Management Plan Strategy #4

Manage a minimum 67% of the gross forested area in each Long-Term Activity Center within the SRMZ as Long-term Owl Habitat Area (LTOHA), as shown on Map 1, unless jointly amended by the DM and DEO, for the purposes of achieving owl management objectives and minimizing timber supply impacts over the long-term.

- Forest Practices must follow Strategy #5 for creating, enhancing and maintaining owl habitat unless for salvage purposes as identified in Strategy #6.

Within the LTOHA, Recruitment Areas (RCAs), as shown on Map 1, unless jointly amended by the DM and DEO, identify all areas of currently non-suitable habitat for the purpose of restoring owl habitat.

- Forest Practices must follow Strategy #5 for creating, enhancing and maintaining owl habitat unless for salvage purposes as identified in Strategy #6.

Outside of the LTOHA, manage a maximum 33% of the gross forested area in each Long-Term Activity Centre within the SRMZ as Forest Management Area (FMA), as shown on Map 1, unless jointly amended from time to time by the DM and DEO.

- Heavy volume removal is permitted unless the area is identified as a Replacement Area.
- Block size and green-up requirements can be modified by the DM.

Within the FMA, Replacement Areas (RPAs), as shown on Map 1, unless jointly amended from time to time by the DM and DEO, identify all area needed for the purpose of achieving 67% suitable owl habitat requirement as identified in Strategy #1.

- Forest Practices must follow Strategy #5 for creating, enhancing and maintaining owl habitat unless for salvage purposes as identified in Strategy #6.

Once RCAs contribute towards the suitable owl habitat requirement then an equivalent amount of RPA will be removed from this designation and will contribute to the FMA.

Four management areas have been identified to provide general direction for forest management practices within all portions of the SRMZ. Each area is described as follows:

Long-term Owl Habitat Area (LTOHA):

LTOHA constitutes a minimum 67% of the gross forested area in each long-term activity centre. The LTOHA overlaps critical owl habitats with existing constrained forests to meet spotted owl objectives and reduce timber supply impacts over the long-term. Although these LTOHAs may not currently possess 100% suitable owl habitat (see Recruitment Areas), over time, it is anticipated that the LTOHA will be restored to suitable owl habitat conditions. Until habitats within the LTOHA are fully restored, some suitable habitats found outside of this area will be retained to achieve the minimum 67% habitat objective (see Replacement Area). The location of the LTOHA may change over time in response to new information, catastrophic events or timber harvesting opportunities. Forest practices within the LTOHA will be oriented towards the creation, enhancement and maintenance of suitable owl habitat (Table 2).

Recruitment Areas (RCAs):

RCAs are areas within the LTOHA that are currently identified as non suitable owl habitat. These areas should be targeted for enhancement through commercial thinning and partial harvest treatments so that they become suitable owl habitat sooner than through natural succession (Table 2). Once a stand becomes suitable, the RCA designation will be removed.

Forest Management Areas (FMAs):

The FMA identifies areas outside of the LTOHA that are not required to meet the minimum 67% suitable owl habitat requirement. The FMA was configured to consolidate areas of the timber harvesting land base that had the lowest level of timber harvesting constraints without jeopardizing spotted owl management objectives. These areas are expected to provide greatest opportunities and latitude for harvesting operations and the greatest return on silviculture investments within each SRMZ. Forest practices within the FMA will be oriented towards greater timber production that also maintains certain owl habitat attributes (Table 2). In the advent of a catastrophic loss of suitable habitat, areas within the FMA may be needed to act as substitute habitat until the destroyed habitat becomes suitable again.

Table 2. Acceptable Forest Management Practices in the Four Management Areas and Salvage

	Basic and Enhanced Silviculture	Stand Conversion	Partial Harvest* to create, enhance or maintain suitable habitat	Heavy Volume Removal**
LTOHA	Yes	Yes	Yes	No
RCA	Yes	Yes	Yes	No
RPA	Yes	Yes	Yes	No
FMA	Yes	Yes	Yes	Yes
Salvage	Yes	Yes	Yes	Yes

* Partial harvest includes commercial thinning.

** Refers to clear cut with reserves and single/group leave tree retention treatments (see Appendix A).

Replacement Areas (RPAs):

RPAs are stands within the FMA that currently contribute towards the 67% suitable owl habitat requirement. As RCAs within LTOHA are restored to suitable owl habitat conditions, an equivalent area of RPA will be removed from this designation and returned to FMA. Forest practices within the RPA will be oriented towards the creation, enhancement and maintenance of suitable owl habitat (Table 2).

Partial Harvest Objectives for All Management Areas

Key Resource Management Plan Strategy #5

Partial Harvest, as described below, is permitted in all management areas within the Long-Term Activity Centre for the purposes of creating, enhancing or maintaining suitable owl habitat attributes.

- Create or maintain stands that exhibit a multi-layered, variable density, multi-species stand structure with canopies dominated by dominant and co-dominant trees.
- Patch cuts (0.05 - 0.5 ha in size) can represent no more than 5% of the prescribed area. Patch cuts must be minimum 100 meters apart (edge to edge) from adjacent patch cuts, clearcuts or natural openings ≥ 0.25 ha in size unless agreed to by DM and DEO.
- Timber extraction corridors will not exceed the average inter-tree spacing requirement of the treatment area as described in Table 3.
- Remove up to one-third of the basal area from each 10 cm stand diameter class distributed evenly across the treatment area. Greater volume removal may occur with agreement from DM and DEO.
- For cut blocks within the Coastal Western Hemlock (CWH), CWHds1, CWHms1, CWHms2, Mountain Hemlock (MH) mm2, Engelmann Spruce -SubAlpine Fir (ESSF), ESSFmw, and Interior Douglas-fir (IDF), IDFww biogeoclimatic subzones, maintain or create on average 5 snags > 30 cm dbh/ha and maintain existing coarse woody debris.
- For cut blocks within the CWHdm, CWHvm1, CWHvm2 and MHmm1 biogeoclimatic subzones, maintain or create on average 5 snags > 50 cm dbh/ha and maintain existing coarse woody debris.

Table 3. Average Corridor Width Spacing Requirements for Partial Harvests*

Mature Layer Stems Retained per Hectare	Average Corridor widths
173	7.6 m
200	7.0 m
250	6.3 m
300	5.8 m
400	5.0 m
500	4.5 m
625	4.0 m
800	3.5 m
1000	3.2 m

* Based on a square shape distribution.

To meet the habitat creation, maintenance or enhancement needs within LTOHA, RCA and RPA; harvesting will occur using non-clearcut silviculture systems. The goal of the Spotted Owl Management Plan is to utilize partial harvest to accelerate the development of owl habitat earlier than through natural succession. Prioritizing non-suitable habitats for partial harvest may reduce the timeline for RCA/RPA trade-off. It is also recommended to target Type B habitats before Type A to accelerate the development of superior habitat characteristics which may increase the likelihood of stabilizing the owl population.

To create, enhance or maintain multi-layered stands, harvesting will remove up to 33% of the volume from each 10 cm diameter class. Patch cuts should be centred around pockets of stands affected by forest health or reforestation issues. Furthermore, partial harvesting within Type A or B habitats must, at minimum, maintain the habitat characteristics associated with that type as described in Table 3 or 4 in the Operational Guidelines. For example, harvesting within Type A habitats must not allow the canopy closure to fall below 60%. However, partial harvests (commercial thinning) in non-suitable habitat (less than 100 years old) may remove greater than 33% of the stand volume where it can be demonstrated to the DM and DEO that the treatment will improve the likelihood of creating owl habitat attributes.

Timber extraction corridor widths should be maintained within the density specific averages provided in Table 3. Where greater than the average corridor width is required, then the excess area contributes to the patch cut quota. Average corridor widths will be measured between the boles of retained trees at 50 m intervals along the corridor.

Heavy Volume Removal In The FMA (non-RPA)

In the FMA, timber production is the primary goal while providing for the maintenance of owl habitat attributes. The retention of certain habitat attributes (described in Table 3 and 4 of the Operational Guidelines) in the FMA is required to ensure that there is long term flexibility for habitat management. Wherever possible, the retention requirements should fall within the requirements for Wildlife Tree Patches, Riparian Reserves and other FPC required retention. When retaining leave trees, it is more desirable to maintain a relatively even distribution of stems throughout the opening. However, recognizing operational difficulties, the distribution of the retained habitat attributes may not be uniform. It is important that the WTP be placed within the block boundaries to achieve the intent of future stand structure diversity.

Appendix A provides general direction for prescription development for heavy volume removal.

Trade-off Strategy for RCA/RPA

Once an activity center exceeds the 67% suitable owl habitat requirement (i.e. as recruitment areas within the LTOHA achieve suitable habitat characteristics) an equivalent amount of RPA is released and made available for heavy volume removal.

For situations where stands are being surveyed to certify they meet only minimum age and/or height attributes, the Resource Inventory Committee (RIC) standards and procedures will be followed. For situations where stands less than 100 years of age are being surveyed to certify they meet suitable habitat attributes, the information collected must follow standards described in *Inventory Procedures and Standards for Sampling Stand Attributes in Northern Spotted Owl Habitat*.

Once an area has been accepted as suitable habitat by SOMIT, an equivalent area of RPA can be released according to the schedule of release priorities jointly agreed upon by the MOF, MoELP and forest licence holders for each activity centre.

Salvage Practices

Key Resource Management Plan Strategy #6:

Salvage is permitted within all management areas where removal of the damaged forests would reduce the risk of further damage to the remaining stand and maintain or improve the habitat suitability for owls.

No minor salvage of special forest products is permitted within the SRMZ.

Natural disturbances caused by insect, disease, wildfire, windthrow or other catastrophic events can lead to forest, habitat and timber degradation within or adjacent to affected stands. Low levels of disturbance may contribute to the maintenance or enhancement of owl habitat characteristics. However, high levels of disturbance may reduce habitat suitability for owls, reduce timber values and increase the risk of further natural disturbances. For this reason, forest managers, forest health specialists and spotted owl specialists should assess the extent of the disturbance, its effect on the remaining stands, its impact on spotted owl management and the potential economic and employment opportunities.

In general, salvage should be considered where damage exceeds 30% of the damaged stand volume, or where retaining the damaged timber may result in further degradation of the remaining stand. Road construction to remove salvage timber should be minimized and consideration should be given to using harvesting methods that minimize or eliminate the need for roads in critical habitat areas (e.g. via use of skylines or helicopters).

Where the effects of a catastrophic event or resulting salvage operations result in the loss of significant areas of suitable owl habitat from the LTOHA or RPA, additional RPA areas from the FMA should be identified and designated.

Road and Landing Construction Practices

Key Resource Management Plan Strategy #7:

Road and landing construction, as described below, is permitted in all management areas for the purposes of timber extraction or mineral exploration.

- Do not construct, modify or deactivate roads or landings within the nest and/or roost reserve unless there is no other practicable option. These activities will be prevented during the breeding period of March 1 to July 31.
- Road clearing widths within the LTOHA shall be limited up to three meters between the timbers edge and either the toe of the fill or the top of the cut.

Forest roads are required for harvesting, forest management, fire, mineral exploration and recreation access. Road construction or deactivation can reduce habitat quality and disturb owls during nesting periods. Where possible, temporary roads should be considered over permanent road when access is required through the reserve zone. Roads required through suitable owl habitat should be designed to keep right-of way width to less than 20 m. Operation of road building machinery should not occur within 200 m and blasting/drilling should not occur within 400 m of nest sites/critical roost sites during March 1 to July 31.

Non-Timber Resource Extraction Operations

Land within various SRMZs contain areas of significant potential for commercial extraction of mineral, gravel, geothermal and other subsurface resources. The magnitude of operations associated with these resources can be expected to range from low intensity exploration to large scale extraction facilities. Ministry of Transportation and Highways, and Ministry of Energy and Mines tenure and/or permit applications in SRMZs will be referred to MoF and MoELP for review and comment. Where exploration or development operations are expected to prevent the spotted owl management objectives from being met, the executive level of the involved ministries will be consulted for direction on how to proceed.

Appendix A: General Approaches to Prescribing Silviculture Practices for Heavy Volume Removal

Heavy Volume Removal Practices

Heavy Volume Removal requires the retention of Wildlife Tree Patches (WTPs), single or grouped leave trees, snags and coarse woody debris for the purpose of providing long-term habitat management options. FPC requirements for WTPs and riparian reserves may provide adequate numbers of large trees and snags when left internal to the block boundaries.

The silviculture prescription for timber extraction in the FMA, except RPAs, should consider the following criteria:

- For each prescribed area, a minimum 10% WTPs should be maintained. WTPs that consist of non-suitable owl habitat may be enhanced utilizing partial harvest, as described in Key Resource Management Strategy #5.
- Maintain or create on average 5 snags > 76 cm dbh/ha within the prescribed area in the CWHdm, CWHvm1, CWHvm2 and MHmm1 biogeoclimatic subzones, or maintain or create on average 5 snags > 51 cm dbh/ha within the prescribed area in the CWHds1, CWHms1, CWHms2, MHmm2, ESSFmw, and IDFww biogeoclimatic subzones.
- For cut blocks within the CWHds1, CWHms1, CWHms2, MHmm2, ESSFmw, and IDFww biogeoclimatic subzones, there should be an average 40 windfirm leave trees maintained from the top 80 largest diameter trees/ha. .
- For cut blocks within the CWHdm, CWHvm1, CWHvm2 and MHmm1 biogeoclimatic subzones, there should be an average 15 windfirm leave trees maintained from the top 30 largest diameter trees/ha.
- Existing coarse woody debris should be maintained.

Leave Tree Retention

When retaining leave trees, it is desirable to maintain a relatively even distribution of stems throughout the opening (Figure 2). However; risk of windthrow, VQO, topography constraints, harvesting system requirements, under-story tree establishment and growth, forest health factors and other site characteristics will largely determine how the distribution and characteristics of leave trees can be prescribed (Figure 3). Leave tree retention

Figure 2 - WTPs and single and groups of leaf trees

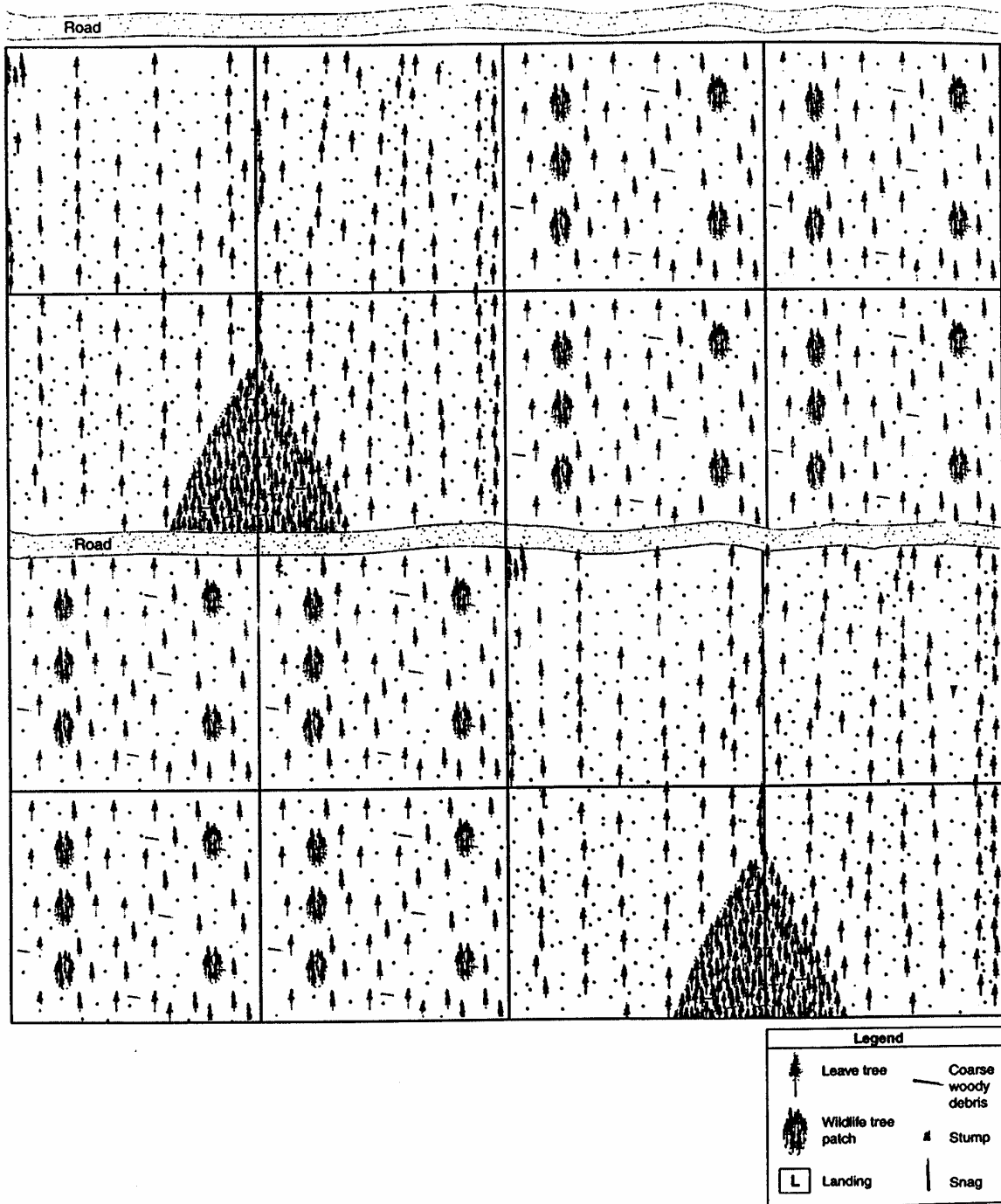
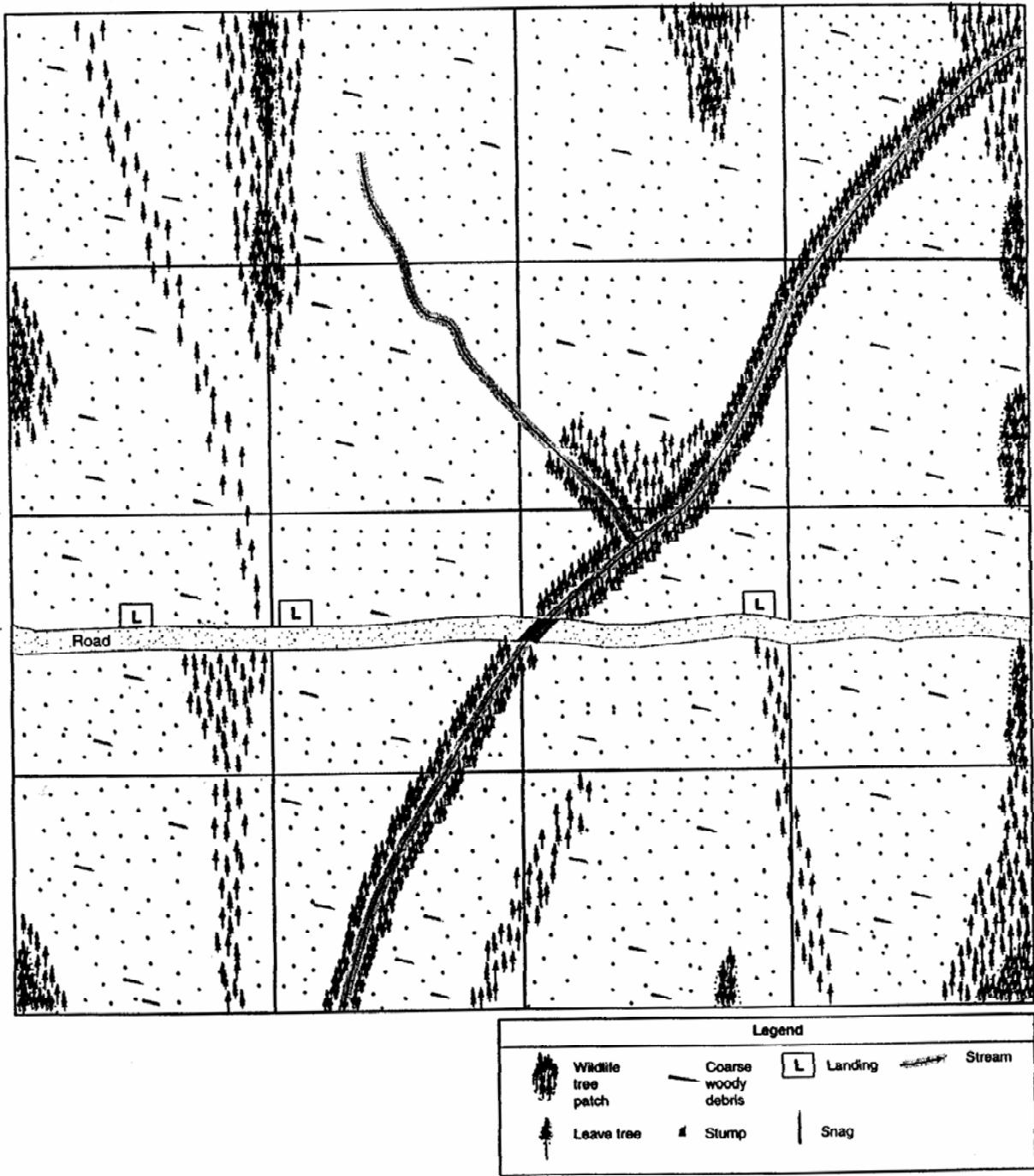


Figure 3 - WTP and clusters of leave trees

16 hectare plot



targets may be achieved utilizing only wildlife tree patches and Riparian Reserves provided that leave trees meet the intention of the large tree criteria (Figure 4).

When accounting for windthrow factors, the *Windthrow Handbook for British Columbia Forests* (Research Program Working Paper 9401 - 1994) and local or expert knowledge will provide the basis for decisions on where and how leave tree retention will occur. In areas that exceed a moderate level of windthrow hazard, the distribution of retention trees can be modified to reduce windthrow potential associated with an activity. Where heavy volume removal silviculture systems are to be undertaken in areas of high windthrow potential, stand structure manipulations, cut block boundary orientation and other mitigating strategies should be undertaken to achieve a moderate or lower potential for windthrow amongst retained trees.

Snag, Wildlife Tree and Coarse Woody Debris Management Approaches

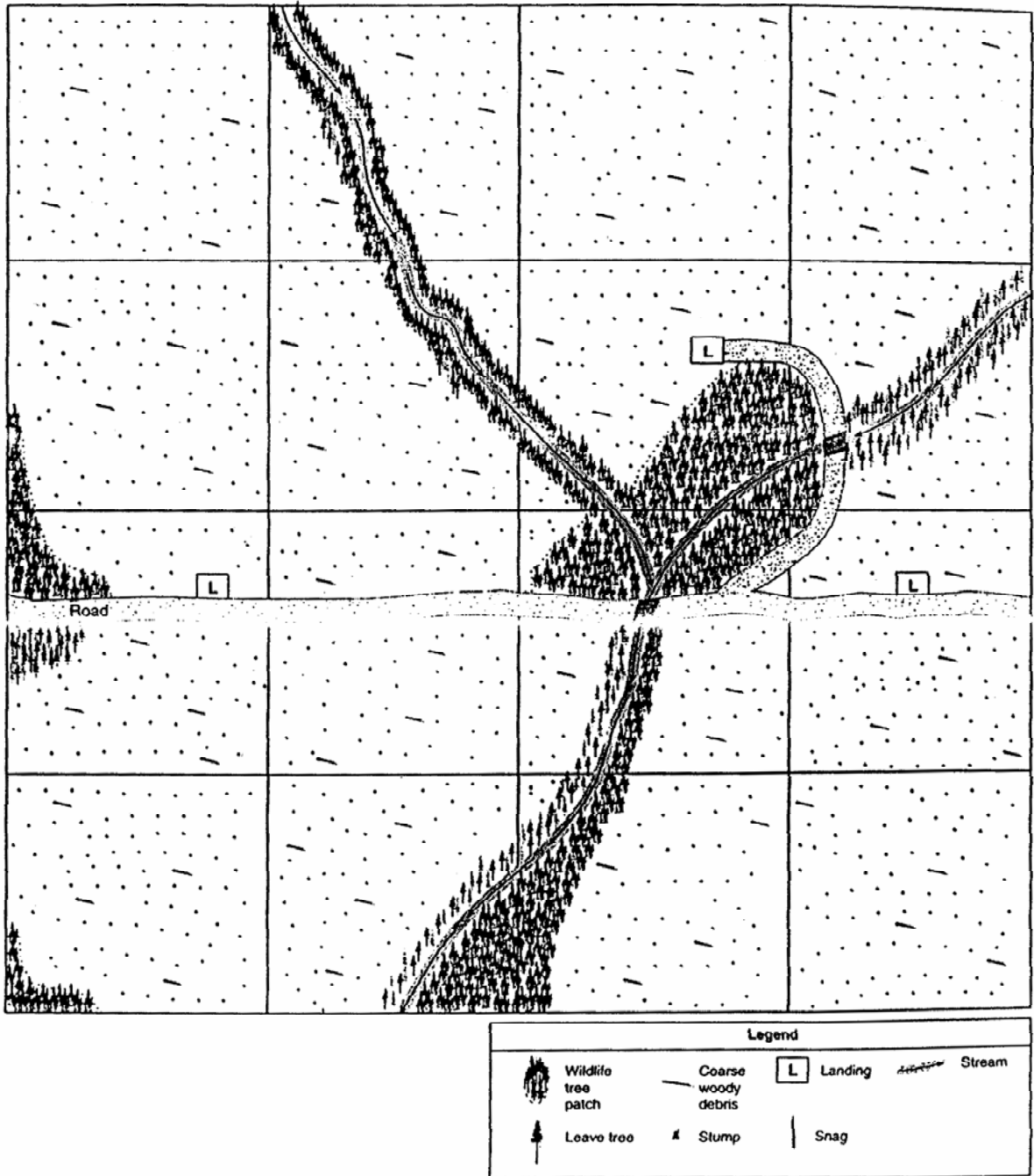
Opportunities to retain or recruit wildlife trees and snags need to be evaluated and planned on an area specific basis. Prescribed activities must strike a balance between the harvesting related flexibility, safety issues and short and/or long term habitat needs of owls and their prey. The habitat requirement must be applied in time frames best suited to the needs of the stand. For example, the removal of low wildlife value snags at time of harvest should be considered where it is possible to provide greater harvesting flexibility and to create new higher value wildlife snags after harvest is complete prior to the end of free growing.

When creating wildlife trees or recruiting snags, it is appropriate to consider chemical (herbicide stem injections), physical (manual or mechanical girdling or scarring) and biological (fungal inoculations) techniques. Techniques should target the creation of structures that provide the greatest amount of habitat over the longest time frame possible. The creation of live trees with sections of dead cambium, decaying heartwood or exposed sapwood should be considered on an operational trial basis. Dead or exposed sections of live trees should be created with the intent of those attributes functional over the long-term.

The removal of existing coarse woody debris is not allowed. Non-merchantable stems should not be yarded to the landing or roadside, but left on site for coarse woody debris recruitment.

Figure 4 - WTPs as leave trees

16 hectare plot



Basic Practices

Reforestation approaches and standards in RMZs, as with other crown lands administered under the FPC, should closely follow the *Establishment to Free Growing Guidebook: Vancouver Forest Region* and be based on the biogeoclimatic information in *A Field Guide For Site Identification and Interpretation for the Vancouver Forest Region*. Prescription reforestation standards and regimes are foreseen to require greater than normal latitude to deal with potential impact of green tree retention targets on the achievement of reforestation obligations. The greatest areas of deviation are expected to be associated with the extension of regeneration and free growing assessment periods as well as increases in the proportion of shade tolerant tree species.

Enhanced Forestry Practices

It is well recognized that enhanced forestry activities have the potential of significantly accelerating the process for attaining suitable owl habitat attributes on a site. However, once an area achieves suitable owl habitat status it is expected that the long term harvest restrictions will exist. Consequently enhanced forestry investments associated with the SRMZs become less attractive for investments than less constrained areas where economics based rotations can be applied. Enhanced forestry investments are made on the basis of priorities set out in the district Enhanced Forestry Plan.

Definitions

Enhanced Silviculture

Activities in free growing stands used to improve the value or attributes of stand.

Heavy Volume Removal

Heavy volume removal is best defined as a silviculture system of clearcut with reserves and single/group leave tree retention

Mature Layer

The layer of trees that have a stem diameter of 12.5 cm or greater measured at a height of 1.3 m.

Movement Corridors

Movement corridors are sections of LTOHA that are designed to provide owl movement between large patches of suitable owl habitat or between activity centers.

Partial Harvest

Partial harvests are silviculture systems in which only selected trees are harvested to create, enhance or maintain spotted owl habitat. Shelterwood, group selection and single tree selection systems best describe the partial cutting silviculture systems needed to maintain or enhance suitable owl habitat conditions. In immature stands (those that have not yet culminated), partial cutting most commonly occurs in older age classes (≥ 50 years of age) and is commonly referred to as commercial thinning.

Stand Conversion

Activities in free growing stands undertaken to establish commercially viable stands that are more ecologically suitable, valuable or otherwise more desirable than what is currently occupying a site.

Spotted Owl
Resource Management Plan
for
Manning and Skagit
Special Resource Management Zone 1

May 31, 1999

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Manning & Skagit SRMZ

The Manning & Skagit SRMZ is approximately 32000 ha of gross forested area. The SRMZ extends from the west entrance of Manning Park east to the headwaters of Skagit River and south to the United States border. Most of SRMZ 1 occurs within the confines of either Manning or Skagit Parks or the Siverdaisy Integrated Management Plan area. Nine long-term activity centres were established varying in size between 2,300 to 3,700 hectares of Gross Forested Area. For this RMP only 3 long-term activity centres are described since these are the only activity centres within the SRMZ that overlap with opportunities for resource extraction.

The three long-term activity centres are located within the Coastal Western Hemlock (CWH), Engelmann Spruce - Subalpine Fir (ESSF) and the Mountain Hemlock (MH) biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHds1, CWHms1, and ESSFmw. These dryer subaritime ecosystems are characterized by Natural Disturbance Type (NDT) 2 which is described in the Biodiversity Guidebook as forests having infrequent stand initiating events usually relating to fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. At higher elevations, forests are located within the MH mm2 subzone and fall within NDT 1. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Manning & Skagit SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
1 A	2968 ha	1295 ha (43.6%)	1202 ha (40.5%)	2497 ha (84.1%)
1 B	2839 ha	0 ha (0%)	0 ha (0%)	2602 ha (91.7%)
1 C	2984 ha	0 ha (0%)	0 ha (0%)	2797 ha (93.7%)
Total SRMZ	8791 ha	1295 ha (14.7%)	1202 ha (13.7%)	7896 ha (89.8%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks, Northern Spotted Owl Survey Protocol in British Columbia.

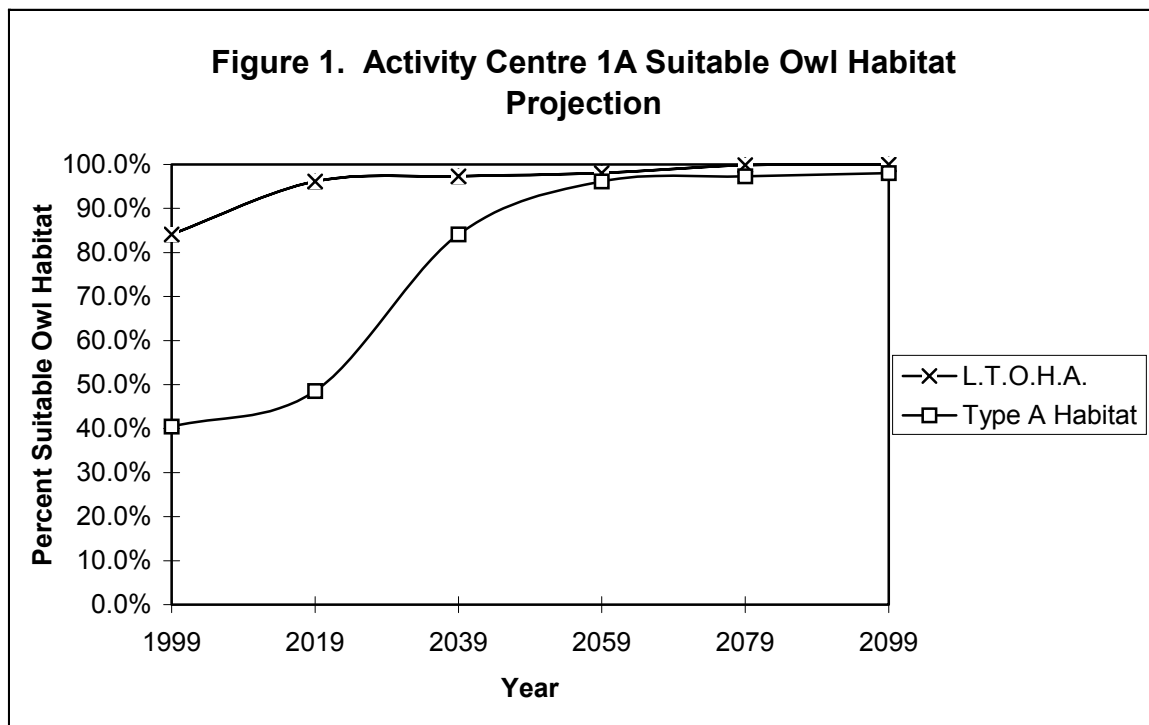
Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

Activity Centre 1A

This activity center follows along the Skagit River and is bounded to the north-east by Sumallo Grove, and to the south-west by Shawnatum Mountain. The activity centre is approximately 2968 hectares of gross forested area. This activity center overlaps with Manning Park and 529.6 ha of this activity center occur within the Silverdaisy Integrated Management Plan area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The entire activity centre is designated as LTOHA as no timber extraction is currently allowed within the area. The activity centre currently contains about 84.1% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 40.5% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 1).



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre:

- Based on age class there is currently 1202ha of Type A (age class 8&9) and 1295ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what type of habitats spotted owls are selecting for.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 82 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has been conducted entirely along the Skagit River trail. This constitutes the only identified transect within this activity centre and consists of approximately 8.5 km of trail through low elevation habitat.

Since 1992 there have been a minimum of 17 surveys of various lengths, duration and objectives conducted in this activity centre. Total survey time within this activity centre is approximately 51 hours.

Owl Status

There have been numerous spotted owl detections in this activity centre indicating a single pair. The status of these birds is currently "Pair status and nesting". These birds have successfully reproduced in 1994 and 1998. There has been one nest site identified within this activity centre.

Inventory/Monitoring Requirements

Inventory protocol has been complete as of 1997 for most of the Skagit River Trail. Approximately 3.5 km of the transect south of the ecological reserve has had minimal surveys over the past three years and will require six surveys over the next one to two years according to protocol. The known breeding pair within this activity centre has been banded as of 1998 thus long-term monitoring will be needed.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 1A for Each Management Area

Age Class	Long-Term Owl Habitat Area						Forest Management Area						Activity Centre Total		
	Suitable Owl Habitat			Recruitment Area			LTOHA Total	Replacement Area			Heavy Volume Removal			FMA Total	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		No Cons.	Cons.	Subtotal	No Cons.	Cons.			Subtotal
1						0	0.00			0.00			0	0.00	0.00
2					53.03	53.03	53.03			0.00			0	0.00	53.03
3					22.51	22.51	22.51			0.00			0	0.00	22.51
4					34.25	34.25	34.25			0.00			0	0.00	34.25
5					356.24	356.24	356.24			0.00			0	0.00	356.24
6	0.19	1056.17	1056.36				1056.36			0.00			0	0.00	1056.36
7		238.73	238.73				238.73			0.00			0	0.00	238.73
8		716.93	716.93				716.93			0.00			0	0.00	716.93
9	4.5	480.36	484.86				484.86			0.00			0	0.00	484.86
NSR					4.79	4.79	4.79			0.00			0	0.00	4.79
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	4.69	2492.19	2496.88	0.00	470.82	470.82	2967.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2967.70
				Percent of Activity centre			100.00%				Percent of Activity centre			0.00%	
Age Class 6-9	4.69	2492.19	2496.88	0.00	0.00	0.00	2496.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	0.00
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

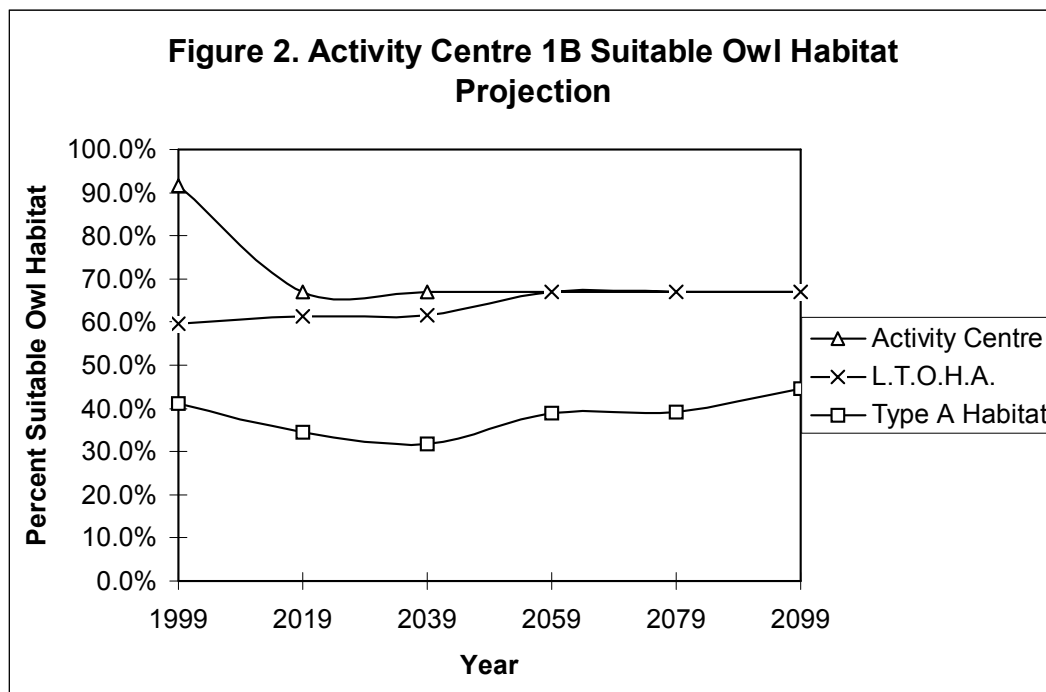
Activity Centre 1B

This activity center is located in the north-west portion of SRMZ 1 and is approximately 2839 ha. It is bounded by the west entrance to Manning Park and to the east by Sumallo Grove. Highway #3 traverses directly down the middle of this activity center.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 91.7% suitable owl habitat based on the minimum forest age criteria of 100 years old. There is a minimum 40% Type A habitat (forests older than 140 years) within this activity centre (Figure 2).

The LTOHA contributes about 60% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 7% suitable owl habitat within the LTOHA will take up to 60 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Specific forest stand characteristics are required to define Type A and Type B habitats and to determine what type of habitats spotted owls are selecting for.
- Age class 6 and 7 stands (354.8 ha) outside of Manning Park should be inventoried to determine characteristics that can be enhanced to improve spotted owl habitat suitability.

Spotted Owl Assessment

Inventory Effort

Over the last five years extensive surveys have been conducted along Highway 3 from the West gate of Manning Park to Sumallo Grove. There has also been several hiking surveys along the trails to Mount Outram and Ghost Pass Lake. The two major transect routes identified in this activity centre are a 5 km linear hiking transect along Ghost Pass Lake trail through low to high elevation habitat and a 8.5 km low elevation driving transect starting at Manning Park West Gate and heading east along highway 3.

Since 1992 a minimum of 41 surveys along the low elevation driving survey have been conducted within this activity centre. There have been 3 transects along the low to high elevation hiking transect. Total survey time is approximately 131 hours.

Owl Status

There have been 18 spotted owl detections along the Manning Park corridor. These detections indicate a pair of spotted owls residing in this area. These owls are currently at “pair status and nesting”. One juvenile owl was heard calling with the female in 1993. There have also been two detections along the Ghost Pass (18 Mile Creek) drainage.

Inventory/Monitoring Requirements

The pair of spotted owls detected in this activity centre have been leg banded. Long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data. As part of the Mehatl Creek Protected Areas Mitigation Strategy, International Forest Products Ltd. is entitled to, over the next fifty years, the first 405 ha of mature forest available for heavy volume removal.

Table 3. Forest Cover Analysis of 1B for Each Management Area

Age Class	Long-Term Owl Habitat Area						Forest Management Area						Activity Centre Total		
	Suitable Owl Habitat			Recruitment Area			LTOHA Total	Replacement Area			Heavy Volume Removal			FMA Total	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		No Cons.	Cons.	Subtotal	No Cons.	Cons.			Subtotal
1						0	0.00			0.00			0	0.00	0.00
2					0.61	0.61	0.61			0.00			0	0.00	0.61
3				9.09	139.76	148.85	148.85			0.00	8.92	1.38	10.3	10.30	159.15
4					12.58	12.58	12.58			0.00			0	0.00	12.58
5					45.21	45.21	45.21			0.00	0.25	8.91	9.16	9.16	54.37
6		232.67	232.67				232.67	0.01	47.53	47.54	1.47	63.63	65.1	112.64	345.31
7	8.91	204.39	213.3				213.30	2.77	63.67	66.44	70.76	104.96	175.72	242.16	455.46
8	25.69	484.64	510.33				510.33	18.01	69.61	87.62	25.97	184.28	210.25	297.87	808.20
9	58.06	41.4	99.46				99.46		3.57	3.57	245.15	8.57	253.72	257.29	356.75
NSR						0.00	0.00			0.00	9.49	0.25	9.74	9.74	9.74
Protected Area		636.50	636.50		0.00	0.00	636.50			0.00			0.00	0.00	636.50
Total	92.66	1599.60	1692.26	9.09	198.16	207.25	1899.51	20.79	184.38	205.17	362.01	371.98	733.99	939.16	2838.67
				Percent of Activity centre			66.92%				Percent of Activity centre			33.08%	
Age Class 6-9	92.66	1599.60	1692.26	0.00	0.00	0.00	1692.26	20.79	184.38	205.17	343.35	361.44	704.79	909.96	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	43.13
2038	12.58
2058	148.85
2078	0.61
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

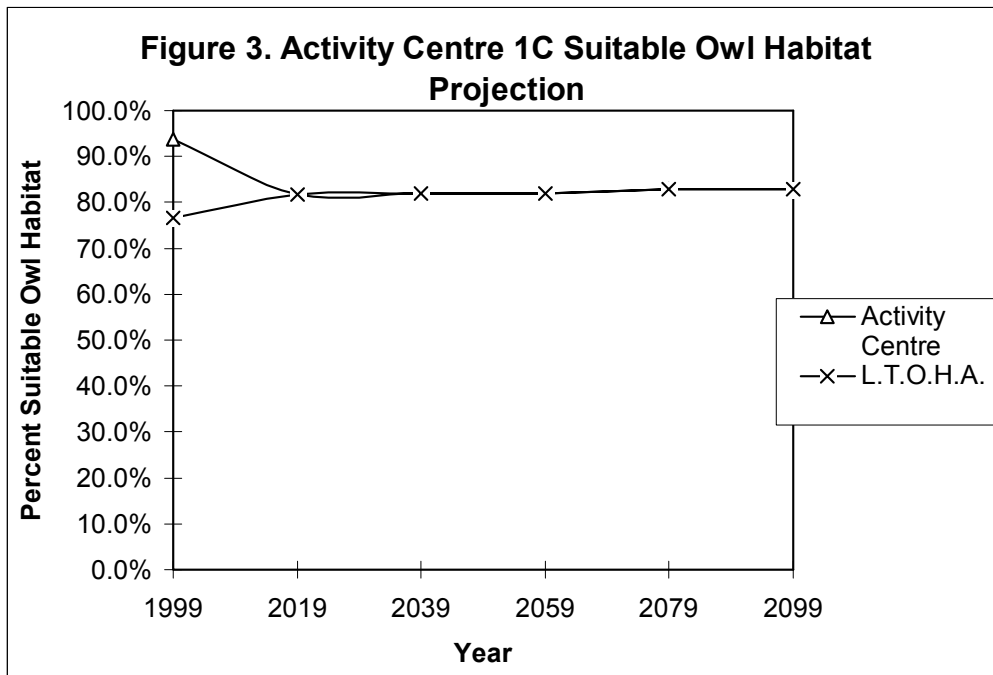
Activity Centre 1C

This activity center is located between Sumallo Grove to the west, Skaist River to the east, Snass Creek headwaters to the north, and follows Highway #3 through Manning Park. This activity center is 2984 ha in size, approximately two-thirds of which is located within Manning Park, and the remaining one-third is located with the Siverdaisy Integrated Management Plan area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 93.7% suitable owl habitat based on the minimum forest age criteria of 100 years old. Amount of Type A habitat (forests older than 140 years) is not known (Figure 3).

The LTOHA contributes about 77% of total suitable owl habitat available within the activity centre.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what type of habitats spotted owls are selecting for.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 105.11 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort in this activity centre has been conducted along a 9 km stretch of Highway 3, 1 km west of Sumallo Grove to 5.5 km east of the Snass Creek bridge, a 5 km transect along the Snass Creek trail and a 8 km transect along the Skagit Bluffs trail. These three areas are identified as the major transect routes within this activity centre.

There has been a minimum of 16 surveys of various lengths, duration and objectives conducted in this activity centre since 1992. The total survey time is approximately 110 hours. The majority of these have been along the Highway 3 transect with only 2 being conducted along Snass Creek trail and two along Skagit Bluffs trail.

Owl Status

There have been 5 spotted owl detections within this activity centre since inventory began in 1989. These detections indicate a male and female spotted owl with “pair status” given in 1991.

Inventory/Monitoring Requirements

Location of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 4. Forest Cover Analysis of 1C for Each Management Area

Age Class	Long-Term Owl Habitat Area				Forest Management Area				FMA Total	Activity Centre Total				
	Suitable Owl Habitat			LTOHA Total	Replacement Area			Heavy Volume Removal						
	No Cons.	Cons.	Subtotal		No Cons.	Cons.	Subtotal	No Cons.			Cons.	Subtotal		
1				0	0.00					0	0.00	0.00		
2				23.17	23.17					0	0.00	23.17		
3				3.78	3.78					0	0.00	3.78		
4				2.35	2.35					0	0.00	2.35		
5				0.06	156.81	156.87					1.02	1.02	157.89	
6		127.44	127.44							46.5	46.5	173.94		
7	0.48	185.74	186.22							65.47	172.95	424.64		
8		967.45	967.45							227.22	227.22	1194.67		
9		21.56	21.56								0	21.56		
NSR					0.00	0.00					0	0.00		
Protected Area		982.00	982.00		0.00	0.00					0.00	982.00		
Total	0.48	2284.19	2284.67	0.06	186.11	186.17	2470.84	0.00	0.00	0.00	65.47	447.69	513.16	2984.00
				Percent of Activity centre			82.80%				Percent of Activity centre			17.20%
Age Class 6-9	0.48	2284.19	2284.67	0.00	0.00	0.00	2284.67	0.00	0.00	0.00	65.47	446.67	512.14	512.14

Predicted Schedule for RPA/RCA Trade-off
RPA Available

1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	0.00
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Chilliwack & Silverhope
Special Resource Management Zone 2

May 31, 1999

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Chilliwack & Silverhope SRMZ

The Chilliwack & Silverhope SRMZ is approximately 15337 ha of gross forested area (See Map 1:SRMZ 2). This SRMZ is bounded to the south by the United States border and follows the Chilliwack River drainage west to Foley creek, follows Post Creek drainage east-ward Silverhope Creek, where it proceeds north to Silver Lake. Five long-term activity centres were established varying in size between 2,350 to 3,350 ha of gross forested area.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHds1 and CWHms1. These dryer sub-maritime ecosystems are characterized by Natural Disturbance Type (NDT) 2 which is described in the Biodiversity Guidebook as forests having infrequent stand initiating events usually relating to fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. At higher elevations (MHmm2) and in areas on Ford Mountain (CWHdm, CWHvm2), forests fall within NDT 1. These wetter maritime ecosystems are characterized as forests having rare to infrequent stand initiating events usually relating to fire. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Chilliwack/Silverhope SRMZ.

Long-term Activity centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
2 A	2367 ha	232 ha (10%)	1105 ha (47%)	1337 ha (57%)
2 B	2780 ha	209 ha (8%)	1056 ha (38%)	1265 ha (46%)
2 C	3145 ha	929 ha (30%)	501 ha (16%)	1430 ha (46%)
2 D	3555 ha	756 ha (21%)	1155 ha (33%)	1911 ha (54%)
2 E	3492 ha	919 ha (26%)	1675 ha (48%)	2594 ha (74%)
Total SRMZ	15339 ha	3045 ha (20%)	5492 ha (36%)	8537 ha (56%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

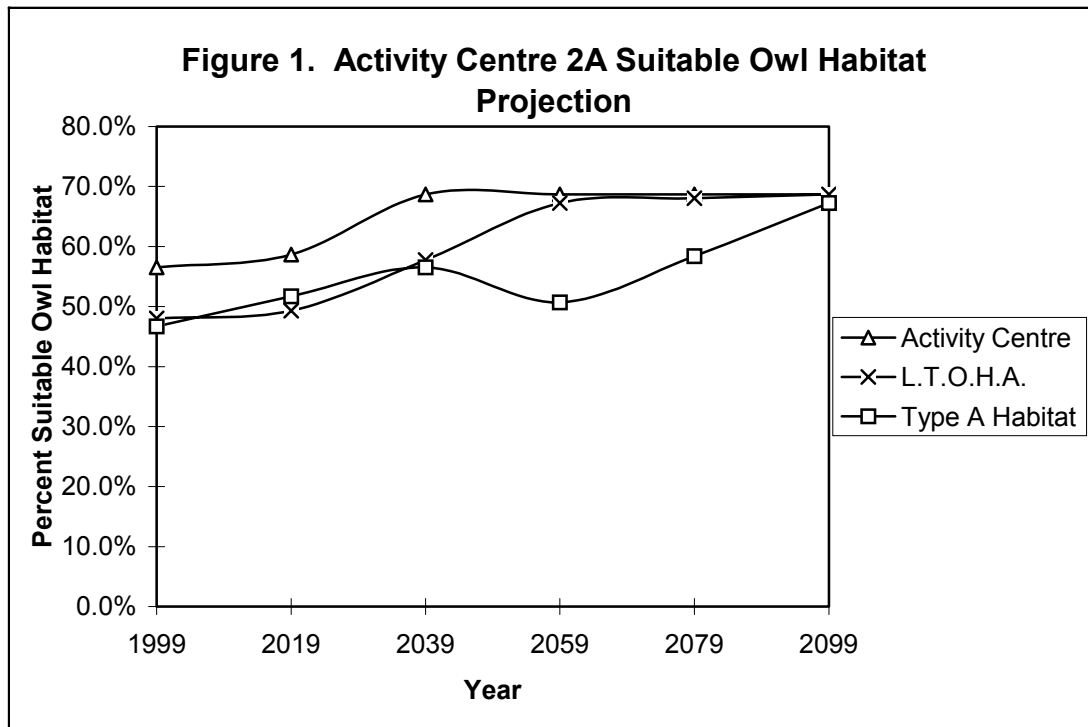
Activity Centre 2A

This activity center is located at the southern end of the SRMZ. It is bounded to the south by the United States border and proceeds north to the north end of Chilliwack Lake. It is approximately 2,367 ha of gross forested area. Chilliwack Lake acts as a natural barrier dividing this activity center into two halves, limiting owl movement east to west across the lake.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 57% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 47% of the total activity centre. Achieving the 50% Type A habitat target will take up to 20 years (Figure 1).

The LTOHA contributes 48% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 19% suitable owl habitat within the LTOHA will take up to 60 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1105 ha of Type A (age class 8&9) and 232 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats utilized by the owl.
- Inventory of age class 5 to determine age and suitability . There is currently 97.17ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Over the last five years extensive surveys have been completed along the east side of Chilliwack Lake, the Upper Chilliwack River Trail, the first 2 km of Depot Creek M/L and the first km of Paleface Creek. The transects identified within this activity centre are: a linear 12 km low elevation transect along the mainline on the east side of Chilliwack lake continuing down the Upper Chilliwack River Trail, and a 8 linear km mid to high elevation transect along the west side of Chilliwack lake.

Since 1992 a minimum of 26 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 89 hours. No surveys have been conducted along the west side of Chilliwack Lake.

Owl Status

There have been 7 spotted owl detections within this activity centre since 1991. The spacing of these detections indicate the possibility of two spotted owl pairs residing in this activity centre. The status of these owls remains at “pair status”. Nesting status is “unknown” at this time.

Inventory/Monitoring Requirements

Inventory protocol has been complete as of 1997 for the Upper Chilliwack River Trail and the mainline from the southern end of the lake north approximately 6 km. The remainder of the mainline north of this point to the activity centre boundary will need two surveys to be completed in 1999. Spotted owls detected within this activity centre require location of nest and/or critical roosts and the attachment of leg bands for long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 2A for Each Management Area

Age Class	Long-Term Owl Habitat Area						Forest Management Area						Activity Centre Total		
	Suitable Owl Habitat			Recruitment Area			LTOHA	Replacement Area			Heavy Volume Removal			FMA	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.		Subtotal	Total
1				15.17		15.17	15.17			0.00	39.61	0.05	39.66	39.66	54.83
2				18.58		18.58	18.58			0.00	109.42	19.73	129.15	129.15	147.73
3				64	160.65	224.65	224.65			0.00	32.06	144.42	176.48	176.48	401.13
4				63.91	136.12	200.03	200.03		45.5	45.50	70.24	0.22	70.46	115.96	315.99
5					30.53	30.53	30.53	19.82	0.88	20.70	45.94		45.94	66.64	97.17
6	8.12	104.56	112.68				112.68	0.54		0.54			0	0.54	113.22
7	4.04	79.51	83.55				83.55	8.63	26.91	35.54			0	35.54	119.09
8	83.98	179.05	263.03				263.03	15.82	124.18	140.00		0.02	0.02	140.02	403.05
9	201.85	475.32	677.17				677.17	17.22	7.74	24.96			0	24.96	702.13
NSR						0.00	0.00			0.00	12.78	0.01	12.79	12.79	12.79
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	297.99	838.44	1136.43	161.66	327.30	488.96	1625.39	62.03	205.21	267.24	310.05	164.45	474.50	741.74	2367.13
				Percent of Activity centre			68.67%				Percent of Activity centre			31.33%	
Age Class 6-9	297.99	838.44	1136.43	0.00	0.00	0.00	1136.43	42.21	158.83	201.04	0.00	0.02	0.02	201.06	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	8.84
2058	224.65
2078	18.58
2099	15.17

Assumptions

*Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).

*No Constraints is Gross Forested Area without identified Constraints above.

*Recently Logged or disturbed areas are not reflected by Forest Cover Data.

*Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

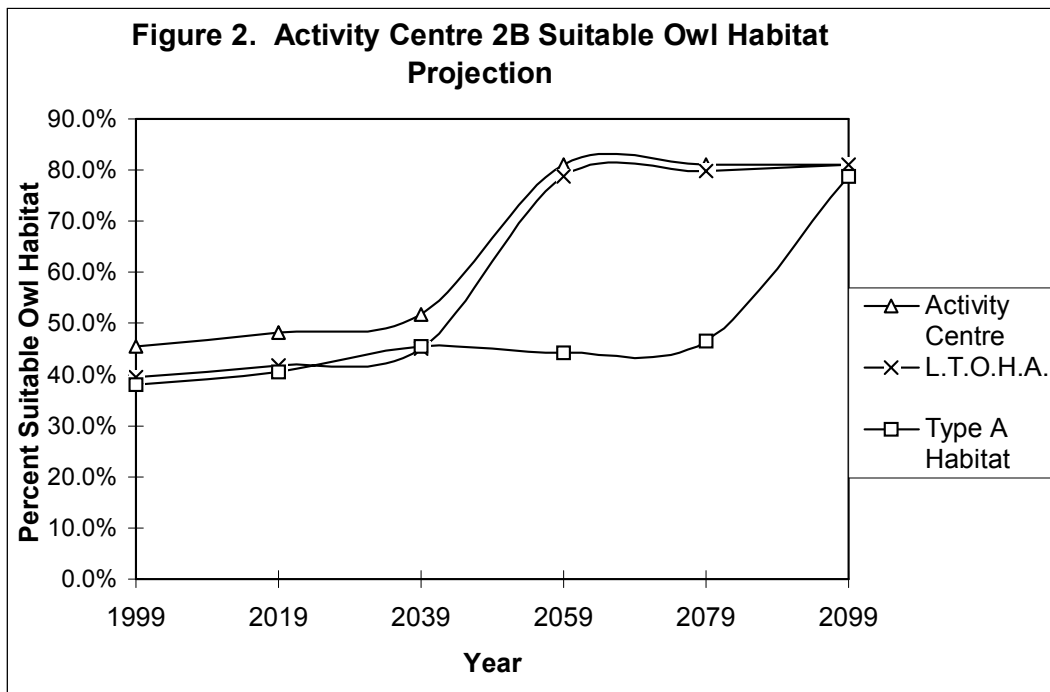
Activity Centre 2B

This activity center is bound by the north end of Chilliwack Lake and proceeds west along the Chilliwack River, north-east along Post Creek to the north end of Greendrop Lake. This activity center is approximately 2780 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 46% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 38% of the total activity centre. Achieving the 50% Type A habitat target will take up to 100 years (Figure 2).

The LTOHA contributes 39% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 28% suitable owl habitat within the LTOHA will take up to 60 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 1056 ha of Type A (age class 8&9) and 209 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats utilized by spotted owls.
- Inventory of age class 5 to determine age and suitability . There is currently 78 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

The primary emphasis of the inventory coverage in this area has been placed on the trail system leading up to Greendrop Lake, a 5.5 km trail survey from Post Creek Forest Service Recreation area to Greendrop Lake and a 6.5 linear low elevation survey along the mainline at the north end of Chilliwack Lake. These areas constitute the two major transects within this activity centre. An additional hiking survey along Radium Creek has been identified to cover the ridge south of the mainline.

Since 1989 a minimum of 24 surveys of various lengths, duration and objectives have been conducted in the activity centre. Total survey time is approximately 83 hours.

Owl Status

There have been 11 spotted owl detections within this activity centre since 1989. These detections indicate a single pair of spotted owls residing within this activity centre. There has been 1 spotted owl critical roost site identified within this activity centre. The status of these owls is "pair and nesting". This pair successfully reproduced in 1993 and 1996.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 , 4 surveys are required along the Chilliwack Lake mainline, all of which should be conducted before June 30,1999. Six hiking surveys will also be needed along the Radium Creek hiking trail, 4 before June 30,1999 to complete coverage of this activity centre. The identification of the nest site of the resident pair of spotted owls and the attachment of leg bands for long-term monitoring is still required for this activity centre.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area. Recently logged or disturbed areas are not reflected by forest cover data.

Table 3. Forest Cover Analysis of 2B for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA	Forest Management Area			Heavy Volume Removal			FMA	Activity
	Suitable Owl Habitat			No Cons.	Cons.	Subtotal	Total	Replacement Area			No Cons.	Cons.	Subtotal	Total	Centre
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	Total
1				0.5	1.11	1.61	1.61			0.00	8.46		8.46	8.46	10.07
2					29	29	29.00			0.00	4.17		4.17	4.17	33.17
3				212.1	721.73	933.83	933.83		0.01	0.01	198.49	130.24	328.73	328.74	1262.57
4				3.34	89.59	92.93	92.93		0.92	0.92			0	0	93.85
5				6.17	60.17	66.34	66.34		11.21	11.21		0.03	0.03	11.24	77.58
6		28.69	28.69				28.69	64.2	47.11	111.31			0	111.31	140.00
7		55.49	55.49				55.49		13.7	13.70			0	13.70	69.19
8	68.76	187.72	256.48				256.48	13.02	13.75	26.77		0	0	26.77	283.25
9	90.08	666.42	756.5				756.50	12.63	3.86	16.49			0	16.49	772.99
NSR				34.2	0.48	34.68	34.68			0.00	2.24		2.24	2.24	36.92
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	158.84	938.32	1097.16	256.31	902.08	1158.39	2255.55	89.85	90.56	180.41	213.36	130.27	343.63	524.04	2779.59
				Percent of Activity centre			81.15%				Percent of Activity centre			18.85%	
Age Class 6-9	158.84	938.32	1097.16	0.00	0.00	0.00	1097.16	89.85	78.42	168.27	0.00	0.00	0.00	168.27	

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	0.00
2038	0.00
2058	115.12
2078	29.00
2099	36.29

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

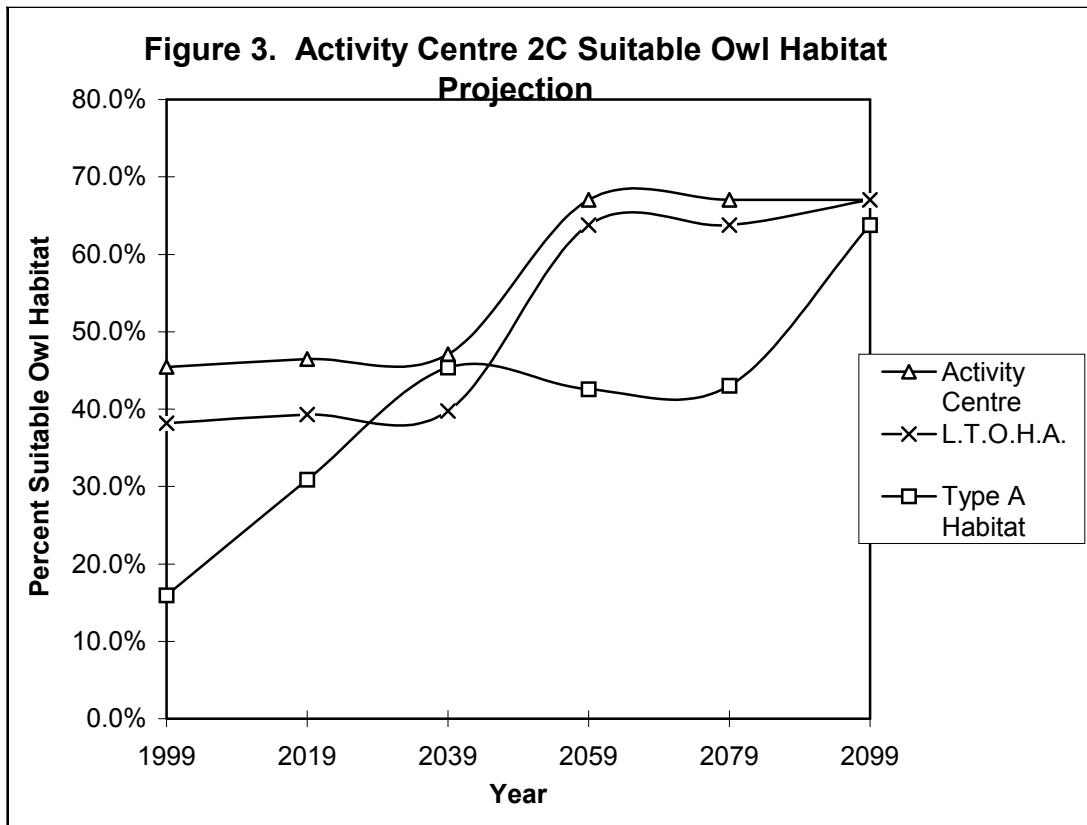
Activity Centre 2C

This activity center is located in the western most portion of the SRMZ. The activity centre overlaps Chilliwack River west to Foley Creek . This activity center is approximately 3145 ha in gross forested area.

Suitable Owl Habitat Assessment

Habitat inventories have been collected in the Ford Mountain area by MOF and New Forest Opportunities Limited with the support of MELP and Scott Paper. Unfortunately, data analysis has not been completed. The activity centre currently contains about 46% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 16% of the total activity centre. Achieving the 50% Type A habitat target will take up to 100 years (Figure 3).

The LTOHA contributes 38% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 29% suitable owl habitat within the LTOHA will take up to 60 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 501 ha of Type A (age class 8&9) and 929 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability. There is currently 35.42 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Nine linear km of mainline surveys, 6.0 Km of driving/hiking surveys up Ford Mountain Trail and an additional 5.5 Km hiking survey up Williams Peak Trail make up the three major survey routes within this activity centre.

There have been 5 surveys along the Ford Mountain Trail and five surveys along the Chilliwack Lake Mainline over the past 8 years. No surveys were conducted during 1991 through 1994 inclusively. The total survey time within this activity centre is approximately 26 hours.

Owl Status

No Spotted Owls have been detected to date within this activity centre.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol will require a minimum 4 surveys along the mainline survey route, all of these before June 30,1999. Six surveys along each of the 2 other survey routes are needed to complete the rest of the activity centre. Two of these surveys must be performed before June 30 if a 2-year time span is used and 4 surveys before June 30 if a 1-year time span is used.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area. Recently logged or disturbed areas are not reflected by forest cover data.

Table 4. Forest Cover Analysis of 2C for Each Management Area

Age Class	Long-Term Owl Habitat Area						Forest Management Area						Activity Centre Total		
	Suitable Owl Habitat			Recruitment Area			LTOHA	Replacement Area			Heavy Volume Removal			FMA	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.		Subtotal	Total
1				55.67	15.02	70.69	70.69			0.00	5.11		5.11	5.11	75.80
2						0	0.00			0.00	5.9	1.95	7.85	7.85	7.85
3				218.41	537.23	755.64	755.64	4.17		4.17	505.82	274.49	780.31	784.48	1540.12
4					14.09	14.09	14.09		5.14	5.14			0	5.14	19.23
5					35.42	35.42	35.42			0.00			0	0.00	35.42
6	87.73	352.41	440.14				440.14		14.85	14.85			0	14.85	454.99
7	244.05	226.48	470.53				470.53			0.00	3.13		3.13	3.13	473.66
8	115.55	128.1	243.65				243.65	31.36	8.53	39.89			0	39.89	283.54
9	20.85	25.12	45.97				45.97	90.29	80.77	171.06		0.01	0.01	171.07	217.04
NSR				29.85	2.29	32.14	32.14			0.00		4.81	4.81	4.81	36.95
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	468.18	732.11	1200.29	303.93	604.05	907.98	2108.27	125.82	109.29	235.11	519.96	281.26	801.22	1036.33	3144.60
				Percent of Activity centre			67.04%				Percent of Activity centre			32.96%	
Age Class 6-9	468.18	732.11	1200.29	0.00	0.00	0.00	1200.29	121.65	104.15	225.80	3.13	0.01	3.14	228.94	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	132.28
2078	0.00
2099	102.83

Assumptions

*Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).

*No Constraints is Gross Forested Area without identified Constraints above.

*Recently Logged or disturbed areas are not reflected by Forest Cover Data.

*Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

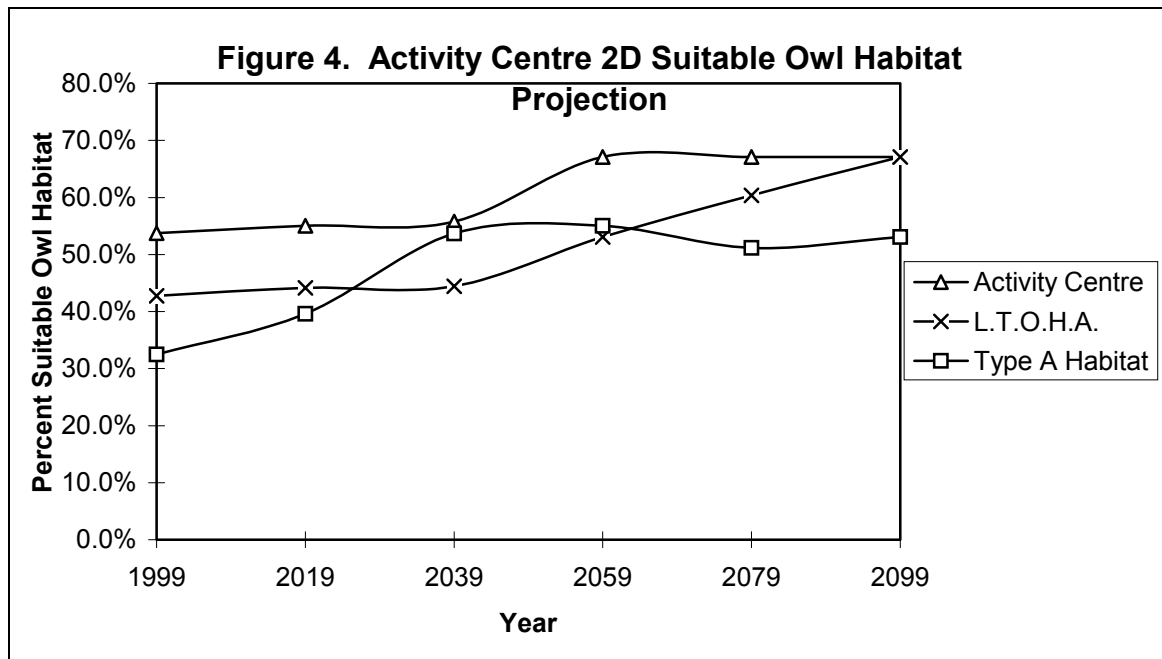
Activity Centre 2D

This activity center is located at the eastern most portion of the SRMZ and is approximately 3555 ha of gross forested area. This activity center extends from the east end of Greendrop Lake following Hicks Creek eastward to Silverhope Creek headwaters and northward to Cantelon Creek.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 54% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 33% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 4).

The LTOHA contributes 43% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 24% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1155 ha of Type A (age class 8&9) and 756 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 49 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 79 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

The inventory coverage for this activity centre includes an 8 linear km road survey along the Silver-Skagit mainline, an additional 7 km of hiking/driving surveys along the Hicks Creek corridor and 3 km along the bottom of the Yola Creek mainline.

There has been minimal survey coverage along these routes over the past 5 years. The only coverage in this area has come from coincidental overlap of survey routes into this activity centre. This activity centre is incomplete according to protocol.

Owl Status

There have been no spotted owl detections within this activity centre.

Inventory/Monitoring Requirements

To complete the activity centre according to protocol by the end of the 1999 field season 6 surveys will be needed along the Hicks Creek corridor, 4 of these before June 30, 1999. Four surveys will be needed heading north along the mainline from the confluence of Hicks Creek and Silverhope Creek to the border of this activity centre. Two of these surveys must be completed before June 30, 1999. Six surveys will be needed along the beginning 3 km of the Yola Creek mainline. These could be incorporated into the previously mentioned surveys north of the Hicks Creek - Silverhope confluence. Finally, 3 additional surveys will be needed from the confluence of Hicks Creek and Silverhope Creek South to the edge of the SRMZ. This coverage would enable the protocol to be completed and only monitoring would be needed for the next five years. If spotted owls are detected, nest and/or roost sites will be located, leg bands will be attached and long-term monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 5 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by forest cover data. As part of the Mehatl Creek Protected Areas Mitigation Strategy, International Forest Products Ltd. is entitled to, over the next fifty years, the first 80 ha of mature forest available for heavy volume removal.

Table 5. Forest Cover Analysis of 2D for Each Management Area

Age Class	Long-Term Owl Habitat Area						Forest Management Area						Activity Centre Total		
	Suitable Owl Habitat			Recruitment Area			LTOHA Total	Replacement Area			Heavy Volume Removal			FMA Total	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		No Cons.	Cons.	Subtotal	No Cons.	Cons.			Subtotal
1				135.54	52.32	187.86	187.86			0.00	194.19	14.86	209.05	209.05	396.91
2				130.79	128.4	259.19	259.19		0.02	0.02	115.72	36.14	151.86	151.88	411.07
3				263.31	45.13	308.44	308.44		93.68	93.68	126.67	174.36	301.03	394.71	703.15
4				2.53	7.82	10.35	10.35	10.25	5.57	15.82			0	15.82	26.17
5				0.32	48.24	48.56	48.56			0.00	0.07		0.07	0.07	48.63
6	98.84	329.35	428.19				428.19	29.8	41.98	71.78			0	71.78	499.97
7	61.44	166.72	228.16				228.16	1.16	24.02	25.18	2.19		2.19	27.37	255.53
8	166.06	380.71	546.77				546.77	18.79	155.09	173.88			0	173.88	720.65
9	131.09	185.94	317.03				317.03	19.23	97.54	116.77		0.26	0.26	117.03	434.06
NSR				48.05	2.99	51.04	51.04			0.00	1.73	5.74	7.47	7.47	58.51
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	457.43	1062.72	1520.15	580.54	284.90	865.44	2385.59	79.23	417.90	497.13	440.57	231.36	671.93	1169.06	3554.65
				Percent of Activity centre			67.11%				Percent of Activity centre			32.89%	
Age Class 6-9	457.43	1062.72	1520.15	0.00	0.00	0.00	1520.15	68.98	318.63	387.61	2.19	0.26	2.45	390.06	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	258.23
2099	238.90

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

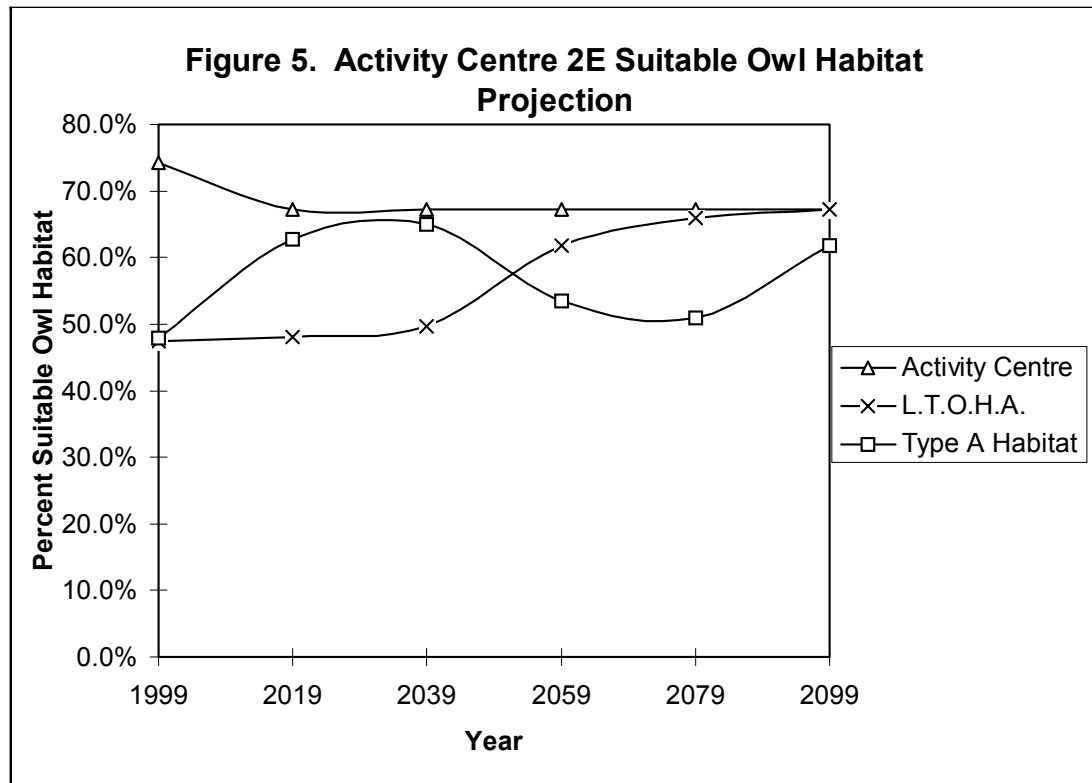
Activity Centre 2E

This activity center is located at the northern most portion of the SRMZ and is approximately 3492 ha of gross forested area. This activity center extends from Cantelon Creek to the south end of Silver Lake encompassing the headwaters of Swanee and Maimen Creeks.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 74% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 48% of the total activity centre. Achieving the 50% Type A habitat target will take up to 20 years (Figure 5).

The LTOHA contributes 47% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 20% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1675 ha of Type A (age class 8&9) and 919 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 36 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this area has been concentrated along the Silver-Skagit mainline (a 9 km road survey) and along the Eaton Lake Trail (3.5 linear km). Since 1993, a minimum of 44 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 120 hours. The majority of this has fallen along the mainline transect.

Owl Status

To date a pair of spotted owls has been detected within this activity centre. The total number of spotted owl detections for this area is 7. Nesting status is “unknown” at this time.

Inventory/Monitoring Requirements

Access to the west side of Silverhope Creek is limited within this activity centre. Most of the spotted owl detections have been on this western side of the valley so locations of possible nest and roost sites have been extremely difficult to determine. There is also a large tract of habitat in the upper reach of Maimen Creek which has not been inventoried due to inaccessibility.

This activity centre has been completed according to the spotted owl inventory protocol in the entire low elevation habitat that runs parallel to the Silver Skagit mainline. Nest and/or roost sites should be located and owls will require the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 5 provides the current forest cover analysis by age class for each management area. Recently logged or disturbed areas are not reflected by forest cover data. As part of the Mehatl Creek Protected Areas Mitigation Strategy, International Forest products is entitled to, over the next fifty years, the first 100 ha of mature forest available for heavy volume removal.

Table 6. Forest Cover Analysis of 2E for Each Management Area

Age Class	Long-Term Owl Habitat Area						Forest Management Area						Activity Centre Total		
	Suitable Owl Habitat			Recruitment Area			LTOHA Total	Replacement Area			Heavy Volume Removal			FMA Total	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		No Cons.	Cons.	Subtotal	No Cons.	Cons.			Subtotal
1				13.25		13.25	13.25			0.00	33.9	4.66	38.56	38.56	51.81
2				106.11	35.37	141.48	141.48			0.00	14.7	3.87	18.57	18.57	160.05
3				217.79	210.58	428.37	428.37			0.00	70.8	41.47	112.27	112.27	540.64
4				51.26	0.01	51.27	51.27			0.00	7.31	0.55	7.86	7.86	59.13
5				11.76	15.19	26.95	26.95			0.00		9.38	9.38	9.38	36.33
6	64.97	61.17	126.14				126.14	4.63	3.91	8.54	36.75		36.75	45.29	171.43
7	187.96	326.67	514.63				514.63	66.5	125.07	191.57	0.58	41.16	41.74	233.31	747.94
8	107.95	512.06	620.01				620.01	5.62	228.02	233.64	0.35	9.31	9.66	243.30	863.31
9	251.64	141.05	392.69				392.69	78.38	174.65	253.03	104.36	61.74	166.1	419.13	811.82
NSR				2.05	29.55	31.60	31.60		0	0.00	16.45	1.62	18.07	18.07	49.67
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	612.52	1040.95	1653.47	402.22	290.70	692.92	2346.39	155.13	531.65	686.78	285.20	173.76	458.96	1145.74	3492.13
				Percent of Activity centre			67.19%				Percent of Activity centre			32.81%	
Age Class 6-9	612.52	1040.95	1653.47	0.00	0.00	0.00	1653.47	155.13	531.65	686.78	142.04	112.21	254.25	941.03	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	20.81
2038	51.27
2058	428.37
2078	141.48
2099	44.85

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Liumchen
Special Resource Management Zone 3

May 31, 1999

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Liumchen SRMZ

The Liumchen SRMZ is approximately 6907 ha of gross forested area (See Map 1:SRMZ 3). It ranges in elevation from 80 m (Chilliwack River) up to a maximum of 1370 m. The SRMZ includes Liumchen Creek, Little Tamihi Creek, Windfall Creek, Clear Creek, Teapot Creek, Amadis Creek and Watt Creek drainages. This SRMZ Borders along Cultus Lake and the Chilliwack River and incorporates 3873 of gross forested area of Cultus Lake Provincial Park and the International Ridge/Liumchen Protected Area. Two long-term activity centres were established, each approximately 3500 hectares of gross forested area.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHdm, CWH vm2 and MH mm2. These wetter maritime ecosystems are characterized by Natural Disturbance Type (NDT) 1 which is described in the Biodiversity Guidebook as forests having rare to infrequent stand initiating events usually relating to fire. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Liumchen SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
3 A	3658 ha	770 ha (21%)	1371 ha(38%)	2141 ha (59%)
3 B	3250 ha	375 ha (12%)	466 ha (14%)	841 ha (26%)
Total SRMZ	6908 ha	1145 ha (17%)	1837 ha (27%)	2982 ha (44%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with owl protection.

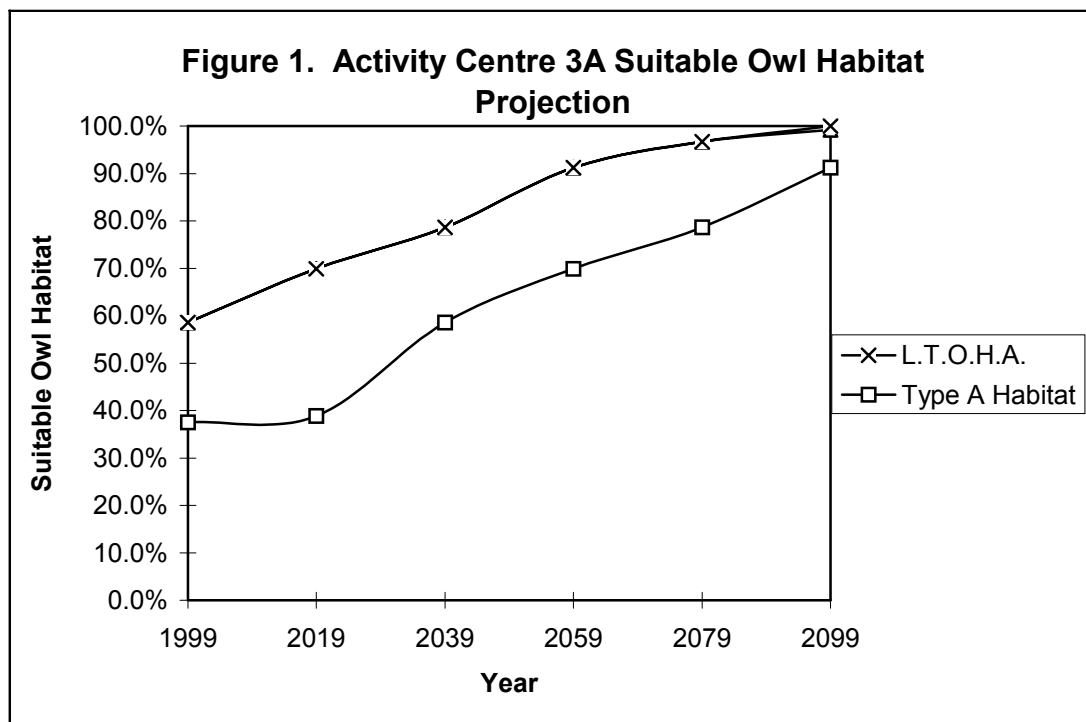
Activity Centre 3A

This activity centre is located at the south-western portion of the SRMZ. This activity centre overlaps the upper Liumchen Creek headwaters and borders Cultus Lake. This activity center comprises approximately 3658 hectares of gross forested area that is exclusively found within protected areas.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 59% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 38% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 1).

The LTOHA contributes 59% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 8% suitable owl habitat to 67% within the LTOHA will take up to 40 years, and up to 100 years to attain 100% owl habitat within the LTOHA.



Habitat Inventory Requirements

Since this activity centre is exclusively within protected area, habitat inventories are not identified as a high priority.

Spotted Owl Assessment

Inventory Effort

There are two transect identified within this activity centre; a 9 linear km hiking transect along the Liumchen Creek mainline and a six km linear hiking transect following the trail to Liumchen Lake. Since 1989 inventory efforts have been limited due to the formation of a provincial park and no forestry activities. There have been 10 surveys with a total duration of 35 hours.

Owl Status

To date there have been 7 spotted owl detections within this activity centre that confirm the presence of a resident owl pair. These owls are listed as “pair status” and “unknown nesting status”.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys along the identified transects 4 of these before June 30,1999. Spotted owls detected require location of nests and/or critical roosts, attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by forest cover data.

Table 2. Forest Cover Analysis of 3A for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA Total	Forest Management Area			Heavy Volume Removal			FMA Total	Activity Centre Total
	Suitable Owl Habitat No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		
1				109.31	10.76	120.07	120.07			0.00			0	0.00	120.07
2				26.16	172.77	198.93	198.93			0.00			0	0.00	198.93
3				2.82	459.65	462.47	462.47			0.00			0	0.00	462.47
4				2.77	316.75	319.52	319.52			0.00			0	0.00	319.52
5				10.85	403.67	414.52	414.52			0.00			0	0.00	414.52
6	12.31	708.86	721.17				721.17			0.00			0	0.00	721.17
7		49.31	49.31				49.31			0.00			0	0.00	49.31
8	84.75	183.47	268.22				268.22			0.00			0	0.00	268.22
9	650.04	453.11	1103.15				1103.15			0.00			0	0.00	1103.15
NSR				0.44		0.44	0.44			0.00			0	0.00	0.44
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	747.10	1394.75	2141.85	152.35	1363.60	1515.95	3657.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3657.80
				Percent of Activity centre			100.00%				Percent of Activity centre			0.00%	
Age Class 6-9	747.10	1394.75	2141.85	0.00	0.00	0.00	2141.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Predicted Schedule for RPA/RCA Trade-off
RPA Available

1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	0.00
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

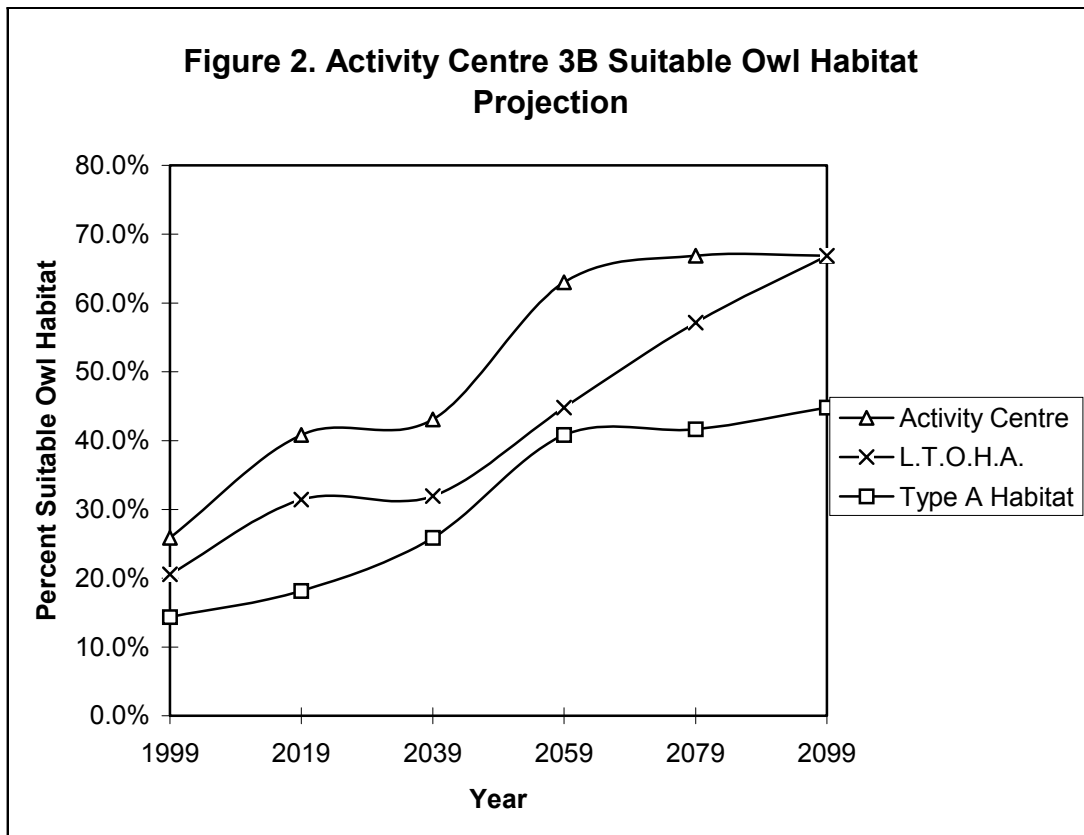
Activity Centre 3B

This activity centre is located in the north-eastern portion of the SRMZ. This activity centre is approximately 3250 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 26% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 14% of the total activity centre. Achieving the 50% Type A habitat target will take over 100 years (Figure 2).

The LTOHA contributes 21% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 46% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 466 ha of Type A (age class 8&9) and 375 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 485.40 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

No owl inventories have been conducted in this activity centre due to the low level of owl habitat currently available.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

To complete this activity centre according to survey protocol requires a minimum of 6 surveys of the entire area, 4 of the 6 surveys should occur prior to June 30,1999. If spotted owls are detected then additional inventories will be required for identification of nests and/or critical roosts, attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by forest cover data.

Table 3. Forest Cover Analysis of 3B for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA	Forest Management Area			Heavy Volume Removal			FMA	Activity	
	Suitable Owl Habitat			No Cons.	Cons.	Subtotal	Total	Replacement Area			No Cons.	Cons.	Subtotal	Total	Centre	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		Total	
1					211.98	211.98	211.98			0.00		241.92	6.04	247.96	247.96	459.94
2				109.53	292.16	401.69	401.69			0.00		39.28	92.44	131.72	131.72	533.41
3				285.38	132.08	417.46	417.46	196.69	33.73	230.42			0.02	0.02	230.44	647.90
4					17.56	17.56	17.56	45.13	10.96	56.09					56.09	73.65
5				332.49	20.62	353.11	353.11	93	39.29	132.29					132.29	485.40
6	80.73	94.8	175.53				175.53	55.69	19.34	75.03				0	75.03	250.56
7	71.39	19.82	91.21				91.21	31.04	1.77	32.81				0	32.81	124.02
8	43.26	38.04	81.3				81.30			0.00				0	0.00	81.30
9	102.89	217.01	319.9				319.90	20.1	44.99	65.09				0	65.09	384.99
NSR				89.77	13.1	102.87	102.87			0.00		61.07	44.4	105.47	105.47	208.34
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00				0.00	0.00	0.00
Total	298.27	369.67	667.94	817.17	687.50	1504.67	2172.61	441.65	150.08	591.73	342.27	142.90	485.17		1076.90	3249.51
				Percent of Activity centre			66.86%				Percent of Activity centre				33.14%	
Age Class 6-9	298.27	369.67	667.94	0.00	0.00	0.00	667.94	106.83	66.10	172.93	0.00	0.00	0.00		172.93	

Predicted Schedule for RPA/RCA Trade-off
RPA Available

1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	276.88
2099	314.85

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Sowaqua & Coquihalla
Special Resource Management Zone 4

May 31, 1999

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Sowaqua & Coquihalla SRMZ

The Sowaqua and Coquihalla SRMZ is approximately 8929 ha of gross forested area (See Map 1:SRMZ 4). It ranges in elevation from 120 m up to 1370 m. The SRMZ extends from the east side of the Fraser River following the Nicolum River to Eight Mile Creek and follows the Coquihalla River northwards to Dewdney Creek. This SRMZ overlaps the Sowaqua Creek, Coquihalla River, Railway Creek, Nine Mile Creek and Ten Mile Creek drainages. This SRMZ also surrounds Mount Jarvis which exceeds the 1370 m elevation limit of the SRMZ boundary. Three long-term activity centres were established varying in size between 2,614 to 3,191 hectares of gross forested area.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHds1 and CWHms1. These dryer subarctic ecosystems are characterized by Natural Disturbance Type (NDT) 2 which is described in the Biodiversity Guidebook as forests having infrequent stand initiating events usually relating to fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. At higher elevations, forests are located within the MH mm2 subzone and fall within NDT 1. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Sowaqua and Coquihalla SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
4 A	3124 ha	578 ha (19%)	883 ha (28%)	1461 ha (47%)
4 B	2614 ha	490 ha (19%)	1563 ha (60%)	2053 ha (79%)
4 C	3191 ha	523 ha (16%)	1674 ha (53%)	2197 ha (69%)
Total SRMZ	8929 ha	1591 ha (18%)	4120 ha (46%)	5711 ha (64%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

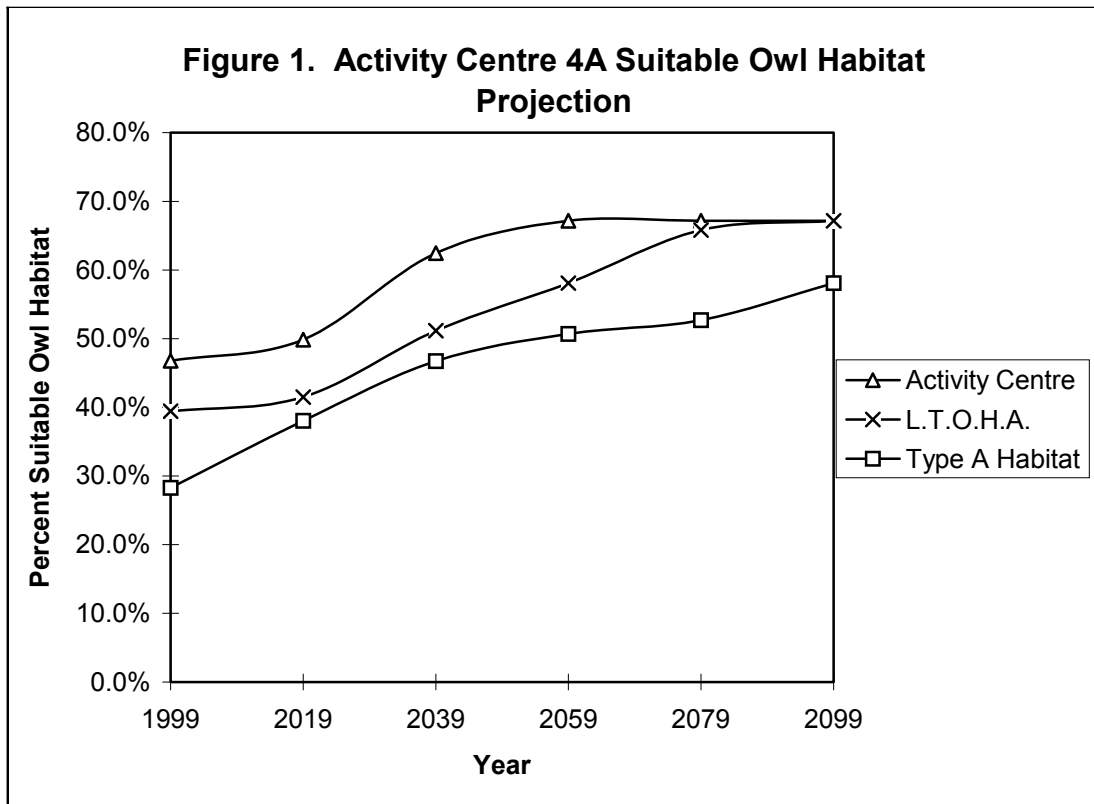
Activity Centre 4A

This activity centre is located in the western portion of the SRMZ and is approximately 3124 ha of gross forested area. The activity centre follows the east bank of the Fraser River, crosses the Coquihalla River and proceeds up the Nicolum River to Eight Mile Creek.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 47% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 28% of the total activity centre. Achieving the 50% Type A habitat target will take up to 100 years (Figure 1).

The LTOHA contributes 39% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 28% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 883ha of Type A (age class 8&9) and 578ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 96.64 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage within this area has been conducted along the area surrounding Kawkawa Lake. There are 2 potential transects identified within this activity centre; a linear six km non roaded/trailed high elevation transect south and west of Ogilvie Peak and an 8 km linear low elevation transect along the Coquihalla highway and adjacent to Kawkawa Lake.

Since 1989 there has been limited inventory effort within this activity centre. There are four recorded surveys with a total duration of 7.8 hours. These surveys have been conducted exclusively along the Kawkawa Lake transect.

Owl Status

To date no spotted owls have been detected within this activity centre.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys along both of the identified transects, 4 of these before June 30,1999. Spotted owls detected will require the identification of nests and/or critical roosts, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 4A for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA	Forest Management Area			Heavy Volume Removal			FMA	Activity
	Suitable Owl Habitat			No Cons.			Cons.	Replacement Area			No Cons.			Cons.	Centre
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	Total
1				12.73	19.77	32.5	32.50	5.12		5.12	40.68	2.75	43.43	48.55	81.05
2				55.52	185.3	240.82	240.82		0.00	0.00	15.93	77.49	93.42	93.42	334.24
3				33	183.77	216.77	216.77	70.17	4.54	74.71	177.52	94.17	271.69	346.40	563.17
4				37.59	265.53	303.12	303.12	89.99	1.15	91.14	77.23	20.36	97.59	188.73	491.85
5				9.99	53.95	63.94	63.94	20.71	11.98	32.69	0.01		0.01	32.70	96.64
6	29.81	209.03	238.84				238.84	9.9	22.75	32.65			0	32.65	271.49
7	16.93	252.22	269.15				269.15	11.91	25.76	37.67		0.01	0.01	37.68	306.83
8	42.19	549.28	591.47				591.47	29.92	116.92	146.84	0.7	0.15	0.85	147.69	739.16
9	7.3	125.1	132.4				132.40	6.51	5.03	11.54			0	11.54	143.94
NSR					10.04	10.04	10.04			0.00	40.13	45.76	85.89	85.89	95.93
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	96.23	1135.63	1231.86	148.83	718.36	867.19	2099.05	244.23	188.13	432.36	352.20	240.69	592.89	1025.25	3124.30
				Percent of Activity centre			67.18%				Percent of Activity centre			32.82%	
Age Class 6-9	96.23	1135.63	1231.86	0.00	0.00	0.00	1231.86	58.24	170.46	228.70	0.70	0.16	0.86	229.56	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	143.88
2078	240.82
2099	47.66

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

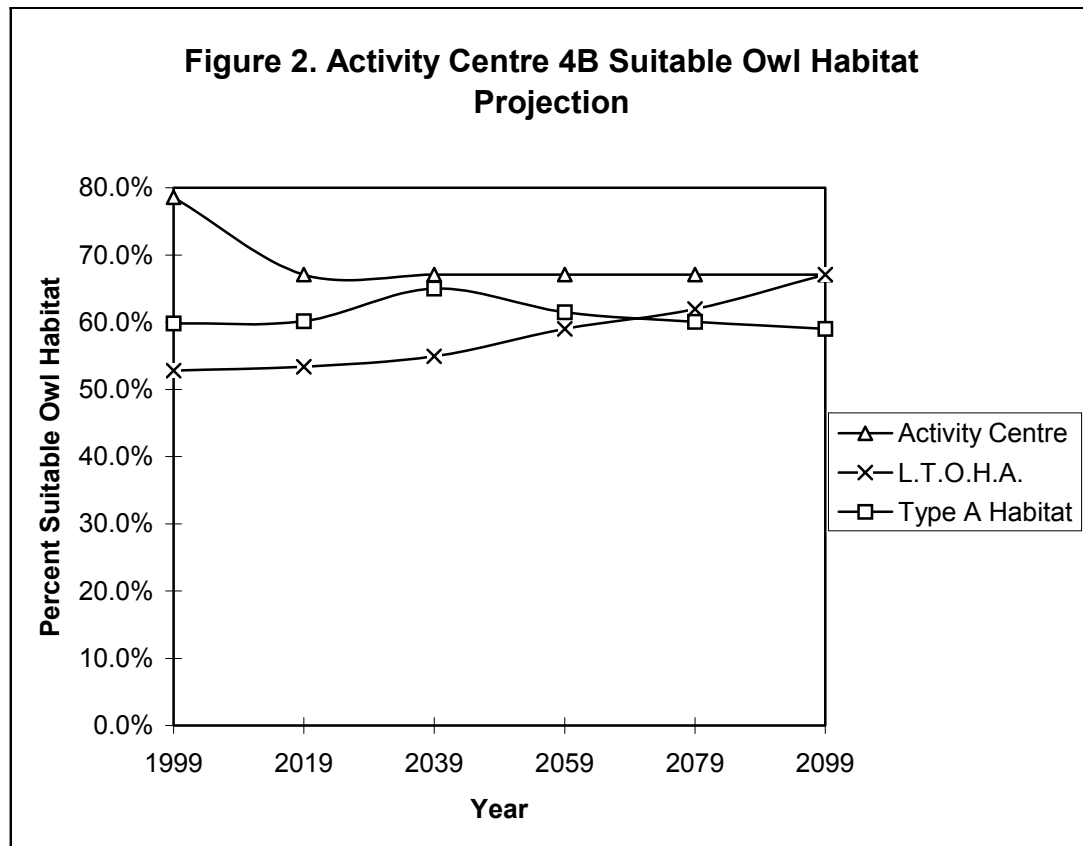
Activity Centre 4B

This activity centre is located in the central portion of the SRMZ and is approximately 2614 ha of gross forested area. The activity centre follows along the Coquihalla River and overlaps Railway Creek, Nine Mile Creek, Ten Mile Creek and Ophelia Creek drainages.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 79% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 60% of the total activity centre (Figure 2).

The LTOHA contributes 53% of the total suitable owl habitat within the activity centre. Recruitment of the remaining 14% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

One habitat inventory requirement has been identified within this activity centre:

- Based on age class there is currently 1563 ha of Type A (age class 8&9) and 490 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

There are two potential transects identified for this activity centre a linear 7 km driving survey along the Coquihalla highway and a 4 km driving transect along Deneau Creek.

Since 1992 there have been a minimum of 20 surveys of varying length, duration and objectives within this activity centre. Total survey time is approximately 10.8 hours. The majority of this effort has been placed along the Coquihalla corridor.

Owl Status

There have been 9 spotted owl detections within this activity centre corresponding to a single pair. These owls are listed as “pair status” and “unknown nesting status”.

Inventory/Monitoring Requirements

To complete this activity centre by 1999 according to protocol the Coquihalla transect requires 4 additional surveys, 2 of these prior to June 30,1999. The Deneau transect requires 6 surveys, 4 of these prior to June 30,1999. The spotted owls detected within this activity centre require identification of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 3. Forest Cover Analysis of 4B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal									
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal						
1				44.3	87.05	131.35									
2				60.75	16.43	77.18			22.65	2.74	25.39	25.39	156.74		
3				9.1	97.96	107.06			37.06	1.04	38.1	38.10	115.28		
4				32.21	7.67	39.88			70.44	44.3	114.74	114.74	221.80		
5					15.43	15.43					0	0.00	39.88		
6	0.41	165.51	165.92							3.46	3.46	3.46	18.89		
7	10.74	198.26	209								0	0.00	165.92		
8	122.26	504.9	627.16						10.77	68.25	79.02	115.03	324.03		
9	25.3	352.28	377.58						235.5	235.50	41.55	95.06	136.61	372.11	
NSR					3.11	3.11			98.05	98.05	51.81	36.84	88.65	186.70	
Protected Area		0.00	0.00		0.00	0.00					4.61	0.07	4.68	4.68	
												0.00	0.00	0.00	
Total	158.71	1220.95	1379.66	146.36	227.65	374.01	1753.67	0.00	369.56	369.56	238.89	251.76	490.65	860.21	2613.88
							67.09%							32.91%	
Age Class 6-9	158.71	1220.95	1379.66	0.00	0.00	0.00	1379.66	0.00	369.56	369.56	104.13	200.15	304.28	673.84	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	10.98
2038	39.88
2058	107.06
2078	77.18
2099	134.46

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

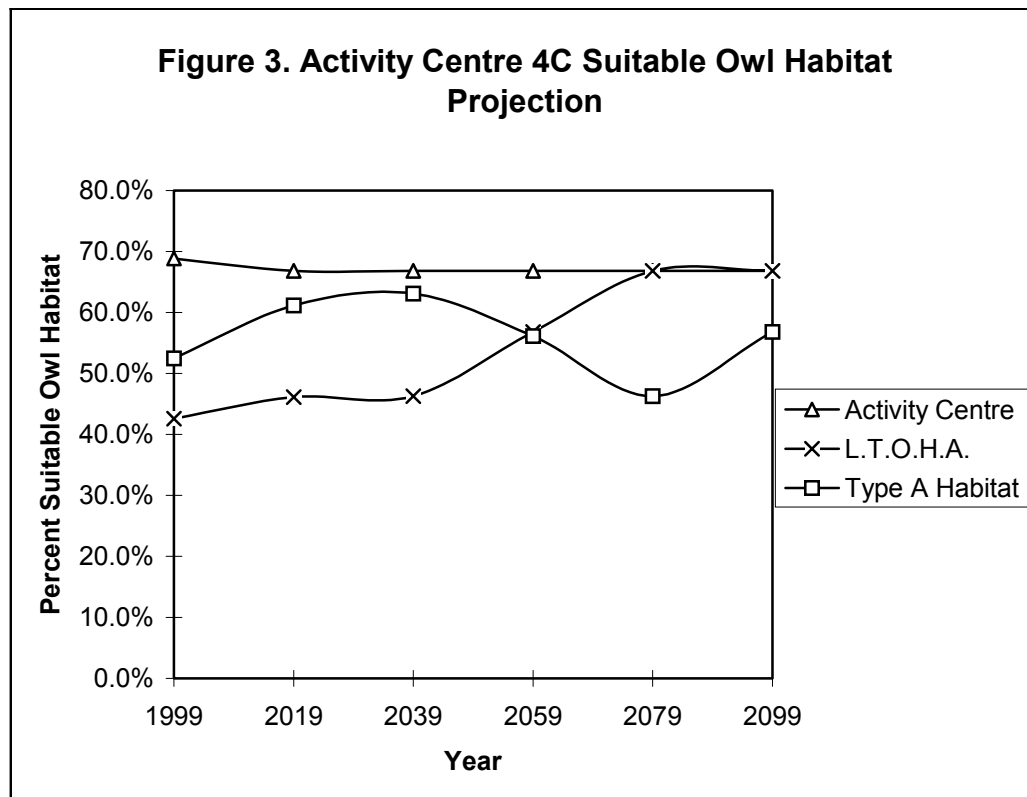
Activity Centre 4C

This activity centre is located in the eastern portion of the SRMZ and is approximately 3191 ha of gross forested area. This activity centre follows along the east bank of the Coquihalla River and overlaps the Sowaqua Creek drainage.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 69% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 53% of the total activity centre (Figure 3).

The LTOHA contributes about 43% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 24% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 1674 ha of Type A (age class 8&9) and 523 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to better determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 136.89 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this activity centre has been concentrated along the Sowaqua Creek mainline and along the Coquihalla highway corridor. There are two identified transects within this activity centre; a 6 km linear transect along the Coquihalla highway and a 6 km linear transect along the Sowaqua mainline.

Since 1992, a minimum of 96 surveys of various lengths, duration and objectives have been conducted in this activity centre. The total survey time is approximately 213 hours. These surveys have been conducted along both transects with an emphasis on the Sowaqua Creek transect.

Owl Status

There have been 66 spotted owl detections within the Sowaqua Creek drainage. These detections indicate one pair of spotted owls residing in the lower reaches of this drainage. These owls are currently listed as “nesting pair status”. There has been one critical roost site detected within this activity centre. Only the male has been banded as of August, 1998.

Inventory/Monitoring Requirements

The lower portion of the Sowaqua Creek transect has been completed to protocol as of 1997. This transect will require annual monitoring until 2002 when the inventory protocol must be met again. The Coquihalla transect will require six surveys to be completed according to protocol by the end of the 1999 field season, 4 of these surveys must be completed prior to June 30, 1999. Identification of a nest site, attachment of a leg band to the female and long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data. As part of the Mehatl Creek Protected Areas Mitigation Strategy, the Small Business Forest Enterprise Program is entitled to, over the next fifty years, the first 327 ha of mature forest available for heavy volume removal.

Table 4. Forest Cover Analysis of 4C for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal									
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal						
1						0.00			75.49	0.82	76.31		76.31		
2				39.37	279.71	319.08			36.36	33.46	69.82		69.82	388.90	
3				6.58	329.28	335.86			5.44	11.1	16.54		16.54	352.40	
4					4.87	4.87					0.00			39.68	
5				6.24	108.35	114.59			25.51	9.3	34.81		34.81	136.89	
6	16.05	11.81	27.86			27.86	19.3	138.39	0.32	21.98	22.3		22.30	215.40	
7	27.31	201.14	228.45			228.45	4.69	60.29	1.8	28.05	29.85		29.85	307.16	
8	145.98	414.53	560.51			560.51	9.7	141.17	3.49	10.24	13.73		13.73	724.84	
9	39.65	501.7	541.35			541.35	275.99	132.23	6.41	7.05	13.46		13.46	949.57	
NSR						0.00					0		0	0.20	
Protected Area		0.00	0.00		0.00	0.00			0.2		0.2		0.20	0.00	
						0.00					0.00		0.00	0.00	
Total	228.99	1129.18	1358.17	52.19	722.21	774.40	2132.57	309.68	472.08	781.76	155.02	122.00	277.02	1058.78	3191.35
							66.82%							33.18%	
Age Class 6-9	228.99	1129.18	1358.17	0.00	0.00	0.00	1358.17	309.68	472.08	781.76	11.70	45.34	57.04	838.80	

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	121.95
2038	4.87
2058	335.86
2078	319.08
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Sasquatch
Special Resource Management Zone 5

May 31, 1999

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Sasquatch SRMZ

The Sasquatch SRMZ is approximately 8813 ha of gross forested area (See Map 1:SRMZ 5). It ranges in elevation from 20 m (Harrison Lake) up to a maximum of 1370 m. This SRMZ borders Harrison Lake to the west, the Fraser River and private land to the south, Ruby Creek to the east, and north to Slollicum Creek. This SRMZ overlaps Trout Lake, Hicks Lake and Deer Lake. This SRMZ also incorporates 1057 ha of gross forested area within Sasquatch Provincial Park. Three long-term activity centres were established, 2696 to 3257 hectares of gross forested area.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHdm, and CWH vm2. These wetter maritime ecosystems are characterized by Natural Disturbance Type (NDT) 1 which is described in the Biodiversity Guidebook as forests having rare to infrequent stand initiating events usually relating to fire. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Sasquatch SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
5 A	2860 ha	305 ha (10.7%)	152 ha (5.3%)	457 ha (16.0%)
5 B	2696 ha	27 ha (1.0%)	127 ha (4.7%)	153 ha (5.7%)
5 C	3257 ha	0 ha (0%)	348 ha (10.7%)	348 ha (10.7%)
Total SRMZ	8813 ha	332 ha (3.7%)	627 ha (7.1%)	958 ha (10.9%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts.

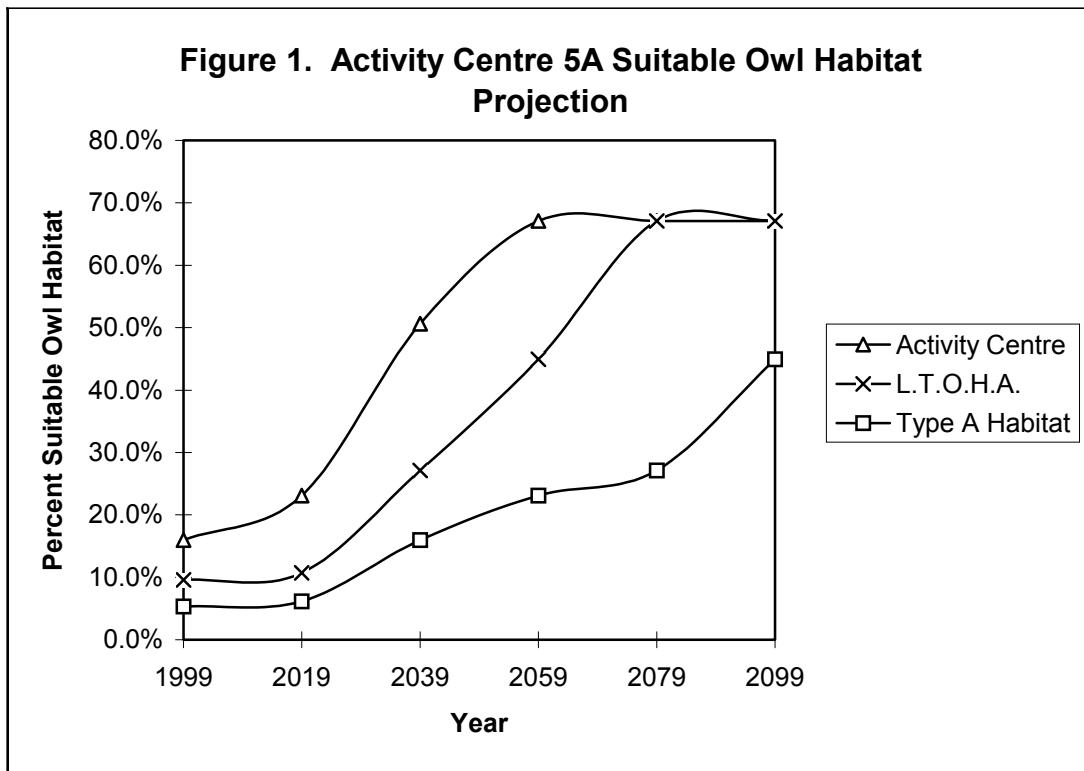
Activity Centre 5A

This activity centre is located at the south-western portion of the SRMZ and is approximately 2860 ha of gross forested area.. The activity centre borders Harrison Lake to the west, Hicks Lake and Trout Lake to the north and private land to the south.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 16% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 5.3% of the total activity centre. Achieving the 50% Type A habitat target will take over 100 years (Figure1).

The LTOHA contributes about 10% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 57% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class, there is currently 152 ha of Type A (age class 8&9) and 305 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 203.34 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

There has been no recorded inventory effort for this activity centre to date. There are two identified transects within this activity centre; and a 5.5 linear km driving transect along the East Harrison mainline and a 6 km linear high elevation transect along a deactivated forest service road. There are only small tracts of suitable habitat within this activity centre and thus this area has been given a low inventory priority.

Owl Status

To date there have been no spotted owls detected within this activity centre.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys along the identified transects, 4 of these before June 30,1999. However, there is insufficient suitable owl habitat to support resident owls at this time.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 5A for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total			
	Suitable Owl Habitat No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal
1						0	0.00			0.00		7.44	7.44	7.44	7.44
2				140.28	493.32	633.6	633.60			0.00	12.81	44.66	57.47	57.47	691.07
3				79.45	430.7	510.15	510.15			0.00	155.97	48.18	204.15	204.15	714.30
4				28.19	440.55	468.74	468.74	206.68	111.5	318.18			0	318.18	786.92
5				8.38	24.04	32.42	32.42	60.39	110.53	170.92			0	170.92	203.34
6	87.06	82.68	169.74				169.74	111.57		111.57	0.07		0.07	111.64	281.38
7		9.83	9.83				9.83	10.84	2.64	13.48			0	13.48	23.31
8			0				0.00			0.00			0	0.00	0.00
9	27.28	67.41	94.69				94.69	45.87	11.88	57.75			0	57.75	152.44
NSR						0.00	0.00			0.00			0	0.00	0.00
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	114.34	159.92	274.26	256.30	1388.61	1644.91	1919.17	435.35	236.55	671.90	168.85	100.28	269.13	941.03	2860.20
							67.10%							32.90%	
Age Class 6-9	114.34	159.92	274.26	0.00	0.00	0.00	274.26	168.28	14.52	182.80	0.07	0.00	0.07	182.87	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	38.30
2078	633.60
2099	0.00

Assumptions

- ***Constraints** is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- ***No Constraints** is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

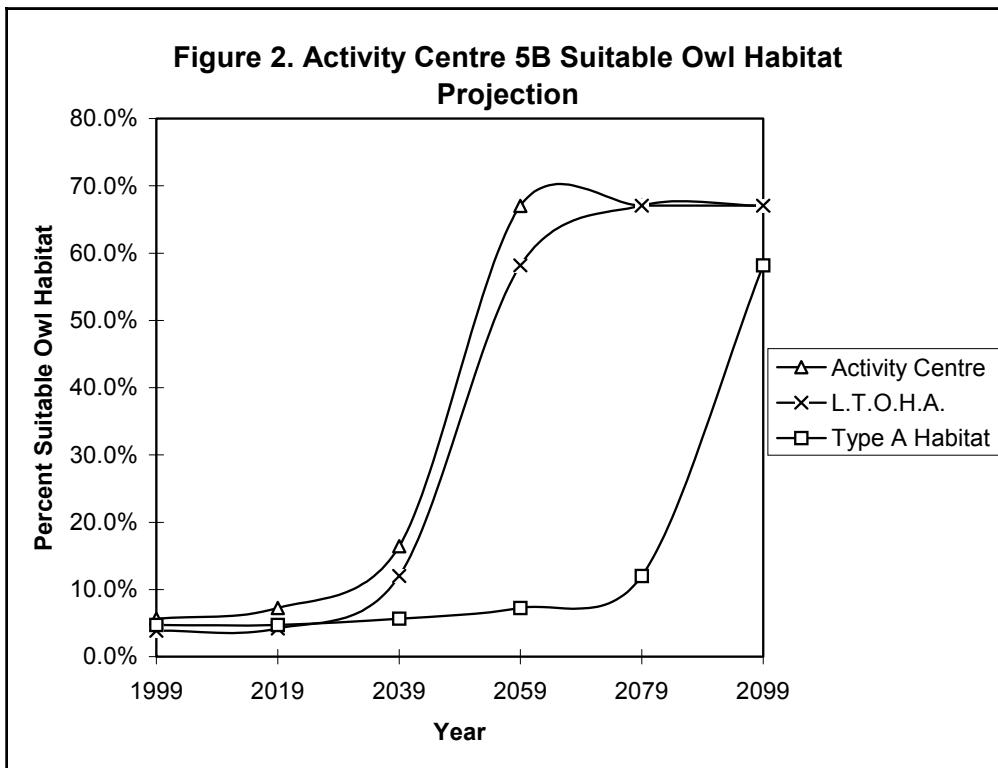
Activity Centre 5B

This activity centre is located in the eastern portion of the SRMZ and is approximately 2696 ha of gross forested area. The activity centre is bounded by Hicks Lake to the west, Deer lake to the north, Ruby Creek to the East and the Fraser River to the south.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 5.7% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 4.7% of the total activity centre. Achieving the 50% Type A habitat target will take up to 100 years (Figure 2).

The LTOHA contributes about 4% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 63% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 127 ha of Type A (age class 8&9) and 27 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 42.83 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.
- A large proportion of long term activity centre 5B consists of age class 3 (1840.90 ha). Habitat inventories should be conducted in these stands to determine the potential for management techniques to accelerate the growth of suitable spotted owl habitat.

Spotted Owl Assessment

Inventory Effort

There has been no recorded inventory effort for this activity centre to date. There are three identified transects within this activity centre, a 7 km driving transect along mainline on the north shore of the Fraser River, a 5 linear km high elevation driving transect and a 6 km low to high elevation transect along a deactivated forest service road in the northeast portion of the activity centre. There are only small tracts of suitable habitat within this activity centre and thus this area has been given a low inventory priority.

Owl Status

To date there have been no spotted owls detected within this activity centre.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys along the identified transects, 4 of these before June 30,1999. However, there is insufficient suitable owl habitat to support resident owls at this time, and therefore, immediate inventories are not a high priority.

Forest Cover Analysis for Each Management Area

The following table provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 3. Forest Cover Analysis of 5B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal			
1				0	0.00			0.00	62.03		62.03	62.03			
2				173.45	65.91	239.36	239.36	0.00	72.53	38.45	110.98	110.98	350.34		
3				935.98	308.76	1244.74	1244.74	107.47	12.09	119.56	452.83	23.77	476.6	1840.90	
4				53.69	156.41	210.1	210.10	36.65		36.65			0	36.65	246.75
5				8.97		8.97	8.97	33.86		33.86			0	33.86	42.83
6	21.54		21.54			21.54	21.54	4.14		4.14			0	4.14	25.68
7			0			0.00	0.00			0.00			0	0.00	0.00
8	10.58	29.24	39.82			39.82	39.82	15.14	3.48	18.62			0	18.62	58.44
9	20.89	22.26	43.15			43.15	43.15	4.14	21.49	25.63			0	25.63	68.78
NSR						0.00	0.00			0.00			0	0.00	0.00
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	53.01	51.50	104.51	1172.09	531.08	1703.17	1807.68	201.40	37.06	238.46	587.39	62.22	649.61	888.07	2695.75
							67.06%							32.94%	
Age Class 6-9	53.01	51.50	104.51	0.00	0.00	0.00	104.51	23.42	24.97	48.39	0.00	0.00	0.00	48.39	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	238.46
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

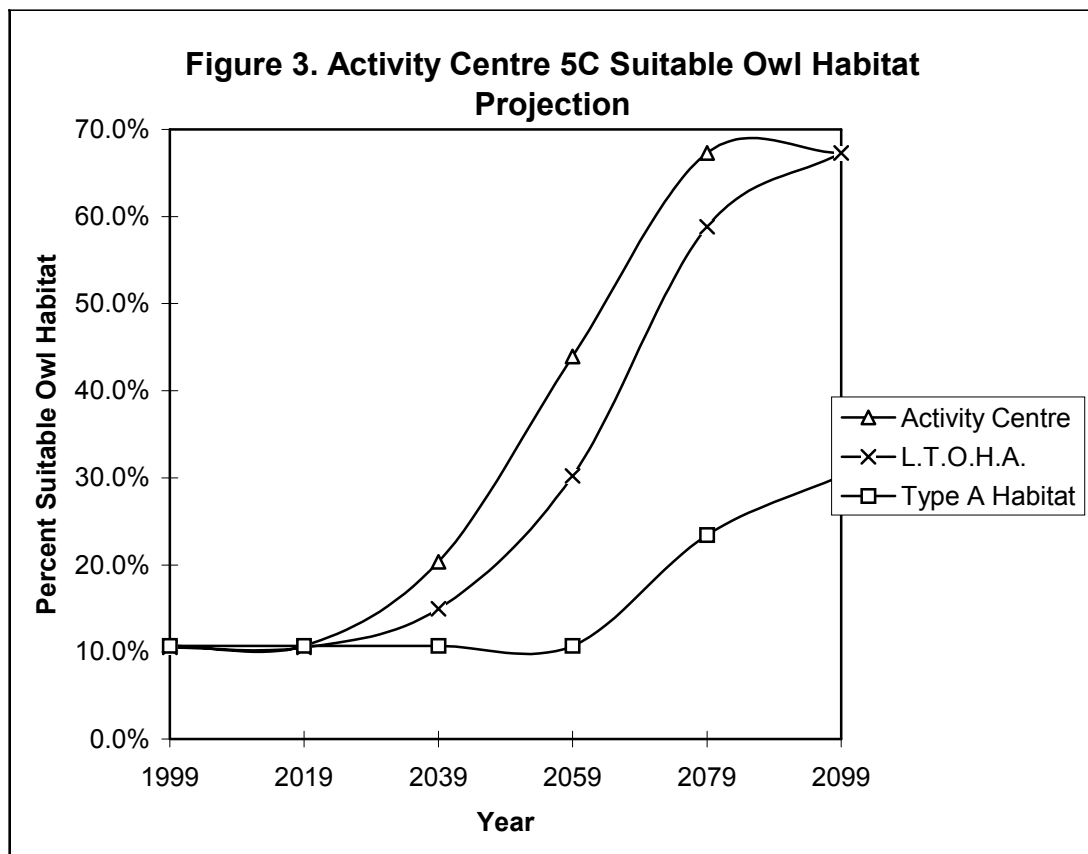
Activity Centre 5C

This activity centre is located in the northern portion of the SRMZ and is approximately 3257 ha of gross forested area. The activity centre is bounded by Harrison Lake to the west, Deer lake and Trout Lake to the south and Slollicum Creek to the north.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 10.7% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 10.7% of the total activity centre. Achieving the 50% Type A habitat target will take over 100 years (Figure 3).

The LTOHA contributes about 11% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 56% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 348 ha of Type A (age class 8&9) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- A large proportion of long term activity centre 5C consists of age class 3&4 (1082.56 ha). Habitat inventories should be conducted in these stands to determine the potential for management techniques to accelerate the growth of suitable spotted owl habitat.

Spotted Owl Assessment

Inventory Effort

There has been no recorded inventory effort for this activity centre to date. There are three identified transects within this activity centre, a 6 km driving transect along the East Harrison mainline, a 4 km linear high elevation transect along a deactivated forest service road branching off the mainline, and another 4 km linear high elevation transect in the northeast section of the activity centre. There are only small tracts of suitable habitat within this activity centre therefore this area has been given a low inventory priority.

Owl Status

To date there have been no spotted owls detected within this activity centre.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys along the identified transects, 4 of these before June 30,1999. However, there is insufficient suitable owl habitat to support resident owls at this time, and therefore, immediate inventories are not a high priority.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 4. Forest Cover Analysis of 5C for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA	Forest Management Area			Heavy Volume Removal			FMA	Activity
	Suitable Owl Habitat			No Cons.			Cons.	Replacement Area			No Cons.			Cons.	Centre
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	Total
1				91.97	148.64	240.61	240.61			0.00		5.8	5.8	5.80	246.41
2				541.94	389.51	931.45	931.45			0.00		390.02	206.39	596.41	1527.86
3				131.49	365.28	496.77	496.77	268.23	2.59	270.82			0	270.82	767.59
4				61.69	82.62	144.31	144.31	155.03	15.63	170.66			0	170.66	314.97
5						0	0.00			0.00			0	0.00	0.00
6			0				0.00			0.00			0	0.00	0.00
7			0				0.00			0.00			0	0.00	0.00
8			0				0.00			0.00			0	0.00	0.00
9	51.74	290.92	342.66				342.66		5.58	5.58			0	5.58	348.24
NSR				16.75	18.35	35.10	35.10			0.00	16.75		16.75	16.75	51.85
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	51.74	290.92	342.66	843.84	1004.40	1848.24	2190.90	423.26	23.80	447.06	412.57	206.39	618.96	1066.02	3256.92
				Percent of Activity centre			67.27%	Percent of Activity centre			Percent of Activity centre			32.73%	
Age Class 6-9	51.74	290.92	342.66	0.00	0.00	0.00	342.66	0.00	5.58	5.58	0.00	0.00	0.00	5.58	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	171.35
2099	275.71

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Chehalis
Special Resource Management Zone 6

May 31, 1999

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Chehalis SRMZ

The Chehalis SRMZ is approximately 11600 ha of gross forested area (See Map 1:SRMZ 6). It ranges in elevation from 120m (Chehalis River) up to a maximum of 1370 m. The SRMZ includes Statlu Creek, Maisal Creek, Chehalis River and Chehalis Lake. Three long-term activity centres were established varying in size between 3750 to 4000 ha of gross forested area.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHvm1, CWH vm2 and MH mm1. These wetter maritime ecosystems are characterized by Natural Disturbance Type (NDT) 1 which is described in the Biodiversity Guidebook as forests having rare to infrequent stand initiating events usually relating to fire. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Chehalis SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
6 A	3986 ha	1 ha (0%)	1811 ha (45.4%)	1812 ha (45.5%)
6 B	3784 ha	156 ha (4.1%)	875 ha (23.1%)	1031 ha (27.3%)
6 C	3830 ha	269 ha (7.0%)	2103 ha (54.9%)	2372 ha (61.9%)
Total SRMZ	11600 ha	426 ha (3.7%)	4789 ha (41.3%)	5215 ha (44.9%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

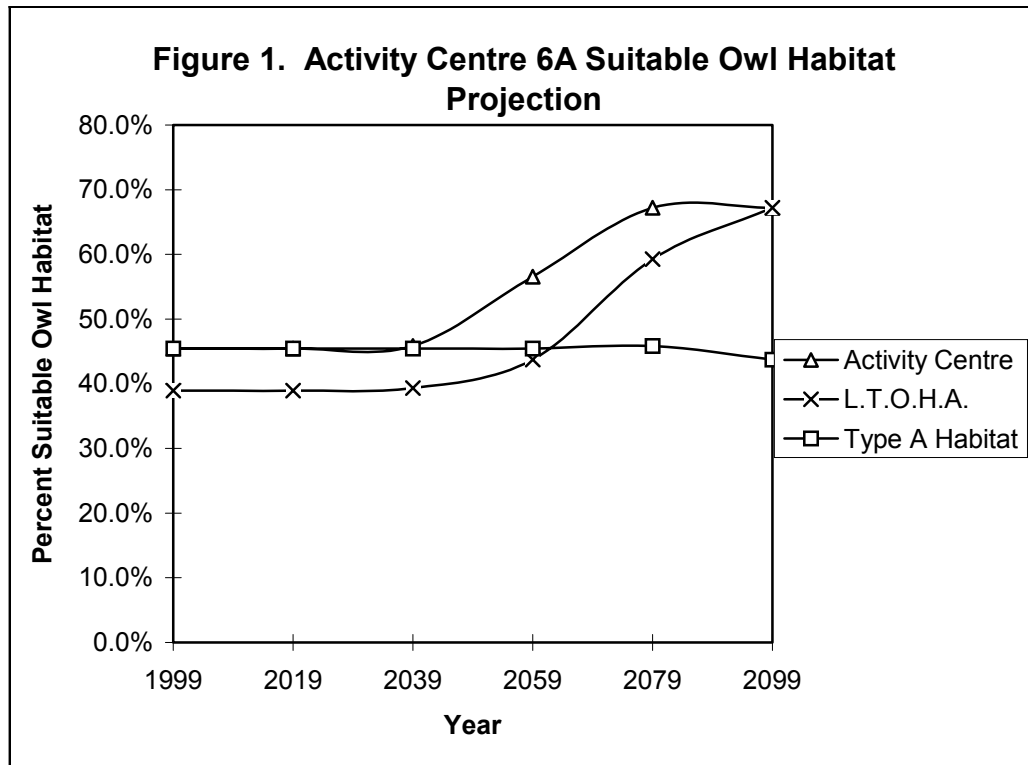
Activity Centre 6A

This activity centre is approximately 3986 ha of gross forested area. It is located at the western portion of the SRMZ and overlaps the Statlu Creek drainage.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 45.5% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 45.4% of the total activity centre. Achieving the 50% Type A habitat target will take over 100 years (Figure 1).

The LTOHA contributes about 39% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 28% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- 1797 ha of Type A (age class 8&9) is within this activity centre. Specific forest stand inventories are required to define Type A habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 230 ha of suitable owl habitat falls within the category of height class 2 or less. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.
- A large proportion of long term activity centre 6A consists of age class 3 (426.59ha). Habitat inventories should be conducted in these stands to determine the potential for management techniques to accelerate the growth of suitable spotted owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this area has taken place along the Statlu Creek Mainline; the Blacklock Creek branch and the South Statlu mainline. There are 2 identified transects within this activity centre. An 8 km linear low elevation hiking/driving transect along Blacklock Creek and South Statlu mainlines, and a 6.5 km linear low elevation hiking/driving transect along the North Statlu and Statlu Creek mainlines.

To date there has been a minimum of 39 surveys of various length duration and objectives conducted within this activity centre. The total survey time is approximately 98 hours. Most of this activity has been along the mainline transect with some occurring in the low to high elevation transect.

Owl Status

To date there have been 15 spotted owl detections within this activity centre. These detections indicate a pair of spotted owls residing in the Statlu, Blacklock areas. These birds are listed as “pair status” and “nesting status unknown”.

Inventory/Monitoring Requirements

The Statlu transect has been completed according to protocol as of 1997. Spotted owls detected within this activity centre will require location of nest and/or critical roosts, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 6A for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal			
1				135.12	15.4	150.52	150.52			0.00	125.53	42.34	167.87	167.87	318.39
2				588.05	31.98	620.03	620.03			0.00	428.33	56.91	485.24	485.24	1105.27
3				154.75	21.39	176.14	176.14	249.77	0.68	250.45				0	250.45
4				15.54		15.54	15.54			0.00				0	0.00
5						0	0.00			0.00				0	0.00
6		0.94	0.94				0.94			0.00				0	0.00
7			0				0.00			0.00				0	0.00
8		13.72	13.72				13.72		0.2	0.20				0	0.20
9	208.67	1327.89	1536.56				1536.56	36.4	224.35	260.75		0	0	260.75	1797.31
NSR				149.24	17.03	166.27	166.27			0.00	102.45	38.97	141.42	141.42	307.69
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	208.67	1342.55	1551.22	1042.70	85.80	1128.50	2679.72	286.17	225.23	511.40	656.31	138.22	794.53	1305.93	3985.65
							67.23%							32.77%	
Age Class 6-9	208.67	1342.55	1551.22	0.00	0.00	0.00	1551.22	36.40	224.55	260.95	0.00	0.00	0.00	260.95	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	194.61
2099	316.79

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

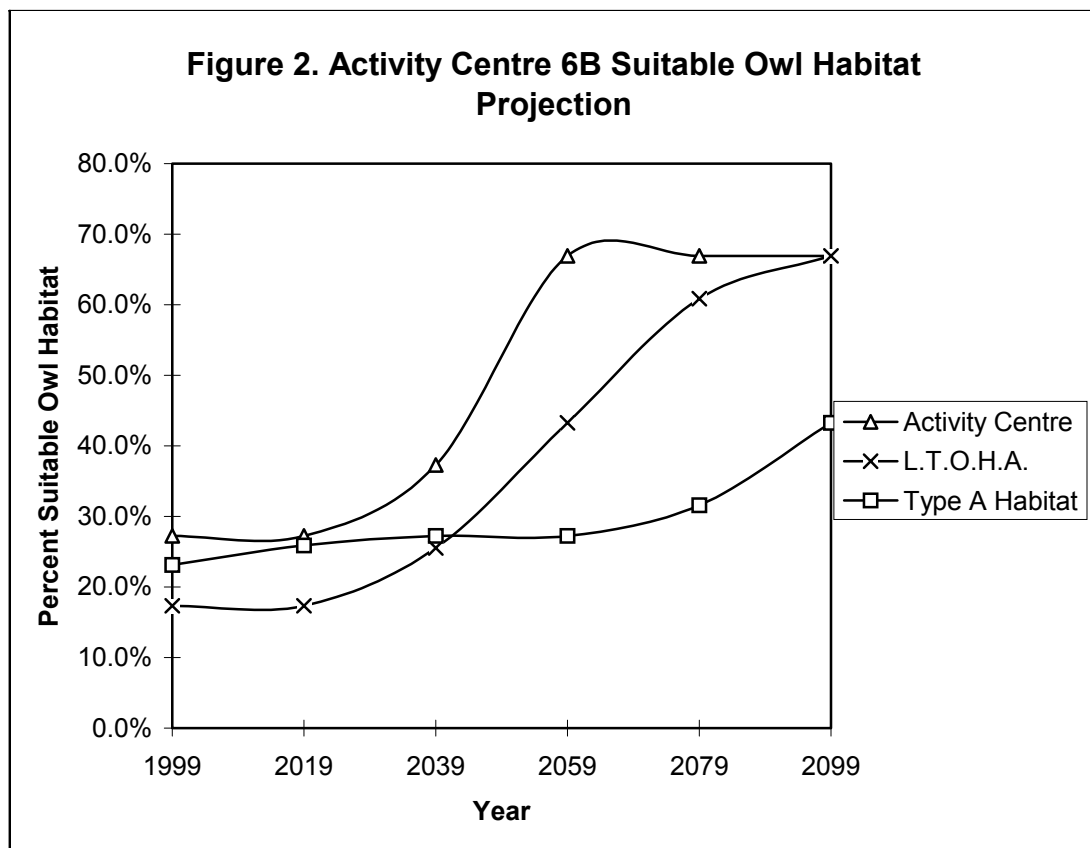
Activity Centre 6B

This activity centre is approximately 3784 ha of gross forested area. It is located in the southern portion of the SRMZ and overlaps the Chehalis River drainage.

Suitable Owl Habitat Assessment

Inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 27.3% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 23.1% of the total activity centre. Achieving the 50% Type A habitat target will take over 100 years (Figure 2).

The LTOHA contributes about 17% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 50% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 875 ha of Type A (age class 8&9) and 156 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- A large proportion of long term activity centre 6B consists of age class 3 (1220 ha). Habitat inventories should be conducted in these stands to determine the potential for management techniques to accelerate the growth of suitable spotted owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this activity centre has taken place along the Chehalis River mainline and the Statlu Creek Mainline. There are three identified transects within this activity centre. A 10.5 km linear low elevation transect along the Chehalis and Statlu mainlines, 4 km linear low to high elevation driving/hiking transect from the south of the activity centre to the north-west and 5 km linear mid-elevation transect on the east side of the Chehalis River.

To date there has been a minimum of 21 surveys of various length duration and objectives conducted within this activity centre. The total survey time is approximately 67 hours. Most of this activity has been along the mainline transect with some occurring in the low to high elevation transect.

Owl Status

No spotted owls have been detected within the activity centre. To date there has been 6 spotted owl detections south of this activity centre. These owls are listed as “two owls, pair status unknown” and “nesting status unknown”.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys along the identified transects, 4 of these before June 30,1999. Spotted owls detected will require location of nest and/or critical roosts, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 3. Forest Cover Analysis of 6B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal								
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal					
1				155.18	64.18	219.36			0.00	57.73	2.96	60.69	60.69	280.05
2				560.24	105.17	665.41		0.01	0.01	174.89	18.49	193.38	193.39	858.80
3				466.39	206.04	672.43	437.12	22.2	459.32	88.24	0.01	88.25	547.57	1220.00
4				308.81	1.11	309.92	68.73	0.12	68.85			0	68.85	378.77
5						0		0.00				0	0.00	0.00
6		24.07	24.07					27.36	27.36			0	27.36	51.43
7	3.14	101.34	104.48					0.02	0.02			0	0.02	104.50
8	4.68	232.49	237.17						0.00			0	0.00	237.17
9	43.79	245.73	289.52						0.00			0	0.00	289.52
NSR					10.35	10.35		49.18	299.55	348.73	0.01	0	0.01	348.74
Protected Area		0.00	0.00		0.00	0.00				0.00	0.4	4.1	4.5	14.85
										0.00		0.00	0.00	0.00
Total	51.61	603.63	655.24	1490.62	386.85	1877.47	2532.71	555.03	349.26	904.29	321.27	25.56	346.83	1251.12
							66.94%							33.06%
Age Class 6-9	51.61	603.63	655.24	0.00	0.00	0.00	655.24	49.18	326.93	376.11	0.01	0.00	0.01	376.12

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	0.00
2038	0.00
2058	9.16
2078	665.42
2099	229.71

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

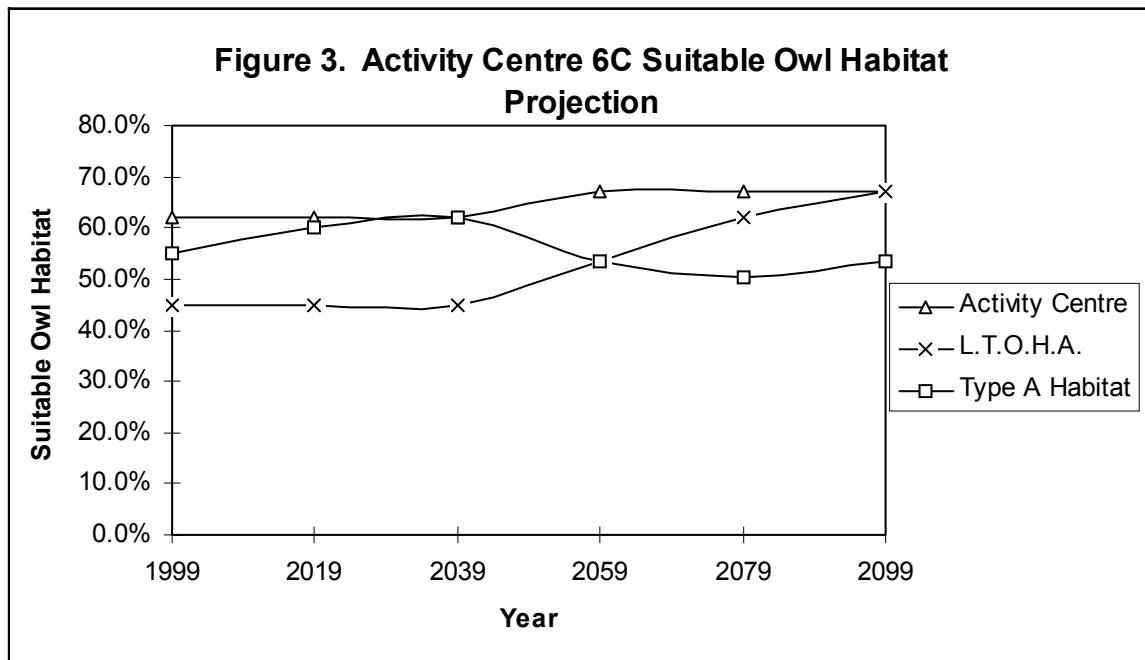
Activity Centre 6C

This activity centre is approximately 3830 hectares of gross forested area. It is located in the northern portion of the SRMZ and overlaps Chehalis Lake.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 61.9% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 54.9% of the total activity centre (Figure 3).

The LTOHA contributes about 45% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 22% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 2103 ha of Type A (age class 8&9) and 269 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Currently, 158 ha of suitable owl habitat (8 ha and 150 ha in age classes 8 and 9, respectively) falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this activity centre has taken place along the Chehalis River west of Chehalis Lake and along the Maisal Creek branch. There are three identified transects within this activity centre: an 8.5 km linear, low elevation transect along the Chehalis mainline from Skwellepil Creek south; an 8 km linear low to high elevation driving/hiking along deactivated logging roads on the east side of Chehalis Lake and a short 3 km driving survey along the Maisal Creek branch.

To date there has been a minimum of 38 surveys of various length duration and objectives conducted within this activity centre. The total survey time is approximately 115 hours. Most of this activity has been along the mainline transect and the Maisal Creek transect.

Owl Status

To date there have been 8 spotted owls detected within this activity centre. These detections indicate a pair of owls residing within this activity centre. These birds are listed at “pair status” and “nesting status unknown”.

Inventory/Monitoring Requirements

Both the low elevation mainline transect and the short Maisal Creek transect were completed according to protocol as of 1995, however both transects require additional inventory at this time according to protocol. The above mentioned transects require a minimum of 6 surveys with four of these commencing prior to June 30,1999. Spotted owls detected will require location of nest and critical roost sites, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 4. Forest Cover Analysis of 6C for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA	Forest Management Area			Heavy Volume Removal			FMA	Activity
	Suitable Owl Habitat			No Cons.	Cons.	Subtotal	Total	Replacement Area			No Cons.	Cons.	Subtotal	Total	Centre
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	Total
1				89.23	0.09	89.32	89.32			0.00	114.84	0.05	114.89	114.89	204.21
2				302.08	25.08	327.16	327.16			0.00	262.23	0.06	262.29	262.29	589.45
3				302.04	27.94	329.98	329.98		0.01	0.01	192.7	14.59	207.29	207.30	537.28
4						0	0.00			0.00			0	0.00	0.00
5						0	0.00			0.00			0	0.00	0.00
6	1.13	62.96	64.09				64.09			0.00			0	0.00	64.09
7	41.13	163.89	205.02				205.02			0.00			0	0.00	205.02
8	154	173.75	327.75				327.75	46.1	102.66	148.76			0	148.76	476.51
9	267.36	858.8	1126.16				1126.16	176.73	323.47	500.20	0	0	0	500.20	1626.36
NSR				56.49	51.93	108.42	108.42			0.00	17.24	1.14	18.38	18.38	126.80
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	463.62	1259.40	1723.02	749.84	105.04	854.88	2577.90	222.83	426.14	648.97	587.01	15.84	602.85	1251.82	3829.72
							67.31%							32.69%	
Age Class 6-9	463.62	1259.40	1723.02	0.00	0.00	0.00	1723.02	222.83	426.13	648.96	0.00	0.00	0.00	648.96	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	124.07
2078	327.16
2099	197.74

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Anderson
Special Resource Management Zone 11

May 31, 1999

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Anderson SRMZ

The Anderson SRMZ is approximately 22294 ha of gross forested area (see Map 1:SRMZ 11). It ranges in elevation from 80m (Fraser River) up to a maximum of 1370 m. The SRMZ includes Urquhart Creek, Spuzzum Creek, Anderson River, East Anderson River and Uztlius Creek drainages. Eight long-term activity centres were established varying in size between 2,000 to 3,060 hectares of gross forested area.

The SRMZ is located within the Coastal Western Hemlock (CWH), Mountain Hemlock (MH), Engelmann Spruce - Subalpine Fir (ESSF) and Interior Douglas Fir (IDF) biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWH dry subarctic (ds1) to moist subarctic (ms1) and IDF wet warm (ww). At higher elevations, forests are located within the Mountain Hemlock moist maritime (MH mm2) subzone or Engelmann Spruce - Subalpine Fir moist warm (ESSF mw). These dryer subarctic ecosystem are distinguished by NDT 2 and 4 which are characterized by infrequent to frequent stand initiating events usually through fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. NDT 4 is characterized by a mosaic of uneven-aged forest interspersed with grass and shrub openings. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Anderson SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
11 A	2051 ha	63 ha (3.1%)	1055 ha (51.4%)	1118 ha (54.5%)
11 B	2471 ha	220 ha (8.9%)	884 ha (35.8%)	1104 ha (44.7%)
11 C	2911 ha	422 ha (14.5%)	1157 ha (39.7%)	1578 ha (54.2%)
11 D	3034 ha	204 ha (6.7%)	1920 ha (63.3%)	2125 ha (70.0%)
11 E	2896 ha	698 ha (24.1%)	1330 ha (45.9%)	2028 ha (70.0%)
11 F	2869 ha	307 ha (10.7%)	1849 ha (64.4%)	2155 ha (75.1%)
11 G	3007 ha	865 ha (28.8%)	884 ha (29.4%)	1749 ha (58.2%)
11 H	3055 ha	213 ha (7.0%)	1603 ha (52.5%)	1816 ha (59.4%)
Total SRMZ	22294 ha	2992 ha (13.4%)	10682 ha (47.9%)	13673 ha (61.3%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

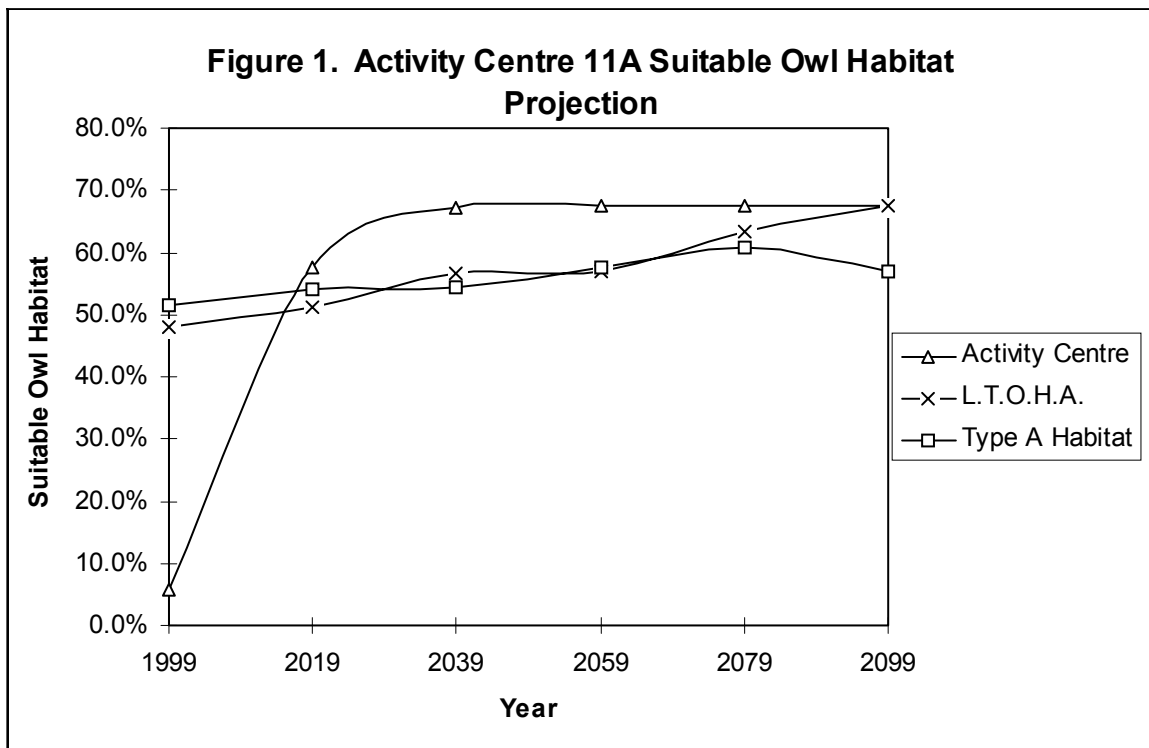
Activity Centre 11A

This activity centre is located at the western most portion of the SRMZ and is approximately 2051 hectares of gross forested area.. The activity centre encompasses the junction of Urquhart Creek and Spuzzum Creek.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 54.5% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 51.4% of the total activity centre. (Figure 1).

The LTOHA contributes about 48% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 19% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1055 ha of Type A (age class 8&9) and 63 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 66.04 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 31 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this activity centre has taken place along the Urquhart Creek drainage and along Spuzzum Creek. There are two identified transects within this activity centre; a 4 linear km hiking transect, extending into the Urquhart Creek drainage and a 5 linear km driving transect along the Spuzzum Creek mainline, which also extends into the upper Spuzzum.

Since 1991 a minimum of 74 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 222 hours.

Owl Status

There have been 6 spotted owl detections within this activity centre since 1989. These detections indicate a pair of spotted owls residing in the Urquhart Creek drainage. The pair is listed as “pair status” and “nesting status unknown”. There have been no critical nest or roost sites detected to date.

Inventory/Monitoring Requirements

Inventory protocol has been completed as of 1995 for the entire activity centre. Identification of critical nest and/or roost sites, attachment of leg bands and long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data. As part of the Mehatl Creek Protected Areas Mitigation Strategy, the Small Business Forest Enterprise Program is entitled to, over the next fifty years, the first 127 ha of mature forest available from the Matrix portion for clearcut or FMA for heavy volume removal (see Spotted Owl Management Plan).

Table 2. Forest Cover Analysis of 11A for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal									
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal						
1				70.43	1.51	71.94			0.00	160.24	14.89	175.13	175.13	247.07	
2				95.96	34.63	130.59			0.00	243.04	7.83	250.87	250.87	381.46	
3				0.02	6.65	6.67			0.00			0	0.00	6.67	
4				7.35	104.87	112.22		36.36	46.01	82.37	7.4	0.01	7.41	89.78	202.00
5				0.28	64.51	64.79		1.25		1.25			0	1.25	66.04
6		5.07	5.07			5.07			0.00				0	0.00	5.07
7	0.1	57.51	57.61			57.61			0.00				0	0.00	57.61
8		597.29	597.29			597.29		4.37	54.79	59.16			0	59.16	656.45
9	42.59	280.94	323.53			323.53		15.2	59.72	74.92			0	74.92	398.45
NSR				0.71	14.81	15.52				0.00	2.69	12.08	14.77	14.77	30.29
Protected Area		0.00	0.00		0.00	0.00				0.00			0.00	0.00	0.00
Total	42.69	940.81	983.50	174.75	226.98	401.73	1385.23	57.18	160.52	217.70	413.37	34.81	448.18	665.88	2051.11
							67.54%							32.46%	
Age Class 6-9	42.69	940.81	983.50	0.00	0.00	0.00	983.50	19.57	114.51	134.08	0.00	0.00	0.00	134.08	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	130.24
2099	87.46

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

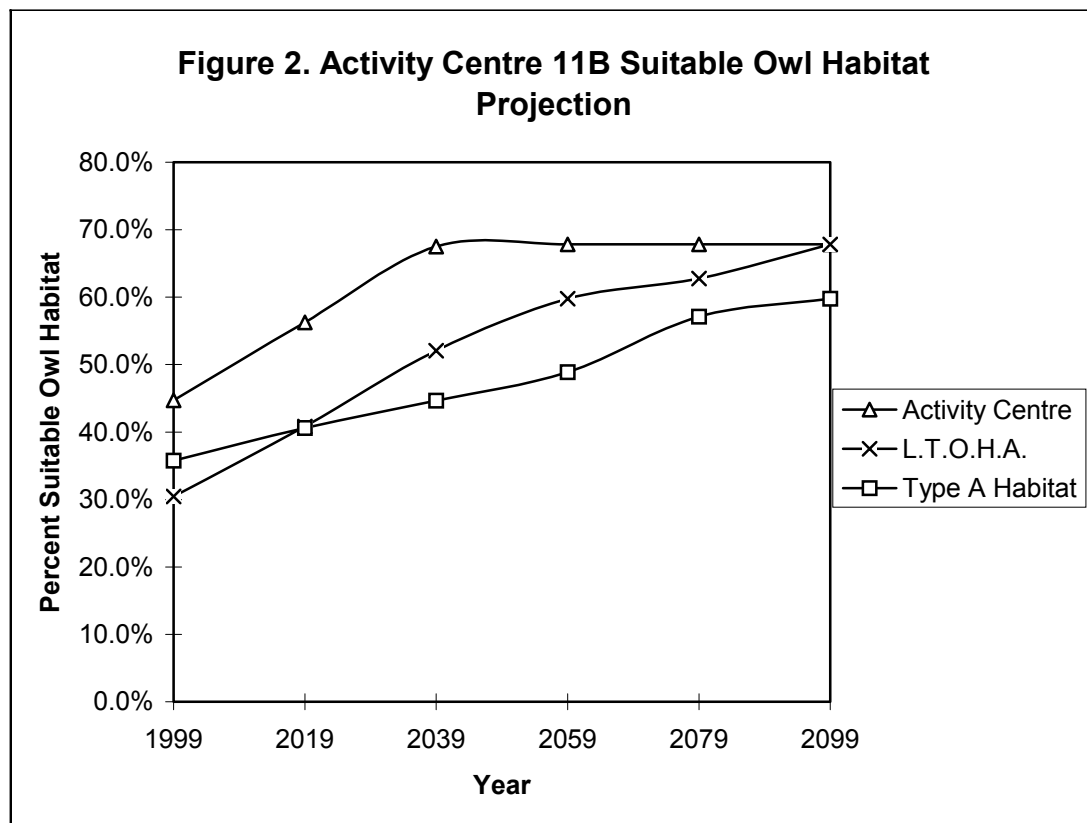
Activity Centre 11B

This activity centre is located in the western portion of the SRMZ and is approximately 2471 ha of gross forested area. The activity centre encompasses the lower portion of Spuzzum Creek and is bounded to the east by the Fraser River.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 44.7% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 35.8% of the total activity centre. Achieving the 50% Type A habitat target will take up to 80 years (Figure 2).

The LTOHA contributes about 30% of the total suitable owl habitat available within the activity centre. Recruitment of the remaining 37% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 884 ha of Type A (age class 8&9) and 220 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 286.57 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort over the last seven years has been limited to the Spuzzum Creek mainline. The one identified transect within this activity centre follows an 8.5 linear km stretch of the Spuzzum Creek mainline. There has been a minimum 31 surveys of varying length, duration and distances. The total survey time within this activity centre is approximately 90 hours.

Owl Status

There have been 6 spotted owl detections within this activity centre since 1991. These detections indicate a single male residing in this drainage. The owl status is currently at “resident single” and “unknown nesting status”. There have been no critical nest or roost sites detected to date.

Inventory/Monitoring Requirements

This activity centre has been completed according to protocol as of 1995. Location of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data. As part of the Mehatl Creek Protected Areas Mitigation Strategy, the Small Business Forest Enterprise Program is entitled to, over the next fifty years, the first 106 ha of mature forest available for heavy volume removal.

Table 3. Forest Cover Analysis of 11B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal								
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal					
1				20.75	44.31	65.06			23.06	9.8	32.86	32.86	97.92	
2				35.54	38.26	73.8			151.88	39.27	191.15	191.15	264.95	
3				6.62	184.32	190.94			3.4	1.48	4.88	4.88	195.82	
4				17.82	259.12	276.94			85.5	73.36	158.86	158.86	435.80	
5				3.63	253.33	256.96	2.87	26.74			0	29.61	286.57	
6	0.71	67.64	68.35			68.35	1.25	32.07			0	33.32	101.67	
7	40.62	72.1	112.72			112.72		5.78			0	5.78	118.50	
8	25.33	453.97	479.3			479.30	40	105.07		0.01	0.01	145.08	624.38	
9	35.06	56.84	91.9			91.90	128.62	39.44	168.06		0	168.06	259.96	
NSR				0.78	59.24	60.02						25.93	85.95	
Protected Area		0.00	0.00		0.00	0.00					0.00	0.00	0.00	
Total	101.72	650.55	752.27	85.14	838.58	923.72	172.74	209.10	381.84	289.63	124.06	413.69	795.53	2471.52
				Percent of Activity centre			67.81%			Percent of Activity centre			32.19%	
Age Class 6-9	101.72	650.55	752.27	0.00	0.00	0.00	169.87	182.36	352.23	0.00	0.01	0.01	352.24	

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	0.00
2038	0.00
2058	182.96
2078	73.80
2099	125.08

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

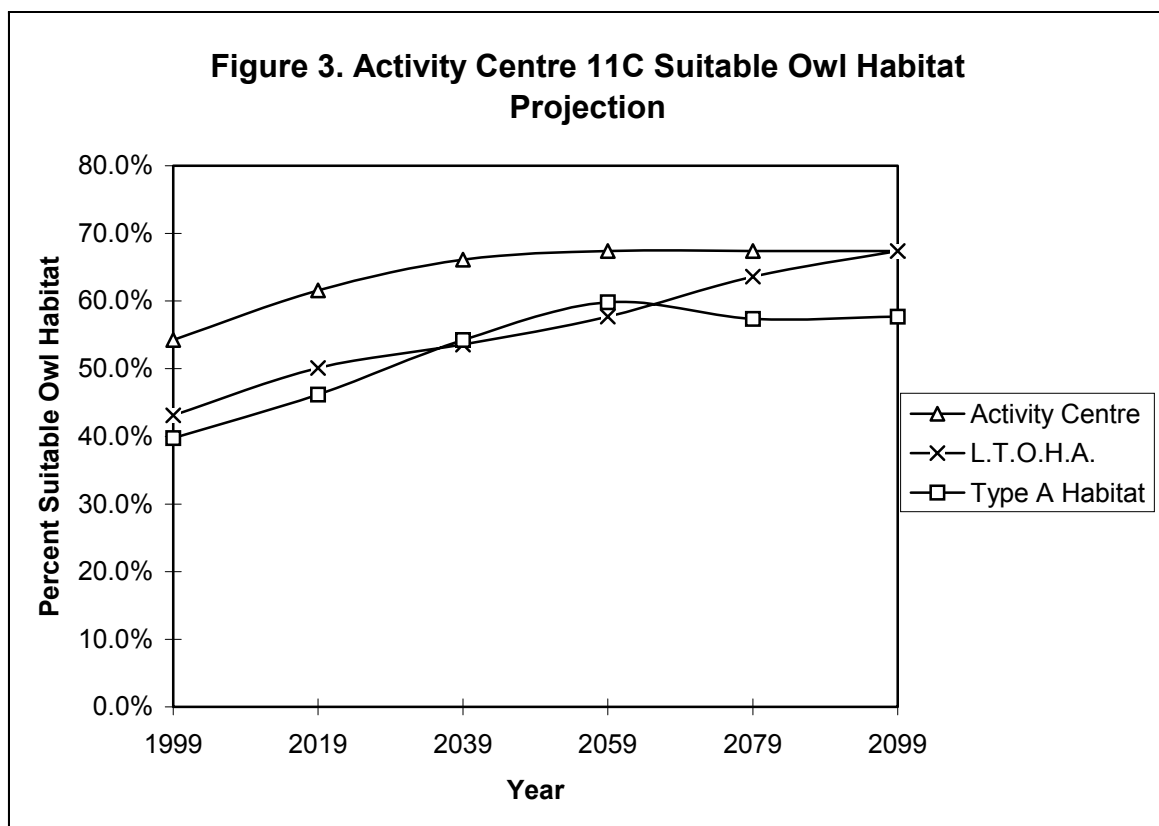
Activity Centre 11C

This activity centre encompasses the Gilt Creek drainage and is bound by the eastern bank of the Fraser River. This activity centre is approximately 2911 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 54.2% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 39.7% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 3).

The LTOHA contributes about 43% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 24% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1157 ha of Type A (age class 8&9) and 422 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 213.51 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this activity centre has taken place along the Gilt Creek branch on the west-facing slope of the ridge, the Gilt/North Anderson branch on the east-facing slope of the same ridge and the Gilt/Anderson mainline. There are two identified transects within this activity centre; a 8.5 km linear transect along Highway 1 and the Gilt/Anderson Mainline and a 6km linear transect along the Gilt Creek branch extending from the Gilt/Anderson mainline over the ridge to the Anderson River.

Since 1989 a minimum of 27 surveys of various lengths, duration and objectives have been conducted in the activity centre. Total survey time is approximately 74 hours.

Owl Status

There have been 7 spotted owl detections within this activity centre since 1989. These detections indicate a pair of spotted owls residing in the area along Gilt Creek and another pair residing along the Anderson River drainage. The second detected pair is utilizing habitat overlapping both activity centres 11c and 11f. Both pairs are listed as “pair status” and “nesting status unknown”. There have been no critical nest or roost sites detected to date.

Inventory/Monitoring Requirements

Only 50% of the Gilt Creek transect has been completed according to protocol. The west-facing slope will require 3 more surveys in 1999. The remaining transect will require 4 more surveys, two before June 30, 1999. Location of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 4. Forest Cover Analysis of 11C for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal			
1				82.73	0.11	82.84	82.84			0.00	134.68	9.16	143.84	143.84	226.68
2				105.27	66.61	171.88	171.88	0.01	0.01	0.01	235.88	45.58	281.46	281.47	453.35
3					119.71	119.71	119.71		0.00	0.00	123.74	18.96	142.7	142.70	262.41
4				45.23	55.36	100.59	100.59	23.95	7.93	31.88	0.01		0.01	31.89	132.48
5				94.85	109.49	204.34	204.34		9.17	9.17			0	9.17	213.51
6	7.74	188.74	196.48				196.48	3.74	34.63	38.37			0	38.37	234.85
7	92.55	25.48	118.03				118.03	57.9	11.16	69.06			0	69.06	187.09
8	255.13	601.5	856.63				856.63	67.62	106.5	174.12			0	174.12	1030.75
9	28.3	55.02	83.32				83.32	16.02	26.47	42.49			0	42.49	125.81
NSR				20.42	7.12	27.54	27.54			0.00	16.11		16.11	16.11	43.65
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	383.72	870.74	1254.46	348.50	358.40	706.90	1961.36	169.24	195.86	365.10	510.42	73.70	584.12	949.22	2910.58
							67.39%							32.61%	
Age Class 6-9	383.72	870.74	1254.46	0.00	0.00	0.00	1254.46	145.28	178.76	324.04	0.00	0.00	0.00	324.04	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	82.83
2078	171.89
2099	110.38

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

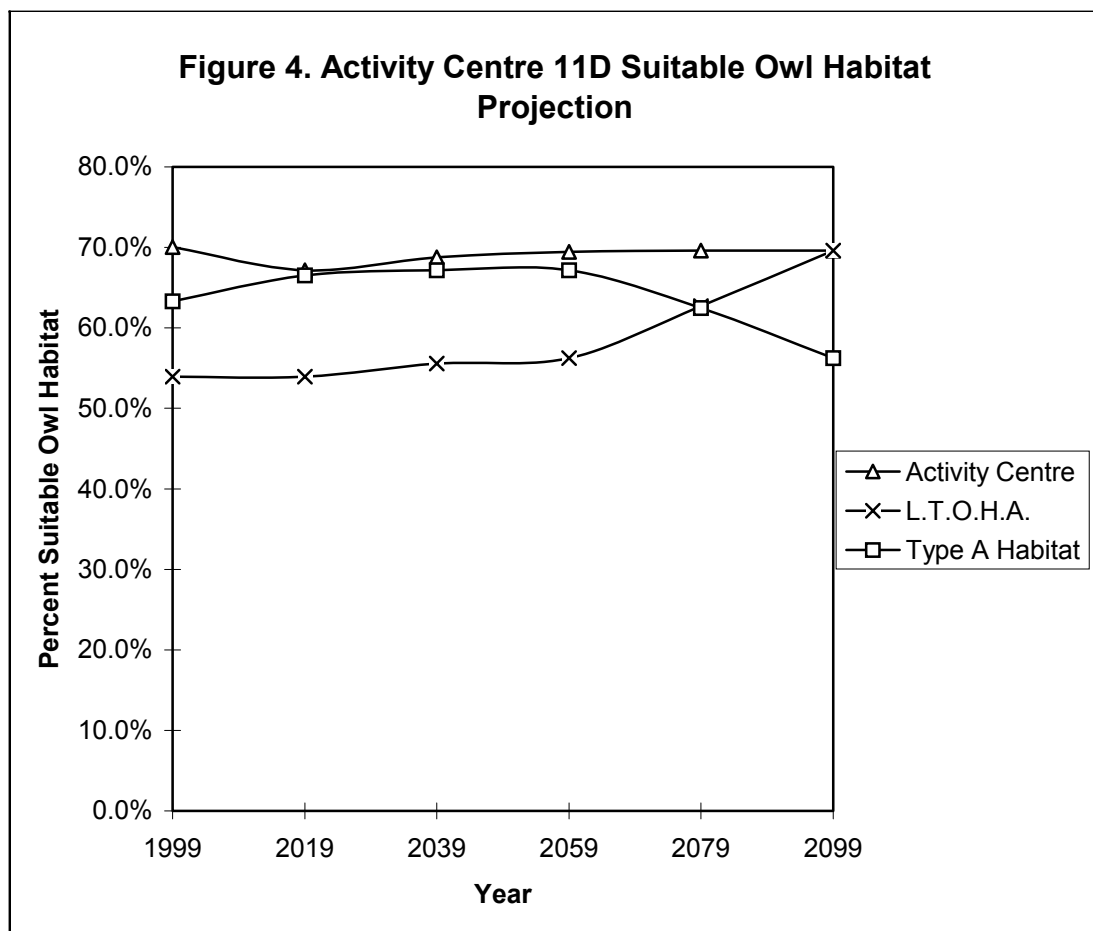
Activity Centre 11D

This activity centre is located in the south-east portion of this SRMZ and follows along the Anderson River drainage. This activity centre is 3034 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 70% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 63.3% of the total activity centre (Figure 4).

The LTOHA contributes about 54% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 13% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1920 ha of Type A (age class 8&9) and 204 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 90 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this activity centre has been concentrated on the southern-most branch of the Anderson River. There are two identified transects within this activity centre; a 6 km linear, low elevation transect following the South Anderson mainline on the eastern side of the river, and a 4.5 km linear survey along the Gilt/Anderson mainline northward from the fork in South Anderson River.

Since 1990 a minimum of 97 surveys of various lengths, duration and objectives have been conducted in the activity centre. Total survey time is approximately 44 hours.

Owl Status

There have been 31 spotted owl detections within this activity centre since 1990. These detections indicate a single pair residing in this activity centre and potentially another single male residing on the southern border of the activity centre. The pair is listed as “pair status” and “nesting” while the single bird is listed at “status unknown” and “nesting status unknown”. There has been a nest site located within this activity centre.

Inventory/Monitoring Requirements

The southern portion of this activity centre has been completed according to protocol as of 1996. The Gilt/Anderson transect will require 6 surveys in 1999 to complete protocol. Four of these surveys must be completed prior to June 30, 1999. Confirmation of known nest and/or critical roost sites, the attachment of leg bands and long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 5 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data. As part of the Mehatl Creek Protected Areas Mitigation Strategy, the Small Business Forest Enterprise Program is entitled to, over the next fifty years, the first 120 ha of mature forest available for heavy volume removal.

Table 5. Forest Cover Analysis of 11D for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal		
1				180.39	29.73	210.12	210.12			133.07	49.89	182.96	182.96	393.08
2				78.6	117.06	195.66	195.66			37.2	141.99	179.19	179.19	374.85
3				0.26	20.79	21.05	21.05			36.99	22.32	59.31	59.31	80.36
4				30.18	18.58	48.76	48.76				2.25	2.25	2.25	51.01
5						0	0.00			10.2		10.2	10.20	10.20
6		18.57	18.57				18.57		1.06		9.84	9.84	10.90	29.47
7	42.98	75.09	118.07				118.07	17.39	39.54	56.93	0.07	0.07	57.00	175.07
8	208.06	809.93	1017.99				1017.99	7.48	277.11	284.59	75.47	0.24	75.71	1378.29
9	192.73	289.82	482.55				482.55	26.24	31.71	57.95	0.32	1.25	59.52	542.07
NSR						0.00	0.00			0.00		0	0.00	0.00
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00		0.00	0.00	0.00
Total	443.77	1193.41	1637.18	289.43	186.16	475.59	2112.77	51.11	349.42	400.53	293.32	227.78	521.10	921.63
							69.63%							30.37%
Age Class 6-9	443.77	1193.41	1637.18	0.00	0.00	0.00	1637.18	51.11	349.42	400.53	75.86	11.33	87.19	487.72

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	4.66
2038	48.76
2058	21.05
2078	195.66
2099	210.12
	480.25

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

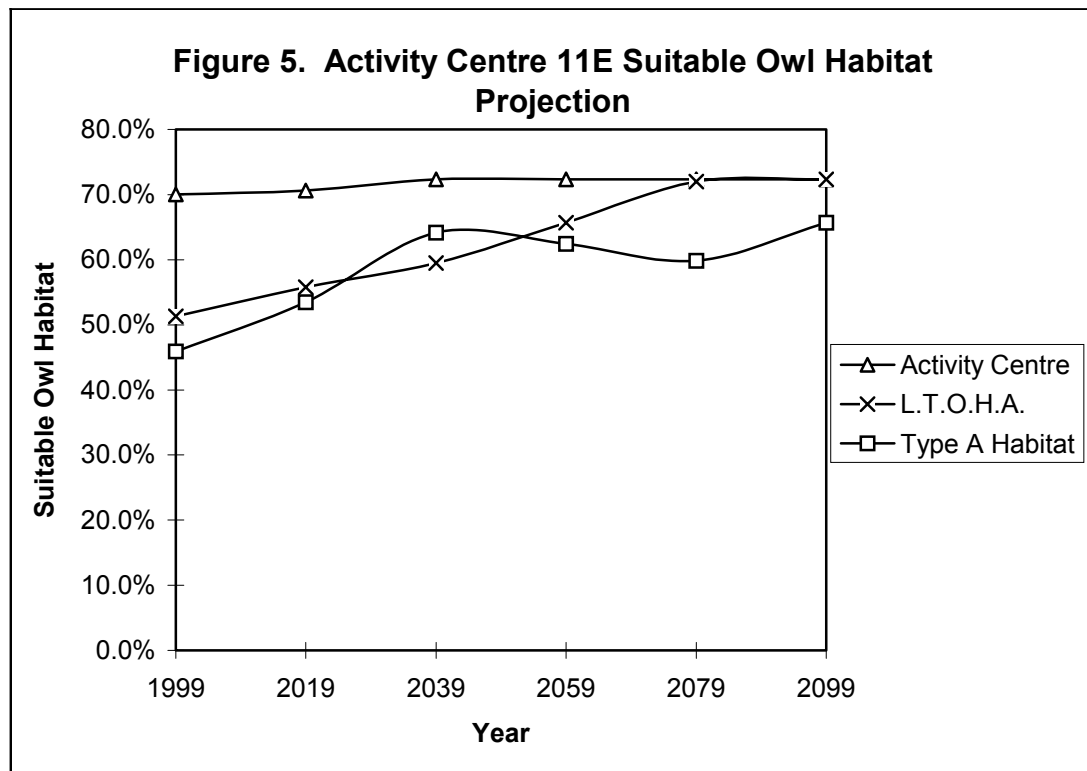
Activity Centre 11E

This activity centre is bounded by the Fraser River to the west and Anderson River to the east and is 2896 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 70% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 45.9% of the total activity centre. Achieving the 50% Type A habitat target will take up to 20 years (Figure 5).

The LTOHA contributes about 51% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 16% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1330 ha of Type A (age class 8&9) and 698 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 135.74 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

There has been no inventory effort within this activity centre to date, as access is limited. There are two identified transect routes within this activity centre. The first is a low elevation linear 11 km transect along Highway 1. The second is a linear high elevation transect along the east ridge of the Fraser River

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

Both identified transects require a minimum of six surveys completed within the 1999 field season for this activity centre to be complete according to protocol. For each transect a minimum of 4 of these surveys must be completed prior to June 30,1999. If spotted owls are detected location of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 6 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data. As part of the Mehatl Creek Protected Areas Mitigation Strategy, the NNTC/JS Jones joint licence is entitled to, over the next 10 years, the first 128 ha of mature forest available for heavy volume removal.

Table 6. Forest Cover Analysis of 11E for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal		
1				1.06	8.73	9.79	9.79			6.65		6.65		16.44
2				1.74	181.89	183.63	183.63			85.45	108.2	193.65	193.65	377.28
3				0.02	178.88	178.9	178.90			41.54	9.09	50.63	50.63	229.53
4					108.59	108.59	108.59			0.03		0.03	0.03	108.62
5					128.71	128.71	128.71			2.23	4.8	7.03	7.03	135.74
6	12.72	264.47	277.19				277.19	0.37	89.67	90.04	0.02	9.71	9.73	376.96
7	4.64	267.94	272.58				272.58	27.82	13.76	41.58	6.89	0.01	6.9	321.06
8	46.64	870.39	917.03				917.03	179.6	106.42	286.02	65.72	17.01	82.73	1285.78
9	16.62	2.3	18.92				18.92	6.77	5.73	12.50	12.44	0.24	12.68	44.10
NSR						0.00	0.00			0.00		0.09	0.09	0.09
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00
Total	80.62	1405.10	1485.72	2.82	606.80	609.62	2095.34	214.56	215.58	430.14	220.97	149.15	370.12	800.26
							72.36%							27.64%
Age Class 6-9	80.62	1405.10	1485.72	0.00	0.00	0.00	1485.72	214.56	215.58	430.14	85.07	26.97	112.04	542.18

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	104.52
2038	108.59
2058	178.90
2078	183.63
2099	9.79
	585.43

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

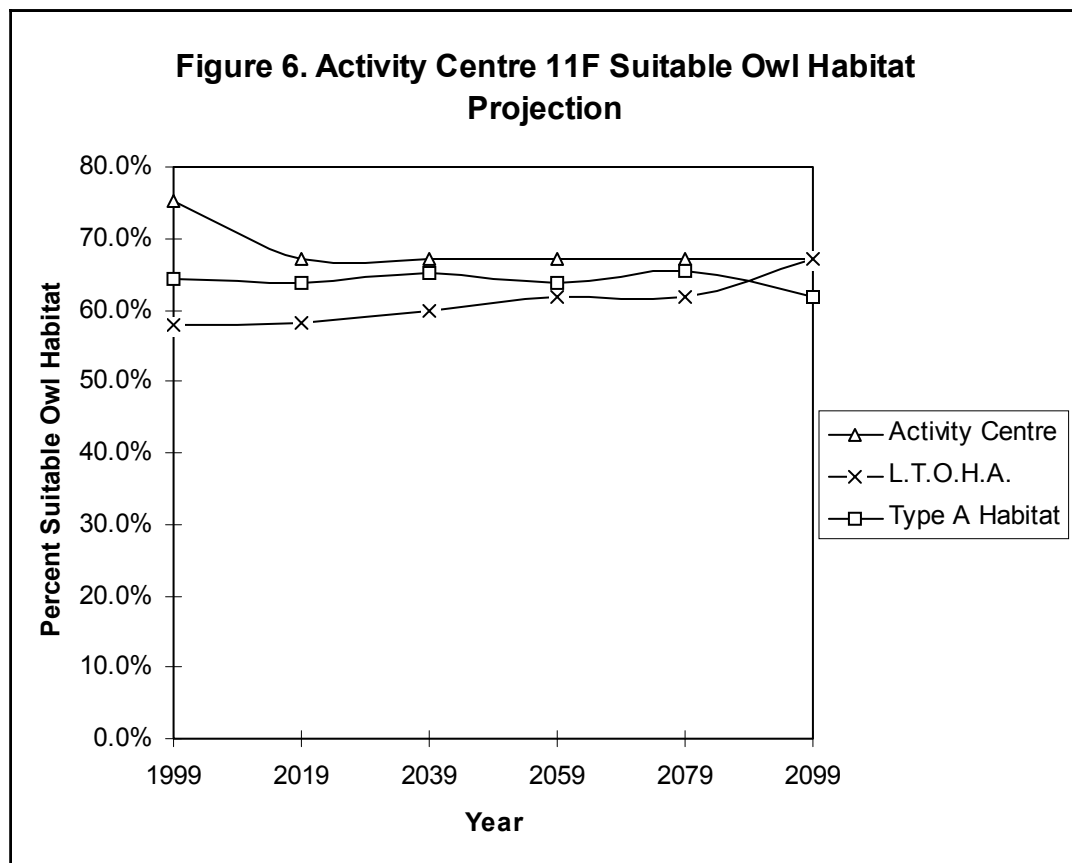
Activity Centre 11F

This activity centre is 2869 ha of gross forested area and overlaps the lower East Anderson River drainage where it converges with the Anderson River.

Suitable Owl Habitat Assessment

Preliminary spotted owl habitat inventories have been conducted, but are not complete, in this activity centre to verify MOF forest cover data, determine habitat suitability and determine if age class 5 and 6 stands meet the requirements for suitable spotted owl habitat. Additional forest stand inventories are required. The activity centre currently contains about 75.1% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 64.4% of the total activity centre. (Figure 6). These numbers do not consider the loss of habitat due to the 1995 Anderson River fire.

The LTOHA contributes about 58% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 11% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1849 ha of Type A (age class 8&9) and 307 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 85.85 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.
- Inventory of age class 5 to determine age and suitability. There is currently 23.37 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this area has been primarily conducted along the Utzlius/East Anderson mainline and along the Gilt/North Anderson branch. There are three identified transects within this activity centre; a 5.5 km linear low elevation transect along the Utzlius/East Anderson mainline, a 4.5 km linear transect along the North Anderson branch and a 6 km linear high elevation transect along branch 300.

Since 1993, a minimum of 44 surveys of various lengths have been conducted in this activity centre. Total survey time is approximately 232 hours. The majority of these surveys have been conducted along the East Anderson transect.

Owl Status

To date there have been 49 spotted owl detections within this activity centre. These detections indicate a pair of spotted owls residing in the East Anderson River drainage and another pair residing in the North Anderson River drainage. The East Anderson Pair is listed at “pair status” and “nesting” and the North Anderson birds are listed as “two birds, pair status unknown” and “nesting status unknown”. No critical nesting or roost sites have

been detected within this activity centre to date. The female spotted owl of the North Anderson pair has been banded.

Inventory/Monitoring Requirements

This activity centre has been completed according to the spotted owl inventory protocol as of 1996. The identification of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring is required for this activity centre.

Forest Cover Analysis for Each Management Area

Table 7 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 7. Forest Cover Analysis of 11F for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal								
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal					
1				112.79	23.13	135.92			0.00	156.41	42.71	199.12	199.12	335.04
2				0.86		0.86		0.01	0.01	21.43	0.31	21.74	21.75	22.61
3				4.39	48.6	52.99			0.00			0	0.00	52.99
4				4.03	42.65	46.68			0.00	99.82	17.78	117.6	117.60	164.28
5				2.83	9.19	12.02			0.00		11.35	11.35	11.35	23.37
6	38.2	47.43	85.63			85.63	20	31	51.00			0	51.00	136.63
7	5.78	130.43	136.21			136.21	28.23	5.7	33.93			0	33.93	170.14
8	115.78	1096.23	1212.01			1212.01	88.08	278.71	366.79	0.01	0.01	0.02	366.81	1578.82
9	21.14	205.38	226.52			226.52	17.61	25.76	43.37			0	43.37	269.89
NSR				16.05	3.74	19.79			0.00	29.46	66.27	95.73	95.73	115.52
Protected Area		0.00	0.00		0.00	0.00			0.00			0.00	0.00	0.00
Total	180.90	1479.47	1660.37	140.95	127.31	268.26	1928.63	153.93	341.17	495.10	307.13	138.43	445.56	2869.29
							67.22%						32.78%	
Age Class 6-9	180.90	1479.47	1660.37	0.00	0.00	0.00	1660.37	153.92	341.17	495.09	0.01	0.01	0.02	495.11

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	238.85
2038	46.68
2058	52.99
2078	0.87
2099	155.71

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

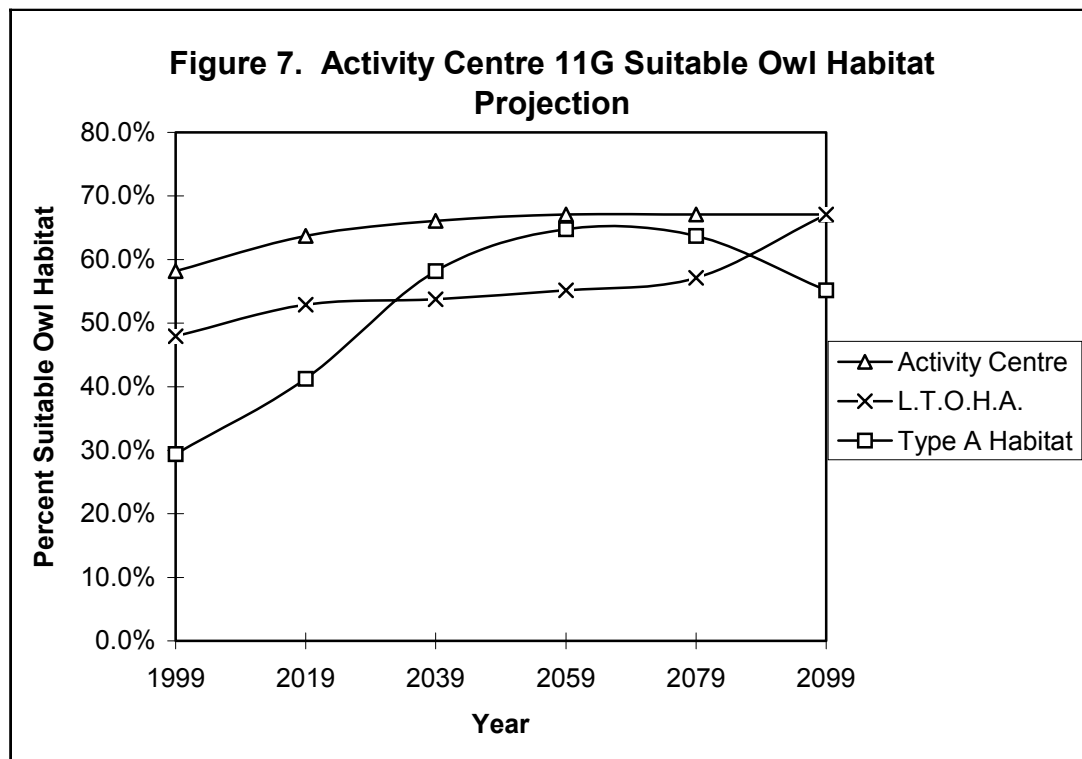
Activity Centre 11G

This activity centre is approximately 3007 ha of gross forested area and is located along the lower portion of the Uztlius Creek drainage.

Suitable Owl Habitat Assessment

Preliminary spotted owl habitat inventories have been conducted, but not completed, in this activity centre to verify MOF forest cover data, determine habitat suitability and determine if age class 5 and 6 stands meet the requirements for suitable spotted owl habitat. Additional inventories are required. The activity centre currently contains about 58.2% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 29.47% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 7).

The LTOHA contributes about 48% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 19% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 884 ha of Type A (age class 8&9) and 865 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 166.57 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this activity centre has been concentrated along the southern end of the Utzlius Creek mainline and along the “No Name” branch east of the Utzlius mainline. There are two identified transects within this activity centre. A 5 km linear low elevation transect along the Utzlius mainline and a 6.5 km linear, mid to high elevation transect along the “No Name” branch.

Since 1989, a minimum of 20 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 47 hours.

Owl Status

To date there have been 6 spotted owl detections within this activity centre. These detections indicate a pair of owls residing within this activity centre. These owls are listed as “two birds, pair status unknown” and “nesting status unknown”. Through telemetry data from 1998 it has also been established that the female spotted owl from activity centre 11f also utilizes this area. The female spotted owl residing within this activity centre has been banded as of 1998.

Inventory/Monitoring Requirements

The identification of nest and/or critical roosts, the attachment of leg bands and long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 8 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 8. Forest Cover Analysis of 11G for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal								
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal					
1				204.63	30.69	235.32			0.00	225.38	92.03	317.41	317.41	552.73
2				48.86	9.86	58.72			0.00	28.97		28.97	28.97	87.69
3				10.31	31.48	41.79			0.00	3.53	117.91	121.44	121.44	163.23
4				26.61	0.36	26.97		14.18	30.25	44.43		0	44.43	71.40
5				78.66	68.82	147.48		14.19	4.9	19.09		0	19.09	166.57
6	270.63	61.37	332					153.97	22.74	176.71		0	176.71	508.71
7	164.7	179.93	344.63					11.53		11.53		0	11.53	356.16
8	387.64	241.89	629.53					43.43	63.49	106.92		0	106.92	736.45
9	48.68	87.2	135.88					0.04	12.03	12.07		0	12.07	147.95
NSR				37.77	26.89	64.66				0.00	49.03	102.68	151.71	216.37
Protected Area		0.00	0.00		0.00	0.00				0.00			0.00	0.00
Total	871.65	570.39	1442.04	406.84	168.10	574.94	2016.98	237.34	133.41	370.75	306.91	312.62	619.53	990.28
							67.07%							32.93%
Age Class 6-9	871.65	570.39	1442.04	0.00	0.00	0.00	1442.04	208.97	98.26	307.23	0.00	0.00	0.00	307.23

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	0.00
2038	0.00
2058	12.05
2078	58.72
2099	299.98

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

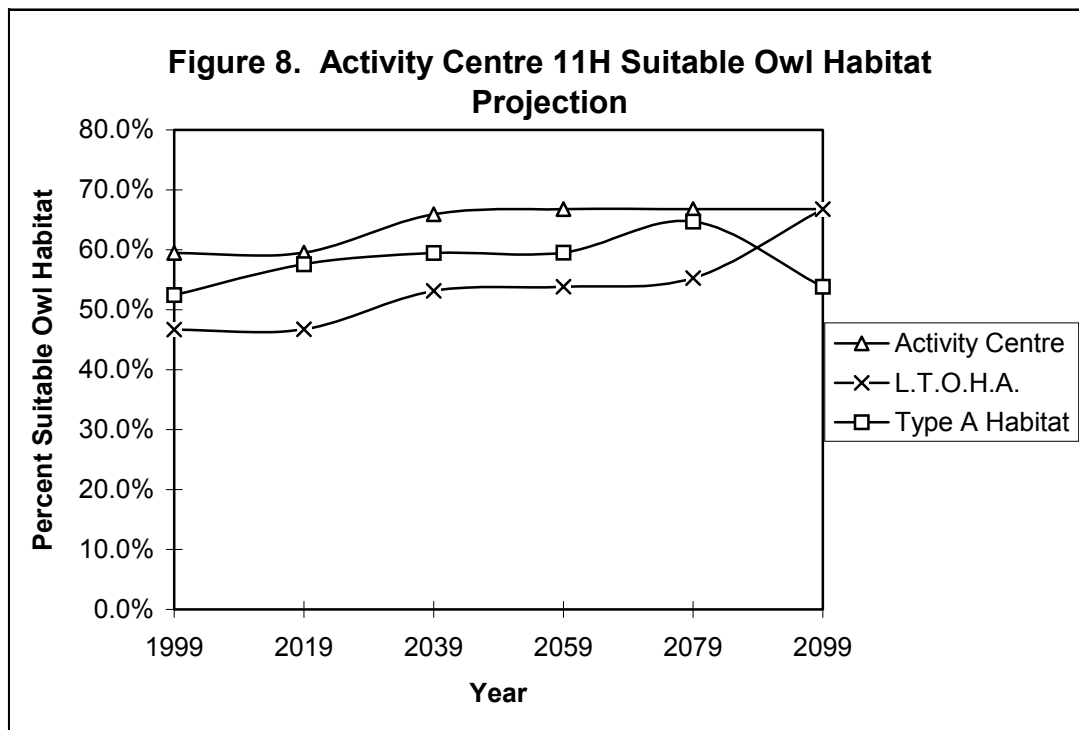
Activity Centre 11H

This activity centre is located in the northern portion of this SRMZ and is 3055 ha of gross forested area. The activity center overlaps the mid-portion the Uztlius Creek drainage.

Suitable Owl Habitat Assessment

Preliminary spotted owl habitat inventories have been conducted, but not completed, in this activity centre to verify MOF forest cover data, determine habitat suitability and determine if age class 5 and 6 stands meet the requirements for suitable spotted owl habitat. Additional inventories are required. The activity centre currently contains about 59.4% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 52.5% of the total activity centre (Figure 8).

The LTOHA contributes about 47% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 20% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1603 ha of Type A (age class 8&9) and 213 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 141 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this activity centre has predominantly taken place along the Utzlius Creek mainline. This is an 8 km linear low elevation transect.

Since 1989, a minimum of 55 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 141 hours.

Owl Status

To date there have been 24 spotted owl detections within this activity centre. These detections indicate a pair of owls residing within this activity centre. These owls are listed at “pair status” and “nesting”. There have been two nest sites detected within this activity centre. The female spotted owl residing within this activity centre has been banded as of 1998.

Inventory/Monitoring Requirements

The north 4.5 km of the Utzlius transect has been completed according to protocol. The attachment of leg bands for the male spotted owl and long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 9 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 9. Forest Cover Analysis of 11H for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal			
1				105.74	4.91	110.65	110.65			0.00	31.54		31.54	31.54	142.19
2				28.84	16.32	45.16	45.16			0.00	29.87	193.54	223.41	223.41	268.57
3				0.1	19.57	19.67	19.67	2.75	10.15	12.90	14.05	62.09	76.14	76.14	108.71
4				181.63	15.35	196.98	196.98			0.00			0	0.00	196.98
5				1.06		1.06	1.06			0.42			0	0.42	1.48
6	24.5	13.54	38.04			38.04	38.04	8.08	9.96	18.04			0	18.04	56.08
7	24.57	69.75	94.32			94.32	94.32	14.26	48.18	62.44			0	62.44	156.76
8	250.01	891.49	1141.5			1141.50	1141.50	66.44	195.95	262.39		0.01	0.01	262.40	1403.90
9	71.99	80.61	152.6			152.60	152.60		46.64	46.64			0	46.64	199.24
NSR				39.17	201.92	241.09	241.09			0.00	205.48	74.25	279.73	279.73	520.82
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	371.07	1055.39	1426.46	356.54	258.07	614.61	2041.07	91.53	311.30	402.83	280.94	329.89	610.83	1013.66	3054.73
							66.82%							33.18%	
Age Class 6-9	371.07	1055.39	1426.46	0.00	0.00	0.00	1426.46	88.78	300.73	389.51	0.00	0.01	0.01	389.52	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	5.93
2078	45.16
2099	351.74

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Hornet and Clear
Special Resource Management Zone 12

May 31, 1999

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Hornet & Clear SRMZ

The Hornet & Clear SRMZ is approximately 12,071 ha of Gross Forested Area (See Map 1: SRMZ 12). The SRMZ ranges in elevation from 20 m (Harrison Lake) up to 1370 m. The SRMZ extends from the east side of Harrison Lake north along Clear Creek, and south to Cogburn Creek. Major watersheds within the SRMZ include Big Silver Creek, Hornet Creek, Pine Creek and Clear Creek. Four long-term activity centres were established varying in size between 2,800 to 3,300 ha of Gross Forested Area.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHds1 and CWHms1. These dryer submaritime ecosystems are characterized by Natural Disturbance Type (NDT) 2 which is described in the Biodiversity Guidebook as forests having infrequent stand initiating events usually relating to fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. At higher elevations, forests are located within the MH mm2 subzone and fall within NDT 1. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Hornet & Clear SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
12 A	2,899 ha	1,219 ha (42%)	877 ha (30%)	2,096 ha (72%)
12 B	2,845 ha	959 ha (34%)	593 ha (21%)	1,552 ha (55%)
12 C	3,312 ha	704 ha (22%)	1,588 ha (46%)	2,292 ha (69%)
12 D	3,015 ha	517 ha (17%)	1,417 ha (47%)	1,934 ha (64%)
Total SRMZ	12,071 ha	3,399 ha (28%)	4,475 ha (37%)	7,740 ha (65%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Park's Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each long-term activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with owl protection.

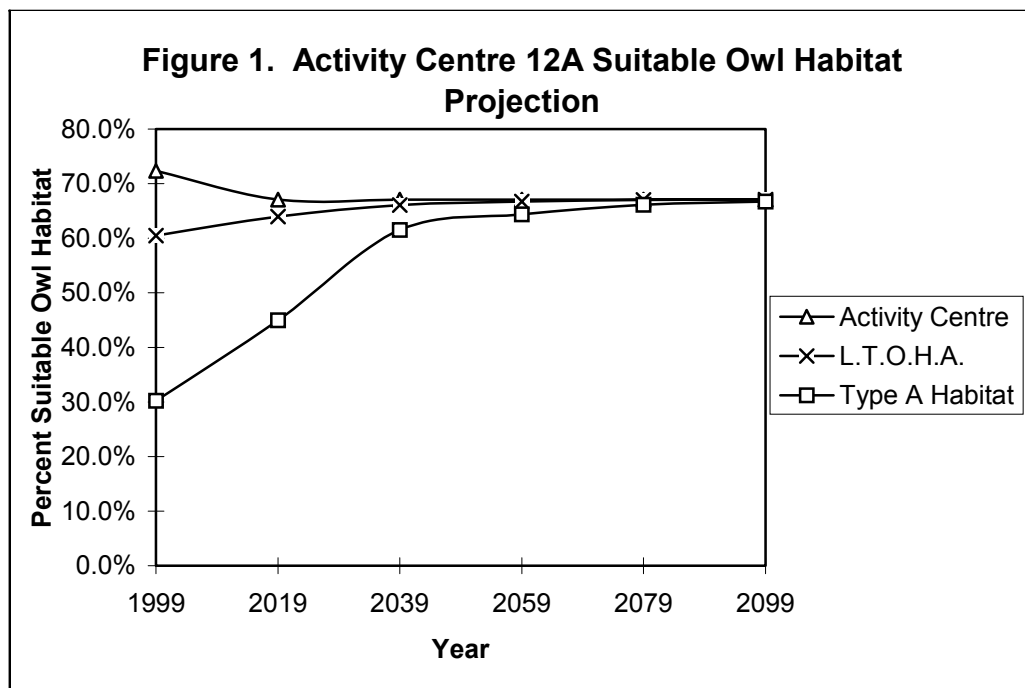
Activity Centre 12A

This activity centre is located at the southern portion of the SRMZ, and is bound to the south by Cogburn Creek, to the west by Harrison Lake, to the north by Big Silver Creek, and to the east by North Fork Creek. The activity centre is approximately 2,900 ha of gross forested area and excludes forests found above 1,370 m in elevation.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 72% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 30% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 1).

The LTOHA contributes about 60% of the total suitable owl habitat available within the activity centre. Recruitment of the remaining 7% suitable owl habitat within the LTOHA will take up to 40 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class, there is currently 877 ha of Type A (age class 8 & 9) and 1219 ha of Type B (age class 6 & 7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 (forests aged 80 to 100 years old) to determine age and suitability. There is currently 137.47 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.
- Inventory of stands classified as forest cover height class 2 (less than 19.4 m tall) to determine suitability. Currently, 138 ha of suitable owl habitat (39 ha and 99 ha in age classes 6 and 9 respectively) falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Since 1992 a minimum of 30 surveys of various lengths, duration and objectives have been conducted in the activity centre. Total survey time is approximately 87 hours.

Surveys have been conducted along the mainlines of Cogburn Creek, Talc Creek and between the mouth of Cogburn Creek and the mouth of Big Silver Creek. Two major transects have been identified within this activity centre: a linear 15 km low elevation transect that follows the mainline road and another 8 km high elevation non-roaded/trailed transect. Only one survey has been conducted along the high elevation transect due to extremely steep terrain, deep stream gully systems, and lack of a trail system.

Owl Status

To date no spotted owls have been detected in this activity centre despite large tracts of suitable habitat at higher elevations. These large tracts at the higher elevations have not been adequately inventoried due to their inaccessibility and cost of surveying. Transects along the mainline cannot adequately cover these upper slope areas.

Inventory/Monitoring Requirements

In 1995, the minimum inventory requirements were completed for the low elevation mainline transect. According to protocol, this transect should be re-inventoried in 2000. A maximum of five additional high elevation surveys are required to complete the inventory requirements of this activity centre. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 12A for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal									
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal						
1				1.2	0.26	1.46	1.46								
2				0.28	9.03	9.31	9.31	0.01		0.01	270.08	53.24	323.32	323.33	324.79
3					18.92	18.92	18.92			0.00	89.03	53.24	142.27	142.27	151.58
4					59.91	59.91	59.91			0.00	12.38	6.75	19.13	19.13	38.05
5					102.16	102.16	102.16			0.02	1.47	61.6	63.07	63.09	123.00
6	3.35	535.26	538.61				538.61			0.00	14.97	20.34	35.31	35.31	137.47
7	22.97	417.77	440.74				440.74	23.96	74.18	98.14	16.49	106.26	122.75	123.05	661.66
8		96.93	96.93				96.93		56.77	56.77	8	10.88	18.88	117.02	557.76
9	69.09	607.96	677.05				677.05	5	26.48	31.48		9.89	9.89	66.66	163.59
NSR						0.00	0.00			0.00	22.47	5.32	27.79	27.79	27.79
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	95.41	1657.92	1753.33	1.48	190.28	191.76	1945.09	28.97	157.75	186.72	434.89	332.39	767.28	954.00	2899.09
							67.09%							32.91%	
Age Class 6-9	95.41	1657.92	1753.33	0.00	0.00	0.00	1753.33	28.96	157.73	186.69	24.49	131.90	156.39	343.08	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	97.09
2038	59.93
2058	18.92
2078	9.31
2099	1.47

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

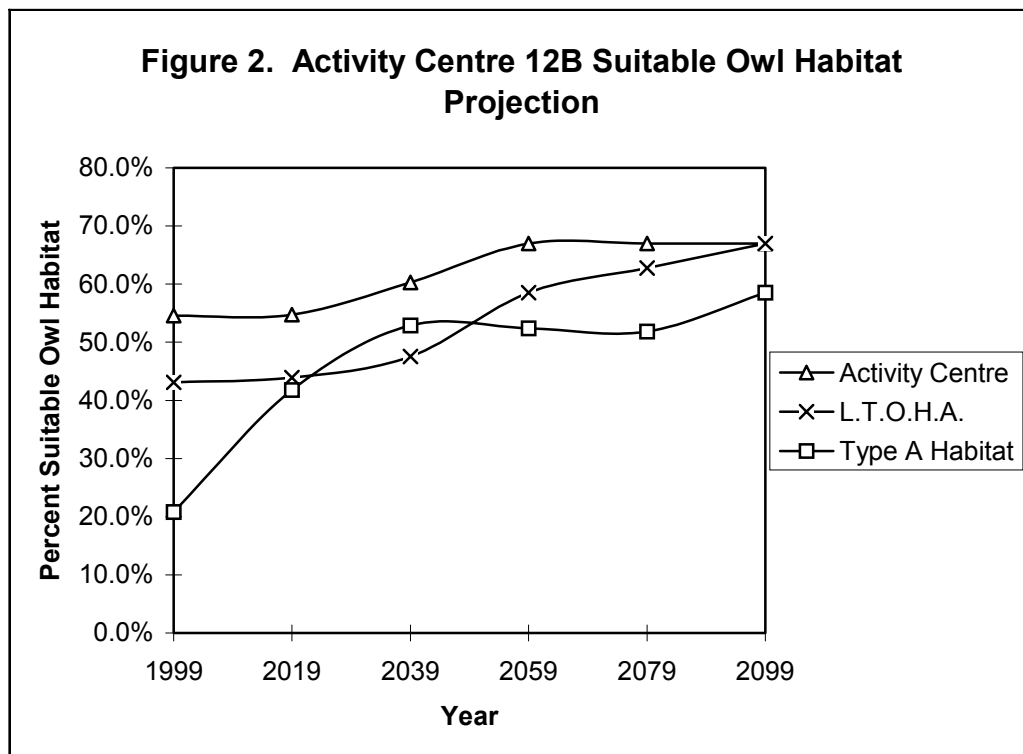
Activity Centre 12B

This activity centre occurs on the western portion of the SRMZ. It is bound to the west by Harrison Lake, to the north by Clear Creek and to the east by Hornet Creek. Portions of Big Silver Creek and Pine Creek are located within this activity centre. The low elevation riparian areas have a large hardwood component. This activity centre is approximately 2845 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 55% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 21% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 2).

The LTOHA contributes about 43% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 24% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 575 ha of Type A (age class 8&9) and 923 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- A large proportion of long-term activity centre 12B consists of age class 3 (529 ha). The majority of these stands consist of height class 3 and 4 with Douglas-fir as the leading species. Habitat inventories should be conducted in these stands to determine the potential for management techniques to accelerate the growth of suitable spotted owl habitat.
- About 101 ha of the age class 7 stands are identified as height class 2 with Lodgepole pine as the leading species. These stands fall within a designated 1 km wide corridor but may not meet the specific requirements to be considered suitable spotted owl habitat. Habitat inventory efforts should be focused on these stands to determine whether they meet the criteria of suitable habitat.
- Only 56 ha of age class 5 forest is within this activity centre resulting in limited recruitment of suitable Type B habitat over the next 20 years. Therefore inventories to assess for recruitment/replacement is not recommended as there is no trade-off opportunities over the next twenty years.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has been conducted along the mainline along Big Silver Creek and along the Pine Creek branch. There are three major transect areas identified in this activity centre: a linear 8 km transect along the mainline, a linear 4 km transect through the Pine Creek branch and another 5 km high elevation non-roaded/trailed transect along the ridge between Pine Creek and Harrison Lake.

Since 1996, a minimum of 7 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 18.5 hours. The majority of this effort has taken place along the Pine Creek forest road. Only one survey has been conducted along the high elevation transect.

Owl Status

There have been no spotted owl detections within this activity centre. Transects along the Pine Creek forest road do not effectively cover the upper slope areas and areas facing Harrison Lake. The current amount of suitable habitat may reduce the likelihood for occupancy of spotted owls in this area.

Inventory/Monitoring Requirements

To complete inventories within the activity centre, 3 surveys will be needed along the Pine Creek forest road (12 km total cumulative distance) and 4 surveys along the 7 km stretch of the mainline north of the mouth of Big Silver Creek. Two of the surveys along the mainline will have to be completed before June 30. Access is also needed for the west-facing slope along Harrison Lake. This stretch of habitat needs to be surveyed a minimum of six times in the next year to complete the entire activity centre by 1999. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data. Opportunities for Heavy Volume Removal reflect a previous agreement between the Ministry of Forest, Ministry of Environment, Lands and Parks and International Forest Products Ltd regarding the SRMZ boundary.

Table 3. Forest Cover Analysis of 12B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal									
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal						
1				13.77	2.22	15.99			0.00	131.1		131.1	131.10	147.09	
2				80.68	39	119.68			0.00	25.55		25.55	25.55	145.23	
3				233.03	79.48	312.51			0.00	182.49	33.59	216.08	216.08	528.59	
4				18.14	85.21	103.35	103.35	26.33	28.06	54.39		4.44	4.44	58.83	162.18
5				6.5	16.45	22.95	22.95	2.98	27.11	30.09	2.66		2.66	32.75	55.70
6	84.39	178.84	263.23			263.23	263.23	34.32	16.64	50.96	5.2		5.2	56.16	319.39
7	48.73	492.63	541.36			541.36	541.36	13.91	77.97	91.88	4.31	2.37	6.68	98.56	639.92
8	5.67	74.2	79.87			79.87	79.87	60.45	18.68	79.13		0.01	0.01	79.14	159.01
9	49.05	293.23	342.28			342.28	342.28	14.26	40.64	54.90	14.63	21.74	36.37	91.27	433.55
NSR				99.79	5.06	104.85	104.85			0.00	147.71	1.5	149.21	149.21	254.06
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	187.84	1038.90	1226.74	451.91	227.42	679.33	1906.07	152.25	209.10	361.35	513.65	63.65	577.30	938.65	2844.72
							67.00%							33.00%	
Age Class 6-9	187.84	1038.90	1226.74	0.00	0.00	0.00	1226.74	122.94	153.93	276.87	24.14	24.12	48.26	325.13	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	120.83
2078	119.68
2099	120.84

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

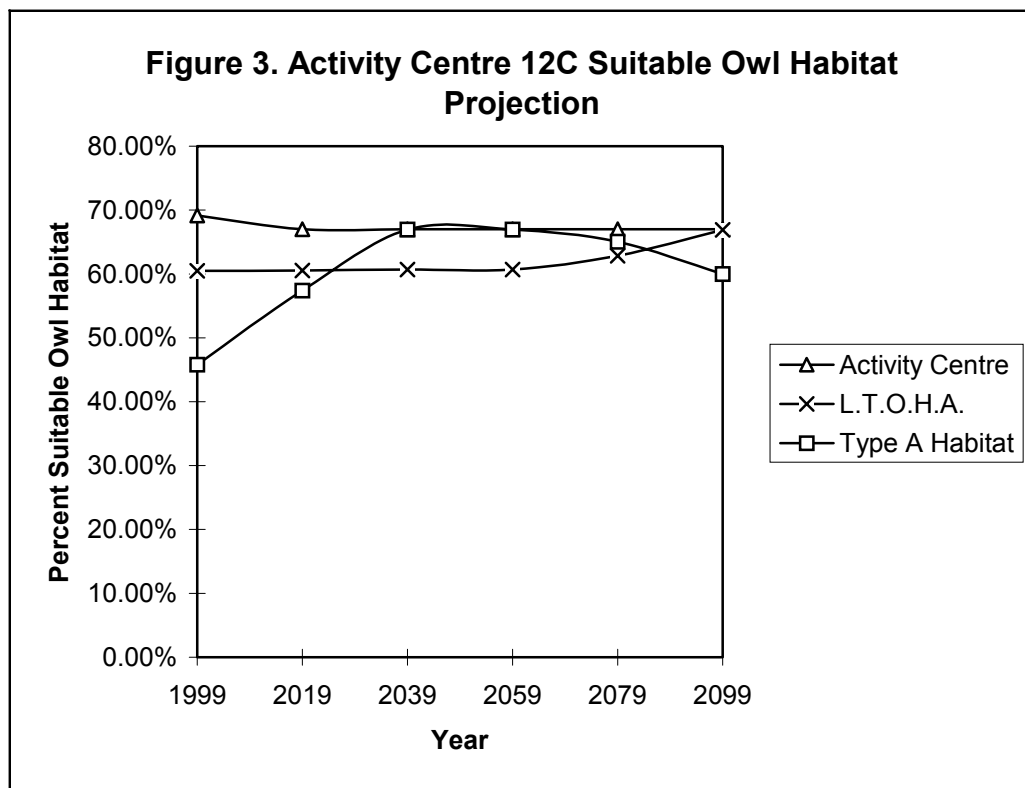
Activity Centre 12C

This activity centre is located in the centre portion of the SRMZ. Hornet Creek is the primary drainage within this activity centre. This activity centre is approximately 3300 hectares of gross forested area. This activity centre excludes a patch of alpine habitat that exceeds the 1370 m elevation barrier.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 69% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 46% of the total activity centre. Achieving the 50% Type A habitat target will take up to 20 years (Figure 3).

The LTOHA contributes about 58% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 9% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1588 ha of Type A (age class 8&9) and 704 ha of Type B (age class 6&7) within this activity centre. Specific forest stand characteristics are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Only 2 ha of forest exist at age class 5 resulting in limited recruitment of suitable Type B habitat over the next 20 years. Therefore inventories to assess for recruitment/replacement is not recommended as there is no trade-off opportunities over the next twenty years.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this activity centre has been conducted along a 14 km linear transect along the Hornet Creek branch.

Since 1992, a minimum of 37 surveys of varying length, duration and objectives have been conducted in this activity centre. Total survey time is approximately 108 hours. No surveys have been conducted along the high elevation slope facing Harrison Lake, as access is extremely limited with no marked trails.

Owl Status

One spotted owl detection on the upper mid-slope of the ridge east of Big Silver in 1994 is the only detection in 5 years of inventory work in this activity centre. Resident status and nesting status is “unknown” at this time.

Inventory/Monitoring Requirements

Inventory of low lying habitat within this activity centre have been completed according to protocol as of 1996 with the exception of the southern ridge between the north and south forks of Hornet Creek. This area will require 4 surveys over the next year with two conducted before June 30. Approximately 4 km of linear higher elevation hiking surveys will need to be conducted six times within the next year to complete inventory protocol by

1999. Two of these surveys must be conducted before June 30, 1999. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

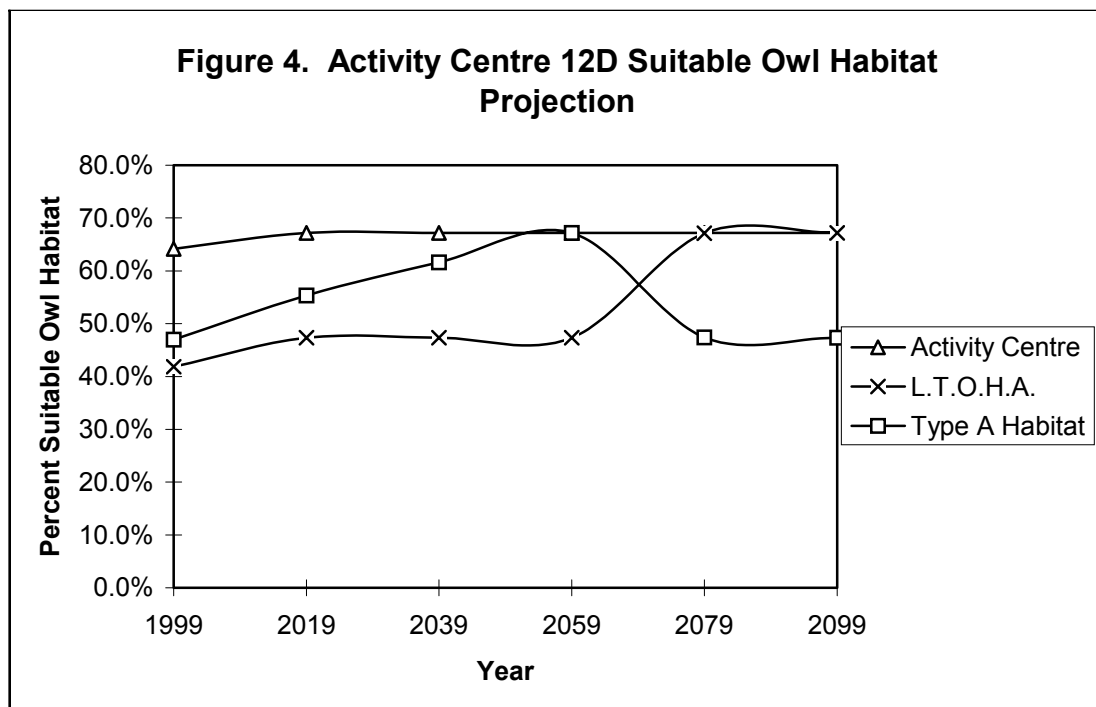
Activity Centre 12D

This activity centre is located at the northern end of the SRMZ and is approximately 3000 ha of gross forested area. Clear Creek is the primary drainage within this activity centre. There is a large burn (about 700 ha in total area) on the north side of Clear Creek that is predominately age class 2 with some vets.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 64% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 47% of the total activity centre. Achieving the 50% Type A habitat target will take up to 20 years (Figure 4).

The LTOHA contributes about 42% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 25% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on age class there is currently 1417 ha of Type A (age class 8&9) and 517 ha of Type B (age class 6&7) within this activity centre. Specific forest stand characteristics are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability. There is currently 166.77 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has exclusively been along the Clear Creek Mainline and the deactivated road/trail to Clear Creek Hot Springs. This area constitutes the major identified transect with a total linear distance of approximately 7.5 km.

Since 1992 there have been a minimum of 27 surveys of varying length, duration and objectives conducted in this activity centre. Total survey time is approximately 104 hours.

Owl Status

To date no spotted owls have been detected despite the large tracts of suitable habitat. Much of this habitat is of higher elevation that has been inadequately inventoried. The low elevation transects which follow along the mainline do not adequately cover these high elevation habitats.

Inventory/Monitoring Requirements

To complete the inventory according to protocol by 1999 six surveys will be needed along the south ridge of Clear Creek over the next two years. A minimum of 4 surveys should be conducted before June 30,1999. Increased effort should be placed in providing access into areas of good habitat along mid to upper slope areas of this ridge. The lower elevation habitat has been inventoried according to protocol and completed as of 1996. This area should be re-inventoried again beginning in 2001 according to protocol. If spotted owls

are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 5 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Spotted Owl
Resource Management Plan
for
Tretheway
Special Resource Management Zone 13

May 31, 1999

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Tretheway SRMZ

The Tretheway SRMZ is approximately 9420 ha of gross forested area (see Map 1:SRMZ 14). It ranges in elevation from 20 m (Harrison Lake) up to a maximum of 1370 m. The SRMZ includes Tretheway Creek, Coop Creek and Bremner Creek drainages and follows along the west side of Harrison Lake. Three long-term activity centres were established, each approximately 3150 ha of gross forested area.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHds1 and CWHms1. These dryer subarctic ecosystems are characterized by Natural Disturbance Type (NDT) 2 which is described in the Biodiversity Guidebook as forests having infrequent stand initiating events usually relating to fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. At higher elevations, forests are located within the MH mm2 subzone and fall within NDT 1. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Tretheway SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
13 A	3137 ha	149 ha (4.8%)	2471 ha (78.8%)	2621 ha (83.5%)
13 B	3142 ha	40 ha (1.3%)	1396 ha (44.4%)	1436 ha (45.7%)
13 C	3153 ha	80 ha (2.5%)	2006 ha (63.6%)	2087 ha (66.2%)
Total SRMZ	9432 ha	269 ha (2.9%)	5873 ha (62.3%)	6144 ha (65.1)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

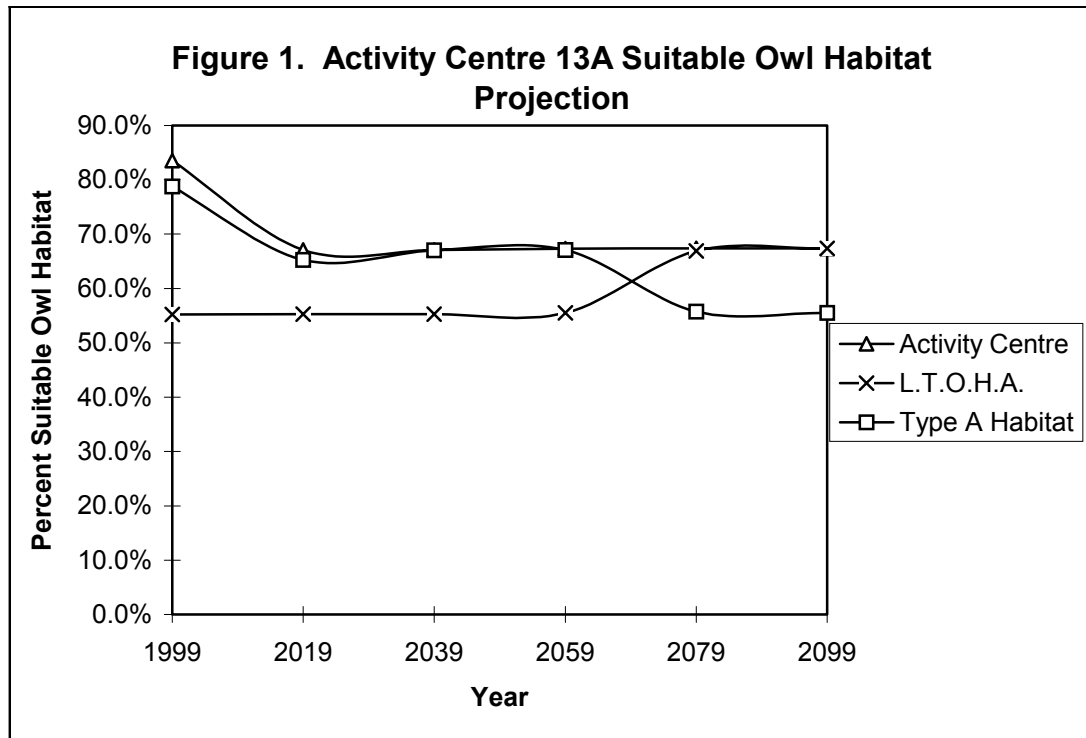
Activity Centre 13A

This activity centre is located at the western portion of the SRMZ and is approximately 3137 hectares of gross forested area. This activity centre overlaps the Tretheway Creek drainage.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 83.5% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 78.8% of the total activity centre (Figure 1).

The LTOHA contributes about 55% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 12% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

One habitat inventory requirement has been identified within this activity centre:

- Based on forest cover age class there is currently 1396ha of Type A (age class 8&9) and 40ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

There is one identified transect within this activity centre; a 13 km linear, non-roaded/trailed transect along the Tretheway Creek drainage.

Since 1989 there has been a minimum of 14 surveys of various lengths, duration and objectives along the eastern border of this activity centre. Total inventory time for this activity centre is approximately 51 hours.

Owl Status

To date no spotted owls have been detected within this activity centre.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys along the identified transect, 4 of these before June 30,1999. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

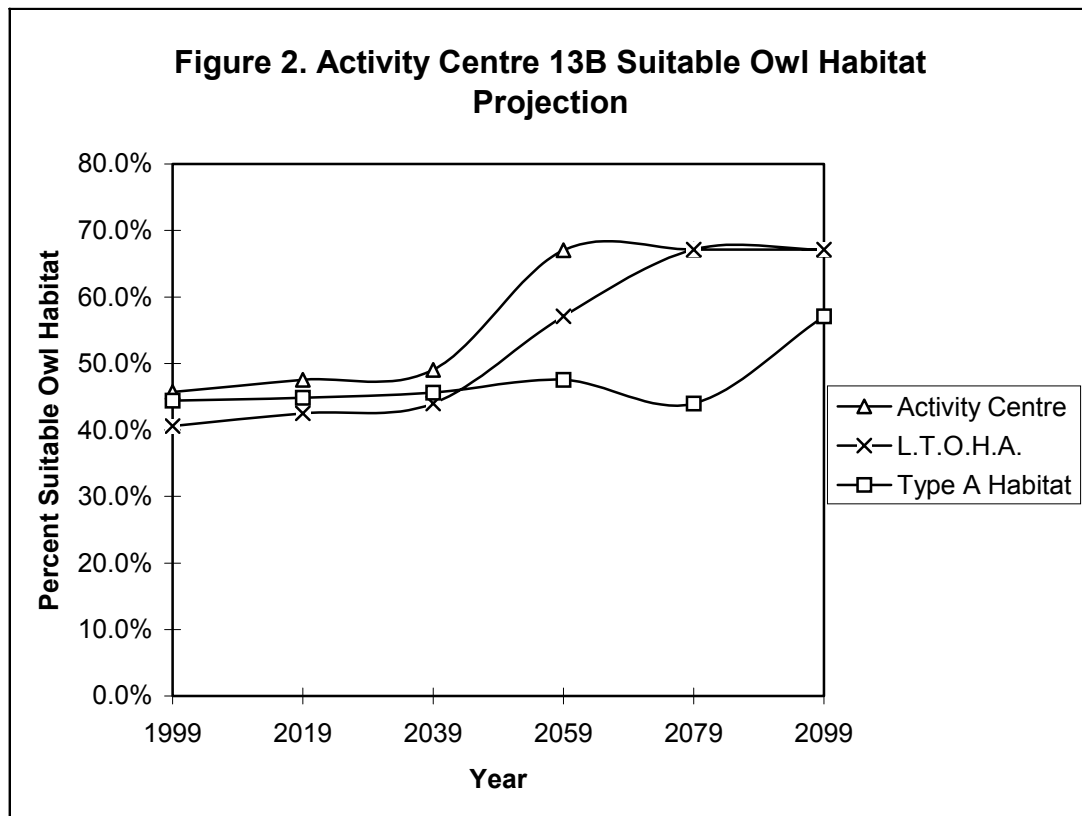
Activity Centre 13B

This activity centre is located in the north-eastern portion of the SRMZ and is approximately 3142 ha of gross forested area. This activity centre encompasses the Coop Creek drainage and the lower portion of Tretheway Creek and is bounded to the west by Harrison Lake.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 45.7% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 44.4% of the total activity centre. Achieving the 50% Type A habitat target will take up to 80 years (Figure 2).

The LTOHA contributes about 41% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 26% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 2006 ha of Type A (age class 8&9) and 80 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- 35 ha of Type A habitat (age class 8) falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has been conducted along the East Harrison mainline and along the Coop Creek forest service road. There are three identified transects within this activity centre. The first is an 11 km linear driving transect along the East Harrison mainline. The second is a short, 3.5 km linear, hiking/driving transect along Coop Creek. The third is a 4 linear km stretch of the Bremner Creek mainline.

Since 1992 there have been a minimum of 45 surveys of varying length, duration and objectives within this activity centre. Total survey time is approximately 28 hours. The majority of this effort has been directed along the East Harrison mainline transect and along the Bremner Creek branch.

Owl Status

To date no spotted owls have been detected within this activity centre.

Inventory/Monitoring Requirements

To complete this activity centre by 1999 according to protocol all of the identified transects must be surveyed a minimum of six times, 4 of these prior to June 30, 1999. Coverage of higher elevation habitat may be limited from the mainline. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 3. Forest Cover Analysis of 13B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal								
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal					
1						0.00			112.73	21.4	134.13	134.13	134.13	
2				76.91	239.17	316.08	316.08		180.18	81.85	262.03	262.03	578.11	
3				277.34	134.4	411.74	411.74	154.43	114.71	63.89	178.6	333.03	744.77	
4				22	23.81	45.81	45.81		58.57	55.52	114.09	114.09	159.90	
5				61.09		61.09	61.09				0	0.00	61.09	
6	24		24			24.00	24.00				0	0.00	24.00	
7		15.69	15.69			15.69	15.69				0	0.00	15.69	
8	135.84	125.66	261.5			261.50	261.50	48.64	11.76	60.40	0	60.40	321.90	
9	312.91	660.52	973.43			973.43	973.43	36.58	61.34	97.92	3.07	100.99	1074.42	
NSR						0.00	0.00				27.97	27.97	27.97	
Protected Area		0.00	0.00		0.00	0.00	0.00					0.00	0.00	
Total	472.75	801.87	1274.62	437.34	397.38	834.72	2109.34	239.65	73.10	312.75	466.19	253.70	719.89	3141.98
							67.13%						32.87%	
Age Class 6-9	472.75	801.87	1274.62	0.00	0.00	0.00	1274.62	85.22	73.10	158.32	0.00	3.07	3.07	161.39

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	312.75
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

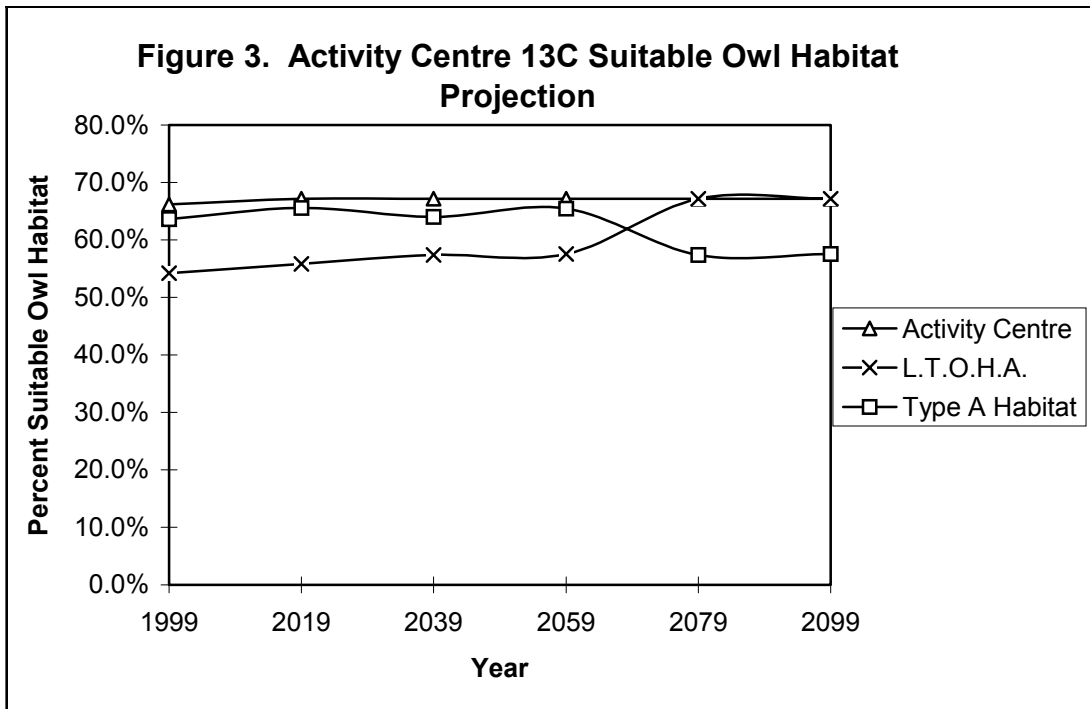
Activity Centre 13C

This activity centre overlaps the Bremner Creek and Doctors Creek drainages and is bounded by the west bank of Harrison Lake. This activity centre is approximately 3153 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 66.2% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 63.6% of the total activity centre (Figure 3).

The LTOHA contributes about 54% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 13% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 2006 ha of Type A (age class 8&9) and 80 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 297.25 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this activity centre has been conducted along the Trio Creek mainline, Bremner Creek mainline, Doctors Creek mainline and the East Harrison mainline. There are two identified transects within this activity centre. The first is a 10 km linear stretch from the headwaters of Bremner Creek east to the East Harrison mainline and south along the mainline to the Doctors Creek branch. The second is a 6 km linear driving survey along Doctors Creek branch and south along the East Harrison mainline.

Since 1992, a minimum of 17 surveys of various lengths, duration and objectives have been conducted in this activity centre. The total survey time is approximately 60 hours. These surveys have been conducted along all identified transects.

Owl Status

There has been a single spotted owl detection within this activity centre since 1992.

Inventory/Monitoring Requirements

To complete this activity centre by 1999 according to protocol all of the identified transects must be surveyed a minimum of six times, 4 of these prior to June 30, 1999. Spotted owls detected will require location of nest and/or critical roosts, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 4. Forest Cover Analysis of 13C for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA	Forest Management Area			Heavy Volume Removal			FMA	Activity
	Suitable Owl Habitat							Replacement Area					Total	Centre	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	Total
1						0	0.00			0.00			0	0.00	0.00
2				121.45	181.74	303.19	303.19			0.00	55.58	48.58	104.16	104.16	407.35
3				2.12	3.27	5.39	5.39		0	0.00	283.54	0.83	284.37	284.37	289.76
4				0.26	48.93	49.19	49.19			0.00	22.7		22.7	22.70	71.89
5				37.3	12.75	50.05	50.05			0.00	239.32	7.88	247.2	247.20	297.25
6			0				0.00			0.00			0	0.00	0.00
7			0				0.00	80.37		80.37			0	80.37	80.37
8	11.78	36.14	47.92				47.92	46.16	7.3	53.46		0.01	0.01	53.47	101.39
9	85.17	1576.64	1661.81				1661.81	113.26	129.81	243.07	0	0	0	243.07	1904.88
NSR						0.00	0.00			0.00			0	0.00	0.00
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	96.95	1612.78	1709.73	161.13	246.69	407.82	2117.55	239.79	137.11	376.90	601.14	57.30	658.44	1035.34	3152.89
				Percent of Activity centre			67.16%				Percent of Activity centre			32.84%	
Age Class 6-9	96.95	1612.78	1709.73	0.00	0.00	0.00	1709.73	239.79	137.11	376.90	0.00	0.01	0.01	376.91	

Predicted Schedule for RPA/RCA Trade-off
RPA Available

1998	0.00
2018	19.13
2038	49.19
2058	5.39
2078	303.19
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Douglas
Special Resource Management Zone 14

May 31, 1999

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Douglas SRMZ

The Douglas SRMZ is approximately 7085 ha of gross forested area (See Map 1:SRMZ 14). It ranges in elevation from Harrison Lake up to 1370 m. The SRMZ extends from the height of land on the west side of Douglas Creek, encompasses the Douglas Creek drainage and extends east along Harrison Lake past Stokke Creek. Two long-term activity centres were established varying in size between 3300 to 3765 ha of gross forested area. The boundary between the two long-term activity centres follows along the Chilliwack and Squamish Forest District boundary.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHds1 and CWHms1. These dryer subarctic ecosystems are characterized by Natural Disturbance Type (NDT) 2 which is described in the Biodiversity Guidebook as forests having infrequent stand initiating events usually relating to fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. At higher elevations, forests are located within the MH mm2 subzone and fall within NDT 1. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Douglas SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
14 A	3320 ha	518 ha (15.6%)	1126 ha (33.9%)	1644 ha (49.5%)
14 B	3765 ha	179 ha (4.8%)	2504 ha (66.5%)	2684 ha (71.3%)
Total SRMZ	7085 ha	697 ha (9.8%)	3630 ha (51.2%)	4328 ha (61.1%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks, Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

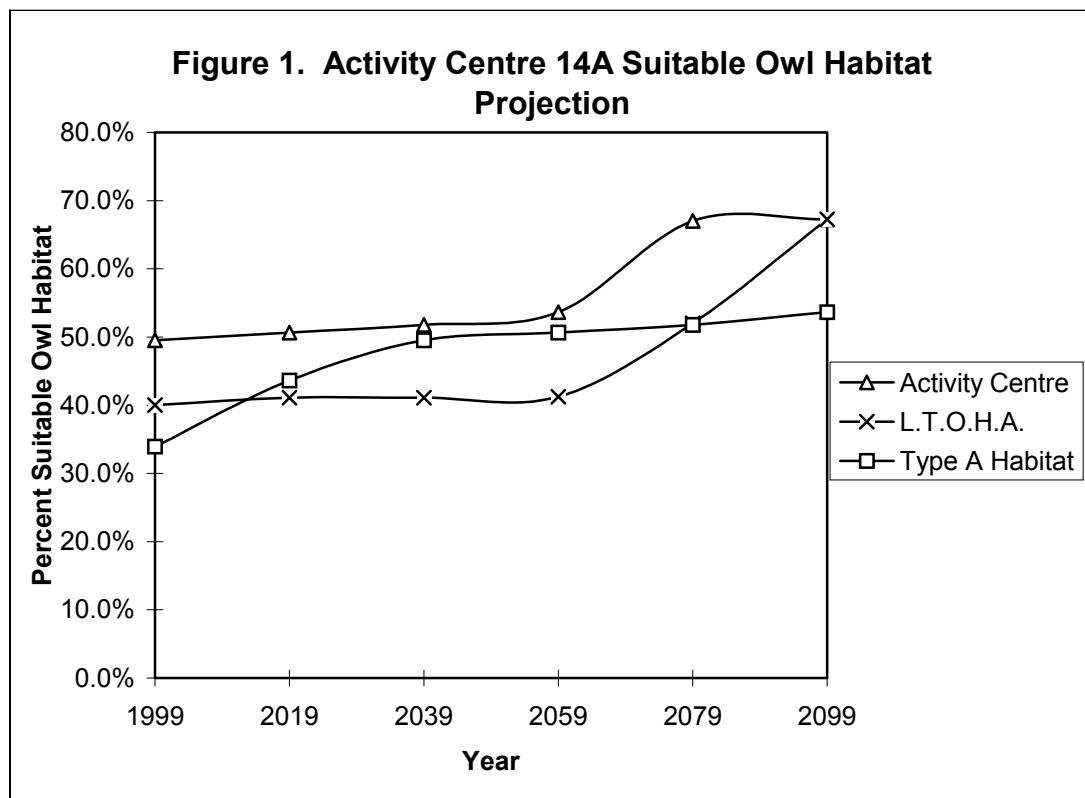
Activity Centre 14A

This activity centre is located at the eastern portion of the SRMZ, extends west to east along the north shore of Harrison Lake and encompasses Stokke Creek. The activity centre is approximately 3,320 ha of gross forested area and is found within the Chilliwack Forest District.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 49.5% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 33.9% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 1).

The LTOHA contributes about 40% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 27% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

One habitat inventory requirement has been identified within this activity centre:

- Based on forest cover age class there is currently 1126 ha of Type A (age class 8&9) and 518 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

No surveys have been conducted within this activity centre.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys along the identified transects, 4 of these before June 30,1999.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 14A for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal			
1				37.7	0.72	38.42	38.42			4.6		4.6	4.60	43.02	
2				350.61	7.01	357.62	357.62	80.96	6.44	87.40	401.24	6.2	407.44	494.84	852.46
3					4.61	4.61	4.61	52.73	4.18	56.91			0	56.91	61.52
4						0	0.00	16.4	21.94	38.34			0	38.34	38.34
5				22.06	13.54	35.6	35.60		1.33	1.33			0	1.33	36.93
6	6.85	149.05	155.9			155.90	155.90		39	39.00			0	39.00	194.90
7	8.33	303.25	311.58			311.58	311.58	11.17	0.2	11.37			0	11.37	322.95
8	43.4	203.85	247.25			247.25	247.25	76.64	56.68	133.32			0	133.32	380.57
9	3.9	609.8	613.7			613.70	613.70	31.32	100.34	131.66		0	0	131.66	745.36
NSR				25.84	442.42	468.26	468.26			0.00	154.96	20.53	175.49	175.49	643.75
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	62.48	1265.95	1328.43	436.21	468.30	904.51	2232.94	269.22	230.11	499.33	560.80	26.73	587.53	1086.86	3319.80
							67.26%							32.74%	
Age Class 6-9	62.48	1265.95	1328.43	0.00	0.00	0.00	1328.43	119.13	196.22	315.35	0.00	0.00	0.00	315.35	

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	0.00
2099	499.33

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

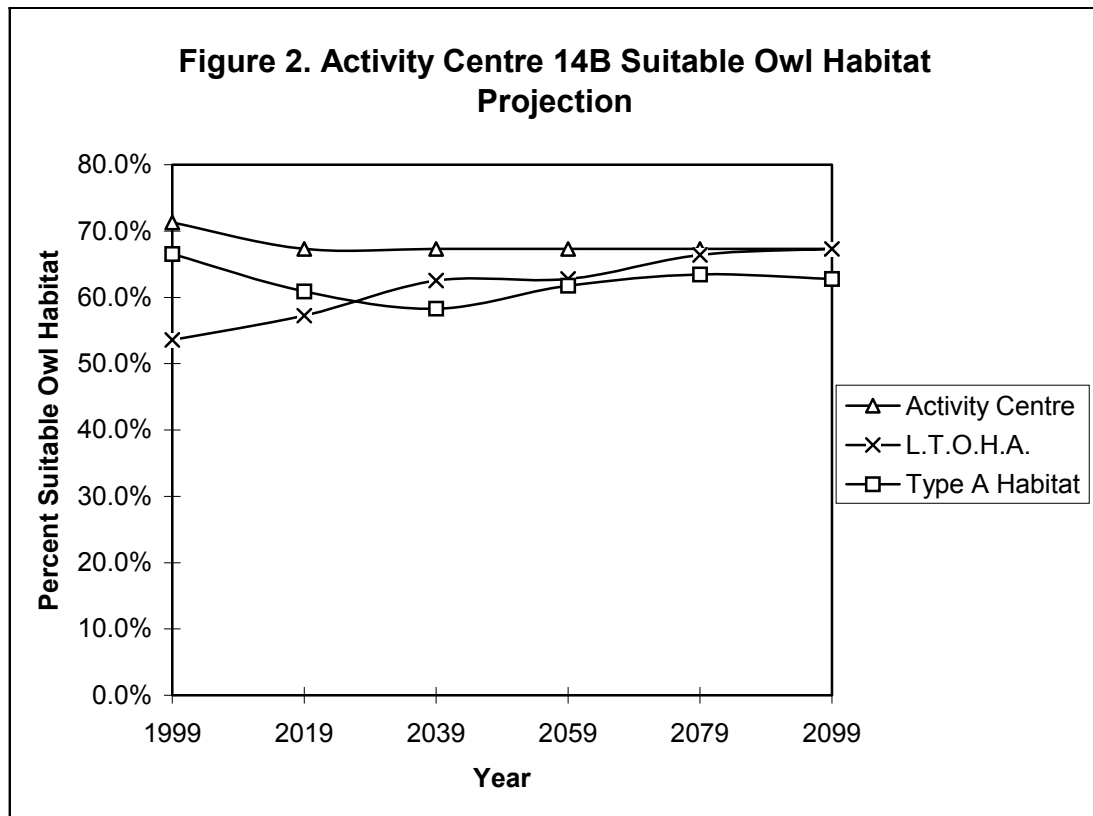
Activity Centre 14B

This activity centre is located at the western portion of the SRMZ, and extends north along Douglas Creek. The activity centre is approximately 3,765 ha of gross forested area and is found within the Squamish Forest District.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 71.3% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 66.5% of the total activity centre (Figure 2).

The LTOHA contributes about 54% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 13% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 2504 ha of Type A (age class 8&9) and 179 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 454.68 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Only one survey has been conducted within the drainage. The mid-portion of the drainage was surveyed in 1993.

Owl Status

There has been one spotted owl detection, a single male was located in 1993 within this activity centre.

Inventory/Monitoring Requirements

To complete inventories within the activity centre in 1999, a minimum of six ,10 km hiking surveys will be required along Douglas Creek. Three of these surveys should occur before June 30, 1999. Spotted owls detected require location of nest and/or critical roosts, the attachment of leg bands and annual monitoring.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Spotted Owl
Resource Management Plan
for
Glacier and Tuwasus
Special Resource Management Zone 15

May 31, 1999

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Glacier & Tuwasus SRMZ

The Glacier and Tuwasus SRMZ is approximately 18000 ha of gross forested area (See Map 1:SRMZ 15). It ranges in elevation from 60m (Lillooet River) up to a maximum of 1370 m. The SRMZ includes the Tuwasus Creek and Snowcap Creek headwaters and drainages and follows along the west side of Lillooet River. The Tuwasus Creek and Snowcap Creek occur within the boundaries of Garibaldi Provincial Park. Seven long-term activity centres were established varying in size between 1,300 to 3,400 ha of gross forested area.

The SRMZ is located within the Coastal Western Hemlock (CWH), Mountain Hemlock (MH), and Interior Douglas Fir (IDF) biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWH dry subarctic (ds1) to moist subarctic (ms1) and IDF wet warm (ww). At higher elevations, forests are located within the MH moist maritime (MH mm2) subzone. These dryer subarctic ecosystem are distinguished by NDT 2 and 4 which are characterized by infrequent to frequent stand initiating events usually through fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. NDT 4 is characterized by a mosaic of uneven-aged forest interspersed with grass and shrub openings. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Glacier & Tuwasus SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
15 A*	1324 ha	0 ha (0%)	0 ha (0%)	1324 ha (100%)
15 B*	2674 ha	0 ha (0%)	0 ha (0%)	2523 ha (94.3%)
15 C*	3215 ha	0 ha (0%)	0 ha (0%)	2784 ha (86.6%)
15 D	3394 ha	220 ha (6.5%)	2742 ha (80.8%)	2962 ha (87.3%)
15 E*	3176 ha	0 ha (0%)	0 ha (0%)	2095 ha (66.0%)
15 F*	2040 ha	0 ha (0%)	0 ha (0%)	1766 ha (86.5%)
15 G*	1522 ha	0 ha (0%)	0 ha (0%)	1522 ha (100%)
Total SRMZ	17345 ha	611 ha (3.5%)	4514 ha (26.0%)	14976 ha (86.3%)

*NOTE: Garibaldi Park data is unclassified. All gross forested area within Garibaldi Park is assumed to be suitable and is unverified.

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

Activity Centre 15A

This activity centre is located at the southern portion of the SRMZ. The activity centre encompasses the headwaters of Snowcap Creek which drains to the east into Glacier Lake. It is approximately 1324 ha of gross forested area and is entirely within the boundary of Garibaldi Provincial Park.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre is currently classified as 100% suitable owl habitat based on the assumption that all forest cover in the park is suitable. The total amount of Type A habitat (forests older than 140 years) is not known.

Habitat Inventory Requirements

One habitat inventory requirement has been identified for this activity centre:

- Currently, 1324 ha are classified as suitable owl habitat. These forest stands should be inventoried to confirm suitability and determine the amount of Type A and Type B habitats.

Spotted Owl Assessment

Inventory Effort

There has been no recorded inventory coverage within this activity centre as it falls entirely within Garibaldi Provincial Park.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

This activity centre falls entirely within Garibaldi Provincial Park and is considered a low priority for inventory. If inventories are conducted and spotted owls detected, location of nest and/or roost sites, attachment of leg bands and long-term monitoring will be required.

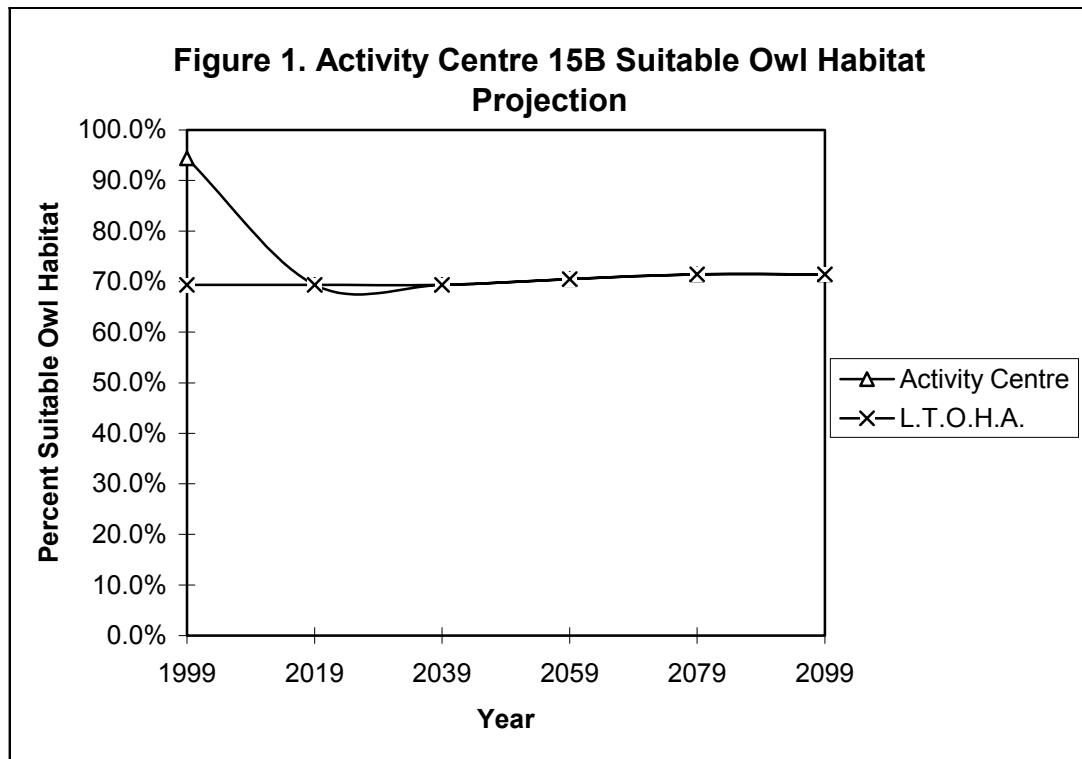
Activity Centre 15B

This activity centre is located in the southern portion of the SRMZ extending from the southern end of Glacier Lake up the Snowcap Creek drainage to the boundary of activity centre 15A. The activity centre is approximately 2674 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre is currently classified as 94.3% suitable owl habitat based on the minimum forest age criteria of 100 years old and the assumption that all forest cover in the park is suitable (Figure 1). The total amount of Type A habitat (forests older than 140 years) is not known.

The LTOHA contributes about 69% of total suitable owl habitat available within the activity centre.



Habitat Inventory Requirements

One habitat inventory requirement has been identified for this activity centre:

- Currently, 2523 ha are classified as suitable owl habitat. These forest stands should be inventoried to determine the amount of Type A and Type B habitats. In particular, forest stands within the park should be inventoried.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has been exclusively along the one linear km of existing logging road at the end of Glacier Lake. There are two potential transects identified for this activity centre: a 6 km linear driving/hiking survey on the south side of Glacier Lake and another 6 km high elevation non roaded transect to the southwest of Glacier Lake.

Owl Status

There have been no spotted owl detections within this activity centre.

Inventory/Monitoring Requirements

Activity centre 15B falls predominantly within Garibaldi Provincial Park and is considered a low priority for inventory, however sufficient habitat does exist to support spotted owls. If inventories are conducted and spotted owls detected, location of nest and/or roost sites, attachment of leg bands and long-term monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 15B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal		
1				0.00				37.35	0.24	37.59	37.59	37.59		
2				25.33	25.33	25.33	0.00			0	0.00	25.33		
3				30.04	30.04	30.04	0.00			0	0.00	30.04		
4						0	0.00			0	0.00	0.00		
5						0	0.00			0	0.00	0.00		
6			0			0	0.00		58.17	58.17	58.17	58.17		
7		13.87	13.87			13.87	0.00	10.03	218.2	228.23	228.23	242.10		
8			0			0.00	0.00	9.95	235.91	245.86	245.86	245.86		
9		6.31	6.31			6.31	0.00	17.34	177.1	194.44	194.44	200.75		
NSR						0.00	0.00			0	0.00	0.00		
Protected Area		1834.00	1834.00			0.00	0.00			0.00	0.00	1834.00		
Total	0.00	1854.18	1854.18	0.00	55.37	55.37	1909.55	0.00	0.00	0.00	74.67	689.62	764.29	2673.84
							71.42%						28.58%	
Age Class 6-9	0.00	1854.18	1854.18	0.00	0.00	0.00	1854.18	0.00	0.00	0.00	37.32	631.21	668.53	668.53

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	0.00
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

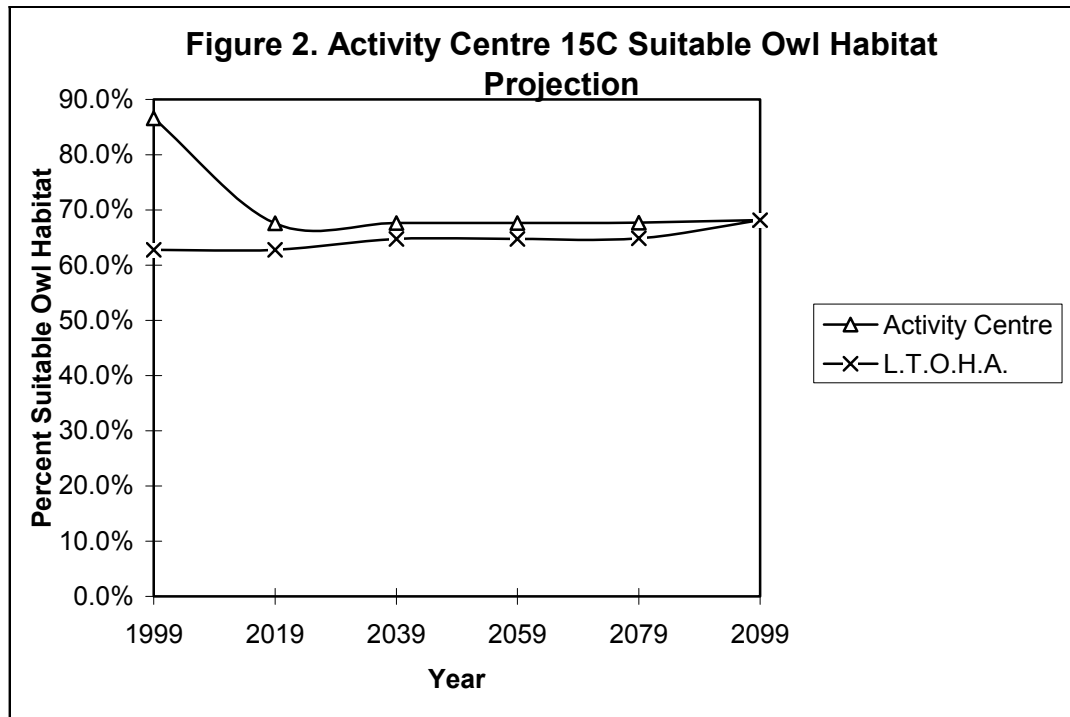
Activity Centre 15C

This activity centre encompasses Glacier Lake downstream to the Lillooet River and is approximately 3215 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre is currently classified as 86.6% suitable owl habitat based on the minimum forest age criteria of 100 years old and the assumption that all forest cover in the park is suitable (Figure 2). The amount of Type A habitat (forests older than 140 years) is a minimum of 55%.

The LTOHA contributes about 65% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 2% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Currently, 2784 ha are classified as suitable owl habitat. These forest stands should be inventoried to determine the amount of Type A and Type B habitats. In particular, the forests within the park should be inventoried to confirm its suitability.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 38 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory effort within this activity centre has been conducted along the mainline east and south of Snowcap Creek. This 6 km linear stretch of road is identified as one of two major transect routes. The other identified transect is a linear 6.5 km high elevation non roaded transect west of Glacier Lake and Snowcap Creek.

Since 1992, a minimum of 15 surveys of various lengths, duration and objectives have been conducted in this activity centre. These surveys have been conducted exclusively along the transect extending from the south end of Glacier Lake to the confluence of Snowcap Creek and Lillooet River.

Owl Status

No spotted owls have been detected to date within this activity centre. The current road transect does not effectively cover the high elevation habitat west of Glacier lake and Snowcap Creek.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol it will take a minimum of 5 surveys along the mainline transect, 4 of these before June 30,1999. Six additional surveys will also be required along the high elevation non roaded transect, 4 of these before June 30,1999. If spotted owls are detected, the identification of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 3. Forest Cover Analysis of 15C for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal			
1				98.91	0.67	99.58	99.58		0.00	217.51	14.23	231.74	231.74	331.32	
2					3.47	3.47	3.47		0.00	88.84		88.84	88.84	92.31	
3						0	0.00		0.00			0	0.00	0.00	
4				0.51		0.51	0.51		0.00			0	0.00	0.51	
5						0	0.00		0.00			0	0.00	0.00	
6		24.51	24.51				24.51	6.17	6.17	0.01		0.01	6.18	30.69	
7	7.13	84.57	91.7				91.70	26.39	26.39	7.2	234.65	241.85	268.24	359.94	
8	315.42	711.88	1027.3				1027.30	31.08	31.08	88.14	203.99	292.13	323.21	1350.51	
9	34.95	281.5	316.45				316.45	27.61	27.61	6.1	70.93	77.03	104.64	421.09	
NSR					5.08	5.08	5.08		0.00	1.36	0.68	2.04	2.04	7.12	
Protected Area		622.00	622.00		0.00	0.00	622.00		0.00			0.00	0.00	622.00	
Total	357.50	1724.46	2081.96	99.42	9.22	108.64	2190.60	91.25	0.00	91.25	409.16	524.48	933.64	1024.89	3215.49
							68.13%							31.87%	
Age Class 6-9	357.50	1724.46	2081.96	0.00	0.00	0.00	2081.96	91.25	0.00	91.25	101.45	509.57	611.02	702.27	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	0.00
2099	91.25

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

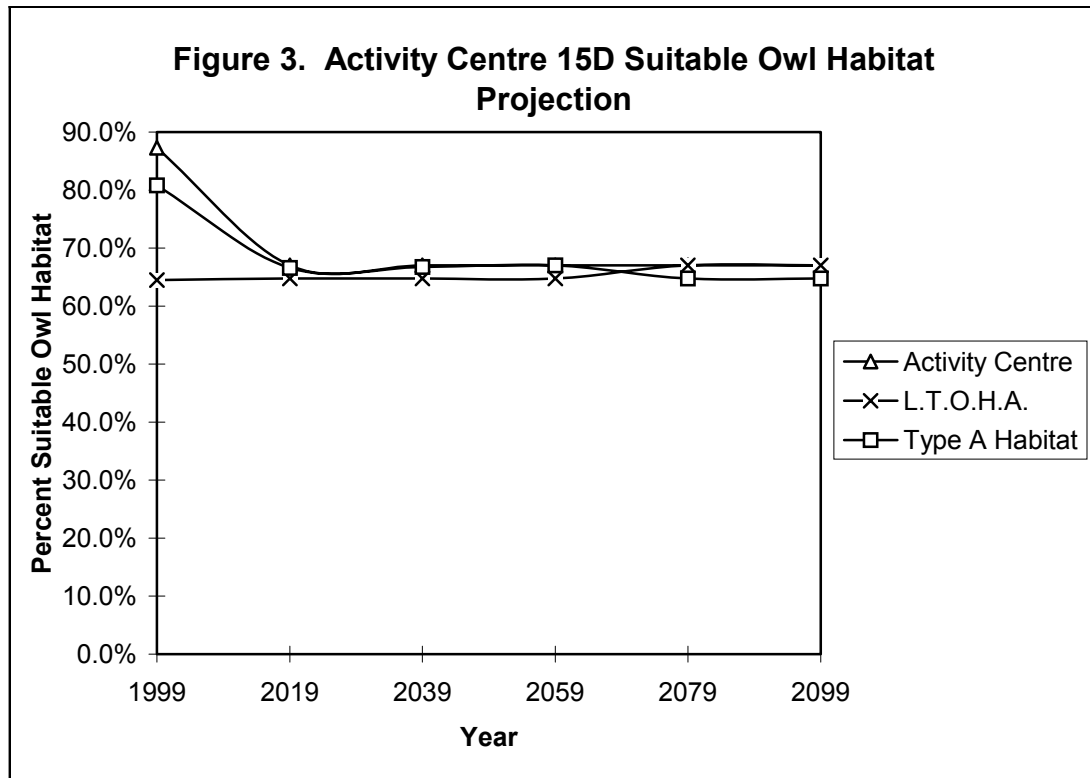
Activity Centre 15D

This activity centre is located in the eastern most portion of this SRMZ and follows along the west side of the Lillooet River. The activity centre is 3394 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 87.3% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 80.8% of the total activity centre (Figure 3).

The LTOHA contributes about 65% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 2% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 2742 ha of Type A (age class 8&9) and 220 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 92 ha of age class 9 falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

This activity centre has not been inventoried. There are approximately 11 linear km of road surveys extending from the confluence of Snowcap Creek and east along the south side of Lillooet River. This road transect is identified as one of two major transect routes within this activity centre. The second transect route is a 7 km transect along the ridge south of the Lillooet River.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

This activity centre requires 6 surveys to satisfy the inventory protocol. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and long-term monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 4. Forest Cover Analysis of 15D for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA	Forest Management Area			Heavy Volume Removal			FMA	Activity
	Suitable Owl Habitat							Replacement Area					Total	Centre	
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	Total
1						0	0.00			0.00	8.18	2.13	10.31	10.31	10.31
2				46.67	29.07	75.74	75.74			0.00	215.16	24.81	239.97	239.97	315.71
3						0	0.00			0.00	4.8		4.8	4.80	4.80
4						0	0.00			0.00	86.84	4.79	91.63	91.63	91.63
5					9.35	9.35	9.35			0.00			0	0.00	9.35
6		5.88	5.88				5.88			0.00	9.58	2.18	11.76	11.76	17.64
7		136.77	136.77				136.77			0.00	6.98	58.53	65.51	65.51	202.28
8	21.64	612.28	633.92				633.92		71.45	71.45	20.48	429.81	450.29	521.74	1155.66
9	20.8	1392.1	1412.9				1412.90		13.25	13.25	8.4	151.95	160.35	173.60	1586.50
NSR						0.00	0.00			0.00			0	0.00	0.00
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	42.44	2147.03	2189.47	46.67	38.42	85.09	2274.56	0.00	84.70	84.70	360.42	674.20	1034.62	1119.32	3393.88
							67.02%							32.98%	
Age Class 6-9	42.44	2147.03	2189.47	0.00	0.00	0.00	2189.47	0.00	84.70	84.70	45.44	642.47	687.91	772.61	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	8.96
2038	0.00
2058	0.00
2078	75.74
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

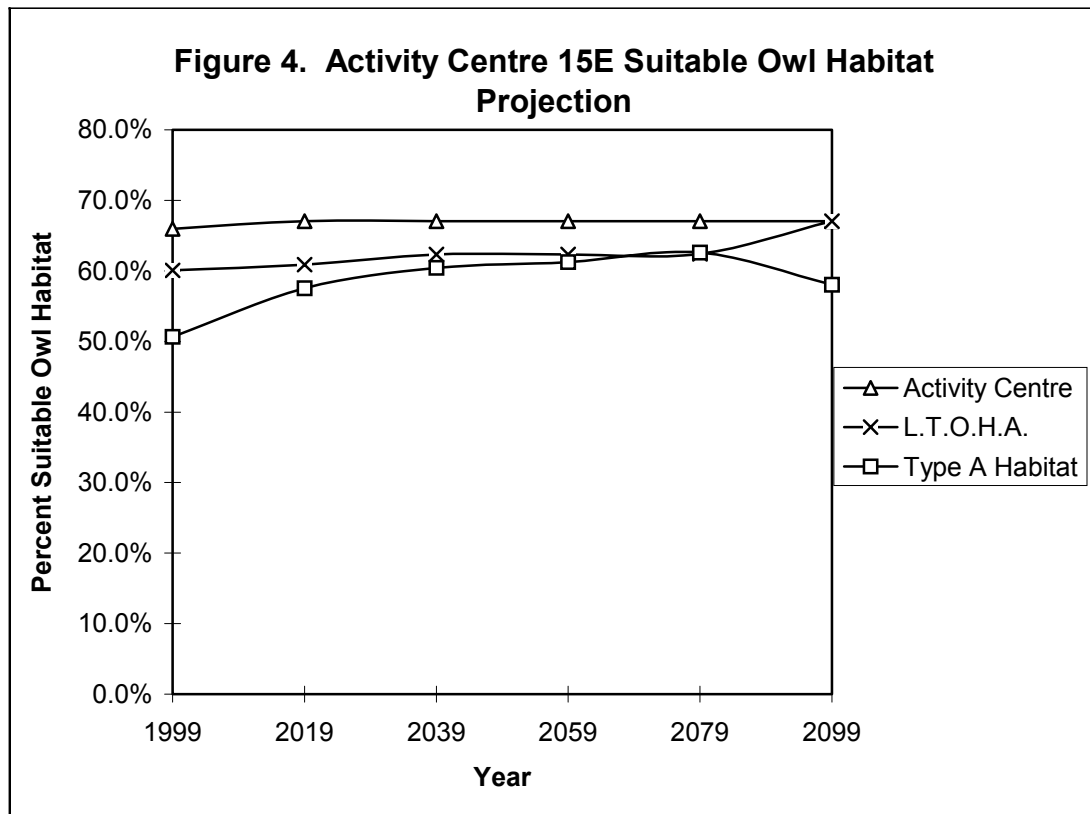
Activity Centre 15E

This activity centre is located in the northern most portion of this SRMZ and follows along the west side of the Lillooet River. The activity centre is approximately 3176 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre is currently classified as 66% suitable owl habitat based on the minimum forest age criteria of 100 years old and the assumption that all forest cover in the park is suitable. The amount of Type A habitat (forests older than 140 years) is a minimum 50% (Figure 5).

The LTOHA contributes about 60% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 7% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Currently, 2095 ha are classified as suitable owl habitat. These forest stands should be inventoried to determine the amount of Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability. There is currently 96.10 ha of age class 5 in the Forest Management Area (FMA). Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area have been conducted along the mainline south of Lillooet River and along the Chief Paul Creek branch. There are two major transects identified within this activity centre: a linear low elevation 11 km transect along the mainline south of the Lillooet River and an 8 km linear, mid to high elevation transect along Chief Paul Creek branch.

Since 1992, a minimum of 44 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 20 hours.

Owl Status

There have been two spotted owl detections within this activity centre to date. Both of these detections have been a female located near the lower reach of Tuwasus Creek. This owl is listed as “resident single status” and “unknown nesting status”.

Inventory/Monitoring Requirements

To complete this activity centre, spotted owls detected require location of nest and/or critical roosts, the attachment of leg bands and annual monitoring.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 5. Forest Cover Analysis of 15E for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal		
1				87.72	11.99	99.71		0.01	0.01	146.77	13.27	160.04	160.05	259.76
2				1.96	0.74	2.7			0.00	391.59	85.12	476.71	476.71	479.41
3					0.87	0.87			0.00	4.53	10.64	15.17	15.17	16.04
4					45.19	45.19			0.00	8.74	24.98	33.72	33.72	78.91
5				1.74	24.8	26.54			0.00	67.39	12.42	79.81	96.10	122.64
6	9.71	71.79	81.5				81.50	27.86	20.64	48.50	0.01	0.01	48.51	130.01
7	3.81	192.73	196.54				196.54	12.53	9.43	21.96		0	21.96	218.50
8	135.92	407.41	543.33				543.33	29.09	38.31	67.40		0	67.40	610.73
9	256.17	692.58	948.75				948.75	12.24	37.22	49.46		0	49.46	998.21
NSR				37.89	8.54	46.43	46.43		0.01	0.01	57.03	20.34	77.37	77.38
Protected Area		137.60	137.60		0.00	0.00	137.60			0.00			0.00	137.60
Total	405.61	1502.11	1907.72	129.31	92.13	221.44	2129.16	81.72	121.91	203.63	676.06	166.77	842.83	1046.46
							67.05%							32.95%
Age Class 6-9	405.61	1502.11	1907.72	0.00	0.00	0.00	1907.72	81.72	105.60	187.32	0.01	0.00	0.01	187.33

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	8.71
2038	45.19
2058	0.87
2078	2.70
2099	146.15

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

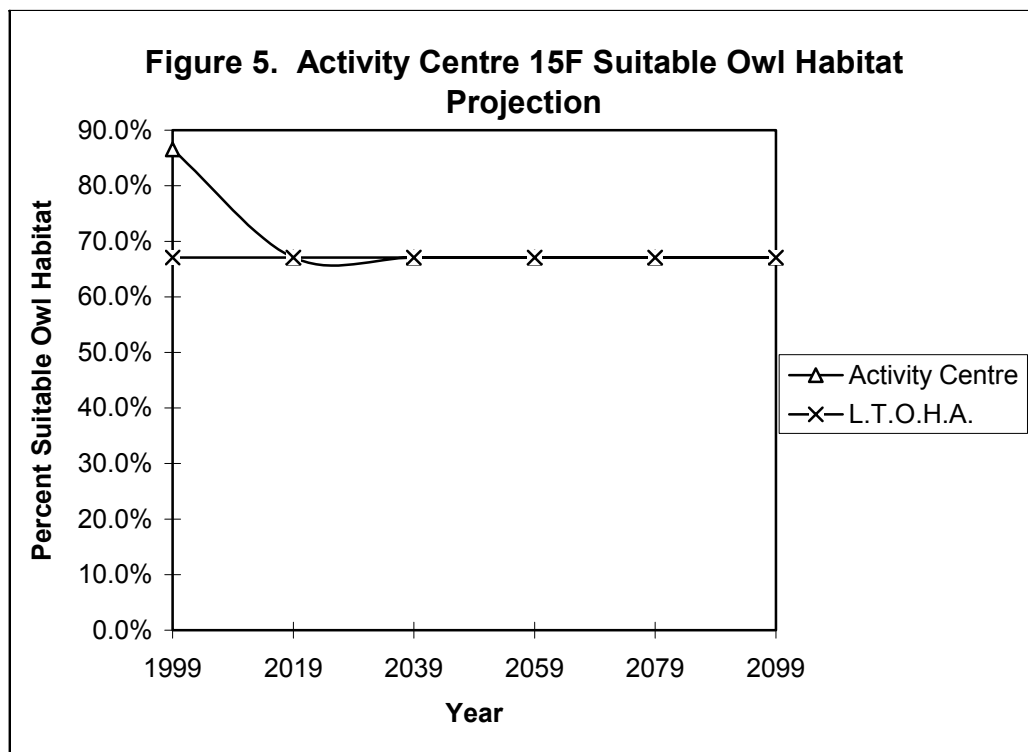
Activity Centre 15F

This activity centre follows along the lower Tuwasus Creek drainage into Garabaldi Park and is approximately 2040 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre is currently classified as 86.5% suitable owl habitat based on the minimum forest age criteria of 100 years old and the assumption that all forest cover in the park is suitable. The total amount of Type A habitat (forests older than 140 years) is not known (Figure 6).

The LTOHA contributes 67% of the total suitable owl habitat available within the activity centre.



Habitat Inventory Requirements

One habitat inventory requirement has been identified within this activity centre:

- Currently, 1766 ha are classified as suitable owl habitat. These forest stands should be inventoried to confirm the habitat suitability within the park and determine the amount of Type A and Type B habitats.

Spotted Owl Assessment

Inventory Effort

There is 12 km of potential habitat that could be inventoried along the upper reach of Tuwasus Creek. To date only one survey of this habitat has been completed. The other identified transect is a 8 km linear transect that follows Tuwasus Creek north from Garabaldi Provincial Park.

Since 1993, a minimum of 43 surveys of varying length duration and objectives have been conducted. Total survey time is approximately 127 hours.

Owl Status

There have been 3 spotted owl detections within this activity centre believed to be the same individual as identified in activity centre 15E. This owl is listed as “resident single status” and “unknown nesting status”.

Inventory/Monitoring Requirements

Spotted owls detected within this activity centre require identification of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 5 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Activity Centre 15G

This activity centre is located in the western most portion of this SRMZ and encompasses the headwaters of Tuwasus Creek. The gross forested area of this activity centre is approximately 1522 ha.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre is currently classified as 100% suitable owl habitat based on the assumption that all forest cover in the park is suitable. The total amount of Type A habitat (forests older than 140 years) is not known.

Habitat Inventory Requirements

One habitat inventory requirement has been identified for this activity centre:

- Currently, 1522 ha are classified as suitable owl habitat. These forest stands should be inventoried to confirm suitability and determine the amount of Type A and Type B habitats.

Spotted Owl Assessment

Inventory Effort

There have been no surveys conducted within this activity centre as it falls entirely within Garibaldi Provincial Park. There are 12 linear km of potential habitat along the upper reach of Tuwasus Creek.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

This activity centre falls entirely within Garibaldi Provincial Park and is considered a low priority for inventory. If inventories are conducted and spotted owls detected, location of nest and/or roost sites, attachment of leg bands and long-term monitoring will be required.

Spotted Owl
Resource Management Plan
for
Lillooet Lake
Special Resource Management Zone 17

May 31, 1999

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Lillooet Lake SRMZ

The Lillooet Lake SRMZ is approximately 13849 ha of gross forested area (See Map 1:SRMZ 17). It ranges in elevation from 80m (Lillooet River) up to a maximum of 1370 m. The SRMZ surrounds Lillooet Lake and includes the Twin One Creek, Lizzie Creek, Kakila Creek, S&M Creek, and Ure Creek drainages. Five long-term activity centres were established varying in size between 2,500 to 3,000 ha of gross forested area.

The SRMZ is located within the Coastal Western Hemlock (CWH), Mountain Hemlock (MH), and Interior Douglas Fir (IDF) biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWH dry subarctic (ds1) to moist subarctic (ms1) and IDF wet warm (ww). At higher elevations, forests are located within the Mountain Hemlock moist maritime (MH mm2). These dryer subarctic ecosystems are distinguished by NDT 2 and 4 which are characterized by infrequent to frequent stand initiating events usually through fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. NDT 4 is characterized by a mosaic of uneven-aged forest interspersed with grass and shrub openings. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Lillooet Lake SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
17 A	2693 ha	0 ha (0%)	0 ha (0%)	1705 ha (63.3%)
17 B	2766 ha	0 ha (0%)	0 ha (0%)	2004 ha (72.4%)
17 C	2909 ha	469 ha (16.1%)	1681 ha (57.8%)	2150 ha (73.9%)
17 D	2899 ha	322 ha (11.1%)	1391 ha (48.0%)	1713 ha (59.1%)
17 E	2582 ha	561 ha (21.7%)	1318 (51.1%)	1879 ha (72.8%)
Total SRMZ	13849 ha	1352 ha (9.8%)	4390 ha (31.7%)	9451 ha (68.2%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

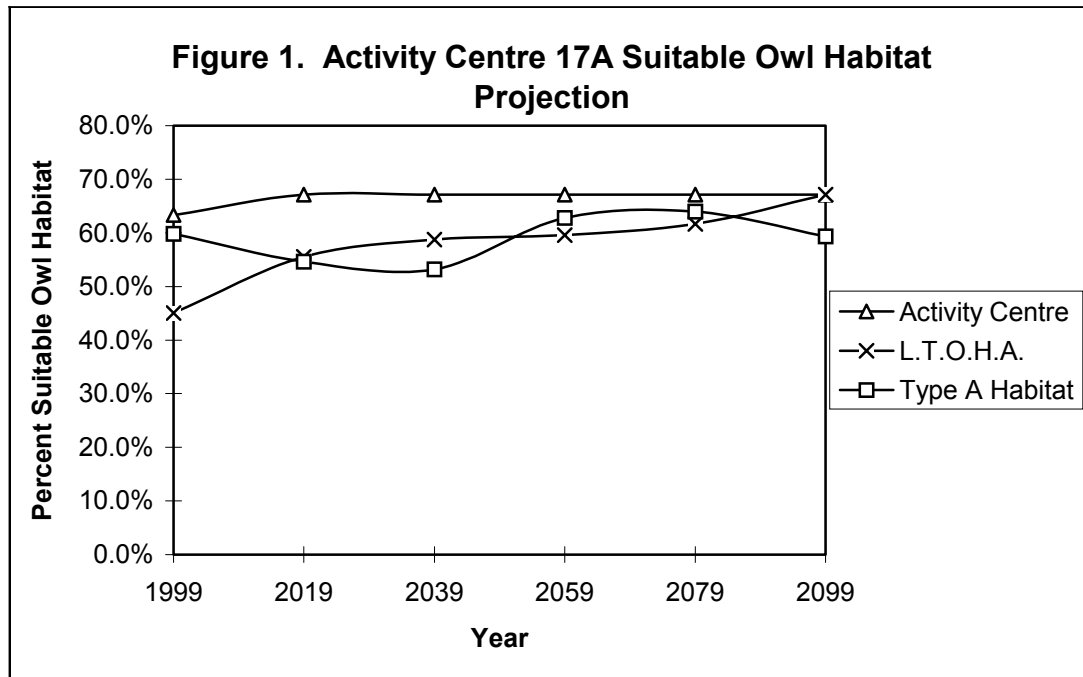
Activity Centre 17A

This activity centre is located at the southern portion of the SRMZ and is approximately 2693 ha of gross forested area. The activity centre encompasses the south-eastern portion of Lillooet Lake and the lower Kakila Creek drainage.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre is currently classified as 63.3% suitable owl habitat based on the assumption that all forest cover in the park is suitable. The total amount of Type A habitat (forests older than 140 years) is about 60% (Figure1).

The LTOHA contributes about 45% of the total suitable owl habitat available within the activity centre. Recruitment of the remaining 22% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Currently, 1705 ha are classified as suitable owl habitat. These forest stands should be inventoried to better determine the amount of Type A and Type B habitats.
- Inventory of age class 5 to determine age and suitability . There is currently 322.90 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 26 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage within this activity centre has been conducted along the east Lillooet Lake mainline and along the Kakila Creek mainline on the south east side of Lillooet Lake. Two major transects have been identified within this activity centre: a linear 6 km low elevation transect along the east Lillooet Lake mainline and a linear 6 km low to mid elevation transect along Kakila Creek and the west side of Lillooet Lake.

Since 1985, a minimum of 23 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 74 hours. The majority of this effort has been placed on the mainline transect along the east side of Lillooet Lake.

Owl Status

There have been 13 spotted owl detections within this activity centre since 1985. These detections represent a pair of spotted owls. These owls are currently listed as “pair status” and “unknown nesting status”. A nest tree was located in the early eighties but fell over several years later.

Inventory/Monitoring Requirements

Inventory protocol has been complete for the low elevation transect along the east side of Lillooet Lake as of 1994. This area should be re-inventoried according to protocol beginning in 1999. The Kakila Creek transect requires 5 surveys, 4 of these prior to June 30, 1999 for inventory protocol to be complete by 1999. The spotted owls detected within this activity centre require nest and/or roost site identification, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 17A for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal			
1				98.98	4.82	103.8	103.80			0.00	193.91	16.56	210.47	210.47	314.27
2				2.93	53.78	56.71	56.71			0.00	77.62	13.29	90.91	90.91	147.62
3				22.2		22.2	22.20			0.00	21.08		21.08	21.08	43.28
4					87.32	87.32	87.32	9.48		9.48	4.3		4.3	13.78	101.10
5				6.52	274.76	281.28	281.28	14.14		14.14		27.48	27.48	41.62	322.90
6	24.25	33.13	57.38				57.38	17.69		17.69			0	17.69	75.07
7		9.8	9.8				9.80	2.6		2.60			0	2.60	12.40
8	32.21	877.75	909.96				909.96	80.1	187.98	268.08	22.2		22.2	290.28	1200.24
9	50.71	178.93	229.64				229.64	20.02	160.96	180.98			0	180.98	410.62
NSR					42.71	42.71	42.71			0.00	12.69	3.36	16.05	16.05	58.76
Protected Area		6.40	6.40		0.00	0.00	6.40			0.00			0.00	0.00	6.40
Total	107.17	1106.01	1213.18	130.63	463.39	594.02	1807.20	144.03	348.94	492.97	331.80	60.69	392.49	885.46	2692.66
							67.12%							32.88%	
Age Class 6-9	107.17	1106.01	1213.18	0.00	0.00	0.00	1213.18	120.41	348.94	469.35	22.20	0.00	22.20	491.55	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	170.75
2038	96.80
2058	22.20
2078	56.71
2099	146.51

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

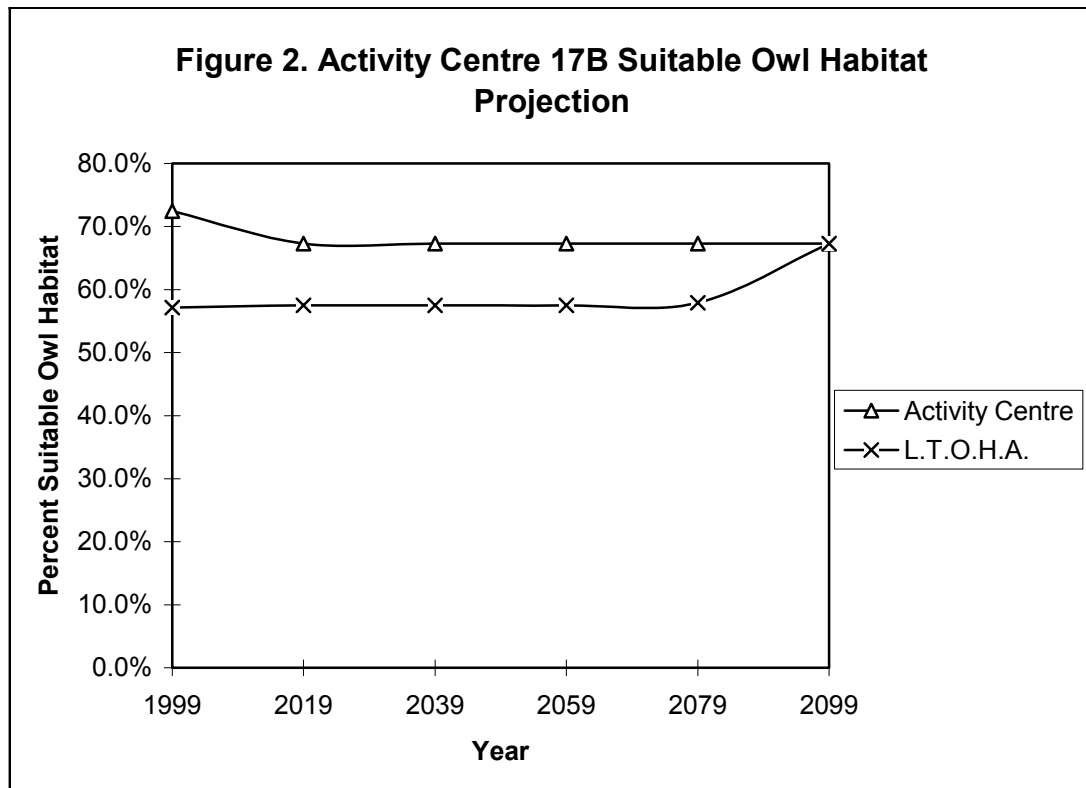
Activity Centre 17B

This activity centre is located in the western portion of the SRMZ following the upper Kakila Creek drainage. The activity centre is approximately 2766 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre is currently classified as 72.4% suitable owl habitat based on the minimum 100 year old criteria and the assumption that all forests within the park is suitable (Figure 1). The total amount of Type A habitat (forests older than 140 years) is not known due to lack of park data.

The LTOHA contributes about 57% of the total suitable owl habitat available within the activity centre. Recruitment of the remaining 10% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

One habitat inventory requirement has been identified within this activity centre:

- Currently, 2004 ha are classified as suitable owl habitat. These forest stands should be inventoried to better determine the amount of Type A and Type B habitats.

Spotted Owl Assessment

Inventory Effort

There has been no inventory coverage within this activity centre to date. Coincidental coverage of low elevation areas along Lillooet Lake has occurred from inventory efforts along activity centre 17A and 17D across the lake.

This activity centre has two identified transect routes. The first is a 3 km linear hiking transect along the forest service road on the west side of Lillooet Lake. The second is a 7 km linear high elevation, non-roaded/trailed transect along the Kakila Creek headwaters.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 a minimum of 6 surveys will have to be completed along both transect routes. Four of these surveys will have to be conducted prior to June 30, 1999. If spotted owls are detected, identification of critical nest and/or roost sites, attachment of legbands and long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 3. Forest Cover Analysis of 17B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal		
1				133.54	3.55	137.09	137.09			214.66	9.5	224.16	224.16	361.25
2				11.55		11.55	11.55			147.92		147.92	147.92	159.47
3						0	0.00				3.35	3.35	3.35	3.35
4						0	0.00			3.18	4.08	7.26	7.26	7.26
5					10.29	10.29	10.29			6.8		6.8	6.80	17.09
6		11.09	11.09				11.09			15.55		15.55	15.55	26.64
7	0.3	38.15	38.45				38.45	4.43	0.14	4.57		0	4.57	43.02
8	40.37	275.08	315.45				315.45	54.97	28.31	83.28	83.5	13.57	97.07	180.35
9	36.55	164.99	201.54				201.54	22.94	167.47	190.41	23.68	8.99	32.67	223.08
NSR				6.38	115.1	121.48	121.48			0.00	3.66	88.82	92.48	92.48
Protected Area		1014.00	1014.00		0.00	0.00	1014.00			0.00			0.00	1014.00
Total	77.22	1503.31	1580.53	151.47	128.94	280.41	1860.94	82.34	195.92	278.26	498.95	128.31	627.26	905.52
							67.27%							32.73%
Age Class 6-9	77.22	1503.31	1580.53	0.00	0.00	0.00	1580.53	82.34	195.92	278.26	122.73	22.56	145.29	423.55

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	8.14
2038	0.00
2058	0.00
2078	11.55
2099	258.57

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

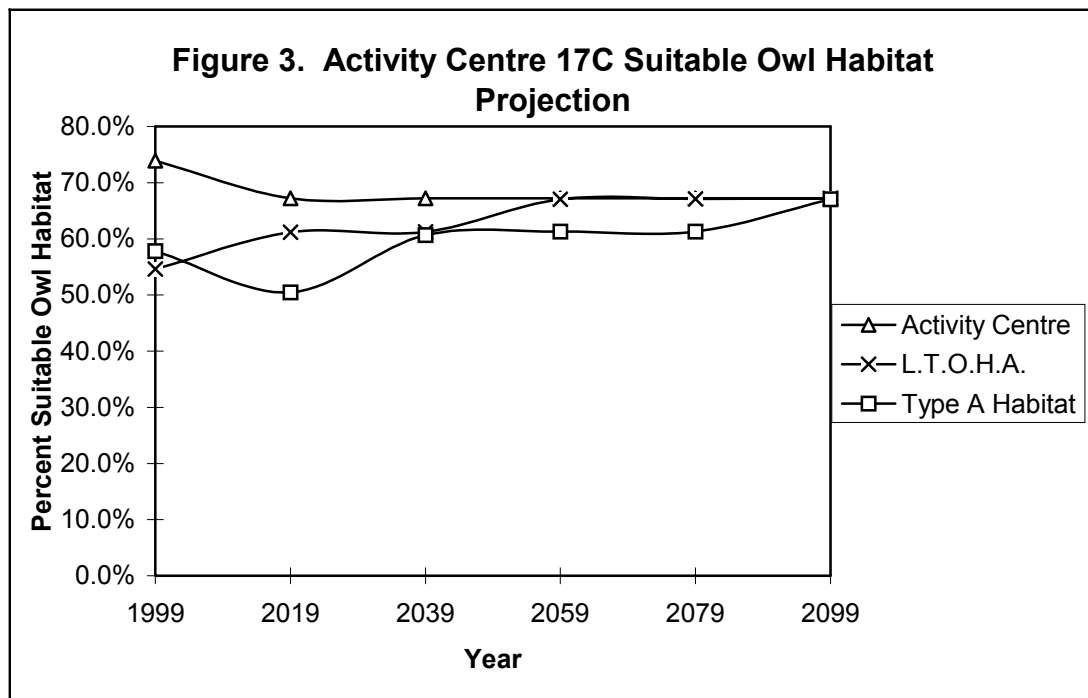
Activity Centre 17C

This activity centre follows the east side of Lillooet Lake encompassing the lower end of Ure Creek and S&M Creek. This activity centre is in the Interior Douglas-fir and Coastal Western Hemlock biogeoclimatic zones and has the characteristics of the wet warm, moist subarctic and dry subarctic subzones. This activity centre is approximately 2909 ha of gross forested area.

Suitable Owl Habitat Assessment

Preliminary spotted owl habitat inventories have been conducted, but are not complete, in this activity centre to verify MOF forest cover data, determine habitat suitability and determine if age class 5 and 6 stands meet the requirements for suitable spotted owl habitat. Additional forest stand inventories are required. The activity centre currently contains about 73.9% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 57.8% of the total activity centre.(Figure 3).

The LTOHA contributes about 55% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 12% suitable owl habitat within the LTOHA will take up to 60 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1681 ha of Type A (age class 8&9) and 469 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 212.67 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 54 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has been conducted exclusively along the S&M Creek mainline and the Ure Creek mainline. Two major transects have been identified within this activity centre: a 5.5 km linear driving transect extending southeast from Ure Creek along the S&M Creek branch and a 6 km linear non-roaded transect heading south from the end of the S&M mainline.

Since 1992, a minimum of 26 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 64 hours. No surveys have been conducted along the full extent of the high elevation non-roaded transect.

Owl Status

There have been 22 spotted owl detections within this activity centre since 1992. These detections indicate a single pair residing in this area. The current status for these owls is “pair status” and “unknown nesting status”. A single critical roost site has been detected

within this activity centre and nesting behaviour has been observed over the past several years although no juveniles or nests have been detected. This pair has been banded.

Inventory/Monitoring Requirements

The low elevation transect along the S&M Creek branch has been completed according to protocol as of 1996. Identification of a nest site and long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 4. Forest Cover Analysis of 17C for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal								
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal					
1				0.78	1.96	2.74		0.01	0.01	68.17	2.72	70.89	70.90	73.64
2				0.64	0.51	1.15			0.00	74.03	122.42	196.45	196.45	197.60
3				0.31	169.89	170.2			0.00		103.54	103.54	103.54	273.74
4					1.7	1.7			0.00		0.16	0.16	0.16	1.86
5					189.02	189.02			0.00	4.05	19.6	23.65	23.65	212.67
6	14.39	282.09	296.48				296.48	8.39	12.16	3.26	6.6	9.86	30.41	326.89
7		116.57	116.57				116.57		4.25	14.3	6.68	20.98	25.23	141.80
8	93.43	724.98	818.41				818.41	120.59	137.71	258.30	47.31	61.45	108.76	367.06
9		358.23	358.23				358.23	8.53	68.6	77.13	7.07	53.15	60.22	1185.47
NSR						0.00	0.00					0	0.00	495.58
Protected Area		0.00	0.00		0.00	0.00	0.00					0.00	0.00	0.00
Total	107.82	1481.87	1589.69	1.73	363.08	364.81	1954.50	137.51	222.73	360.24	218.19	376.32	594.51	2909.25
							67.18%						32.82%	
Age Class 6-9	107.82	1481.87	1589.69	0.00	0.00	0.00	1589.69	137.51	222.72	360.23	71.94	127.88	199.82	560.05

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	184.44
2038	1.70
2058	170.20
2078	1.15
2099	2.75

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

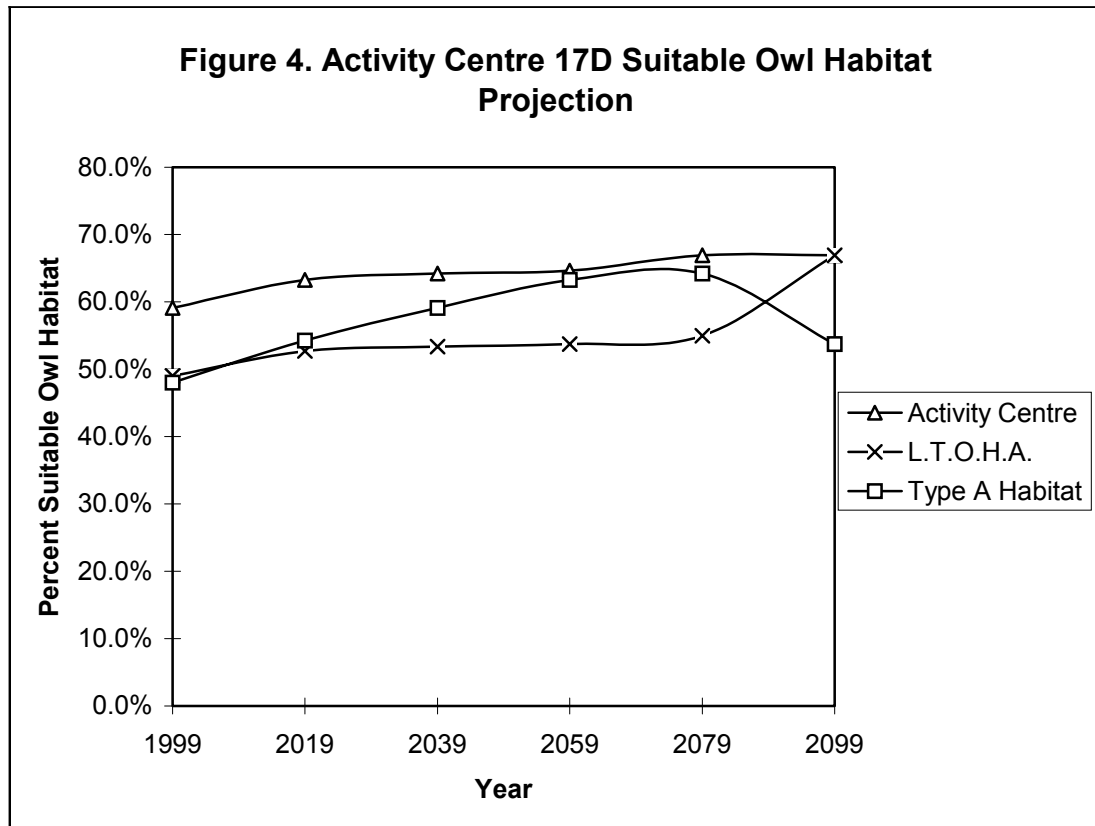
Activity Centre 17D

This activity centre is located on the eastern side of Lillooet Lake and encompasses the Lizzie Creek drainage. The activity centre is 2899 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 59.1% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 48% of the total activity centre. Achieving the 50% Type A habitat target will take up to 20 years (Figure 4).

The LTOHA contributes about 49% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 18% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1391 ha of Type A (age class 8&9) and 322 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 120.66 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has been conducted along the east Lillooet Lake mainline and along the Lizzie Creek branch. There are 3 identified transects within this activity centre: a 7.5 km linear low elevation driving transect along the east Lillooet Lake mainline, a 5.5 km low to high elevation transect along the Lizzie Creek branch, and another 4 km high elevation transect north of Lizzie Creek.

Since 1992, a minimum of 26 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 72 hours. The majority of these surveys have been conducted along the mainline transect.

Owl Status

There have been 14 spotted owl detections within this activity centre since 1992. These detections indicate a single pair in this area. Owl status at this time is “pair status” and “nesting status unknown”. One critical roost site has been identified in this activity centre.

Inventory/Monitoring Requirements

In 1998, the minimum inventory requirements were completed for the low elevation mainline transect. Spotted owls detected within this activity centre require location of nest and/or critical roosts, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 5 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 5. Forest Cover Analysis of 17D for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA Total	Forest Management Area			Heavy Volume Removal			FMA Total	Activity Centre Total
	Suitable Owl Habitat No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal		
1				300.74	31.32	332.06	332.06			0.00	464.86	41.61	506.47	506.47	838.53
2				26.22	9.17	35.39	35.39	34.33	0.73	35.06	83.24	10.63	93.87	128.93	164.32
3					11.82	11.82	11.82			0.00			0	0.00	11.82
4					18.07	18.07	18.07	0.02	10.21	10.23			0	10.23	28.30
5				25.07	83.27	108.34	108.34	12.32		12.32			0	12.32	120.66
6	51.61	68.97	120.58				120.58	6.65	13.08	19.73			0	19.73	140.31
7	21.24	138.36	159.6				159.60	16.66	5.23	21.89			0	21.89	181.49
8	506.21	456.6	962.81				962.81	65.57	169.87	235.44			0	235.44	1198.25
9	42.56	134.4	176.96				176.96	15.23	0.95	16.18			0	16.18	193.14
NSR				11.7	2.71	14.41	14.41			0.00	6.18	1.42	7.6	7.60	22.01
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	621.62	798.33	1419.95	363.73	156.36	520.09	1940.04	150.78	200.07	350.85	554.28	53.66	607.94	958.79	2898.83
				Percent of Activity centre			66.92%				Percent of Activity centre			33.08%	
Age Class 6-9	621.62	798.33	1419.95	0.00	0.00	0.00	1419.95	104.11	189.13	293.24	0.00	0.00	0.00	293.24	

Predicted Schedule for RPA/RCA Trade-off
RPA Available

1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	4.38
2099	346.47

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

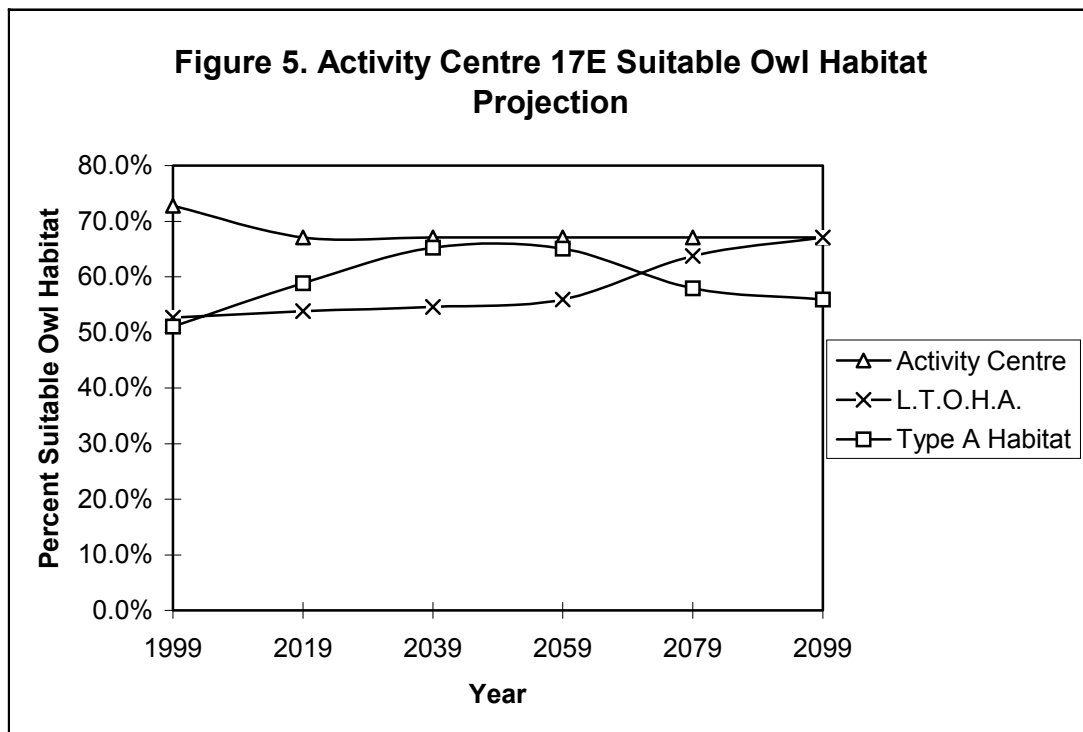
Activity Centre 17E

This activity centre is located in the northern most portion of this SRMZ and follows along the east side of Lillooet Lake encompassing Twin One and Twin Two Creek drainages. The activity centre is 2582 ha of gross forested area.

Suitable Owl Habitat Assessment

Preliminary spotted owl habitat inventories have been conducted, but are not complete, in this activity centre to verify MOF forest cover data, determine habitat suitability and determine if age class 5 and 6 stands meet the requirements for suitable spotted owl habitat. Additional forest stand inventories are required. The activity centre currently contains about 72.8% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 51.1% of the total activity centre (Figure 5).

The LTOHA contributes about 53% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 14% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1318 ha of Type A (age class 8&9) and 561 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 45 ha of suitable owl habitat falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.
- Inventory of age class 5 to determine age and suitability. There is currently 43.53 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has taken place along the east Lillooet Lake mainline and the Twin One Creek branch. There are two major transects identified within this activity centre. The first is a linear 7 km low elevation transect following the east Lillooet Lake mainline. The second is a low to mid elevation transect following the Twin One branch approximately 5 km from Lillooet Lake.

Since 1989, a minimum of 59 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 170 hours. Most of this effort has taken place along the low elevation transect.

Owl Status

There have been 41 spotted owl detections within this activity centre since 1989. These detections indicate a pair residing in this area. The status of these owls is currently at “pair status” and “nesting status”. There have been two nest sites identified over the past 5 years and juveniles observed at both of these sites. Both of these owls and their two young were banded in 1998.

Inventory/Monitoring Requirements

This activity centre has been completed according to the spotted owl inventory protocol in the entire low elevation habitat that runs parallel to Lillooet Lake. Long-term monitoring is required.

Forest Cover Analysis for Each Management Area

Table 6 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Spotted Owl
Resource Management Plan
for
Birkenhead
Special Resource Management Zone 18

May 31, 1999

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Birkenhead SRMZ

The Birkenhead SRMZ is approximately 15434 ha of gross forested area (see Map1: SRMZ 18). It ranges in elevation from 340 m (Birkenhead River) up to a maximum of 1370 m. The SRMZ follows the Birkenhead River, Poole Creek, Gates Creek and Sockeye Creek drainages and includes Gates Lake, Birkenhead Lake and Blackwater Lake. Five long-term activity centres were established varying in size between 2925 to 3,181 ha of gross forested area.

The SRMZ is located within the Coastal Western Hemlock (CWH), Mountain Hemlock (MH), Engelmann Spruce - Subalpine Fir (ESSF) and Interior Douglas Fir (IDF) biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWH dry subarctic (ds1) to moist subarctic (ms1) and IDF wet warm (ww). At higher elevations, forests are located within the ESSF moist warm (ESSF mw). These dryer subarctic ecosystems are distinguished by NDT 2 and 4 which are characterized by infrequent to frequent stand initiating events usually through fire. The landscape in NDT 2 would consist of extensive areas of even-aged stands with snags and vets that have survived previous fires. NDT 4 is characterized by a mosaic of uneven-aged forest interspersed with grass and shrub openings. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Birkenhead SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
18 A	2925 ha	787 ha (26.9%)	1072 ha (36.6%)	1859 ha (63.5%)
18 B	3043 ha	1165 ha (38.3%)	997 ha (32.8%)	2162 ha (71.0%)
18 C	3159 ha	904 ha (28.6%)	1259 ha (39.8%)	2163 ha (68.5%)
18 D	3126 ha	959 ha (30.7%)	1726 ha (55.2%)	2685 ha (85.9%)
18 E	3181 ha	996 ha (31.3%)	1078 ha (33.9%)	2073 ha (65.2%)
Total SRMZ	15434 ha	4811 ha (31.2%)	6132 ha (39.7%)	10942 ha (70.9%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

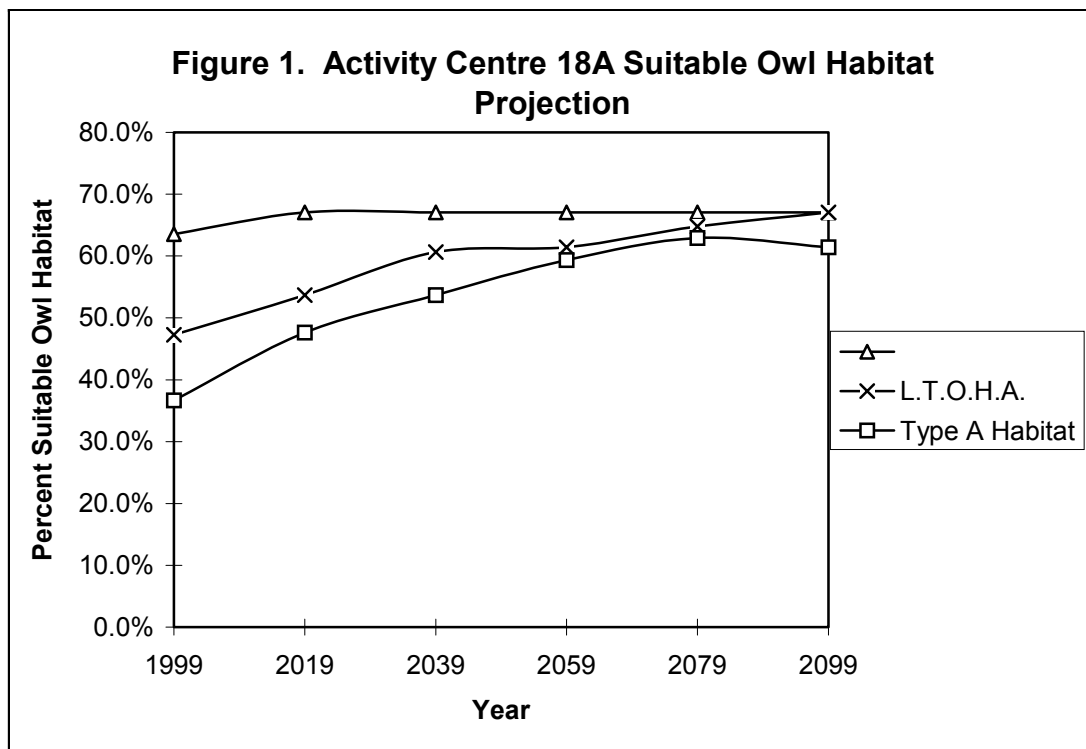
Activity Centre 18A

This activity centre is located at the southern portion of the SRMZ and is approximately 2925 ha of gross forested area . The activity centre follows along the Birkenhead River encompassing Spetch Creek and continuing northward to Poole Creek.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 63.5% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 36.6% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 1).

The LTOHA contributes about 47% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 20% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

One habitat inventory requirement has been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1072 ha of Type A (age class 8&9) and 787 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage within this activity centre has been conducted along the highway between Owl Creek and Birkenhead River and the Spetch Creek mainline, as well as along a deactivated forest service road west of the highway. Two major transects have been identified within this activity centre: a linear 6.5 km low elevation transect along the highway and a linear 4.5 km low to mid elevation transect along the Spetch Creek branch.

Since 1993, a minimum of 53 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 157 hours. The majority of this effort has been placed on the mainline transect.

Owl Status

There have been 5 spotted owl detections within this activity centre since 1993. These detections indicate a single male residing in this area. This owl is currently listed at “resident single status” and “unknown nesting status”.

Inventory/Monitoring Requirements

Inventory protocol has been complete for the low elevation mainline transect as of 1995.. The spotted owls detected within this activity centre require location of nest and/or critical roost sites, the attachment of leg bands long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

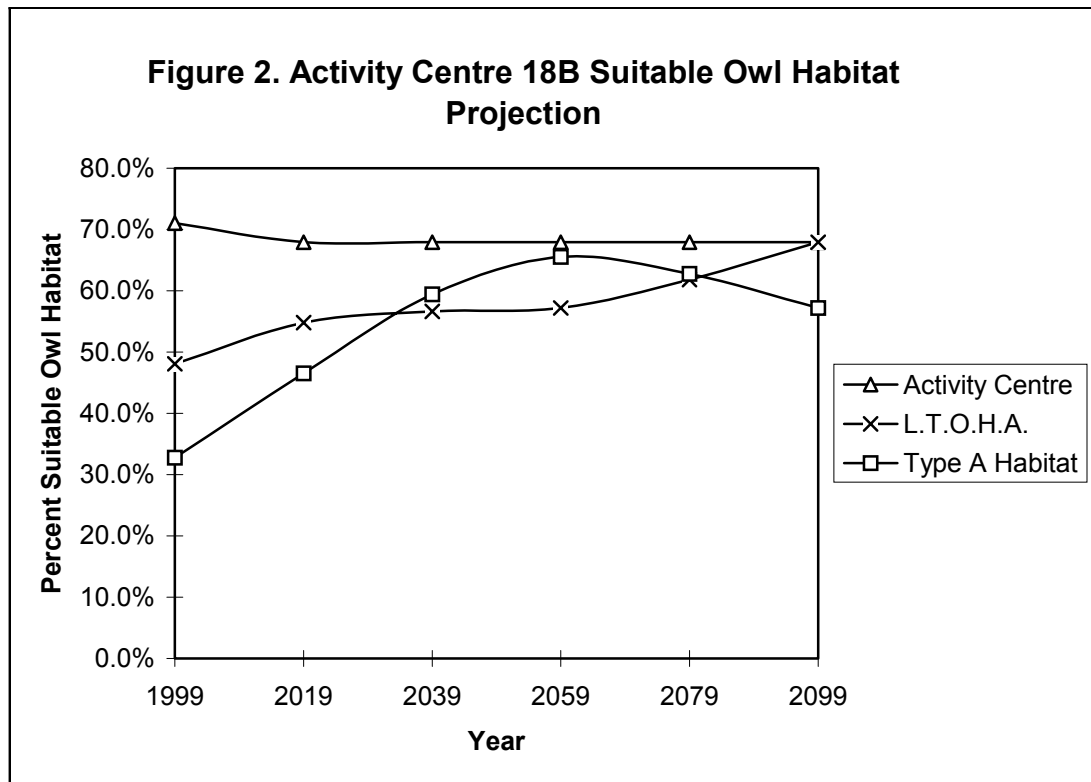
Activity Centre 18B

This activity centre is located along Birkenhead River and PooleCreek. Privately owned land is located along the Poole Creek valley bottom and is excluded from the activity center. The activity centre is approximately 3043 ha of gross forested area.

Suitable Owl Habitat Assessment

Preliminary spotted owl habitat inventories have been conducted, but are not complete, in this activity centre to verify MOF forest cover data, determine habitat suitability and determine if age class 5 and 6 stands meet the requirements for suitable spotted owl habitat. Additional forest stand inventories are required. The activity centre currently contains about 71% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 32.8% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 2).

The LTOHA contributes about 48% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 19% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Three habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 997 ha of Type A (age class 8&9) and 1165 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability. There is currently 318.65 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 114.62 ha of suitable owl falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage within this activity centre has been conducted along the Birkenhead River mainline from Poole Creek to the south end of Birkenhead Lake and northward along the highway from the confluence of Birkenhead River/Poole Creek to approximately 2 km north of Gates Lake. These two routes are identified as the major transects within this activity centre, covering a total of 13 linear km of low to mid elevation habitat.

Since 1993, a minimum of 23 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 58 hours.

Owl Status

There have been 9 spotted owl detections within this activity centre to date. These detections indicate a pair residing along the Birkenhead River corridor and possibly another single male residing in the area near Gates Lake. The Birkenhead River birds are listed at “pair status” and “nesting status” as they were detected with juveniles in 1998. The Gates Lake bird is listed as “resident single status” and “nesting status unknown”. The Birkenhead River owls were banded in 1998.

Inventory/Monitoring Requirements

The lower 5 km of the Birkenhead River transect and the mainline transect from Gates Lake south to the Birkenhead River have been completed according to protocol as of 1998. The spotted owls detected within this activity centre require location of nest and/or critical roost sites and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 3. Forest Cover Analysis of 18B for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal									
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal						
1				54.92	74.5	129.42			0.00	64.19	24.46	88.65	88.65	218.07	
2				78.81	62.61	141.42			0.00	6.46	4.58	11.04	11.04	152.46	
3				14.21	2.57	16.78			0.00	3.31		3.31	3.31	20.09	
4				12.46	43.75	56.21			0.00			0	0.00	56.21	
5				77.5	125.77	203.27			0.00			78.08	78.08	115.38	
6	143.66	266.85	410.51			410.51	32.27	5.03	37.30			91.72	0.18	91.9	
7	82.15	141.33	223.48			223.48	83.79	94.92	178.71	130.79	71.31	202.10	45.7	12.87	
8	54.86	690.25	745.11			745.11	43.77	78.6	122.37	43.77	78.6	122.37	5.37	2.03	
9	23.82	60.89	84.71			84.71	22.42	14.87	37.29			0	0	37.29	
NSR				23.63	33.23	56.86			0.03			48.83	10.11	58.94	
Protected Area		0.00	0.00		0.00	0.00			0.00			0.00	0.00	0.00	
Total	304.49	1159.32	1463.81	261.53	342.43	603.96	2067.77	313.07	264.73	577.80	265.58	132.31	397.89	975.69	3043.46
							67.94%							32.06%	
Age Class 6-9	304.49	1159.32	1463.81	0.00	0.00	0.00	1463.81	280.77	259.70	540.47	142.79	15.08	157.87	698.34	

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	177.08
2038	56.21
2058	16.78
2078	141.42
2099	186.28

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

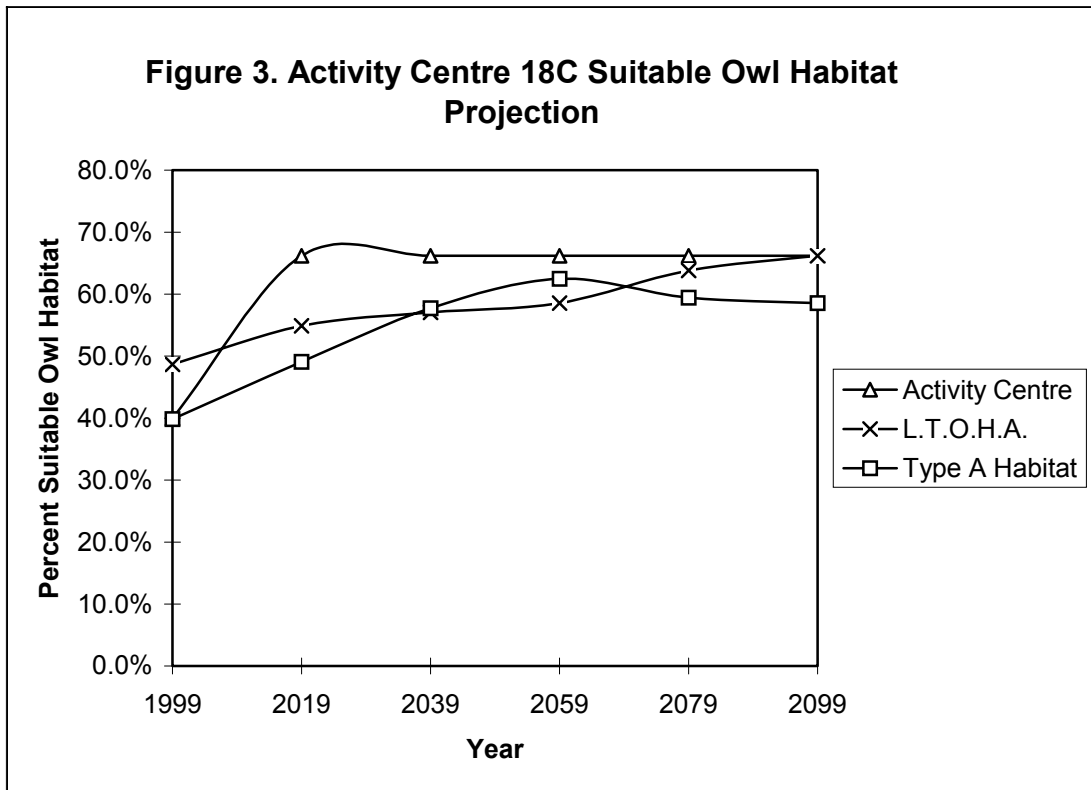
Activity Centre 18C

This activity centre follows Gates Creek north towards Anderson Lake. The activity centre is approximately 3159 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 68.5% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 39.8% of the total activity centre. Achieving the 50% Type A habitat target will take up to ?? years (Figure 3).

The LTOHA contributes about 49% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 18% suitable owl habitat within the LTOHA will take up to ?? years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1259 ha of Type A (age class 8&9) and 904 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability. There is currently 252.89 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.
- Inventory of stands classified as height class 2 to determine suitability. Currently, 187 ha of suitable owl falls within the category of height class 2. Habitat inventory efforts should focus on these stands to determine if they meet the criteria for suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has been conducted along the highway between Gates Lake and the Blackwater Creek road and along the 6/7 Mile Creek branches and Spruce Creek branch. Two major transects have been identified within this activity centre: a 8 km linear driving transect extending along the highway from the community of Gates Lake north and a 5 km linear transect along the 6/7 Mile Creek branch.

Since 1993, a minimum of 21 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 72 hours. The majority of these surveys have been conducted along the highway transect.

Owl Status

A resident male spotted owl occupies this area.

Inventory/Monitoring Requirements

In 1997 the minimum inventory requirements were completed for the 6/7mile transect. The spotted owl detected within this activity centre requires location of nest and/or critical roost sites, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 4. Forest Cover Analysis of 18C for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat No Cons.	Cons.	Subtotal		Replacement Area No Cons.	Cons.	Subtotal			Heavy Volume Removal No Cons.	Cons.	Subtotal		
1				24.54	1.32	25.86			98.53	3.05	101.58	101.58	127.44	
2				127.31	39.17	166.48		0.01	0.01	121.81	16.84	138.65	138.66	305.14
3				13.3	33.3	46.6			0.00	0.02	37.05	37.07	37.07	83.67
4				23.23	46.13	69.36			0.00	0.51	66.11	66.62	66.62	135.98
5				69.79	127.01	196.8			0.00	8.41	47.68	56.09	56.09	252.89
6	106.33	237.48	343.81				343.81	18.51	147.87	166.38	4.26	2.09	6.35	172.73
7	66.81	236.24	303.05				303.05	16.86	54.47	71.33	12.79		12.79	84.12
8	149.02	741.08	890.1				890.10	30.78	216.16	246.94	16.58	9.14	25.72	272.66
9			0				0.00		96.11	96.11			0	96.11
NSR				6.86	41.35	48.21	48.21			0.00	26.25	17.01	43.26	43.26
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00
Total	322.16	1214.80	1536.96	265.03	288.28	553.31	2090.27	66.15	514.62	580.77	289.16	198.97	488.13	1068.90
				Percent of Activity centre			66.17%				Percent of Activity centre			33.83%
Age Class 6-9	322.16	1214.80	1536.96	0.00	0.00	0.00	1536.96	66.15	514.61	580.76	33.63	11.23	44.86	625.62

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	224.25
2038	69.36
2058	46.60
2078	166.49
2099	74.07

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

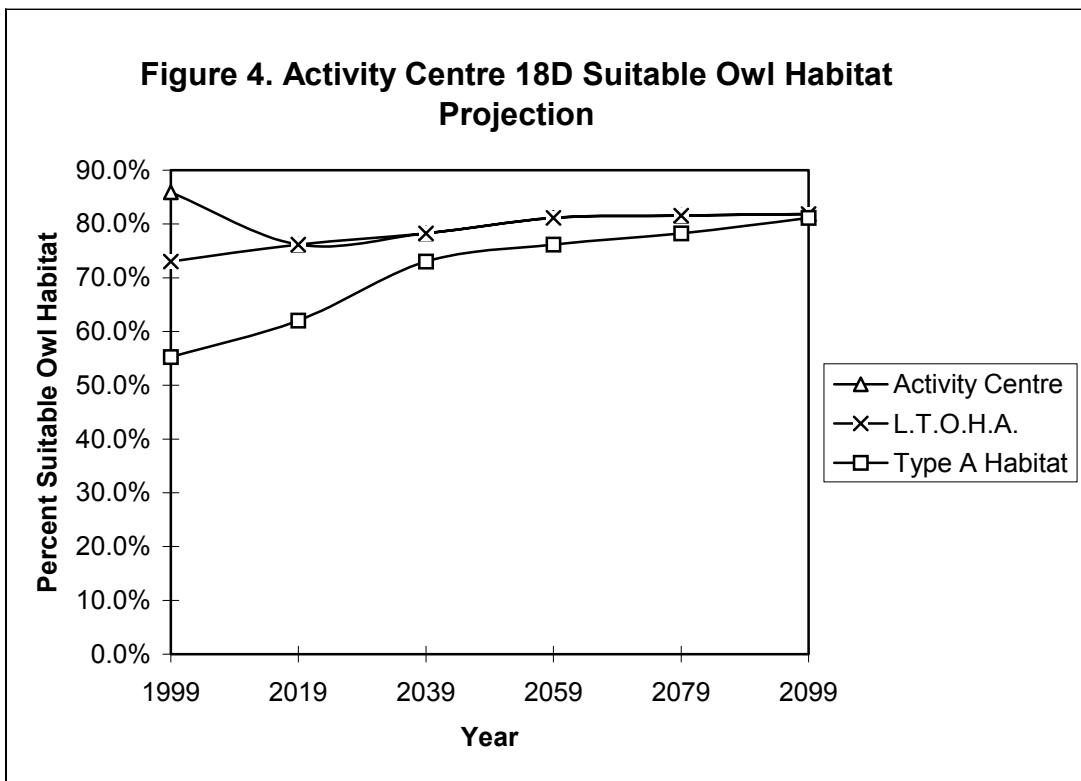
Activity Centre 18D

This activity centre encompasses Birkenhead Lake, follows Sockeye Creek and is approximately 3126 ha of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 85.9% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 55.2% of the total activity centre (Figure 4).

The LTOHA contributes about 73% of total suitable owl habitat available within the activity centre.



Habitat Inventory Requirements

One habitat inventory requirement has been identified within this activity centre, these include:

- Inventory of age class 5 to determine age and suitability . There is currently 111.81 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this area has been conducted exclusively on the trail system running along the northwest side of Birkenhead Lake. This 8.5 km linear stretch of trail is the only identified transect within this activity centre.

Since 1992, a minimum of 18 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 71 hours. These surveys have been conducted mainly along the northern 4.5 km of the transect route.

Owl Status

There have been 2 spotted owl detections within this activity centre since 1993. These detections indicate a single pair in this area. Owl status at this time is “pair and nesting status”.

Inventory/Monitoring Requirements

In 1997, the minimum inventory requirements were completed for the northern 4.5 km of the identified transect. Spotted owls detected within this activity centre require identification of nest and/or critical roosts, the attachment of leg bands and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 5 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 5. Forest Cover Analysis of 18D for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total					
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal								
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal					
1					10.52	10.52			60.61	3.9	64.51	64.51	75.03	
2				6.74	6.3	13.04			44.14	16.22	60.36	60.36	73.40	
3				72.06	17.75	89.81			7.15	14.36	21.51	21.51	111.32	
4				37.72	28.5	66.22			0.9		0.9	0.90	67.12	
5				72.81	24.29	97.1			14.71		14.71	14.71	111.81	
6	209.89	134.61	344.5			344.50				56.23	56.23	56.23	400.73	
7	312.2	163.5	475.7			475.70			26.72	55.59	82.31	82.31	558.01	
8	671.28	290.74	962.02			962.02			81.43	35.85	117.28	117.28	1079.30	
9	314.94	185.67	500.61			500.61			96.63	49.85	146.48	146.48	647.09	
NSR						0.00				1.97	1.97	1.97	1.97	
Protected Area		0.00	0.00		0.00	0.00					0.00	0.00	0.00	
Total	1508.31	774.52	2282.83	189.33	87.36	276.69	2559.52	0.00	0.00	0.00	332.29	233.97	566.26	3125.78
							81.88%						18.12%	
Age Class 6-9	1508.31	774.52	2282.83	0.00	0.00	0.00	2282.83	0.00	0.00	0.00	204.78	197.52	402.30	402.30

Predicted Schedule for RPA/RCA Trade-off

	RPA Available
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	0.00
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

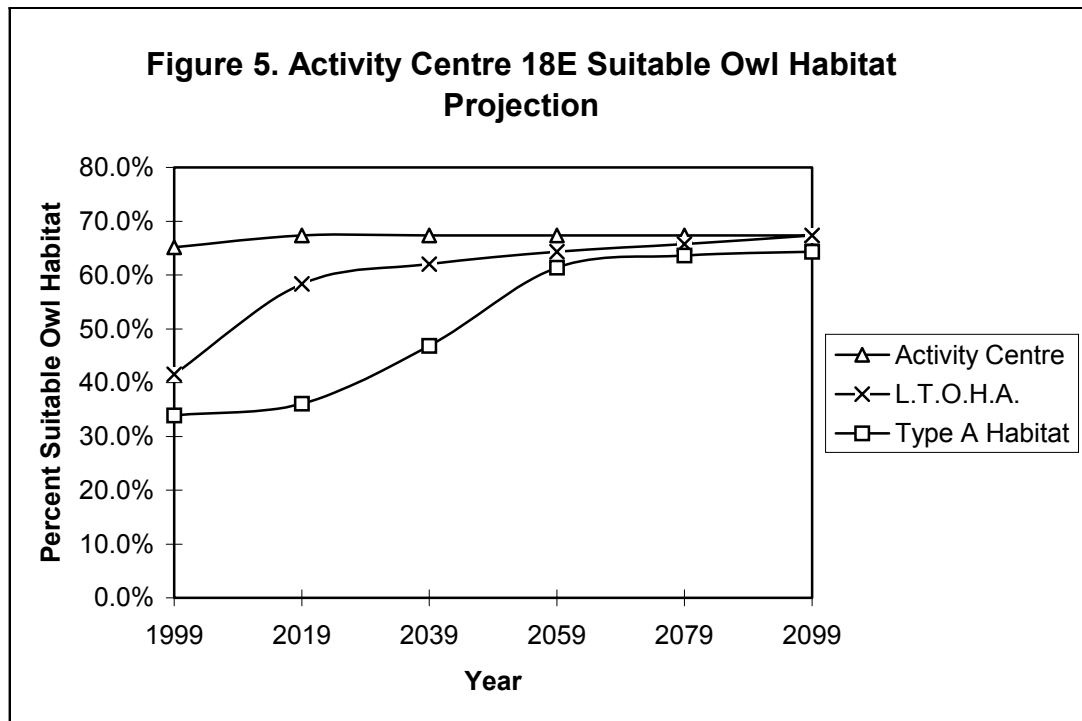
Activity Centre 18E

This activity centre is located in the northern most portion of the SRMZ and follows along Blackwater Creek encompassing Blackwater Lake. The activity centre is approximately 3181 ha of gross forested area.

Suitable Owl Habitat Assessment

Preliminary spotted owl habitat inventories have been conducted, but are not complete, in this activity centre to verify MOF forest cover data, determine habitat suitability and determine if age class 5 and 6 stands meet the requirements for suitable spotted owl habitat. Additional forest stand inventories are required. The activity centre currently contains about 65.2% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents about 33.9% of the total activity centre. Achieving the 50% Type A habitat target will take up to 60 years (Figure 5).

The LTOHA contributes about 42% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 25% suitable owl habitat within the LTOHA will take up to 100 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1078 ha of Type A (age class 8&9) and 996 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 680.6 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

Inventory coverage in this activity centre has taken place along the Blackwater Creek mainline and the Phelix Creek mainline. There are two major transect routes identified within this activity centre. The first is a 7 km linear, low elevation transect following the Blackwater Creek mainline. The second is a low to mid elevation transect following the Phelix Creek mainline approximately 3 km from the Birkenhead Provincial Park gate.

Since 1993, a minimum of 52 surveys of various lengths, duration and objectives have been conducted in this activity centre. Total survey time is approximately 169 hours. Most of this effort has taken place along the low elevation transect.

Owl Status

There have been 22 spotted owl detections within this activity centre since 1993. These detections indicate a pair residing in this area. The status of these owls is currently at “pair status” and “unknown nesting status”. There has been one critical roosting area identified in this activity centre.

Inventory/Monitoring Requirements

Spotted owls detected within this activity centre need the attachment of leg bands, identification of nesting location and long-term monitoring.

Forest Cover Analysis for Each Management Area

Table 6 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 6. Forest Cover Analysis of 18E for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal									
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal						
1				44.16	3.93	48.09			0.00	42.7	5.44	48.14	48.14	96.23	
2				26.42	19.48	45.9			0.00	20.84		20.84	20.84	66.74	
3				47.06	25.01	72.07			0.00	21.9	2.48	24.38	24.38	96.45	
4				80.33	37.71	118.04			0.00	23.35		23.35	23.35	141.39	
5				225.21	308.35	533.56			0.00	105.32	41.72	147.04	147.04	680.60	
6	256.98	203.46	460.44				460.44	171.03	20.02	191.05	0	0	191.05	651.49	
7	56.46	143.63	200.09				200.09	82.17	61.92	144.09		0	144.09	344.18	
8	192.28	373.56	565.84				565.84	186.78	198.82	385.60		0.01	385.61	951.45	
9	67.35	28.19	95.54				95.54		30.65	30.65		0	30.65	126.19	
NSR				1.63	0.51	2.14	2.14			0.00	22.26	1.71	23.97	23.97	26.11
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	
Total	573.07	748.84	1321.91	424.81	394.99	819.80	2141.71	439.98	311.41	751.39	236.38	51.35	287.73	1039.12	3180.83
							67.33%							32.67%	
Age Class 6-9	573.07	748.84	1321.91	0.00	0.00	0.00	1321.91	439.98	311.41	751.39	0.01	0.00	0.01	751.40	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	465.15
2038	118.04
2058	72.07
2078	45.90
2099	50.23

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

Spotted Owl
Resource Management Plan
for
Squamish
Special Resource Management Zone 21

May 31, 1999

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Squamish SRMZ

The Squamish SRMZ is approximately 8725 ha of gross forested area (See Map 1:SRMZ 21). It ranges in elevation from 0 m (Howe Sound) up to 1370 m. The SRMZ extends from Howe Sound, north along the Tantalus Range to Ashlu Creek and is bordered on the east by the Squamish River. Major water features within the SRMZ include Monmouth Creek, Fries Creek, Lake Lovely Water, Sigurd Creek, Tantalus Creek, Mawby Creek and Zenith Creek. Three long-term activity centres were established varying in size between 2658 to 3199 ha of gross forested area.

The SRMZ is located within the Coastal Western Hemlock and the Mountain Hemlock biogeoclimatic zones. The main biogeoclimatic variants within this SRMZ are the CWHdm, CWH vm2 and MH mm2. These wetter maritime ecosystems are characterized by Natural Disturbance Type (NDT) 1 which is described in the Biodiversity Guidebook as forests having rare to infrequent stand initiating events usually relating to fire. Forests in this SRMZ will be managed for ecosystems as outlined in Operational Guidelines and recommended Higher Level Plan Objectives.

Suitable Owl Habitat Assessment Methodology

The Spotted Owl Management Plan extrapolated habitat information gathered from the western and eastern cascade regions in Washington State and applied it to classify suitable habitat in the wetter coastal and dryer interior ecosystems in BC, respectively. The quality of suitable owl habitat can be defined as either Type A (superior quality) or Type B (moderate quality) based on quantitative stand characteristics. In the absence of habitat characteristics, Ministry of Forests forest cover information was used as a default to delineate suitable owl habitats. Type B habitat is characterized as forests aged between 100 and 140 years (age class 6 and 7) and heights greater than height class 2. Type A habitat is characterized as forests older than 140 years (age class 8 and 9) with heights greater than height class 2. For each long-term activity centre, all available information was assessed to determine the quantity of Type A and B habitats (Table 1) and identify habitat inventory gaps.

Table 1. Current suitable habitat within each long-term activity centre in Squamish SRMZ.

Long-term Activity Centre	Total Gross Forested Area	Total Type B Habitat	Total Type A Habitat	Total Suitable Owl Habitat
21 A	3199 ha	604 ha (18.9%)	1353 ha (42.3%)	1957 ha (61.2%)
21 B	2658 ha	1029 ha (38.7%)	948 ha (35.7%)	1978 ha (74.4%)
21 C	2868 ha	132 ha (4.6%)	1873 ha (65.3%)	2005 ha (69.9%)
Total SRMZ	8725 ha	1765 ha (20.2%)	4174 ha (47.8%)	5940 ha (68.1%)

Spotted Owl Assessment Methodology

For each long-term activity centre, all available inventory information collected since 1992 was utilized to assess the current owl status, identify information gaps, and identify critical owl habitats for the RMP as per the Ministry of Environment, Lands and Parks' Northern Spotted Owl Survey Protocol in British Columbia.

Since spotted owls may die or vacate their territories or re-establish new territories, spotted owl inventory and monitoring on a long-term basis is required within each activity centre to identify critical nesting and roosting habitats. The identification of these habitats will facilitate planning and forest development within SRMZs and prevent harvesting conflicts with spotted owl protection.

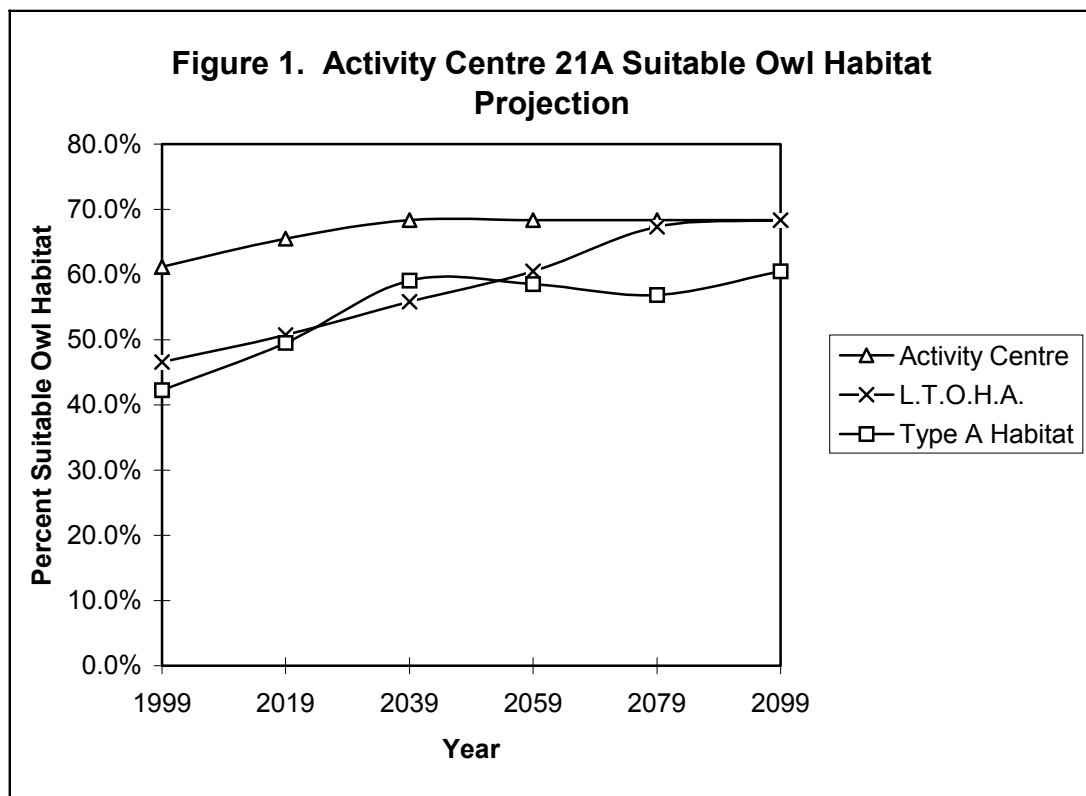
Activity Centre 21A

This activity centre is located at the southern portion of the SRMZ, and is bound to the south by Howe Sound, to the west by the Squamish Forest District boundary, to the north by Fries Creek and to the east by the Squamish River. The activity centre is approximately 3200 ha of gross forested area and excludes forests found above 1,370 m in elevation.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 61.2% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 42.3% of the total activity centre. Achieving the 50% Type A habitat target will take up to 40 years (Figure 1).

The LTOHA contributes about 47% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 20% suitable owl habitat within the LTOHA will take up to 80 years.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1353 ha of Type A (age class 8&9) and 604 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 5 to determine age and suitability . There is currently 139.22 ha of age class 5. Habitat inventory efforts should focus on these stands to determine if they meet the minimum age and/or structural characteristics of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

There has been no recorded inventory coverage within this activity centre.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys, 4 of these before June 30,1999. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 2 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 2. Forest Cover Analysis of 21A for Each Management Area

Age Class	Long-Term Owl Habitat Area			LTOHA Total	Forest Management Area			FMA Total	Activity Centre Total						
	Suitable Owl Habitat	Recruitment Area			Replacement Area	Heavy Volume Removal									
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal						
1					31.91	31.91			39.4	39.4	39.40	71.31			
2				38.79	179.46	218.25			10.61	147.84	158.45	158.45	376.70		
3				34.28	114.28	148.56			6.84	56.77	63.61	63.61	212.17		
4					164.52	164.52			3.36	259.73	263.09	263.09	427.61		
5					131.87	131.87				0.01	0.01	7.35	139.22		
6		214.02	214.02			214.02	5.47	7.34			0	159.09	373.11		
7		213.06	213.06			213.06		153.62			0	17.91	230.97		
8		330.51	330.51			330.51		17.91			0	58.83	389.34		
9		733.02	733.02			733.02	7.78	58.83			0	230.24	963.26		
NSR					0.36	0.36		222.46			0	15.27	15.27		
Protected Area		0.00	0.00		0.00	0.00					0.00	0.00	0.00		
Total	0.00	1490.61	1490.61	73.07	622.40	695.47	2186.08	13.25	460.16	473.41	20.81	519.02	539.83	1013.24	3199.32
							68.33%							31.67%	
Age Class 6-9	0.00	1490.61	1490.61	0.00	0.00	0.00	1490.61	13.25	452.82	466.07	0.00	0.00	0.00	466.07	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	74.33
2058	148.56
2078	218.25
2099	32.27

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

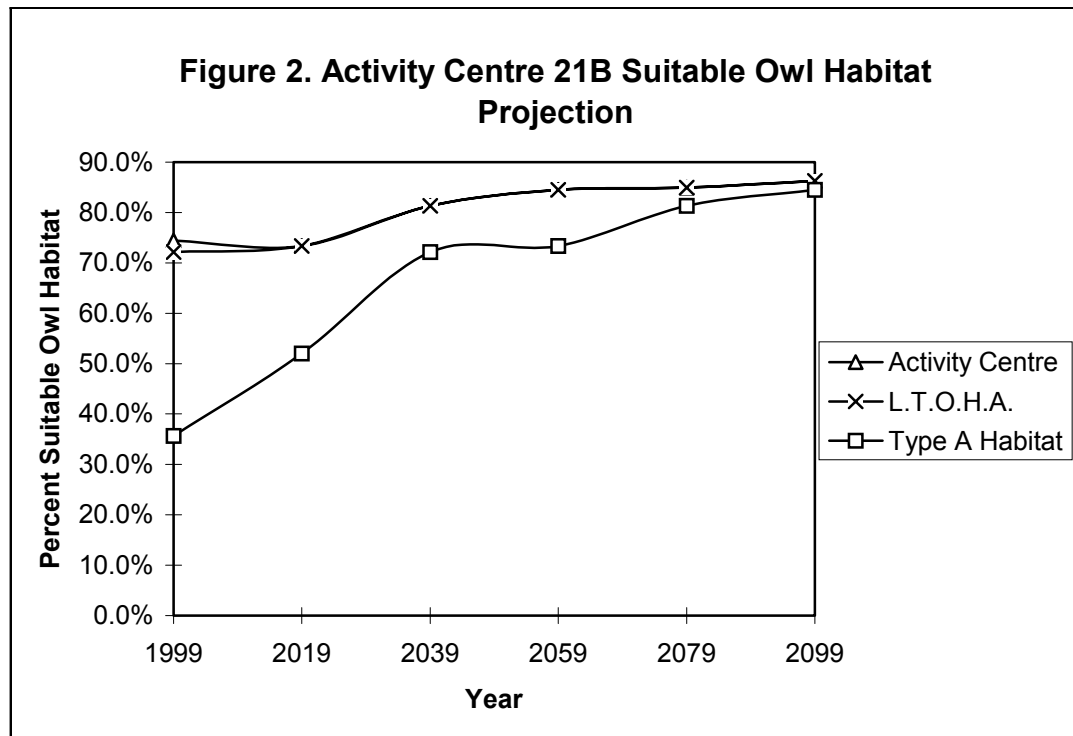
Activity Centre 21B

This activity centre is located in the centre of the SRMZ and is approximately 2,658 ha of gross forested area. It is bound to the west by the Squamish Forest District boundary and to the east by the Squamish River.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 74.4% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents only 35.7% of the total activity centre. Achieving the 50% Type A habitat target will take up to 20 years (Figure 2).

The LTOHA contributes about 72% of total suitable owl habitat available within the activity centre.



Habitat Inventory Requirements

Two habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 948 ha of Type A (age class 8&9) and 1029 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.
- Inventory of age class 4 to determine age and suitability . There is currently 717.75 ha of age class 4. Habitat inventory efforts should focus on these stands to determine structural characteristics and to determine what forest practices are needed to promote the development of these habitats.

Spotted Owl Assessment

Inventory Effort

There has been no recorded inventory coverage within this activity centre.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys, 4 of these before June 30,1999. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 3 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

Table 3. Forest Cover Analysis of 21B for Each Management Area

Age Class	Long-Term Owl Habitat Area			Recruitment Area			LTOHA	Forest Management Area			Heavy Volume Removal			FMA	Activity
	Suitable Owl Habitat			No Cons.	Cons.	Subtotal	Total	Replacement Area			No Cons.	Cons.	Subtotal	Total	Centre
	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	No Cons.	Cons.	Subtotal	No Cons.	Cons.	Subtotal	Total	Total
1					34.31	34.31	34.31			0.00			0	0.00	34.31
2					12.68	12.68	12.68			0.00			0	0.00	12.68
3				0.13	83.94	84.07	84.07			0.00	44.08	9	53.08	53.08	137.15
4					211.33	211.33	211.33			0.00	43.69	208.51	252.2	252.20	463.53
5				0.36	31.89	32.25	32.25			0.00	0.02	0.01	0.03	0.03	32.28
6		535.63	535.63				535.63			0.00		16.12	16.12	16.12	551.75
7		436.04	436.04				436.04			0.00	7.91	33.64	41.55	41.55	477.59
8		183.73	183.73				183.73			0.00			0	0.00	183.73
9		762.1	762.1				762.10			0.00	0.52	1.91	2.43	2.43	764.53
NSR					0.4	0.40	0.40			0.00			0	0.00	0.40
Protected Area		0.00	0.00		0.00	0.00	0.00			0.00			0.00	0.00	0.00
Total	0.00	1917.50	1917.50	0.49	374.55	375.04	2292.54	0.00	0.00	0.00	96.22	269.19	365.41	365.41	2657.95
							86.25%							13.75%	
Age Class 6-9	0.00	1917.50	1917.50	0.00	0.00	0.00	1917.50	0.00	0.00	0.00	8.43	51.67	60.10	60.10	

Predicted Schedule for RPA/RCA Trade-off

RPA Available	
1998	0.00
2018	0.00
2038	0.00
2058	0.00
2078	0.00
2099	0.00

Assumptions

- *Constraints is Gross Forested Area with Identified Constraints (VQO, ESA, Wildlife, Inoperable, Low site Index).
- *No Constraints is Gross Forested Area without identified Constraints above.
- *Recently Logged or disturbed areas are not reflected by Forest Cover Data.
- *Protected Areas are assumed to be 100% Suitable Owl Habitat (Age Class 6, 7, 8, 9).

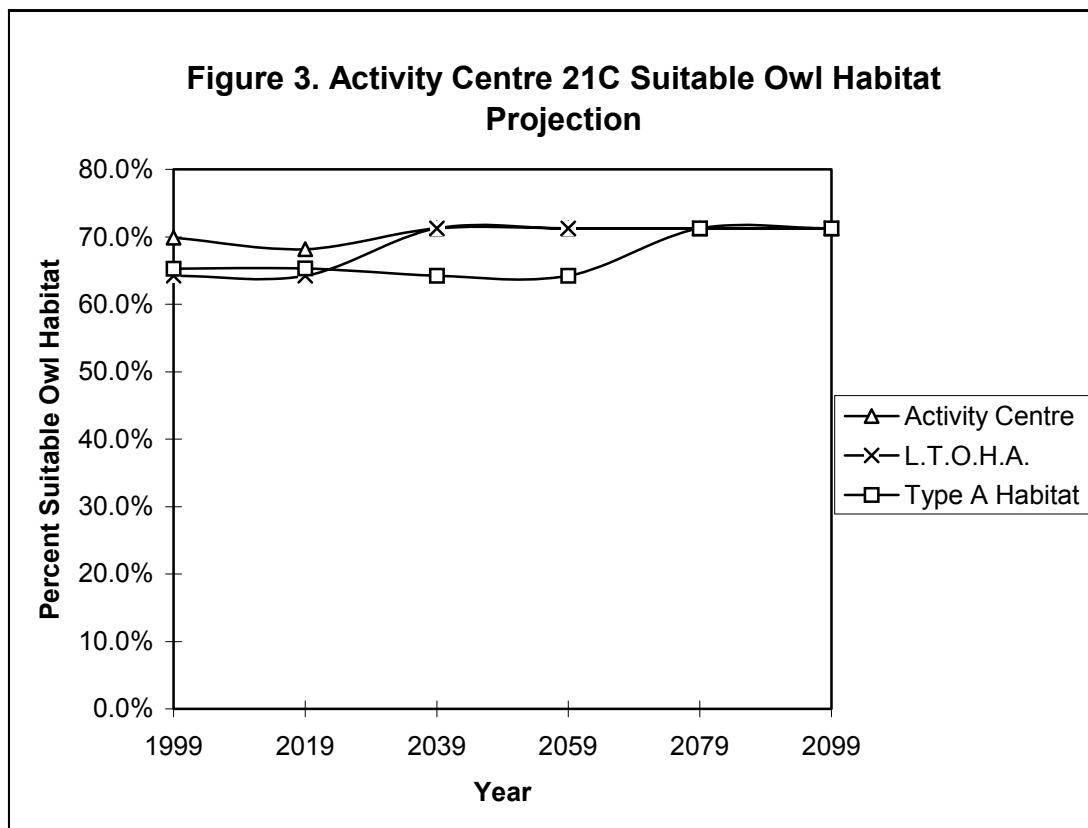
Activity Centre 21C

This activity centre is located in the northern portion of the SRMZ. It is bounded to the east by the Squamish River, to the west by the Squamish Forest District boundary and the north by Ashlu Creek. This activity centre is approximately 2868 hectares of gross forested area.

Suitable Owl Habitat Assessment

Forest stand inventories to determine habitat suitability have not been performed to date within this activity centre. The activity centre currently contains about 69.9% suitable owl habitat based on the minimum forest age criteria of 100 years old. Type A habitat (forests older than 140 years) represents 65.3% of the total activity centre (Figure 3).

The LTOHA contributes about 64% of total suitable owl habitat available within the activity centre. Recruitment of the remaining 3% suitable owl habitat within the LTOHA will take up to 40 years.



Habitat Inventory Requirements

One habitat inventory requirements have been identified within this activity centre, these include:

- Based on forest cover age class there is currently 1873 ha of Type A (age class 8&9) and 132 ha of Type B (age class 6&7) within this activity centre. Specific forest stand inventories are required to better define Type A and Type B habitats and to determine what forest practices are needed to promote the development of suitable owl habitat.

Spotted Owl Assessment

Inventory Effort

There has been no recorded inventory coverage within this activity centre.

Owl Status

Status is unknown.

Inventory/Monitoring Requirements

To complete this activity centre according to protocol by 1999 it will take a minimum of 6 surveys, 4 of these before June 30, 1999. If spotted owls are detected, location of nest and/or critical roosts, the attachment of leg bands and annual monitoring will be required.

Forest Cover Analysis for Each Management Area

Table 4 provides the current forest cover analysis by age class for each management area in the activity centre. Recently logged or disturbed areas are not reflected by the forest cover data.

