



File: ORCS 17580-30/Birk  
17580-30/Gate

**ORDER TO ESTABLISH  
A LANDSCAPE UNIT AND OBJECTIVES**

**BIRKENHEAD AND GATES LANDSCAPE UNITS**

Pursuant to Section 4 of the Forest Practices Code of British Columbia Act, I hereby establish the Birkenhead and Gates Landscape Units in the Squamish Forest District, effective May 9, 2005. These landscape units are located in the Birkenhead River and Gates River drainages north of Pemberton

The boundaries of the Birkenhead and Gates Landscape Units are shown on the Birkenhead and Gates Landscape Unit maps dated March 21, 2005 attached to this Order.

In addition, I hereby establish objectives for the Birkenhead and Gates Landscape Units, as attached to this Order, effective May 9, 2005.

(original signed by)

(April 13, 2005)

\_\_\_\_\_  
**Regional Director, Coast Region,  
Ministry of Sustainable Resource Management**

\_\_\_\_\_  
**Date**

## Preamble

The goal of these objectives is to sustain biological diversity at the landscape level; permissible activities are described to streamline administrative procedures, address ecosystem restoration and operational safety concerns.

First Nations traditional use of forest resources, treaty negotiations or settlements will not be limited by the following objectives.

### Objectives - Birkenhead Landscape Unit

Pursuant to Section 4 of the *Forest Practices Code of British Columbia Act*, the following are landscape unit objectives for the Birkenhead Landscape Unit.

#### Objective 1

1. Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached Birkenhead Landscape Unit map dated March 21, 2004 subject to timber harvesting and road construction in accordance with section 2, 3 and 4 below.
2. (1) Where sufficient suitable replacement forest is available in the variants listed below, timber harvesting or road construction (unrelated to ecosystem restoration activities) may be undertaken in OGMAs that are >10 ha in size for operational reasons up to a cumulative maximum of:
  - i) 15 ha in variant CWHds1,
  - ii) 30 ha in variant CWHms1,
  - iii) 5 ha in variant IDFww,
  - iv) 40 ha in subzone ESSFmw, and
  - v) 5 ha in variant MHmm2provided that replacement OGMA of equivalent or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA.
- (2) The criteria in 2 (1) is to apply to individual OGMAs within the categories below and must ensure that OGMA ecological attributes and spatial distribution are maintained or improved:
  - i) OGMAs >10 ha to <50 ha in size where the proposed activity affects the OGMA by <5 ha,
  - ii) OGMAs ≥50 ha to <100 ha in size where the proposed activity affects the OGMA by <10ha,
  - iii) OGMAs ≥100 ha in size where the proposed activity affects the OGMA by <10%.
  - iv) Construction of ≤500m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may permanently deactivate and rehabilitate a temporary road or bridge site within four years after construction.
- (3) Where OGMA boundary adjustments and replacement areas are required under section 2 (1) and (2) they must be documented, mapped and submitted to the satisfaction of the Delegated Decision Maker (DDM) at the end of each calendar year for his/her approval.
- (4) The provisions in section 2 (1) and (2) do not apply to the following OGMAs #8, 14, 24, 52, 70, 74, 95, 101.

3. Permissible Activities:

- (1) Timber harvest may occur to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMA. Salvage within OGMA will be done in a manner that retains as many old growth forest attributes as possible.
- (2) Timber harvesting for ecosystem restoration purposes within fire dominated areas in up to 25% of OGMA in the IDFww subzone and 25% of OGMA in the CWHds1 variant. Proposed treatments must adhere to the Strategies and Table B below, and must be incorporated into an approved operational plan (FDP or equivalent) that specifically addresses ecosystem restoration goals. Ecosystem restoration activities must be documented, mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.
- (3) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by <0.5 ha.
- (4) Intrusions, other than those specified, that affect an OGMA by less than 0.5 hectare in total.
- (5) Where OGMA replacement forest is required as a result of activities under 3 (1) or (3), it must be of equivalent or better quality and quantity and be identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA; such that OGMA ecological attributes and spatial distribution are maintained or improved. OGMA replacement areas must be documented, mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.

4. Permissible Activities for Safety Purposes:

- (1) Maintenance, deactivation, removal of danger trees, or brushing and clearing on existing roads under active tenure within the right-of-way for safety purposes.
- (2) Felling of guyline clearance, tailhold anchor trees, or danger trees (except high value wildlife trees) along cutblock boundaries or within the right of way on new road/bridge alignments to meet safety requirements.

**Objective 2**

Maintain stand level structural diversity by retaining wildlife tree patches (WTP). Cutblocks for which harvesting has been completed by each licensee by tenure will retain adequate amounts of wildlife tree patches to ensure that over each 3 year period, commencing on the date the objectives are established, the target percentage as noted in Table A is achieved. In addition:

- (1) WTPs must be well distributed across the BEC subzone and located within or immediately adjacent to a cutblock.
- (2) Each cutblock >10 ha in size must have a minimum of 2% wildlife tree retention, except in the ESSFmw subzone.
- (3) No timber harvesting, including single tree selection, is to occur within WTPs for at least one rotation, except as noted in (4) below.
- (4) Salvage of windthrown timber and harvesting of remaining standing stems is only permitted within WTPs where catastrophic windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. Where salvage/harvesting is planned and authorized, replacement WTP of equivalent or better quality and quantity must be identified immediately to achieve the retention target.
- (5) WTPs must include, if present, remnant old growth patches and live or dead veteran trees (excluding danger trees).
- (6) WTPs must include representative larger trees for the stand and any moderate to high value wildlife trees (excluding danger trees).
- (7) Where differences exist between mapped and actual BEC subzones, subzones will be confirmed by site plan information.

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

<b>BEC Subzone</b>	<b>% Wildlife Tree Retention</b>
CWH ds (Coastal Western Hemlock, dry subarctic)	4
CWH ms (Coastal Western Hemlock, moist subarctic)	3
ESSF mw (Engelmann Spruce Subalpine Fir moist warm)	0
IDF ww (Interior Douglas Fir, wet warm)	5
MH mm (Mountain Hemlock, moist maritime)	2

**Ecosystem Restoration Strategies:**

The purpose of restoration activities in OGMAs, within the limits provided, is to improve or maximize biodiversity values and/or ecosystem health values in areas where there is a high to extreme risk of natural disturbance. Where ecosystem restoration is proposed and carried out, it must address the following strategies:

1. Where ecosystem restoration provisions within OGMAs are proposed in an FDP (or equivalent), the FDP must outline the highest risk/highest priority transition forests requiring treatment. Ecosystem restoration treatment will be permitted in up to 25% of the OGMA target area, within specified site series in the IDFww and CWHds1 variants (see Table B).
2. Restoration activities within OGMAs must address how old growth structure will be developed and/or maintained through management intervention over time. Accepted treatments include: partial cut timber harvesting, spacing, thinning and prescribed burning. Note: Open forest (<76 stems/ha in IDF, and <170 stems/ha in CWH) or grassland communities will not meet OGMA suitability criteria. Treatments to below these thresholds can occur outside OGMAs; they can and do contribute to natural ecosystem diversity but aren't considered a forested ecosystem for OGMA purposes.
3. Where other resource objectives have been set (e.g. Ungulate Winter Range, Spotted Owl SRMZ, Identified Wildlife – Wildlife Habitat Areas), ecosystem restoration will only be permitted where compatible with those objectives. In addition, restoration plans and treatments must be compatible with and incorporate the habitat requirements of other red and blue-listed species or regionally important species.
4. Restoration prescriptions will vary from site to site, but will maintain the oldest and/or largest trees for the site and high value wildlife trees (any high value wildlife trees that are determined to be danger trees should be left in no work zone areas). Partial harvest will be limited to removal of excess immature and understory trees or any larger trees in excess of the target stocking standard specified in Table B.
5. Partial-cut harvesting will be subject to current timber harvesting and silviculture practices, except normal stocking standards and green-up height obligations will not apply (see Table B for modified stocking standards).
6. BEC subzones, variants and site series for purposes of Table B will be confirmed by site plan or on the ground information.
7. Achieving restoration targets will be a direct function of budget and staffing resources available to undertake treatment activities.

8. Once forest stands within OGMAs have received initial restoration treatment, they should become components of a long term cycle of spacing and/or prescribed burning and future partial-cut harvesting that will maximize biodiversity value and ecosystem health. All treatments subsequent to meeting modified stocking standards would be considered incremental, and would not be considered a licensee responsibility unless by mutual agreement. Special and non-governmental funds can potentially be accessed to finance these incremental treatments.
9. All roads and trails required for restoration treatment must be temporary, and rehabilitated promptly (i.e. made non-driveable) after completion of harvest operations (except roads required for permanent access beyond the OGMA).
10. In most cases a partial-cut harvest can meet target stocking initially, but unless further treatments are undertaken, stocking targets will be exceeded again after a short time. Subsequent (incremental) prescribed burns will normally be required to reduce numbers of new tree seedlings or rejuvenate the understory and recycle nutrients. If burning is prescribed it should normally follow a partial-cut treatment so that initial fuel loading is reduced. Partial-cut harvest slash volumes and distribution should be managed to facilitate subsequent low soil temperature, surface burns. Measures must be taken to ensure post burn survival of appropriate numbers of tree recruits.
11. Restoration targets set in Table B may be modified over time based on experience, long term monitoring and better scientific knowledge (Adaptive Management).

**Table B. Ecosystem Restoration Targets for the Birkenhead Landscape Unit.**

BEC Unit	Site series <i>Still need to confirm site series</i>	Target Stocking Standard (stems/ha)	Minimum - Maximum Stocking Standard (stems/ha)	Desired Structures Post Treatment*	Primary Leave Species (Secondary/Minor Leave Species)**	General Mgmt System Proposed
IDF ww	02, 03	- 200 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	76 – 250	WT, LT, CL, UV	02-Pl (/Fd) 03-Fd (Pl Py/)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain open forest
IDFww	01, 04, 05	- 250 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	170 – 400	WT, LT, CL, UV	01-Fd (Pl Py / Cw) 04-Fd (Py / Cw) 05-CwFd (/Ss)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain forest condition
CWHds1	01, 02, 03, 04, 05	- 250 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	170 – 400	WT, LT, CL, UV	01-Fd (/Cw Lw Pw) 02-Pl (Fd/) 03-Fd (Pl Py / Cw) 04-Fd (/Cw Lw Pw) 05-Fd (Se/Cw Pw)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain forest condition

\* WT = where present and safe, retain a minimum of 5 moderate or high value wildlife trees per hectare; and 5 dying trees >50 cm dbh per hectare (e.g. by no work zone).

LT = large trees for the site, including veteran trees.

CL = approximately 1/3 of leave trees should be in clusters, not just uniform spacing.

UV = the diversity of natural understory vegetation (e.g. shrubs) should be retained, herbicide treatment should not occur.

\*\* leave tree species are taken from the Ministry of Forests Land Management Handbook Number 28.

## Preamble

The goal of these objectives is to sustain biological diversity at the landscape level; permissible activities are described to streamline administrative procedures, address ecosystem restoration and operational safety concerns.

First Nations traditional use of forest resources, treaty negotiations or settlements will not be limited by the following objectives.

### Legal Objectives - Gates Landscape Unit

Pursuant to Section 4 of the *Forest Practices Code of British Columbia Act*, the following are landscape unit objectives for the Gates Landscape Unit.

#### Objective 1

1. Maintain or recruit old growth forests in established old growth management areas (OGMAs), as shown on the attached Gates Landscape Unit map dated March 21, 2004 subject to timber harvesting and road construction in accordance with section 2, 3 and 4 below.
2. (1) Where sufficient suitable replacement forest is available in the variants listed below, timber harvesting or road construction (unrelated to ecosystem restoration activities) may be undertaken in OGMAs that are >10 ha in size for operational reasons up to a cumulative maximum of:
  - i) 15 ha in variant CWHds1,
  - ii) 15 ha in variant CWHms1,
  - iii) 15 ha in subzone ESSFmw, and
  - iv) 30 ha in variant MHmm2provided that replacement OGMA of equivalent or better quality and quantity is identified in order of priority, 1) immediately adjacent to the existing OGMA, or 2) in the same variant and landscape unit as the existing OGMA.
- (2) The criteria in 2 (1) is to apply to individual OGMAs within the categories below and must ensure that OGMA ecological attributes and spatial distribution are maintained or improved:
  - i) OGMAs >10 ha to <50 ha in size where the proposed activity affects the OGMA by <5 ha,
  - ii) OGMAs ≥50 ha to <100 ha in size where the proposed activity affects the OGMA by <10ha,
  - iii) OGMAs ≥100 ha in size where the proposed activity affects the OGMA by <10%.
  - iv) Construction of ≤500m of road or a bridge within an OGMA where there is no other practicable option. As an alternative to finding replacement area, the licensee may permanently deactivate and rehabilitate a temporary road or bridge site within four years after construction.
- (3) Where OGMA boundary adjustments and replacement areas are required under section 2 (1) and (2) they must be documented, mapped and submitted to the satisfaction of the Delegated Decision Maker (DDM) at the end of each calendar year for his/her approval.
- (4) The provisions in section 2 (1) and (2) do not apply to the following OGMAs #9, 33, 35, 45, 57, 61.

3. Permissible Activities:

- (1) Timber harvest may occur to prevent the spread of insect infestations or diseases that pose a significant threat to forested areas outside of OGMA. Salvage within OGMA will be done in a manner that retains as many old growth forest attributes as possible.
- (2) Timber harvesting for ecosystem restoration purposes within fire dominated areas in up to 25% of OGMA in the IDFww subzone and 25% of OGMA in the CWHds1. Proposed treatments must adhere to the Strategies and Table B below, and must be incorporated into an approved operational plan (FDP or equivalent) that specifically addresses ecosystem restoration goals. Ecosystem restoration activities must be documented, mapped and submitted to the satisfaction of the DDM at the end of each calendar year for his/her approval.
- (3) Construction of rock quarries and gravel pits under authority of forest tenure where the development will be located immediately adjacent to existing roads under tenure and will affect the OGMA by <0.5 ha.
- (4) Intrusions, other than those specified, that affect an OGMA by less than 0.5 hectare in total.
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- (1) WTPs must be well distributed across the BEC subzone and located within or immediately adjacent to a cutblock.
- (2) Each cutblock >10 ha in size must have a minimum of 2% wildlife tree retention, except in the ESSFmw and MHmm subzone.
- (3) No timber harvesting, including single tree selection, is to occur within WTPs for at least one rotation, except as noted in (4) below.
- (4) Salvage of windthrown timber and harvesting of remaining standing stems is only permitted within WTPs where catastrophic windthrow exceeds 50% of the dominant or co-dominant stems; or where forest health issues pose a significant threat to areas outside the WTP. Where salvage/harvesting is planned and authorized, replacement WTP of equivalent or better quality and quantity must be identified immediately to achieve the retention target.
- (5) WTPs must include, if present, remnant old growth patches and live or dead veteran trees (excluding danger trees).
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- (7) Where differences exist between mapped and actual BEC subzones, subzones will be confirmed by site plan information.

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

<b>BEC Subzone</b>	<b>% Wildlife Tree Retention</b>
CWH ds (Coastal Western Hemlock, dry subarctic)	6
CWH ms (Coastal Western Hemlock, moist subarctic)	6
ESSF mw (Engelmann Spruce Subalpine Fir moist warm)	1
IDF ww (Interior Douglas Fir, wet warm)	8
MH mm (mountain Hemlock, moist maritime)	0

**Ecosystem Restoration Strategies:**

The purpose of restoration activities in OGMAs, within the limits provided, is to improve or maximize biodiversity values and/or ecosystem health values in areas where there is a high to extreme risk of frequent natural disturbance. Where ecosystem restoration is proposed and carried out, it must address the following strategies:

1. Where ecosystem restoration provisions within OGMAs are proposed in an FDP (or equivalent), the FDP must outline the highest risk/highest priority transition forests requiring treatment. Ecosystem restoration treatment will be permitted in up to 25% of the OGMA target area, within specified site series in the IDFww and CWHds1 variants (see Table B).
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**Table B. Ecosystem Restoration Targets for the Gates Landscape Unit.**

BEC Unit	Site Series	Target Stocking Standard (stems/ha)	Minimum - Maximum Stocking Standard (stems/ha)	Desired Structures Post Treatment*	Primary Leave Species (Secondary/Minor Leave Species)**	General Mgmt System Proposed
IDF ww	02, 03	- 200 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	76 – 250	WT, LT, CL, UV	02-Pl (/Fd) 03-Fd (Pl Py/)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain open forest
IDFww	01, 04, 05	- 250 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	170 – 400	WT, LT, CL, UV	01-Fd (Pl Py / Cw) 04-Fd (Py / Cw) 05-CwFd (/Ss)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain forest condition
CWHds1	01, 02, 03, 04, 05	- 250 of the oldest and largest stems. - up to 1/3 clustered - 2/3 well spaced.	170 – 400	WT, LT, CL, UV	01-Fd (/Cw Lw Pw) 02-Pl (Fd/) 03-Fd (Pl Py / Cw) 04-Fd (/Cw Lw Pw) 05-Fd (Se/Cw Pw)	Periodic partial-harvesting, prescribed burning, spacing and/or thinning to maintain forest condition

\* WT = where present and safe, retain a minimum of 5 moderate or high value wildlife trees per hectare; and 5 dying trees >50 cm dbh per hectare (e.g. by no work zone).

LT = large trees for the site, including veteran trees.

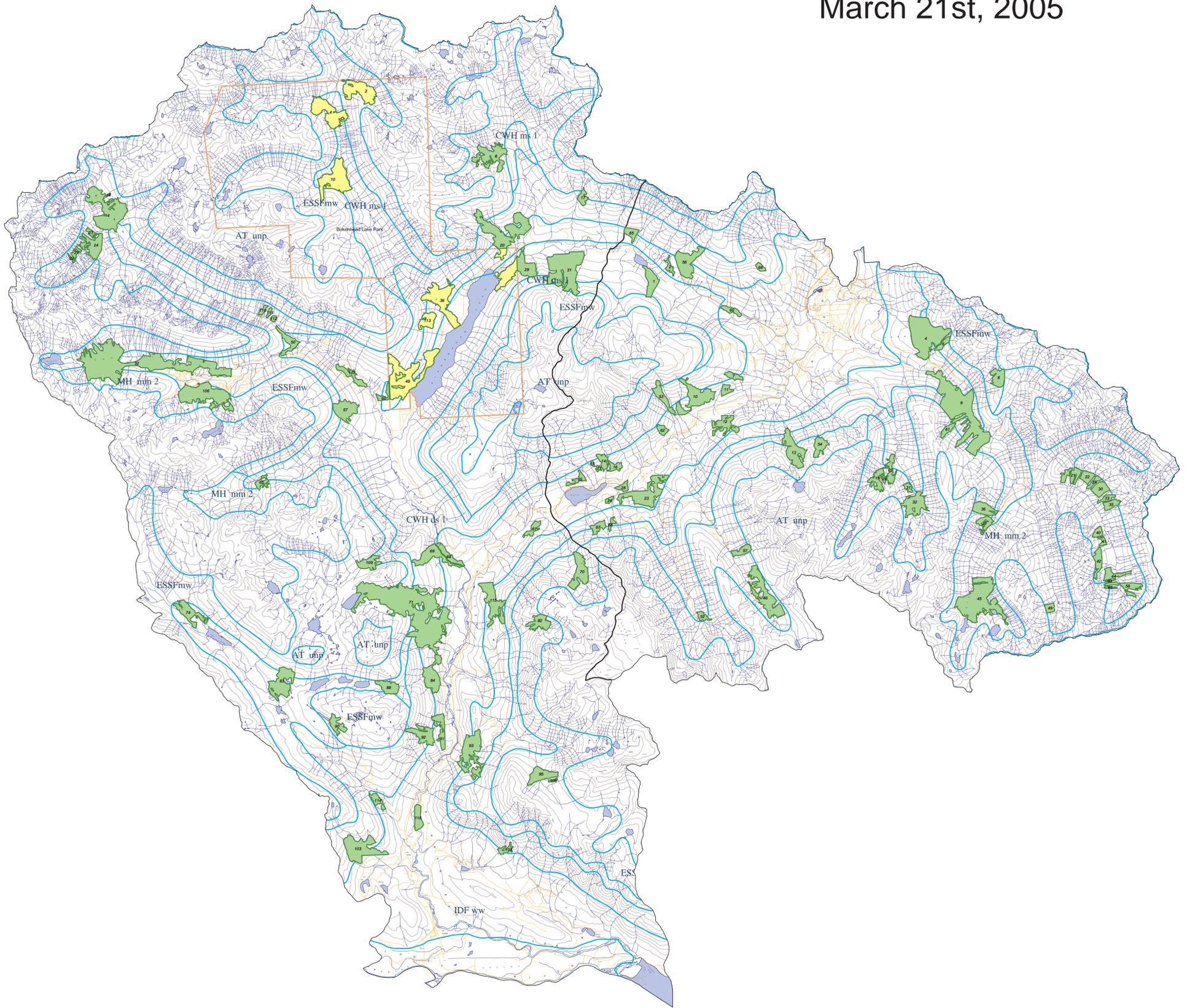
CL = approximately 1/3 of leave trees should be in clusters, not just uniform spacing.

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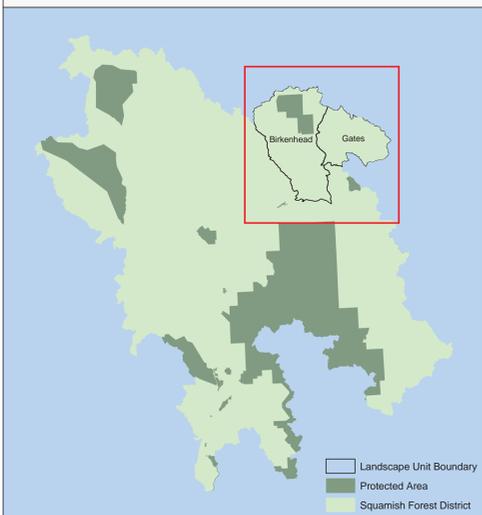
\*\* leave tree species are taken from the Ministry of Forests Land Management Handbook Number 28.

# Birkenhead/Gates Landscape Units

## March 21st, 2005



Map Study Area for Birkenhead/Gates Landscape Units

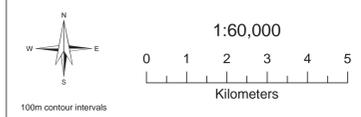


### Legend

- Landscape Unit Boundary
- Biogeoclimatic Ecosystem Classification
- Protected Area
- Roads
- Creeks
- Lakes and Rivers
- Old Growth Management Area
- Old Seral Representation Area

Submitted by: LS, GG, JR, MSRM

(original signed by)  
 Regional Director, Coast Region,  
 Ministry of Sustainable Resource Management  
 March 21, 2005  
 Date



Produced for:  
**Resource Management Division**

Produced by:  
  
**Ministry of Sustainable Resource Management**  
 Business Solutions Branch

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