

Appendix 1

**BAY D'ESPOIR FOREST ECOSYSTEM MANAGEMENT PLANNING TEAM
2012**

Summary of Attendance by Organization

| Company/Organization | Representative | No. Meetings Attended |
|----------------------------|----------------|-----------------------|
| Dept. of Natural Resources | | |
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BAY D'ESPOIR FOREST ECOSYSTEM MANAGEMENT PLANNING TEAM

Summary of Attendance by Organization

| Company/Organization | Representative | No. Meetings Attended |
|----------------------|----------------|-----------------------|
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| | | |

Appendix 2

Department of Natural Resources
Eastern Region

Five-Year Operating Plan Meeting # 1

Development Minutes

FMD 7 December 6, 2011

| | | |
|---------|-------------------------|--------------|
| 7:00 pm | Welcome/Meeting Purpose | D. Poole DNR |
| 8:00 pm | Adjournment | |

Attendance:

| | |
|-----------------|----------------------------|
| Jason Pond | Dept. of Natural Resources |
| David Parsons | Dept. of Natural Resources |
| Ryan Knott | Dept. of Natural Resources |
| Pam White | Dept. of Natural Resources |
| Craig Benoit | MFN Conne River |
| Lloyd Kearley | Head of Bay d'Espoir |
| Gerard Organ | St. Veronica's |
| Gordon Perry | Milltown |
| Guy Sutton | Milltown |
| Julie Whiteway | DFO – Grand Falls-Windsor |
| John O'Rourke | DFO – Mt. Pearl |
| Jody Roach | DFO – Mt. Pearl |
| Cosmos McDonald | Northstar Electrical |
| Jeff Dewland | Dept. of Natural Resources |
| Joe Gillingham | Dept. of Natural Resources |
| Edward Cokes | Head of Bay d'Espoir |
| Dave Poole | Dept. of Natural Resources |

Department of Natural Resources
Eastern Region

Five-Year Operating Plan Meeting # 2

Development Minutes
FMD 7 January 24, 2012

7:00 pm Welcome/Meeting Purpose D. Poole DNR

Attendance:

| | |
|------------------|----------------------------|
| Cosmas MacDonald | Northstar Electrical |
| Gerard Organ | St. Veronica's |
| Guy Sutton | Milltown |
| Gordon Perry | Milltown |
| Pamela White | Dept. of Natural Resources |
| Ryan Knott | Dept. of Natural Resources |
| Dave Mercer | Crown Lands |
| Jody Roach | DFO – Mt. Pearl |
| John O'Rourke | DFO – Mt. Pearl |
| Tony Bouzane | DFO – Grand Falls |
| Lloyd Kearley | Head of Bay d'Espoir |
| David Parsons | Dept. of Natural Resources |
| Joe Gillingham | Dept. of Natural Resources |
| Gary Forward | Dept. of Natural Resources |
| Dave Poole | Dept. of Natural Resources |
| Jason Pond | Dept. of Natural Resources |

Regrets:

Edward Cokes
Julie Whiteway
Craig Benoit

Jason opened the meeting by thanking everyone for their attendance / participation and asked if there were any comments / concerns/ questions from the minutes of last meeting.

There was a round table of introductions and a review of the agenda for tonight's meeting.

**1.) Presentation on Forest Industry Diversification
(Gary Forward–Forest Services)**

Gary gave a presentation on the NL forest Products Industry, in particular, Pulp & Paper Sector, Sawmill Sector, Value Added Manufacturing Sector, and the Province's Diversification initiatives.

Gary spoke about the historic trends within the Pulp & Paper, Sawmill and Value Added Manufacturing Sectors. The bigger questions facing the Forestry Industry now are how to position itself for the future and what are the product opportunities that have future economic viability?

It is anticipated that some growth initiatives and products include: Engineered Wood Products (Wood I-Joists, Fingerjointed Lumber, Housing Components), Appearance Products (Decking, Siding, Flooring), & Biofuel Products (Wood Pellets, Briquettes, Cogeneration)

Q) What type of wood species is used in value added industry?

A) Currently there is a lot of birch being used, but as well as spruce.

Q) With respect to the green movement and topics discussed in your presentation, would you anticipate the mill in Grand Falls opening again?

A) There is a good fibre basket in central and although given the market conditions for newsprint, I wouldn't expect to see the newsprint mill open again, there are other companies who produce other forest products that potentially could start a business in Grand Falls area.

Q) What about a Cogen plant in central. There was some talk awhile ago about this, would you see this starting?

A) Some of the larger sawmills may become interested in starting up a cogen plant to help out their own operations, but maybe not Nalcor.

2.) Presentation on Summary of Past Activities in FMD 7 **(David Parsons & Jason Pond–Forest Services)**

An overview of the district in geographical terms was provided, where the Barren areas and Coastline was noted. With respect to the district, the productive forest is generally small and is mostly found around the Upper Salmon / Bay D'Espoir area.

Currently, the AAC is about 24,000 cubic meters where some of this volume can be accessed easily, while a portion would be accessed with a reasonable expenditure. This is fairly small in relation to the provincial outlook.

The presentation provided a discussion of the past activities in this district as it relates to Domestic and Commercial areas, Non AAC and AAC Harvest, Resource Roads Program, and the Sawmill Sector.

Q) With respect to AAC, is it the same or stable as last time?

A) Yes, pretty much stable.

Q) With talking about Domestic Blocks, is the province providing access to these areas?

A) No, normally domestic areas are allocated close to communities and generally people extract the wood using their own trail by ATV or snowmobile.

Q) Are the volumes indicated in your presentation based on permits sold or are they actually surveyed numbers?

A) Domestic permit holders are required to make a return, but this does not necessarily always happen. Basically, the volumes indicated are based on the number of permits sold and it is assumed that one harvests the entire permit volume.

Q) Most people have cabins, so how do you know exactly how much is cut there?

A) You are right; some people obtain permits for their cabins only. However, when purchasing a permit, people know that its only 23 cubic meters that they are allowed to cut. It is very hard to get an exact number, but as you can see Domestic Harvesting is a very important part of the forest industry down here. The key is to complete some type of estimate rather than not doing any estimate at all.

Q) The road at Cox's Landing, what value did we get for that road being put in. It was constructed, but nobody went in there?

A) The industry has been going through a lot of change in the past few years and it's very hard to judge how much wood is actually going to be cut and thus how much road will be required to meet demands. The objective is to always try to be ahead of the game. The road is being utilized by domestic harvesters and other resource users.

Q) How do you equate volume to the amount of road construction?

A) The determination of the amount of road to be constructed within a district is not necessarily based on volumes, although the amount of volume to be extracted is a consideration. Sometimes roads are built for reforestation purposes.

Q) Are there any forest access roads going to be built upon the highway?

A) Not much, but we will be looking at this area in this upcoming five-yr plan. At a future meeting, this question will be better answered.

Q) If somebody has a domestic sawmill licence, can they saw other peoples volume?

A) A domestic sawmill licence only permit the licensee to saw his/her volume harvested under a domestic harvesting permit (Max 5000 FBM). It is possible however, for another individual to obtain their own domestic sawmill license for the same mill – provided the owner of the mill equipment is in agreement.

Q) Does the lumber produced down here get sold here?

A) No, the lumber produced down here gets sold to other parts of the island.

Q) How many roads are proposed for this year?

A) There is 1 new construction and 1 reconstruction proposed.

Q) When harvesting the commercial areas, on average, what percentage is considered sawlogs?

A) On average 40% logs and 60% pulpwood.

In closing the meeting, Jason asked if there were any future expectations with respect to this process or the type of material to be covered. At the next meeting, we intend on presenting the new proposed five-year plan boundaries for domestic and commercial harvesting areas. With this said, it is our intentions to resolve any potential conflicts/issues with such proposed activity, so it is important that we know the values/interest of all stakeholders. There was some discussion surrounding the level of participation at these meetings, especially from town councils. It was stated that town councils have been notified of the process and as well, this particular meeting. The Forest Services Branch can only invite individuals/organizations to the process and there is not much we can do if they choose not to attend. However, we would like to keep the door open to anybody who wishes to attend and if anybody here tonight knows of someone who may like to participate, then you are encouraged to ask.

The meeting adjourned at 9 pm.

NEXT MEETING: JANUARY 31, at 7 pm at the VANCOR

AGENDA:

- 1.) Silviculture Presentation (DNR-Forestry)
- 2.) NEW 5-Yr Plan Domestic and Commercial Proposed Areas (DNR-Forestry)

Department of Natural Resources
Eastern Region

Five-Year Operating Plan Meeting # 3

Development Minutes
FMD 7 January 31, 2012

7:00 pm Welcome/Meeting Purpose D. Poole DNR

Attendance:

| | |
|------------------|----------------------------|
| Cosmas MacDonald | Northstar Electrical |
| Gerard Organ | St. Veronica's |
| Gordon Perry | Milltown |
| Pamela White | Dept. of Natural Resources |
| Ryan Knott | Dept. of Natural Resources |
| Dave Frampton | Crown Lands |
| Lloyd Kearley | Head of Bay d'Espoir |
| David Parsons | Dept. of Natural Resources |
| Joe Gillingham | Dept. of Natural Resources |
| Jeff Dewland | Dept. of Natural Resources |
| Dave Poole | Dept. of Natural Resources |
| Jason Pond | Dept. of Natural Resources |

Regrets:

| | |
|---------------|-----|
| Jody Roach | DFO |
| John O'Rourke | DFO |

Jason opened the meeting by thanking everyone for their attendance / participation and asked if there were any comments / concerns/ questions from the minutes of last meeting. There were no concerns/corrections identified.

There was a round table of introductions and a review of the agenda for tonight's meeting.

**1.) Presentation on Silviculture Activity in FMD 7
Jeff Dewland – Forest Services)**

Jeff provided an overview of the early silviculture activity starting in 1970/71 and the devastating impacts of the spruce budworm in this district. He then talked about the Forest Economic Stimulation Program that started in 1978 and ran until 1985, which was really a wood salvage program. The current silviculture program for this district consists of activities such as: tree planting, pre-commercial thinning, white pine management and stand conversion. It is anticipated that a new site treatment called Prescribed Burn will occur in this district as well.

The past five year actual silviculture activity was presented and discussed in detail. There was some discussion around Scleroderis on the Red Pine Species, which appeared in this district around 2008. Original evidence of scleroderis was found on the Avalon, but has since progressed, where the exact cause is not known.

2.) Presentation on Upcoming Domestic / Commercial Areas and Proposed Roads for the next five-year period in FMD 7
David Parsons & Jason Pond – Forest Services

With respect to the Proposed Domestic areas, Dave indicated that basically, they are the same shapes as in this five-year plan that is set to expire the end of this year. Dave explained the numbering system on the domestic areas and explained why the numbers are not presented in order.

With respect to the quantity of domestic permits issued, basically number 6 area gets issued the most, followed by number 7 and then down the coast in area numbers 26, 27 and 28. Dave indicated that generally, domestic harvesting is centered mostly around communities. Within these domestic areas, there is a small portion of commercial operations for firewood.

Next, Dave provided a discussion on the proposed commercial areas, where many areas are similar to the past five-year plan. In total, there is about 143,000 cubic meters proposed for the next five-year period. This is the inventory volume and not necessarily what will be harvested. In this plan, we are only proposing to harvest the Annual Allowable Cut (AAC) which is 23, 500 cubic meters per year. Basically, about half of this will be cut domestically and the other will be commercially. Dave indicated the 2 new commercial areas in this plan will be C-07-10 and C-07-11 around the camp 6 / goodyears area.

It is hard to determine if any or all of the AAC will be harvested over the next five years because that depends on what markets are doing for operators to sell lumber, etc... However, we have to develop areas and be ready.

Next, Dave led a discussion on the potential roads to be constructed / reconstructed over the next five-year period. The difference in specifications between the class C and C-2 road was discussed.

Some questions / conversations arising from the presentations included:

Q) What is Stand Conversion?

A) This is when you take a stand like Balsam Fir, which is full of aphid, clearcut the trees and then replant another species like Black Spruce on these sites in an effort to get rid of the aphid.

Q) You haven't done any prescribed burn here yet, so how do you know the correct models and procedures for doing so?

A) No, there hasn't been any prescribed burning down here yet, but the forest service has been doing this form of site treatment in other areas of the province for the past couple of years now, so there are correct procedures established for doing this.

Q) Do you plant any hybrid trees?

A) Yes, in the late 80's, we planted some Japanese Larch.

Q) When you mentioned the money spent in the last five-years on silviculture, is this still 70% cost shared?

A) No, that agreement ended some time ago, all the money is provincial dollars.

Q) Is all the planting done along the Bay D'Espoir Highway?

A) Most of the work in this district is going to be concentrated at the upper salmon areas, but outside of the district along the Bay D'Espoir Highway, there are some areas to plant, which maybe completed by our workers.

Q) You mentioned the number of people have reduced from 125 to 14. People are retiring and not being replaced, so is there going to come a time when you cannot get experienced workers if they are not being replaced?

A) The reason why the numbers were originally high was because the spruce budworm wiped out a lot of the forest. Then, the Forest Economic Stimulus Program came into effect to salvage harvest a lot of the damaged wood from the spruce budworm. Because of this, a lot of people were required to "catch up" on the harvested areas and get the sites back into production. As the sites were completed, we didn't need so many people. However, we are trying other different silviculture treatments such as stand conversion, hardwood thinning and aerial seeding.

Q) It doesn't seem like balsam fir is required any more because the insects kill them and now it is not good for lumber, what is the preferred species?

A) Right now, black spruce is the preferred species for sawlogs because there is less rot in spruce as opposed to fir. As well, because spruce is slow growing, the density and strength properties make it high quality.

Q) Will Kiln dried spruce warp?

A) Any species will probably warp if left out in the elements, but generally spruce lumber will not warp if not exposed to the elements.

Q) Is there any chemical developed to kill the aphid?

A) No, not on the stand level. The aphid is a sap sucking insect, not needle eating, so it is a very difficult insect to control. Very cold temperatures for a short period of time would probably kill the aphid, but these very cold temperatures don't happen here on the island.

Q) It seemed that planting Japanese Larch was the goal by the department to reduce aphid infestation, but another problem resulted because of moose feeding on the larch. Is there any other exotic tree species tried?

A) Yes other exotic tree species was tried, but unfortunately, moose browsing tend to remain a problem.

Q) What about domestic permits for cabins?

A) Only 1 domestic permit is issued per household, which would include firewood cut for cabins.

Q) The area north of Granite, is this mature or overmature?

A) Overmature

Q) What is the cost for construction of a C-2 road?

A) The average cost is about 25,000 dollars / km if no large watercrossing have to be built. The construction of Bridges would increase this number.

Q) Is there much wood on Diversion Road?

A) Yes, there is a significant amount of volume in this area that is average of the district.

Dave Poole asked if there were any concerns with the proposed roads or commercial and domestic areas that were presented tonight. There were no immediate concerns elevated from those in attendance. Dave explained the next step is to send these areas through a process called an Interdepartmental Land Use Committee (ILUC), where other government departments/agencies who could not attend the process in person would have an opportunity to review the proposal. The intent is to determine if there are any concerns raising from Forestry's proposals and if so, we need take the time to mitigate and ensure other values are protected, while we are still able to maintain forestry operations.

This ILUC process is usually a 30 day process when the proposal is received by the department of Environment and we intend to submit our proposal within the next two weeks. For our purposes, while this process is ongoing, we will continue to develop the text portion of the new five-year plan.

With respect to the text portion of the new plan, there are many topics/discussions in the old plan expiring this year that is still current and as such will remain the same. Over the next few weeks, it is our intent to use the old plan as a starting point and make revisions were required for the new plan. Then, we will meet again to discuss the draft changes and work together to finalize the text of the new plan. To this effect, it will probably be late February before the next meeting is scheduled. However, over the next week or so we will establish a time for the next meeting.

The meeting adjourned at 9 pm.

NEXT MEETING: LATE FEBRUARY – Exact time to be determined

AGENDA:

- 1.) Proposed Silviculture for next five-year period (DNR)
- 2.) DRAFT PLAN TEXT (DNR-Forestry)
- 3.) Any concerns/ problems arising from NEW 5-Yr Plan
Domestic and Commercial Proposed Areas

Appendix 3

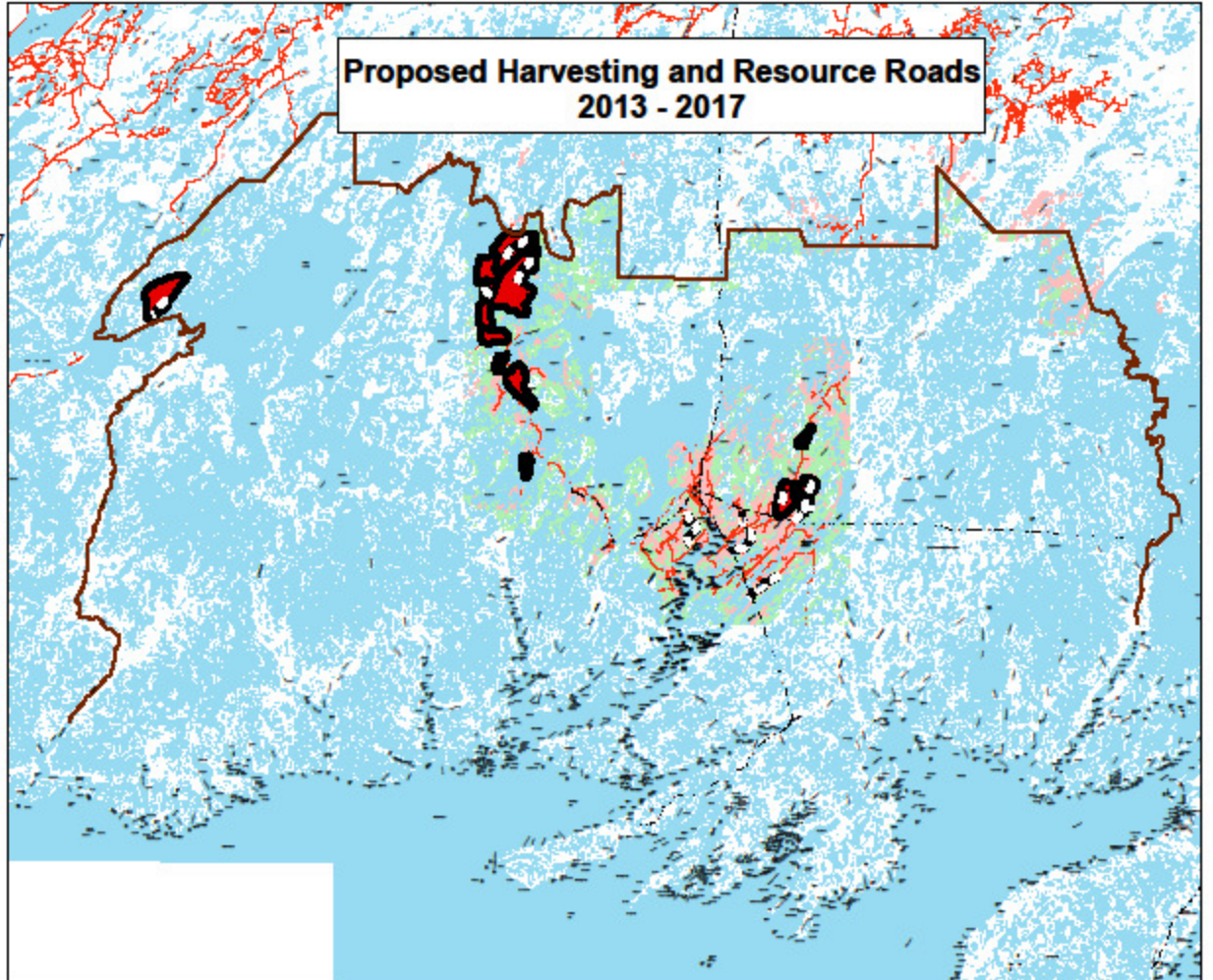


Five year Plan 2013 - 2017
Forest Management District 07

Overview
Harvest Areas
&
Resource Roads

Legend

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- C2 road
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- Dist7_commercial_block
- contour
- powerline
- wetlands
- streams
- roads
- immature
- mature
- waterbodies



Proposed Harvesting and Resource Roads
2013 - 2017

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Kilometers

Appendix 4

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|--|---------------------|------------------------|-----|
| Operating Area: | Diversion | Ref Map #: 12A1 | |
| Scheduled Harvest (m;): | 15,200 | Operating Area # C-7-1 | |
| Area (hectares): | 345 | | |
| Gross Volume (m;): | 30,414 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer and Fall | | |
| Harvest System: | Harvester/Forwarder | | |
| Comments: The bF portion of these stands is in poor condition. | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|-------------------------|---------------------|------------------------|-----|
| Operating Area: | Domshell Ridge | Ref Map #: 12A1 | |
| Scheduled Harvest (m;): | 16,000 | Operating Area # C-7-2 | |
| Area (hectares): | 342 | | |
| Gross Volume (m;): | 32,000 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer and Fall | | |
| Harvest System: | Harvester/Forwarder | | |
| Comments: | | | |
| | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|-------------------------|---------------------|------------------|-------|
| Operating Area: | Cold Spring Pond | Ref Map #: | 12A1 |
| Scheduled Harvest (m;): | 7,200 | Operating Area # | C-7-3 |
| Area (hectares): | 184 | | |
| Gross Volume (m;): | 14,500 | | |
| Stand Condition: | Good | % Mortality: | 30 |
| Seasons of Harvest: | Summer, Fall | | |
| Harvest System: | Harvester/Forwarder | | |
| Comments: | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|-------------------------------------|------------------|------------------|-------|
| Operating Area: | Godaleich | Ref Map #: | 12A1 |
| Scheduled Harvest (m;): | 45,000 | Operating Area # | C-7-4 |
| Area (hectares): | 1,056 | | |
| Gross Volume (m;): | 90,000 | | |
| Stand Condition: | Fair | % Mortality: | 20% |
| Seasons of Harvest: | Summer and Fall | | |
| Harvest System: | Manual/Harvester | | |
| Comments: Stands damaged by insect. | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|--|---------------------|------------------|-------|
| Operating Area: | North Salmon | Ref Map #: | 12A1 |
| Scheduled Harvest (m;): | 15,500 | Operating Area # | C-7-5 |
| Area (hectares): | 338 | | |
| Gross Volume (m;): | 31,000 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer, Fall | | |
| Harvest System: | Harvester/Forwarder | | |
| Comments: Wood is located on steep ridges. | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|---|------------------|------------------|-----------|
| Operating Area: | Bailey Bridge | Ref Map #: | 12A8/12A1 |
| Scheduled Harvest (m;): | 4,200 | Operating Area # | C-7-6 |
| Area (hectares): | 108 | | |
| Gross Volume (m;): | 9,400 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer, Fall | | |
| Harvest System: | Manual/Forwarder | | |
| Comments: The bF portion of these stands are in poor condition. | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|-------------------------|--|------------------|-------|
| Operating Area: | White Hills | Ref Map #: | 12A1 |
| Scheduled Harvest (m;): | 19,900 | Operating Area # | C-7-7 |
| Area (hectares): | 553 | | |
| Gross Volume (m;): | 39,900 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer/Fall | | |
| Harvest System: | Harvester/Forwarder | | |
| Comments: | Remaining wood is some distance from the road. This is a salvage area. | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|---|---------------------|------------------|------------|
| Operating Area: | Bear Lake | Ref Map #: | 11P16/12A1 |
| Scheduled Harvest (m;): | 7,700 | Operating Area # | C-7-8 |
| Area (hectares): | 131 | | |
| Gross Volume (m;): | 15,400 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer and Fall | | |
| Harvest System: | Harvester/Forwarder | | |
| <p>Comments: This area contains large areas of blowdown. The volumes are contained in the areas remaining standing.</p> | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|---|-------------------------|------------------|-----------|
| Operating Area: | Granite Lake | Ref Map #: | 12A2/12A7 |
| Scheduled Harvest (m;): | 5,000 | Operating Area # | C-7-9 |
| Area (hectares): | 100 | | |
| Gross Volume (m;): | 10,000 | | |
| Stand Condition: | Fair | % Mortality: | 40% |
| Seasons of Harvest: | Summer and Early Fall | | |
| Harvest System: | Harvester and Forwarder | | |
| <p>Comments: The bF portion of these stands are in poor condition.</p> <p>This area is accessed through Millertown.</p> | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|---|---------------------|------------------|--------|
| Operating Area: | Goodyear's | Ref Map #: | 1M13 |
| Scheduled Harvest (m;): | 14,200 | Operating Area # | C-7-10 |
| Area (hectares): | 658 | | |
| Gross Volume (m;): | 28,500 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer and Fall | | |
| Harvest System: | Harvester/Forwarder | | |
| Comments: There is a portion of this area with no recent mapping. | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

| | | | |
|---|------------------|------------------|----------|
| Operating Area: | Camp 6 | Ref Map #: | 1M13/2D4 |
| Scheduled Harvest (m;): | 7,000 | Operating Area # | C-7-11 |
| Area (hectares): | 341 | | |
| Gross Volume (m;): | 13,900 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer and Fall | | |
| Harvest System: | Manual/Forwarder | | |
| Comments: The bF portion of these stands are in poor condition. | | | |

**Department of Natural Resources
District #7
5 Year Operating Plan**

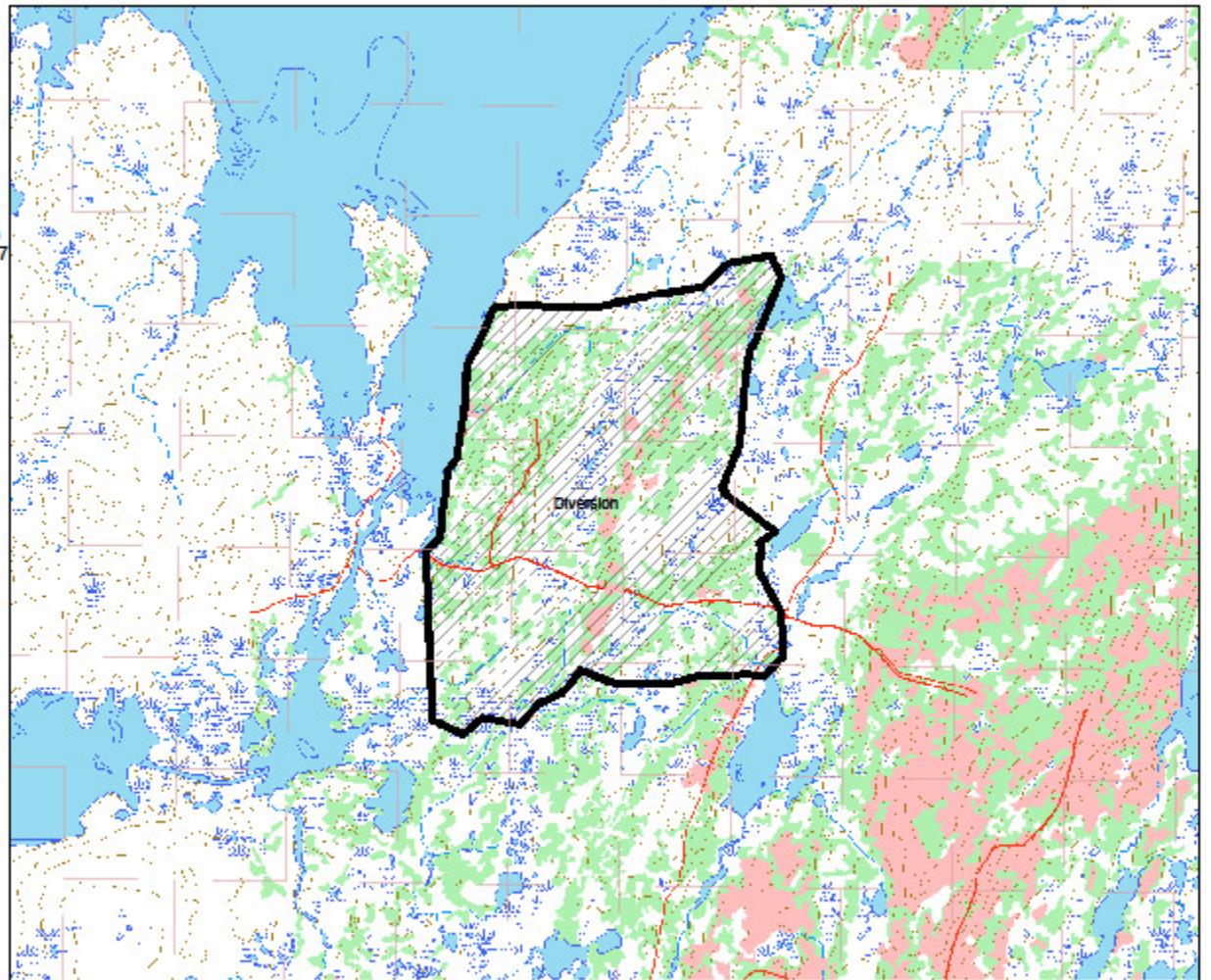
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|---|------------------|------------------|--------|
| Operating Area: | Camp 4 | Ref Map #: | 2D4 |
| Scheduled Harvest (m;): | 2,200 | Operating Area # | C-7-12 |
| Area (hectares): | 149 | | |
| Gross Volume (m;): | 4,300 | | |
| Stand Condition: | Good | % Mortality: | 30% |
| Seasons of Harvest: | Summer and Fall | | |
| Harvest System: | Manual/Forwarder | | |
| Comments: The bF portion of these stands are in poor condition. | | | |

Appendix 5



Five year Plan (2013 - 2017)
Forest Management District 07

Division
Proposed
Harvest areas and Roads

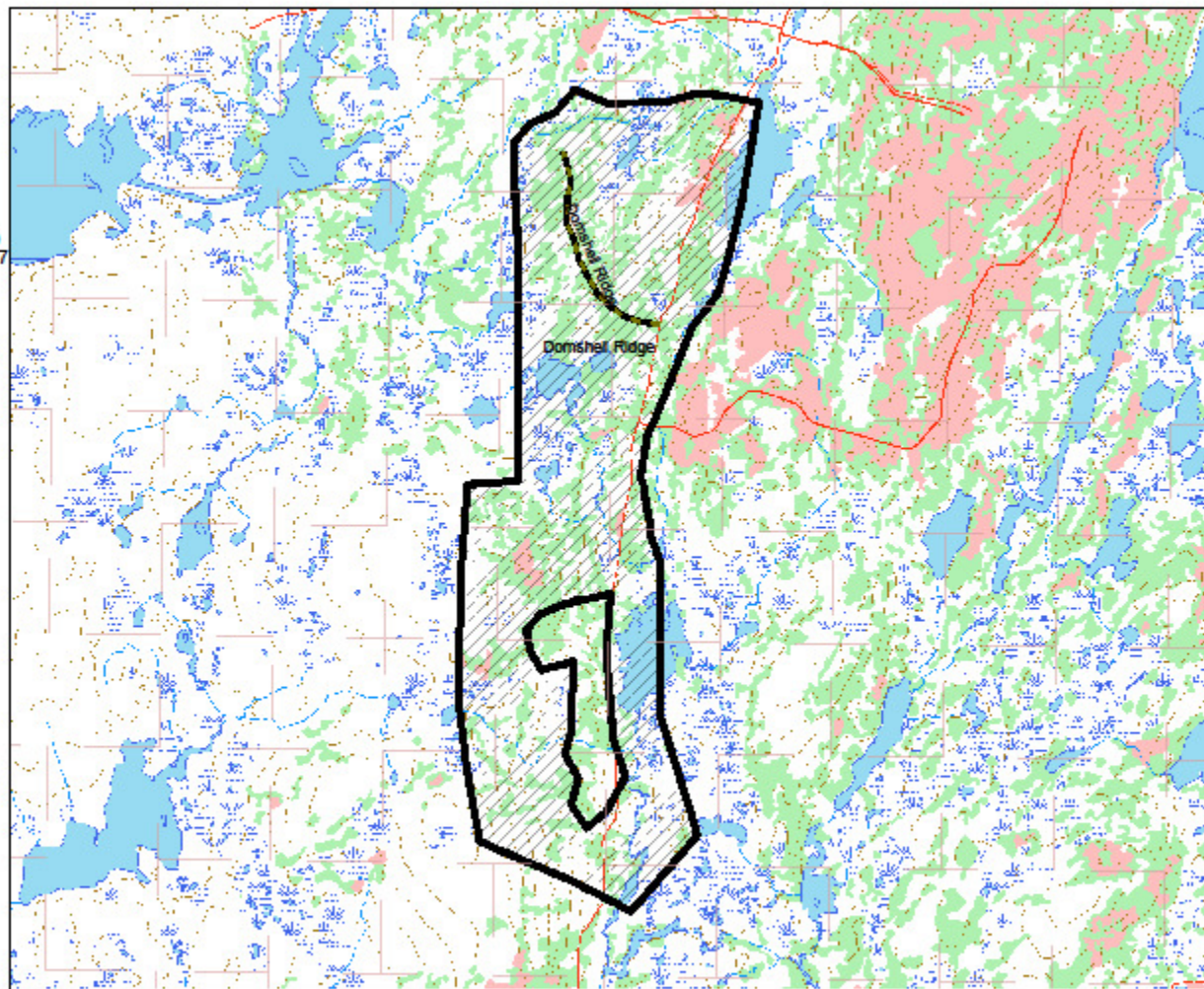


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Kilometers



Five year Plan (2013 - 2017)
Forest Management District 07

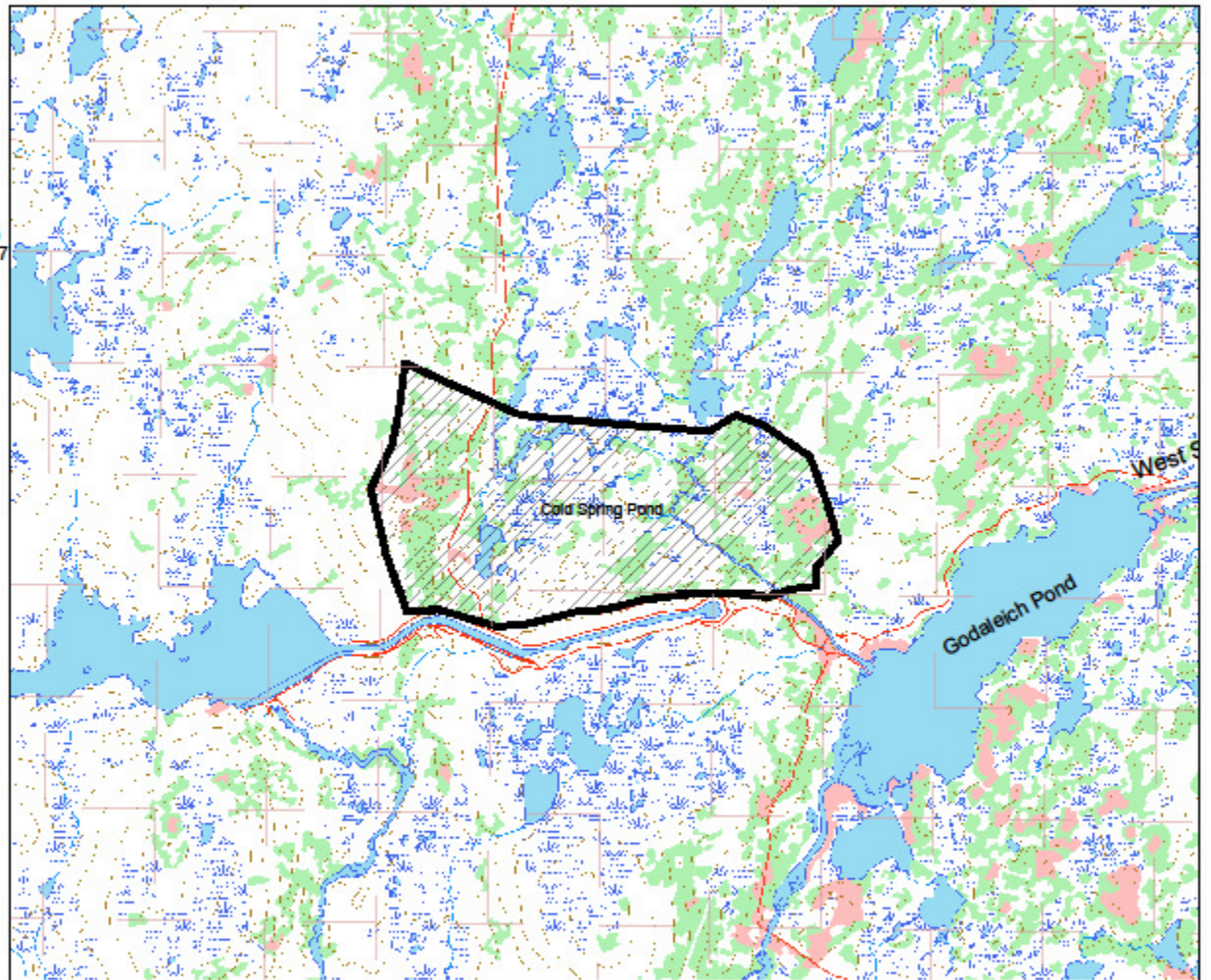
Domshell Ridge
Proposed
Harvest areas and Roads





Five year Plan (2013 - 2017)
Forest Management District 07

Cold Spring Pond
Proposed
Harvest areas and Roads

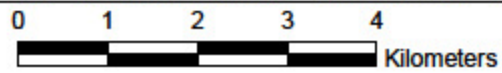
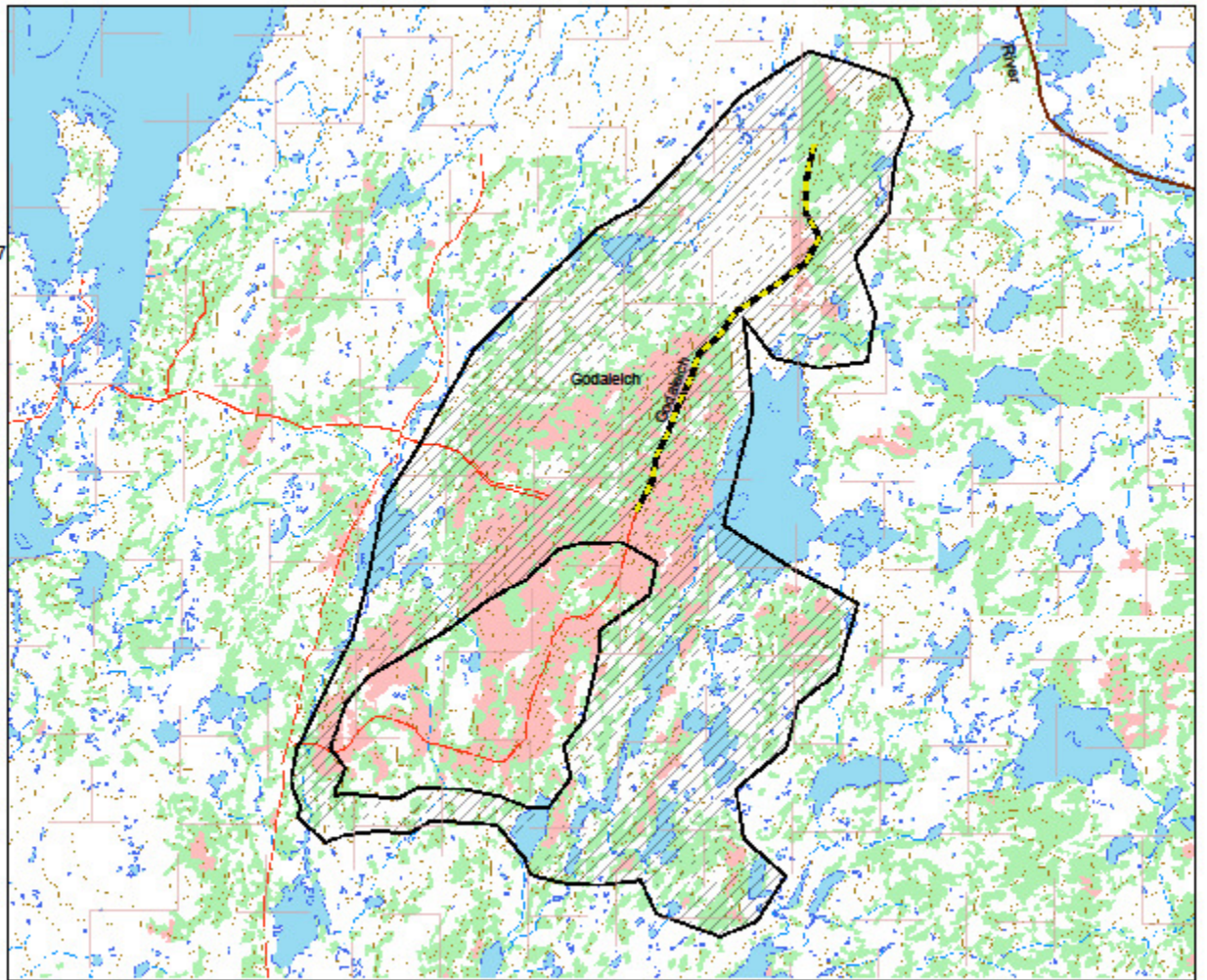


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Five year Plan (2013 - 2017)
Forest Management District 07

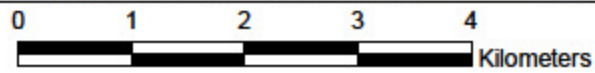
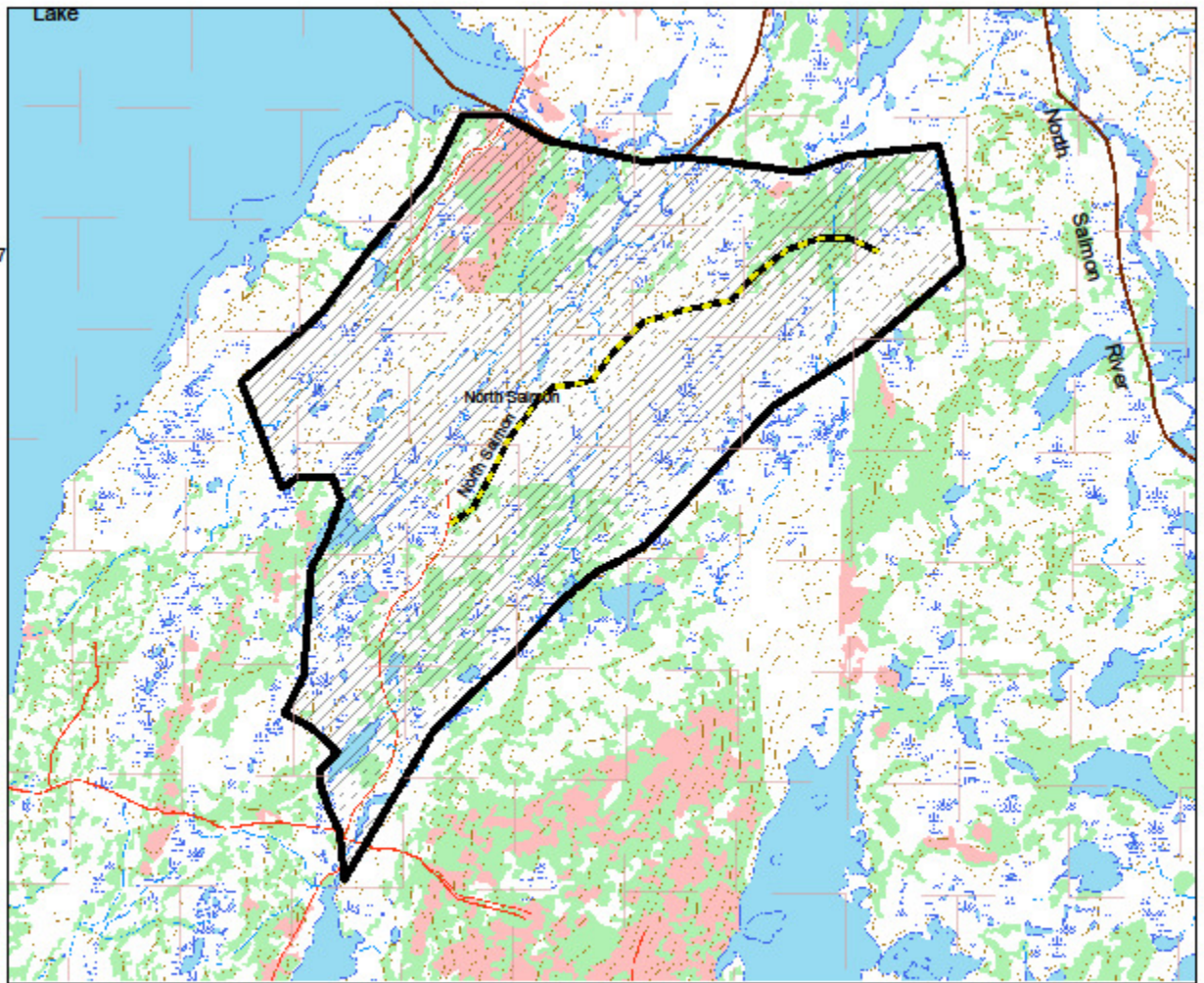
Godaleich
Proposed
Harvest areas and Roads





Five year Plan (2013 - 2017)
Forest Management District 07

North Salmon
Proposed
Harvest areas and Roads



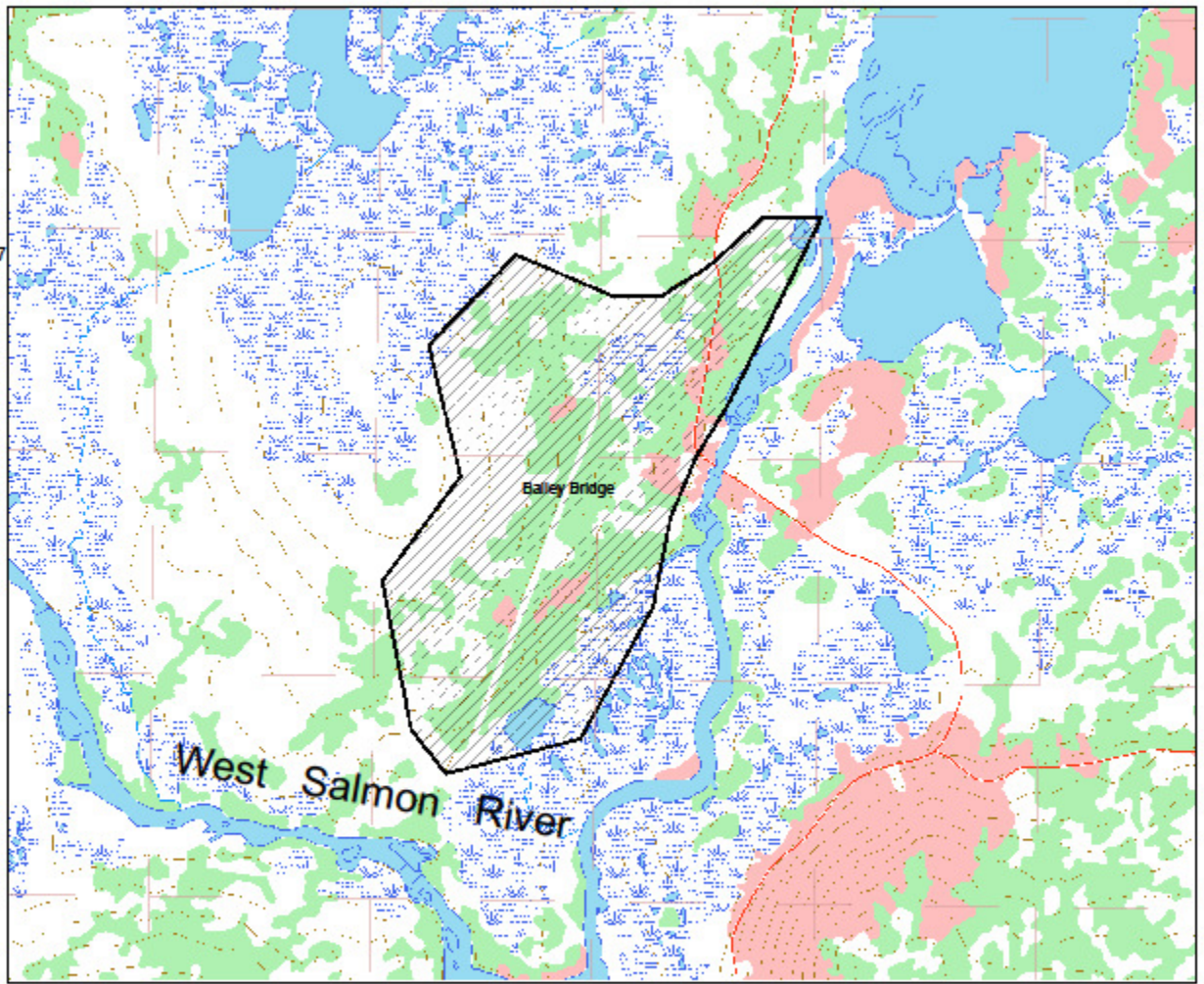


Five year Plan (2013 - 2017)
Forest Management District 07

Bailey Bridge
proposed
Harvest areas and Roads

Legend

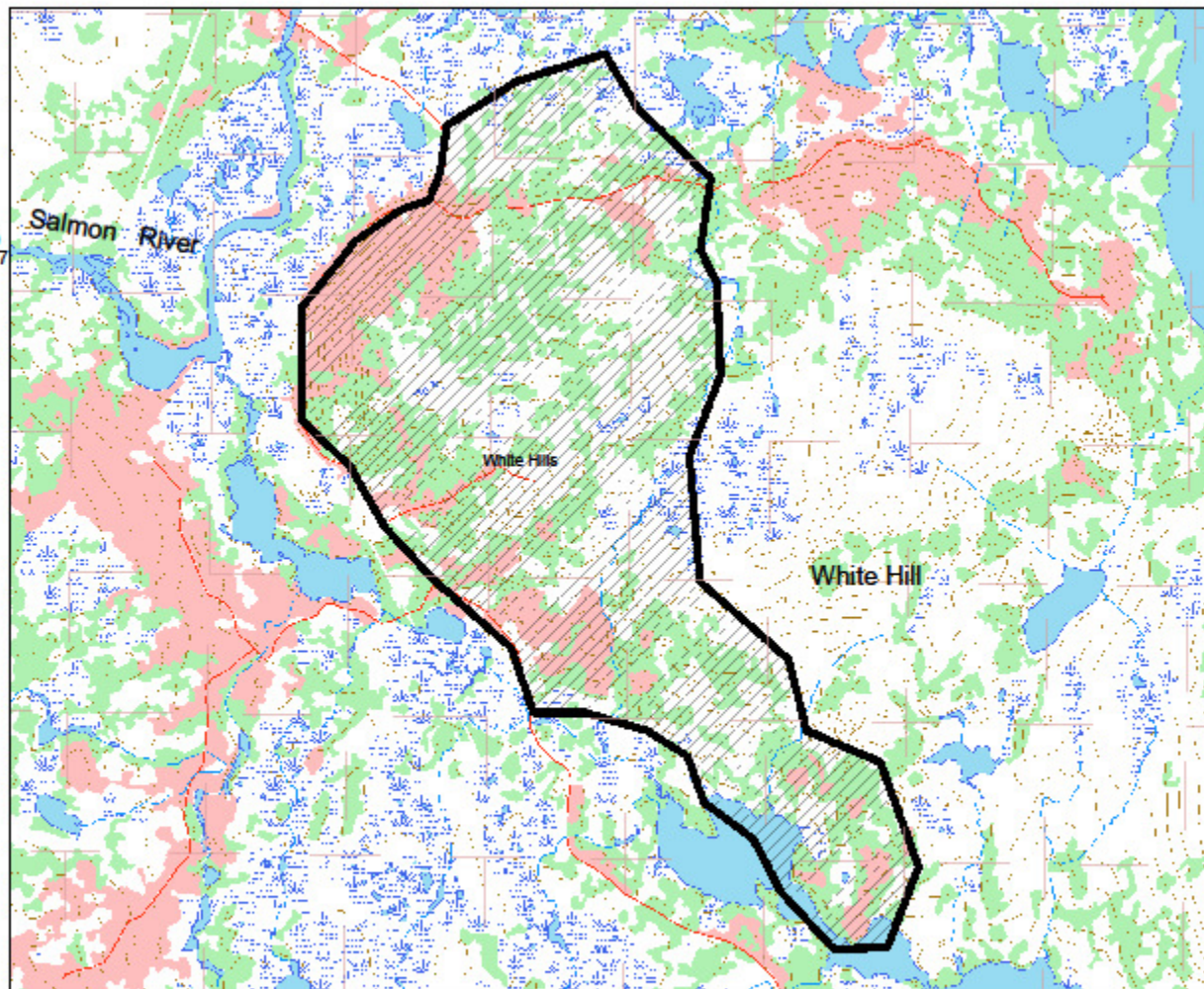
- Dist7_proposed_roads
- C2-wcon
- C2
- C
- df_boundary
- Dist7_commercial_block
- contour
- powerline
- streams
- roads
- immature
- mature
- waterbodies
- wetlands





Five year Plan (2013 - 2017)
Forest Management District 07

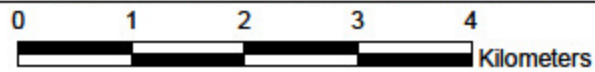
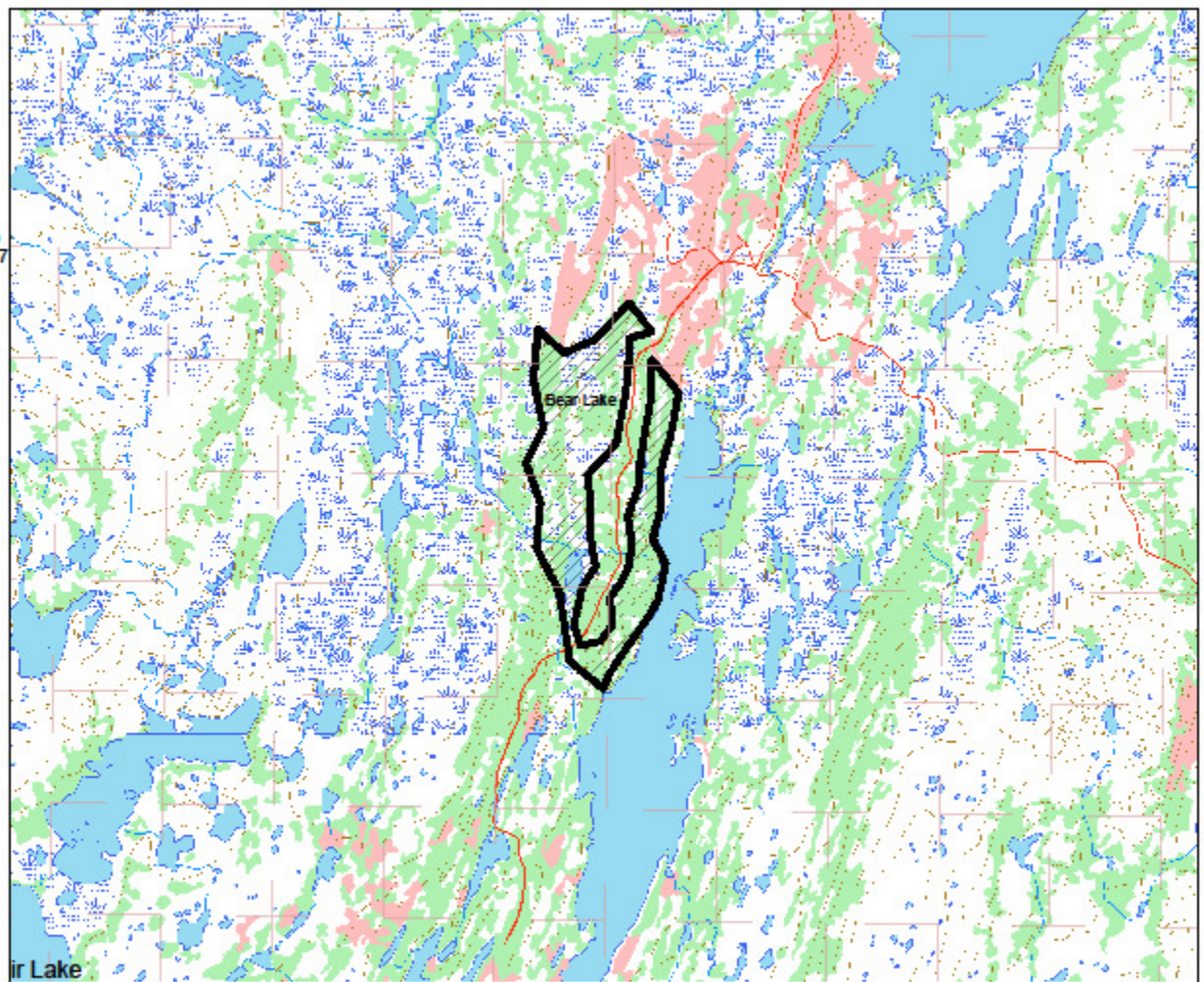
White Hills
Proposed
Harvest areas and Roads





Five year Plan (2013 - 2017)
Forest Management District 07

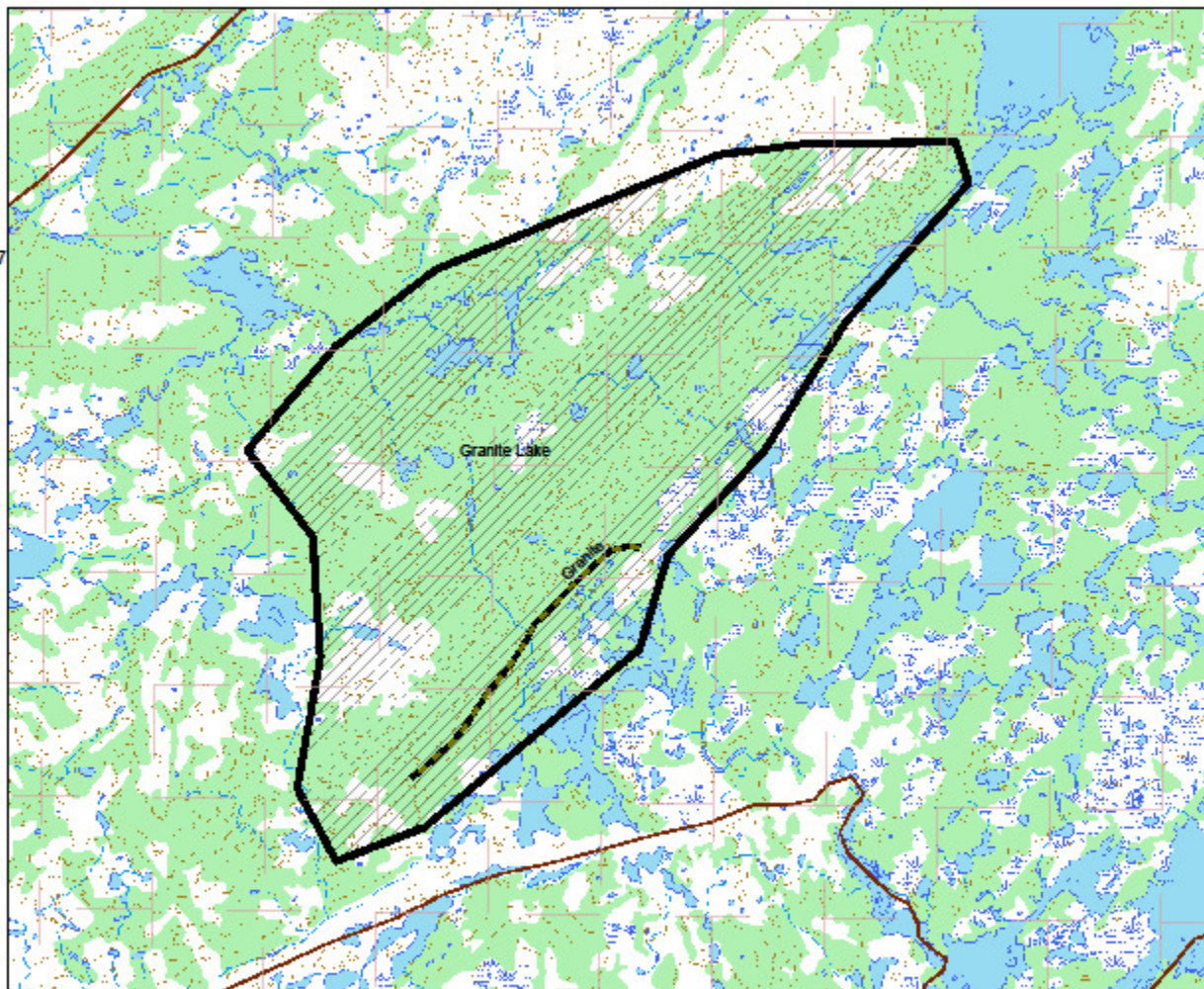
**Bear Lake
Proposed
Harvest areas and Roads**





Five year Plan (2013 - 2017)
Forest Management District 07

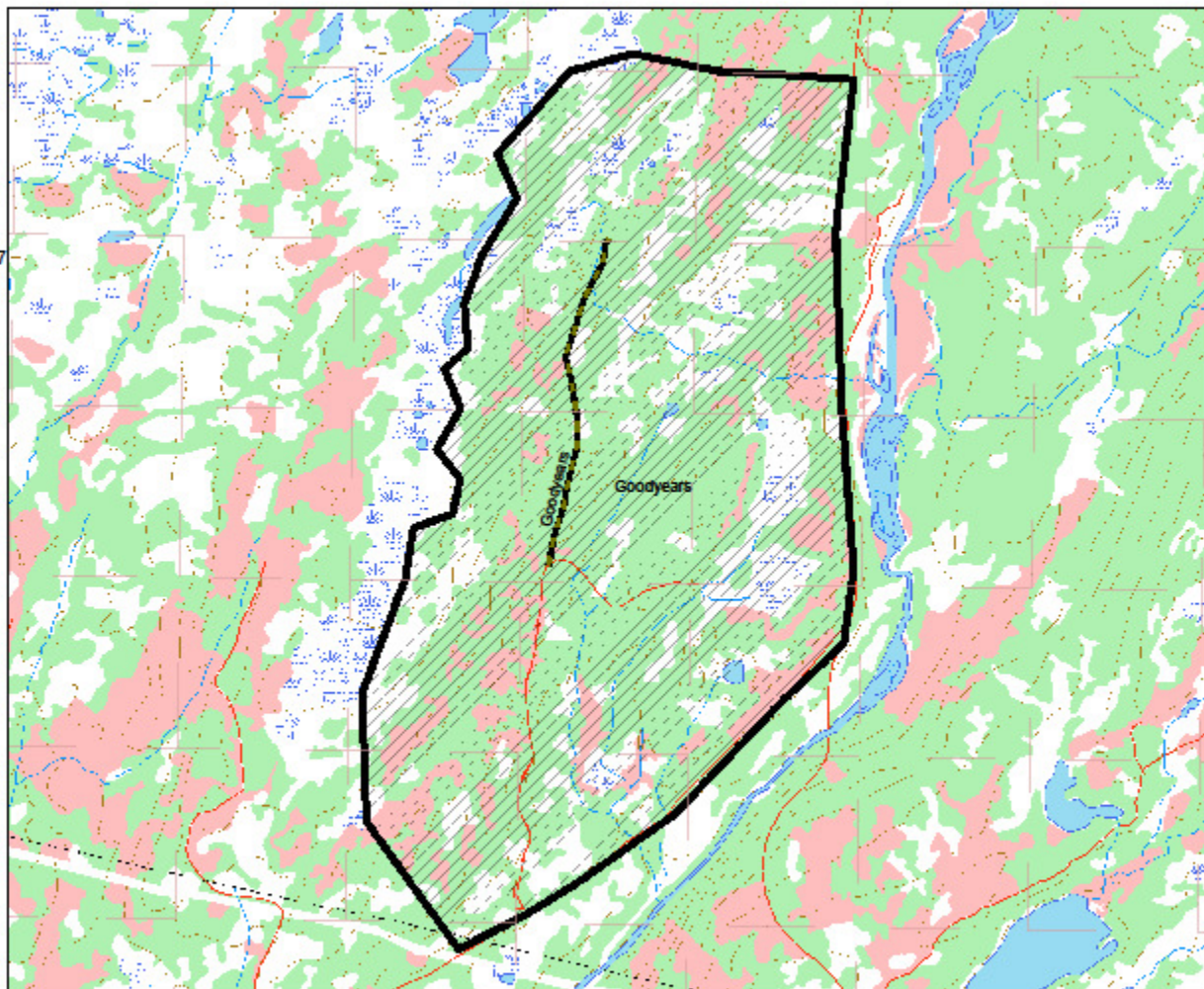
Granite lake
Proposed
Harvest areas and Roads





Five year Plan (2013 - 2017)
Forest Management District 07

Goodyears
Proposed
Harvest areas and Roads



0 1 2 3 4
Kilometers



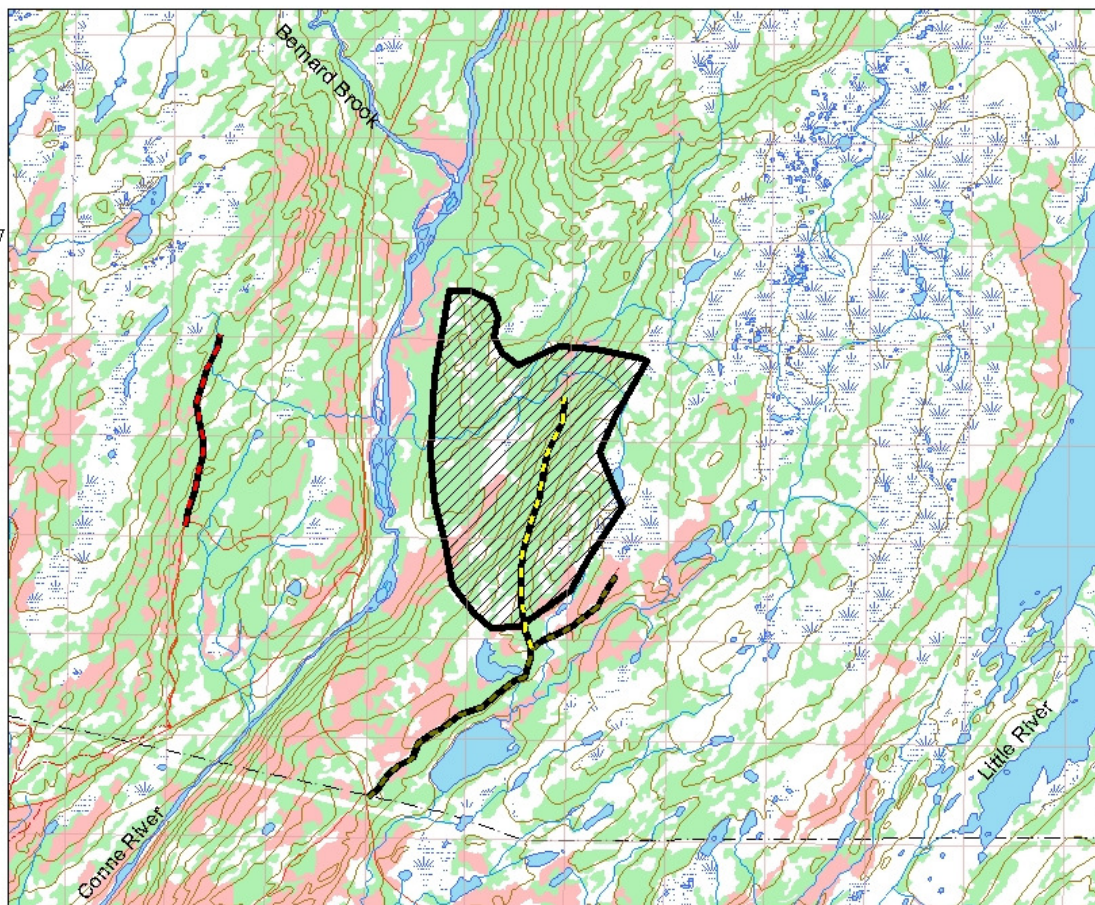
Five year Plan (2013 - 2017)
Forest Management District 07

Camp 6
Proposed
Harvest areas and Roads

Legend

Dist7_proposed_roads

-  C
-  C-2
-  C-2 region
-  df_boundary
-  Dist7_commercial_borders
-  contour
-  stream
-  road
-  immature
-  mature
-  waterbodies
-  wetlands



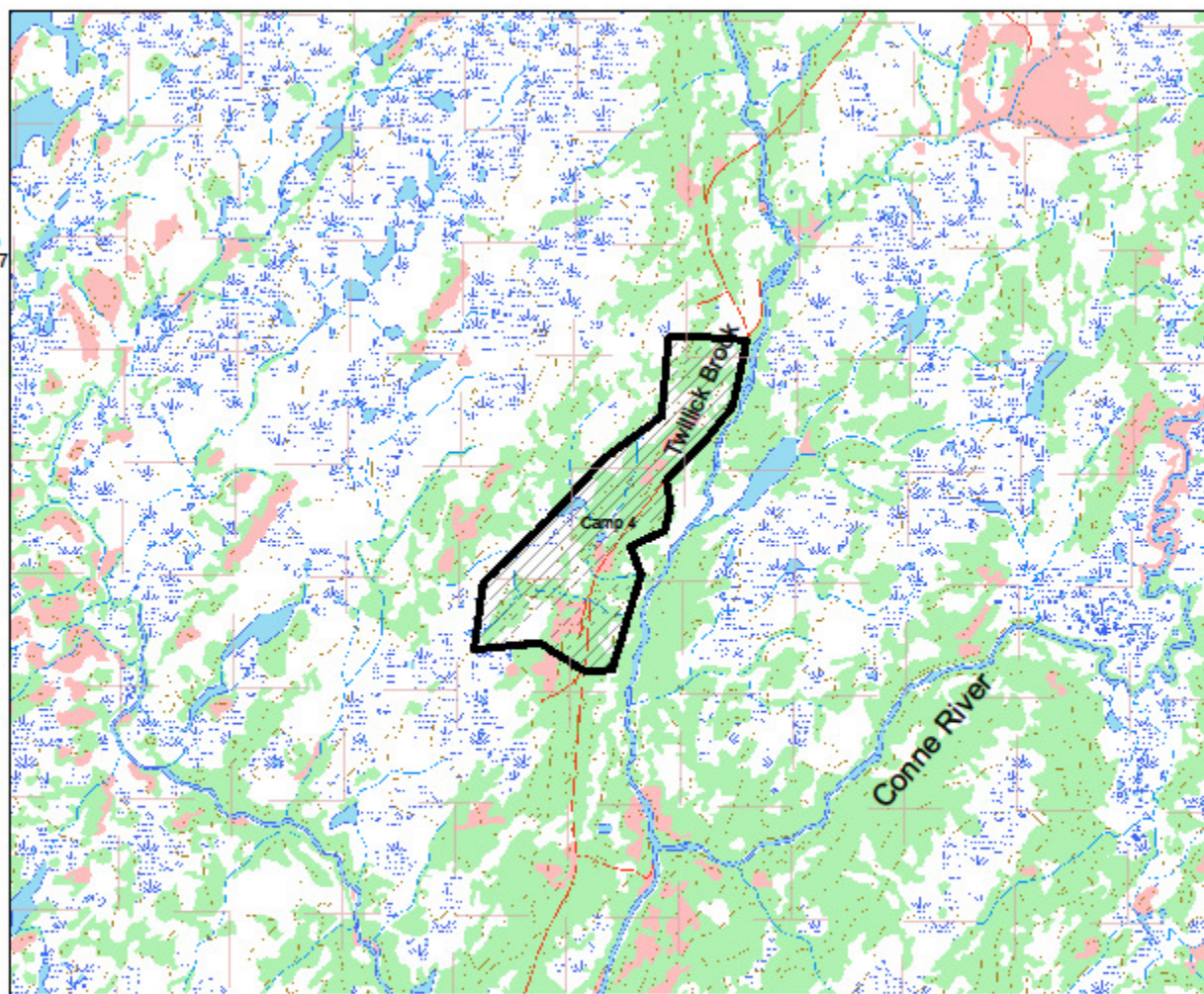


Five year Plan (2013 - 2017)
Forest Management District 07

Camp 4
Proposed
Harvest areas and Roads

Legend

- Dist7_proposed_roads
- C2-wcon
- C2
- C
- df_boundary
- Dist7_commercial_blocks
- contours
- powerline
- streams
- roads
- immature
- mature
- waterbodies
- wetlands

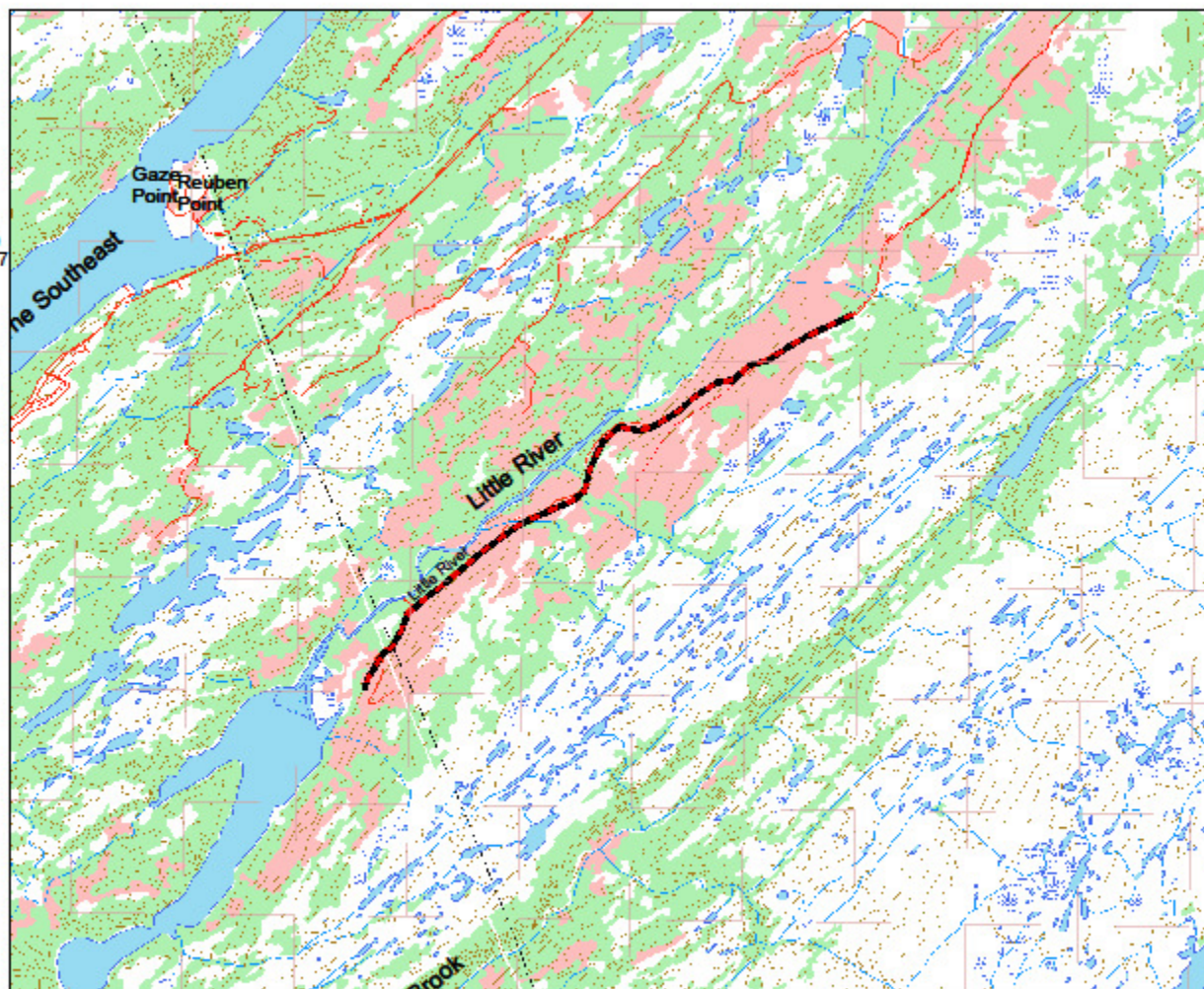


0 1 2 3 4
Kilometers



Five year Plan (2013 - 2017)
Forest Management District 07

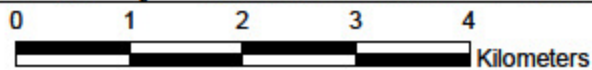
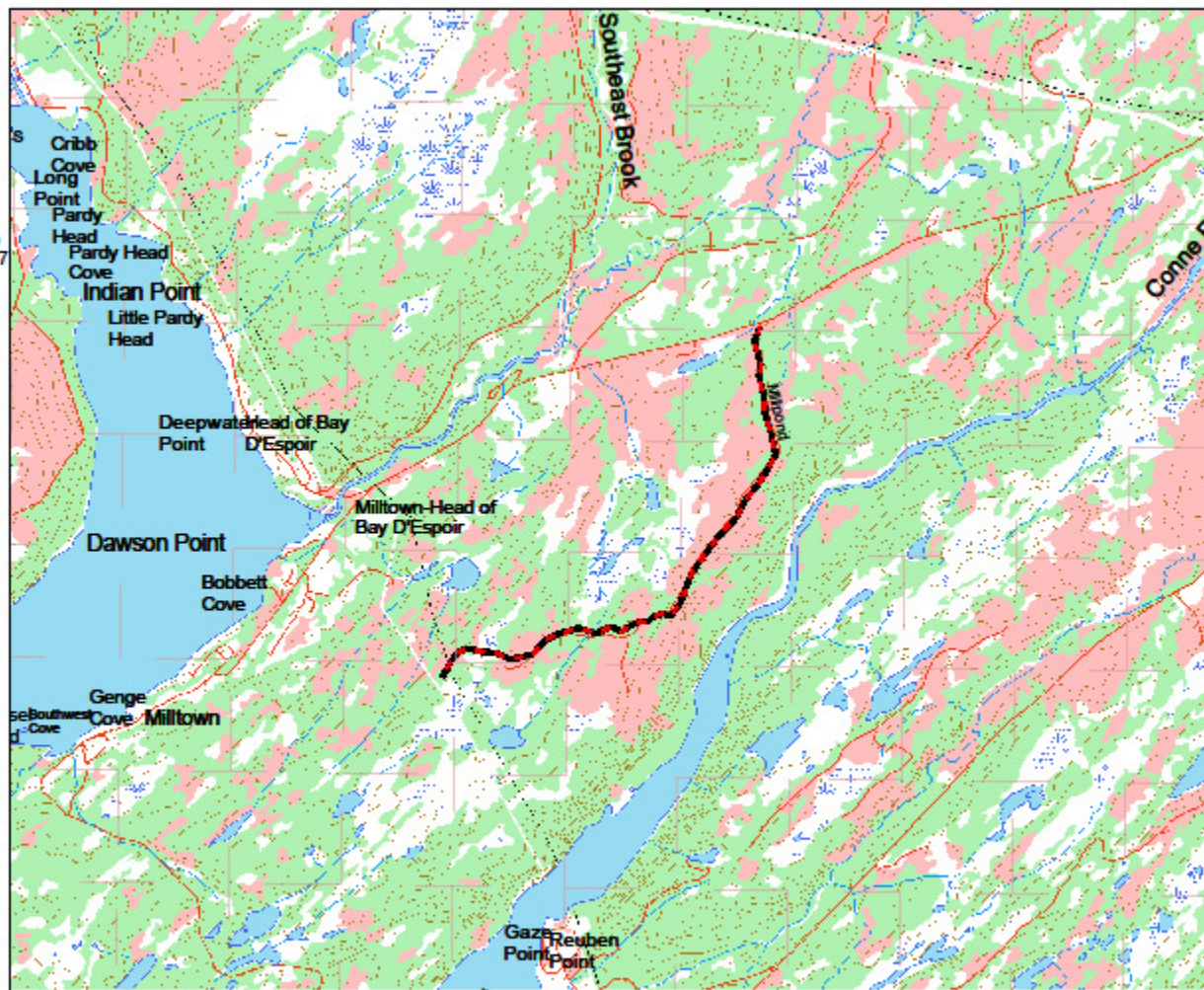
Little River
Proposed
Harvest areas and Roads





Five year Plan (2013 - 2017)
Forest Management District 07

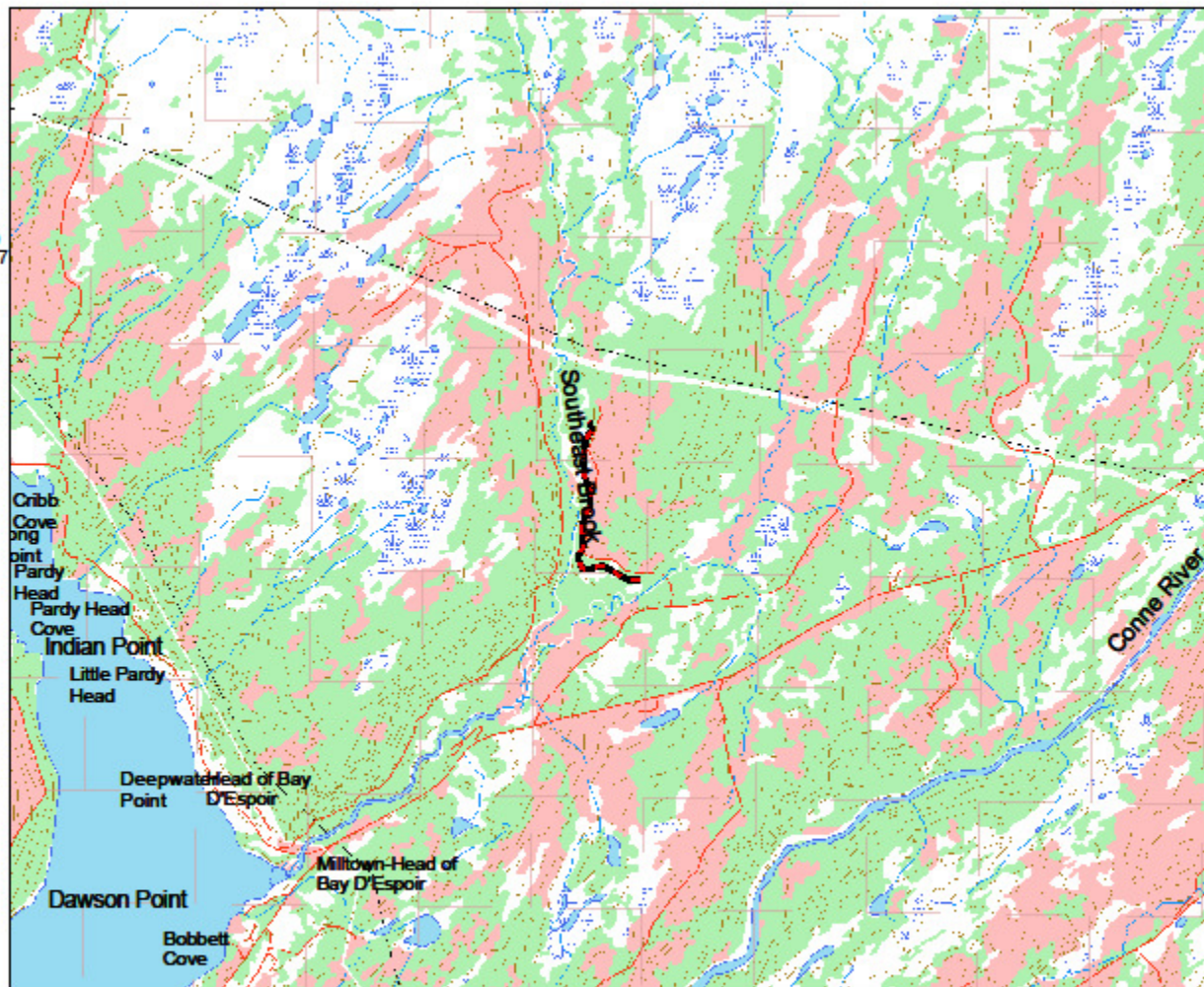
Millpond
Proposed
Harvest areas and Roads





Five year Plan (2013 - 2017)
Forest Management District 07

Twin Brooks
Proposed
Harvest areas and Roads



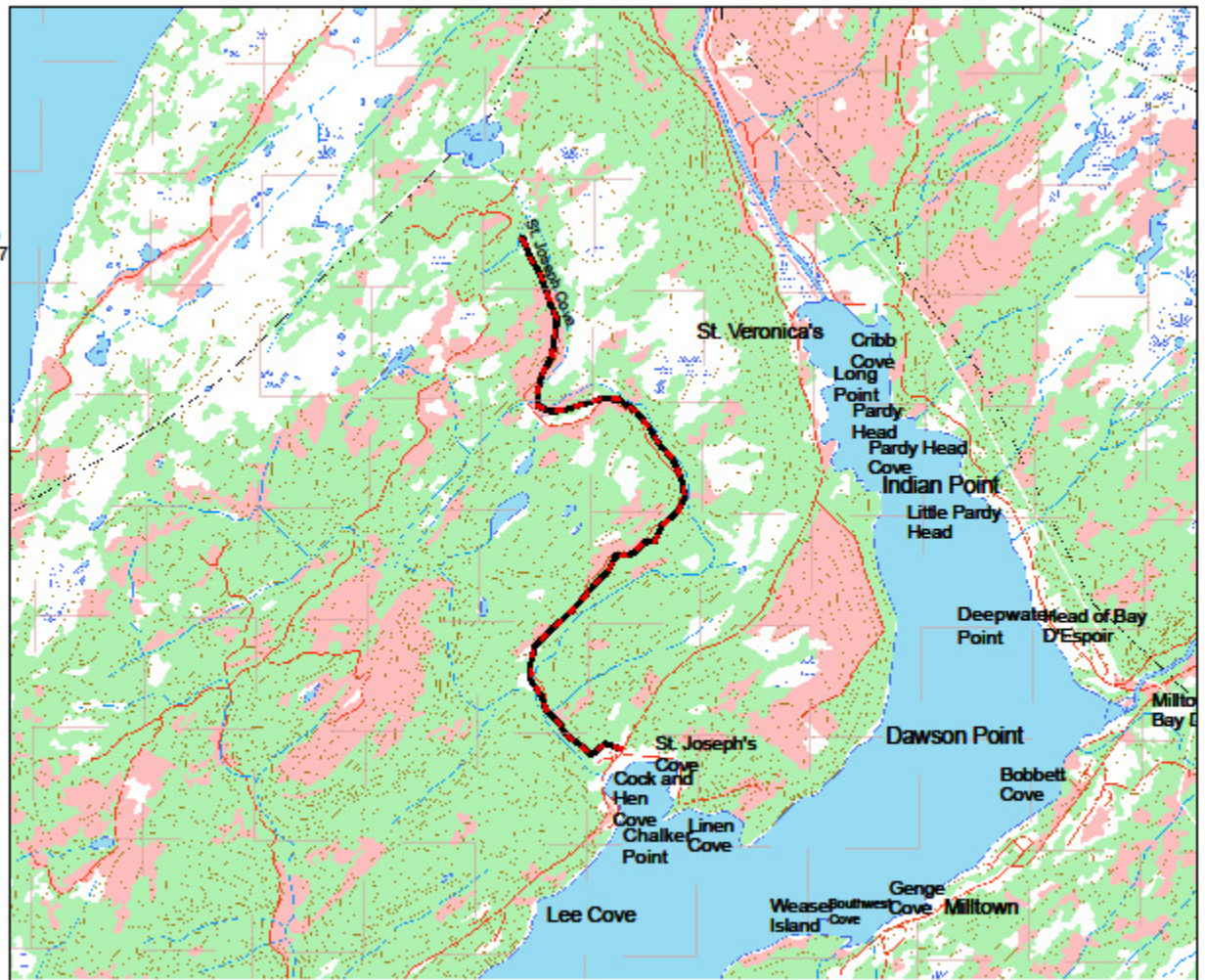


Five year Plan (2013 - 2017)
Forest Management District 07

St. Joseph Cove
Proposed
Harvest areas and Roads

Legend

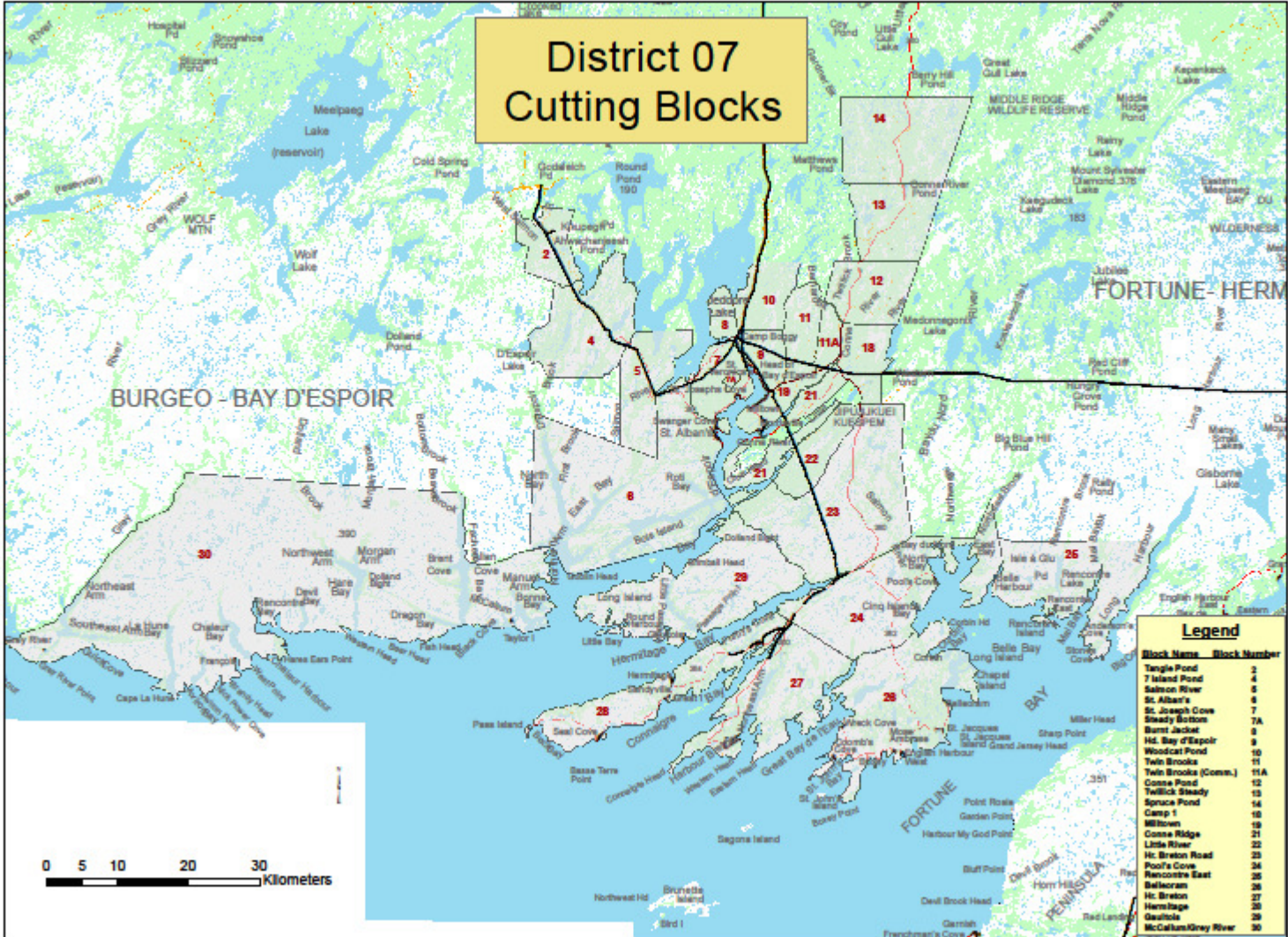
- Dist7_proposed_roads
- C2-recon
- C2
- C
- df_boundary
- Dist7_commercial_blocks
- contours
- powerline
- streams
- roads
- immature
- mature
- waterbodies
- wetlands



0 1 2 3 4
Kilometers

Appendix 6

District 07 Cutting Blocks



| Block Name | Block Number |
|---------------------|--------------|
| Tangle Pond | 2 |
| 7 Island Pond | 4 |
| Salmon River | 6 |
| St. Alban's | 8 |
| St. Joseph's | 7 |
| Sleazy Bottom | 7A |
| Burnt Jacket | 9 |
| Hd. Bay d'Espoir | 9 |
| Woodcut Pond | 10 |
| Twin Brooks | 11 |
| Twin Brooks (Comm.) | 11A |
| Combe Pond | 12 |
| Tallick Steady | 13 |
| Spruce Pond | 14 |
| Camp 1 | 16 |
| Milbrow | 19 |
| Combe Ridge | 21 |
| Little River | 22 |
| Hc. Breton Road | 23 |
| Pool's Cove | 24 |
| Rencontre East | 25 |
| Balfouran | 26 |
| Hc. Breton | 27 |
| Hermilage | 28 |
| Gauleide | 29 |
| McCallum/Gray River | 30 |

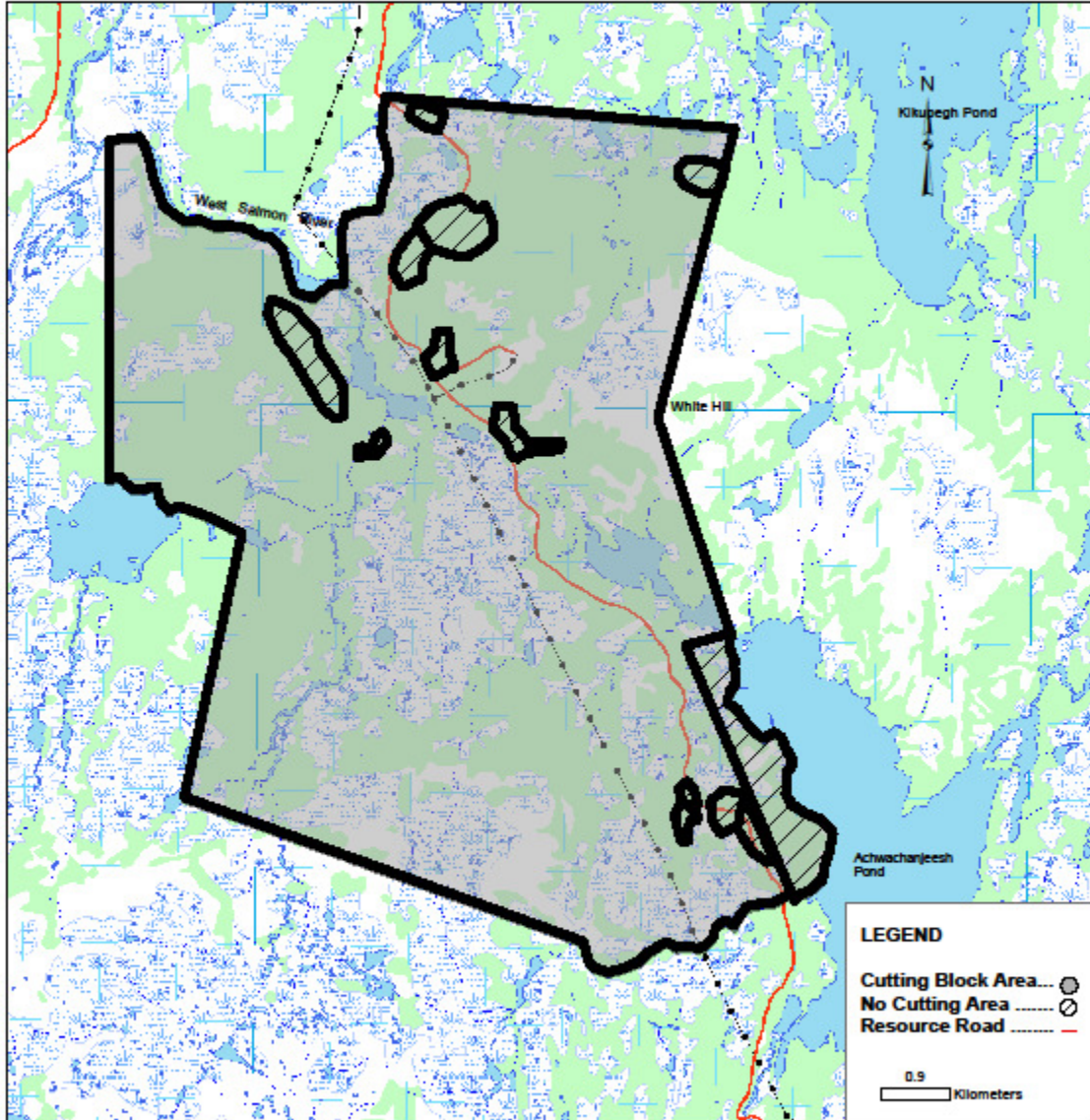
0 5 10 20 30 Kilometers

Appendix 7



CUTTING BLOCK NO. 2

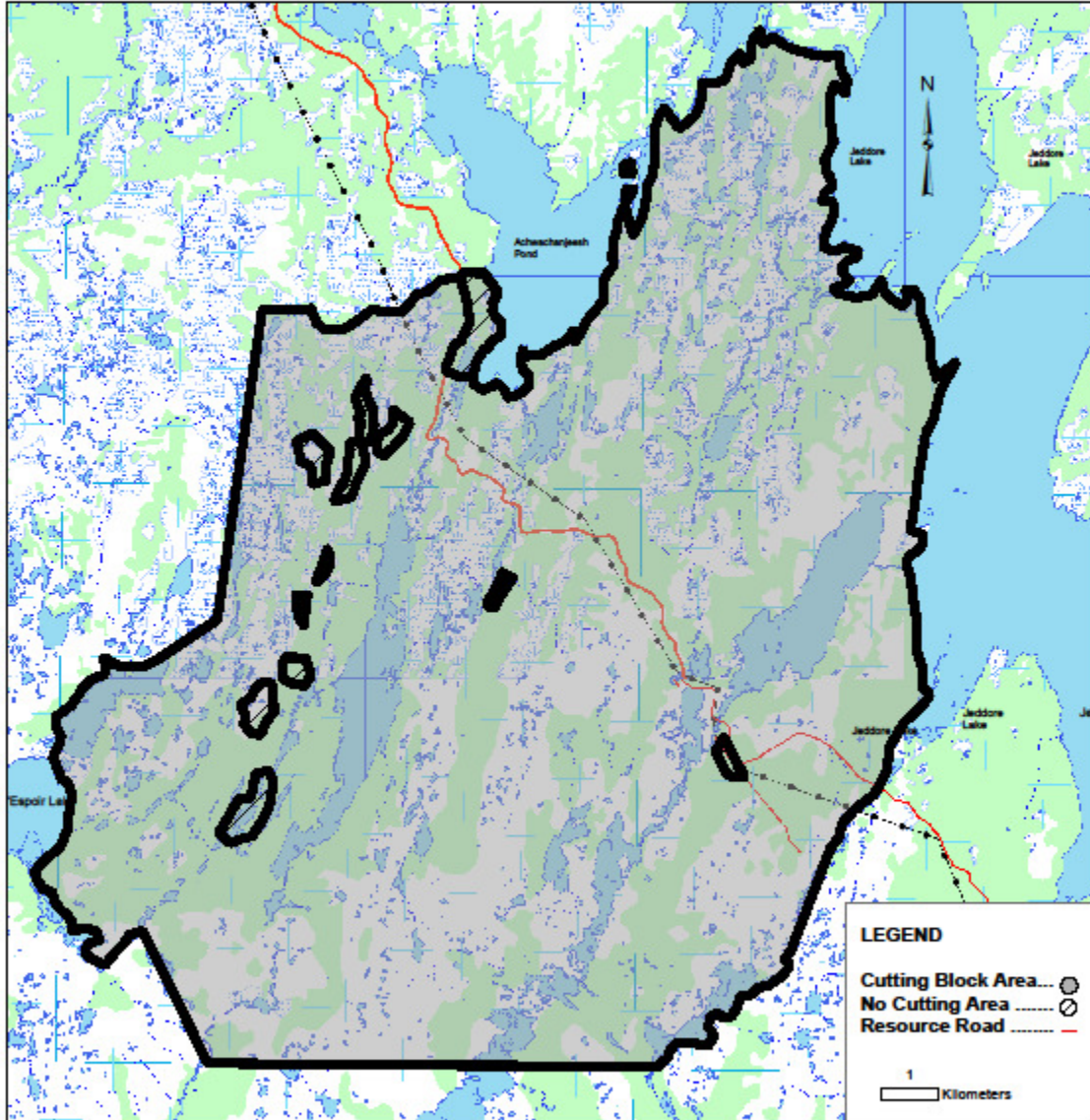
Newfoundland
Labrador



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A0H 2E0



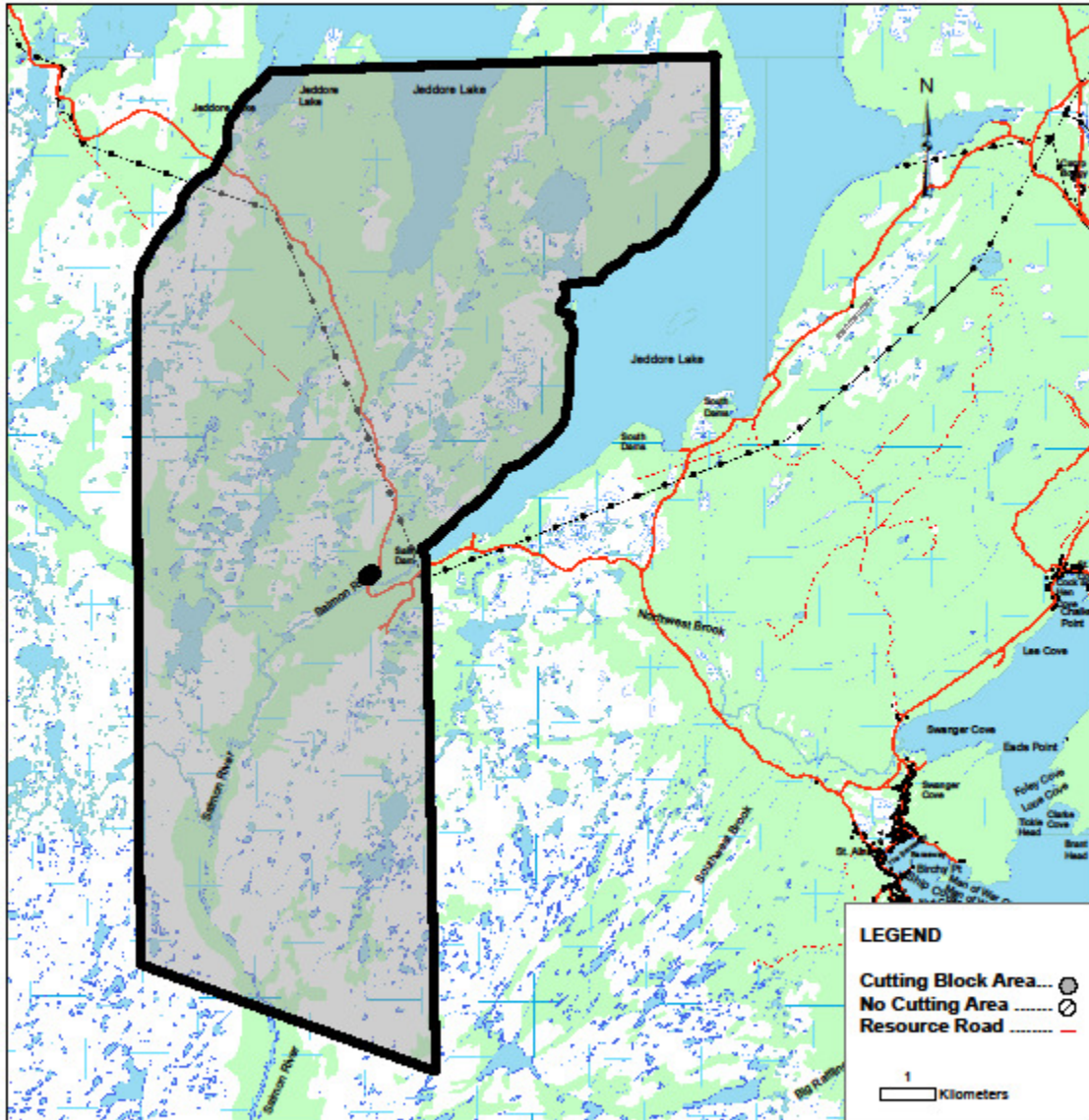
CUTTING BLOCK NO. 4



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CUTTING BLOCK NO. 5

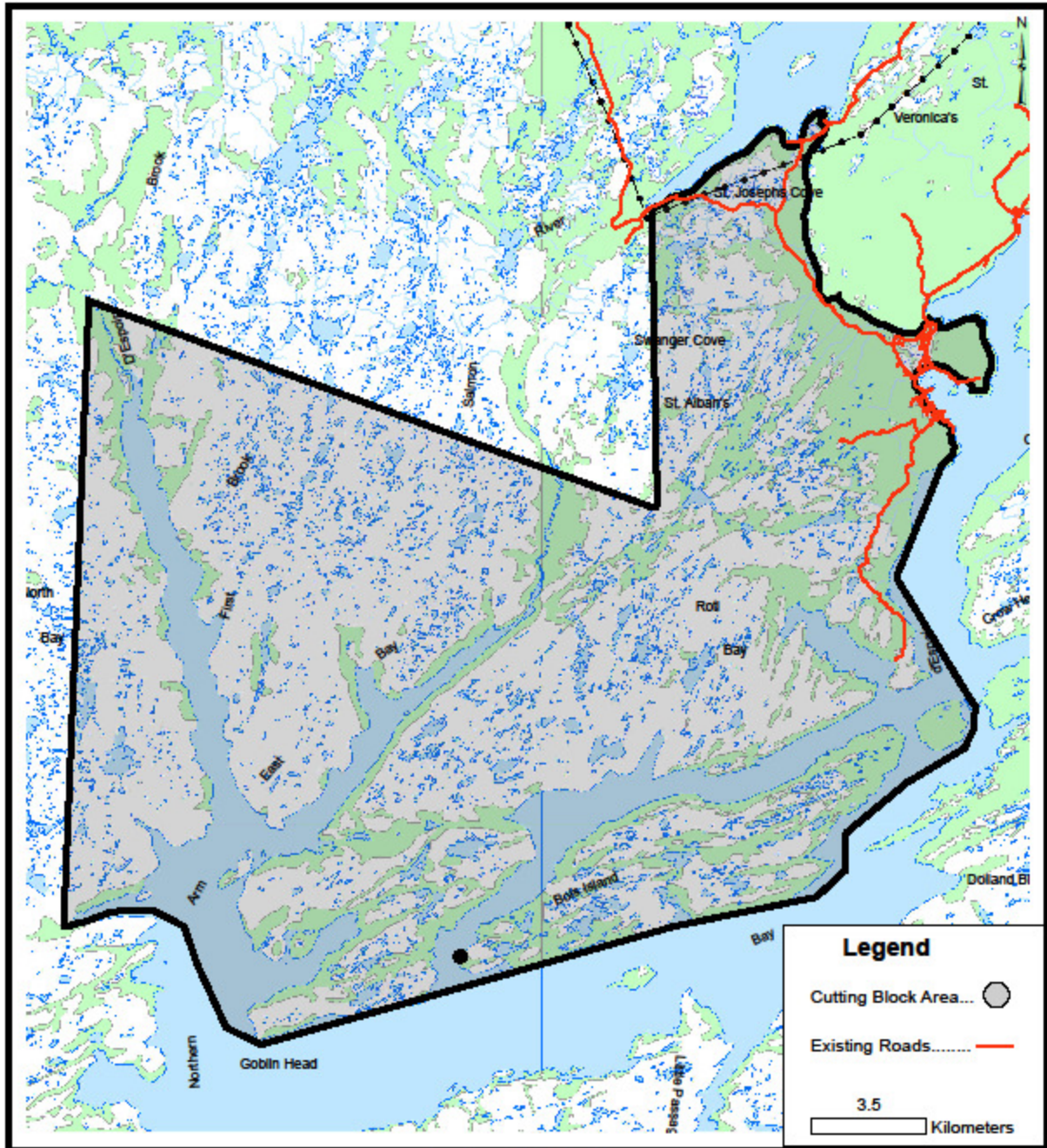


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CUTTING BLOCK NO. 6

Newfoundland
Labrador

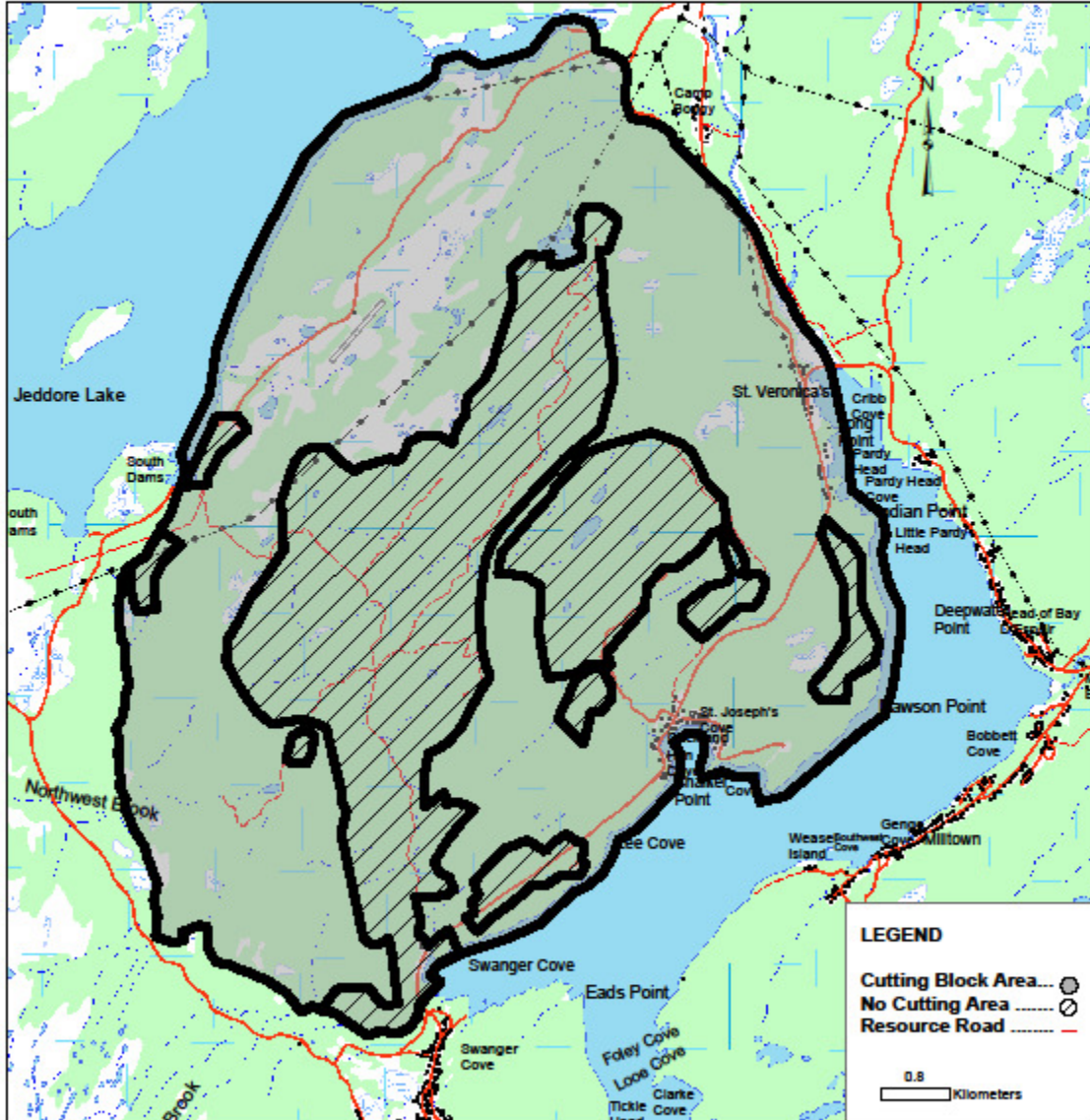


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CUTTING BLOCK NO. 7

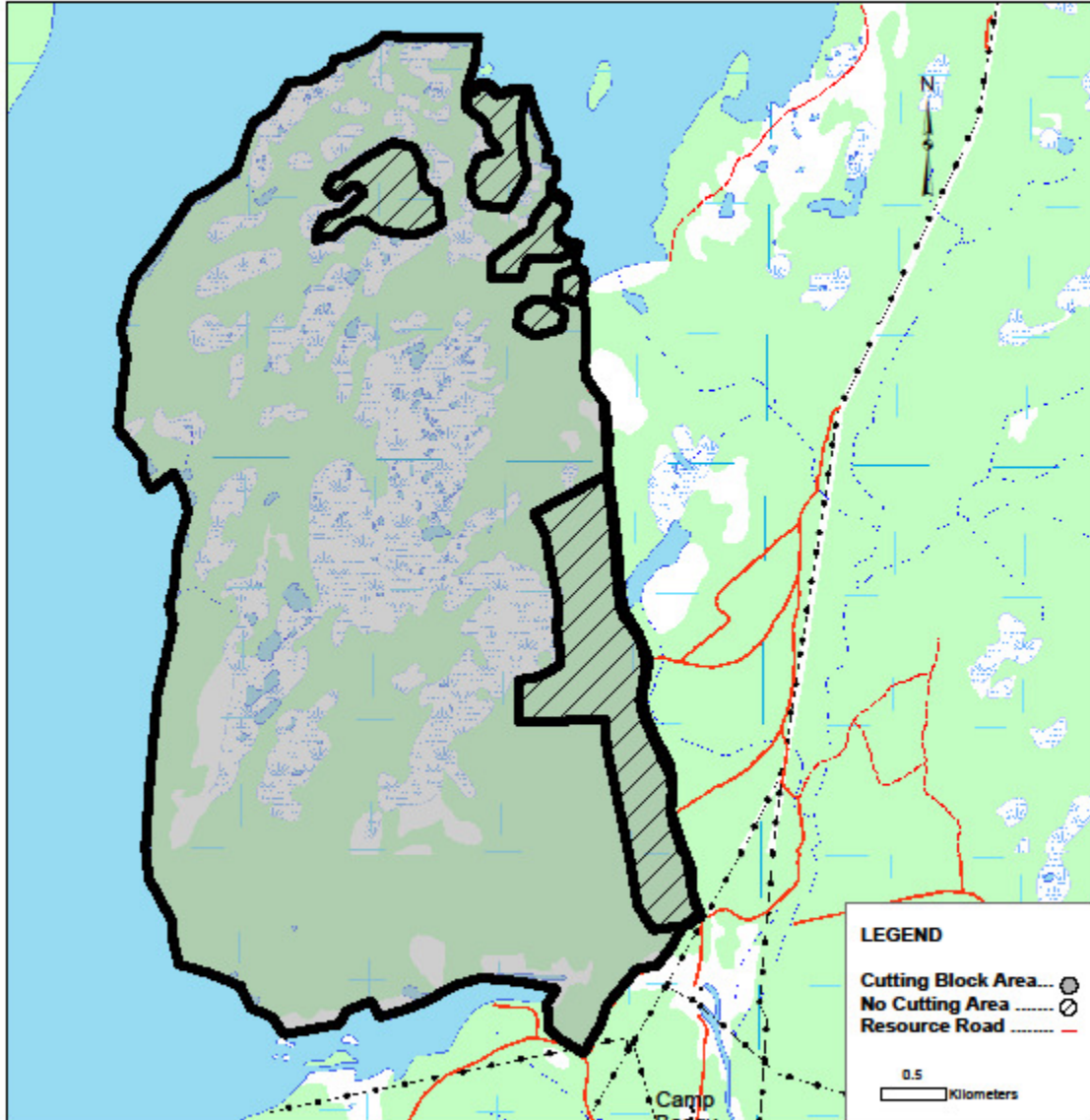
Newfoundland
Labrador



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CUTTING BLOCK NO. 8

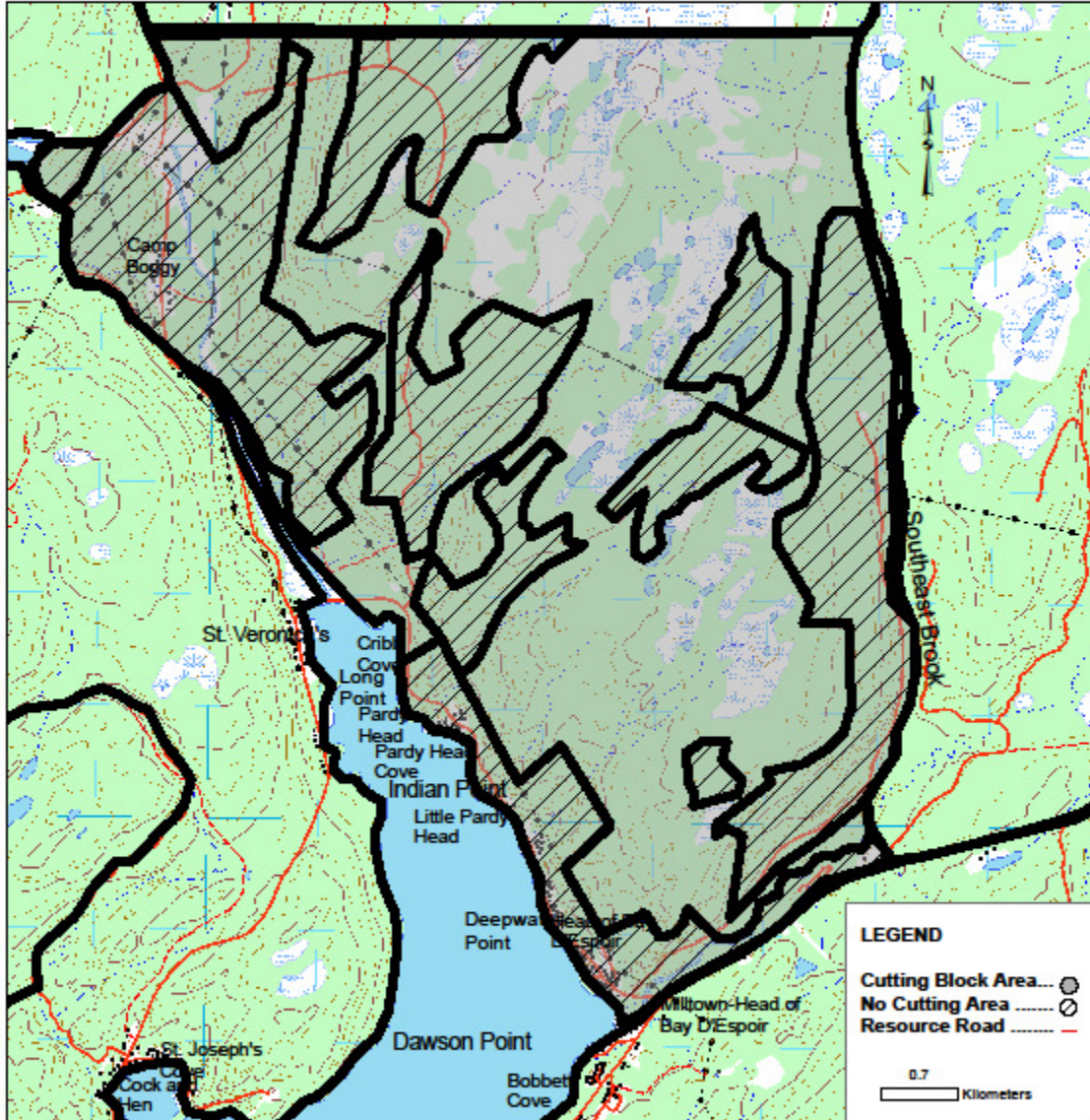


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CUTTING BLOCK NO. 9

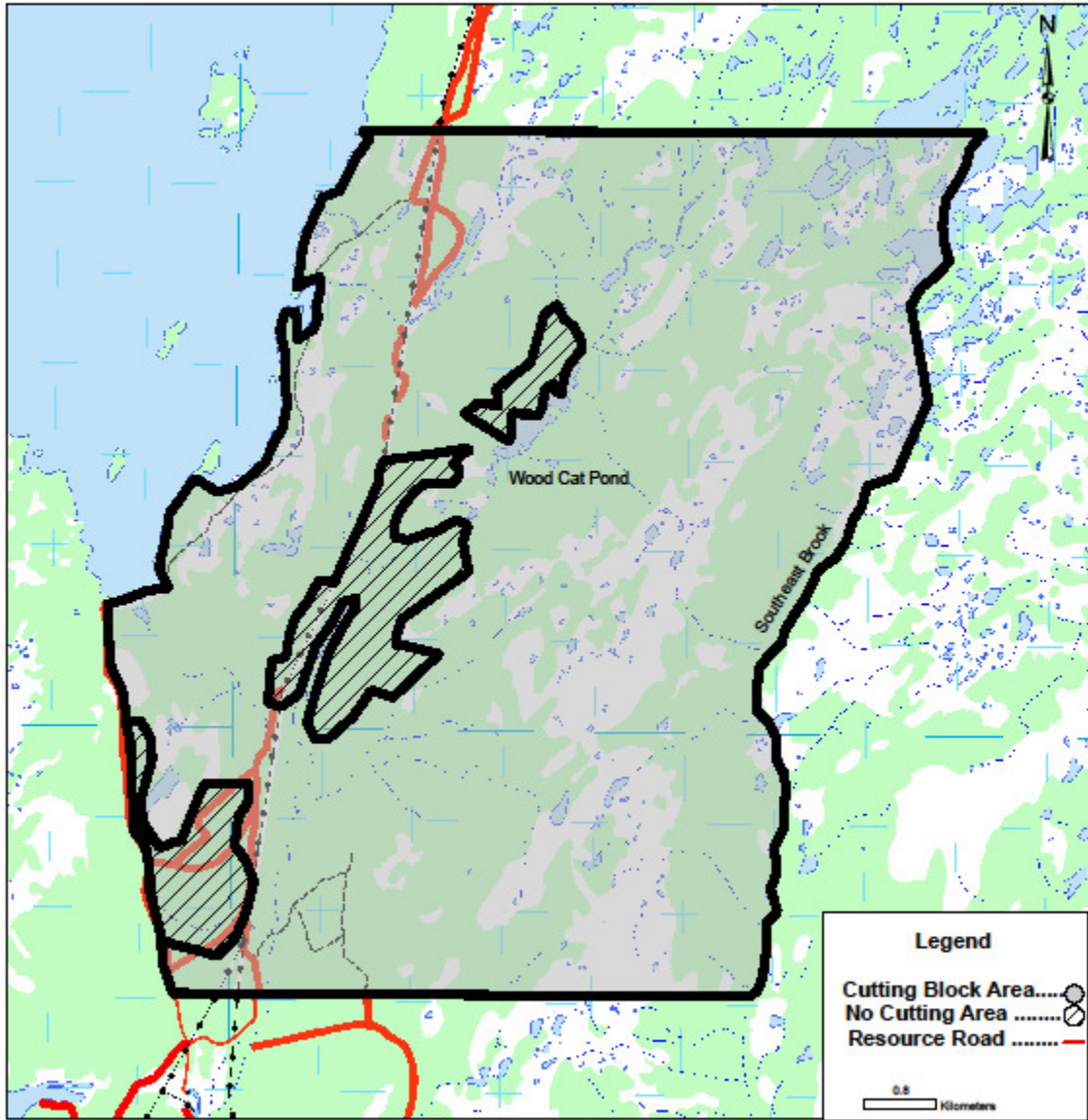
Newfoundland
Labrador



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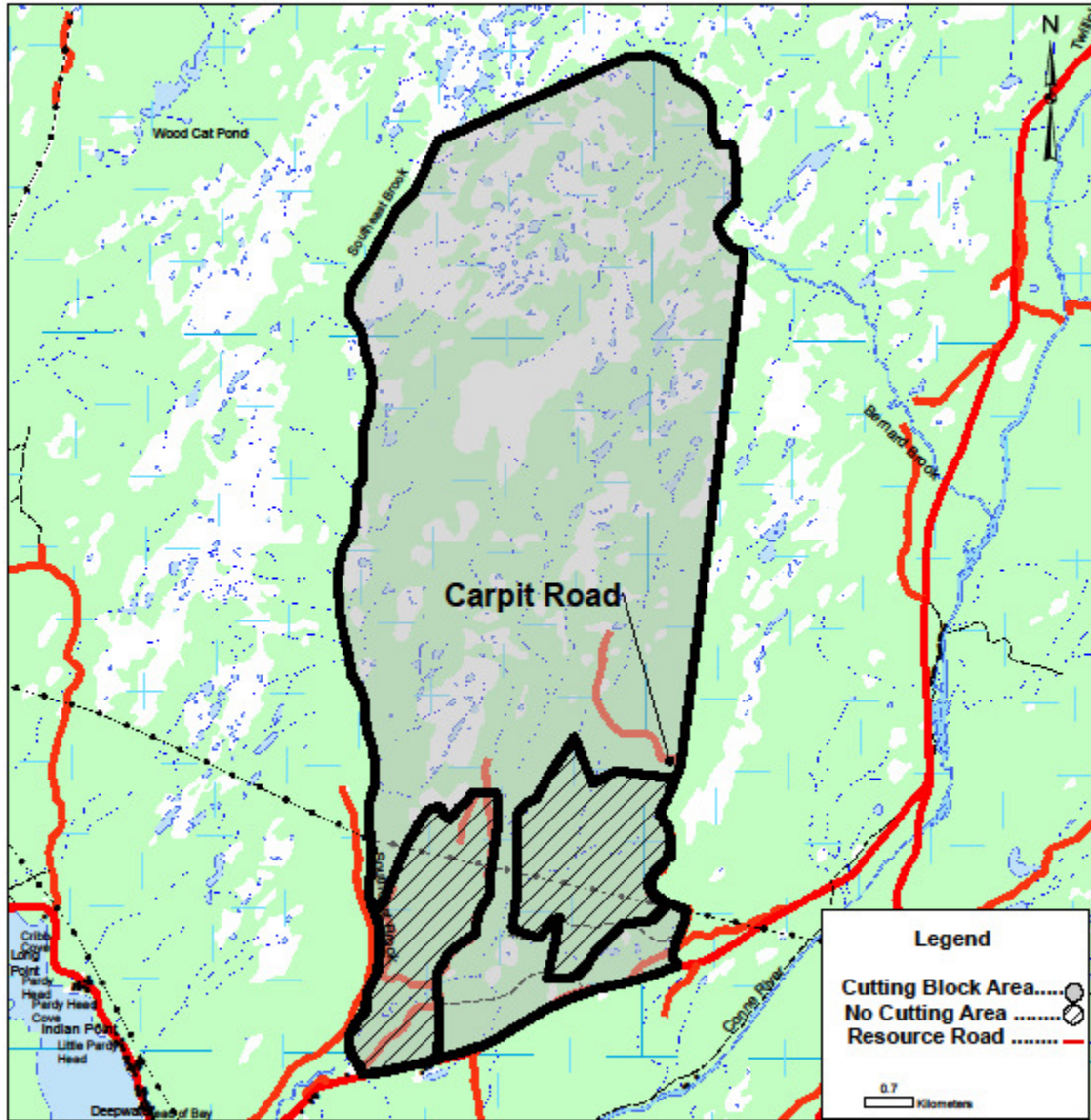
Cutting Block No. 10



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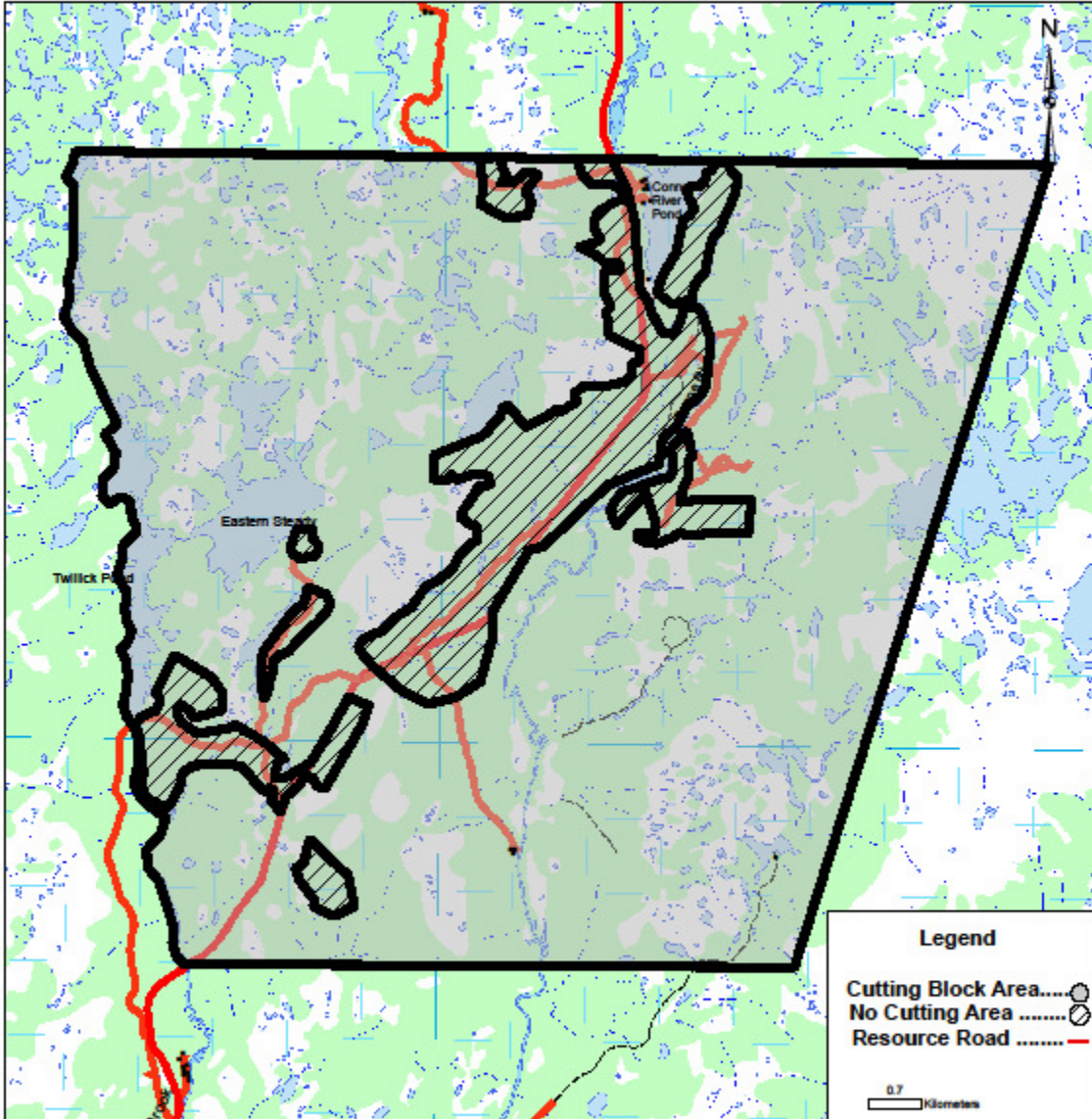
Cutting Block No. 11



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Cutting Block No. 13

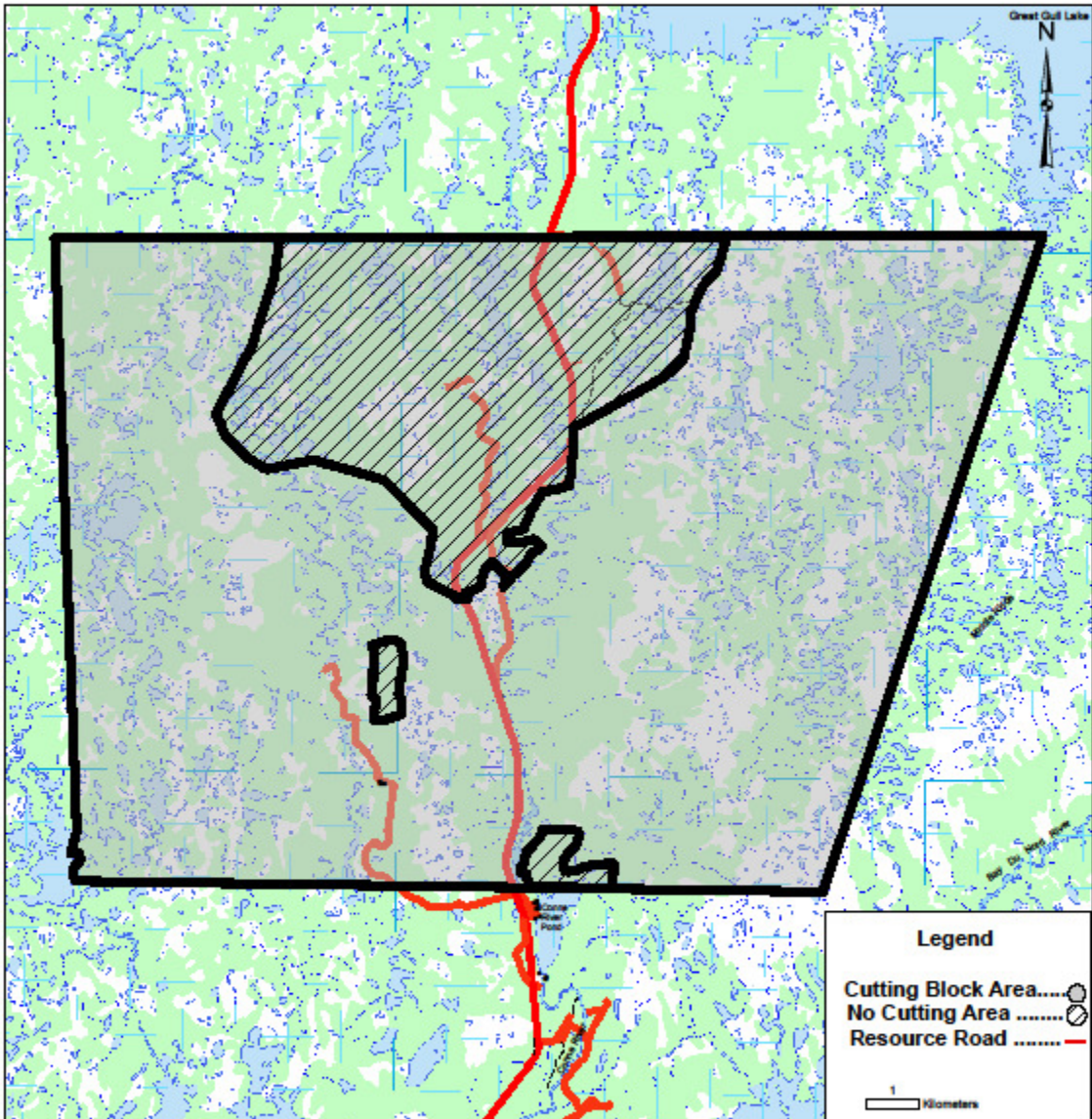


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Cutting Block No. 14

Newfoundland
Laborator

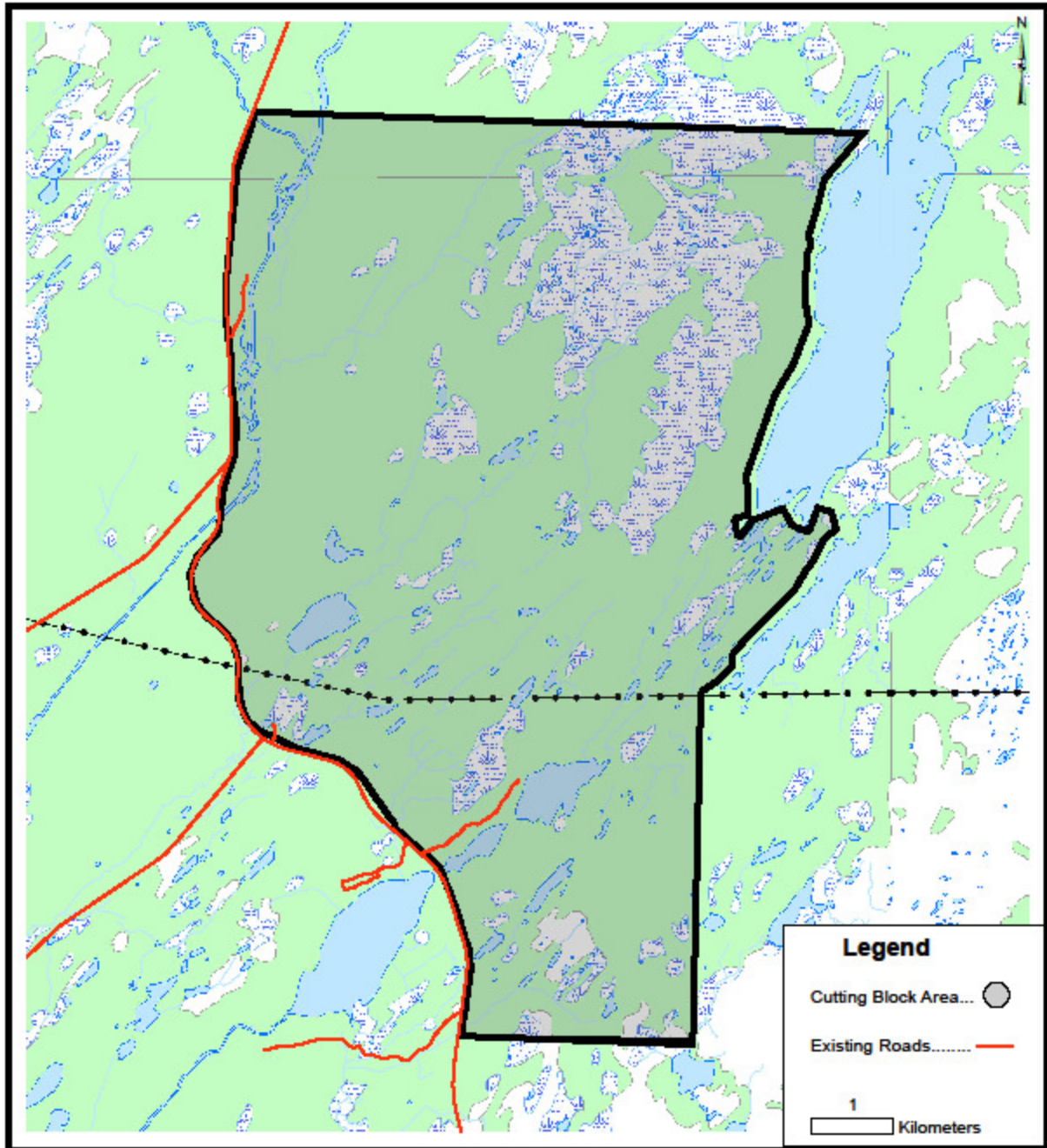


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**CUTTING BLOCK
NO. 18**

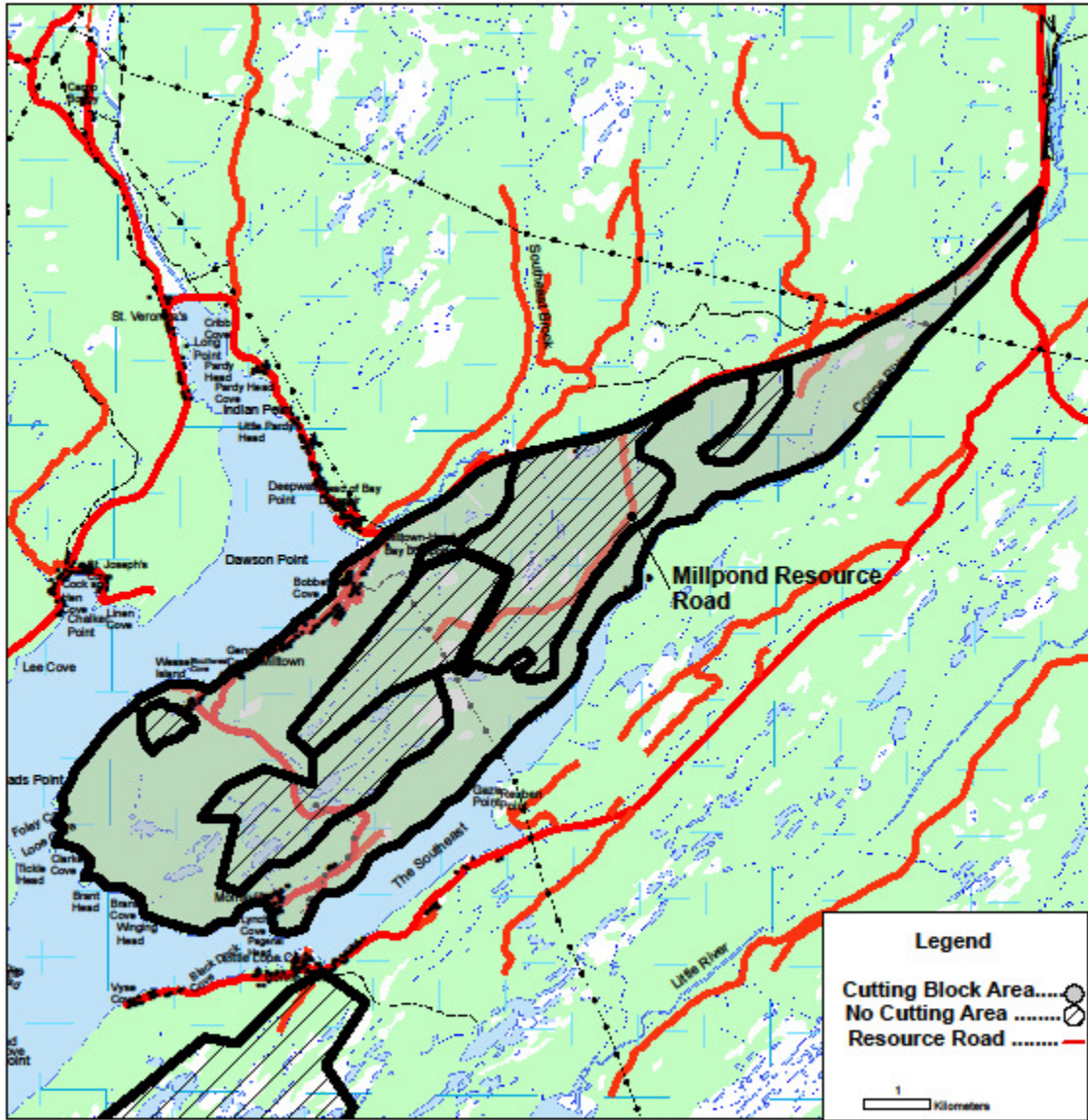
Newfoundland
Labrador



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Cutting Block No. 19

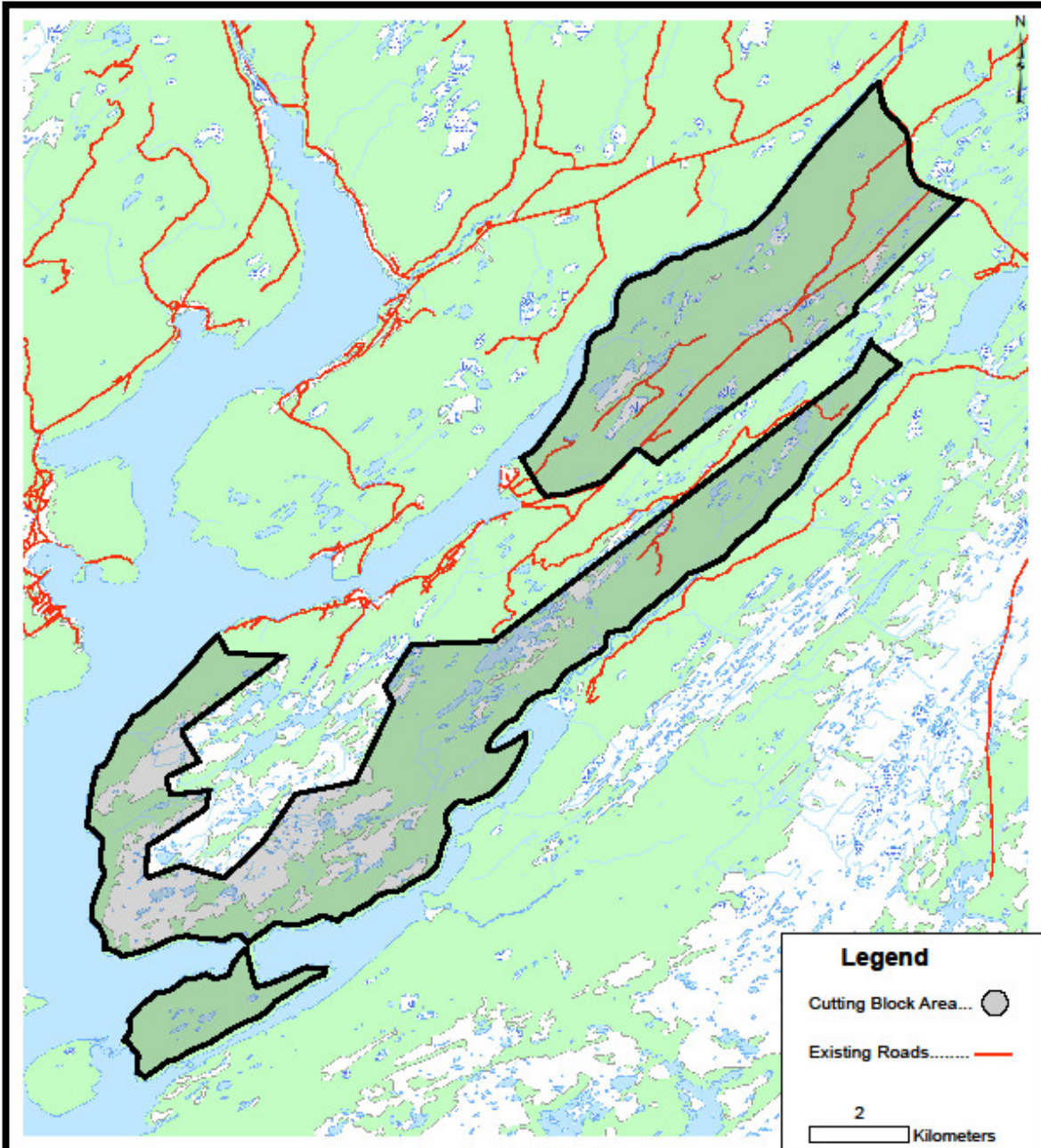


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CUTTING BLOCK NO. 21

Newfoundland
Labrador

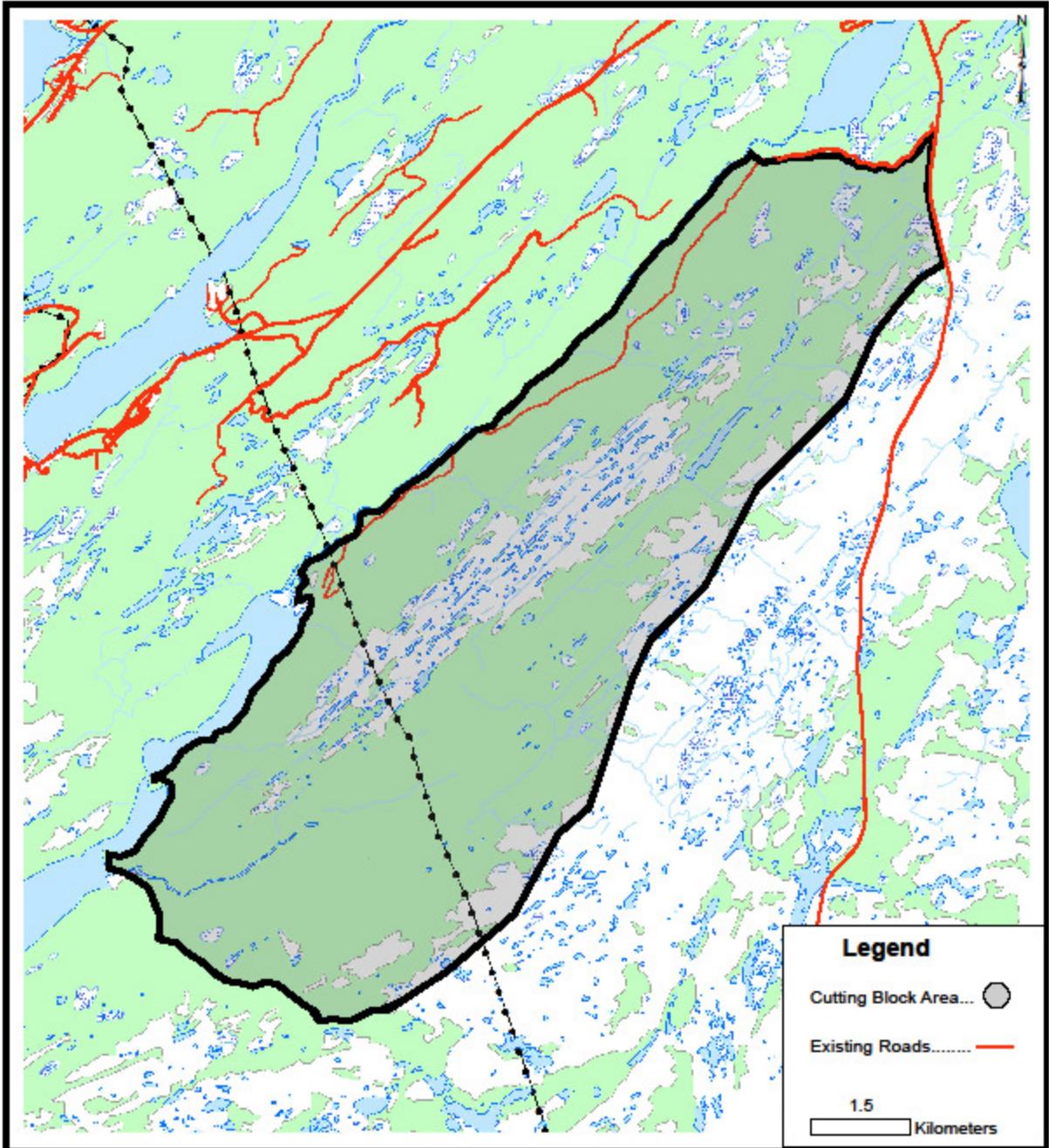


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CUTTING BLOCK
NO. 22

Newfoundland
Labrador

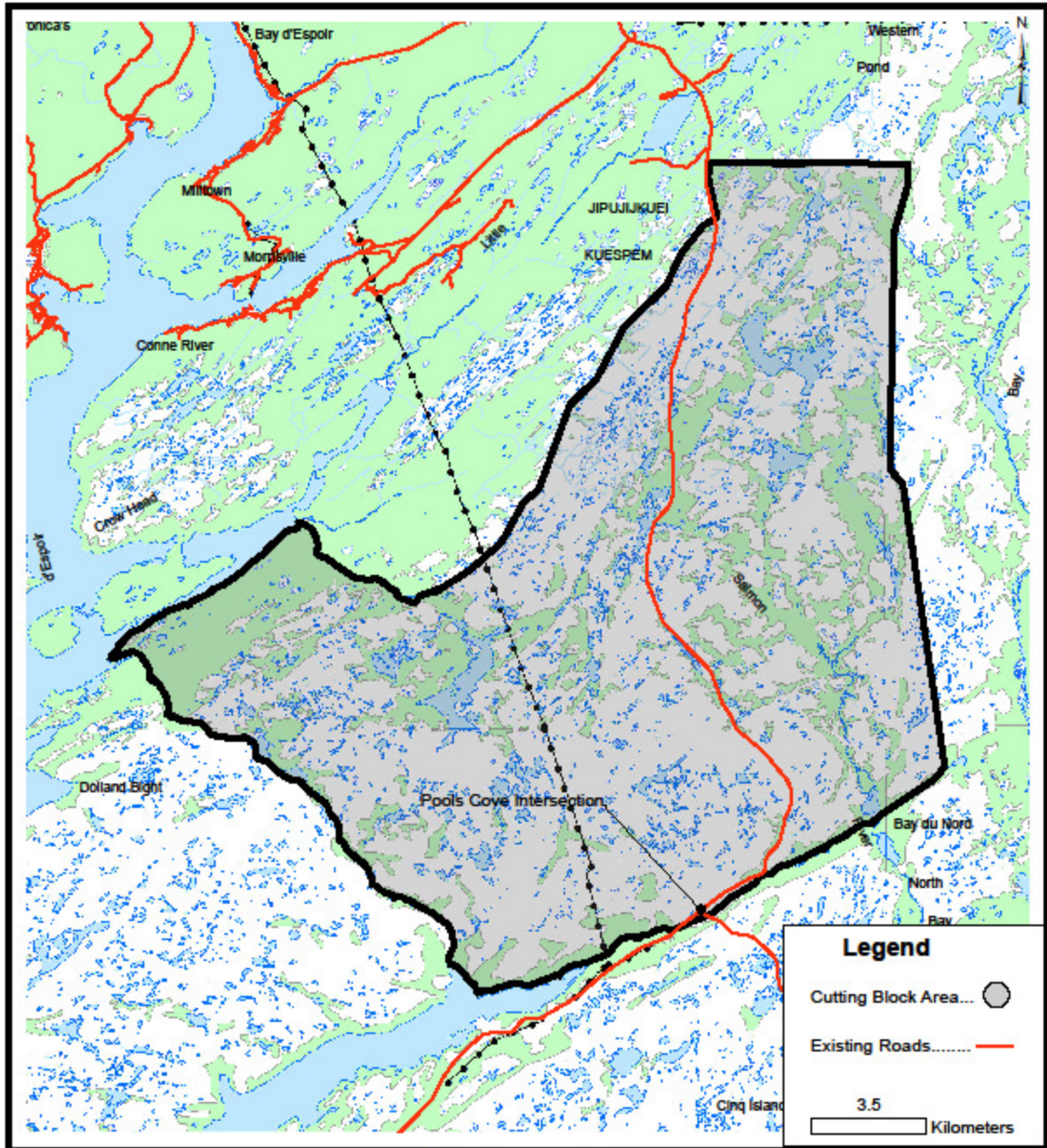


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CUTTING BLOCK NO. 23

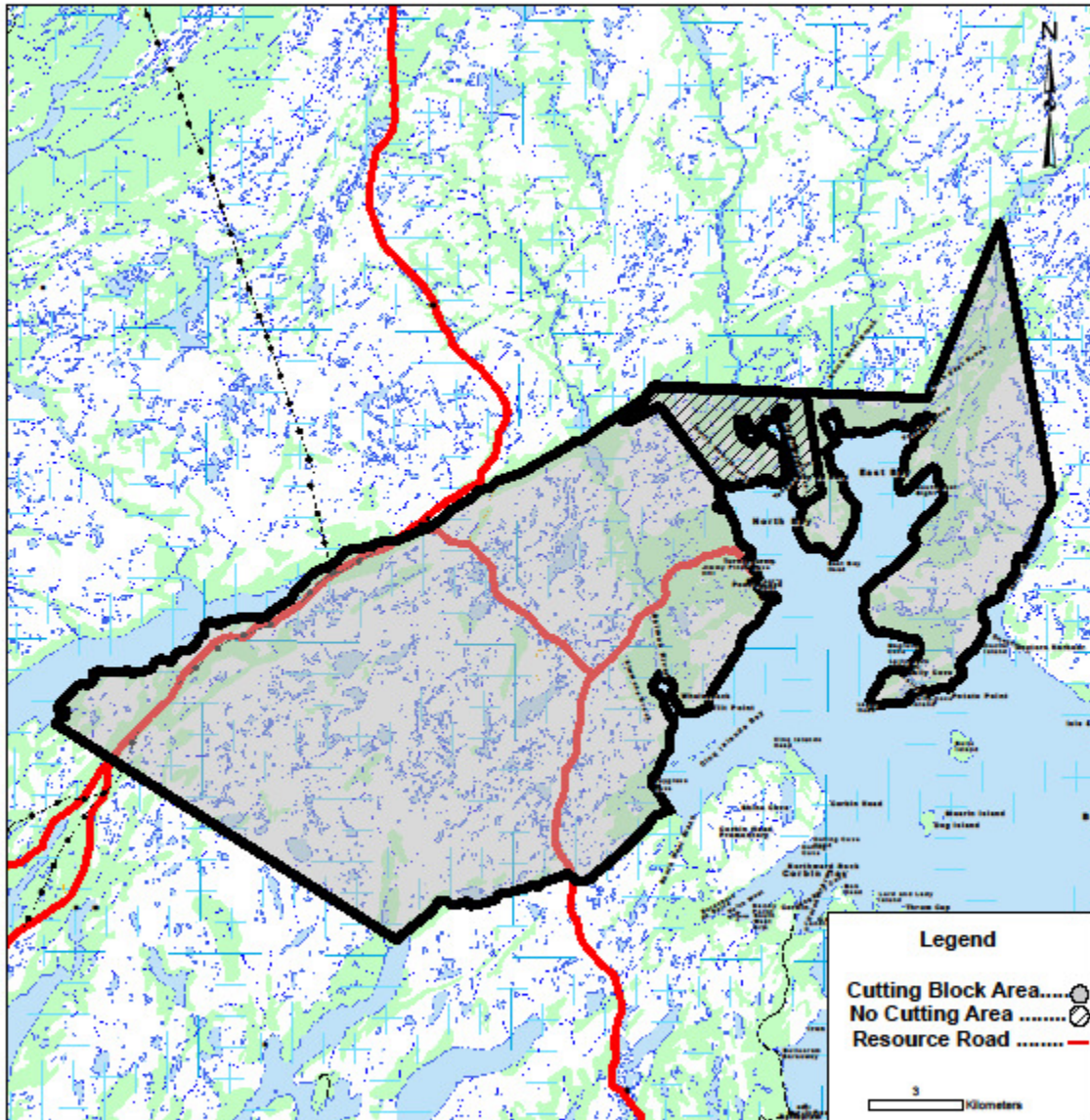
Newfoundland
Labrador



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A0H 2E0



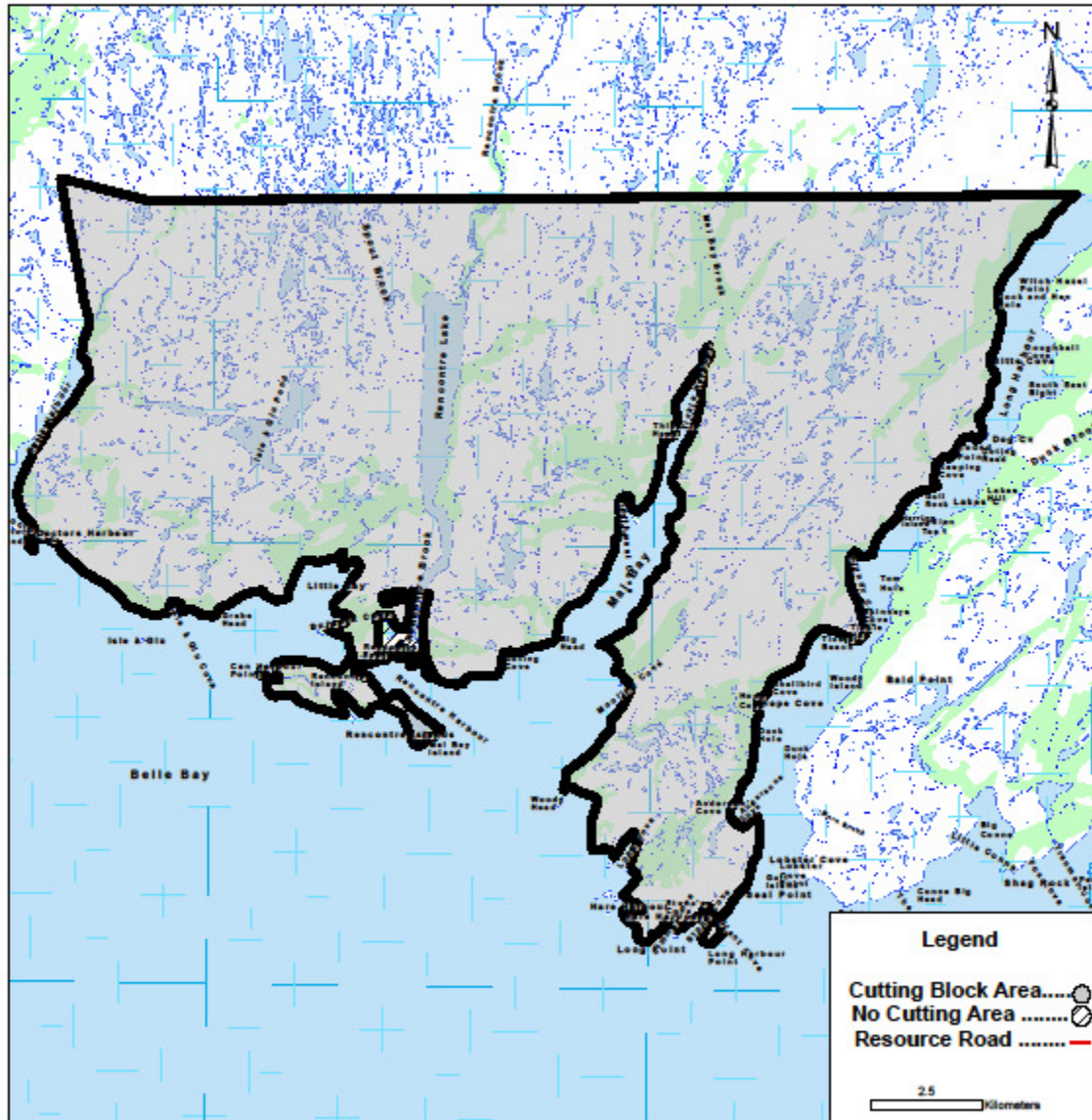
Cutting Block No. 24



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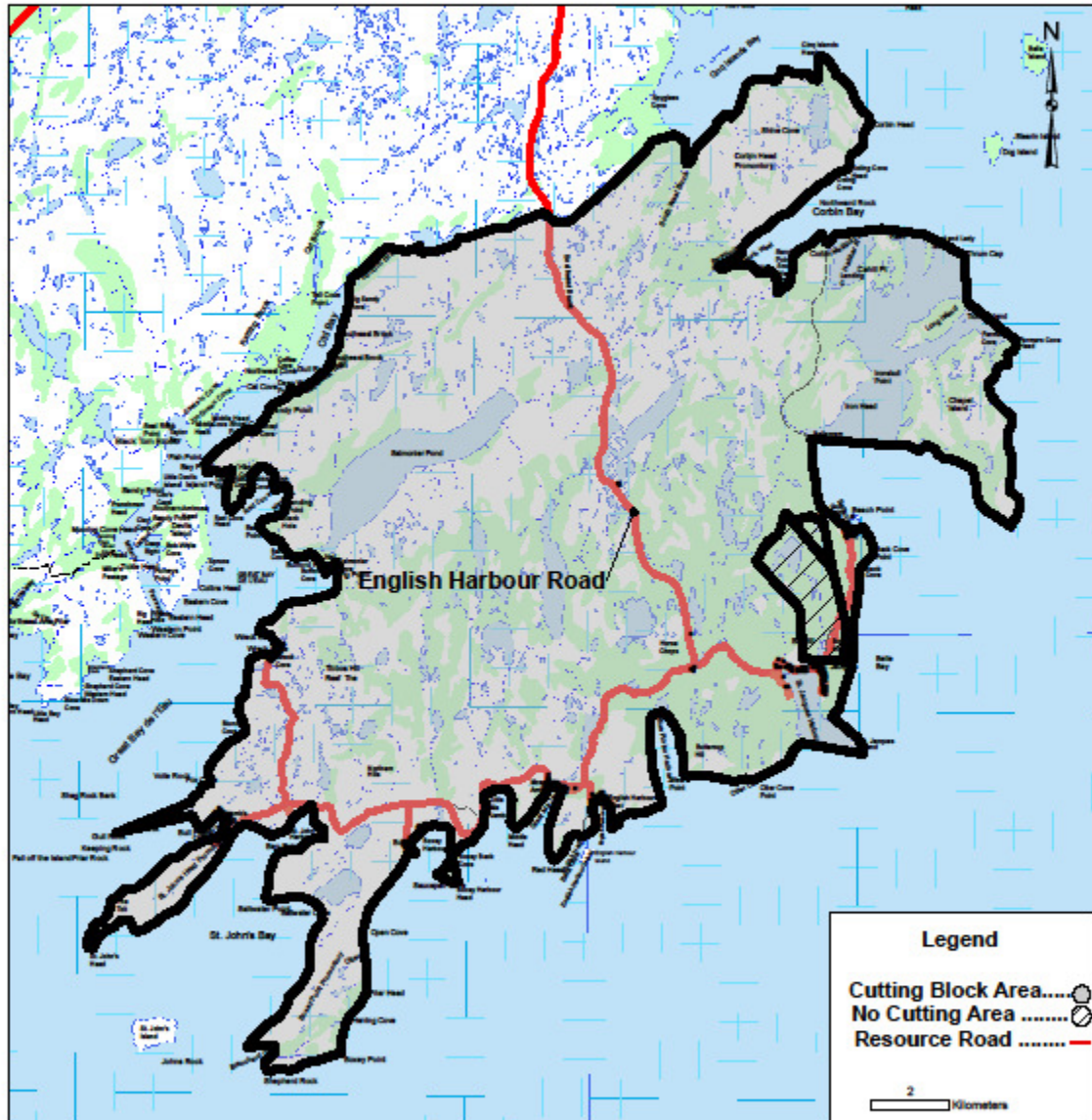
Cutting Block No. 25



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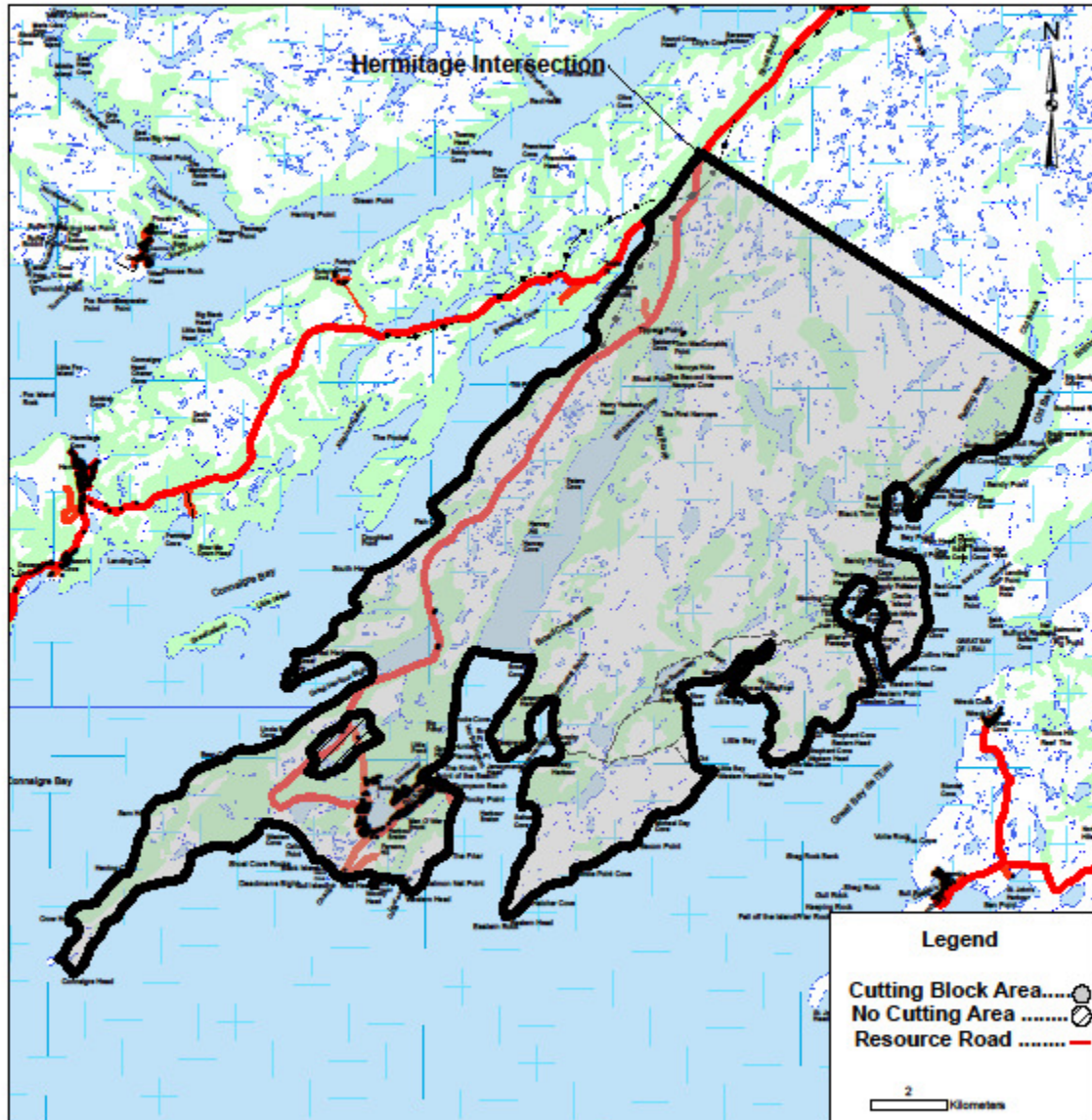
Cutting Block No. 26



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Cutting Block No. 27

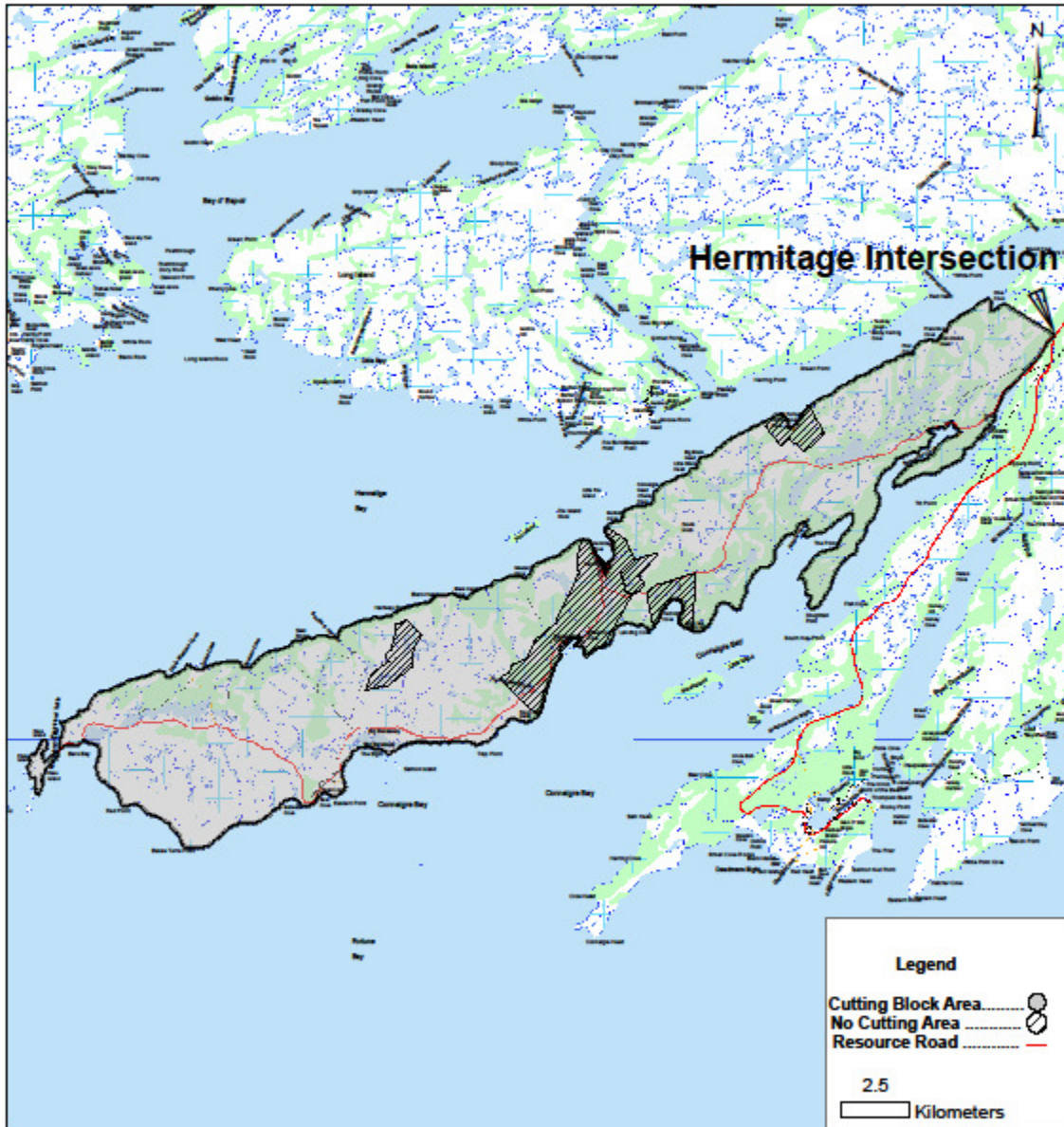


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CUTTING BLOCK NO 28

Newfoundland
Labrador

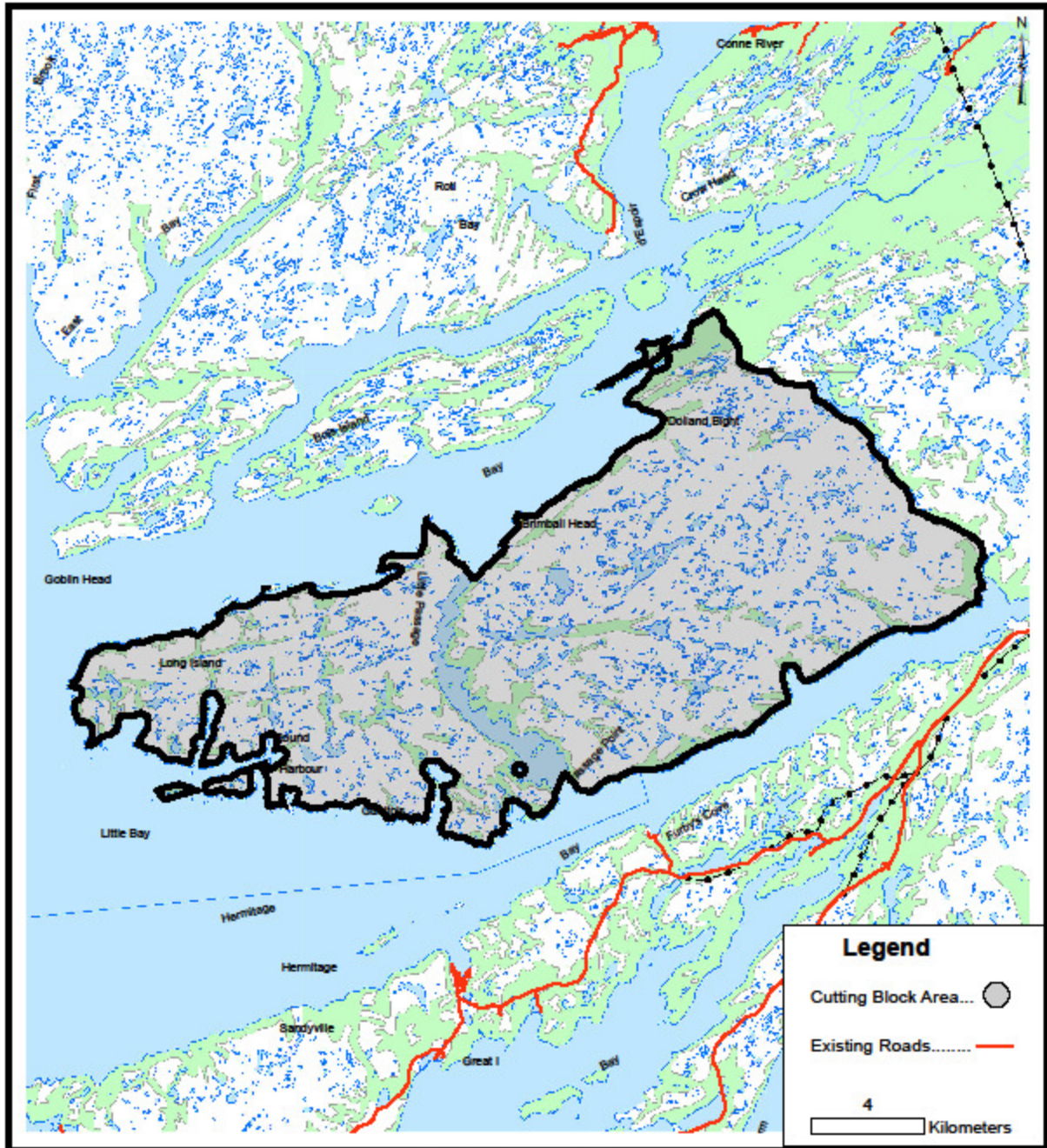


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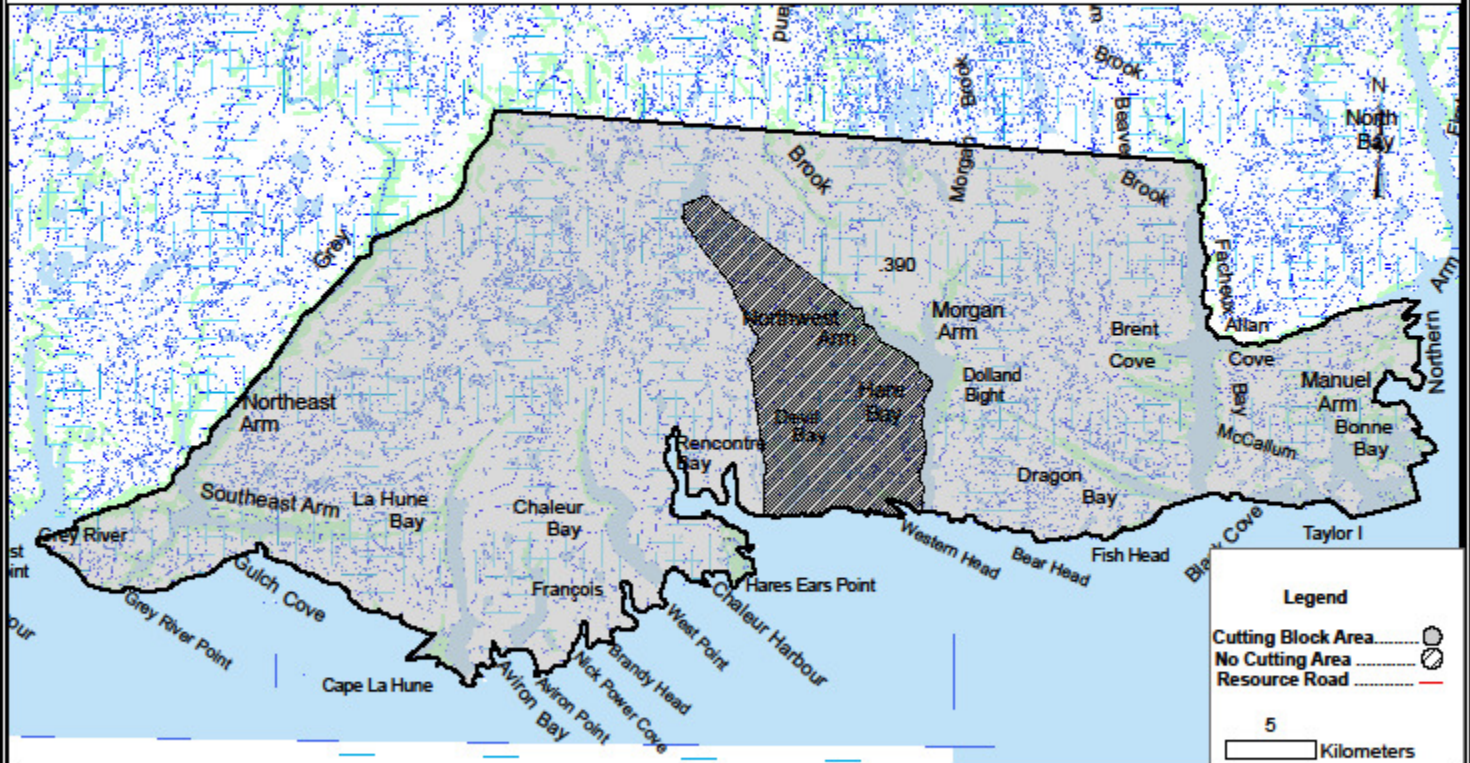
Newfoundland
Labrador



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Miltown, NL
A0H 2E0



CUTTING BLOCK NO 30



Department of Natural Resources
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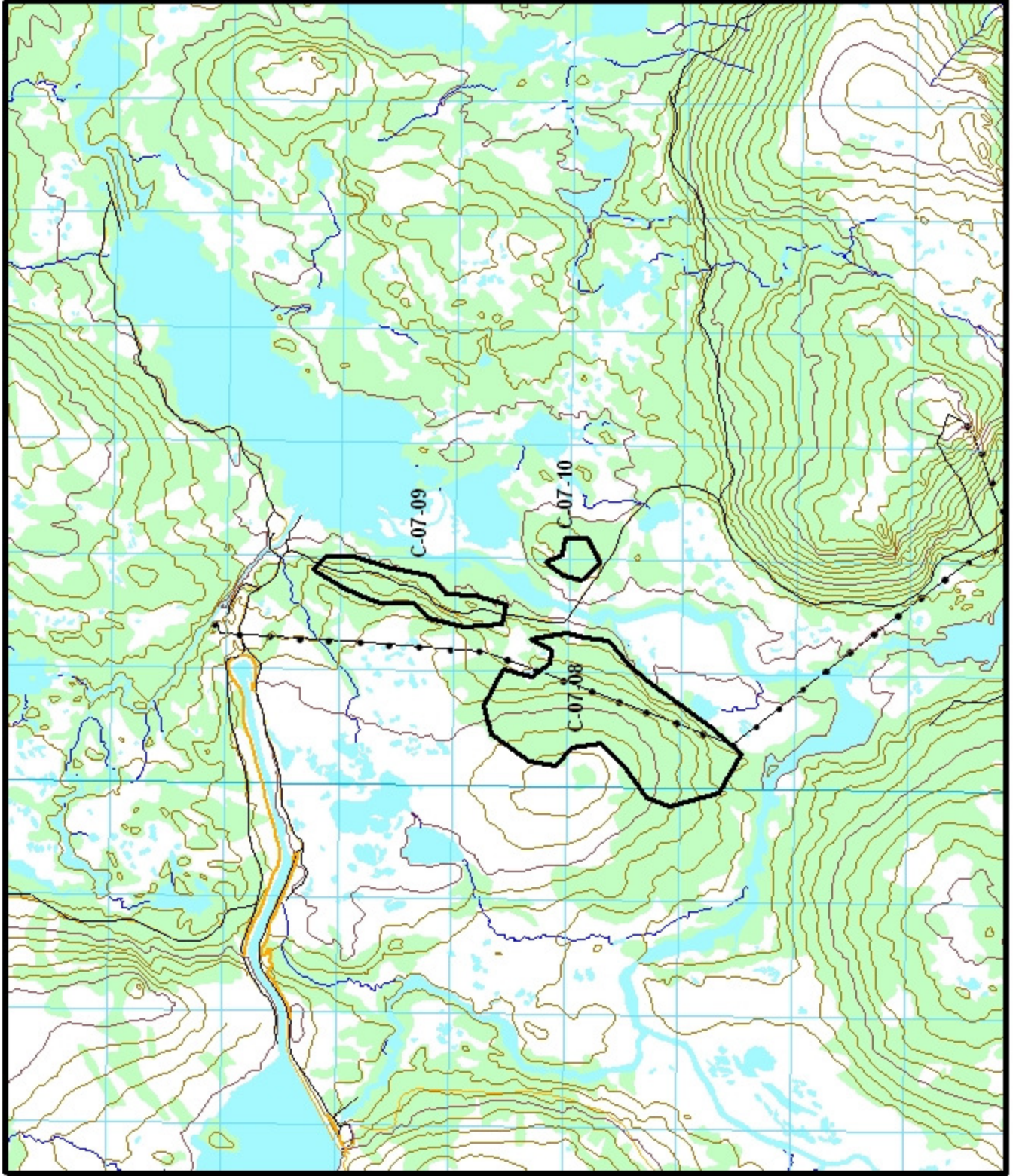
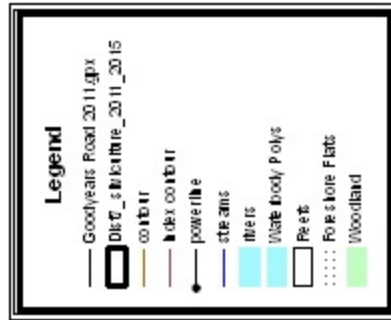
Appendix 8

Appendix 9



Five Year Plan (2013-2017)
Forest Management District 07

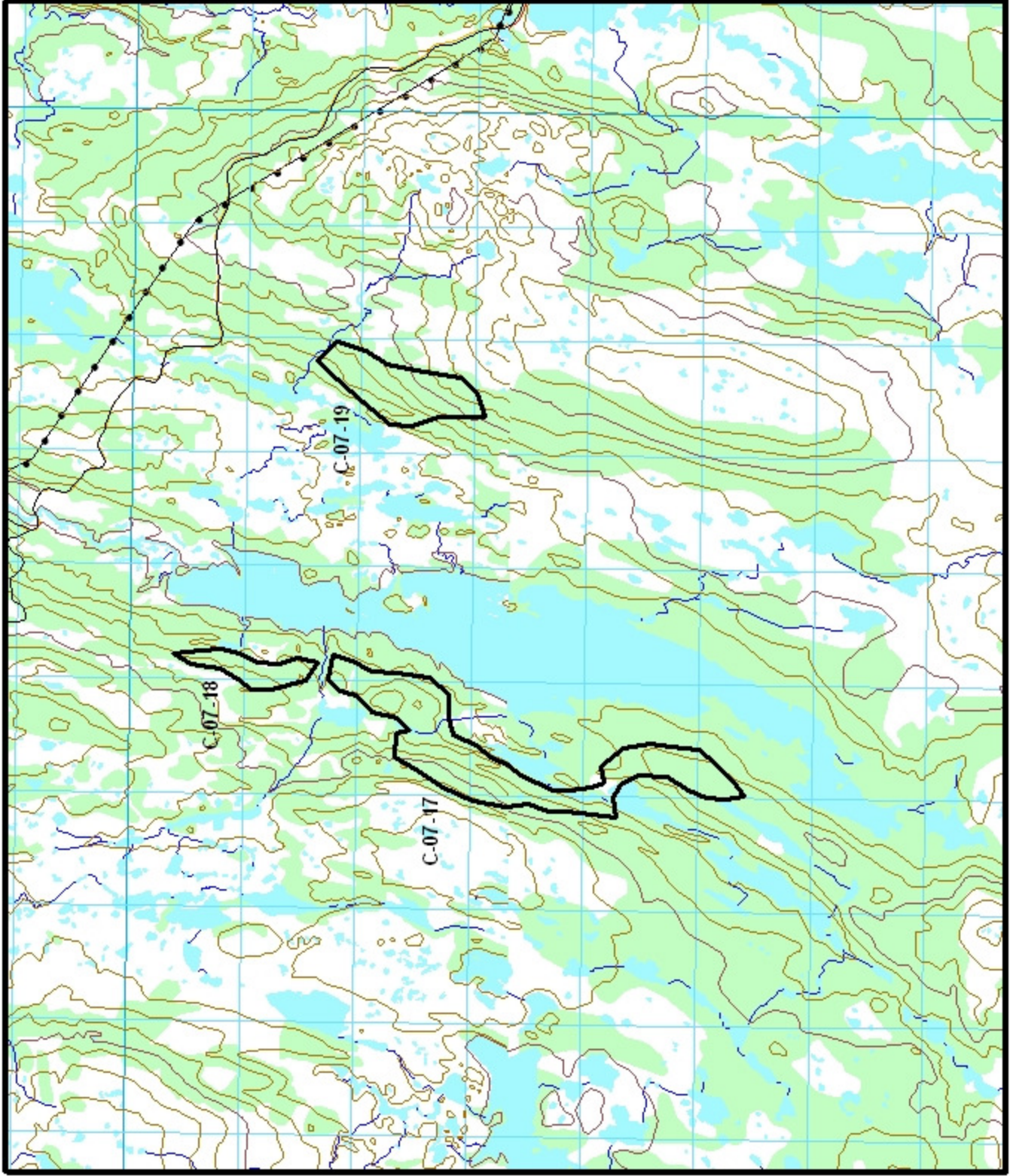
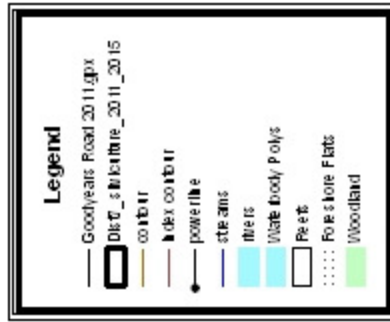
Bailey Bridge
Silviculture Areas
(Prescribed Burn/Planting/
Plantation Maintenance)





Five Year Plan (2013-2017)
Forest Management District 07

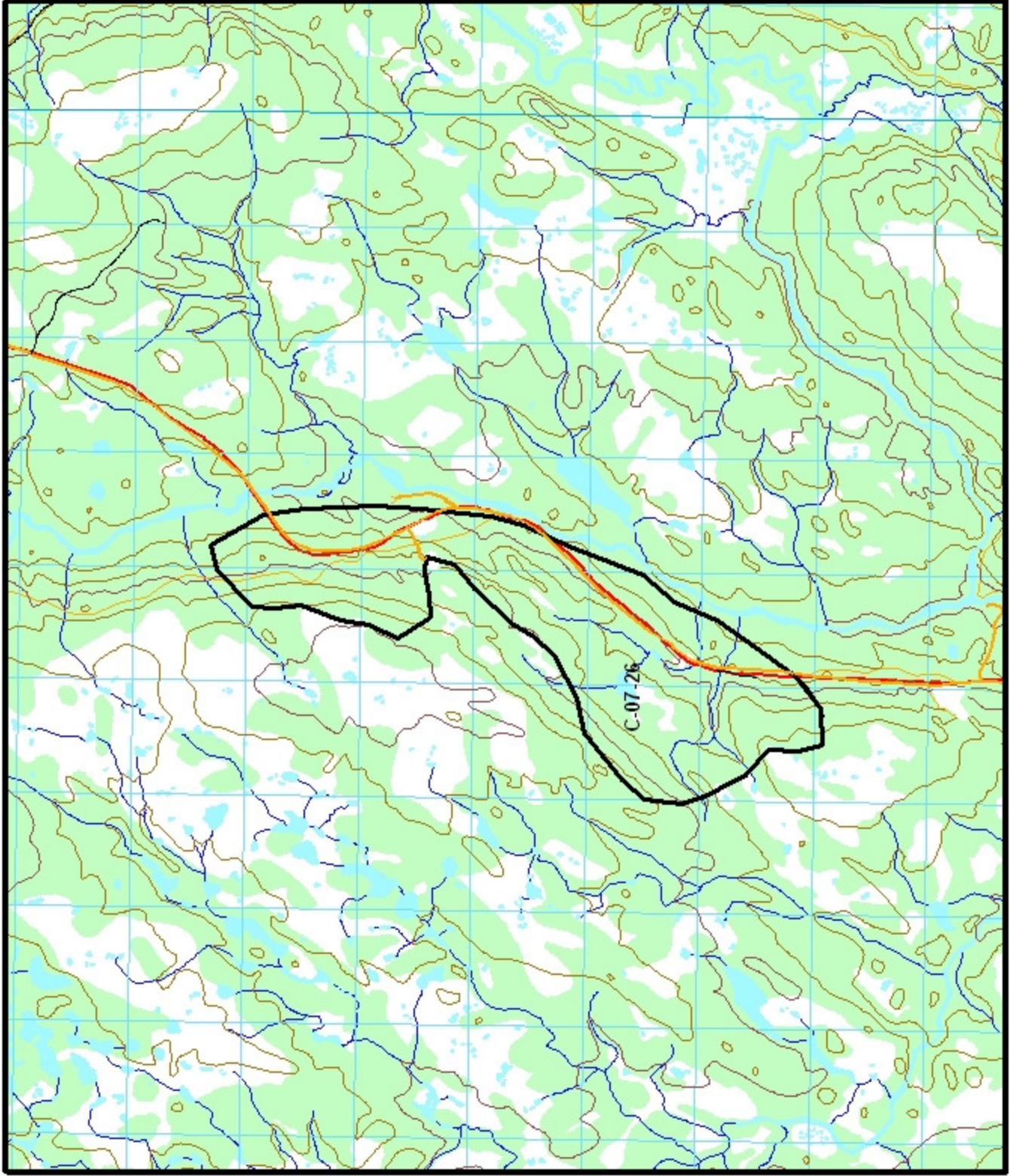
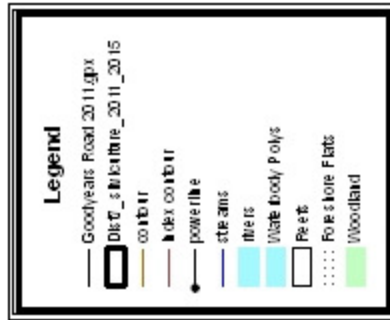
Bear Lake
Silviculture Areas
(PCT/Plantation Maintenance/
Prescribed Burn/Planting)





**Five Year Plan (2013-2017)
Forest Management District 07**

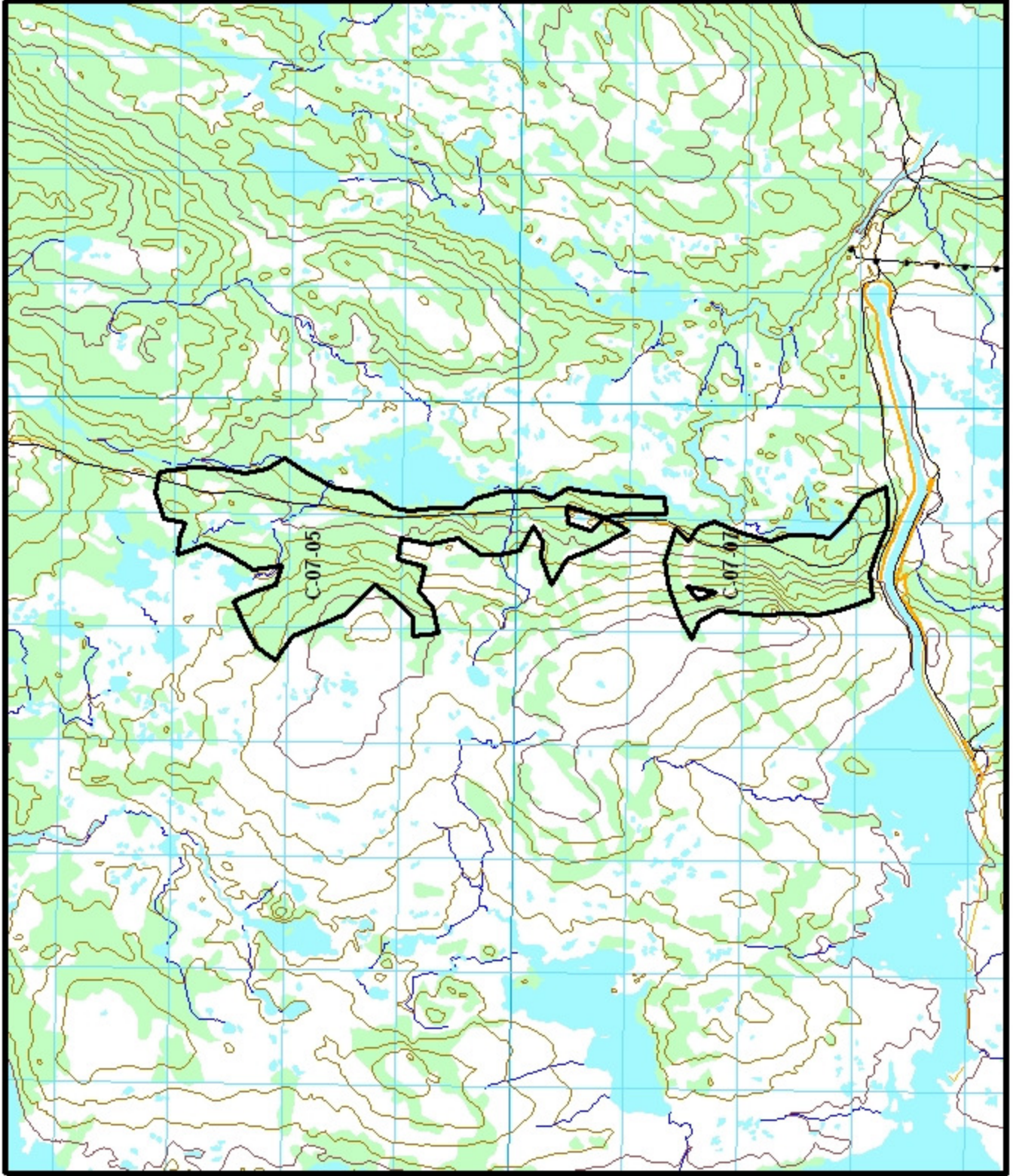
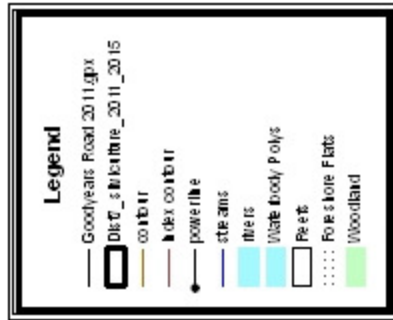
**Camp 4
Silviculture Areas
(Prescribed Burn/Planting)**





Five Year Plan (2013-2017)
Forest Management District 07

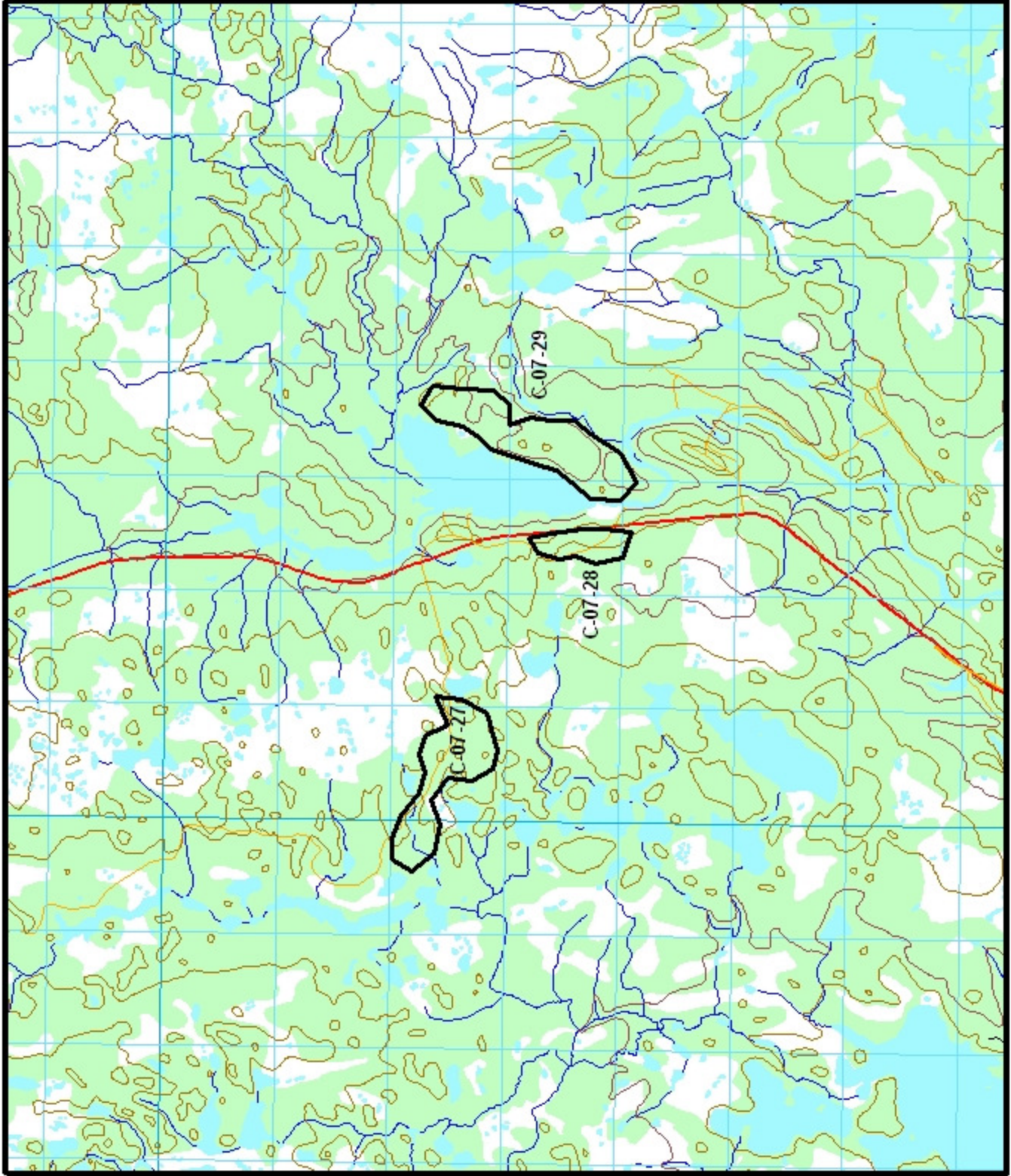
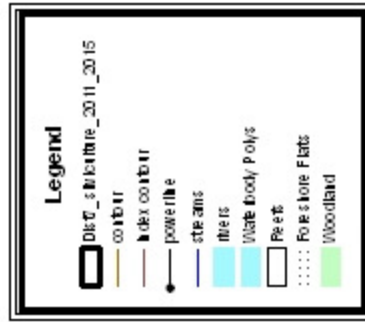
**Cold Spring
Silviculture Areas
(Prescribed Burn/Planting)**





**Five Year Plan (2013-2017)
Forest Management District 07**

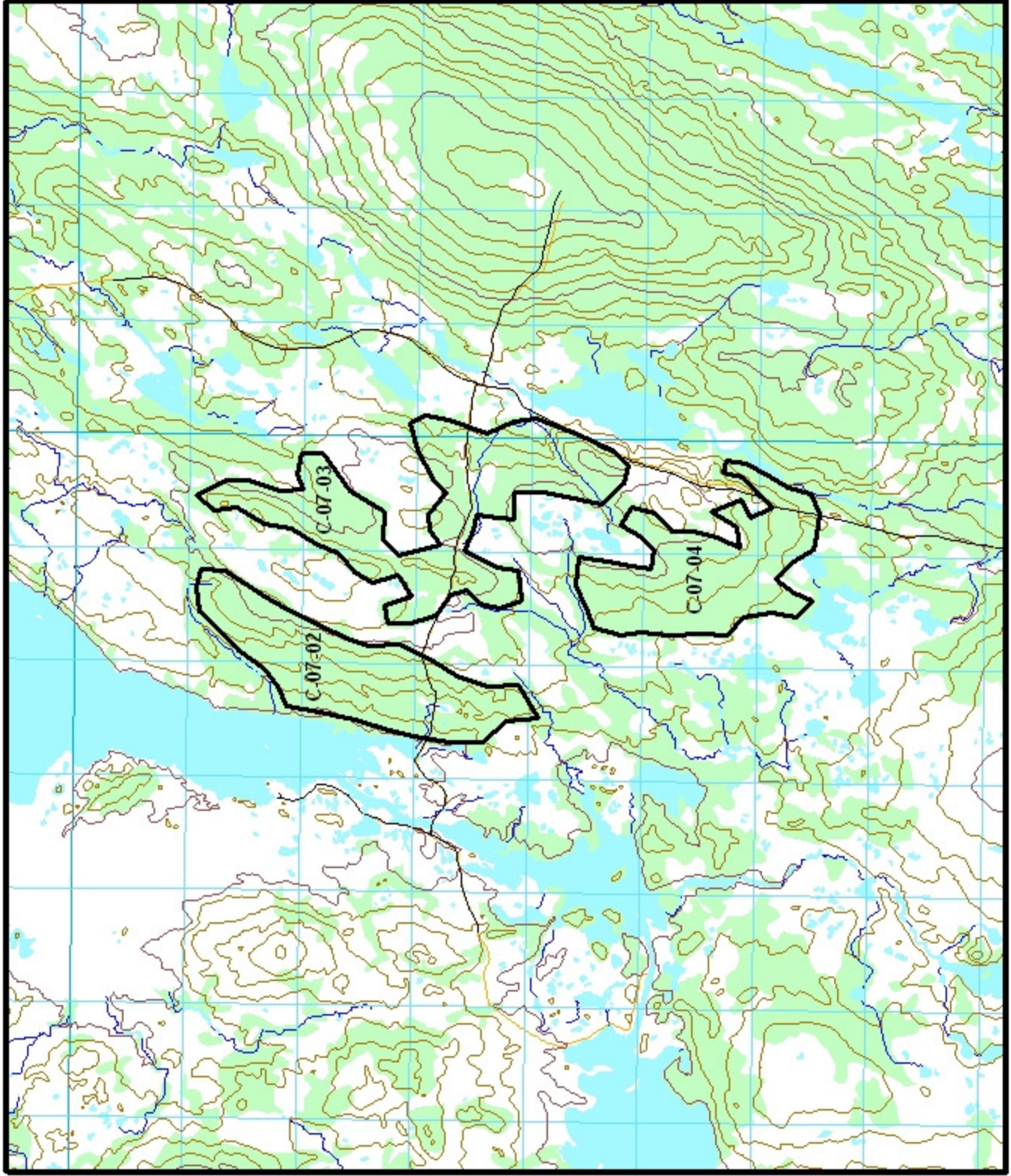
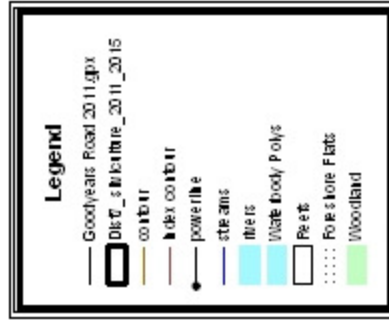
Conne Pond
Silviculture Areas
(Plantation Maintenance)





**Five Year Plan (2013-2017)
Forest Management District 07**

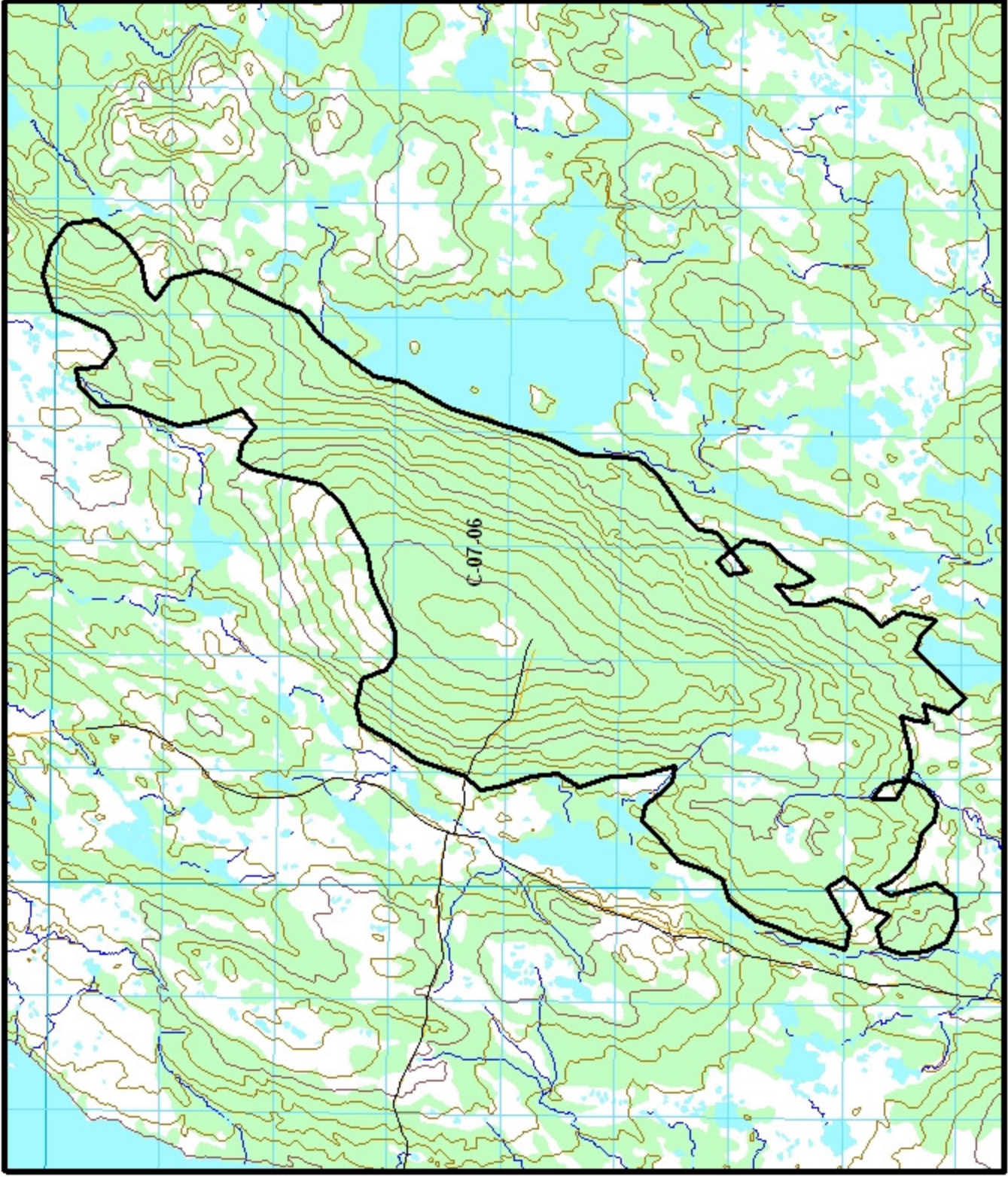
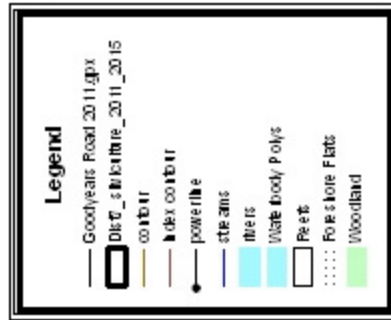
**Diversion Road
Silviculture Areas
(Prescribed Burn/Planting)**





Five Year Plan (2013-2017)
Forest Management District 07

Godaleich Road
Silviculture Areas
(Prescribed Burn/Planting/
Plantation Maintenance)



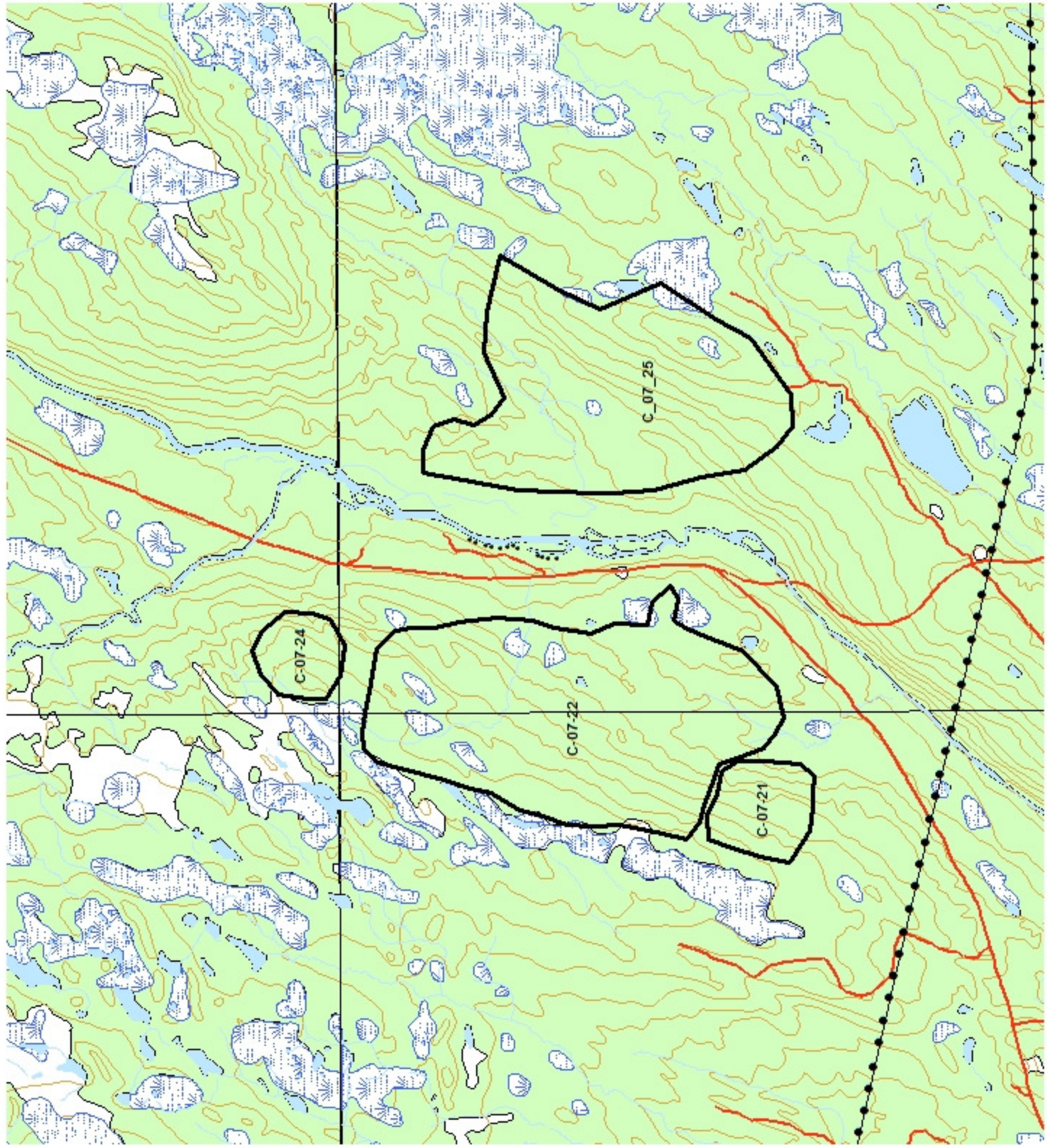


**Five Year Plan (2013-2017)
Forest Management District 07**

**Good years Road
Silviculture Areas
(Prescribed Burn/
Planting/PCT/
Plantation Maintenance)**

Legend

- Dist7_silviculture_2013_2017
- Contours
- Powerline
- Roads
- Streams
- Wetlands
- Waterbodies
- Woodland



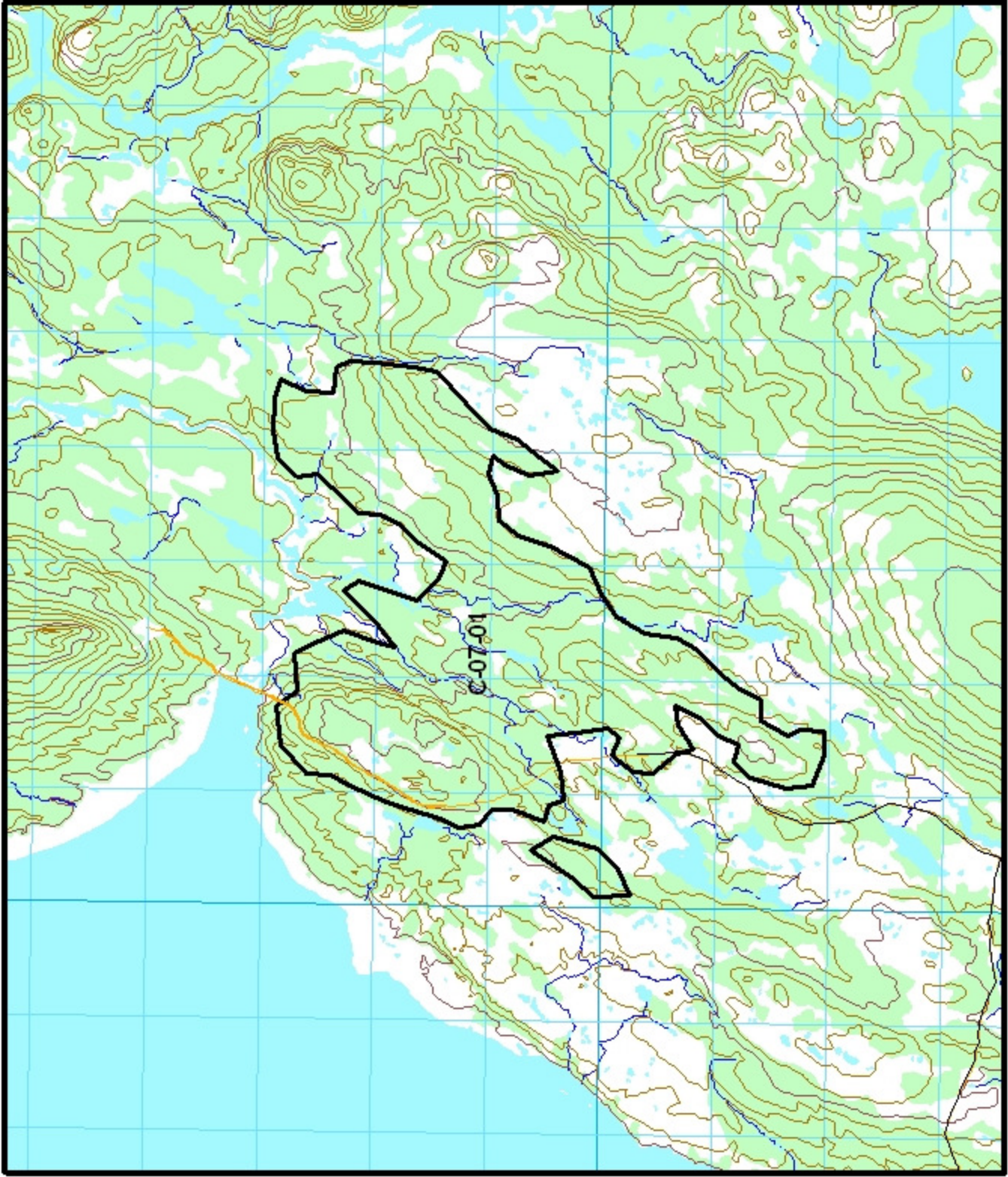


Five Year Plan (2013-2017)
Forest Management District 07

North Salmon
Silviculture Areas
(Prescribed Burn/Planting)

Legend

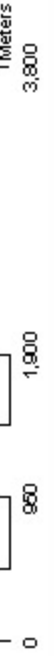
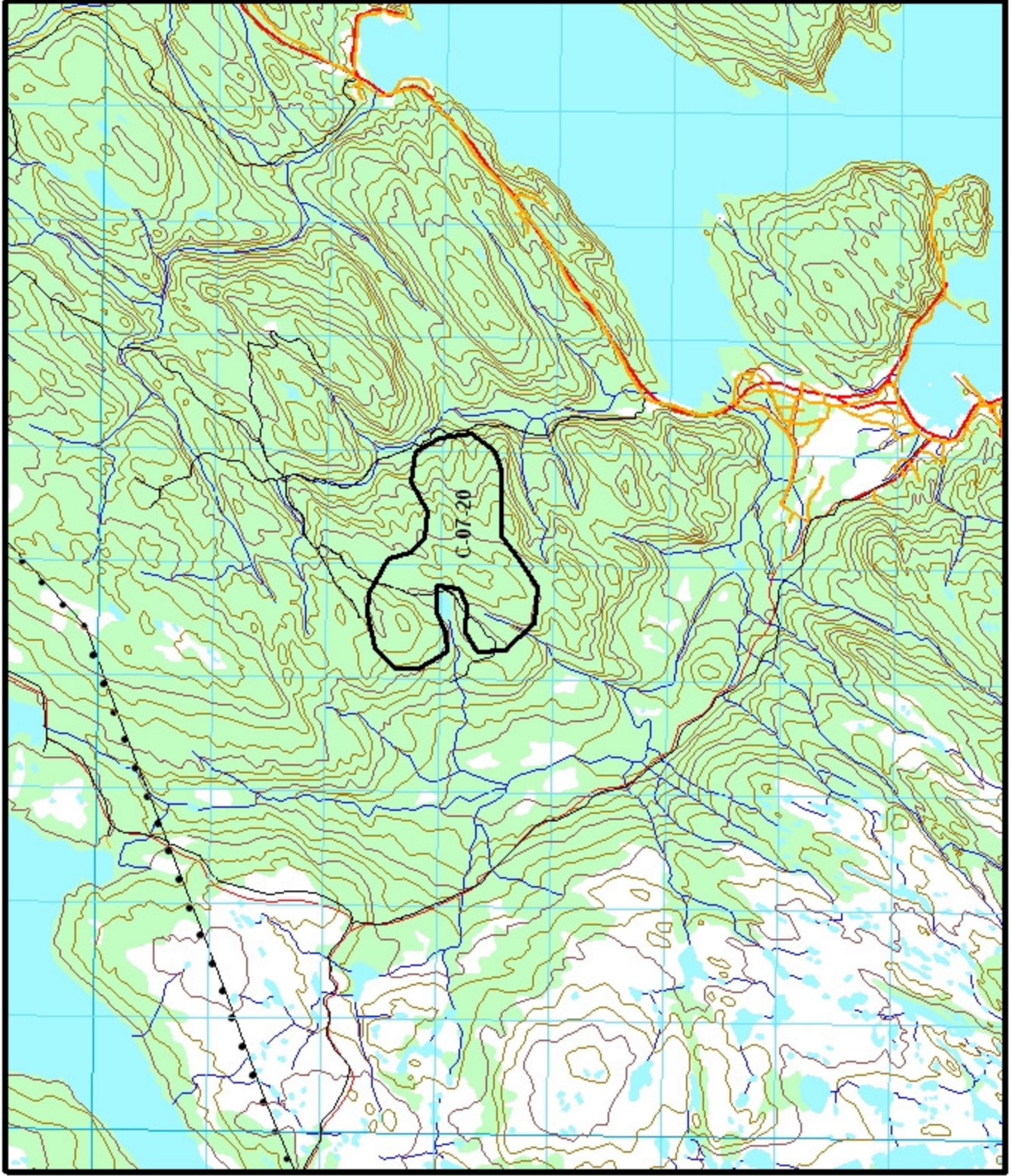
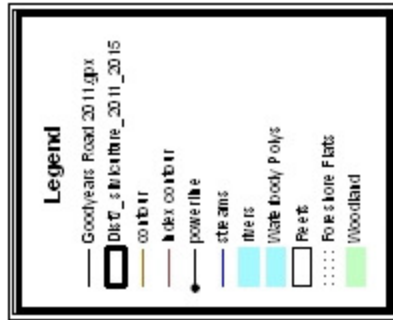
- Goodyears Road 2011.gpx
- ▭ Dist_silviculture_2011_2015
- contour
- water contour
- powerline
- stream
- ▭ fireis
- ▭ Water body Polyg
- ▭ Forest
- Forest Fire Flats
- ▭ Woodland





Five Year Plan (2013-2017)
Forest Management District 07

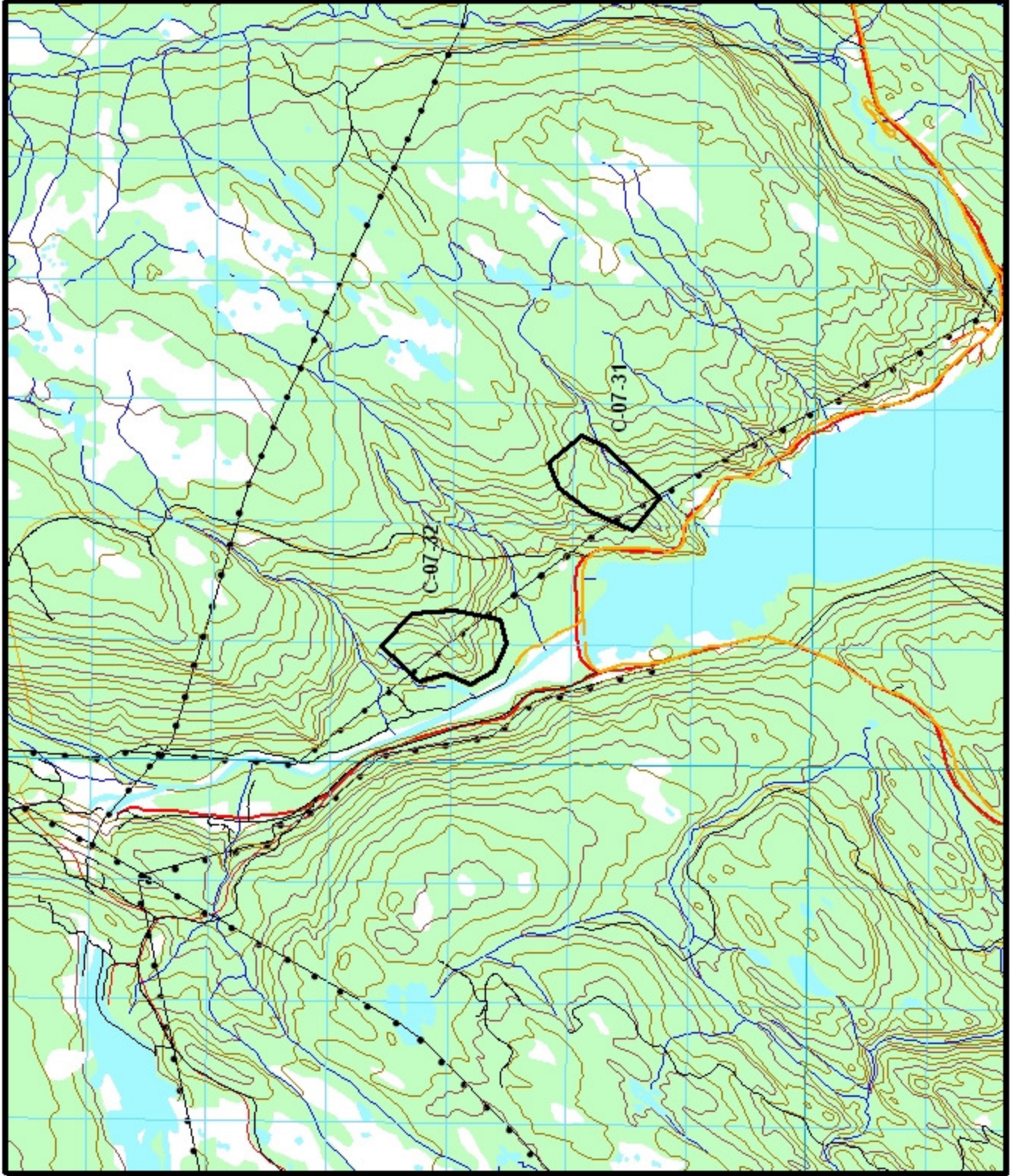
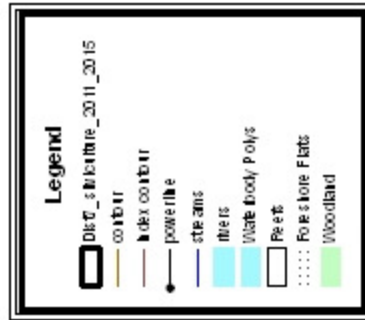
Swanger Cove
Silviculture Areas
(PCT)





**Five Year Plan (2013-2017)
Forest Management District 07**

**Tailrace
Silviculture Areas
(Plantation Maintenance)**



Meters
4,000
2,000
0

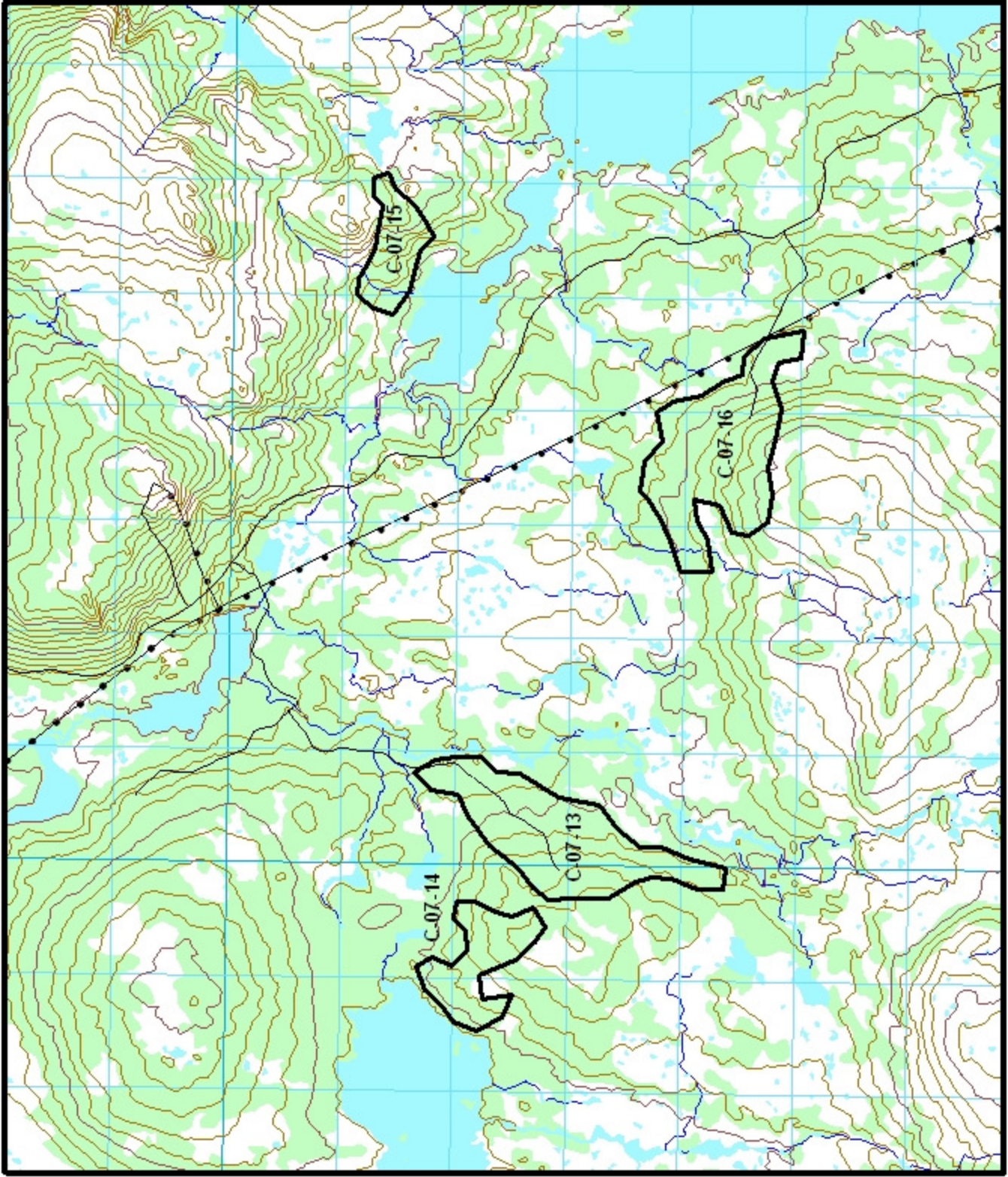


**Five Year Plan (2013-2017)
Forest Management District 07**

**Tangle Pond
Silviculture Areas
(Stand Conversion/
Prescribed Burn/Planting/
Plantation Maintenance)**

Legend

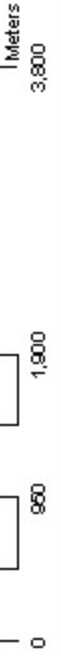
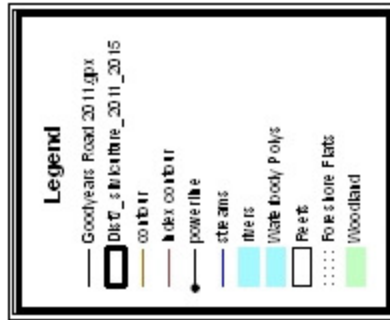
- Goodyears Road 2011.gpx
- ▭ D:\C_silviculture_2011_2015
- contour
- data contour
- powerline
- stream
- ▭ fireis
- ▭ Water body Polyg
- ▭ Ponds
- ⋯ Forest Fire Flats
- ▭ Woodland





Five Year Plan (2013-2017)
Forest Management District 07

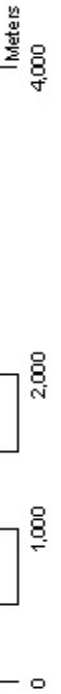
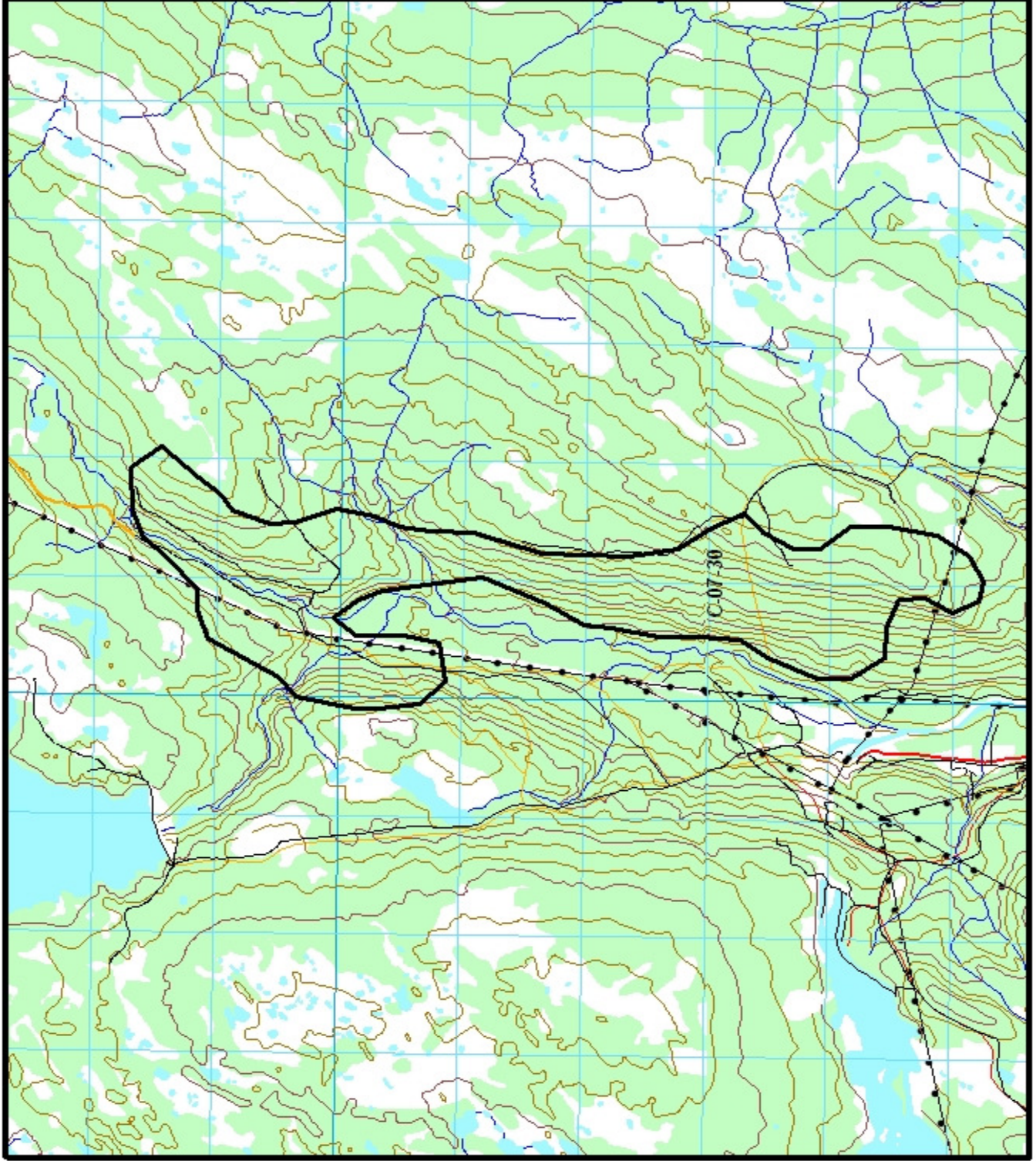
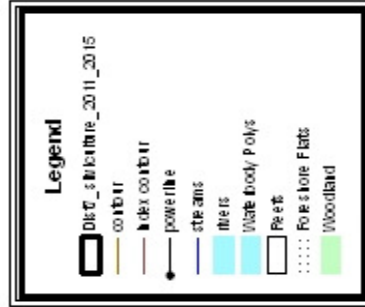
White Hills Silviculture Areas (PCT/Plantation Maintenance)





Five Year Plan (2013-2017)
Forest Management District 07

**Woodcat
Silviculture Areas
(Plantation Maintenance)**



Appendix 10

**ENVIRONMENTAL PROTECTION GUIDELINES
FOR ECOLOGICALLY BASED FOREST RESOURCE MANAGEMENT
(STAND LEVEL OPERATIONS)**

November 1998

ENVIRONMENTAL PROTECTION GUIDELINES

“Forests are interconnected webs which focus on sustaining the whole, not the production of any one part or commodity. Trees, the most obvious part of a forest are critical structural members of a forest framework. However, trees are only a small portion of the structure needed for a fully functioning forest.” (Hammond, 1991).

This ecologically based approach to forest resource management requires that resource managers shift their focus from managing components of the ecosystem to managing the three dimensional landscape ecosystems that produce them. Primary concern becomes the maintenance of landscapes and waterways as complete ecosystems because the only way to assure the sustained benefit of forest values, now and in the future, is to keep them and all their parts in a healthy state. This is the foundation for an ecologically based approach to forest management. It means that everyone attends to the conservation and sustainability of ecosystems instead of sharply focusing on the productivity of individual or competing resources which has been our traditional mode of operation.

The Newfoundland Forest Service is committed to the concept of forest ecosystem management which is captured in the twenty-year Forestry Development Plan (1996-2016) vision statement: “To conserve and manage the ecosystems of the Province which sustain forests and wildlife populations and to provide for the utilization of these resources by the people of the Province under the principles of sustainable development, an ecologically-based management philosophy, and sound environmental practices”.

There are five strategic goals in the twenty-year Forestry Development Plan (1996-2016) which provide the foundation upon which ecologically based resource management will be developed.

1. Manage forest ecosystems so that their integrity, productive capacity, resiliency, and biodiversity are maintained.
2. Refine and develop management practices in an environmentally sound manner to reflect all resource values.
3. Develop public partnerships or networks to facilitate meaningful public involvement in resource management.
4. Promote adaptive ecosystem management and conduct research that focuses on ecosystem processes, functions, and ecosystem management principles.
5. Establish and enforce conservation and public safety laws with respect to managing ecosystems.

The environmental protection guidelines provide specific “on the ground” tasks for loggers and gives management direction to planners. Individually, the guidelines appear as specific rules; however, when implemented collectively they will facilitate ecologically-based forest resource management.

1.0 GENERAL GUIDELINES

These guidelines are generated from impacts described in the literature and from discussions with resource managers. As new information and management techniques become available the guidelines will be changed to reflect this improved information base. Consequently, the guidelines will be reviewed on an annual basis to incorporate any necessary changes. The “General Guidelines” apply to all forestry activities (i.e., silviculture, harvesting, road construction). These guidelines form Schedule IV of the Certificate of Managed Land. They are conditions of Crown commercial permits and they form the basis for the voluntary compliance program.

1.1 Planning

1. The location and type of all waterbody crossings must be submitted to the Department of Environment and Labour and the Department of Fisheries and Oceans. Certificates of Approval are required from both departments for waterbody crossings. A waterbody is defined as any water identified on the latest 1:50,000 topographic map. Appropriate protection is still required for streams greater than 1.0 m in width (at its narrowest point from the high water mark) not found on the 1:50,000 topographic map.

2. All waste disposal sites require a Certificate of Approval from the Minister of Government Services.

3. Excessive bulldozing is not permitted and no more than 10% of the total forest within an operating area can be disturbed. In situations where specific operating areas require more than 10% disturbance to capture available timber, the operator is required to rehabilitate the area to reduce the total net disturbance to the 10% maximum. Where disturbance has been excessive, a rehabilitation plan will be developed with the Forest Service District Manager. Disturbance is defined as per the Ground Disturbance Survey Guidelines developed by the Newfoundland Forest Service.

4. When an archaeological site or artifact is found, the *Historical Resources Act* requires that all development temporarily cease in the area and the discovery be reported to the Historical Resources Division (709-729-2462).

The Historic Resources Division will respond immediately and will have mitigation measures in place within seven days as agreed to by the Historical Resources Division and the operator. Forestry activity can then continue. The Historic Resources Division will be contacted during the preparation of five-year operating plans to determine the location of historic resources and appropriate mitigation measures will be designed. These measures will include such things as buffer zones and modified operations or surveys.

5. Should an oil or gas spill in excess of 70 litres occur, the operator must make every effort to first, contain, and second, clean up the spill after reporting the spill to the appropriate authorities.

Government Services Centre
Spill Report Line
(709) 772-2083 or 1-800-563-2444

6. The Parks and Natural Areas Division will be contacted during the preparation of five-year operating plans. Where operations are within one kilometre of provisional and ecological reserves, wilderness reserves or provincial parks, modified operations may be necessary.

7. In areas where caribou utilize arboreal lichens during the summer and/or winter, and terrestrial lichens during the summer, a minimum amount of lichen forest must be maintained for the caribou. Forestry activity will be designed in consultation with the Wildlife Division where this situation has been identified.

8. Areas identified as containing rare and/or unique flora (through literature review) are to be protected from forestry activity by avoiding these areas.

9. Where mature stands of timber for moose shelter and moose yards are required, they will be identified in consultation with Wildlife Division.

10. The impacts of forest operations on pine marten have been an ongoing issue. Until appropriate guidelines are developed for pine marten habitat, forestry activities within high density pine marten areas and dispersion areas required for pine marten recovery will require consultation with the Wildlife Division.

11. During the preparation of five-year operating plans, areas identified as "Sensitive Wildlife Areas" in the Land Use Atlas require consultation with the Wildlife Division prior to any forestry activity.

1.2 Operations

1. A 20-metre, treed buffer zone shall be established around all water bodies that are identified on the latest 1:50,000 topographic maps and around water bodies greater than 1.0 metre in width that do not appear on the maps. Where the slope is greater than 30% there shall be a no-harvest buffer of 20 m + (1.5 x % slope). All equipment or machinery is prohibited from entering waterbodies; thus, structures must be created to cross over such waterbodies. Every reasonable effort will be made to identify intermittent streams and they will be subject to this buffer requirement. The District Manager of Forest Ecosystems is permitted to adjust the specified buffer requirements in the following circumstances: - the no-cut, treed buffer can exceed the 20 meters for fish and wildlife habitat requirements.

- a 50-metre, no-cut, treed buffer will be maintained around known black bear denning sites (winter) or those encountered during harvesting. These den sites must be reported to the Wildlife Division.

- no forestry activity is to occur within 800 metres of a bald eagle or osprey nest during the nesting season (March 15 to July 31) and 200 metres during the remainder of the year. The location of any raptor nest site must be reported to the Wildlife Division.

- all hardwoods within 30 metres of a waterbody occupied by beaver are to be left standing.

- a minimum 30-metre, no-cut, treed buffer will be maintained from the high water mark in waterfowl breeding, moulting and staging areas. These sites will be identified by the Canadian Wildlife Service and/or the Wildlife Division.

2. Heavy equipment and machinery are not permitted in any waterbody, on a wetland or a bog (unless frozen) without a Certificate of Approval from the Department of Environment and Labour and without contacting the DFO area habitat coordinator.

3. No heavy equipment or machinery is to be refueled, serviced, or washed within 30 metres of a waterbody. Gasoline or lubricant depots must be placed 100 metres from the nearest waterbody. All fuel-storage tanks (including JEEP tanks) must be registered with the Department of Government Services and Lands and installed in accordance with the *Storage and Handling of Gasoline and Associated Products Regulations*. Fuel storage within Protected Water Supplies is more stringent. Please refer to “Guidelines for Forest Operations within Protected Water Supplies” for more information.

4. Used or waste oil shall be collected either in a tank or a closed container.

5. Above ground storage tanks shall be surrounded by a dyke. The dyked area will contain not less than 110% of the capacity of the tank. The base and walls of the dyke shall have a impermeable lining of clay, concrete, solid masonry or other material, designed, constructed and maintained to be liquid tight to a permeability of 25L/m²/d. There shall be a method to eliminate water accumulations inside the dyke.

6. Wherever possible, place slash on forwarded trails while forwarders are operating in an area. Skidding timber through any waterbody (as defined in Section 1.2.1) is prohibited.

7. Any forestry operation that directly or indirectly results in silt entering a waterbody must be dealt with immediately (A government official must be notified within 24 hours). Failure to comply will result in the operation being stopped.

8. Woody material of any kind (trees, slash, sawdust, slabs, etc.) is not permitted to enter a waterbody. Woody material on ice within the high water floodplain of any waterbody is prohibited.

9. To minimize erosion and sedimentation, waterbody crossings shall:

- i) have stable approaches;
- ii) be at right angles to the waterbody;
- iii) be located where channels are well defined, unobstructed, and straight;
- iv) be at a narrow point along the waterbody;
- v) allow room for direct gentle approaches;
- vi) have all mineral soil exposed during bridge construction and culvert installation seeded with grass.

10. Garbage is to be disposed of at an approved garbage disposal site. Prior to disposal it must be contained in a manner not to attract wildlife. All equipment is to be removed from the operating area where operations are completed.

11. Where safety is not an issue, a minimum average of 10 trees or snags per hectare (average on a cut block) or a clump of trees is to be left on all sites (harvesting and silviculture). Preference will be given to trees over 50 cm dbh.

2.0 TIMBER HARVESTING GUIDELINES

2.1 Planning

1. There will be corridors to connect areas of forest that will not be harvested (isolated stands within cutovers are not considered forested areas). These corridors connect wildlife habitat, watersheds and minimize fragmentation. Acceptable corridor vegetation includes productive forest areas (all age classes) and softwood/hardwood scrub. These corridors do not have to be continuous (i.e., breaks in vegetation are permitted) and will be determined in the five-year operating plan and identified in the annual work schedule.

2. Complete utilization of harvested trees is required. (Complete utilization is harvesting trees to a top diameter of 8 cm and stumps to a height of 30 cm). The District Manager can modify the stump height requirement to accommodate snow conditions. Where markets exist, noncommercial tree species that are harvested should be brought to roadside. This will be determined in consultation with the District Manager.

3. Preplanning is required on all forest operations (Industry/Crown) at the request of the District Manager (for Industry) and the Section Head i/c Management Planning (for Crown).

Preplanning will include:

- boundaries of protected water supplies (if applicable);
- existing and proposed access roads;
- skid trails and landing locations;
- areas sensitive to erosion;
- buffer zones around water bodies;
- approved stream crossings;
- fuel storage locations;
- wildlife corridors.

4. Harvesting is not permitted within caribou calving areas from May 15 - June 15 (calving period). Harvesting is not permitted within post-calving areas from June 15 to July 31. These areas will be identified by the Wildlife Division.

5. Harvest scheduling should be modified during the migration of wildlife (e.g., caribou) and during temporary wildlife concentrations (e.g., waterfowl staging). Wildlife biologists will identify the areas of concern, and in conjunction with district or company foresters, aid in the modification of forestry operations.

2.2 Operations

1. When skid trails and winter roads are to be constructed, soil disturbance and impacts on waterbodies are to be minimized. The operator will use culverts and/or log bridges depending on the conditions. The objective is to minimize erosion and sedimentation, to avoid restricting streamflow, and to ensure fish passage in fish-bearing streams. Erosion control measures (e.g., laying down brush mats and the construction of diversion ditches for water run-off) are to be maintained while the skid trail is in use. All temporary crossings are to be removed at the end of the operating season unless the District Manager agrees to extend the life of the crossing for more than one season.

2. A minimum 50-metre, no-cut buffer is to be left between operations within approved cabin development areas.

3.0 FOREST ACCESS ROADS GUIDELINES

3.1 Planning

Forest access roads, borrow pits and quarries shall avoid:

- i) wetlands, deltas, and floodplain or fluvial wetlands;
- ii) terrain with high erodibility potential;
- iii) known sensitive wildlife areas such as:
 - calving grounds, post calving areas, caribou migration routes, caribou rutting areas, and winter areas,
 - waterfowl breeding areas and colonial nesting sites,
 - established moose yards by one kilometre,
 - eagle and osprey nest sites,
 - where site conditions and engineering permits, main haul roads should be one kilometre from permanent water bodies and all other roads by not more than 100 metres,
 - endangered or endemic species or sub-species of flora or fauna and other areas to be determined by qualified authorities;
- iv) known sensitive fish areas such as:
 - spawning and rearing grounds;
- v) historically significant areas such as:
 - archaeological sites;
- vi) existing reserves such as:
 - parks (municipal, provincial, national);
 - wilderness areas and ecological reserves;
 - rare and endangered plant sites and habitats.

2. With respect to borrow pits and quarries, the operator shall:

- i) minimize the number of new borrow areas opened for construction and/or maintenance;
- ii) use existing borrow areas whenever practical;
- iii) be in possession of a valid quarry permit from the Department of Mines and Energy prior to aggregate extraction activities;
- iv) not locate pits and quarries in sensitive areas as identified by planning processes.

3. Forest access roads will not obstruct wildlife migration routes. The following guidelines will be followed to ensure the road is as unobstructing as possible:

- i) roads should be of low profile (less than 1 m above the surrounding terrain);
- ii) slash and other debris shall be removed;
- iii) the slope of ditches and road banks should not exceed 1½ horizontal to vertical.

4. Culverts and bridges are to be installed in accordance with the manufacturer's specifications and the specifications attached to the Certificates of Approval received from the Department of Environment and Labour and from the Department of Fisheries and Oceans. Culvert ends will be properly riprapped.
5. Where road construction is to occur around identified waterfowl breeding, moulting and staging areas, the Canadian Wildlife Service is to be consulted.
6. Road construction is not permitted within any buffer zone except with the permission of the District Manager.
7. When a skid trail is on steep ground and is no longer in use, cut-off ditches and push lanes must be created. The frequency will be determined by the District Manager.
8. When disturbance is over 10%, the conditions in 1.1.3 will apply.
9. There shall be no bulldozing of standing merchantable timber or poor utilization of merchantable softwoods and hardwoods during cutting of the right-of-way.
10. Excavations required for the construction of piers, abutments or multi-plate culverts shall be completed in the dry. (Where exceptions occur, consultation with District manager is required).
11. On a site specific basis, roads can be decommissioned and/or rehabilitated as directed by the District Manager. Decommissioning is defined as barring access; rehabilitation means to revegetate the road.

3.2 Operations

1. A "no-grub" zone of 30 metres of undisturbed ground vegetation must be maintained around any water body crossing to minimize the damage to the lower vegetation and organic cover, thus reducing erosion potential. Manual clearing at waterbody crossing sites should be used to remove or control vegetation. Right-of-way widths at waterbody crossings should be kept to a minimum.
2. Fill materials for road building must not be obtained from any waterbody or from within the floodplain of any waterbody.
3. Trees are to be felled away from all waterbodies, and slash and debris should be piled above the high water mark so that it cannot enter waterbodies during periods of peak flow.
4. Equipment activity in water crossing areas is to be kept to a minimum. Whenever possible, any work is to be carried out from dry, stable areas.
5. Unnecessary side casting or backfilling in the vicinity of waterbodies is not permitted. Where topographical constraints dictate that the roadbed must be constructed adjacent to a waterbody, road slope stabilization is to be undertaken at the toe of the fill where it enters the water (an area where active erosion is likely). The placement of large riprap or armour stone is recommended in such areas.

6. Side casting must be carried out in such a manner that sediment does not enter any waterbody.
7. Where borrow pit or quarry activity is likely to cause sediment-laden run-off to contaminate a waterbody, sediment control measures such as filter fabric berms or sedimentation ponds are to be installed. Contact is to be made with the District Manager prior to construction where such conditions exist.
8. Stabilize cut banks and fill slopes in the vicinity of waterbodies.
9. When using ditches, especially on long slopes, baffles and culverts are to be used at frequent intervals.
10. When constructing ditches near streams, the ditch itself is not to lead directly into the stream.
11. Keep ditches at the same gradient as the road.
12. In side hill and similar areas, install ditches on the uphill sides of roads to intercept seepage and run-off.
13. Borrow pits are to be located 50 metres from the nearest waterbody.

4.0 SILVICULTURAL PRACTICES AND FOREST REGENERATION GUIDELINES

4.1 Scarification

1. Select scarification methods best suited for preparing the area for planting and for minimizing ground disturbance.
2. Where slash is piled into windrows, ensure the windrows are placed where slash cannot be washed into streams at peak flooding conditions.
3. To minimize erosion, do not direct scarification equipment straight down slope.
4. Where safety is not an issue, a minimum average of 10 cavity trees or snags per hectare, or a clump of trees, will be left on all sites.
5. Whenever possible, white pine regeneration will not be disturbed.

4.2 Planting

1. Landings will be stabilized through seeding (grass) or planting at time of plantation establishment.

4.3 Pre-commercial Thinning

1. Where possible, do not carry out pre-commercial thinning in important wildlife areas during the periods of birth and/or hatching. These areas and times will be identified by the Wildlife Division.
2. Where white pine regeneration is present, the District Manager will determine how the pine will be thinned.
3. Trees cut will not be felled into waterbodies.

5.0 FOREST PROTECTION GUIDELINES

1. A pesticide application licence must be obtained from the Department of Environment. This licence will determine planning and operational requirements.

6.0 GUIDELINES FOR FORESTRY OPERATIONS WITHIN PROTECTED WATER SUPPLY AREAS

The primary function of a protected water supply area is to provide the public with an adequate quantity of safe and good quality water on a permanent basis, to meet its present and future demands. Any other activity within water supply areas is considered secondary, and if permitted, must be strictly regulated and monitored to ensure that the water supply integrity is not threatened and the quality of the water is not impaired. In Newfoundland, forestry operations are permitted in protected water supply areas on a limited and controlled basis provided the proposed operations have no, or minimal, water quality impairment potential. The following permits and approvals are required prior to the beginning of forestry operations within a protected water supply area:

- 1) Approval of the forest operating plan by the Newfoundland Forest Service.
- 2) Approval of the forest operating plan by the provincial Department of Environment and Labour and issuance of a Certificate of Approval under *Section 10* of the *Department of Environment Act*.
- 3) Quarry permits from the provincial Department of Mines and Energy for all borrow areas and ballast pits on unalienated Crown lands and alienated Crown land (i.e., leased and licenced land).
- 4) Stream crossing permits under *Section 11* of the *Department of Environment Act* and from the federal Department of Fisheries and Oceans.
- 5) Other permits or approvals as required by natural resource management and regulatory agencies.

6.1 Planning

1. Prior to beginning any work, a forest operating plan must be prepared and approved by the Newfoundland Forest Service and the Department of Environment and Labour, and a Certificate of Approval must be obtained under *Section 10* of the *Department of Environment Act* for site specific activities such as road construction, commercial harvesting, silvicultural operations, and other activities associated with forestry operations.
2. In addition to the information normally contained in a forest operating plan, the plan must include maps to show:
 - < the boundary of the protected water supply area;
 - < existing and proposed access roads;
 - < proposed harvesting areas;
 - < areas sensitive to erosion;
 - < buffer zones around water bodies;
 - < approved stream crossings;
 - < proposed landing and skid trail locations;
 - < proposed fuel storage locations;
 - < peatland and other wetlands;
 - < nearby communities;
 - < other relevant information.

The plan must also contain a written section describing the harvesting techniques to be used, the equipment required for the operation, and the schedule of the operation.

3. Locate roads to avoid all waterbodies and areas of sensitive terrain.
4. The forest operating plan must identify an Operations Manager who shall have the responsibility for ensuring that the special protection measures are followed. The Operations Manager is responsible for co-ordinating clean-up efforts in the event of a fuel or oil spill.

6.2 Forest Access Road Construction

1. A "no-grub" zone of 30 metres of undisturbed ground vegetation must be maintained around any waterbody crossing to minimize the damage to the lower vegetation and organic cover, thus reducing the erosion potential. Manual clearing at waterbody crossing sites should be used to remove or control vegetation. Right-of-way widths at waterbody crossings should be kept to a minimum.
2. Clear-cutting up to the perimeter of any waterbody is not permitted. In all areas where road construction approaches a waterbody, a buffer zone of undisturbed vegetation must be maintained on both sides of the right-of-way using the buffer zone criteria outlined in section 6.6.
3. Fill materials for road building must not be obtained from any waterbody or from within the floodplain of any waterbody.
4. Provide adequately designed and constructed drainage ditches along forest roads to allow for good road drainage.

5. Take-off ditching can be used on both sides of the road, or in conjunction with culverts, to divert the ditch flow into the woods or into stable vegetated areas above the no-grub zones. Where take-off ditches are unstable or cannot be constructed, the use of check dams and settling basins in the ditches is required until the ditches become stabilized.
6. Trees are to be felled away from all waterbodies, and slash and debris should be piled above the high water mark so that it cannot enter waterbodies during periods of peak flow.
7. Equipment activity in water crossing areas shall be kept to a minimum. Any work will be carried out in dry, stable areas.
8. When working near sensitive areas such as streams or lakes, road building operations causing erosion or siltation are to be followed as per section 1.2.7.
9. Unnecessary side casting or backfilling in the vicinity of water bodies is not permitted. Where topographical constraints dictate that the roadbed must be constructed adjacent to a waterbody, road slope stabilization is to be undertaken at the toe of the fill where it enters water, an area where active erosion is likely. The placement of large riprap or armour stone is recommended in such areas. Contact is to be made with the District Manager prior to construction when such conditions occur.
10. Side casting must be carried out in such a manner that sediment does not enter any waterbody.
11. Maintenance support sites must be located outside the protected water supply area.

6.3 Forest Access Road Stream Crossings

1. Stream fording is prohibited in protected water supply areas.
2. All stream crossings, whether culverts or bridges, require written approval under *Section 11* of the *Department of Environment Act*.
3. The operator must comply with all terms and conditions of a Certificate of Approval for stream crossings.

6.4 Harvesting

1. Harvesting or other heavy equipment will not be used on wetlands or bogs.
2. Steep areas with high potential for erosion should not be harvested.
3. Wherever possible, skid trails should run along contours and never cross wetlands and waterbodies.
4. Landings will be few in number with a maximum size of less than 0.25 ha. All landings should be located at least 100 metres from a waterbody.

5. In sensitive areas prone to erosion, equipment must have wide tires, or harvesting must occur during the winter when the ground is frozen.
6. Harvesting equipment shall not enter a buffer zone or any waterbody without permission of the District Manager.
7. The operator must implement erosion control and rehabilitation measures in areas where soils have been unduly disturbed by harvesting activity. In addition to general erosion control measures presented in other sections of these guidelines, the following should also be considered in protected water supply areas:
 - < undertake contour furrowing;
 - < construct diversion ditches to lessen the possibility of forming new drainage channels;
 - < seed or plant areas that are difficult to stabilize by other means;
 - < plough or rip prior to seeding any surfaces which have been compacted.

6.5 Buffer Zones

The Newfoundland Forest Service on unalienated Crown land and the appropriate company on leased, licenced, private or charter land will provide the operator with a map indicating the harvesting area and no-cut treed buffer zones, and will ensure that the operator is familiar with the boundaries.

No forestry activities are permitted within the following buffer zones.

Water Body Width of Buffer Zone

1. Intake pond/lake/reservoir A minimum of 150 m
2. River intake A minimum of 150 m for 1 km upstream and 100 m downstream
3. Main river channel A minimum of 75 m
4. Major tributaries/lakes/ponds A minimum of 50 m
5. Other water bodies A minimum of 30 m

6.6 Fuel/Oil Handling and Storage

Fuel storage and the operation of fuel storage equipment is regulated by the *Storage and Handling of Gasoline and Associated Products Regulations (1982)* under the Department of Environment and Lands Act. According to the regulations, the owner or operator of a fuel storage system must submit a Schedule "A" Storage Tank System Application to the Department of Environment. The applicant must be in receipt of a Certificate of Approval for the system before the system is used for fuel storage. Section 9 of the above Act states: "*No owner or operator shall directly or indirectly cause pollution of the soil or water by causing, suffering or permitting leakage or spillage of gasoline or associated products from a storage tank system or vehicle.*"

In addition to the above regulatory requirements, the following guidelines are to be followed:

1. Bulk fuel is to be stored outside the protected water supply area. If fuel must be stored in the protected area, it must be in the least sensitive area and be approved by the Water Resources Management Division of the Department of Environment and Labour.
2. Fuel must be stored in self-dyked, above-ground Jeep Tanks which have been approved by the Department of Environment and Labour.

3. A maximum of seven days fuel supply can be stored within a water supply area.
4. Refuelling must not take place within 100 metres of a waterbody.
5. Daily dipping of tanks and weekly reconciliations are mandatory. Visual inspection of the dykes and the surrounding area must be carried out daily and inspection records must be maintained.
6. Each unit must be fitted with a locking valve system for the elimination of water inside the outer tank. The valve must be closed and locked except to drain precipitation.
7. Each person involved with fuel handling must be cautioned that any spillage is to be cleaned up immediately.
8. Each person involved with fuel storage must exercise extreme caution when refueling equipment.
9. All waste materials and waste oil on the site must be collected in enclosed containers and removed to an approved site at least weekly.
10. Contaminated soil or snow must be disposed of at an approved waste disposal site.
11. Any spill in excess of 70 litres must be reported immediately through the 24- hour Spill Report Number (709-772-2083) or the Government Services Centre (1-800-563-2444).
12. All self-dyked Jeep Tanks must be located at a minimum distance of 500 metres from any major waterbody.
13. A fuel or oil spill clean-up kit must be kept on site within the protected area to facilitate any clean-up in the event of a spill. This kit must include absorbent pads, loose absorbent materials such as dried peat, speedy-dry or sawdust, and a container such as an empty drum for recovering the fuel or oil. If there is a bulk fuel storage facility within the protected area, the clean-up kit must include the following list of fuel or oil spill clean-up equipment:
 - < Fire pump and 100 metres of hose
 - < Two hand operated fuel pumps
 - < Six recovery containers such as empty drums
 - < Four long handled shovels
 - < Two pick axes
 - < Ten metres of containment boom
 - < Twenty-five absorbent pads
 - < One hundred litres of loose absorbent material.

When any fuel spill occurs, stop the fuel flow immediately. This may entail repairing a leak, pumping out a tank, or shutting off a valve. If fuel or oil is spilled onto soil, dyking may be necessary. If fuel or oil enters water, absorbent booms or barriers such as fencing or netting with loose absorbent or straw must be used to contain the spill. If necessary, culverts may be blocked off by earth or wooden barriers to contain the fuel or oil provided the threat of flooding is addressed. All recovered fuel or oil must be stored in

containers. Contaminated soil must be removed and placed in containers for transport and disposal. Extensive soil removal may cause problems such as erosion and the subsequent siltation of waterbodies; therefore, the affected area must be backfilled and sloped and revegetated as required by the Department of Environment and Labour.

Recovered fuel or oil should be reused or collected by a waste oil company for recycling. Oily debris and contaminated soils must be disposed of at an approved waste disposal site with the approval of the disposal site owner or operator. Contact must be made with the appropriate regional office of the Department of Environment and Labour before disposal.

6.7 Support Service and Structures

1. Storage of any type of pesticide, chemical or other hazardous material is prohibited within a protected water supply area.
2. Dormitory camps, garages or any other structures are prohibited within a protected water supply area.
3. The establishment of new sawmills is not permitted in protected water supply areas.
4. Wherever possible, toilet facilities must be provided in all work areas.
5. Garbage cans must be located in all work areas and garbage is to be collected regularly and disposed of at an approved waste disposal site outside the protected area.

6.8 Silviculture

1. Chemicals are to be used within a protected water supply area only under the approval of the Division of Water Resources.
2. Scarification must be minimized and restricted to the trench or spot types.
3. If scarification leads to erosion or sedimentation of small streams or water bodies, scarification operations must be suspended and remedial measures must be taken.

6.9 Abandonment

When forestry operations in a protected water supply area have been completed, an abandonment plan for the area should be developed. This will involve input from the Newfoundland Forest Service, the Community involved, and the Water Resources Management Division of the Department of Environment and Labour. In general, the purpose of the plan is: (i) to ensure that the post-harvest conditions do not lead to water quality impairment, and (ii) to discourage activities or use of the area that could lead to water quality impairment.

An important question will be whether access roads will remain open. This will be decided on a case-by-case basis in consultation with the municipality, Water Resources Management Division and the operator. Issues such as the rehabilitation of cutover areas, landing sites, skid trails, and the abandonment of roads are to be discussed during the consultation process to control post-harvesting environmental impacts and activities. The

following are recommended precautionary measures if roads are to be closed to control post-harvesting access to the area:

< Use water bars (trenches 8-10" deep dug across the road) to intercept and deflect surface roadside ditches rather than have it flow into a waterbody. Water bars can be placed 500 metres apart in gentle to moderate terrain (up to 10% slope), but should be no more than 150 metres apart in terrain greater than 10%. In most cases, it is sufficient to limit water bars to one kilometer on each side of a stream crossing.

< Road-side ditches should flow into the woods or into stable, vegetation covered areas.

< Stable bridge abutments and erosion protection works at crossings need not be removed.

< Bridge decking, culverts and other easily removable structures should be transported out of the watershed area.

< All disturbed areas of river banks will be stabilized and seeded.

6.10 Monitoring and Inspection

1. Forestry operations approved under Section 10 of the Department of Environment Act will be inspected from time to time by the staff of the Water Resources Management Division to ensure the operator's compliance with the environmental protection guidelines and the terms and conditions of the approvals.

2. In case of an oil spill, the sedimentation of a water body, or any other water quality impairment related issue, the operator might be required by the Department of Environment and Labour to undertake water quality monitoring to assess the extent of the damage and to select appropriate mitigative measures to correct the harmful conditions.

3. Any water quality impairment problem should be reported to the Water Resources Management Division.

7.0 PROCESSING FACILITIES AND SUPPORT SERVICES GUIDELINES

1. If possible, use previously disturbed sites (e.g., borrow pit).

2. Minimize the size of the area cleared for the establishment of any camp, processing or support structures. Wherever possible, these facilities should not be established within 100 metres of a waterbody.

3. All sumps containing effluent from a kitchen or washroom facility must be properly treated on a daily basis in compliance with Department of Health regulations.

4. Sewage disposal must be carried out in compliance with the Public Health Act.

5. A permit to occupy is required for Crown Land developments.

6. Facilities will not be located within known sensitive wildlife areas. These areas will be identified by the Wildlife Division.

7. A permit is required for a firearm.

8.0 PLANNING AND MUNICIPAL AREA GUIDELINES

1. Timber harvesting, resource road construction, silviculture, processing facilities, and support services are developments under the Urban and Rural Planning Act. Where these activities occur within a planning area boundary or within 400 metres of a protected road, a development permit is required before any activity takes place.

2. Consultation with the planning agency (usually municipality, but also the Development Control Unit of the Department of Municipal and Provincial Affairs) is to be made at the planning stage so that regulatory requirements can be made known and taken into account. This should occur three months before the desired commencement of the development and the permit obtained about one month before the development is to start.