# Appendix 4: Landbase Determination

# TIMBER SUPPLY ANALYSIS

# Landbase Determination

Alberta
Sustainable Resource
Development

Forest Management Branch
Resource Analysis Section
May 15, 2008

# TABLE OF CONTENTS

# LIST OF TABLES

**LIST OF FIGURES**

**LIST OF MAPS**

LANDBASE DETERMINATION

This document contains a detailed description of the methods used to classify the landbase for the FMU E8 Timber Supply Analysis (TSA). Map 1-1 illustrates the FMU boundaries. The forest management unit encompasses 219,657.34 ha.

This document is comprised of the following five sections:

- Data

- Inventory

- Landbase Stratification

- Classified Landbase Attributes

- Classified Landbase Summaries

**Map 0-1: Forest Management Unit E8 and Surrounding Area**

# Forest Management Unit E8 and Surrounding Area



Legend:
- FMU E08
- Provincial Recreation Areas
- Rivers
- Lakes
- Raillines
- Pipelines
- Powerlines
- Cutlines

**All Roads**
- Divided Highway
- Gravel Roads
- Primary Highways

Grande Cache

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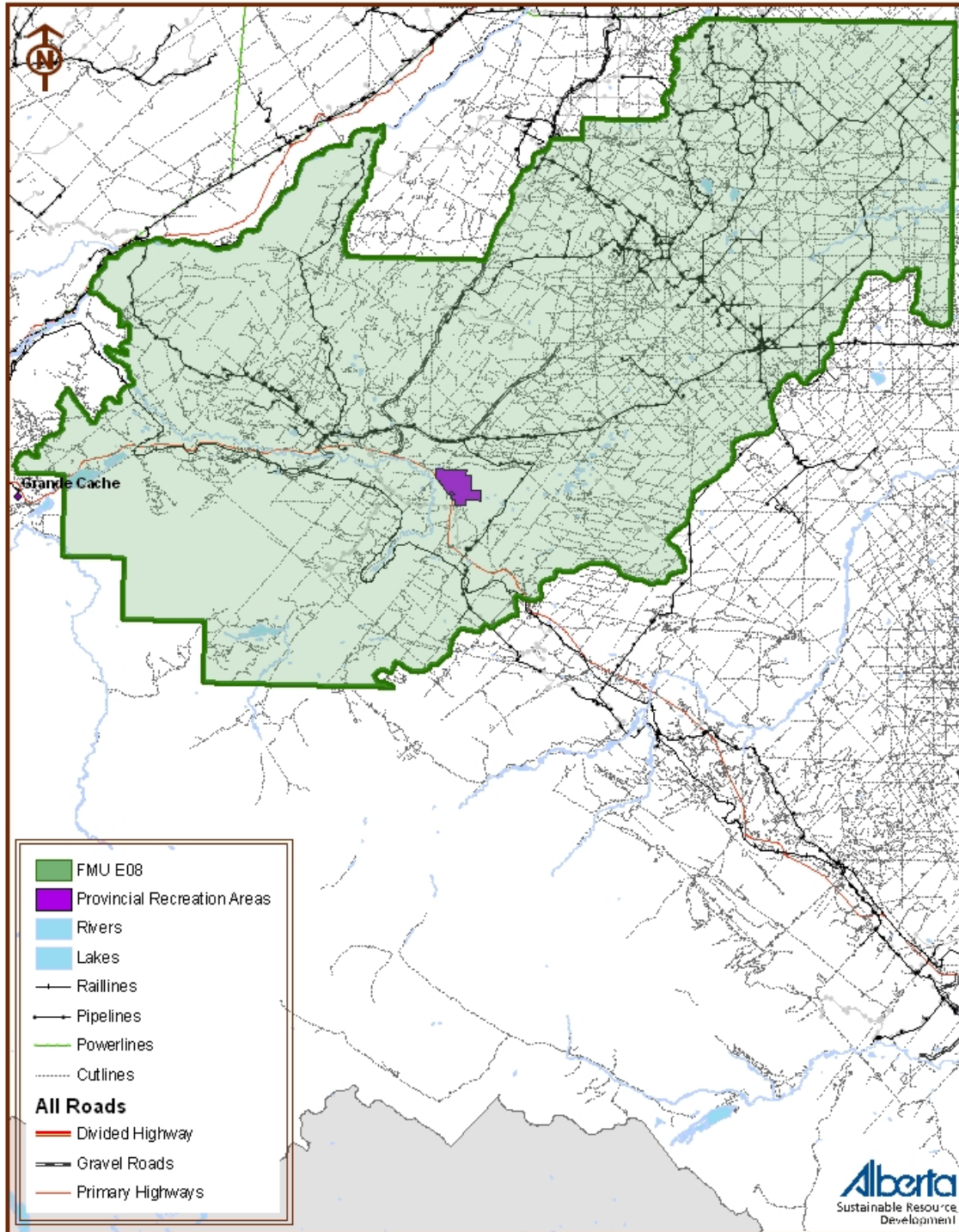
Map produced by Resource Analysis Section, Forest Management Branch, Forestry Division   Date: May 1, 2008   Projection: NAD_1983_10TM_AEP_Forest   Project: (f) weyergp/e8/data/FMUe82008.mxd

| COVERAGE NAME | SOURCE | SCALE/ ACCURACY | DESCRIPTION |
|---|---|---|---|
| E8-AVI | WGP | 1:20 000 | AVI |
| HARVEST | WGP | 1:20 000 | Harvest update |
| LOC_ROADS | WGP | 1:20 000 | Roads covered under LOC dispositions |
| TEMP_ROADS | WGP | 1:20 000 | Temporary roads (in block, etc) |
| PSP | WGP | 1:20 000 | PSP point locations |
| CARMGMT.SHP | WGP | 1:1 000 000 | Caribou Management Areas |

## Table 0-2: Weyerhaeuser data converted to UTM 11 NAD83

| COVERAGE NAME | SOURCE | SCALE/ ACCURACY | DESCRIPTION |
|---|---|---|---|
| WGP_AVI | WGP | 1:20 000 | AVI |
| WGP_FMU | WGP | 1:20 000 | FMU boundary |
| WGP_PSP | WGP | 1:20 000 | PSP point locations |
| WGP_ROADS | WGP | 1:20 000 | Roads covered under LOC dispositions |
| WGP_TROADS | WGP | 1:20 000 | Temporary roads (in block, etc.) |
| WGP_UPDATE | WGP | 1:20 000 | Harvest update |

## Table 0-3: Base Features Data

| COVERAGE NAME | SOURCE | SCALE/ ACCURACY | DESCRIPTION |
|---|---|---|---|
| ACC_POLY | RIMB[8] | 1:20 000 | Access polygon features |
| CUTLINES | RIMB | 1:20 000 | Seismic lines/trails |
| FACILITIES | RIMB | 1:20 000 | Facilities |
| HYDROCARTO | RIMB | 1:20 000 | Hydrography annotation |
| HYDROPOINTS | RIMB | 1:20 000 | Hydrography point features |
| HYDROPOLYS | RIMB | 1:20 000 | Hydrography polygon features |
| PIPELINES | RIMB | 1:20 000 | Pipelines (arcs) |
| POWERLINES | RIMB | 1:20 000 | Powerlines (arcs) |
| RAILLINES | RIMB | 1:20 000 | Railway (arcs) |
| ROADS | RIMB | 1:20 000 | Classified roads (arcs) |
| SLNET | RIMB | 1:20 000 | Single line hydrography network |
| WELLSITES | RIMB | 1:20 000 | Wellsites (points) |

[8] Resource Information Management Branch

**Table 0-4: Other data**

| COVERAGE NAME | SOURCE | SCALE/ ACCURACY | DESCRIPTION |
|---|---|---|---|
| NW_CARIBOU | FW[9] | 1:1 000 000 | - caribou zone boundaries for NW Alberta<br>- data provided by Troy Sorenson (F&W Whitecourt)<br>- shape file converted to coverage |
| CARIBOU2 | FMB[10] | 1:1 000 000 | - new boundary (arc) created using some hydro arcs and digitizing the rest<br>- boundary approved by Dave Hervieux (Provincial Caribou Co-ordinator) |
| HWY40 | FRI[11] | 1:20 000 | Highway 40 project area boundary |
| E8_CMPT | FMB | 1:20 000 | Compartment boundaries |
| E8_BASINS | FMB | 1:20 000 | Watershed boundaries |
| E8_HIST_RES | FMB | 1:20 000 | Historical Resource probability |
| E8_PBLOCKS | FMB | 1:20 000 | Pre-blocks (TSA) |
| E8_VIS_SENS | FMB | 1:20 000 | Visually sensitive areas |
| SLOPECL_POLY | FMB | 1:20 000 | slope classification converted from SLOPECLASS |
| WGP_FMA | RIMB | 1:20 000 | most current FMA boundary |

**Table 0-5: Data clipped to FMU E8 boundary**

| COVERAGE NAME | SOURCE | SCALE/ ACCURACY | DESCRIPTION |
|---|---|---|---|
| E8_1PGEOFMU | RIMB | 1:20 000 | most current FMU boundary (not officially released) |
| E8_1PGEOFRAP | TPR[12] | 1:20 000 | Forest Recreation Areas |
| E8_1PGEOPRA | TPR | 1:20 000 | Provincial Recreation Areas |
| E8_AVI | WGP | 1:20 000 | AVI with attributes reformatted to SRD AVI 2.1 data model |
| E8_CARIBOU | FMB | 1:1 000 000 | |
| E8_CUTLINES | RIMB | 1:20 000 | cutlines |
| E8_DISP | RIMB | 1:20 000 | dispositions created by extracting deletions from WGP_FMA and attributing. |
| E8_HYDL | RIMB | 1:20 000 | streams and creeks |
| E8_HYDP | RIMB | 1:20 000 | lakes and rivers |
| E8_NSR | RIMB | | natural subregions |
| E8_OWNERSHIP | RIMB | 1:20 000 | private land |
| E8_PIPELINES | RIMB | 1:20 000 | pipelines (arcs) |
| E8_PSP | WGP | 1:20 000 | Permanent Sample Plots (points) |
| E8_ROADS | FMB | 1:20 000 | access/roads |
| E8_RWY | RIMB | 1:20 000 | railway (arc) |
| E8_SLOPECL | FMB | 1:20 000 | slope classes<br>- slopeclass = 1 0% to 30% slope<br>- slopeclass = 2 31% to 45% slope<br>- slopeclass = 3 > 45% slope |

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[9] Fish and Wildlife Division
[10] Forest Management Branch
[11] Foothills Research Institute (formerly Foothills Model Forest)
[12] Tourism, Parks and Recreation – Parks and Protected Areas

# Inventory

## Alberta Vegetation Inventory (AVI)

As a condition of approval of their last Detailed Forest Management Plan (DFMP), Weyerhaeuser must complete a new inventory to current standards (Alberta Vegetation Inventory version 2.1). Aerial photography was obtained in 2000. Nine "test" townships were interpreted and approved through the AVI audit process in 2000-2001. Beginning in 2001, the AVI has been completed in blocks. The first block included portions of FMUs G3 and G4. The second block included the north-eastern portion of FMU G7 and the eastern half of FMU E8. The third block covers the western portion of FMU E8 and a portion of FMU G7.

The Department obtained a copy of the AVI for FMU E8 from Weyerhaeuser. Historical cutblock data had been captured as a separate inventory by Weyerhaeuser (Regenerated Stand Inventory or RSI) and in the AVI, the polygons had been given a generic call of *mSO$_4$-CC5-1995*. SRD obtained the RSI inventory in May 2007. The RSI data was incorporated into the AVI by FMB Senior Technologist Lowell Lyseng (re-interpreted to AVI 2.1 standards). The new version of the E8 AVI was released in November 2007.

## Inventory Updates

Post-inventory updates by Weyerhaeuser were completed on an annual basis, using helicopter-mounted GPS to capture the perimeter of all harvest blocks[13]. Since 2004, the Crown has been responsible for capturing depletion information. The depletion information (both cutblocks and land use) is captured using 1:20 000 colour photography. The update data provided by Weyerhaeuser was reviewed and was used where appropriate. Otherwise, the cutblock boundaries were updated with aerial photography. Resource Analysis Section is now in the process of assigning ARIS opening numbers to each block. See Map 3-1 for post-inventory updates.

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[13] Information supplied by Greg Behuniak, Weyerhaeuser, Grande Prairie

**Map 0-1: Post-Inventory Updates**



Legend:
- E8 FMU
- Land Use Update
- Cutblock Update Year
  - 1995
  - 2000
  - 2001
  - 2002
  - 2003
  - 2004
  - 2005
  - 2006
  - 2007
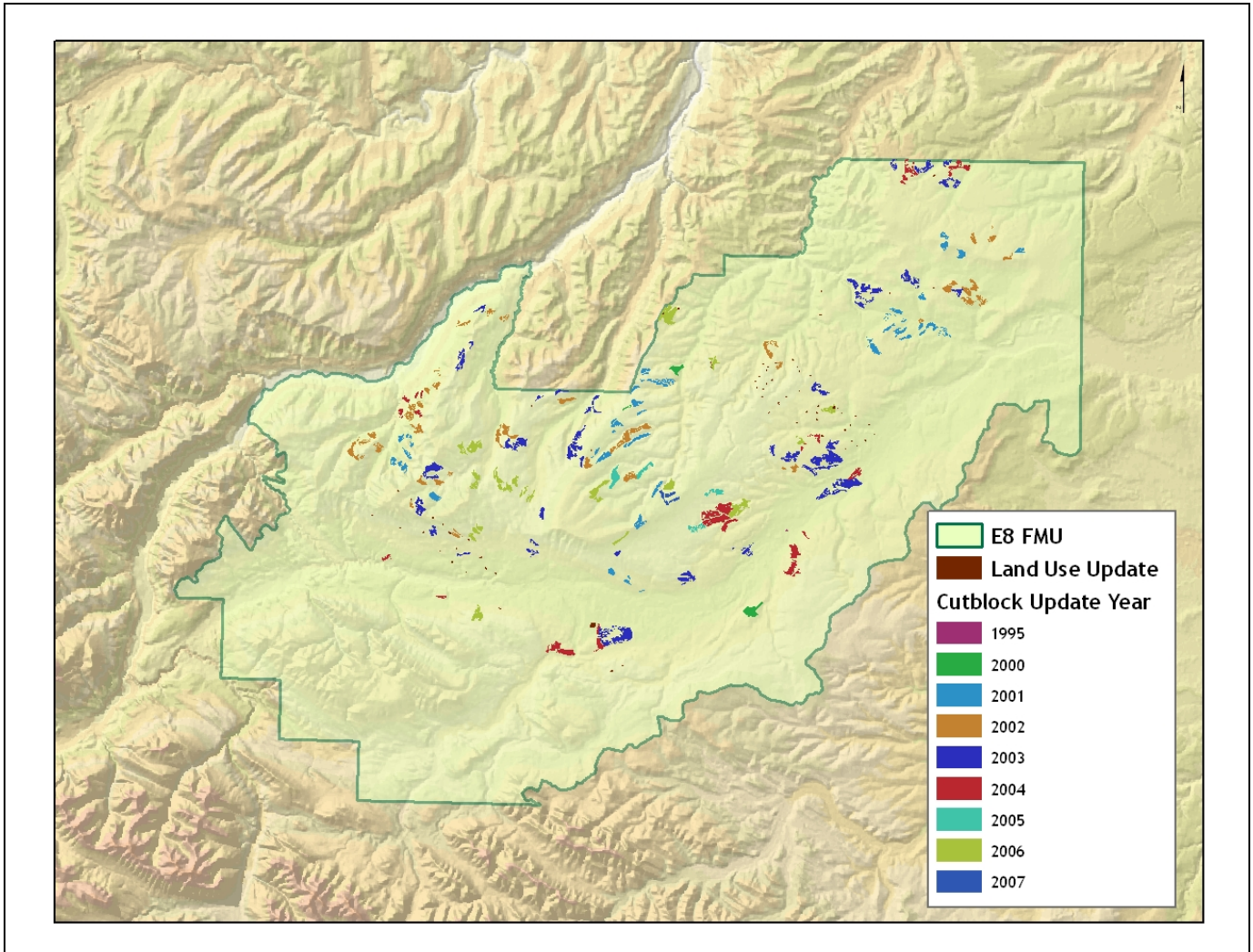
# Landbase Stratification

Stratification of the land base by land use category ensures that areas that are not operable because of ground rules, excessive slopes and incompatible land status do not contribute to the proposed harvest level.

The following are some land classifications that limit or prevent areas from contributing to the harvest level in FMU E8:

- Non-forested land (both naturally non-forested and anthropogenic non-forested areas).
- Subjective deletions for site-specific productivity adjustments based on cover types such as 'larch as primary or secondary species'. The subjective deletions used in this analysis are outlined in Section 5.3.8.2.
- Productivity deletions, such as TPR = 'U'.
- Riparian/hydrography buffers. In this analysis, standard provincial Operating Ground Rules hydrography buffers were used.
- Accessibility, operational, slope and elevation constraints, based on not operating on slopes > 45%.
- Crown land committed to incompatible uses, such PNTs with surface restrictions.
- Existing parks, recreation areas, wilderness areas and other Order-in-Council protected areas.
- Private land.

It is also important to account for features that may not be adequately captured in the vegetation inventory, including:

- Road widths that are below the minimum width outlined in the vegetation inventory standards.
- Seismic lines.
- Pipelines that are below the minimum width outlined in the vegetation inventory standards.

Figure 4-1 outlines the basic approach taken to stratify the landbase.

**Figure 0-1: FMU Landbase Stratification Process**
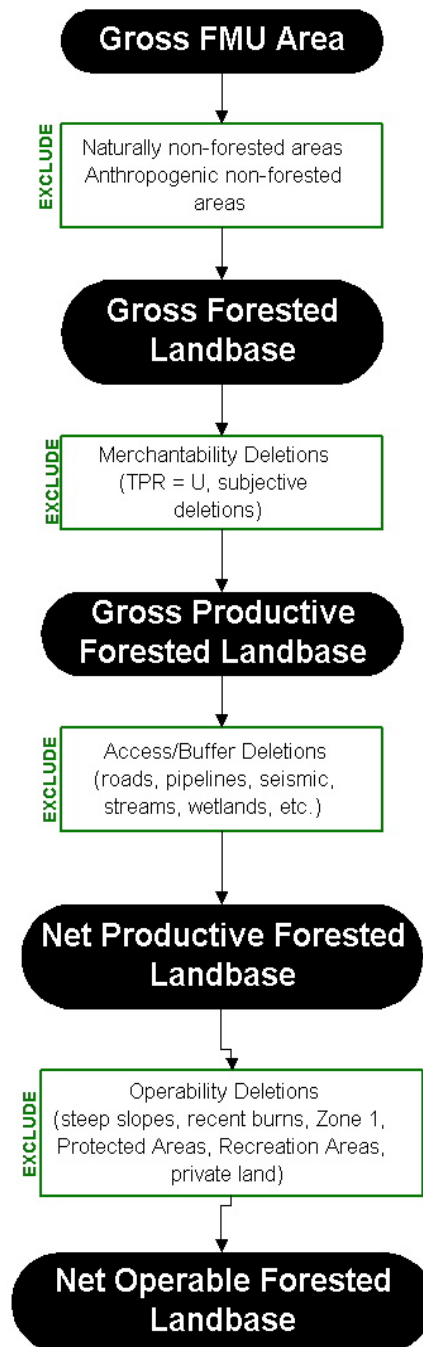
In addition to the spatial data types outlined above, other spatial data sets are incorporated into the landbase stratification for the purpose of setting objectives/targets in the Timber Supply Analysis (TSA) and reporting on non-timber values.

In ArcInfo, a series of unions are performed to create the final classified landbase coverage. The input spatial coverages used in this analysis are outlined below in Table 4-1.

**Table 0-1: Input Spatial Coverages**

| SPATIAL DATA TYPE | GIS COVERAGE NAME | DESCRIPTION | NET LANDBASE DATABASE FIELDS |
|---|---|---|---|
| Access Features | CUTLINEBUF | Cutlines (buffered 3m) | CUTLINEBUF |
| | ROADSBUF | Road buffers (3m/8m) | ROADBUF |
| Buffers | HYDPBUF | 100 m buffers applied to all lakes > 4 ha | HYDPBUF |
| | HYDLBUF | 60 m buffers for all rivers and large permanent streams 30 m buffers for all small permanent streams | HYDLBUF |
| | RECBUF | 100 m buffers for all Recreation Areas | RECBUF |
| Land Status | E8_DISP | Dispositions precluding timber harvesting | DISP_TYPE |
| | E8_1PGEOPRA | Provincial Recreation Areas | PRA_NAME |
| | E8_1PGEOFRAP | Forest Recreation Areas | FRA_NAME |
| | E8_OWNERSHIP | Freehold and Mixed ownership quarter sections | OWNERSHIP |
| | E8_LUUPDT_07 | Post-inventory land use updates to 2007 | LUPDATE |
| Steep Slopes | E8_SLOPECL | Slopes > 45% | SLOPE_CODE |
| Land Use | PIPEBUF | Pipelines (buffered 10m) | PIPEBUF |
| Geoadmin | E8_1PGEOFMU | Forest Management Unit Boundary | FMU_CODE |
| | HWY40 | Highway 40 Project area boundary | HWY40 |
| | E8_CMPT | Compartment boundaries | COMP_NAME |
| Vegetation Inventory | E8_AVI | Described in section 3.0 | See Table 5-2 |
| | E8_CCUPDT_07 | Depletion updates for AVI | UPDATE, UPDT_YEAR |
| | FFP_UPDT | Cutblock updates provided by Foothills Forest Products | FFP_UPDT, FFP_UPDTYR |
| Natural Subregions | E8_NSR | Natural subregion coverage clipped to E8 boundary | NSR, NSRNAME |
| Miscellaneous Data | E8_BASINS E8_HIST_RES E8_PBLOCKS E8_VIS_SENS | Watershed boundaries Historical Resource probability Pre-blocks (TSA) Visually sensitive areas | WS_NAME HRV5 PBLOCK VQO |
| Habitat | E8_CARIBOU4 CARIBOU0707 INTACT_CLS GB_GC_PAREA | Original caribou ranges Current caribou ranges Caribou habitat intactness classification Grizzly Bear Core Area | OLD_HERD,CARIBOU1 HERD, RANGE INTACT_CLA GB_PAREA |

# Classified Landbase Attributes

## Spatial Data

All GIS-processing was completed using ArcInfo 7.2.1 on a Sun Workstation. The AML used to create the final coverage is included in Appendix 1. All data were projected into UTM 11 NAD83. The coverage was converted to shapefile format and Paradox Version 11.0.0.411 was used for the post-GIS processing. The spatial data processing parameters are summarised in Table 5-1 below.

**Table 0-1: Spatial Data Processing Parameters**

| | |
|---|---|
| *GIS software* | ArcInfo 7.2.1 on Sun UNIX workstation |
| *Projection/Datum* | UTM 11 NAD83 |
| *Tolerance parameters* | Fuzzy - 0.001　　Dangle - 0.00　　Snap - 10.0<br>Edit - 100.0　　　Node Snap - 2.5 |
| *Sliver polygons* | Not dealt with |
| *Number of records (polygons)* | 167,690 |
| *Post-GIS processing software* | Corel Paradox, Version 11.0.0.411 |
| *Mapping software* | ArcMap 9.2 |

## Attribute Data

The following data dictionary outlines the database table contents and structures. There are a total of 190,713 records (polygons) in the net landbase shape file.

**Table 0-2: FMU E8 Classified Landbase Data Dictionary for E8_net9.dbf**

| Field Name | Data Type | Width | # Decimals | Description |
|---|---|---|---|---|
| STANLOCK | Character | 15 | | Stanley Spatial Sequence Lock field |
| | | | | _Lock 1    Indicates polygon to be exlcuded for 1 period |
| REMSOFT_ID | Numeric | 9 | 0 | Remsoft assigned ID - 1,000,001 and greater |
| BLOCK | Character | 10 | | Spatial sequence block number assigned by Remsoft |
| REASONCODE | Character | 15 | | Reason for inclusion or exclusion from spatial solution |
| | | | | Flows    Inclusion caused flow constraint violation |
| | | | | Impossible The polygon could not be aggregated into a neighbor |
| | | | | In Solution Included in spatial solution |
| | | | | Inoperable Polygon not operable to the action in assigned period |
| | | | | Not Needed Polygon not needed to meet Woodstock targets |
| BESTPERIOD | Numeric | 3 | 0 | Remsoft identified best period for harvest |
| AREA | Numeric | 18 | 5 | ArcInfo polygon area in m$^2$ |
| PERIMETER | Numeric | 18 | 5 | ArcInfo polygon perimeter in meters |
| E8_NET9_ | Numeric | 11 | 0 | Internal ArcInfo identifier |
| E8_NET9_ID | Numeric | 11 | 0 | Internal ArcInfo identifier |
| NSRNAME | Character | 25 | | Natural Subregion code (see below for codes) |
| NSR | Numeric | 2 | 0 | Natural Subregion name (code) |
| | | | | **NSR**      **NSRNAME** |
| | | | | 8        Sub-Alpine |
| | | | | 9        Montane |
| | | | | 10       Upper Foothills |
| CUTLINEBUF | Numeric | 11 | | 100      inside cutline buffer |
| | | | | 0        outside cutline buffer |
| ROADBUF | Numeric | 11 | | 100      inside road buffer |
| | | | | 0        outside road buffer |
| PIPEBUF | Numeric | 11 | | 100      inside pipeline buffer |
| | | | | 0        outside pipeline buffer |
| HYDPBUF | Numeric | 11 | | 100      inside hydro polygon buffer |
| | | | | 0        outside hydro polygon buffer |
| HYDLBUF | Numeric | 11 | | 100      inside hydro line buffer |
| | | | | 0        outside hydro line buffer |
| SLOPE_CODE | Numeric | 1 | | Slope classification |
| | | | | 1        0% to 30% slope |
| | | | | 2        31% to 45% slope |
| | | | | 3        > 45% slope |
| PRA_NAME | Character | 40 | | provincial recreation area name |
| | | | | Pierre Grey's Lakes PRA |
| FRA_NAME | Character | 80 | | forest recreation area name |
| | | | | Mason Creek Day Use Forest Recreation Area |
| DISP_TYPE | Character | 3 | | land use disposition type |
| | | | | PNT      Protective Notation |
| DISP_NUM | Numeric | 7 | | land use disposition number |
| OWNERSHIP | Character | 1 | | land ownership |
| | | | | F        Freehold |
| OLD_HERD | Character | 16 | | Old caribou herd boundaries |
| | | | | Little Smoky |
| | | | | A La Peche |
| CARIBOU1 | Character | 4 | | Caribou range code |
| | | | | NALP     North Little Smoky Range |
| | | | | NLS      South Little Smoky Range |
| | | | | SALP     North A La Peche Range |
| | | | | SLS      South A La Peche Range |
| INTACT_CLA | Numeric | 11 | | Intactness Class |
| | | | | 1        Primary intactness |
| | | | | 2        Secondary intactness |
| | | | | 3        Outside intactness area |
| HERD | Character | 25 | | Caribou herd name |
| | | | | Little Smoky |
| | | | | A La Peche |

| Field Name | Data Type | Width | # Decimals | Description |
|---|---|---|---|---|
| RANGE | Character | 1 | | Caribou range code<br>W     winter range<br>S     summer range |
| VQO | Character | 1 | | Visuallay Sensitive Areas<br>H     Highly visible<br>M     Moderately visible |
| COMP_NAME | Character | 12 | | Compartment Name<br>Bolton<br>Deep Valley<br>Huckleberry<br>Muskeg<br>Simonette<br>Smoky |
| HWY40 | Numeric | 11 | | Highway 40 Project<br>100     Inside Highway 40 project boundaries |
| WS_NAME | Character | 16 | | Watershed name<br>Little Smoky<br>Muskeg River<br>Simonette<br>Trib1<br>Trib2<br>Trib3<br>W1<br>W11<br>W5<br>W8 |
| HRV5 | Character | 5 | | High Potential Lands<br>5 |
| PBLOCK | Character | 1 | | Pre-block<br>Y     Identified pre-block<br>N     Not a pre-block |
| PBLK_YR | Numeric | 1 | | Year from time 0 pre-block scheduled for harvest<br>1     Harvest to occur in period 1<br>6     Harvest to occur in period 2 |
| UPDATE | Character | 4 | | Harvest inventory update feature type<br>CC     clearcut |
| UPDT_YEAR | Numeric | 4 | | Update year |
| LUPDATE | Character | 4 | | Land use inventory update feature type<br>AIG     Gravel/borrow pits<br>AII     Industrial sites, sewage lagoons<br>CIW     Geophysical + wellsites seeded to grass<br>CL     Clearing |
| FFP_UPDT | Character | 2 | | Harvest inventory update provided by FFP<br>CC     clearcut |
| FFP_UPDTYR | Numeric | 11 | | Update year provided by FFP |
| GB_PAREA | Character | 15 | | Grizzly Pear Priority Area<br>GRANDE CACHE |
| POLY_NUM | Numeric | 10 | | unique AVI stand number |
| TRM | Numeric | 6 | | Township, range and meridian |
| MOIST_REG | Character | 1 | | Moisture Regime<br>d     dry<br>m     mesic<br>w     wet<br>a     aquatic |
| DENSITY | Character | 1 | | Crown Closure (%)<br>A     6 to 30 %<br>B     31 to 50 %<br>C     51 to 70 %<br>D     70 % + |
| HEIGHT | Numeric | 2 | 0 | Average Stand Height (dominant & codominant trees) in meters |
| SP1, SP2, SP3, SP4, SP5 | Character | 2 | | Declining order of species based on crown closure<br>Sw, Sb, Se, P, Pl, Pj, Pf, Pa, Fb, Fa, Fd, Lt, La, Lw, A, Aw, Pb, Bw |
| SP1_PER, SP2_PER.... | Numeric | 2 | 0 | Actual % (to nearest 10) of species listed above. |

| Field Name | Data Type | Width | # Decimals | Description |
|---|---|---|---|---|
| STRUC | Character | 1 | | Stand structure |
| | | | | Blank     inferred single storey |
| | | | | M     multi-layer canopy (2 storey) |
| | | | | C     complex (multiple or uneven stories) |
| | | | | H     horizontal (homogeneous stand w/ scattered |
| STRUC_VAL | Numeric | 1 | 0 | Used only with 'H' above |
| ORIGIN | Numeric | 4 | 0 | Actual year of origin |
| TPR | Character | 1 | | Timber productivity rating (site index grouping) |
| | | | | U     Unproductive |
| | | | | F     Fair |
| | | | | M     Medium |
| | | | | G     Good |
| INITIALS | Character | 2 | | AVI interpreters initials |
| NFL | Character | 2 | | Non-forest vegetated land (>6% plant cover and <6% tree cover) |
| | | | | SC     closed shrub |
| | | | | SO     open shrub |
| | | | | HG     herbaceous grassland |
| | | | | HF     herbaceous forbs |
| | | | | BR     bryophyte (moss) |
| NFL_PER | Numeric | 2 | 0 | NFL tenths closure, SC or SO only |
| NAT_NON | Character | 3 | | Naturally non-vegetated (<6% plant cover) |
| | | | | NWI     Permanent ice/snow |
| | | | | NWL     Seasonal thaws, lakes, ponds |
| | | | | NWR     River |
| | | | | NWF     Flooded |
| | | | | NMB     Recent burn |
| | | | | NMC     Cutbank |
| | | | | NMR     Rock/barren |
| | | | | NMS     Sand |
| ANTH_VEG | Character | 3 | | Human-induced vegetation |
| | | | | CA     Annual crops (farmland) |
| | | | | CP     Perennial forage crops |
| | | | | CPR     Rough pasture (>10% woody cover) |
| | | | | CIP     Pipelines, powerlines etc. seeded to grass |
| | | | | CIW     Geophysical + wellsites seeded to grass |
| ANTH_NON | Character | 3 | | Anthropogenic non-vegetated land |
| | | | | ASC     Cities, towns, villages, hamlets |
| | | | | ASR     Ribbon development, subdivisions, acreages |
| | | | | AIH     Permanent right-of-way |
| | | | | AIE     Peat extractions |
| | | | | AIG     Gravel/borrow pits |
| | | | | AIF     Farmyards |
| | | | | AIM     Surface mines |
| | | | | AII     Industrial sites, sewage lagoons |
| MOD1, MOD2 | Character | 2 | | Stand modifier 1 (or 2) condition/treatment |
| | | | | CC     Clearcut, partial cut |
| | | | | BU     Burn |
| | | | | WF     Windfall |
| | | | | CL     Clearing |
| | | | | DI     Disease |
| | | | | IK     Insect kill |
| | | | | UK     Unknown kill |
| | | | | WE     Weather (ex. redbelt) |
| | | | | DT     Discolored/dead tops |
| | | | | BT     Broken tops |
| | | | | SN     Snags |
| | | | | ST     Scattered timber |
| | | | | SI     Site improvement (fert, drain) |
| | | | | SC     Seedbed prepared |
| | | | | PL     Planted/seeded |
| | | | | TH     Thinned |
| | | | | GR     Grazing development (domestic) |
| | | | | IR     Irrigated |

| Field Name | Data Type | Width | # Decimals | Description |
|---|---|---|---|---|
| MOD1_EXT, MOD2_EXT | Numeric | 1 | 0 | Modifier extent<br><br>Blank     nil<br>1     1 to 25% loss of crown closure<br>2     26 tp 50%<br>3     51 to 75%<br>4     76 to 94%<br>5     Entire |
| MOD1_YR, MOD2_YR | Numeric | 4 | 0 | Year of the stand modifying occurrence |
| DATA | Character | 1 | | Data Source<br>F     Interpreter plot<br>P     PSP<br>V     Volume plot<br>C     cruise data<br>S     supplementary photography<br>A     air call<br>L     large-scale photography<br>I     interpreted TPR |
| DATA_YR | Numeric | 4 | 0 | Year of the data source |
| *NOTE: All leading "U" refers to understory, the same codes apply as were used for the overstory | | | | |
| UMOIST_REG | Character | 1 | | Understory moisture regime |
| UDENSITY | Character | 1 | | Understory density |
| UHEIGHT | Numeric | 2 | 0 | Understory height |
| USP1, USP2, USP3… | Character | 2 | | Understory species composition |
| USP1_PER, USP2_PER… | Numeric | 2 | 0 | Understory species percent |
| USTRUC | Character | 1 | | Understory stand structure |
| USTRUC_VAL | Numeric | 1 | 0 | Understory stand structure value |
| UORIGIN | Numeric | 4 | 0 | Understory origin |
| UTPR | Character | 1 | | Understory TPR |
| UINITIAL | Character | 2 | | Understory interpreter's initials |
| UNFL | Character | 2 | | Understory non-forest vegetated land |
| UNFL_PER | Numeric | 2 | 0 | Understory non-forest vegetated land percent |
| UNAT_NON | Character | 3 | | Understory naturally non-vegetated land |
| UANTH_VEG | Character | 3 | | Understory human induced vegetation |
| UANTH_NON | Character | 3 | | Understory anthropogenic non-vegetated |
| UMOD1, UMOD2 | Character | 2 | | Understory stand modifier |
| UMOD1_EXT, UMOD2_EXT | Numeric | 1 | 0 | Understory stand modifier extent |
| UMOD1_YR, UMOD2_YR | Numeric | 4 | 0 | Understory stand modification year |
| UDATA | Character | 1 | | Understory data source |
| UDATA_YR | Numeric | 4 | 0 | Understory data source year of collection |
| CF | Numeric | 3 | 1 | Mountain Pine Beetle Climate Factor<br>0<br>0.2<br>0.5<br>0.8<br>1 |
| SSI | Numeric | 3 | 0 | Mountain Pine Beetle stand suscpetibility index<br>0-73 |
| SSI_CF | Numeric | 3 | 0 | Mountain Pine Beetle susceptibility with climate factor<br>0-59 |
| TWP | Numeric | 3 | 0 | Township |
| RGE | Numeric | 2 | | Range |
| MER | Numeric | 1 | | Meridian |
| O_CPCT | Numeric | 2 | | Overstory coniferous percent content*10. |
| O_DPCT | Numeric | 2 | | Overstory deciduous percent content*10. |
| U_CPCT | Numeric | 2 | | Understory coniferous percent content /10 |
| U_DPCT | Numeric | 2 | | Understory deciduous percent content /10 |
| COV_GRP | Character | 3 | | Broad cover groupings based on crown cover<br>C     80-100% coniferous, 0-20% deciduous<br>CD     50-79% coniferous, 21-50% deciduous<br>DC     21-49% coniferous, 51-79% deciduous<br>D     0-20% coniferous, 80-100% deciduous<br>Con     Coniferous clearcut |
| UCOV_GRP | Character | 3 | | Understory cover group (C, CD, DC, D) |

| Field Name | Data Type | Width | # Decimals | Description |
|---|---|---|---|---|
| LBTYPE | Character | 3 | | Landbase type |
| | | | | R          regular |
| | | | | HO       horizontal overstory (struc_val>=50%, MUST be a |
| | | | | HU       horizontal understory (struc_val<50%, MUST be a |
| | | | | S          switched stands (conifer understory below a pure |
| | | | | CCC      Clear cut conifer |
| | | | | CCD      Clear cut deciduous |
| | | | | CCX      Clear cut unknown |
| F_AGECLS | Numeric | 2 | | Final ageclass of the stand in years used in TSA / 5 |
| F_AGE | Numeric | 3 | | The actual age in years of the stand (year - **Origin**) |
| F_YC | Character | 15 | | Yield curve assignment |
| | | | | CPIABF   Pine, AB density, F TPR |
| | | | | CPIABMG Pine, AB density, M/G TPR |
| | | | | CPIABMGS Pine, AB density, M/G TPR Smallwood stands |
| | | | | CPICDF   Pine, CD density, F TPR |
| | | | | CPICDMG Pine, CD density, M/G TPR |
| | | | | CSbalal   Black Spruce, all densities, all TPRs |
| | | | | CSwalal   White Spruce, all densities, all TPRs |
| | | | | CSwalalS White Spruce, all densities, all TPRs Smallwood stands |
| | | | | DAwalal  Deciduous, all densities, all TPRs |
| | | | | CDMxalal Conifer/Decid mixedwood, all densities, all TPRs |
| | | | | DCMxalal Decid/Conifer mixedwood, all densities, all TPRs |
| | | | | CCompalal Composite conifer |
| F_LBASE | Numeric | 1 | | Final landbase type |
| | | | | 1         Conifer landbase |
| | | | | 2         Deciduous landbase |
| | | | | 3         Switched |
| | | | | 4         Coniferous clearcut |
| | | | | 7         Conifer smallwood stands |
| | | | | 8         Switched conifer smallwood stands |
| F_AREA | Numeric | 10 | 4 | Final area in hectares after accounting for Horizontal stand structures |
| D_BUFF | Character | 8 | | Buffer deletion type |
| | | | | Lake     Lake buffer |
| | | | | LUUPDate Landuse update |
| | | | | Pipe     Pipeline right-of-way |
| | | | | Road    Road right-of-way |
| | | | | Seismic  Seismic lines, trails |
| | | | | Slope    Slopes > 45% |
| | | | | Stream   Stream buffers |
| D_STATUS | Character | 8 | | Land status deletions due to private land, protected areas, etc. |
| | | | | FreeHold Private land |
| | | | | FPark    Forest recreation area |
| | | | | PNT      Protective notation |
| | | | | PPark    Provincial recreation area |
| | | | | RecBuf   Recreation buffer |
| D_TPR | Character | 1 | | TPR deletion if unproductive, based on **TPR** field |
| | | | | U= unproductive |
| D_SUBJ | Character | 6 | | Subjective deletions |
| | | | | SubDel   Polygon subjectively deleted |
| F_DEL | Character | 8 | | Reason why polygon was deleted, incorporates appropriate heirarchy |
| | | | | Anth_Non Anthropologically non-vegetated |
| | | | | Anth_Veg Anthropologically vegetated |
| | | | | FPark    Forest recreation area |
| | | | | FreeHold Private land |
| | | | | LUUPDate Landuse update |
| | | | | Lake     Lake buffer |
| | | | | NFL      Non-forested vegetated land |
| | | | | Nat_Non Naturally non-vegetated land |
| | | | | NetLB    Not Deleted - Net landbase |
| | | | | PNT      Protective notation |
| | | | | PPark    Provincial recreation area |
| | | | | Pipe     Pipeline |
| | | | | RecBuf   Recreation buffer |
| | | | | Road    Road |
| | | | | Seismic  Cutlines |
| | | | | Slope    Steep slopes |
| | | | | Stream   Stream buffers |
| | | | | SubDel   Subjective deletions |
| | | | | Unclass  Unclassified stands |

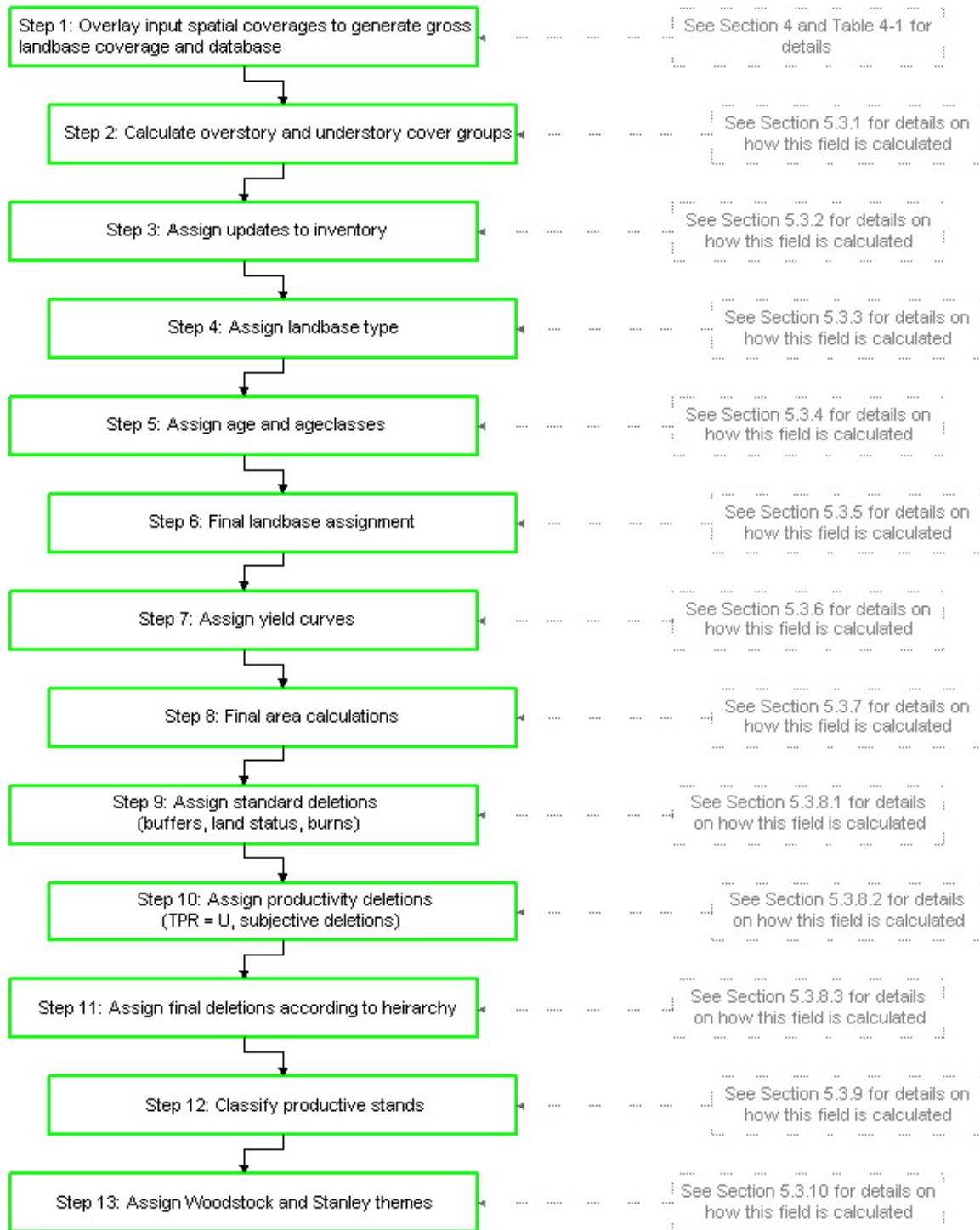| Field Name | Data Type | Width | # Decimals | Description |
|---|---|---|---|---|
| F_PROD | Character | 1 | | 'Y' means that the **nfl**, **anth_veg, anth_non**, etc. fields are blank |
| CLEARCUT | Character | 3 | | Clearcut |
| | | | |     Con      Conifer clearcut |
| YRHARVEST | Numeric | 4 | | Year of harvest |
| THEME1 | Character | 5 | | Woodstock theme - Landbase |
| | | | |     Con      Conifer |
| | | | |     SmCon  Smallwood conifer |
| | | | |     Dec      Deciduous |
| THEME2 | Character | 15 | | Woodstock theme - Yield Curve (F_YC) |
| THEME3 | Character | 2 | | Woodstock theme - Regeneration Status |
| | | | |     RT      F_lbase = 4 |
| | | | |     ST      F_lbase = 1 or 2 or 3 or 6 |
| THEME4 | Character | 9 | | Woodstock theme - Caribou range by intactness value |
| | | | |     IHigh      High intactness |
| | | | |     IHighALP  High intactness in A La Peche range |
| | | | |     IHighLS   High intactness in Little Smoky range |
| | | | |     ILow       Low intactness |
| | | | |     ILowALP  Low intactness in A La Peche range |
| | | | |     ILowLS    Low intactness in Little Smoky range |
| | | | |     IMed      Medium intactness |
| | | | |     IMedALP  Medium intactness in A La Peche range |
| | | | |     IMedLS   Medium intactness in Little Smoky range |
| | | | |     INul       No intactness rating and outside caribou ranges |
| | | | |     INulALP  No intactness and inside A La Peche range |
| | | | |     INulLS   No intactness and inside Little Smoky range |
| THEME5 | Character | 8 | | Woodstock theme - Active/Passive landbase |
| | | | |     Net      Net or active landbase |
| | | | |     Passive  Passive landbase |
| THEME6 | Character | 5 | | Woodstock theme - Interpretive Bulletin MPB ranking |
| | | | |     Rank0   Rank 0 stands |
| | | | |     Rank1   Rank 1 stands |
| | | | |     Rank2   Rank 2 stands |
| THEME7 | Character | 3 | | Woodstock theme - Pine content in tenths |
| | | | |     P0       0 pine content |
| | | | |     P1       1/10 pine content |
| | | | |     P2       2/10 pine content |
| | | | |     P3       3/10 pine content |
| | | | |     P4       4/10 pine content |
| | | | |     P5       5/10 pine content |
| | | | |     P6       6/10 pine content |
| | | | |     P7       7/10 pine content |
| | | | |     P8       8/10 pine content |
| | | | |     P9       9/10 pine content |
| | | | |     P10     10/10 pine content |
| THEME8 | Character | 8 | | Woodstock theme - Stand susceptibility index with climate factor |
| | | | |     SSICF0 - SSICF59 |
| THEME9 | Character | 4 | | Woodstock theme - Compartment name |
| | | | |     Bolt      Bolton Creek |
| | | | |     Deep     Deep Valley |
| | | | |     Huck    Huckleberry |
| | | | |     Musk    Muskeg |
| | | | |     Simo    Simonette |
| | | | |     Smok   Smoky |

| Field Name | Data Type | Width | # Decimals | Description |
|---|---|---|---|---|
| THEME10 | Character | 6 | | Woodstock theme - Natural sub-region forest type |
| | | | | MCD     Montane CD mixedwood |
| | | | | MCPI    Montane coniferous pine |
| | | | | MCSb   Montane coniferous black spruce |
| | | | | MCSw  Montane coniferous white spruce |
| | | | | MD      Montane deciduous |
| | | | | MDC    Montane DC mixedwood |
| | | | | SACD   Sub-alpine CD mixedwood |
| | | | | SACPI  Sub-alpine coniferous pine |
| | | | | SACSb Sub-alpine coniferous black spruce |
| | | | | SACSe Sub-alpine coniferous englemann spruce |
| | | | | SACSw Sub-alpine coniferous white spruce |
| | | | | SAD    Sub-alpine deciduous |
| | | | | SADC  Sub-alpine DC mixedwood |
| | | | | UFCD  Upper foothills CD mixedwood |
| | | | | UFCPI Upper foothills coniferous pine |
| | | | | UFCSb Upper foothils coniferous black spruce |
| | | | | UFCSw Upper foothils coniferous white spruce |
| | | | | UFD   Upper foothills deciduous |
| | | | | UFDC  Upper foothills DC mixedwood |
| ORIGPREBLO | Character | 1 | | Internal pre-block identifier |
| | | | | Y |
| CUT_PERIOD | Numeric | 3 | 0 | Period polygon scheduled for harvest |
| PREBLOCK | Character | 1 | | Polygon harvest schedule preserved |
| | | | | Y       Yes |
| | | | | N       No |
| ACTION | Numeric | 3 | 0 | Woodstock action accessing stand |
| LOCK | Character | 20 | | Woodstock lock field |
| | | | | _Lock 1   Indicates polygon to be exlcuded for 1 period |
| PREBLK1 | Character | 1 | | Internal pre-block identifier |
| | | | | Y |

## Derived Attributes

{Note:  File names are presented in **bold**; field/variable names are presented in *__italicized bold__*.}

The landbase classification program consists of 13 key parts.  Each step involved in the process was designed to allow for maximum flexibility if changes are necessary.  Figure 5-1 outlines the approach taken to create the classified landbase database.

**Figure 0-1: FMU Classified Landbase Database Creation Process**

| Process Step | Reference |
|---|---|
| Step 1: Overlay input spatial coverages to generate gross landbase coverage and database | See Section 4 and Table 4-1 for details |
| Step 2: Calculate overstory and understory cover groups | See Section 5.3.1 for details on how this field is calculated |
| Step 3: Assign updates to inventory | See Section 5.3.2 for details on how this field is calculated |
| Step 4: Assign landbase type | See Section 5.3.3 for details on how this field is calculated |
| Step 5: Assign age and ageclasses | See Section 5.3.4 for details on how this field is calculated |
| Step 6: Final landbase assignment | See Section 5.3.5 for details on how this field is calculated |
| Step 7: Assign yield curves | See Section 5.3.6 for details on how this field is calculated |
| Step 8: Final area calculations | See Section 5.3.7 for details on how this field is calculated |
| Step 9: Assign standard deletions (buffers, land status, burns) | See Section 5.3.8.1 for details on how this field is calculated |
| Step 10: Assign productivity deletions (TPR = U, subjective deletions) | See Section 5.3.8.2 for details on how this field is calculated |
| Step 11: Assign final deletions according to heirarchy | See Section 5.3.8.3 for details on how this field is calculated |
| Step 12: Classify productive stands | See Section 5.3.9 for details on how this field is calculated |
| Step 13: Assign Woodstock and Stanley themes | See Section 5.3.10 for details on how this field is calculated |

344

*Cover Group (O_CPCT, O_DPCT, COV_GRP, U_CPCT, U_DPCT, UCOV_GRP)*

The first step is to assign an initial cover group. The overstory and understory of each forested polygon is assigned to a cover group based on the percent of deciduous content.

**Table 0-3: Cover Group Definitions**

| Cover Group | Percent Crown Closure | |
|---|---|---|
| | Coniferous | Deciduous |
| **C** - coniferous | 80 - 100 | 0 - 20 |
| **CD** - coniferous/deciduous | 50 - 79 | 21 - 50 |
| **DC** - deciduous/coniferous | 21 - 49 | 51 - 79 |
| **D** - deciduous | 0 - 20 | 80 - 100 |

- Where the percent crown closure is 50% conifer and 50% deciduous the factor which is used in deciding which cover group assignment is made, is the leading species (**sp1**). Stands with a conifer leading species are placed in the CD cover group, while stands with deciduous leading species are placed in the DC cover group.

- The percent values (*sp1_per* to *sp5_per*) associated with deciduous species ('Aw', 'Pb', 'Bw' or 'A' in the *sp1* to *sp5* fields) are summed and the result is placed in the *o_dpct* field.

- The *o_dpct* field is used to assign an overstory cover group (*cov_grp*). The percentage values used to assign polygons to the various cover groups are based on those outlined in the Timber Damage Assessment (1995) document and various FMA documents.
    - Polygons with an overstory deciduous percent (*o_dpct*) less than or equal to 2 were assigned to the 'C' cover group (*cov_grp* is equal to 'C').
    - Polygons with an overstory deciduous percent (*o_dpct*) greater than 2 and less than or equal to 5 were assigned to the 'CD' cover group (*cov_grp* = 'CD'), even if the leading species is deciduous.
    - Polygons with an overstory deciduous percent (*o_dpct*) greater than 5 and less than 8 were assigned to the 'DC' cover group (*cov_grp* = 'DC').
    - Polygons with an overstory deciduous percent (*o_dpct*) greater than or equal to 8 were assigned to the 'D' cover group (*cov_grp* = 'D').

- The *o_cpct* is filled with [10 - *o_dpct*]

- The percent values (*usp1_per* to *usp5_per*) associated with deciduous species ('Aw', 'Pb', 'Bw' or 'A' in the *usp1* to *usp5* fields) were summed and placed in the *u_dpct* field.

- The *u_dpct* field is used to assign an understory cover group (*ucov_grp*) using the same rules as for the overstory cover group (*cov_grp*).

- The *u_cpct* field is filled with [10 - *u_dpct*].

*Inventory Update (CLEARCUT, YRHARVEST)*

Updates to the original inventory must be taken into account. The original AVI calls are not overwritten. A new field *clearcut* is created and the field is populated using the AVI *mod1* and *mod2*

fields as well as *update* field from the update layer. All cutblocks are assigned to the cover group 'Con', as there are no deciduous clearcuts in this analysis.

- Corrections were made to the existing **mod1_yr** field to correct for known errors in harvest dates for three polygons as follows;
    - If Poly_Num = 570860157, then **mod1_yr** was assigned a value of 1975
    - If Poly_Num = 570860076, then **mod1_yr** was assigned a value of 1975
    - If Poly_Num = 560660320, then **mod1_yr** was assigned a value of 1981

- The following rules for assigning a stand as a clearcut are processed in order
    *1) clearcut* is filled with a value of 'Con' if the **mod1** fields equal 'CC' and the **mod1_ext** field has a value greater than 2. The field *yrharvest* is filled with **mod1_yr** if the **mod1_yr** value is greater than 1972. The field *yrharvest* is filled with 2003 if the **mod1_yr** value is less than 1973.
    *2) clearcut* is filled with a value of 'Con' if the **ffp_updt** field equals 'CC' and *yrharvest* is filled with **ffp_updtyr**.
    *3) clearcut* is filled with a value of 'Con' if the **update** field equals 'CC' and *yrharvest* is filled with **updt_year**.

- Cutblocks are assigned to a cover group (***cov_grp***) of 'Con' if the ***sp1*** field is blank.

*Landbase Type (LBTYPE)*

Next a landbase type (***lbtype***) is assigned to each polygon. Landbase type is created as an intermediate step designed to classify horizontal stands or stands which will be managed for the understory. The seven landbase types are:

      **R**      Regular
      **HO**    Horizontal Overstory (***struc*** = 'H' and ***struc_val*** >= 50%)
      **HU**    Horizontal Understory (***struc*** = 'H' and ***struc_val*** < 50%)
      **S**      Switched (conifer understory below a pure deciduous overstory)
      **CCC**  Clear Cut Conifer
      **CCD**  Clear Cut Deciduous
      **CCX**  Clear Cut Unknown

- Cutblocks (***clearcut*** = 'Con') are assigned to a landbase type based on cover group (***cov_grp***). In this analysis all cutblocks are in cover group (***cov_grp***) 'Con' and are placed in the 'CCC' landbase type (***lbtype*** = 'CCC').

- Only the majority portion of each horizontal stand will contribute to the Timber Harvesting Landbase (THLB).
    - When the structural value is 5 or greater the preference is given to the overstory portion of the horizontal stand. The overstory portion is most likely to have a forested cover type since the tallest portion of the horizontal stand is listed first. If the polygon has a horizontal structure (***struc*** = 'H') and the overstory structural value (***struc_val***) is greater than or equal to 5 then the polygon is assigned to the 'HO' landbase type (***lbtype*** = 'HO'). This means that only the overstory portion of the horizontal stand is considered during the remainder of the program. In this analysis, there are no 'HO' stands.
    - If the polygon has a horizontal structure (***struc*** = 'H') and the overstory structural value (***struc_val***) is less than 5 then the polygon is assigned to the 'HU' landbase type (***lbtype*** =

'HU').  This means that only the shorter, understory portion of the horizontal stand is considered during the remainder of the program.  In this analysis, there are no 'HU' stands.

- Switched stands (**lbtype** = 'S') are those stands with a pure deciduous overstory (**cov_grp** = 'D') and a conifer or mixedwood understory (**cov_grp** = 'C' or 'CD' or 'DC').  Stands are "switched" so that the understory becomes the managed portion of the stand.

- All other polygons are assigned to the 'R' (regular) landbase type (**lbtype** = 'R').  The overstory portion of the polygon is considered during the remainder of the program.

## Age (F_AGE, F_AGECLS)

**Origin, uorigin** and **yrharvest** are all used to determine polygon age and age classes.  In this analysis, final age (**f_age**) is calculated using the year 2007.  Five-year age classes (**f_agecls**) are created with the first five-year age class (1) encompassing ages 0 to 5.  This age class structure is necessary for Woodstock, which does not allow for a 0 age class.  A ceiling function is used to create age classes by rounding up to the nearest integer (in effect, the upper end of each age class).  For example in a stand with an origin of 1940, the age class is calculated as, CEIL ((2007 - 1940)/5) = 14, so **f_agecls** = 14.

For stands in the regular landbase (**lbtype** = 'R') or the horizontal overstory landbase (**lbtype** = 'HO'), ages (**f_age** and **f_agecls**) are calculated using **origin**, where **f_age** = 2007 – **origin**, and age **F_agecls** is calculated as per the example above, **f_agecls**  = CEIL ((2007 - **origin**)/5).

For stands in the switched landbase (**lbtype** = 'S') or the horizontal understory landbase (**lbtype**='HU'), ages (**f_age** and **f_agecls**) are calculated using **uorigin**, where **f_age** = 2007 – **uorigin**, and age **F_agecls** is calculated as per the example above, **f_agecls**  = CEIL ((2007 - **uorigin**)/5).

As mentioned in Section 5.3.2, cutblocks (**lbtype**='CCC') are assigned a year of harvest in the **yrharvest** field. The ages (**f_age** and **f_agecls**) are calculated using **yrharvest**, where **f_age** = 2007 – **yrharvest**, and age **F_agecls** is calculated as per the example above, **f_agecls**  = CEIL ((2007 - **yrharvest**)/5).

## Final Landbase Assignment (F_LBASE)

This part of the program assigns polygons to a final landbase (**f_lbase**).

Stands are classified as being in the conifer landbase (**f_lbase** = 1) if they are in the regular landbase or the horizontal overstory landbase (**lbtype** = 'R' or 'HO') and are in the conifer or mixedwood cover groups (**cov_grp** = 'C' or 'CD' or 'DC').  If the stand is in the horizontal understory landbase (**lbtype** = 'HU') and the understory cover group  is conifer or conifer mixedwood cover groups (**ucov_grp** = 'C' or 'CD' or 'DC'), the stand is also classified as being in the conifer landbase (**f_lbase** = 1).

Stands are considered part of the deciduous landbase (**f_lbase** = 2) if they are in the regular landbase or the horizontal overstory landbase (**lbtype** = 'R' or 'HO') and the deciduous cover groups (**cov_grp** = 'D').  If the stand is in the horizontal understory landbase (**lbtype** = 'HU') and the understory cover group is deciduous (**ucov_grp** = 'D'), the stand is also classified as being in the deciduous landbase (**f_lbase** = 2).

Switched stands (**lbtype** = 'S') are assigned to the switched stands landbase (**f_lbase** = 3).

Cutblocks are assigned to the conifer cutblock landbase (**f_lbase** = 4) if **lbtype** = 'CCC'.

Lands subjectively deleted from the conifer landbase, but included in the smallwood conifer landbase are classified as **f_lbase** = 7 when **lbtype** = 'R' or classified as **f_lbase** = 8 when **lbtype** = 'S' as described in Section 5.3.8.2.

*Yield Curve Assignment (F_YC)*

The next step is to assign a valid yield curve to each forested polygon (*f_yc*). Stands in the conifer landbase (*f_lbase* = 1) are classified based on the overstory cover group (*cov_grp*), overstory species (*sp1*,…), overstory density (*density*) and timber productivity rating (*tpr*). As there are no horizontal stands in this data set the instance of *lbtype* = 'HU' with a *f_lbase* = '1' (utilization of *usp1*, *udensity* and *utpr* to define yield curve) have not been dealt with. Stands in the switched landbase (*f_lbase* = 3) are classified based on the understory cover group (*ucov_grp*), understory species (*usp1*,…), understory density (*udensity*) and timber productivity rating (*utpr*). Stands in the deciduous landbase (*f_lbase* = 2) are assigned to a deciduous yield curve, while cutblocks (*f_lbase* = 4) are assigned to a composite conifer yield curve, unless there is pre-harvest vegetation information to assign a polygon to a specific yield curve

.
The yield curves developed for this analysis are outlined below in Table 5-4. (See the document *Growth and Yield* for details on how the yield curves were developed.). The assignment of yield curves for the smallwood conifer landbase is detailed in section 5.3.8.2.

**Table 0-4: Yield Curves**

| Cover Group | Leading Species | Crown Closure | TPR |
|---|---|---|---|
| C | Pl | AB | F |
| C | Pl | AB | MG |
| C | Pl | CD | F |
| C | Pl | CD | MG |
| C | Sb | all | all |
| C | Sw | all | all |
| D | Aw | all | all |
| CD | Mx | all | all |
| DC | Mx | all | all |
| Con | Comp | all | all |

Yield curves are then assigned as follows:
- Stands are assigned to CPlABF if *f_lbase* = 1 and *cov_grp* = 'C' and *sp1*= 'Pl' and *density* = 'A' or 'B' and *tpr* = 'F' or 'U'.
- Stands are assigned to CPlABMG if *f_lbase* = 1 and *cov_grp* = 'C' and *sp1*= 'Pl' and *density* = 'A' or 'B' and *tpr* = 'M' or 'G'.
- Stands are assigned to CPlCDF if *f_lbase* = 1 and *cov_grp* = 'C' and *sp1*= 'Pl' and *density* = 'C' or 'D' and *tpr* = 'F' or 'U'.
- Stands are assigned to CPlCDMG if *f_lbase* = 1 and *cov_grp* = 'C' and *sp1*= 'Pl' and *density* = 'C' or 'D' and *tpr* = 'M' or 'G'.
- Stands are assigned to CSbalal if *f_lbase* = 1 and *cov_grp* = 'C' and *sp1*= 'Sb' or 'Lt'.
- Stands are assigned to CSwalal if *f_lbase* = 1 and *cov_grp* = 'C' and *sp1*= 'Sw' or 'Se' or 'Fa' or 'Fb'.
- Stands are assigned to CDMxalal if *f_lbase* = 1 and *cov_grp* = 'CD'.
- Stands are assigned to DCMxalal if *f_lbase* = 1 and *cov_grp* = 'DC'.
- Stands are assigned to CPlABF if *f_lbase* = 3 and *ucov_grp* = 'C' and *usp1*= 'Pl' and *udensity* = 'A' or 'B' and *utpr* = 'F' or 'U'.
- Stands are assigned to CPlABMG if *f_lbase* = 3 and *ucov_grp* = 'C' and *usp1*= 'Pl' and *udensity* = 'A' or 'B' and *utpr* = 'M' or 'G'.
- Stands are assigned to CPlCDF if *f_lbase* = 3 and *ucov_grp* = 'C' and *usp1*= 'Pl' and *udensity* = 'C' or 'D' and *utpr* = 'F' or 'U'.

- Stands are assigned to CPlCDMG if *f_lbase* = 3 and *ucov_grp* = 'C' and *usp1*= 'Pl' and *udensity* = 'C' or 'D' and *utpr* = 'M' or 'G'.
- Stands are assigned to CSbalal if *f_lbase* = 3 and *ucov_grp* = 'C' and *usp1*= 'Sb' or 'Lt'.
- Stands are assigned to CSwalal if *f_lbase* = 3 and *ucov_grp* = 'C' and *usp1*= 'Sw' or 'Se' or 'Fa' or 'Fb'.
- Stands are assigned to CDMxalal if *f_lbase* = 3 and *ucov_grp* = 'CD'.
- Stands are assigned to DCMxalal if *f_lbase* = 3 and *ucov_grp* = 'DC'.
- Stands are assigned to DAwalal if *f_lbase* = 2.
- Stands are assigned to CCompalal if *f_lbase* = 4 and *sp1* is blank.
- Stands are assigned to CPlCDF if *f_lbase* = 4 and *cov_grp* = 'C' and *sp1* = 'Pl' and *tpr* ='F' or 'U'.
- Stands are assigned to CPlCDMG if *f_lbase* = 4 and *cov_grp* = 'C' and *sp1* = 'Pl' and *tpr* ='M' or 'G'.
- Stands are assigned to CSbalal if *f_lbase* = 4 and *cov_grp* = 'C' and *sp1* = 'Sb' or 'Lt'.
- Stands are assigned to CSwalal if *f_lbase* = 4 and *cov_grp* = 'C' and *sp1* = 'Sw' or 'Fb' or 'Se' or 'Fa'.
- Stands are assigned to CDMxalal if *f_lbase* = 4 and *cov_grp* = 'CD' and *sp1* is not blank.
- Stands are assigned to DCMxalal if *f_lbase* = 4 and *cov_grp* = 'DC' and *sp1* is not blank.
- Stands are assigned to DAwalal if *f_lbase* = 4 and *cov_grp* = 'D' and *sp1* is not blank.

## Areas (F_AREA, UN_AREA)

The data in the *area* field is in square meters and must be converted to hectares.
As there are no horizontal stands in this data set no special calculations are required for those types.
The *f_area* field is assigned the value of *area*/10000.

## Excluding Lands from the Gross Landbase

All land that will not be contributing to the Annual Allowable Cut (AAC) must be removed from the gross landbase, leaving the Timber Harvesting Landbase (THLB). This part of the program creates a series of interim deletion fields, classified based on the data created through GIS processing. The classifications and fields are unique to each net landbase. There are many reasons to exclude lands from the THLB, including but not limited to, land status, operating ground rules (i.e. hydrography buffers), steep slopes, productivity, and recent fires.

Standard Deletions (D_BUFF, D_STATUS)

The buffer, slope, burn and land status data provided through GIS processing are combined into a buffer deletion field (*d_buff*) and a land status deletion field (*d_status*). Buffer deletions are not applied to existing cutblocks while land status deletions are applied to all polygons.

## Access-related Buffer Deletions

Lineal features such as roads, cutlines and pipelines are too small to be captured in the inventory as a polygon feature with its associated area. The BUFFER function in ArcInfo was used to create an estimate of the true area of the cutline, pipeline or road features. This area is considered non-forested and as a result cannot contribute to the THLB. As many buffer type deletions can overlap each other, the following is a hierarchical list of buffer deletion identification, where the first is consider lowest and the last supersedes all previous assignments. This list applies to the bullets from section 5.3.8.1.1 through to and including section 5.3.8.1.4.

- The buffer deletion field (**d_buff**) is filled with 'Seismic' when a seismic line buffer is present (**cutlinebuf** = 100).
- The buffer deletion field (**d_buff**) is filled with 'Road' when a road buffer is present (**roadbuf** = 100).
- The buffer deletion field (**d_buff**) is filled with 'Pipe' when a pipeline buffer is present (**pipebuf** = 100).

Table 5-5 describes the buffer widths used for the access-related features.

**Table 0-5: Buffer Widths for Access-Related Features**

| Feature | Buffer Width (in m) | Code |
|---|---|---|
| Roads (**feature_codes** DA62200010, DA62200020, DA62200200, DA62200210) | 8 | Road |
| Cutlines (**feature_codes** DA62700000, DA62700200, DC76100000, DC7616000, DC76500000, DC76500200) | 3 | Seismic |
| Pipelines (**feature_code** EA52550000) | 3 | Pipe |

*Operability*

Generally speaking, the companies operating in the E8 FMU do not want to operate on slopes greater than 45%, so a slope coverage is created (using the DEM) to classify all slopes greater than 45%. The buffer deletion field (**d_buff**) is filled with 'Slope'; when slopes area greater the 45% (**slope_code** = 3).

*Hydrography Buffers*

Hydrography buffers are applied in accordance with the provincial Operating Ground Rules. Other buffers are applied in accordance with management objectives and strategies. Table 5-6 outlines the buffer widths used in this analysis.

**Table 0-6: Buffer Widths**

| Feature | Buffer Width (in m) | Code |
|---|---|---|
| Perennial Streams (**feature_code** = GA61900000) | 30 | Stream |
| Lakes (**feature_code** = GB37950000) | 100 | Lake |
| Recreation Areas | 100 | FPark, PPark |

- The buffer deletion field (**d_buff**) is filled with 'Stream' when a perennial stream buffer is present (**hydlbuf** = 100).
- The buffer deletion field (**d_buff**) is filled with 'Lake when a major river buffer or lake buffer is present (**hydpbuf** = 100).

*Land Use Update Buffers*

A land use update layer was incorporated into the landbase to capture updates from anthropological disturbances since the base map layer's last update.
- The buffer deletion field (**d_buff**) is filled with 'LUUPDate' when a landuse update is present (**lupdate** is not blank).

*Land Status*

Land status deletions are generally those areas that have an existing status that precludes timber harvesting. In E8, this includes private land, protected areas, both provincial and forest recreation areas and ESIP (Eastern Slopes Integrated Policy) Zone 1 (Prime Protection). The following is a hierarchical list of land status deletion identification, where the first is consider lowest and the last supersedes all previous assignments.

- *d_status* is filled with 'RecBuf' when *recbuf* = 100.
- *d_status* is filled with 'FPark' when *fra_name* is not blank.
- *d_status* is filled with 'PPark' when *pra_name* is not blank.
- *d_status* is filled with 'FreeHold' when *ownership* = 'F'.
- *d_status* is filled with 'PNT' when *disp_type* is equal to 'PNT'.


Subjective Deletions (D_SUBJ), and Assignment to Smallwood Conifer Landbase

Subjective deletions (*d_subj*) need to be calculated. These deletions are not applied to existing cutblocks. Subjective deletions are generally applied to low productivity stands; stagnant stands (origin/height combinations); stands with undesirable species; or with species requiring protection. In this analysis certain stands that were subjectively deleted were transferred into the smallwood conifer landbase and removed from as a subjective deletion.

Both regular/horizontal overstory stands (*lbtype* = 'R' or 'HO') and horizontal understory stands (*lbtype* = 'HU') or switched stands (*lbtype* = 'S') must be evaluated.

When *lbtype* = 'R' or 'HO' and *f_lbase* = 1;
- *d_subj* is filled with 'SubDel' when:
    - *tpr* = 'U'
    - *sp1* or *sp2* are 'Lt'
    - *Density* = 'A'
    - *sp1* = 'Aw' or 'Pb' or 'Bw' and *sp3* = 'Lt'
    - *sp1* or *sp2* are 'Sb' and *tpr* = 'U'
    - *sp1* = 'Sb' and *sp2* is blank
    - *sp1* = 'Sb' and *tpr* = 'F'
- If a stand was subjectively deleted by the process in the previous bullet then the following occurs;
    - If *f_yc* = 'CSwalal' and *height* > 14 meters and *density* = 'A' then, *f_lbase* = 7 and *d_subj* = '' (blank) and *f_yc* = 'CSwalalS'.
    - If *f_yc* = 'CPlABMG' and *height* > 14 meters and *density* = 'A' and *tpr* = 'M' or 'G' then, *f_lbase* = 7 and *d_subj* = '' (blank) and *f_yc* = 'CPlABMGS'.


When *lbtype* = 'R' or 'HO' and *f_lbase* = 2;
- *d_subj* is filled with 'SubDel' when:
    - *density* = 'A'
    - *tpr* = 'U' or 'F'


When *lbtype* = 'HU' or *lbtype* = 'S' and *f_lbase* = 3
- *d_subj* is filled with 'SubDel' when:
    - *utpr* = 'U'
    - *usp1* or *usp2* are 'Lt'

- o *udensity* = 'A'
- o *usp1* = 'Aw' or 'Pb' or 'Bw' and *usp3* = 'Lt'
- o *usp1* or *usp2* are 'Sb' and *utpr* = 'U'
- o *usp1* = 'Sb' and *usp2* is blank
- o *usp1* = 'Sb' and *utpr* = 'F'
- If a stand was subjectively deleted by the process in the previous bullet then the following occurs;
  - o If *f_yc* = 'CSwalal' and *uheight* > 14 meters and *udensity* = 'A' then, *f_lbase* = 8 and *d_subj* = '' (blank) and *f_yc* = 'CSwalalS'.
  - o If *f_yc* = 'CPlABMG' and *uheight* > 14 meters and *udensity* = 'A' and *utpr* = 'M' or 'G' then, *f_lbase* = 8 and *d_subj* = '' (<blank>) and *f_yc* = 'CPlABMGS'.

Subjectively deleted switched stands (*f_lbase* = 3) with Sw, Se, Fa or Fb leading understories, or subjectively deleted switched stands with B, C or D density pine leading (Pl) understories are added back into the conifer landbase.

When *d_subj* = 'SubDel' and *f_lbase* = 3:
- *d_subj* is filled with <blank> when:
  - o *usp1* = 'Sw' or 'Se' or 'Fb' or 'Fa'
  - o *udensity* = 'B' or 'C' or 'D' and *usp1* = 'Pl'

When *lbtype* = 'HU' or *lbtype* = 'S' and *f_lbase* = 2
- *d_subj* is filled with 'SubDel' when:
  - o *udensity* = 'A'
  - o *utpr* = 'U' or 'F'

Final Deletions (F_DEL)

This part of the program populates the *f_del* (final deletion type) field with the appropriate code from the temporary deletion fields. This is based on a "hierarchy of deletions", so that a polygon is only deleted once (no double-counting), based on which deletion type is higher in the hierarchy. For example, if a polygon has both a subjective deletion (*d_subj* = 'SubDel') and is a land status deletion (*d_status* ='PNT'), the *d_status* will take precedence and the *f_del* field gets populated with 'PNT'. (The general approach taken to classify the timber harvesting landbase is outlined in Figure 4-1.) The following is a hierarchical list of final deletion assignments, where the first is consider lowest in priority and the last supersedes all previous assignments.
- If *lbtype* = 'R' and *nfl* is not blank then *f_del* = 'NFL'.
- If *lbtype* = 'R' and *nat_non* is not blank then *f_del* = 'Nat_Non'.
- If *lbtype* = 'R' and *anth_veg* is not blank then *f_del* = 'Anth_Veg'.
- If *lbtype* = 'R' and *anth_non* is not blank then *f_del* = 'Anth_Non'.
- If *sp1* is blank and *nfl* is not blank and *lbtype* <> 'CCC' then *f_del* = 'NFL'.
- If *sp1* is blank and *nat_non* is not blank and *lbtype* <> 'CCC' then *f_del* = 'Nat_Non'.
- If *sp1* is blank and *anth_veg* is not blank and *lbtype* <> 'CCC' then *f_del* = 'Anth_Veg'.
- If *sp1* is blank and *anth_non* is not blank and *lbtype* <> 'CCC' then *f_del* = 'Anth_Non'.
- If *lbtype* = 'S' and *unfl* is not blank then *f_del* = 'NFL'.
- If *lbtype* = 'S' and *unat_non* is not blank then *f_del* = 'Nat_Non'.
- If *lbtype* = 'S' and *uanth_veg* is not blank then *f_del* = 'Anth_Veg'.
- If *lbtype* = 'S' and *uanth_non* is not blank then *f_del* = 'Anth_Non'.

- If the ***d_subj*** field value = 'SubDel' then ***f_del*** = 'SubDel'.
- If the ***d_buff*** field value is not blank, then ***f_del*** = ***d_buff***.
- If the ***d_status*** field value is not blank, then ***f_del*** = ***d_status***.

### *Classifying Productive Stands (F_PROD)*

It is necessary to do a final check to determine which stands are productive forested stands.
- Polygons with ***lbtype*** of 'R' or 'HO' and with an overstory cover group (***cov_grp*** is not blank) that do not have data entered into the ***nfl***, ***nat_non***, ***anth_non***, or ***anth_veg*** fields are considered productive (***f_prod*** is equal to 'Y').
- Polygons with ***lbtype*** of 'S' or 'HU' and with an understory cover group (***ucov_grp*** is not blank) that do not have data entered into the ***unfl***, ***unat_non***, ***uanth_non***, or ***uanth_veg*** fields are considered productive (***f_prod*** is equal to 'Y').
- All cutblocks (polygons with ***lbtype*** of 'CCC' or 'CCD') are considered productive (***f_prod*** is equal to 'Y').
- If ***f_del*** is blank and ***f_prod*** = 'Y' then ***f_del*** = 'NetLB'.
- The final check for unclassified stands is;
    - If ***f_del***, ***sp1***, ***nfl***, ***nat_non***, ***anth_veg*** and ***anth_non*** are blank, then ***f_del*** = 'Unclass'.

### *Woodstock and Stanley Themes (THEME1, THEME2…)*

The final step is to create and populate the "themes" required for Woodstock and Stanley. As a rule Stanley requires that theme1, theme2 and so on appear as a group (ordered sequentially) in the database.

Woodstock themes are populated under two conditions:
- If ***f_del*** = 'NetLB'
- If ***f_del*** <> 'NetLB' and ***f_prod*** = 'Y'

- Theme 1 –Landbase
  Theme 1 is the assignment of polygons into one of three landbase categories; Conifer, Smallwood Conifer or Deciduous.
    - If ***f_lbase*** is equal to 1 or 3 or 4, then ***theme1*** = 'Con'
    - If ***f_lbase*** is equal to 2 , then ***theme1*** = 'Dec'
    - If ***f_lbase*** is equal to 7 or 8, then ***theme1*** = 'SmCon'
- Theme 2 – Yield Curve
  Theme 2 is the assignment of polygons to a yield curve.
    - ***theme2*** is equal to ***f_yc***
- Theme 3 –Status
  Theme 3 is the assignment of polygons to a status indicating past harvest status; natural or not previously harvested, and polygons previously harvested.
    - If ***f_lbase*** is equal to 4, then ***theme3*** = 'RT'
    - If ***f_lbase*** is equal to 1 or 2 or 3 or 7 or 8, then ***theme3*** = 'ST'
- Theme 4 – Caribou
  Theme 4 is the assignment of a polygon to indicate it's presence inside or outside of a caribou herd range as well as indicating it's habitat intactness rating.
    - If ***old_herd*** = 'A La Peche' and ***intact_cla*** = 0 then ***theme4*** = 'INulALP'
    - If ***old_herd*** = 'A La Peche' and ***intact_cla*** = 1 then ***theme4*** = 'IHighALP'
    - If ***old_herd*** = 'A La Peche' and ***intact_cla*** = 2 then ***theme4*** = 'IMedALP'

- o If *old_herd* = 'A La Peche' and *intact_cla* = 3 then *theme4* ='ILowALP'
- o If *old_herd* = 'Little Smoky' and *intact_cla* = 0 then *theme4* ='INulLS'
- o If *old_herd* = 'Little Smoky' and *intact_cla* = 1 then *theme4* ='IHighLS'
- o If *old_herd* = 'Little Smoky' and *intact_cla* = 2 then *theme4* ='IMedLS'
- o If *old_herd* = 'Little Smoky' and *intact_cla* = 3 then *theme4* ='ILowLS'
- o If *old_herd* = <blank> and *intact_cla* = 0 then *theme4* ='INul'
- o If *old_herd* = <blank> and *intact_cla* = 1 then *theme4* ='IHigh'
- o If *old_herd* = <blank> and *intact_cla* = 2 then *theme4* ='IMed'
- o If *old_herd* = <blank> and *intact_cla* = 3 then *theme4* ='ILow'
- Theme 5 – Passive/Active Landbase
  Theme 5 identifies polygons being actively managed and contributing to the Annual Allowable Cut and polygons that do not have forest management activities occurring on them.  This is primarily for fire management and planning purposes.
  - o if *f_del* = 'NetLB' then theme5 = 'Net'
  - o When *f_del* <>'NetLB' and *f_prod* = 'Y' then theme5 = 'Passive'
- Theme 6 – Mountain Pine Beetle Pine Stand Ranking
  Theme 6 is the assignment of polygons to a rank as specified under the "Planning Mountain Pine Beetle Response Operations" Interpretive Bulletin.
  - o If *cf* > 0.7999 then *theme6* = 'Rank1'
  - o If *cf* < 0.8 and *cf* > 0.1999 and *ssi* < 31 then *theme6* = 'Rank2'
  - o If *cf* < 0.8 and *cf* > 0.1999 and *ssi* > 30 then *theme6* = 'Rank1'
  - o If *cf* > 0 and *cf* < 0.2 and *ssi* < 31 then *theme6* = 'Rank3'
  - o If *cf* > 0 and *cf* < 0.2 and *ssi* > 30 then *theme6* = 'Rank2'
  - o Finally after processing, the conditions above, if *theme6* is still blank then *theme6* = 'Rank0'
- Theme 7 – Polygon Pine Content
  Theme 7 indicates the pine content of a polygon in tenths.
  - o *theme7* = *sp1_per* if *sp1* = 'Pl'
  - o *theme7* = *sp2_per* if *sp2* = 'Pl'
  - o *theme7* = *sp3_per* if *sp3* = 'Pl'
  - o *theme7* = *sp4_per* if *sp4* = 'Pl'
  - o *theme7* = *sp5_per* if *sp5* = 'Pl'
- Theme 8 – Mountain Pine Beetle Stand Susceptibility Index with Climate Factor
  Theme 8 is the assignment of polygons to an index value representing the Mountain Pine Beetle Stand Susceptibility Index with Climate Factor.
  - o *theme8* is calculated as a concatenation of the string 'SSICF' added to the front of the integer value of  the *ssi_cf* field.
  - o If *ssi_cf* < 0 then *theme8* = 'SSICF0'
- Theme 9  – Compartment
  Theme 9 is the assignment of polygons to a company compartment.
  - o *Theme9* = the first 4 characters of *comp_name*
- Theme 10  – Natural Sub-Region Yield Group
  Theme 10 is the assignment of polygons to a Natural Sub-Region yield group.
  - o *Theme10* is assigned a value based on the values of the *nsr*, *cov_grp* and *sp1* field values as per the table 5-7;

**Table 5-7: Natural Sub-Region Yield Curve Assignment to Theme 10**

| nsr | cov_grp | sp1 | theme10 |
|---|---|---|---|
| 8 | Con | all species | SACSw |
| 8 | CD | all species | SACD |
| 8 | DC | all species | SADC |
| 8 | D | all species | SADC |
| 8 | C | Fb or Sw | SACSw |
| 8 | C | Fa or Se | SACSe |
| 8 | C | Pl | SACPl |
| 8 | C | Sb or Lt | SACSb |
| 9 | Con | all species | MCSw |
| 9 | CD | all species | MCD |
| 9 | DC | all species | MDC |
| 9 | D | all species | MD |
| 9 | C | Fa or Fb or Sw or Se | MCSw |
| 9 | C | Pl | MCPl |
| 9 | C | Sb or Lt | MCSb |
| 10 | Con | all species | UFCSw |
| 10 | CD | all species | UFCD |
| 10 | DC | all species | UFDC |
| 10 | D | all species | UFD |
| 10 | C | Fa or Fb or Sw or Se | UFCSw |
| 10 | C | Pl | UFCPl |
| 10 | C | Sb or Lt | UFCSb |

Cut Period and Pre-Block assignment;

As Foothills Forest products has identified more areas in pre-blocks for the first two harvest periods than can be harvested under a sustainable rate a process was adopted to use as many pre-blocks as possible, while keeping the company identified pre-blocks to less than 8,000 ha per 5 year period.

The following identification of future conifer pre-blocks (from the conifer landbase) is processed in a sequential fashion starting from the top of the database and progressively working through it until the area target of 8,000 ha is exceeded for the first two periods. As the number of smallwood conifer landbase pre-blocks is quite small, all smallwood conifer pre-blocks were eligible for inclusion as pre-blocks

- If *theme1* = 'Con' and *theme5* = 'Net' and *pblock* = 'Y' and *pblk_yr* = 1 then
  - *cut_period* = 1
  - *origpreblo* = 'Y'
  - *preblock* = 'Y'
  - *action* = 1
- If *theme1* = 'Con' and *theme5* = 'Net' and *pblock* = 'Y' and *pblk_yr* = 6 then
  - *cut_period* = 2
  - *origpreblo* = 'Y'
  - *preblock* = 'Y'
  - *action* = 1
- If *theme1* = 'SmCon' and *theme5* = 'Net' and *pblock* = 'Y' and *pblk_yr* = 1 then
  - *cut_period* = 1

- o *origpreblo* = 'Y'
- o *preblock* = 'Y'
- o *action* = 2
- If *theme1* = 'SmCon' and *theme5* = 'Net' and *pblock* = 'Y' and *pblk_yr* = 6 then
  - o *cut_period* = 2
  - o *origpreblo* = 'Y'
  - o *preblock* = 'Y'
  - o *action* = 2

Existing cutblocks are identified through the following process;
- *cut_period* = CEIL ((*yrharvest*-2007)/5). Refer to section 5.3.4 for the description of the ceiling function
- *origpreblo* = 'Y'
- *preblock* = 'Y'
- *action* = 1

Through the identification of future harvest blocks by the company, pieces of stands that are below the minimum timber supply harvest ages were included as pre-blocks. To ensure the timber supply model does not harvest these under age stands, they have been removed as pre-blocks. If all the conditions on any line of table 5-8 are true for each polygon, then the values of the preblock, action, cut_period, origpreblo and lock fields are reset to <blank>.

**Table 5-8: Identification of UnderAge Pre-blocks**

| theme6 | theme2 | f_agecls |
|--------|----------|----------|
| 0 or 3 | DAwalal | < 21 |
| 0 or 3 | CPIABF | < 17 |
| 0 or 3 | CPLABMG | < 18 |
| 0 or 3 | CPLABMGS | < 18 |
| 0 or 3 | CPICDF | < 17 |
| 0 or 3 | CPICDMG | < 18 |
| 0 or 3 | CSwalal | < 24 |
| 0 or 3 | CSwalalS | < 24 |
| 0 or 3 | CSbalal | < 17 |
| 0 or 3 | CDMxalal | < 20 |
| 0 or 3 | DCMxalal | < 20 |
| 0 or 3 | CCompalal | < 18 |
| 1 or 2 | DAwalal | < 15 |
| 1 or 2 | CPIABF | < 14 |
| 1 or 2 | CPLABMG | < 14 |
| 1 or 2 | CPLABMGS | < 14 |
| 1 or 2 | CPICDF | < 14 |
| 1 or 2 | CPICDMG | < 14 |
| 1 or 2 | CSwalal | < 15 |
| 1 or 2 | CSwalalS | < 15 |
| 1 or 2 | CSbalal | < 15 |
| 1 or 2 | CDMxalal | < 15 |
| 1 or 2 | DCMxalal | < 15 |
| 1 or 2 | CCompalal | < 14 |

A final clean up is then done to ensure any pre-blocks that were identified within the high intactness value areas are removed as pre-blocks.

If *preblock* = 'Y' and *cut_period* > 0 and *cut_period* < 3 and *theme4* = 'IHighALP' or 'IHighLS' then the following fields are reset to <blank>; *preblock*, *action*, *cut_period*, *origpreblo*, and *lock*.

# Classified Landbase Summary

The classified landbase is presented in map and tabular format in this section. This serves as the representation of how the landbase has been characterised through the netdown process. Map 6-1 shows how the landbase has been classified and what lands are available for timber harvesting. Table 6-1 is the numerical breakdown of the gross landbase into the specific classes of why a particular polygon is unavailable for consideration in the timber harvesting landbase. Maps 6-2 to 6-5 provide various summaries of key attributes for this FMU including; conifer/deciduous differentiation, caribou zone and habitat intactness ratings, age class distribution, and yield class assignment.

# Map 6-1: FMU E8 Classified Landbase

**Classified Landbase**

- Timber Harvesting Landbase
- Lakes and Rivers
- PNT
- Private Land
- Provincial Recreation Area
- Forest Recreation Area
- Recreation Buffer
- Lake and River Buffers
- Slopes
- Pipelines
- Access
- Cutlines (Seismic)
- Land Use Updates
- Subjective Deletions
- Unclassified Lands

Kilometers
0  3  6  12  18  24

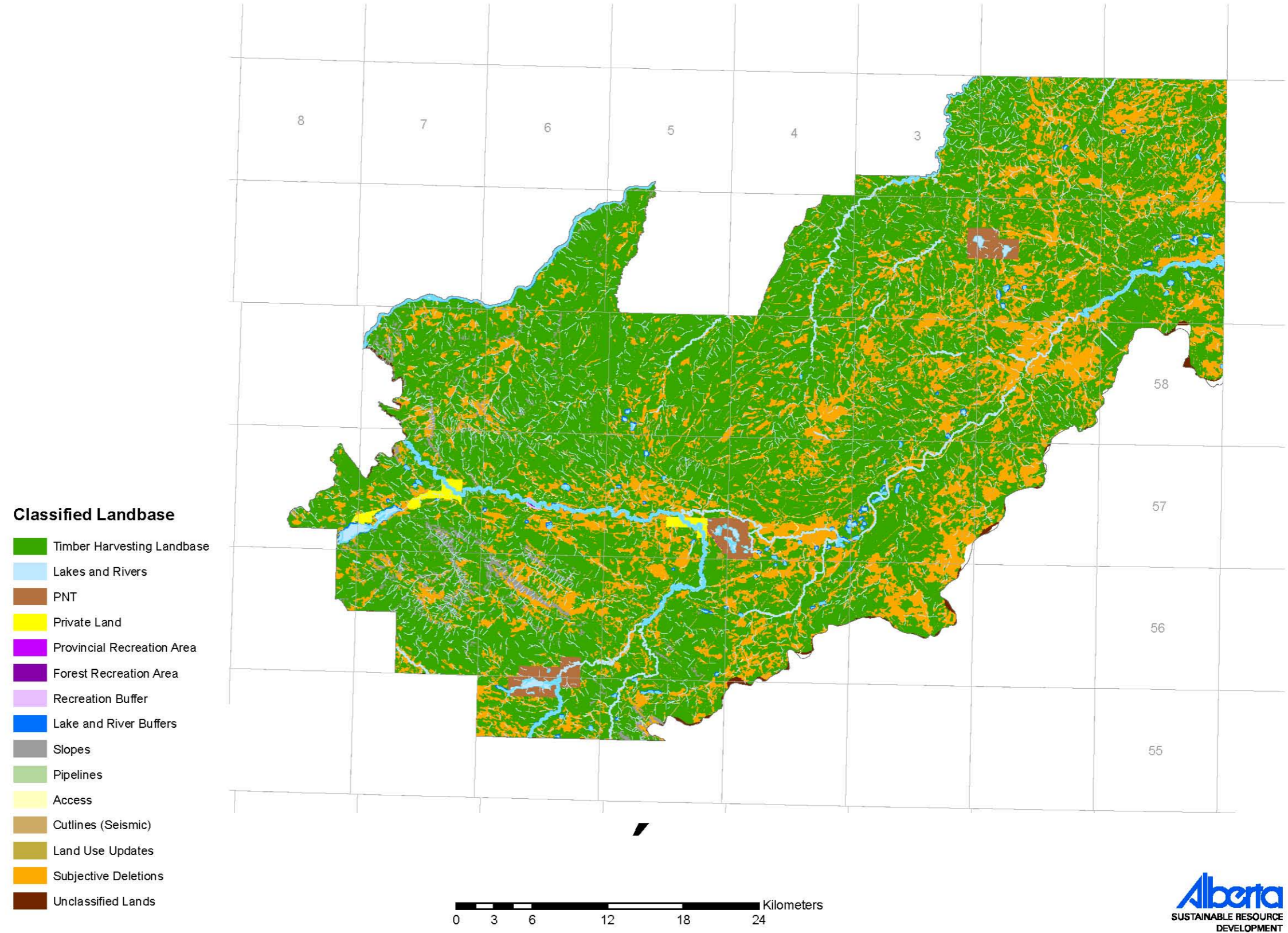Alberta
SUSTAINABLE RESOURCE
DEVELOPMENT

**Table 0-1: Classified Landbase Summary**

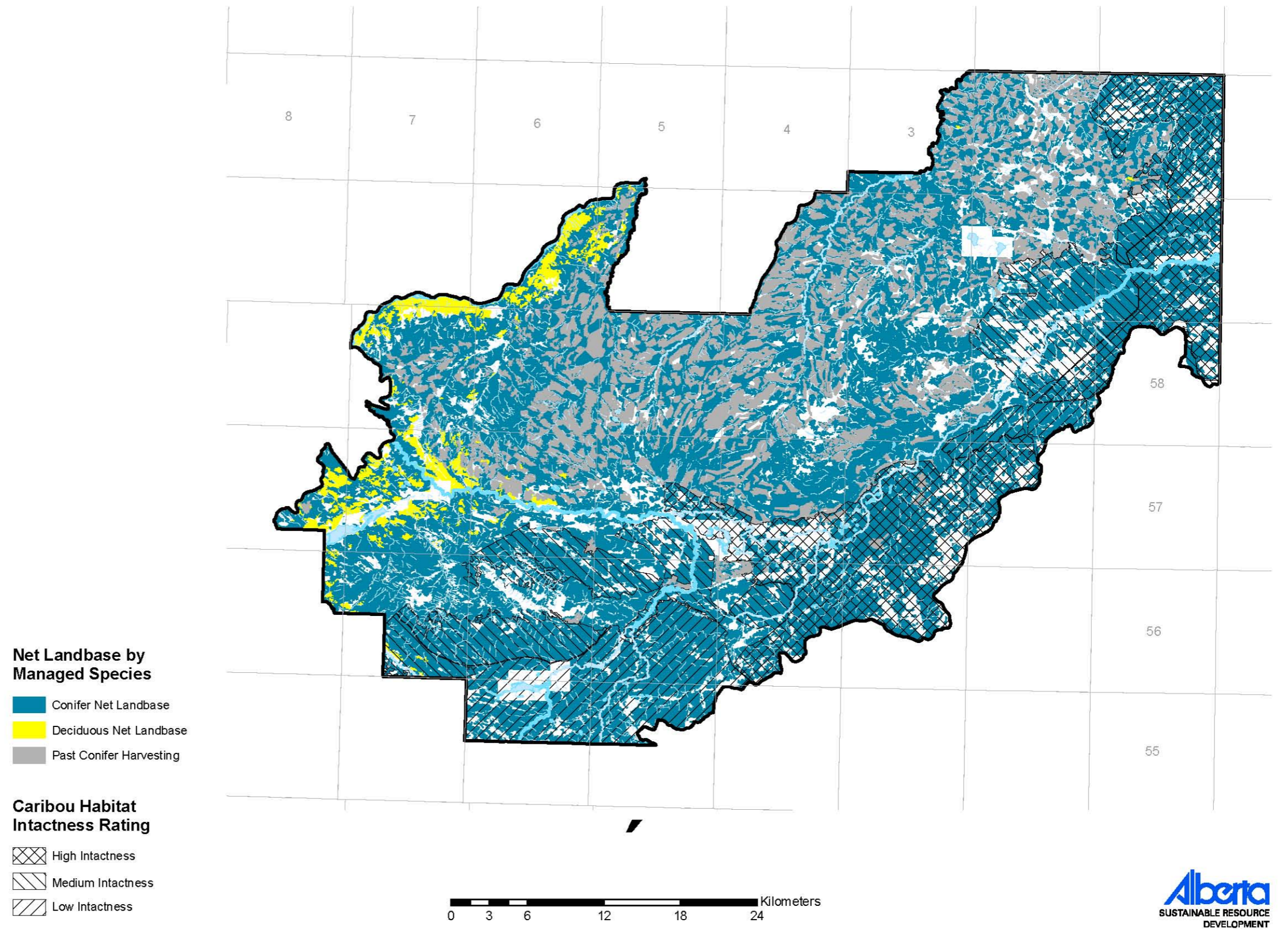Differences in numbers and sums due to rounding to one decimal place.

| Landbase Category | | Area (in ha) | % of Gross Area |
|---|---|---|---|
| **Gross FMU Area** | | **219,657.3** | **100.00%** |
| Non-forest vegetated land (Nfl is not <blank> and clearcut = <blank> | | 4,945.8 | 2.25% |
| Naturally non-vegetated (Nat_non is not <blank> and clearcut = <blank>) | | 1,797.7 | 0.82% |
| Anthropogenic induced vegetation (Anth_veg is not <blank>, Anth_veg is not 'AI' and clearcut = <blank>) | | 612.3 | 0.28% |
| Anthropogenic non-vegetated land (Anth_non is not <blank>and clearcut = <blank>) | | 2,699.3 | 1.23% |
| Non forested sliver along FMU boundary due to GIS processing (AVI & FMU union) (nfl, nat_non, anth_veg, anth_non, sp1 & clearcut=<blank> | | 663.0 | 0.30% |
| Non-Productive Lands | Subtotal | 10,718.1 | 4.88% |
| | | | |
| **Gross Productive Forest Landbase** | | **208,939.2** | **95.12%** |
| | | | |
| **Gross Productive Conifer Landbase** (theme1='Con' or 'SmCon') | | **200,986.3** | **91.50%** |
| PNTs (Protective Notations) (F_del='PNT') | | 2,552.3 | 1.16% |
| Private Land (Freehold) (F_del='FreeHold') | | 533.5 | 0.24% |
| Provincial Recreation Area (F_del='PPark') | | 0.2 | 0.00% |
| Forest Recreation Area (F_del='FPark') | | 13.1 | 0.01% |
| Hydrography buffer deletion (Lakes) (F_del='Lake') | | 2,365.4 | 1.08% |
| Hydrography buffer deletion (Streams/Rivers) (F_del='Stream') | | 680.7 | 0.31% |
| Slope>=45 deletion (F_del='Slope') | | 2,443.0 | 1.11% |
| Pipelines (F_del='Pipe') | | 12.3 | 0.01% |
| Access (Roads) (F_del='Road') | | 145.1 | 0.07% |
| Cutlines (Seismic) (F_del='Seismic') | | 1,824.9 | 0.83% |
| Land Use Updates (F_del='LUUPDate') | | 125.7 | 0.06% |
| Recreation Buffer (F_del='RecBuf') | | 21.8 | 0.01% |
| Subjective deletions (F_del='SubDel') | | 38,295.2 | 17.43% |
| Conifer Landbase Deletions | Subtotal | 49,013.2 | 22.31% |
| **Net Productive Conifer Landbase** | | **151,973.1** | **69.19%** |
| | | | |
| Gross Productive Deciduous Landbase (theme1='Dec') | | 7,952.9 | 3.62% |
| PNTs (Protective Notations) (F_del='PNT') | | 0.3 | 0.00% |
| Private Land (Freehold) (F_del='FreeHold') | | 188.9 | 0.09% |
| Provincial Recreation Area (F_del='PPark') | | 0.0 | 0.00% |
| Forest Recreation Area (F_del='FPark') | | 0.1 | 0.00% |
| Hydrography buffer deletion (Lakes) (F_del='Lake') | | 274.6 | 0.12% |
| Hydrography buffer deletion (Streams/Rivers) (F_del='Stream') | | 2.0 | 0.00% |
| Slope>=45 deletion (F_del='Slope') | | 398.1 | 0.18% |
| Pipelines (F_del='Pipe') | | 0.0 | 0.00% |
| Access (Roads) (F_del='Road') | | 5.6 | 0.00% |
| Cutlines (Seismic) (F_del='Seismic') | | 25.6 | 0.01% |
| Land Use Updates (F_del='LUUPDate') | | 0.0 | 0.00% |
| Recreation Buffer (F_del='RecBuf') | | 16.3 | 0.01% |
| Subjective deletions (F_del='SubDel') | | 1,865.5 | 0.85% |
| Deciduous Landbase Deletions | Subtotal | 2,776.8 | 1.26% |
| **Net Productive Deciduous Landbase** | | **5,176.1** | **2.36%** |
| | | | |
| **Net Productive Landbase** | | **157,149.1** | **71.54%** |

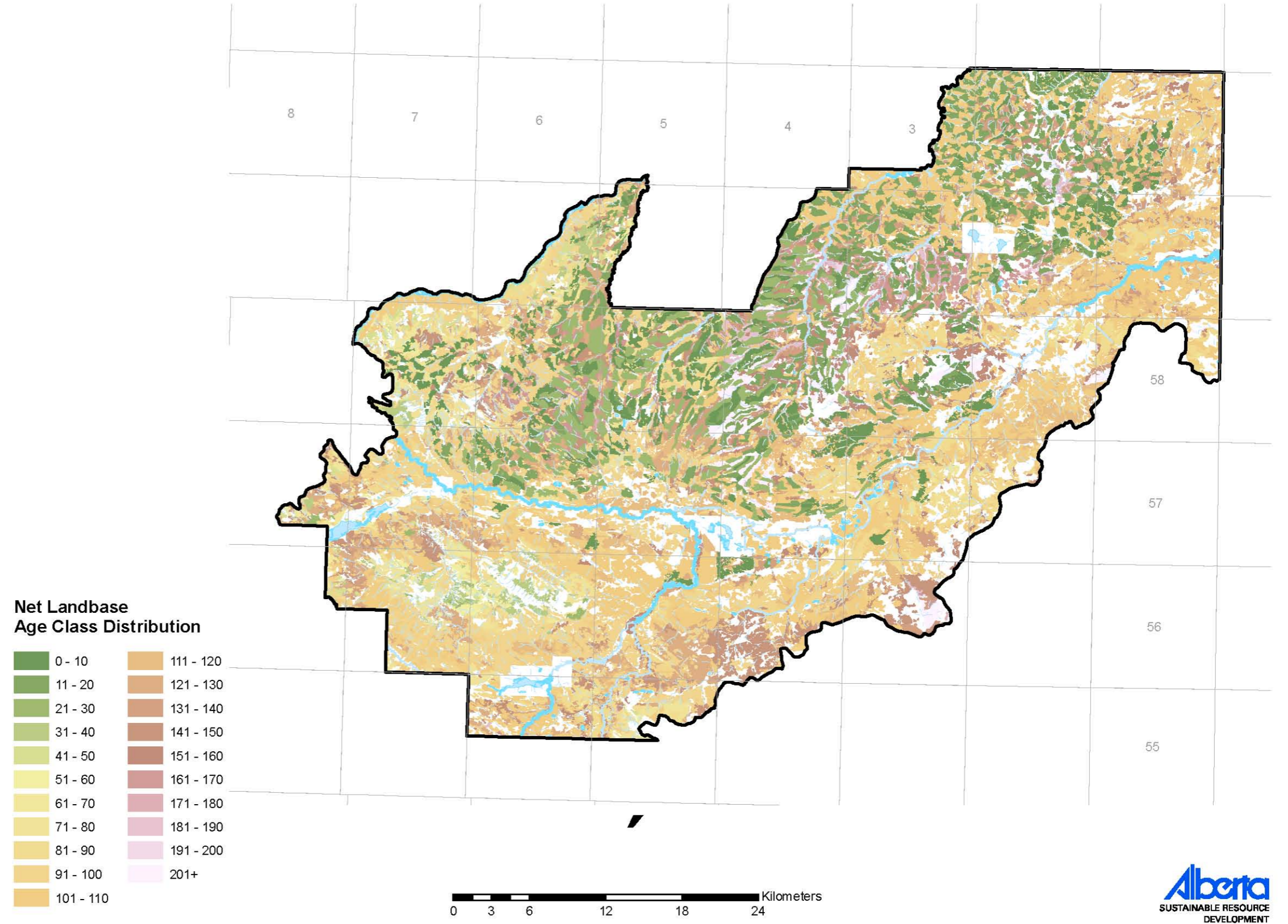**Table 0-2: Classified Landbase by Yield Strata**

Differences in numbers and sums due to rounding to one decimal place.

| Landbase | Yield Strata | Area (in ha) | % of Net Productive Landbase |
|---|---|---|---|
| **Conifer** | CPIABF | 14,684.5 | 9.34% |
| | CPIABMG | 8,958.7 | 5.70% |
| | CPICDF | 50,684.7 | 32.25% |
| | CPICDMG | 27,749.5 | 17.66% |
| | CSbalal | 9,192.0 | 5.85% |
| | CSwalal | 14,931.3 | 9.50% |
| | CDMxalal | 2,671.8 | 1.70% |
| | DCMxalal | 2,846.9 | 1.81% |
| | DAwalal | 520.5 | 0.33% |
| | CPIABMGS | 4,445.7 | 2.83% |
| | CSwalalS | 8,076.1 | 5.14% |
| | CCompalal | 7,211.3 | 4.59% |
| | **Net Productive Conifer Landbase** | **151,973.1** | **96.71%** |
| | | | |
| **Deciduous** | DAwalal | 5,176.1 | 3.29% |
| | **Net Productive Deciduous Landbase** | **5,176.1** | **3.29%** |
| | | | |
| | **Net Productive Landbase** | **157,149.1** | **100.00%** |

# Map 6-2: FMU E8 Net Landbase Distribution by Managed Species



**Net Landbase by Managed Species**

- � Conifer Net Landbase
- ▮ Deciduous Net Landbase
- ▮ Past Conifer Harvesting

**Caribou Habitat Intactness Rating**

- ▨ High Intactness
- ▧ Medium Intactness
- ▤ Low Intactness

Kilometers
0  3  6     12     18     24

*Alberta*
SUSTAINABLE RESOURCE
DEVELOPMENT

# Map 6-3: FMU E8 Net Landbase Age Class Distribution

**Net Landbase
Age Class Distribution**

| | |
|---|---|
| 0 - 10 | 111 - 120 |
| 11 - 20 | 121 - 130 |
| 21 - 30 | 131 - 140 |
| 31 - 40 | 141 - 150 |
| 41 - 50 | 151 - 160 |
| 51 - 60 | 161 - 170 |
| 61 - 70 | 171 - 180 |
| 71 - 80 | 181 - 190 |
| 81 - 90 | 191 - 200 |
| 91 - 100 | 201+ |
| 101 - 110 | |

Kilometers

0   3   6      12      18      24

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# Map 6-4: FMU E8 Net Landbase Yield Strata Assignment



**Net Landbase Yield Strata**

- CCompalal
- CDMxalal
- CPlABF
- CPlABMG
- CPlCDF
- CPlCDMG
- CPlABMGS
- CSbalal
- CSwalal
- CSwalalS
- DAwalal
- DCMxalal

Kilometers
0  3  6  12  18  24

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SUSTAINABLE RESOURCE
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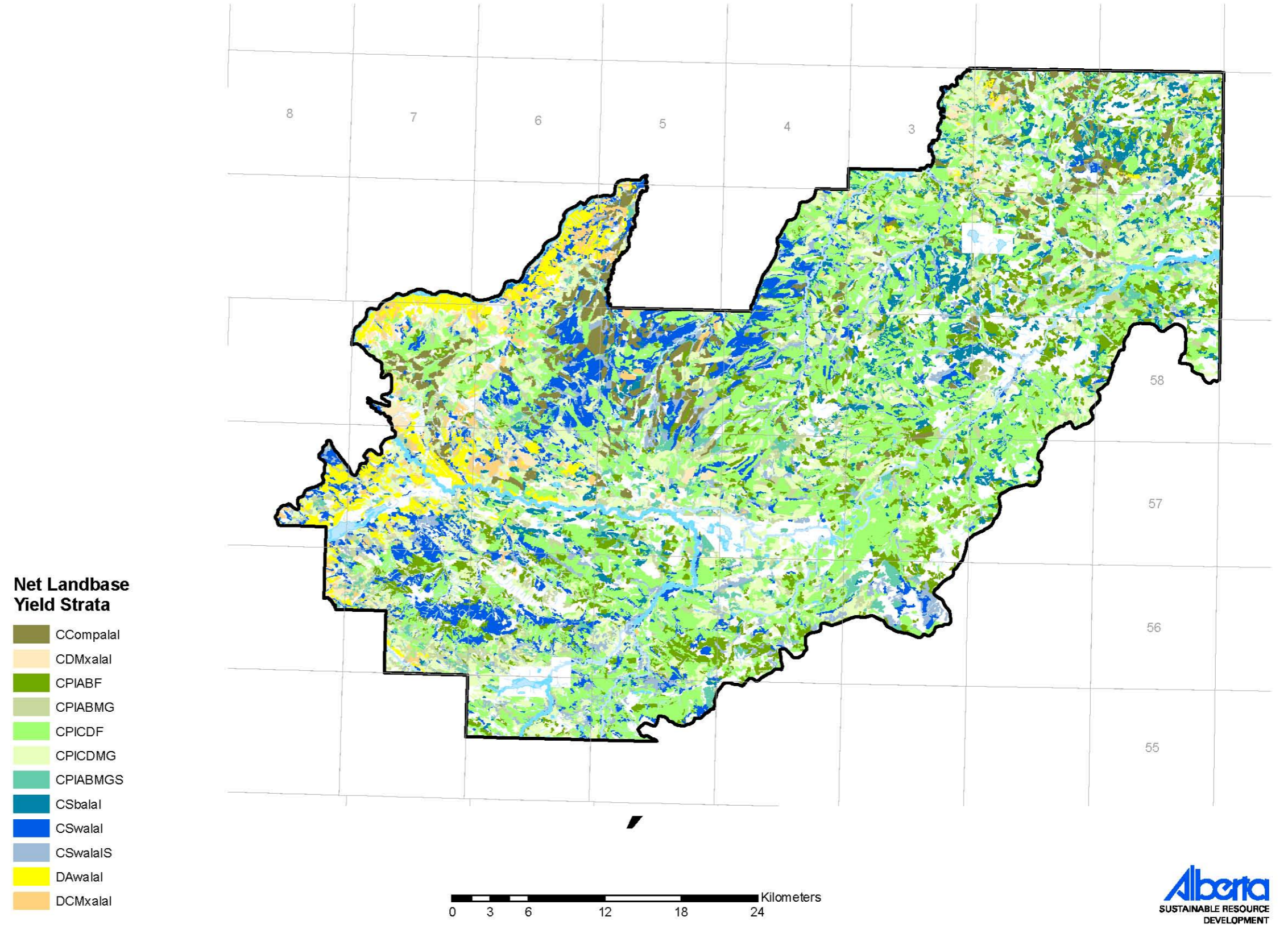
# Map 6-5: FMU E8 Caribou Ranges and Intactness Rating



**Caribou Range**

- North A La Peche
- South A La Peche
- North Little Smoky
- South Little Smoky

**Caribou Habitat Intactness Rating**

- High Intactness
- Medium Intactness
- Low Intactness

Kilometers
0  3  6  12  18  24

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