**COMMON ATTRIBUTE SCHEMA (CAS)**

**FOR**

**FOREST INVENTORIES ACROSS CANADA**

BOREAL AVIAN MODELLING PROJECT

AND

CANADIAN **BEACONs** PROJECT

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**Common Attribute Schema (CAS)**



**1.0 INTRODUCTION**



Canada‟s vast boreal ecosystem hosts one of the most diverse bird communities in North America. Development pressure within the boreal region is on the increase, and there is an urgent need to understand the impact of changing habitats on boreal bird populations and to make sound management decisions. The Boreal Avian Modeling Project was initiated to help address the lack of basic information on boreal birds and their habitats across boreal forests in Canada. The need to effectively manage bird species and their habitats has resulted in the effort to collect and gather data across Canada to develop models that will predict bird abundance and distribution, and that will clarify population and habitat associations with climate and land cover.

Current national databases developed from satellite-based products using biophysical variables have limited application at regional levels because many bird species are sensitive to variation in canopy tree species composition, height, and age; vegetation attributes that satellite- based products cannot measure. Because satellite-based land cover maps lack the thematic detail needed to model the processes of stand growth, succession, and regeneration, avian habitat models derived from satellite land cover data cannot be used to link forest management actions to the desired biotic indicators at the scale of forest tenure areas.

Digital forest inventory data can overcome many of the deficiencies identified with satellite-based land cover data. These data exist for most operational and planned commercial forest tenures in the Canadian boreal forest; however, differences among data formats, attributes, and standards across the various forest inventories make it difficult to develop models that are comparable and can be consistently applied across regions. To do so, it is necessary to address the variation between different forest inventories and bring all available inventories into one explicitly defined database where attributes are consistently defined without loss of precision. The starting point is to review all forest inventory classifications and develop a set of common attributes. This document addresses the inventory review developed for the Boreal Avian Monitoring Project; this review is called the Common Attribute Schema (CAS).



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**Common Attribute Schema (CAS)**



**2.0 COMMON ATTRIBUTE SCHEMA**



The common attribute schema (CAS) is a comprehensive attribute classification suitable for avian habitat modeling. Its development requires the selection of vegetation cover attributes useful for avian habitat modeling, and the assignment of common codes for each attribute that are broad enough to capture all relevant existing forest inventory attributes. CAS attributes represent the most common attributes that are consistently recorded in forest inventories across Canada including: stand structure (layers), moisture regime, crown closure, species composition, height, age (origin), site class or site index, non-forested cover types, non-vegetated cover types, and disturbance history. CAS also includes two attributes of ecological interest: ecosite and wetland. These two attributes are not common to most forest inventories across Canada; however, these attributes are considered important for avian habitat models and can possibly be acquired from other sources or partially or wholly derived from other attributes.

Development of the CAS attribute codes and rule sets for inventory attribute code conversion to CAS codes required an extensive review of previous and current inventory standards and specifications across Canada. Gillis and Leckie 1 provided a good starting point for review of previous inventory standards. More current and other inventory standards and documents are listed in the bibliography. A summary of recent or current inventories across Canada are presented in Appendix 1. These inventories are the most likely sources for data that can contribute to the avian bird modeling project.

Based on the review, detailed tables were produced to summarize each inventory standard by province and territory. Two national parks, Wood Buffalo and Prince Albert are included. Conversion rule sets were then produced as part of the detailed tables to identify how each province or territory inventory attribute codes translate into CAS attribute codes. Detailed tables and conversion rule sets for each CAS attribute are presented in Appendices noted in the appropriate sections of this document.

Although many CAS attributes have a one-to-one conversion, not all do; some are identified by an interval or class that has an upper and lower bound (lower bound is > and the upper bound is <). Interval coding for height, crown closure, age, and similar quantitative attributes is a unique feature of CAS. Crown closure, height, age, and disturbance extent use bounds to define an attribute class. For example, the CAS captures crown closure as an interval providing two values, the lower bound and upper bound. In the Alberta Vegetation Inventory, crown closure is captured in four cover classes: A, B, C and D, while the British Columbia Vegetation Resource Inventory captures crown closure as values ranging from 1 to 100 to the nearest 1 percent. In

1. Gillis, M.D.; Leckie, D.G. 1993. Forest Inventory Mapping Procedures Across Canada. Petawawa National Forestry Institute, Information Report PI-X-114.



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**Common Attribute Schema (CAS)**



CAS, an Alberta “B”- value would be represented as an interval: 31 for the lower bound and 50 for the upper bound. A British Columbia crown closure value of 36 would be represented as a CAS value of 36 for both the lower and upper bounds. All of the information contained in the original inventories is preserved and the attributes are not converted to a common resolution or set of values.

Attributes for CAS are stored in six attribute files to facilitate conversion and translation:

1. Header (HDR) attributes – values assigned to all polygons based on provenance or reference information;
2. CAS Base Polygon (CAS) attributes – values that identify a polygon and provide a link between the CAS polygon and the original inventory polygon;
3. Forest-Level (LYR) attributes – values that pertain to the polygon for productive and non-productive forest land;
4. Non-Forest Land (NFL) attributes – values that pertain to naturally non-vegetated, non-forest anthropogenic, and non-forest vegetated land;
5. Disturbance history (DST) attributes – values that pertain to any disturbance that has occurred in a polygon including type, year, and extent; and
6. Ecological specific (ECO) attributes – values representing ecosites and wetlands.

The main body of this report (Sections 2.1 through 2.3 and Section 3) defines each of the six attribute categories and tabulates the attributes and their characteristics. A summary of the data structure and data dictionary is presented in Appendix 2.

Each inventory data base has a unique data structure. A conversion procedure must be documented describing how to load the source inventory into CAS. A sample procedure is presented in Appendix 16.

**2.1** **Header Information**

Header information is a primary element of CAS. Header information identifies the source data set including jurisdiction, spatial reference, ownership, tenure type, inventory type, inventory version, inventory start and finish date and the year of acquisition for CAS. These attributes are detailed on the following pages.



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**Common Attribute Schema (CAS)**



**2.1.1 Jurisdiction**

Jurisdiction identifies the province or territory from which the inventory data came.

|  |  |
| --- | --- |
| Field: **JURISDICTION** | **Attribute Value** |
| British Columbia | BC |
| Alberta | AB |
| Saskatchewan | SK |
| Manitoba | MB |
| Ontario | ON |
| Quebec | QC |
| Prince Edward Island | PE |
| New Brunswick | NB |
| Nova Scotia | NS |
| Newfoundland and Labrador | NL |
| Yukon Territory | YK |
| Northwest Territories | NT |
| Wood Buffalo National Park | WB |
| Prince Albert National Park | PA |

**2.1.2** **Spatial Reference**

Spatial reference describes the reference frame for, and the means to encode, coordinates in the data set including a coordinate system, projection, and datum. Coordinates can be referenced to any desired geographic grid. The coordinate system is a method of representing points in a space of given dimensions by coordinates to establish position. A projection is a systematic construction of lines drawn on a plane surface representative of and corresponding to the meridians and parallels of the curved surface of the earth. A datum is the geodetic datum specifying that coordinate system in which horizontal control points are located. The North American Datum (NAD) of 1983 is the current datum used in Canada. Some inventories may use the NAD of 1927.

|  |  |
| --- | --- |
| Field: **COORDINATE\_SYSTEM** | **Attribute Value** |
|  |  |
| Universal Trans Mercator | UTM |
| British Columbia Geographic System | BCGS |
| National Topographic System | NTS |
| Ontario Base Map | OBM |
| Township System | TOWNSHIP |

|  |  |
| --- | --- |
| Field: **PROJECTION** | **Attribute Value** |
|  |  |
| Albers System | ALBERS |
| Universal Trans Mercator System | UTM |



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|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Common Attribute Schema (CAS)** | |
|  |  |  |  |
|  |  |  |  |
|  | Field: **DATUM** | **Attribute Value** |  |
|  |  |  |  |
|  | North American Datum 1927 | NAD27 |  |
|  | North American Datum 1983 | NAD83 |  |
| **2.1.3 Ownership** | |  |  |

Ownership identifies who owns the inventory data, who owns the land that the inventory covers, and degree of permission to which the data can be used. Ownership of the inventory can be federal, provincial, territory, industry, private, or First Nation. Ownership of the land is identified as being crown, private, military, or First Nation. Permission identifies whether the use of the data is unrestricted, restricted or limited.

|  |  |
| --- | --- |
| Field: **INV\_OWNER** | **Attribute Value** |
|  |  |
| Provincial Government | PROV\_GOV |
| Federal Government | FED\_GOV |
| Yukon Territory or Northwest Territories | TERRITORY |
| First Nations | FN |
| Industry | INDUSTRY |
| Private | PRIVATE |

|  |  |
| --- | --- |
| Field**: LAND\_OWNER** | **Attribute Value** |
|  |  |
| Crown | CROWN |
| Private | PRIVATE |
| Military | MILITARY |
| First Nation | FN |

|  |  |
| --- | --- |
| Field: **PERMISSIONS** | **Attribute Value** |
|  |  |
| Use of the inventory data is unrestricted | UNRESTRICTED |
| Use of the inventory data has restrictions | RESTRICTED |
| Use of the data has limitations. | LIMITED |

**2.1.4** **Tenure Type**

Tenure type identifies the kind of agreement or license under which the inventory was done. Various tenure types exist across Canada. The most common types are included in the list below; any others are to be coded as “other”.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Field: **TENURE\_TYPE** | **Attribute Value** |  |
|  |  |  |  |
|  | Tree Farm License | TFL |  |
|  | Forest License | FL |  |
|  | Tree Farm | TF |  |
|  | Managed Forest | MF |  |
|  | Forest Management Agreement | FMA |  |
|  | Forest Management License Agreement | FMLA |  |
|  | Sustainable Forest License | SFL |  |
|  |  |  |  |

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Common Attribute Schema (CAS)** | | |
|  |  |  |  |  |
|  |  |  |  |  |
|  | National or Provincial Park |  | PARK |  |
|  | Northern Boreal Initiative |  | NBI |  |
|  | Private Land |  | PRIVATE |  |
|  | Administered by the Military |  | MILITARY |  |
|  | First Nation or Métis Area |  | FN |  |
|  | Tenure type not on list |  | OTHER |  |
|  | Timber Limit |  | TL |  |
|  | No tenure |  | NONE |  |

**2.1.5** **Inventory Metadata**

Inventory metadata provides general information with regard to a particular forest or vegetation inventory. The inventory type identifies the kind of inventory that was produced for an area. The name, abbreviation, or acronym usually becomes the name used to identify an inventory. For example, Alberta had a series of successive forest inventories called Phase 1, Phase 2, and Phase 3. As inventories became more inclusive of attributes other than just the trees, they became known as vegetation inventories, for example, the Alberta Vegetation Inventory or AVI. The inventory type along with a version number usually identifies an inventory.

The inventory version identifies the standards used to produce a consistent inventory, usually across large landbases and for a relatively long period of time. Inventory Reference Year identifies the year the inventory done. An inventory can take several years to complete; therefore, Reference Year Minimum and Maximum dates are included to identify the interval for when the inventory was completed. In some cases inventory reference year and air photo year will be the same. Several years of successive or periodic acquisition are possible; therefore, a minimum and a maximum year are recorded. Inventory Start and Finish Year identifies the year the inventory was started and finished. Year of Update indicates the year that an inventory was updated.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Field: **INV\_TYPE** | **Attribute Value** |  |
|  |  |  |  |
|  | Inventory name or type of inventory | Alpha Numeric |  |
|  |  |  |  |
|  | Field: **INV\_VERSION** | **Attribute Value** |  |
|  |  |  |  |
|  | The standard and version of the standard used to create the | Alpha Numeric |  |
|  | inventory |  |
|  |  |  |
|  | Field: **REFERENCE\_YEAR\_MIN** and |  |  |
|  | **Attribute Value** |  |
|  | **REFERENCE\_YEAR\_MAX** |  |
|  |  |  |
|  | Reference Year Minimum – first year of inventory | 1960 – 2020 |  |
|  | Reference Year Maximum – last year of inventory | 1960 - 2020 |  |



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|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | **Common Attribute Schema (CAS)** | | |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  | Field: **INV\_START\_YR** and **INV\_FINISH\_YR** | **Attribute Value** | |  |
|  |  |  |  |  |  |
|  |  | Inventory start year – year inventory was started | 1960 - 2020 |  |  |
|  |  | Inventory finish year – year inventory was finished | 1960 - 2020 |  |  |
|  |  |  |  |  | |
|  |  | Field: **INV\_UPDATE\_YR** | **Attribute Value** |  |  |
|  |  |  |  |  |  |
|  |  | Year when an update to the inventory data was updated | 1960 - 2020 |  |  |
|  |  |  |  |  |  |

**2.1.6** **CAS Data Acquisition**

CAS data acquisition identifies the year that the inventory was acquired for CAS. A unique number is assigned to each inventory for purposes of CAS identification.

|  |  |  |
| --- | --- | --- |
|  | Field: **INV\_ACQ\_YR** | **Attribute Value** |
|  |  |  |
|  | Year inventory was acquired for CAS | 2008 - 2020 |
|  |  |  |
|  | Field: **INV\_ACQ\_ID** | **Attribute Value** |
|  |  |  |
|  | Data acquisition identification number | 1 - 1000 |

**2.2** **CAS Base Polygon Attributes**

The CAS base polygon data provides polygon specific information and links the original inventory polygon ID to the CAS ID. Identification attributes include original stand ID, CAS Stand ID, Mapsheet ID, and Identification ID. Polygon attributes include polygon area and polygon perimeter. Inventory Reference Year, Photo Year, and Administrative Unit are additional identifiers.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **2.2.1 Polygon Identification** | | |  |  |  |
|  |  |  |  |  |  |
|  |  | Field: **ORIGINAL\_STAND\_ID** | **Attribute Value** | |  |
|  |  |  |  |  |  |
|  |  | Original stand identification – unique number for each polygon within | 1 – 10,000,000 | |  |
|  |  | the original inventory |  |
|  |  |  |  |  |
|  |  |  |  |  |  |
|  |  | Field: **CAS\_STAND\_ID** | **Attribute Value** |  |  |
|  |  |  |  |  |  |
|  |  | CAS stand identification – unique number for each polygon within | Alpha Numeric |  |  |
|  |  | CAS |  |  |
|  |  |  |  |  |



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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Common Attribute Schema (CAS)** | |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Field**: MAPSHEET\_ID** | **Attribute Value** |  |  |
|  |  |  |  |  |
|  | Map sheet identification according to original naming convention for | Alpha Numeric |  |  |
|  | an inventory |  |  |
|  |  |  |  |
|  |  |  |  |  |
|  | Field**: IDENTIFICATION\_ID** | **Attribute Value** |  |  |
|  |  |  |  |  |
|  | Unique number for a particular inventory section | 1 – 1000 |  |  |
| **2.2.2 Polygon Area and Perimeter** | |  |  |  |
| Each polygon area and perimeter is recorded. | |  |  |  |
|  |  |  |  |  |
|  | Field: **POLYGON\_AREA** and **POLYGON\_PERIMETER** | **Attribute Value** |  |  |
|  |  |  |  |  |
|  | Polygon area (ha). | 0.1 – 10,000 |  |  |
|  | Polygon perimeter (ha). | 0.1 - infinity |  |  |

**2.2.3 Year of Aerial Photography**

Photo Year is the year in which the inventory was considered initiated and completed. An inventory can take several years to complete; therefore, Photo Year Minimum and Maximum dates are included to identify the interval for when the inventory was completed. In some cases inventory reference year and air photo year are the same. Several years of successive or periodic acquisition are possible; therefore, a minimum and a maximum year are recorded.

|  |  |
| --- | --- |
| Field: **PHOTO\_YEAR\_MIN** and **PHOTO\_YEAR\_MAX** | **Attribute Value** |
|  |  |
| Photo Year Minimum – earliest year of aerial photo acquisition | 1960 - 2020 |
| Photo Year Maximum – last year of aerial photo acquisition | 1960 - 2020 |

**2.2.4** **Administration Unit**

Administration unit identifies any inventory sub-unit boundaries that exist within an inventory. Sub- unit boundaries can possibly split a polygon; therefore, this CAS attribute is applied at the CAS base polygon level. Two administration unit (possibly hierarchical) levels of organization are identified, such as Forest Management Units (FMUs) and Working Circle (WC) or Compartment (CMPT). Their interpretation is source-data-set explicit.

|  |  |
| --- | --- |
| Field: **ADM\_UNIT\_1** and **ADM\_UNIT\_2** | **Attribute Value** |
|  |  |
| Administration Unit 1 | Alpha Numeric,e.g. FMU |
| Administration Unit 2 | Alpha Numeric, e.g. WC |



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**Common Attribute Schema (CAS)**



**2.3** **CAS Forest and Non-Forest Attributes**

**2.3.1 Stand Structure**

Structure is the physical arrangement or vertical pattern of organization of the vegetation within a polygon. A stand can be identified as single layered, multilayered, complex, or horizontal. A single layered stand has stem heights that do not vary significantly and the vegetation has only one main canopy layer.

A multilayered stand can have several distinct layers and each layer is significant, has a distinct height difference, and is evenly distributed. Generally the layers are intermixed and when viewed vertically, one layer is above the other. Layers can be treed or non-treed. Up to 9 layers are allowed; most inventories recognize only one or two layers. The largest number of layers recognized is in the British Columbia VRI with 9 followed by Saskatchewan SFVI with 7 and Manitoba FLI with 5. Each layer is assigned an independent description with the tallest layer described in the upper portion of the label. The number of layers and a ranking of the layers can also be assigned. Some inventories (e.g. Saskatchewan UTM, Quebec TIE, Prince Edward Island, and Nova Scotia) can imply that a second layer exists; however, the second layer is not described or only a species type is indicated.

Complex layered stands exhibit a high variation in tree heights. There is no single definitive forested layer as nearly all height classes (and frequently ages) are represented in the stand. The height is chosen from a stand midpoint usually followed by a height range.

Horizontal structure represents vegetated or non-vegetated land with two or more homogeneous strata located within other distinctly different homogeneous strata within the same polygon but the included strata are too small to map separately based on minimum polygon size rules. This attribute is also used to identify multi- label polygons identified in biophysical inventories such as Wood Buffalo National Park and Prince Albert National Park. The detailed table for stand structure is presented in Appendix 3.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Field: **STAND STRUCTURE** | **Attribute Value** |  |
|  |  |  |  |
|  | **Single layered** – vegetation within a polygon where the heights do | S |  |
|  | not vary significantly. |  |
|  |  |  |
|  |  |  |  |
|  | **Multilayered** – two or more distinct layers of vegetation occur. Each |  |  |
|  | layer is significant, clearly observable and evenly distributed. Each | M |  |
|  | layer is assigned an independent description. |  |  |
|  |  |  |  |
|  | **Complex** – stands exhibit a high variation of heights with no single | C |  |
|  | definitive forest layer. May be used with non-forested layers. |  |
|  |  |  |
|  |  |  |  |
|  |  |  |  |

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**Common Attribute Schema (CAS)**



**Horizontal** – two or more significant strata within the same polygon;

at least one of the strata is too small to delineate as a separate H polygon.

**2.3.2** **Structure Percent or Range**

Stand Structure Percent or Range is assigned when a complex or horizontal structured polygon is identified. Stand structure percent is used with horizontal stands and identifies the percentage of stand area, assigned in 10% increments, attributed by each stratum within the entire polygon and must add up to 100%. Any number of horizontal strata can be described per horizontal polygon.

Stand Structure Range is used with complex stands and represents the height range (m) around the stand midpoint. For example, height range 6 means that the range around the midpoint height is 3 meters above and 3 meters below the midpoint.

|  |  |  |
| --- | --- | --- |
| Field: **STAND\_STRUCTURE\_PER** and | **Attribute Value** |  |
| **STAND\_STRUCTURE\_ RANGE** |  |
|  |  |
| **Stand Structure Percent** - used with horizontal stands to identify the |  |  |
| percentage, in 10% increments, represented by each homogeneous | 1 - 9 |  |
| strata within the polygon. Must add up to 100%. Only two strata |  |
|  |  |
| descriptions are allowed per polygon. |  |  |
| **Stand Structure Range** – height range (m) around the midpoint | 1 - 9 |  |
| height of the stand. |  |
|  |  |

**2.3.3** **Number of Layers**

Number of Layers is an attribute related to stand structure and identifies how many layers have been identified for a particular polygon.

|  |  |  |
| --- | --- | --- |
| Field: **NUMBER\_OF\_LAYERS** | **Attribute Value** |  |
|  |  |  |
| Identifies the number of vegetation or non vegetation layers assigned | 1 - 9 |  |
| to a particular polygon. A maximum of 9 layers can be identified. |  |
|  |  |
| **2.3.4 Layer** |  |  |

Layer is an attribute related to stand structure that identifies which layer is being referred to in a multi-layered stand. The layer identification creates a link between each polygon attribute and the corresponding layer. Layer 1 will always be the top (uppermost) layer in the stand sequentially followed by Layer 2 and so on.

The maximum number of layers recognized is nine. The uppermost layer may also be a veteran

1. layer. A veteran layer refers to a treed layer with a crown closure of 1 to 5 percent and must occur with at least one other layer; it typically includes the oldest trees in a stand.



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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Common Attribute Schema (CAS)** |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Field: **LAYER** | **Attribute Value** |  |  |
|  |  |  |  |  |
|  | Identifies the number of vegetation or non vegetation layers assigned | 1 – 9, V |  |  |
|  | to a particular polygon. A maximum of 9 layers can be identified. |  |  |
|  |  |  |  |
|  | **2.3.5 Layer Rank** |  |  |  |

Layer Rank value is an attribute related to stand structure and refers to layer importance for forest management planning, operational, or silvicultural purposes. When a Layer Rank is not specified, layers can be sorted in order of importance by layer number.

|  |  |  |
| --- | --- | --- |
| Field: **LAYER RANK** | **Attribute Value** |  |
|  |  |  |
| Layer Rank - value assigned sequentially to layer of importance. | 1 – 9 |  |
| Rank 1 is the most important layer followed by Rank 2, etc. |  |
|  |  |
| Blank – no value |  |  |

**2.3.6 Soil Moisture Regime**

Soil moisture regime describes the available moisture supply for plant growth over a period of several years. Soil moisture regime is influenced by precipitation, evapotranspiration, topography, insolation, ground water, and soil texture. The CAS soil moisture regime code represents the similarity of classes across Canada. The detailed soil moisture regime table and CAS conversion is presented in Appendix 4.

|  |  |  |
| --- | --- | --- |
| Field: **SMR** | **Attribute Value** |  |
|  |  |  |
| **Dry** – Soil retains moisture for a negligible period following | D |  |
| precipitation with very rapid drained substratum. |  |
|  |  |
| **Mesic** – Soils retains moisture for moderately short to short periods | F |  |
| following precipitation with moderately well drained substratum. |  |
|  |  |
| **Moist** – Soil retains abundant to substantial moisture for much of the | M |  |
| growing season with slow soil infiltration. |  |
|  |  |
| **Wet** – Poorly drained to flooded where the water table is usually at or | W |  |
| near the surface, or the land is covered by shallow water. |  |
|  |  |
| **Aquatic** – Permanent deep water areas characterized by hydrophytic | A |  |
| vegetation (emergent) that grows in or at the surface of water. |  |
|  |  |
| **Blank** – no value |  |  |

**2.3.7** **Crown Closure**

Crown closure is an estimate of the percentage of ground area covered by vertically projected tree crowns, shrubs, or herbaceous cover. Crown closure is usually estimated independently for each layer. Crown closure is commonly represented by classes and differs across Canada; therefore, CAS recognizes an upper and lower percentage bound for each class. The detailed crown closure table is presented in Appendix 5.



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|  |  |  |
| --- | --- | --- |
|  | **Common Attribute Schema (CAS)** |  |
|  |  |  |
| Field: **CROWN\_CLOSURE\_UPPER** and |  |  |
| **Attribute Value** |  |
| **CROWN\_CLOSURE\_LOWER** |  |
|  |  |
|  |  |  |
| Upper Bound – upper bound of a crown closure class | 0 – 100 |  |
| Lower Bound – lower bound of a crown closure class | 0 – 100 |  |
| Blank – no value |  |  |
| **2.3.8 Height** |  |  |

Stand height is based on an average height of leading species of dominant and co-dominant heights of the vegetation layer and can represent trees, shrubs, or herbaceous cover. Height can be represented by actual values or by height class and its representation is variable across Canada; therefore, CAS will use upper and lower bounds to represent height. The detailed height table is presented in Appendix 6.

|  |  |
| --- | --- |
| Field: **HEIGHT\_UPPER** and **HEIGHT\_LOWER** | **Attribute Value** |
|  |  |
| Upper Bound – upper bound of a height class. | 0 - 100 |
| Lower Bound – lower bound of a height class. | 0 - 100 |

**2.3.9 Species Composition**

Species composition is the percentage of each tree species represented within a forested polygon by layer. Species are listed in descending order according to their contribution based on crown closure, basal area, or volume depending on the province or territory. A total of ten species can be used in one label. The CAS attribute will capture estimation to the nearest percent; however, most inventories across Canada describe species to the nearest 10% (in actual percent value or multiples of 10). Species composition for each forest stand and layer must sum to 100%.

The detailed table for species composition is presented in Appendix 7. Some inventories (Alberta Phase 3, Saskatchewan UTM, Quebec TIE, and Newfoundland, and National Parks) do not recognize a percentage breakdown of species but rather group species as contributing a major (greater than 26 percent) or minor (less than 26 percent) amount to the composition. Also included in Appendix 7 is a translation table that assigns a species composition percentage breakdown for those inventories that do not have a percentage breakdown.

CAS species codes are derived from the species‟ Latin name using the first four letters of the Genus and the first four letters of the Species unless there is a conflict, then the last letter of the species portion of the code is changed. Unique codes are required for generic groups and hybrids. A species list has been developed representing every inventory species identified across Canada including hybrids, exotics and generic groups (Appendix 8). Generic groups represent situations where species were not required to be recognized past the generic name or where photo interpreters could not identify an individual species. A list of species that is



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**Common Attribute Schema (CAS)**



represented by the generic groups by province, territory, or Park has also been developed and is presented in Appendix 9.

|  |  |  |
| --- | --- | --- |
| Field: **SPEC1, SPEC1\_PER, SPEC2, SPEC2\_PER, SPEC3,** |  |  |
| **SPEC3\_PER, SPEC4, SPEC4\_PER, SPEC5, SPEC5\_PER, SPEC6,** | **Attribute Value** |  |
| **SPEC6\_PER, SEPC7, SPEC7\_PER, SPEC8, SPEC8\_PER, SPEC9,** |  |
|  |  |
| **SPEC9\_PER, SPEC10, SPEC10\_PER** |  |  |
|  |  |  |
| **Species (SPEC#)** – Example:*Populus tremuloides*, Trembling Aspen. | POPU TREM |  |
| Ten species can be listed per layer per polygon. |  |
|  |  |
| **Species Percent (SPEC#\_PER)** – Percentage of a species or generic |  |  |
| group of species that contributes to the species composition of a | 1 - 100 |  |
| polygon. Must add up to 100%. |  |  |

**2.3.10 Stand Origin**

Stand origin is the average initiation year of codominant and dominant trees of the leading species within each layer of a polygon. Origin is determined either to the nearest year or decade. An upper and lower bound is used to identify CAS origin. The detailed stand origin table is presented in Appendix 10.

|  |  |
| --- | --- |
| Field: **ORIGIN\_UPPER** and **ORIGIN\_LOWER** | **Attribute Value** |
|  |  |
| Upper Bound – upper bound of an age class | 0 - 2020 |
| Lower Bound – lower bound of an age class | 0 - 2020 |

**2.3.11 Site Class**

Site class is an estimate of the potential productivity of land for tree growth. Site class reflects tree growth response to soils, topography, climate, elevation, and moisture availability. See Appendix 11 for the detailed site table.

|  |  |
| --- | --- |
| Field: **SITE\_CLASS** | **Attribute Value** |
|  |  |
| **Unproductive** – cannot support a commercial forest | U |
| **Poor** – poor tree growth based on age height relationship | P |
| **Medium** - medium tree growth based on age height relationship | M |
| **Good** - medium tree growth based on age height relationship | G |
| **Blank** – no value |  |
| **2.3.12 Site Index** |  |

Site Index is an estimate of site productivity for tree growth. It is derived for all forested polygons based on leading species, height, and stand age based on a specified reference age. Site index is not available for most inventories across Canada. See Appendix 11 for the detailed site table.

|  |  |  |
| --- | --- | --- |
| Field: **SITE\_INDEX** | **Attribute Value** |  |
|  |  |  |
| **Site Index –** estimate of site productivity for tree growth based on a | 0 - 99 |  |
| specified reference age. |  |
|  |  |



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**Common Attribute Schema (CAS)**



**2.3.13 Unproductive Forest**

Unproductive forest is forest land not capable of producing trees for forest operations. They are usually wetlands, very dry sites, exposed sites, rocky sites, higher elevation sites, or those sites with shallow or poor soils. The detailed table, CAS codes, and conversion rule sets are presented in Appendix 12.

|  |  |
| --- | --- |
| Field: **UNPRODUCTIVE\_FOREST** | **Attribute Value** |
|  |  |
| **Treed Muskeg** – treed wetland sites | TM |
| **Open Muskeg** – open (<10% trees) wetland sites | OM |
| **Alpine forest** – high elevation forest usually above 1800 m | AL |
| **Scrub Deciduous** – scrub deciduous trees on poor sites | SD |
| **Scrub Coniferous** – scrub coniferous trees on poor sites | SC |
| **Non Productive Forest** – poor forest types on rocky or wet sites | NP |
| **Productive Forest** – any other forest | P |
| **Blank** – no value |  |
| **2.3.14 Naturally Non Vegetated** |  |

The Naturally Non-Vegetated class refers to land types with no vegetation cover. The maximum vegetation cover varies across Canada but is usually less than six or ten percent. The detailed table, CAS codes, and CAS conversion rule set are presented in Appendix 12.

|  |  |
| --- | --- |
| Field: **NATURALLY\_NON\_VEGETATED** | **Attribute Value** |
|  |  |
| **Alpine** – high elevation exposed land | AP |
| **Lake** – ponds, lakes or reservoirs | LA |
| **River** – double-lined watercourse | RI |
| **Ocean** – coastal waters | OC |
| **Rock or Rubble** – bed rock or talus or boulder field | RK |
| **Sand** – sand dunes, sand hills, non recent water sediments | SA |
| **Snow/Ice** – ice fields, glaciers, permanent snow | SI |
| **Slide** – recent slumps or slides with exposed earth | SL |
| **Exposed Land** – other non vegetated land | EX |
| **Beach** – adjacent to water bodies | BE |
| **Water Sediments** – recent sand and gravel bars | WS |
| **Flood** – recent flooding including beaver ponds | FL |
| **Island** – vegetated or non vegetated | IS |
| **Tidal Flats** – non vegetated feature associated with oceans | TF |
| **Blank** – no value |  |

**2.3.15 Non-Vegetated Anthropogenic**

Non-vegetated anthropogenic areas are influenced or created by humans. These sites may or may not be vegetated. The detailed table, CAS codes, and CAS conversion rule set are presented in Appendix 12.



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|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Common Attribute Schema (CAS)** | |
|  |  |  |  |
|  |  |  |  |
|  | Field: **NON\_VEGETATED\_ANTHROPOGENIC** |  | **Attribute Value** |
|  |  |  |  |
|  | **Industrial** – industrial sites |  | IN |
|  | **Facility/Infrastructure** – transportation, transmission, pipeline |  | FA |
|  | **Cultivated** – pasture, crops, orchards, plantations |  | CL |
|  | **Settlement** – cities, towns, ribbon development |  | SE |
|  | **Lagoon** - water filled, includes treatment sites |  | LG |
|  | **Borrow Pit** – associated with facility/infrastructure |  | BP |
|  | **Other** – any not listed |  | OT |
|  | **Blank** – no value |  |  |
|  | **2.3.16 Non-Forested Vegetated** |  |  |

Non-forested vegetated areas include all natural lands that have vegetation cover with usually less than 10% tree cover. These cover types can be stand alone or used in multi-layer situations. The detailed table, CAS codes, and CAS conversion rule set are presented in Appendix 12.

|  |  |  |  |
| --- | --- | --- | --- |
| Field: **NON\_FORESTED\_VEGETATED** | | | **Attribute Value** |
|  | | |  |
| **Tall Shrub** – shrub lands with shrubs > 2 meters tall | | | ST |
|  |  |  |  |
| **Low Shrub** – shrub lands with shrubs | < 2 meters tall | | SL |
| **Forbs** - herbaceous plants other than graminoids | | | HF |
| **Herbs** – no distinction between forbs and graminoids | | | HE |
| **Graminoids** – grasses, sedges, rushes, and reeds | | | HG |
| **Bryoid** – mosses and lichens | | | BR |
| **Open Muskeg** – wetlands less than 10% tree cover | | | OM |
| **Tundra** – flat treeless plains | | | TN |
| **Blank** – no value | | |  |

**2.3.17 Disturbance**

Disturbance identifies the type of disturbance history that has occurred or is occurring within the polygon. The type of disturbance, the extent of the disturbance and the disturbance year, if known, may be recorded. The disturbance may be natural or human -caused. Up to three disturbance events can be recorded with the oldest event described first. Silviculture treatments have been grouped into one category and include any silviculture treatment or treatments recorded for a polygon. The detailed table, CAS codes, and CAS conversion rule set are presented in Appendix 13.

|  |  |  |
| --- | --- | --- |
| Field: **DISTURBANCE1, DISTURBANCE2, DISTURBANCE3** | **Attribute Value** |  |
|  |  |  |
| **Cut** – logging with known extent | CO |  |
| **Partial Cut** – portion of forest has been removed, extent known or | PC |  |
| unknown |  |
|  |  |
| **Burn** – wildfires or escape fires | BU |  |
| **Windfall** – blow down | WF |  |



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|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Common Attribute Schema (CAS)** | |
|  |  |  |  |
|  |  |  |  |
|  | **Disease** – root, stem, branch diseases |  | DI |
|  | **Insect** – root, bark, leader, or defoliation insects |  | IK |
|  | **Flood** – permanent flooding from blockage or damming |  | FL |
|  | **Weather** – ice, frost, red belt |  | WE |
|  | **Slide** – damage from avalanche, slump, earth or rock slides |  | SL |
|  | **Other** – unknown or other damage |  | OT |
|  | **Dead Tops or Trees** – dead or dying trees, cause unknown |  | DT |
|  | **Silviculture Treatments** – Planting, Thinning, Seed Tree |  | SI |

**2.3.18 Disturbance Extent**

Disturbance extent provides an estimate of the proportion of the polygon that has been affected by the disturbance listed. Extent codes and classes vary across Canada where they occur; therefore, CAS identifies upper and lower bounds for this category. Three disturbance extents can be identified, one for each disturbance event.

|  |  |  |
| --- | --- | --- |
| Field:**DIST1\_EXT\_UPPER, DIST2\_EXT\_UPPER, DIST3\_EXT\_UPPER,** | **Attribute Value** |  |
| **DIST1\_EXT\_LOWER, DIST2\_EXT\_LOWER, DIST3\_EXT\_LOWER** |  |
|  |  |
|  |  |  |
| Disturbance extent upper – upper bound of extent class | 10 – 100 |  |
| Disturbance extent lower – lower extent of extent class | 1 - 95 |  |

**2.3.19 Disturbance Year**

Disturbance year is the year a disturbance event occurred. The disturbance year may be unknown. Three disturbance years can be identified, one for each disturbance event.

|  |  |
| --- | --- |
| Field: **DIST1\_YR, DIST2\_YR, DIST3\_YR** | **Attribute Value** |
|  |  |
| Disturbance Year – year that a disturbance event occurred. | 1900 - 2020 |



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**Common Attribute Schema (CAS)**



**3.0 ECOLOGICAL ATTRIBUTES**



Ecological attributes are generally not included or are incompletely recorded in typical forest inventories across Canada. Two attributes have been included for CAS: ecosite and wetland. These attributes are to be translated or derived for CAS from other attributes whenever possible.

**3.1 Wetland**

The wetland classification scheme used for CAS follows the classes developed by the National Wetlands Working Group2 and modified by Vitt and Halsey3,4. The scheme was further modified to take into account coastal and saline wetlands. The CAS wetland attribute is composed of four parts: wetland class, wetland vegetation modifier, wetland landform modifier, and wetland local modifier.

Five major wetland classes are recognized based on wetland development from hydrologic, chemical, and biotic gradients that commonly have strong cross-correlations. Two of the classes; fen and bog, are peat-forming with greater than 40 cm of accumulated organics. The three non- peat forming wetland types are shallow open water, marsh (fresh or salt water), and swamp. A non-wetland class is also included. The Vegetation Modifier is assigned to a wetland class to describe the amount of vegetation cover. The Landform Modifier is a modifier label used when permafrost, patterning, or salinity are present. The Local Landform Modifier is a modifier label used to define the presence or absence of permafrost features or if vegetation cover is shrub or graminoid dominated.

The detailed wetland table, CAS code set, and CAS translation rule set are presented in Appendix 14. Not many forest inventories across Canada provide a wetland attribute. Some inventories have complete or partial wetland attributes while others will need to have wetland classes derived from other attributes or ecosite information. The level of wetland detail that is possible to describe from a particular inventory database is dependent on the attributes that already exist. A rule set for each province or territory that identifies a method to derive wetland attributes using forest attributes or ecosite data is presented in Appendix 15. The wetland derivation may not be complete nor will it always be possible to derive or record all four wetland attributes in the CAS database.

1. National Wetlands Working Group 1988. Wetlands of Canada. Ecological Land Classification Series No. 24.
2. Alberta Wetland Inventory Standards. Version 1.0. June 1977. L. Halsey and D. Vitt.
3. Alberta Wetland Inventory Classification System. Version 2.0. April 2004. Halsey, et. al.



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**Common Attribute Schema (CAS)**



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field: **WETLAND\_CLASS** | | | **Attribute Value** |  |
|  |  |  |  |  |
| **Bog** - > 40 cm peat, receive water from precipitation only, low in nutrients | | | B |  |
| and acid, open or wooded with sphagnum moss | | |  |
|  |  |
| **Fen** - > 40 cm of peat, groundwater and runoff flow, mineral rich with | | | F |  |
| mostly brown mosses, open, wooded or treed | | |  |
|  |  |
| **Swamp** - woody vegetation with > 30 shrub cover or 6% tree cover. | | |  |  |
| Mineral rich with periodic flooding |  | and near permanent subsurface water. | S |  |
| Various mixtures of mineral sediments and peat. | | |  |  |
| **Marsh** - emergent vegetation with < 30% shrub cover, permanent or | | | M |  |
| seasonally inundated with nutrient rich water | | |  |
|  |  |
| **Shallow Open Water** - freshwater lakes < 2 m depth | | | O |  |
| **Tidal Flats** - ocean areas with exposed flats | | | T |  |
| **Estuary** - mixed freshwater/saltwater marsh areas | | | E |  |
| **Wetland -** no distinction of class | | | W |  |
| **Not Wetland** - upland areas | | | Z |  |
| **Blank** - no value | | |  |  |

|  |  |
| --- | --- |
| Field: **WETLAND\_VEGETATION\_MODIFIER** | **Attribute Value** |
|  |  |
| **Forested** - closed canopy > 70% tree cover | F |
| **Wooded** - open canopy > 6% to 70% tree cover | T |
| **Open Non-Treed Freshwater** - < 6% tree cover with shrubs | O |
| **Open Non-Treed Coastal** - < 6% tree cover, with shrubs | C |
| **Mud** - no vegetation cover | M |
| **Blank** - no value |  |

|  |  |
| --- | --- |
| Field: **WETLAND\_LANDFORM\_MODIFIER** | **Attribute Value** |
|  |  |
| Permafrost Present | X |
| Patterning Present | P |
| No Permafrost or Patterning Present | N |
| Saline or Alkaline Present | A |
| Blank – no value |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Field: **WETLAND\_LOCAL\_MODIFIER** | | | **Attribute Value** |
|  |  |  |  |
| Collapse Scar Present in permafrost area | | | C |
| Internal Lawn With Islands of Forested Peat Plateau | | | R |
| Internal Lawns Present (permafrost was once present) | | | I |
| Internal Lawns Not Present | | | N |
| Shrub Cover > 25% | | | S |
|  | | |  |
| Graminoids With Shrub Cover < 25% | | | G |
| Blank – no value | | |  |



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**Common Attribute Schema (CAS)**



**3.2 Ecosite**

Ecosites are site-level descriptions that provide a linkage between vegetation and soil/moisture and nutrient features on the site. The detailed ecosite table is presented in Appendix 16. A common attribute structure for ecosite is not provided for CAS because ecosite is not available for most forest inventories across Canada nor can it be derived from existing attributes. An ecosite field is included in CAS to accommodate inventories that do include ecosite data. The original inventory attribute value is captured in CAS. For example some codes: Quebec = MS25S, Ontario = ES11 or 044 or S147N and Alberta = UFb1.2.

|  |  |  |
| --- | --- | --- |
| Field: **ECOSITE** | **Attribute Value** |  |
|  |  |  |
| Ecosite – an area defined by a specific combination of site, soil, and | A-Z / 0-199 |  |
| vegetation characteristics as influenced by environmental factors. |  |
|  |  |



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**Common Attribute Schema (CAS)**



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**Common Attribute Schema (CAS)**



**5.0 LIST OF APPENDICES**



Appendix 1 Current Canadian Inventories

Appendix 2 Data Structure and Data Dictionary

Appendix 3 Stand Structure – Summary of Canadian Forest Inventories

Appendix 4 Soil Moisture Regime – Summary of Canadian Forest Inventories and CAS Conversion

Appendix 5 Crown Closure – Summary of Canadian Forest Inventories

Appendix 6 Stand Height – Summary of Canadian Forest Inventories

Appendix 7 Species Composition – Summary of Canadian Forest Inventories; and

CAS Species Percent Translation (For Forest Inventories that do not provide

species percent)

Appendix 8 CAS Species List and Codes

Appendix 9 CAS Generic Species Group List

Appendix 10 Stand Origin (Age) – Summary of Canadian Forest Inventories Appendix 11 Site Class and Site Index and CAS Conversion

Appendix 12 Non-Forested, Non-Vegetated, and Unproductive Forest – Summary of Canadian Forest Inventories;

CAS Codes Non-Forested, Non-Vegetated, and Unproductive Forest Codes; and

CAS Non-Forested, Non-Vegetated, and Unproductive Forest Conversion Appendix 13 Disturbance History – Summary of Canadian Forest Inventories;

CAS Disturbance History Codes; and

Disturbance History CAS Conversion

Appendix 14 Wetland – Summary of Canadian Forest Inventories; CAS Wetland Conversion; and

CAS Wetland Codes

Appendix 15 Procedures for CAS Wetland Derivation

Appendix 16 Ecosite– Summary of Canadian Forest Inventories Appendix 17 Sample of Export Procedure



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**APPENDIX 1**

**CURRENT CANADIAN INVENTORIES**



**Appendix 1** **Current Canadian Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **JURISDICTION** |  |  | **INVENTORY TYPE** |  |  | **INVENTORY** |  |  | **TIME PERIOD** |  |  | **COMMENTS** |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | **VERSION** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Completely digital. Class-based attributes up to | |  |
|  |  |  |  | Forest Cover Inventory | |  | Periodic | | 1978 -1998 | |  |  | 1987, then to absolute values. Province wide | |  |
|  |  |  |  |  | Revisions | |  |  | excluding parks and reserves. Conversion to | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | British Columbia | |  |  |  |  |  |  |  |  |  |  | VRI is ongoing. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Completely digital, absolute values. Province | |  |
|  |  |  |  | VRI – Vegetation Resource Inventory | | 2.4 | |  |  | 1995 - ongoing | |  | wide may include parks and reserves. Some | |  |
|  |  |  |  |  |  |  | landbases have rolled FCI into VRI; therefore | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | some VRI attributes will be missing. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Hardcopy maps with digital database. Most | |  |
|  |  |  |  | Phase 3 | |  | None | | 1972 - 1984 | |  |  | maps are now converted to digital. Class-based | |  |
|  |  |  |  |  |  |  | attributes. Most of green zone. Updated for | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | disturbance. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Completely digital, class-based and absolute | |  |
|  | Alberta | |  |  |  |  | 2.1 and 2.1.1 | |  | 1988 - ongoing | |  | attributes. Green zone and portions of the white | |  |
|  |  |  |  |  |  |  |  |  |  |  | zone. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | AVI – Alberta Vegetation Inventory | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | Industry initiatives. Same as AVI 2.1 but with | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 2.1+ | |  |  | 1991 - ongoing | |  | enhancements and additional attributes. | |  |
|  |  |  |  |  |  |  |  |  | License holders within green zone. Can include | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | wetland data. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



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**Appendix 1** **Current Canadian Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **JURISDICTION** |  |  | **INVENTORY TYPE** |  |  | **INVENTORY** |  |  | **TIME PERIOD** | |  |  | **COMMENTS** |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | **VERSION** |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Hardcopy maps (UTM grid) with digital database. | |  |
|  |  |  |  |  | UTM | |  | None | | 1985 | | - 1995 |  |  | Maps now converted to digital. Commercial forest | |  |
|  |  | Saskatchewan | |  |  |  |  |  |  |  |  |  |  |  | zone. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | SFVI – Saskatchewan Forest | | 4.0 | |  | 1998 | | - ongoing | |  | Completely digital. Commercial forest zone. | |  |
|  |  |  |  |  | Vegetation Inventory | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  | FLI – Forest Land Inventory | | 1.0, 1.1 | |  | 2001 | | - ongoing | |  | Completely digital, wooded and aspen parkland | |  |
|  |  | Manitoba | |  |  |  | areas included. Some wetland data. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Completely digital. 1.2 Height not recorded, age | |  |
|  |  |  |  |  |  |  | 1.2, 1.3 | |  | 1992 | | - 1998 |  |  | added. 1.3 Height and moisture added. Forested | |  |
|  |  |  |  |  | FRI – Forest Resource Inventory | |  |  |  |  |  |  |  |  | areas of province. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 1.0, 1.1 | |  |  | Prior to 1992 | | |  | Completely digital. Age and height not recorded. | |  |
|  |  |  |  |  |  |  |  |  |  | Forest areas of province | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  | |  |
|  |  |  |  |  | FRI – Forest Resource Inventory | |  | Numerous | | 1977 | | - 2000 |  |  | Completely digital, forest land up to the Line of | |  |
|  |  |  |  |  |  | revisions | |  |  | Undertaking. With or without ecosite data. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  | FRI-FIM – Forest Resource Inventory | |  |  |  |  |  |  |  |  | Completely digital, re-inventory of FRI areas. Several | |  |
|  |  | Ontario | |  | with Forest Information Management | |  | FIM1 and FIM 2 | | 2006 | | - ongoing | |  | new attributes incorporated into FRI, including, | |  |
|  |  |  | attributes. | |  |  |  |  |  |  |  |  | structure and ecosites. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  | FRI-NBI – Forest Resource Inventory | |  | With or without | |  |  |  |  |  | Completely digital, FRI above Line of Undertaking. | |  |
|  |  |  |  |  |  | 2000 | | - ongoing | |  | First Nations initiatives. Enhanced attributes with | |  |
|  |  |  |  |  | in Northern Boreal Initiative area | |  | FIM2 | |  |  |
|  |  |  |  |  |  |  |  |  |  |  | complete wetland attributes. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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**Appendix 1** **Current Canadian Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **JURISDICTION** |  |  | **INVENTORY TYPE** |  |  | **INVENTORY** |  |  | **TIME PERIOD** | |  |  | **COMMENTS** |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | **VERSION** |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Quebec | |  | TIE – Troisième Inventaire | |  | 3rd | | 1990 - 2008 | | |  |  | Completely digital, 4th inventory just underway. | |  |
|  |  |  |  | Écoforestier | |  |  |  |  |  |  |  |  |  |  |  |
|  | Prince Edward | |  | Forest Inventory | |  | None | |  | 2000 - ongoing | | |  | Completely digital. 10 yr cycle | |  |
|  | Island | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | |  |  | |  |  |  |  |  |  |  |  |
|  | New Brunswick | |  | NB Integrated Land Classification | |  | Periodic | | 1993 | | - ongoing | |  | Completely digital. 10 yr cycle | |  |
|  |  | System | |  | Revisions | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | |  |  |  |  | |  | |  |  |  |  |
|  | Nova Scotia | |  | Spatially Referenced Forest | |  | None | | 1987 | | – 1996 | |  | Completely digital, updated on a ten-year cycle. | |  |
|  |  | Resources Inventory | |  | 1996 | | – ongoing | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Newfoundland | | |  | Completely digital. 10 yr cycle. | |  |
|  | Newfoundland | |  |  |  |  | Periodic | | 1996 | | -2006 |  |  |  |
|  |  | Forest Inventory | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | and Labrador | |  |  | Revisions | |  | Labrador | | |  | Indeterminate cycle. | |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 1991 | | - ongoing | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |
|  | Yukon Territory | |  | YVI – Yukon Vegetation Inventory | | 2.1 | |  | 1999 | | - ongoing | |  | Completely digital, southeast and central Yukon and | |  |
|  |  |  |  | along Porcupine River. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | |  |  | |  | |  |  |  |  |  |  |  | |  |
|  | Northwest | |  | NWTFVI – Northwest Territories | | 1.0, 1.01 1.2, | |  | 1994 | | - ongoing | |  | Completely digital, commercial forest areas only | |  |
|  | Territories | |  | Forest Vegetation Inventory | | 2.1, 2.1.1, 3.0 | |  |  | along Slave, Mackenzie and Liard Rivers. | |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |
|  | Prince Albert | |  | Prince Albert National Park Forest | |  |  |  |  |  |  |  |  | Biophysical inventory at scale of 1:50,000. Digitized | |  |
|  |  |  | None | | 1968 | |  |  |  | 1994. No updates. Overlay fire history. | |  |
|  | National Park | |  | Cover Data | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Can contain up to three cover types per polygon. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Wood Buffalo | |  |  |  |  |  |  |  |  |  |  |  | Biophysical inventory at 1:100,000 scale. Digitized | |  |
|  |  | Integrated Resources Inventory | |  | None | | 1975 - 1979 | | |  |  | 1986. No updates. Overlay fire history. | |  |
|  | National Park | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | Can contain up to seven cover types per polygon. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



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**APPENDIX 2**

**DATA STRUCTURE AND DATA DICTIONARY**



|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Appendix 2** | | | | **Data Structure and Data Dictionary** | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Category** |  |  |  | **Attribute** |  |  | **Field Name** |  |  | **Field Type** |  |  | **Domain Values or** |  |  | **Description** |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | **Ranges** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | BC,AB,SK,MB,ON |  |  |  |  |  |  |
|  |  |  |  | Jurisdiction | | |  | JURISDICTION | |  | C | |  | QC,PE,NB,NS,NL |  |  | Province, Territory, or National Park | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | YK,NT |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | A set of numbers representing points in a space | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | of given dimensions to establish position and | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | UTM,BCGS,NTS |  |  | referenced to a geographic grid. Grid systems | | |  |
|  |  |  |  | Coordinate System | | |  | COORDINATE\_SYSTEM | |  | C | |  |  |  | include: Universal Transverse Mercator, British | | |  |
|  |  |  |  |  |  |  | OBM,TOWNSHIP |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Columbia Geographic System, National | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Topographic System, Ontario Base Map system, | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | and the Township system. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | A function relating the points on a surface | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | (plane, cylinder or cone) to points on another | | |  |
|  |  |  |  | Projection | | |  | PROJECTION | |  | C | |  | ALBERS,UTM |  |  | surface (spheroid or ellipsoid). Projection | | |  |
|  | HEADER | |  |  |  |  |  |  | systems include Albers Equal-Area Conic | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (HDR) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | projection and the Universal Transverse | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Mercator projection. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | A set of constants specifying the coordinate | | |  |
|  |  |  |  | Datum |  |  |  | DATUM | |  | N | | 27,83 | |  |  | system used for geodetic control. The North | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | American Datum of 1927 or 1983. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | PROV\_GOV,FED\_ |  |  | Provincial government, federal government, | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | GOV,TERRITORY |  |  |  |
|  |  |  |  | Owner of Inventory | | |  | INV\_OWNER | |  | C | |  |  |  | territory government, first nations, industry or | | |  |
|  |  |  |  |  |  |  | FN,INDUSTRY |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | private. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | PRIVATE |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Owner of Land | | |  | OWNER\_LAND | |  | C | |  | CROWN,PRIVATE |  |  | Crown, private, military or first nations. | | |  |
|  |  |  |  |  |  |  | MILITARY,FN |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | UNRESTRICTED |  |  | Permission to use the data is unrestricted, | | |  |
|  |  |  |  | Permissions | | |  | PERMISSIONS | |  | C | |  | RESTRICTED |  |  |  |
|  |  |  |  |  |  |  |  |  | restricted or limited. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | LIMITED |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



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|  | **Appendix 2** | | | | **Data Structure and Data Dictionary** | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Category** |  |  |  | **Attribute** |  |  | **Field Name** |  |  | **Field Type** |  |  | **Domain Values or** |  |  | **Description** |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | **Ranges** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Agreement or license to which the inventory was | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | TFL,FL,TF,MF,FMA |  |  | produced. Tree Farm License, Forest License, | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Tree Farm, Managed Forest, Forest | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | FMLA,SFL,PARK |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Management Agreement, Forest Management | | |  |
|  |  |  |  | Tenure Type | | |  | TENURE\_TYPE | |  | C | |  | NBI,PRIVATE |  |  |  |
|  |  |  |  |  |  |  |  |  | Agreement License, Sustainable Forest | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | MILITARY,FN |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | License, National or Provincial Park, Northern | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | OTHER, NONE |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Boreal Initiative, Private, Military, First nations or | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | HEADER | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Métis area, Other type or no license. | | |  |
|  |  | Inventory Type | | |  | INV\_TYPE | |  | CN | |  | A-Z / 1-10 |  |  | Inventory name or type of inventory. | | |  |
|  | (HDR) CON‟T | |  |  |  |  |  |  |  |
|  |  |  |  | Inventory Version | | |  | INV\_VERSION | |  | N | |  | A-Z /1.0-9.0 |  |  | Standard and version of the standard used to | | |  |
|  |  |  |  |  |  |  |  |  | create the inventory. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Inventory Start Year | | |  | INV\_START\_YR | |  | N | | 1960 -2020 | |  |  | Year inventory was started. | | |  |
|  |  |  |  | Inventory Finish Year | | |  | INV\_FINISH\_YR | |  | N | | 1960 - 2020 | |  |  | Year Inventory was completed. | | |  |
|  |  |  |  | Inventory Update Year | | |  | INV\_UPDATE\_YR | |  | N | | 1960 - 2020 | |  |  | Year inventory was updated. | | |  |
|  |  |  |  | Inventory Acquisition Year | | |  | INV\_ACQ\_YR | |  | N | | 2008 - 2020 | |  |  | Year inventory data was acquired for CAS | | |  |
|  |  |  |  | Inventory Acquisition Id | | |  | INV\_ACQ\_ID | |  | N | | 1 - 1000 | |  |  | Identification number assigned to inventory. | | |  |
|  |  |  |  | Original stand Identification | | |  | ORIGINAL\_STAND\_ID | |  | N | |  | 1 – 10,000,000 |  |  | Unique number for each polygon within the | | |  |
|  |  |  |  |  |  |  |  |  | original inventory. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | CAS stand Identification | | |  | CAS\_STAND\_ID | |  | N | |  |  |  |  | Unique number of each polygon within CAS. | | |  |
|  |  |  |  | Map sheet Identification | | |  | MAPSHEET\_ID | |  | CN | |  |  |  |  | Map sheet identification according to original | | |  |
|  |  |  |  |  |  |  |  |  |  | naming convention for an inventory. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Identification | | |  | IDENTIFICATION\_ID | |  | N | | 1 - 1000 | |  |  | Unique number for a particular inventory | | |  |
|  | CAS BASE | |  |  |  |  |  | section. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Polygon Area | | |  | POLYGON\_AREA | |  | N | |  | 0.1 – 10,000 |  |  | Area of a polygon in hectares. | | |  |
|  | POLYGON | |  |  |  |  |  |  |  |
|  | ATTRIBUTES | |  | Polygon Perimeter | | |  | POLYGON\_PERIMETER | |  | N | |  | 0.1 - infinity |  |  | Perimeter of polygon in meters. | | |  |
|  | (CAS) | |  |  | | |  |  | |  |  | |  |  |  |  |  | | |  |
|  |  | Reference Year Min | | |  | REFERENCE\_YEAR\_MIN | |  | N | |  |  |  |  | Inventory reference year start | | |  |
|  |  |  |  | Reference Year Max | | |  | REFERENCE\_YEAR\_MAX | |  | N | |  |  |  |  | Inventory reference year finish | | |  |
|  |  |  |  | First Photo Acquisition Year | | |  | PHOTO\_YEAR\_MIN | |  | N | | 1960 - 2020 | |  |  | Earliest year of aerial photo acquisition for | | |  |
|  |  |  |  |  |  |  |  | inventory. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Last Photo Acquisition Year | | |  | PHOTO\_YEAR\_MAX | |  | N | | 1960 - 2020 | |  |  | Last year of aerial photo acquisition. | | |  |
|  |  |  |  | Administration Subunit 1 | | |  | ADM\_UNIT\_1 | |  | C | |  |  |  |  | Inventory subunit administration boundary | | |  |
|  |  |  |  | Administration Subunit 2 | | |  | ADM\_UNIT\_2 | |  | C | |  |  |  |  | Inventory subunit administration boundary | | |  |



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|  | **Appendix 2** | | | | **Data Structure and Data Dictionary** | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Category** |  |  |  | **Attribute** |  |  | **Field Name** |  |  | **Field** |  |  | **Domain Values** |  |  | **Description** |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | **Type** |  |  | **or Ranges** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Vertical pattern of organization of vegetation layers. | | |  |
|  |  |  |  | Stand Structure | | |  | STAND\_STRUCTURE | |  | C |  |  | S,M,C,H |  |  | Single layered, multi-layered, complex layered and | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | horizontal layered. | | |  |
|  |  |  |  | Stand s Structure Percent | | |  | STAND\_STUCTURE\_PER | |  | N |  | 1 - 9 | |  |  | Percentage of polygon, in 10% increments, | | |  |
|  |  |  |  |  |  |  |  |  | represented by each horizontal structure strata. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Stand Structure Range | | |  | STAND\_STRUCTURE\_RANG | |  | N |  | 1 - 9 | |  |  | Height range (m) around the midpoint height of a | | |  |
|  |  |  |  |  | E | |  |  |  |  | complex structured stand. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Number of Layers | | |  | NUMBER\_OF\_LAYERS | |  | N |  | 1 - 9 | |  |  | Number of vegetation or non-vegetated layers | | |  |
|  |  |  |  |  |  |  |  |  | identified in a polygon. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Each layer within a polygon is assigned a layer | | |  |
|  |  |  |  | Layer |  |  |  | LAYER | |  | N |  |  | 1 – 9, V |  |  | number with 1 being the uppermost layer unless it | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | is a veteran layer (V). Also for biophysical Inventory | | |  |
|  |  |  |  | Layer Rank | | |  | LAYER\_RANK | |  | N |  | 1 - 9 | |  |  | Value assigned sequentially to layers with most | | |  |
|  | FORESTED | |  |  |  |  |  |  | important layer ranked first. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LAYER | |  | Soil Moisture Regime | | |  | SMR | |  | C |  |  | D,F,M,W,A |  |  | Available moisture supply for plant growth. Dry, | | |  |
|  | (LYR) | |  |  |  |  |  |  |  | Mesic (Fresh), Moist, Wet, and Aquatic. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Estimate of percentage of ground area covered by | | |  |
|  |  |  |  | Crown Closure Lower Bound | | |  | CROWN\_CLOSURE\_LOWER | |  | N |  | 0 - 100 | |  |  | vertical projection of crowns. Lower bound of crown | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | closure class. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Estimate of percentage of ground area covered by | | |  |
|  |  |  |  | Crown Closure Upper Bound | | |  | CROWN\_CLOSURE\_UPPER | |  | N |  | 0 - 100 | |  |  | vertical projection of crowns. Lower bound of crown | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | closure class. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Average stand height by layer of the dominant and | | |  |
|  |  |  |  | Height Lower Bound | | |  | HEIGHT\_LOWER | |  | N |  | 0 -100 | |  |  | codominant trees (leading species) or other | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | vegetation. Lower bound of height class. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Average stand height by layer of the dominant and | | |  |
|  |  |  |  | Height Upper Bound | | |  | HEIGHT\_UPPER | |  | N |  | 0 - 100 | |  |  | codominant trees (leading species) or other | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | vegetation. Lower bound of height class. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | e.g. TREM |  |  | Leading or only species. First four letters of Genus | | |  |
|  |  |  |  | Species 1 | | |  | SPEC1 | |  | C |  |  |  |  | followed by the first four letters of Species. See | | |  |
|  |  |  |  |  |  |  |  | POPU |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | CAS species list. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Appendix 2** | | | | **Data Structure and Data Dictionary** | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Category** |  |  |  | **Attribute** |  |  | **Field Name** |  |  | **Field Type** |  |  | **Domain Values** |  |  | **Description** |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | **or Ranges** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 1 Percent | | |  | SPEC1\_PER | |  | N | | 10 - 100 | |  |  | Percent species composition in 10% increments. | | |  |
|  |  |  |  | Species 2 | | |  | SPEC2 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  |  |  |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 2 Percent | | |  | SPEC2\_PER | |  | N | | 10 - 50 | |  |  | Percent species composition in 10% increments | | |  |
|  |  |  |  | Species 3 | | |  | SPEC3 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  |  |  |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 3 Percent | | |  | SPEC3\_PER | |  | N | | 10 - 30 | |  |  | Percent species composition in 10% increments | | |  |
|  |  |  |  | Species 4 | | |  | SPEC4 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  |  |  |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 4 Percent | | |  | SPEC4\_PER | |  | N | | 10 - 20 | |  |  | Percent species composition in 10% increments | | |  |
|  |  |  |  | Species 5 | | |  | SPEC5 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  |  |  |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FORESTED | |  | Species 5 Percent | | |  | SPEC5\_PER | |  | N | | 10 - 20 | |  |  | Percent species composition in 10% increments | | |  |
|  | LAYER | |  | Species 6 | | |  | SPEC6 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  | (LYR) | |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | CON‟T | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Species 6 Percent | | |  | SPEC6\_PER | |  | N | | 10 | |  |  | Percent species composition in 10% increments | | |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 7 | | |  | SPEC7 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  |  |  |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 7 Percent | | |  | SPEC7\_PER | |  | N | | 10 | |  |  | Percent species composition in 10% increments | | |  |
|  |  |  |  | Species 8 | | |  | SPEC8 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  |  |  |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 8 Percent | | |  | SPEC8\_PER | |  | N | | 10 | |  |  | Percent species composition in 10% increments | | |  |
|  |  |  |  | Species 9 | | |  | SPEC9 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  |  |  |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 9 Percent | | |  | SPEC9\_PER | |  | N | | 10 | |  |  | Percent species composition in 10% increments | | |  |
|  |  |  |  | Species 10 | | |  | SPEC10 | |  | C | |  | See CAS |  |  | First four letters of Genus followed by the first four | | |  |
|  |  |  |  |  |  |  | species list. |  |  | letters of Species. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Species 10 Percent | | |  | SPEC10\_PER | |  | N | | 10 | |  |  | Percent species composition in 10% increments | | |  |



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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Appendix 2** | | | **Data Structure and Data Dictionary** | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Category** |  |  | **Attribute** |  |  | **Field Name** |  |  | **Field Type** |  |  | **Domain Values** |  |  | **Description** |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | **or Ranges** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Origin Lower Bound | |  | ORIGIN\_LOWER | |  | N | | 0 - 2020 | |  |  | Average age of dominant and codominant trees of | | |  |
|  |  |  |  |  |  |  |  | the leading species. Lower bound of age class. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Origin Upper Bound | |  | ORIGIN\_UPPER | |  | N | | 0 - 2020 | |  |  | Average age of dominant and codominant trees of | | |  |
|  |  |  |  |  |  |  |  | the leading species. Upper bound of age class. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FORESTED | |  | Site Class | |  | SITE\_CLASS | |  | C | |  | U,P,M,G |  |  | Estimate of potential productivity of polygon for tree | | |  |
|  | LAYER | |  |  |  |  |  |  | growth. Unproductive, Poor, Medium, and Good. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (LYR) | |  | Site Index | |  | SITE\_INDEX | |  | N | | 0 - 99 | |  |  | Estimate of site productivity of polygon for tree | | |  |
|  | CON‟T | |  |  |  |  |  | growth based on a reference age. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Not capable of growing trees for forest operations. | | |  |
|  |  |  |  | Unproductive Forest | |  | UNPRODUCTIVE\_FOREST | |  | C | |  | TM,OM,AL,SD |  |  | Treed Muskeg, Open Muskeg, Alpine Forest, Scrub | | |  |
|  |  |  |  |  |  |  | SC,NP,P |  |  | Deciduous, Scrub Coniferous, Non Productive | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Forest, Productive Forest. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | AP,LA,RI,OC |  |  | Naturally non-vegetated land. Alpine, lake, River, | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | RK,SD,SI,SL |  |  |  |
|  |  |  |  | Naturally Non-Vegetated | |  | NATURALLY\_NON\_VEG | |  | C | |  |  |  | Ocean, Rock, Sand, Snow, Slide, Exposed Land, | | |  |
|  |  |  |  |  |  |  | EX,BE,WS,FL |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Beach, Water Sediments, Flood, Island, Tidal Flats | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | IS,TF |  |  |  |
|  | NON-FOREST | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | IN,FA,CL,SE,L |  |  | Non-vegetated anthropogenic land. Industrial, | | |  |
|  | LAND | |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Non-Forest Anthropogenic | |  | NON\_FOREST\_ANTHRO | |  | C | |  |  |  | Facility/Infrastructure, Cultivated, Settlement, | | |  |
|  | (NFL) | |  |  |  |  | G,BP,OT, |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Lagoon, Borrow Pit, Other | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | ST,SL,HF,HE |  |  | Non-forested vegetated land. Tall Shrub, Low | | |  |
|  |  |  |  | Non-Forested Vegetated | |  | NON\_FORESTED\_VEG | |  | C | |  |  |  | Shrub, Forbs, Herbs, Graminoids, Bryoid, Open | | |  |
|  |  |  |  |  |  |  | HG,BR,OM,TN |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Muskeg, Tundra | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Type of disturbance that has occurred. Cut, Partial, | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | CO,PC,BU,WF |  |  | Cut, Burn, Windfall, Disease, Insect, Flood, | | |  |
|  |  |  |  | Disturbance History 1 | |  | DIST1 | |  | C | |  | DI,IK,FL,WE |  |  | Weather, Slide, Other, Dead Tops or Trees, | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | SL,OT,DT,SI |  |  | Silviculture Treatments. Oldest disturbance | | |  |
|  | DISTURBANCE | |  |  |  |  |  |  |  |  |  |  |  |  |  | recorded first. | | |  |
|  | (DST) | |  | Disturbance Year 1 | |  | DIST1\_YEAR | |  | N | | 1900 2020 | |  |  | Year disturbance event occurred. | | |  |
|  |  |  |  | Disturbance Extent 1 | |  | DIST1\_EXTENT\_LOWER | |  | N | | 1 - 95 | |  |  | Extent of disturbance. Lower bound of class. | | |  |
|  |  |  |  | Lower | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Disturbance Extent 1 | |  | DIST1\_EXTENT\_UPPER | |  | N | | 10 - 100 | |  |  | Extent of disturbance. Upper bound of class. | | |  |
|  |  |  |  | Upper | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Appendix 2** | |  | **Data Structure and Data Dictionary** | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Category** |  |  | **Attribute** |  |  | **Field Name** |  |  | **Field Type** |  |  | **Domain Values** |  |  | **Description** |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | **or Ranges** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | CO,PC,BU,WF |  |  |  |  |  |  |
|  |  |  |  | Disturbance History 2 | |  | DIST2 | |  | C | |  | DI,IK,FL,WE |  |  | Type of disturbance that has occurred. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | SL,OT,DT,SI |  |  |  |  |  |  |
|  |  |  |  | Disturbance Year 2 | |  | DIST2\_YEAR | |  | N | | 1900 - 2020 | |  |  | Year disturbance event occurred. | | |  |
|  |  |  |  | Disturbance Extent 2 | |  | DIST2\_EXTENT\_LOWER | |  | N | | 1 - 95 | |  |  | Extent of disturbance. Lower bound of class. | | |  |
|  |  |  |  | Lower | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | DISTURBANCE | |  | Disturbance Extent 2 | |  | DIST2\_EXTENT\_UPPER | |  | N | | 10 - 100 | |  |  | Extent of disturbance. Upper bound of class. | | |  |
|  |  | Upper | |  |  |  |  |  |
|  | (DST) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | CO,PC,BU,WF |  |  |  |  |  |  |
|  | CON‟T | |  | Disturbance History 3 | |  | DIST3 | |  | C | |  |  |  | Type of disturbance that has occurred. | | |  |
|  |  |  |  |  |  |  | DI,IK,FL,WE |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | SL,OT,DT,SI |  |  |  |  |  |  |
|  |  |  |  | Disturbance Year 3 | |  | DIST3\_YEAR | |  | N | | 1900 - 2020 | |  |  | Year disturbance event occurred. | | |  |
|  |  |  |  | Disturbance Extent 3 | |  | DIST3\_EXTENT\_LOWER | |  | N | | 1 - 95 | |  |  | Extent of disturbance. Lower bound of class. | | |  |
|  |  |  |  | Lower | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Disturbance Extent | |  | DIST3\_EXTENT\_UPPER | |  | N | | 10 - 100 | |  |  | Extent of disturbance. Upper bound of class. | | |  |
|  |  |  |  | 3Upper | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | B,F,S,M O T E |  |  | Wetland type. Bog, Fen, Swamp, Marsh, Shallow | | |  |
|  |  |  |  | Wetland Class | |  | WETLAND\_CLASS | |  | C | |  |  |  | Open Water, Tidal Flats, Estuary, Wetland, Not | | |  |
|  |  |  |  |  |  |  | W Z |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Wetland | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Wetland Vegetation | |  |  |  |  |  |  |  |  |  |  | Amount of vegetation cover. Forested, Treed, Open | | |  |
|  |  |  |  |  | WETLAND\_VEG\_MOD | |  | C | |  | F,T,O,C,M |  |  | Non Treed Freshwater, Open Non Treed Coastal, | | |  |
|  |  |  |  | Modifier | |  |  |  |  |  |  |
|  | ECOLOGICAL | |  |  |  |  |  |  |  |  |  |  |  | Mud | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | (ECO) | |  | Wetland Landform | |  |  |  |  |  |  |  |  |  |  | Modifying agent to wetland. Permafrost Present, | | |  |
|  |  |  |  |  | WETLAND\_LAND\_MOD | |  | C | |  | X,P,N,A |  |  | Patterning Present, No permafrost or patterning | | |  |
|  |  |  |  | Modifier | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | present, Alkaline or Saline Present | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Wetland Local Modifier | |  | WETLAND\_LOCAL\_MOD | |  | C | |  | C,R,I,N,S,G |  |  | Indicates the presence or absence of permafrost | | |  |
|  |  |  |  |  |  |  |  |  | features and type of non tree cover present. | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Ecosite | |  | ECOSITE | |  | CN | |  | A-Z / 0 - 199 |  |  | Ecosite identified for a polygon. | | |  |



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**APPENDIX 3**

**STAND STRUCTURE – SUMMARY OF CANADIAN**

**FOREST INVENTORIES**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 3 Stand Structure - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** |  | **FIELD(S)** |  | **RANK** | **COMMENTS** |  |  |
|  |  |  | **CAS INVENTORY** |  |
| **STRUCTURE** | **LAYER** | **NUMBER OF** |  |
|  |  |  |  |  |  |
|  |  | **LAYERS** |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **BC** | For. Cov. Inv. | S, M, C | Layer | No Field | 1,2 | Up to 2 layers identified | NO LIMIT TO LAYERS |  |
|  |  |  |  |  |  |  |
| VRI | S,M | Layer\_cnt | Layers\_id 0-9,V | 1,2,3-9 | 11 Layers + Vertical Complexity | Need to identify rank |  |
|  |  |
|  | Code |  |
|  |  |  |  |  |  |  |  |
|  | Phase 3 | S,M | No Field | No Field | - | Up to 2 layers identified | Need to identify sturcture type, i.e if Single, multi, complex or horizontal |  |
| **AB** |  |  |  |  |  |  |  |  |
| AVI 2.1 | S,M,C,H | No Field | No Field | - | Up to 2 layers identified |  |  |
|  |  |  |  |  |  |  |  |  |
|  | AVI 2.1 + | S,M,C,H | No Field | No Field | - | Up to 2 layers identified | STRUCTURE TYPE |  |
|  |  |  |  |  |  |  |  |  |
|  | UTM | NONE | Default to single (S) layer | No Field | - | 1 Layer with bracket to indicate | NUMBER OF LAYERS |  |
| **SK** | understory |  |
|  |  |  |  |  |  |  |
|  | SFVI 4.0 | S,M,C | Layer | No Field | - | Up to 7 layers identified | STRUCTURE % OR RANGE |  |
|  |  |  |  |  |  |  |  |  |
|  | Pre 1998 | NONE | Default to single (S) layer | No Field | - | Only 1 layer identified | LAYER |  |
| **MB** |  |  |  |  |  |  |  |  |
| FLI | S,V,C,M,U | CANLAY | SEQ 1,2,3,4,5 | CANRANK | Up to 5 layers; to determine the | LAYER RANK |  |
|  |  |
|  | 1-5 | number of layers refer to SEQ |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | FRI | NONE | Default to single (S) layer | No Field |  | Only 1 layer identified |  |  |
|  |  |  |  |  |  |  |  |  |
| **ON** | FRI FIM | VERT | SI, SV, TT, MV, CX | No Field | - | Up to 2 layers identified |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | FRI NBI | S,M | No Field | No Field | 1,2 | Up to 2 layers |  |  |
|  | with Vertical Complexity Code |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **QC** | 3rd | Equienne (even aged), Inequienne (uneven aged) young=JIN | | | Only one layer | 2 layers can be implied via age |  |  |
| or old=VIN, Etagee (Multi-layered). No field for strucure or | | | class; however second layer is not |  |  |
|  |  | layer, it is implied via age class. | |  | described | described |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **PE** | 2000 | History1 | No Field | No Field | 1 | (2S) indicates two-storied stand, no |  |  |
| 2nd layer is descibed |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | Pre 2003 | NONE | Default to single (S) layer | No Field | - | Only 1 layer identified |  |  |
| **NB** |  |  |  |  |  |  |  |  |
| 2003 | 1,2,3 | No Field | No Field | - | 1 Layer with structure code |  |  |
|  | 1= one canopy layer, 2= two layers, 3= |  |  |
|  |  |  |  |  |  | multi-canopied |  |  |
| **NS** | Pre 2006+2006 | Two Story ALL | No Field | No Field | - | 2 Layers Second story species |  |  |
| HEIGHTS/AGE | composition = S, SH, HS, H |  |  |
|  |  |  |  |  |  |  |
| **NL** | 2005 | NONE | Default to single (S) layer | No Field | - | Only 1 layer identified |  |  |
|  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 | NONE | No Field | vegct |  | Seven veg communities per polygon. Term |  |  |
|  | 'structure' refers to different field type |  |  |
| **PANP** | 1968 | Overstory, Understory, | C1, C2, C3; U1, U2, U3; | No Field |  | Three layers. Up to three coverages with or |  |  |
| Ground Vegetation | G1, G2, G3 |  | without other layers per poly identified. |  |  |
| **YT** | 2.1 | NONE | Default to single (S) layer | No Field | - | Only 1 layer identified |  |  |
|  |  |  |  |  |  |  |  |  |
| **NT** | 3.0 | STRUCTURE | S, M, H, C | No Field | - | Up to 2 layers identified |  |  |
|  |  |  |  |  |  |  |  |  |

Aug 28 2010

**APPENDIX 4**

**SOIL MOISTURE REGIME – SUMMARY OF CANADIAN FOREST INVENTORIES AND CAS CONVERSION**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 4 Soil Regime Moisture - Summary of Canadian Forest Inventories and CAS Conversion**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **COMMOM: MOISTURE\_REGIME** | | |  |  |  |
|  | D | F |  | M | W | A |
|  |  |  |  |  |  |  |
|  | DRY | MESIC |  | MOIST | WET | AQUATIC |
|  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **FIELD** | **CODES** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | CONVERSION TO CAS | | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **BC** | Forest Cover Inventory | NO FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| VRI | Soil\_Moisture\_Regime | VX |  | X | SX | SM | M | SG | HG |  | SD |  |  | HD |  |  | VX, X, SX = D | SM, M=F | SG, HG=M | | SD, HD=W |  |  |
|  |  |  |  |  |  |  |  |  |
|  | 0 |  | 1 | 2 | 3 | 4 | 5 | 6 |  | 7 |  |  | 8 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1 | MOISTURE REGIME |  |  | D |  |  | M |  |  |  |  | W |  |  |  | A | D=D | M=F |  | W=W | A=A |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **AB** | AVI2.1+ | MOISTURE REGIME | VX |  | X | SX | SM | M | SG | HG |  | SD |  |  | HD |  |  | 0,1,2 = D | 3,4=F |  | 5=M | 6,7=W | 8=A |  |
| 0 |  | 1 | 2 | 3 | 4 | 5 | 6 |  | 7 |  |  | 8 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | PHASE 3 | NO FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |
|  | SERM | NO FIELD | CAN DERIVE FROM DRINAGE CLASS AND UNPRODUCTIVE WETLAND TYPES | | | | | | | | |  | Very poorly drained = W | | | | Imperfectly drained = M | | Well drained = F | | Very rapidly drained = D | | |  |
| **SK** |  | Poorly drained = M | | |  | Moderatley drained = F | | Rapidly drained = D | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SFVI 4.0 | Soil\_Moisture\_Regime | VD |  | D | MF | F | VF | MM | M |  | VM | MW |  | W | VW |  | VD, D=D | MF, F, VF=F | MM, M, VM-M | | MW, W, VW=W |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 1997 | NO FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MB** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1997 | MOIST | 1=arid |  | 2=dry |  |  |  |  | 3=moist |  |  |  |  | 4=wet |  |  | 1=D | 2=D |  | 3=M | 4=W |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FLI | MR | D |  |  |  | F | V | M |  |  |  |  |  | W |  |  | D=D W=W | F,V=F |  | M=M | W=W |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI | NO FIELD (CAN DERIVE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FROM ECOSITE) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ON** | FRI FIM | NO FIELD (CAN DERIVE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FROM ECOSITE) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |
|  | FRI NBI | Soil\_Moisture\_Regime | VD |  | D | MF | F | VF | MM | M |  | VM | MW |  | W | VW |  | VD, D=D | MF, F, VF=F | MM, M, VM=M | | MW, W, VW=W |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | RHY\_CO | 1 |  | 2 | SM | 3 |  |  | 4 |  |  |  |  | 5 |  |  | 1,2=D | 3=F | 4=M |  | 5=W |  |  |
| **QC** | 3rd Inventory | Regime Hydrique | X |  | SX | M |  |  | SH |  |  |  |  | W |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Class de Drainage |  |  | Moisture can also be derived from drainage class (CDR\_CO): Use the first number of the two number code. | | | | | | | | | | | |  | 0,1=D | 2,3=F | 4=M |  | 5,6=W |  |  |
| **PE** | 2000 | NO FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NB** | 2003 | NO FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NS** | 2006 | NO FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NL** | 2005 | NO FIELD | Identifies W (wet) and D (dry) Biophtsical Class for Non Commercial Forest Land | | | | | | | | |  |  |  |  |  |  | D=D |  |  | W=W |  |  |  |
|  |  |  |  | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 | v#moi | Describes vegetation class moisture regime. Values range from 0 to 3 with 1 being wettest and 3 the driest. Zero is | | | | | | | | | | | |  | Do not confuse with | | 1=W | 2=F |  | 3=D | 0=blank |  |  |
| associated with water and unclassified areas. | | | | |  |  |  |  |  |  |  |  | moict field | |  |  |  |
| **PANP** | 1968 | NO FIELD | Identifies upland and lowland sites (wet sites). Can derive a wet moisture using lowland site field and leading | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |
| species. Lowland sites=wet (W), leading species larch,larch black spruce, and black spruce larch=wet | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2.1 | SMR |  |  | D |  |  |  |  | M |  |  |  |  | W |  | A | D=D | M=F |  | W=W | A=A |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |
| **NT** | 3.0 | MOISTURE | VX |  | X | SX | SM |  |  | M |  | SG | HG |  | SD | HD |  | VX, X, SX=D | SM, M=F | SG, HG=M | | SD, HD=W |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**APPENDIX 5**

**CROWN CLOSURE – SUMMARY OF CANADIAN**

**FOREST INVENTORIES**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 5 Crown Closure - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **TYPE** | **FIELD** | **CAS LOWER AND UPPER BOUND (Lower is > and Upper is <) Numbers within a box on top are the class, those on the bottom are bounds of the class** | | | | | | | | | | | | | | | | | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | For. Cov. Inv. | Class (10%) | CC | 0 | 1 | 2 | 3 |  | 4 | |  | 5 | 6 | 7 | 8 | 9 | 10 |  |  |  |  |  |  |  |  |  |  |  |  |
| **BC** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0-5 | 6-15 | 16-25 | 26-35 |  | 36-45 | | | 46-55 | 56-65 | 66-75 | 76-85 | 86-95 | 96-100 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | VRI | Nearest 1% | Crown Closure | 1-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Phase 3 | Class | CC | A | B | C | D |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 6-30 | 31-50 | 51-70 | 71-100 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1 | Class | Crown Closure | A | B | C | D |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **AB** | 6-30 | 31-50 | 51-70 | 71-100 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AVI 2.1 + | Nearest 1% | Crown Closure | 1-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1 other | Class (10%) | Crown Closure | 0 | 1 | 2 | 3 |  | 4 | |  | 5 | 6 | 7 | 8 | 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 6-10 | 11-20 | 21-30 | 31.40 |  | 41-50 | | | 51-60 | 61-70 | 71-80 | 81-90 | 91-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | SERM | Class | CC | A | B | C | D |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **SK** | 11-30 | 31-55 | 56-80 | 81-100 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SFVI 4.0 | Nearest 1% | Crown Closure | 1-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Prior 1996 | Class | Crown Closure | 1 | 2 | 3 | 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-20 | 21-50 | 51-70 | 71-100 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1996-1997 | Class (10%) | Crown Closure | 0 | 1 | 2 | 3 |  | 4 | |  | 5 | 6 | 7 | 8 | 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-10 | 11-20 | 21-30 | 31-40 |  | 41-50 | | | 51-60 | 61-70 | 71-80 | 81-90 | 91-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MB** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 0 | 0 | 1 | 2 |  | 3 | |  | 4 | 5 | 6 | 7 | 8 | 9 |  | NOTE: Shrub crown closure is included with the shrub code in NNF\_ANTH, e.g. SC6 (closed | | | | | | | | | |  |
|  |  |  |  |  |  |  |  |
|  | FLI | Class (10%) | CC | 1-5 (with |  |  |  | shrub with 61%-70% crown closure). Shrub crown closure will need to be pulled from here | | | | | | | | | |  |
|  | 6-10 | 11-20 | 21-30 |  | 31-40 | | | 41-50 | 51-60 | 61-70 | 71-80 | 81-90 | 91-100 |  |  |
|  |  |  |  | Canlay V) |  |  |  |  | and placed in the crown closure field for CAS | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI | - | No Field | None |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ON** | FRI FIM | Nearest 1% | OCCLO | 1-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| UCCLO |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI NBI | Nearest 1% | Crown Closure | 1-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 3rd | Class | CDE\_CO | A | B | C | D |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **QC** | 25-40 | 40-60 | 60-80 | 80-100 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4th | Class | CDE\_CO | A | B | C | D |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 25-40 | 40-60 | 60-80 | 80-100 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2000 | Class | Crown Closure | A | B | C | D |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PE** | 0-30 | 31-60 | 61-80 | 81-100 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000 | Nearest 1% | CROWN | 1-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2003 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NB** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 1 | 2 | 3 | 4 |  | 5 | |  | 61 | 62 | 63 | 64 | Codes 1 to 5 used with normal cover distribution; | | | | |  |  |  |  |  |  |  |  |  |
|  | 2003 | Class | Crown Closure |  |  | Patchy | Patchy | Patchy | Patchy | codes 61 to 64 used with patchy vegetation | | | | |  |  |  |  |  |  |  |  |  |
|  | 10-30 | 31-50 | 51-70 | 71-90 |  | 91 - 100 | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 10-30 | 31-50 | 51-70 | 71-90 | distribution | |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2006 | Class (10%) | Crown Closure | 1 | 2 | 3 | 4 |  | 5 | |  | 6 | 7 | 8 | 9 | 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NS** | 0-10 | 11-20 | 21-30 | 31-40 |  | 41-50 | | | 51-60 | 61-70 | 71-80 | 81-90 | 91-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | Class (5%) | Crown Closure | Assigned in 5% increments from 0 to 95%. e.g 27% = 25, 3% = 05 | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | | | |  |
| **NL** | 2005 | Class | Crown Closure | DI or NS | 3 | 2 | 1 | 76 |  |  |  |  | 0 |  |  | Non Commercial Forest | | | 1 | 2 | 3 |  | 4 | Must identify comercial forest vs non | | | | |  |
| 1-25 | 26-50 | 51-75 | 100 |  |  | Cannot be defined from interpretation | | | | | | 76-100 | 51-75 | 26-50 |  | 10-25 | commercial first, then assign appropriate CC | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 | Class (10%) | v#pct | 0 | 1 | 2 | 3 | 4 | | |  | 5 | 6 | 7 | 8 | 9 | Describes vegetation class in percentage for each vegetation plant community identified within a polygon (Up to | | | | | | | | | | |  |  |
| 0-9 | 10-19 | 20-29 | 30-39 | 40-49 | | | | 50-59 | 60-69 | 70-79 | 80-89 | 90-100 | seven: V1-V7). Do not confuse with pcnt# | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PANP** | 1968 | Class | C#DENS | 1 | 2 | 3 |  |  |  | 1 = Open | | | 2 = Moderate | | 3 = Dense | | Describes density of species or | | | Also have C1PERCA, C#PERC, G1PERCA and G#PERC; these describe percent cover of up to three different | | | | | | | | |  |
| U#DENS | 0 - 30 | 30 - 60 | 60 - 100 |  |  |  | species group. | |  | cover types allowed per polgon. In 10 or 20% classes (0=0%, 2=20%, 3=30%....8=80%, 10=100%) | | | | | | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2.1 | Class (5%) | CC | 0-5 | 6-10 | 11-15 | 16-20 |  | 21-25 | | | 26-30 | 31-35 | 36-40 | 41-45 | 46-50 | 51-55 | 56-60 | 61-65 | 66-70 | 71-75 |  | 76-80 | 81-85 | 86-90 | 91-95 |  | 96-100 |  |
|  |  |  |  |  |  |  |  |  |  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 3.0 | Class (10%) | CrownClos | 0 | 10 | 20 | 30 |  | 40 | | | 50 | 60 | 70 | 80 | 90 | 100 | Crown closure may appear in 10% or 5% classes depending on inventory | | | | | | | |  |  |  |  |
| **NT** | 0-5 | 6-15 | 16-25 | 26-35 |  | 36-45 | | | 46-55 | 56-65 | 66-75 | 76-85 | 86-95 | 96-100 |  |  |  |  |
|  | 3.0 | CLASS (5%) | CrownClos | 0-5 | 6-10 | 11-15 | 16-20 |  | 21-25 | | | 26-30 | 31-35 | 36-40 | 41-45 | 46-50 | 51-55 | 56-60 | 61-65 | 66-70 | 71-75 |  | 76-80 | 81-85 | 86-90 | 91-95 |  | 96-100 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**APPENDIX 6**

**STAND HEIGHT – SUMMARY OF CANADIAN**

**FOREST INVENTORIES**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 6 Stand Height - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **TYPE** | **FIELD** | **COMMON INVENTORY LOWER AND UPPER BOUND (Meters) (Lower bound is > and < for upper bound)** | | | | | | | | | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Forest Cover | CLASS | HEIGHT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |  | 8 |  |  |  |
|  | Inventory | 0-10.4 | 10.5-19.4 | 19.5-28.4 | 28.5-37.4 | 37.5-46.4 | 46.5-55.4 | 55.5-64.4 | | | 64.5-INFINITY | |  |  |  |
| **BC** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| VRI | Nearest 0.1m | HEIGHT | 0.1 + |  | Vertical Complexity code will give idea of stand structure height variability | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Phase 3 | CLASS | HEIGHT | 0 | 1 | 2 | 3 | 4 |  | 5 |  |  |  |  |  |  |  |
|  | 0-6.0 | 6.1-12.0 | 12.1-18.0 | 18.1 - 24.0 | 24.1-30.0 | 30.1-INFINITY | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **AB** | AVI 2.1 | Nearest 1m | HEIGHT | 1+ | Also have complex height range around the stand mid-point when STAND STRUCTURE=C | | | | | | | | | |  |  |  |
|  |  |  |  |  |  | | | | | | | | | |  |  |  |
|  | AVI 2.1+ | Nearest 0.1m | HEIGHT | 0.5+ | Also have complex height range around the stand mid-point when STAND STRUCTURE=C | | | | | | | | | |  |  |  |
|  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |
|  | UTM | CLASS | HEIGHT | 5 | 10 | 15 | 20 | 25 | |  |  |  |  |  |  |  |  |
| **SK** | 2.5 - 7.5 | 7.6-12.5 | 12.6 - 17.5 | 17.6 - 22.5 | 22.6-INFINITY | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | SFVI 4.0 | Nearest 1m | HEIGHT | 1+ |  | Can also have complex (Stand Structure=C) height tolerance around the stand mid-point | | | | | | | | | |  |  |
|  |  |  |  |  | | |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 1997 | NONE | No Field | Height was not recorded prior to 1997 | | |  |  |  |  |  |  |  |  |  |  |  |
| **MB** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1997 | Nearest 1m | HT | 1+ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | | | | | | | | |  |  |  |  |
|  | FLI | Nearest 1m | HEIGHT | 1+ | Also have complex minimum and maximum height range (COMHT) when CANLAY = C | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI | Nearest 1m | HT | 1+ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ON** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FRI FIM | Nearest 1m | HT | 1+ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | NBI | Nearest 1m | HT | 0.1+ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **QC** | 3rd | CLASS | CHA\_CO | 6 | 5 | 4 | 3 | 2 |  | 1 |  |  |  |  |  |  |  |
| Hauteur | <4 | 4-7 | 7-12 | 12-17 | 17-22 | 22-INFINITY | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2000 | CLASS | HEIGHT | 1 | 2 | 3 | 4 |  | 5 |  |  |  |  |  |  |  |  |
|  | 0.0-5.0 | 5.1-10.0 | 10.1 15.0 | 15.1-20.1 | 20.1-INFINITY | |  |  |  |  |  |  |  |  |
| **PE** |  |  |  |  |  |  |  |  |  |  |  |
| 2000 | Nearest 1m | HEIGHT | 1+ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | | | |  |  |  |  |  |  |  |  |  |  |
| **NB** | Pre 2003 | NONE | No Field | Not interpreted, but incorporated in age and site class data | | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2003 | Nearest 1m | HEIGHT | 1+ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NS** |  | Nearest 1m | HEIGHT | 1+ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | Nearest 1m | HEIGHT | 1+ |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | | |  |  | | |  |
| **NL** | 2005 | CLASS | HEIGHT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | 8 | Codes 1-5 also assigned to non | | |  |
| 0 - 3.5 | 3.6-6.5 | 6.6-9.5 | 9.6-12.5 | 12.6-15.5 | 15.6-18.5 | 18.6-21.5 | | | 21.6- |  | commercial forest | |  |
|  |  |  |  | INFINITY |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 | CLASS | v#htc | 0 | 1 | 2 | 3 | 13 | 14 | 23 | | | 24 | 34 | 35 | 45 |  |
| < 1 | 1 - 5 | 6 - 10 | 11 - 15 | 1 - 15 | 1 - 20 | 6 - 10 | | | 6 - 15 | 11 - 20 | 11 - 20 | 16 - 26 |  |
|  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PANP** | 1968 | CLASS | C1HT, C2HT, | 1 | 3 | 5 | 7 |  |  |  |  |  |  | Overstory and one understory | | |  |
| C3HT; U1HT, |  |  |  |  |  |  |  |
| 0 - 6 | 7 - 12 | 13 - 18 | > 19 |  |  |  |  |  |  | height possible per polygon | | |  |
|  |  |  | U2HT, U3HT |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2.1 | Nearest 1m | AVE\_HT | 1+ |  |  | Also have minimum and maximum height fields | | | | | |  |  |  |  |  |
|  |  |  |  |  |  |  | | | | | | | | | |  |  |
| **NT** | 3.0 | Nearest 1m | HEIGHT | 1+ |  | Can also have complex (Stand Structure=C) height range around the stand mid-point | | | | | | | | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**APPENDIX 7**

**SPECIES COMPOSITION – SUMMARY OF CANADIAN**

**FOREST INVENTORIES**

**CAS SPECIES PERCENT TRANSLATION**

**(For Forest Inventories that do not provide species percent)**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 7 Species Composition - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **FIELD** | **SPECIES COMPOSITION INFORMATION (1)\*** | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Forest Cover | Species | 5 | Species to nearest 10% by volume. Composition codes 1(6-15), 2(16-25), 3(26-35), 4(36-45), 5(46-55), 6(56-65), 7(66-75), 8(76-85), 9(86-95), 10(96-100). | | | | | | | | | |  |  |
|  | Inventory | Species% |  |  |
| **BC** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| VRI 2.4 | Species | 6 | Species to nearest 1% by basal area or density (trees ave ht< 2m). | | | | | | | |  |  |  |  |
|  |  |  |  |  |
|  | Species% |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Phase 3 | S1,S2,S3,S4 | 4 | Species based on % of gross roundwood volume and/ or percentage of crown closure (0 and 1 ht class). Up to 3 species, each comprising at least 20% of stand content and no more than 1 species constituting 11%-20%. 10% or less is not | | | | | | | | | | |  |
|  | U1,U2,U3,U4 | recorded but included with similar species. (SEE RULES FOR SPECIES % ASSIGNMENT). | | | | | | | | | |  |  |  |
|  |  |  |  |  |
| **AB** | AVI 2.1 | Species | 5 | Species to nearest 10% based on crown closure. Composition codes 1(6-15), 2(16-25), 3(26-35), 4(36-45), 5(46-55), 6(56-65), 7(66-75), 8(76-85), 9(86-95), 10(96-100). | | | | | | | | | |  |  |
| Species% |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1+ | Species | 5 | Species same as AVI 2.1. | | | | | | | |  |  |  |  |
|  | Species% |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | UTM | Species | 5 | Species | Described by 2-part cover type; a general designation of forest type (Softwood (S), Mixedwood (SH,HS) and Hardwood (H)) and a specific designation of species group (Primary and Secondary) | | | | | | | | | |  |
| **SK** | Primary species have > 25% of volume of stand. Secondary species have <25% of volume of stand. Understory species (Field U1 or U2) are designated by species symbol in brackets on maps. | | | | | | | | | |  |
|  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SFVI | Species | 6 | Species to nearest 10% by crown closure. | | | | | | | |  |  |  |  |
|  |  |  |  |  |
|  | Species % |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Cover type |  |  |  |  |  |  |  |  |  |  | Look in COVERTYPE field, the first two digits define tree cover: 10 cover type codes | (0-3=S, 4-7=M |  |
|  | Prior 1998 | Sub type | 5 | Species to nearest 10% by basal area; also see cover type/sub type for general species cover- | | | | | | | | | softwood leading, 8=N hardwood leading, 9=H) |  |  |
| **MB** |  | Species Comp |  |  |  |  |  |  |  |  |  |  | 22 softwood (S), 24 mixedwood (M), 9 mixedwood (N), 15 hardwood (H) subtypes |  |  |
|  | FLI | SP# | 6 | Species to nearest 10% by crown closure. Numeric codes from 1 to 10 representing 10% cover classes are used. | | | | | | | | |  |  |  |
|  | SP# PER |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI | SPC | 10 Species to nearest 10% by basal area. | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ON** | FRI FIM | OSPCOMP | 10 Species to nearest 10% by crown closure. | | | | | | | | |  |  |  |  |
| USPCOMP |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI NBI | SPC | 10 Species to nearest 10% by crown closure. | | | | | | | | |  |  |  |  |
|  |  |  |  | | | | | | | | |  | |  |  |
|  | TIE (3rd) | GES\_CO | Species designated in terms of cover type, species groups and subgroups. | | | | | | | | | Cover type: Softwood (3 types), mixedwood (47 types), hardwood (16 types) | | Three species codes can be |  |
|  | (Codes may represent a combination of species or species association). Plantation spp | | | | | | | | | Species group: Major species in stand based on % crown closure 75% or 50% | | entered, a code can repesent a |  |
| **QC** |  |  | and certain islands with white spruce are identified separately. | | | | | | | | | Sub group: Secondary species at least 25% of cover type. | | species or group. |  |
| QIE (4th) | GES\_CO | Same set up as per the 3rd, however species list and codes are revised and better defined - moving towards species | | | | | | | | | | % by crown closure. |  |  |
|  |  |  |
|  |  |  |  | | | | | | | | | | |  |  |
|  | Pre 2000 | Cover Class | 3-5 Species to nearest 10% by crown closure. First species designates major component of stand, second species important minor component, third any other component. | | | | | | | | | | |  |  |
| **PE** | First and second must represent > 75%. | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000 | CoverClass# | 7 | Species to nearest 10% by crown closure. | | | | | | | |  |  |  |  |
|  |  |  |  |  |
|  | Percent# |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2003 | Species | 3 | Species to nearest 10% by gross merch. volume. Minimum requirement of 20% per species, 18 species and species groups recognized, hardwoods not specified by | | | | | | | | | |  |  |
| **NB** | species but by 3 groups (TH,IH, H) for productive forest stand types. | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2003 | Species | 5 | Species FST1 (all merchantable) FST2 (with unmerchantable understory) | | | | | | | | FST3 (no merchantable component), non-productive forest does not identify species beyond hardwood/ softwood | | |  |
|  |  |  |  |  | | | | | | | |  |  |  |  |
| **NS** | Pre 2006 | Species | 4 | Species to nearest 10% of crown composition | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | Species | 4 | Species to nearest 10% of crown composition. For two-storied stands the second story identifies only broad species groups (S, SH, HS, H). | | | | | | | | | |  |  |
|  |  |  |
|  |  |  |  |  | | | | | | | |  |  |  |  |
| **NL** | 2005 | Species | 3 | Species based on total basal area, any single species must comprise > 25%. | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 | v#sp# | 4 | Species per each vegetation plant community (up to seven:V1 to V7) based on percent cover. Note: also includes non tree codes for Alder(AL), Willow(WW), Ericaceous(ER), and Graminoid(GR). | | | | | | | | | | Birch, balsam fir and larch |  |
| not listed |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PANP** | 1968 | C#SPEC U#SPEC | Three species, each must represent at least 20% of canopy. Note: codes 0, WATER, and ISLAND represent non forest or non vegetated cover. | | | | | | | | | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2.1 | SP # | 4 | Species to nearest 10% by crown closure. | | | | | | | |  |  |  |  |
| SP# PER |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NT** | 3.0 | SP # | 4 | Species to nearest 10% by crown closure. | | | | | | | |  |  |  |  |
| SP# PER |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | | | | | | | | | |  |  |  |
| \*(1) Numeric codes from 1 to 10 representing 10% cover classes are used for many inventories - will need to first convert to percent (%) prior to entry into CAS. | | | | | | | | | | | | |  | Sept 7 2010 |  |

**Appendix 7 CAS SPECIES PERCENT TRANSLATION**

**(For forest inventories that do not provide species percent)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **Percent Translation for CAS** | | | | |  |  |  |  |  |
|  |  |  |  | | |  |  |  |  |  |  |
|  |  |  | Major species >25% | | | Minor species < 25% |  |  |  |  |  |
|  |  |  | |  |  |  |  |  |  |  |  |
|  |  | If: 1 major species = | | | | 100% |  |  |  |  |  |
|  |  |  | 2 major species | | | 1st=65% | 2nd=35% |  |  |  |  |
|  |  |  | 3 major species | | | 1st=43% | 2nd=30% | 3rd=27% |  |  |  |
| **AB** | Phase 3 |  | 1 major, 1 minor | | | 1st=85% | 2nd=15% |  |  |  |  |
|  | 2 major, 1 minor | | | 1st=55% | 2nd=30% | 3rd=15% |  |  |  |
|  |  |  |  |  |  |
|  |  |  | 3 major, 1 minor | | | 1st=30% | 2nd=30% | 3rd=25% | 4th=15% |  |  |
|  |  |  | 1major, 3 minor | | | 1st=70% | 2nd=10% | 3rd=10% | 4th=10% |  |  |
|  |  |  | 1 major, 2 minor | | | 1st=75% | 2nd=15% | 3rd=10% |  |  |  |
|  |  |  | 2 major, 2 minor | | | 1st=40% | 2nd=35% | 3rd=15% | 4th=10% |  |  |
|  |  |  |  | | |  | |  |  |  |  |
|  |  | If: | 1 species=100% | | | S=Softwood H=Hardwood | |  |  |  |  |
|  |  |  | PURE | | |  |  |  |  |  |  |
|  |  |  | 2 species and primary | | | is either S or H | 1st=80% | 2nd=20% |  |  |  |
| **SK (If** |  |  | 3 species and primary | | | is either S or H | 1st=60% | 2nd=20% | 3rd=20% |  |  |
| **converting** |  |  |  |  |
| UTM |  | 4 species and primary | | | is either S or H | 1st=50% | 2nd=20% | 3rd=15% | 4th=15% |  |
| **using a map** |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **label)** |  |  | MIXEDWOOD | | |  | SH (softwood dominant) | | HS (hardwood dominant) | |  |
|  |  |  | 2 species and primary | | | is either SH or HS | 1st=60% | 2nd=40% |  |  |  |
|  |  |  | 3 species and primary | | | is either SH or HS | 1st=40% | 2nd=20% | 3rd=40% |  |  |
|  |  |  | 4 species and primary | | | is either SH or HS | 1st=35% | 2nd=15% | 3rd=35% | 4th=15% |  |
|  |  |  |  | | | | | | | |  |
|  |  |  | Primary Species #1 (SP 10), #2 (SP11),and #3 (SP12); Secondary Species #1 (SP20) and #2 (SP21). Secondary Species 10 to 25 % | | | | | | | |  |
|  |  | If: | PURE species (i.e. Softwood S or Hardwood H). Species field position is determined by percent contribution of species: | | | | | | | |  |
|  |  |  | 1 species | | |  |  | SP10=100% |  |  |  |
|  |  |  | 2 species, one primary and one secondary, either all S or all H | | | | | SP10=80% | SP 20=20% |  |  |
|  |  |  | 2 species, both primary, except Jack Pine and Black Spruce | | | | | SP 10=70% | SP 11=30% |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

2 species, both primary and are Jack Pine and Black Spruce SP10=60% SP11=40%

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 3 species all primary | is either S or H | SP10=40% | SP11=30% | | SP12=30% |  |  |  |
|  |  | 3 species, 2 primary | is either S or H | SP10=50% | SP11=30% | | SP20=20% |  |  |  |
|  |  | 3 species, 1 primary | is either S or H | SP 10=70% | SP 20=20% | | SP 21=10% |  |  |  |
|  |  | 4 species, 2 or 3 primary, either S or H | | SP 10=40% | SP 11=30% | | SP 20=20% | SP 21=10% | |  |
| **SK (If using** |  | 4 species, 1 primary, either S or H | | SP 10=50% | SP 11=20% | | SP 20=20% | SP 21=10% | |  |
| UTM | 5 species, 1 primary, either S or H | | SP 10=50% | SP 11=20% | | SP 12=20% | SP20=20% SP21=10% | |  |
| **data base)** |  |
| If: | MIXEDWOOD (i.e. softwood/hardwood SH or hardwood/softwood HS). Total H and S must be | | | > | 30% |  |  |  |  |
|  |  |  |  |  |
|  |  | 2 species, both must be primary | | SP 10=60% | SP 11=40% | |  |  |  |  |
|  |  | 3 species, first species is S or H, other two opposite of first | | SP 10=60% | SP 11=30% | | SP 20=10% |  |  |  |
|  |  | 3 species, first two species S or H, third is opposite of first two | | SP 10=40% | SP 20=20% | | SP 11=40% |  |  |  |
|  |  | 4 species, first two are S or H and others opposite of first two | | SP 10=30% | SP 20=20% | | SP 11=30% | SP 21=20% | |  |
|  |  | 4 species, first three are S or H, fourth opposite of first three | | SP 10=40% | SP 20=20% | | SP 21=10% | SP 11=30% | |  |
|  |  | 4 species, first species is S or H, last three are opposite the first | | SP 10=50% | SP 11=30% | | SP 20=10% | SP 21=10% | |  |
|  |  | 5 species, first four are S or H, fifth is opposite of first four | | SP 10=30% | SP 12=20% | | SP 20=10% | SP 21=10% SP 11=30% | |  |
|  |  | 5 species, first three are S or H, last two are opposite of others | | SP 10=30% | SP 12=20% | | SP 20=10% | SP 11=30% | SP 21=10% |  |
|  |  | 5 species, first two are S or H, last three are opposite of first two | | SP 10=30% | SP 12=20% | | SP 11=30% | SP 20=10% | SP 21=10% |  |
|  |  | 5 species, first species is S or H, last four are opposite | | SP 10=40% | SP 11=30% | | SP 12= 10% | SP 20=10% | SP 21=10% |  |
|  |  | | | | | | | |  |  |
|  | If: Single species or group=100% (Note: If only a single species, then second species is also filled in with the first species, ( e.g. BbBb) | | | | | | | |  |  |
|  | If: Two species, one major and one minor; e.g. BbBbS, PePeG | | | 1st=80% | 2nd=20% | |  |  |  |  |
|  | If: | 2 species or group or 1 spp and 1 spp group, e.g.PbPg or SE or | | 1st=65% | 2nd=35% | |  |  |  |  |
|  | PbE |  |  |  |  |  |
|  | If: 1st spp is followed by a plus (+) sign or a one (1), e.g.Pr+Pe | | | 1st=70% | 2nd=30% | |  |  |  |  |
|  | If: 2nd spp is followed by plus (+) sign, e.g. RBj+ | | | 1st=60% | 2nd=40% | |  |  |  |  |
| **QC** | If: 2nd spp is followed by minus (-) sign, e.g. CBj- | | | 1st=70% | 2nd=30% | |  |  |  |  |
| 3rd (TIE) | There are 3 spp and the 2nd spp is the same as the 1st, then only | |  |  |  |  |  |  |  |
|  | If: | 1st=65% | 2nd=35% | |  |  |  |  |
|  | tranfer the 1st and 3rd spp to CAS as spp 1 and 2 | |  |  |  |  |
|  | If: | 1st spp is followed by a minus (-) sign then a third generic spp | | 1st=35% | 2nd=35% | | 3rd=30% |  |  |  |
|  |  | must be added in place of the minus sign as species 2 in the CAS | |  |  |  |  |  |  |  |
|  |  | species, e.g. Pb-Bb becomes PbRBb | |  |  |  |  |  |  |  |
|  | If: | 3 species or 2 species and 1 species group, e.g.BbPePg | | 1st=51% | 2nd=25% | | 3rd=24% |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | If: | Softwood is at least 3 species and it is assigned R followd by the | | | |  |  |  |  |
|  |  |  | most dominant species, e.g. RPb, then assign Pb to CAS species | | | | 1st=51% | 2nd=25% | 3rd=24% |  |
|  |  |  | 1 and R to CAS species 2 and 3. | | |  |  |
|  |  |  |  | | |  |  |  |  |  |
| **WBNP** | 1979 |  | Up to four species listed. | | |  |  |  |  |  |
|  |  | If: | 1 species = 100% | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  | If: | 2 species | | |  | 1st=70% | 2nd=30% |  |  |
|  |  | If; | 3 species | | |  | 1st=40% | 2nd=30% | 3rd=30% |  |
|  |  | If: | 4 species | | |  | 1st=35% | 2nd=35% | 3rd=15% 4th=15% |  |
| **PANP** | 1968 |  | Up to three species listed. | | |  |  |  |  |  |
|  |  | If: | 1 species = 100% | | |  |  |  |  |  |
|  |  | If: | 2 species, pine (PB) and black spruce (PM) | | |  | 1st=60% | 2nd=40% |  |  |
|  |  | If: | 2 species, any other combination | | |  | 1st=70% | 2nd=30% |  |  |
|  |  | If: | 3 species, any combination | | |  | 1st=50% | 2nd=30% | 3rd=20% |  |
|  |  | If: | 1 species (> 75% of the basal area)=100% | | | E.g. bF |  |  |  |  |
|  |  |  | PURE |  |  |  |  |  |  |  |
| **NL** | 2005 | If: | 2 species (at least 50% of BA is 1st species) | | | 1st=60% | 2nd=40% |  |  |  |
|  | E.g. bFwB | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  | If: | 3 species E.g. bFbSwB | | | 1st=40% | 2nd=30% | 3rd=30% |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

Sept 7 2010

**APPENDIX 8**

**CAS SPECIES LIST AND CODES**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CAS SPECIES LIST** |  |  |  |  |  |  |  |  |  |  | Page 1 of 4 |  |
| **Appendix 8 CAS Species List and Codes** |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **COMMON NAME** | |  | **TYPE** |  | **ENGLISH INVENTORY** | **QUEBEC INVENTORY** |  |  |  |  |  |
|  |  |  | **SCIENTIFIC NAME** | **(N, V, X** | **CAS COMMON CODE** | **SOURCE INVENTORY LIST** |  | **COMMENTS** |  |  |
| **ENGLISH** |  | **FRENCH \*** |  | **E,G) \*\*** |  | **CODES** | **CODES** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Western red cedar |  |  | *Thuja plicata* | N | Thuj plic | Cw |  | BC, AB |  |  |  |  |
| Yellow cedar |  |  | *Chamaecyparis nootkatensis* | N | Cham noot | Yc |  | BC |  |  |  |  |
| Eastern white cedar |  | Thuya occidental | *Thuja occidentalis* | N | Thuj occi | Ce, eC, EC, CE, Cw | To, ThO, C | ON, QC,PE,NB, NS |  |  |  |  |
| Eastern red cedar |  |  | *Juniperus virginiana* | N | Thuj juni | Cr, Cer |  | ON |  |  |  |  |
| Douglas-fir |  |  | *Pseudotsuga menziesii* | N | Pseu menz | Fd, DF |  | BC, AB, PE, NS |  |  |  |  |
| Coastal Douglas-fir |  |  | *Pseudotsuga menziesii* var. menziesii | V | Pseu menm | Fdc |  | BC |  |  |  |  |
| Interior Douglas-fir |  |  | *Pseudotsuga menziesii* var. *glauca* | V | Pseu meng | Fdi, Fd |  | BC, AB |  |  |  |  |
| Amabilis fir |  |  | *Abies amabilis* | N | Abie amab | Ba |  | BC |  |  |  |  |
| Grand fir |  |  | *Abies grandis* | N | Abie gran | Bg |  | BC |  |  |  |  |
| Subalpine fir, alpine fir |  |  | *Abies lasiocarpa* | N | Abie lasi | Bl, F, Fa |  | BC, AB, YT, NT |  |  |  |  |
| Balsam fir |  | Sapin baumier | *Abies balsamea* | N | Abie bals | Fb, bF, BF, Bf, Bb, AB | Sb, SaB | AB,SK,MN,ON,QC,PE,NB,NS,NL,NT,PANP |  |  |  |  |
| Mountain hemlock |  |  | *Tsuga mertensiana* | N | Tsug mert | Hm |  | BC |  |  |  |  |
| Western hemlock |  |  | *Tsuga heterophylla* | N | Tsug hete | Hw |  | BC, AB |  |  |  |  |
| Eastern hemlock |  | Pruche de l’est | *Tsuga canadensis* | N | Tsug cana | He, eH, EH, HE | Pu, PrU | ON, QC, PE, NB, NS |  |  |  |  |
| Mountain x western hemlock |  |  | *Tsuga mertensiana x heterophylla* | X | Tsug merx | Hxm |  | BC |  |  |  |  |
| Rocky mountain juniper |  |  | *Juniperus scopulorum* | N | Juni scop | Jr |  | BC, AB |  |  |  |  |
| Alpine larch |  |  | *Larix lyallii* | N | Lari lyal | La |  | BC, AB |  |  |  |  |
| Tamarack, Eastern larch |  | Mélèze laricin | *Larix laricina* | N | Lari lari | Lt, TL, La, tL, LA, LL | Ml, Me, MeL | BC,AB,SK,MN,ON,QC,PE,NB,NS,NL,YK,NT,PANP | |  |  |  |
| Western larch |  |  | *Larix occidentalis* | N | Lari occi | Lw, wL, WL |  | BC, AB, NS |  |  |  |  |
| Jack pine |  | Pin gris | *Pinus banksiana* | N | Pinu bank | Pj, JP, jP, PB, PN | Pg, PiG | BC,AB,SK,MN,ON,QC,PE,NB,NS,NL,YK,NT,WBNP,PANP | |  |  |  |
| Limber pine |  |  | *Pinus flexilis* | N | Pinu flex | Pf |  | BC, AB |  |  |  |  |
| Lodgepole pine |  |  | *Pinus contorta* | N | Pinu cont | Pl, lP, LP |  | BC, AB, YT, PE, NL, YK, NT |  |  |  |  |
| Shore pine |  |  | *Pinus contorta* var. *contorta* | V | Pinu conc | Plc |  | BC |  |  |  |  |
| Lodgepole x jack pine |  |  | *Pinus x murraybanksiana* | X | Pinu murx | Pxj |  | BC |  |  |  |  |
| Western white pine |  |  | *Pinus monticola* | N | Pinu mont | Pw |  | BC |  |  |  |  |
| Eastern white pine |  | Pin blanc | *Pinus strobus* | N | Pinu stro | Pw, wP, WP | Pb, PiB | ON, QC, PE, NB, NS, NL |  |  |  |  |
| Whitebark pine |  |  | *Pinus albicaulis* | N | Pinu albi | Pa |  | BC, AB |  |  |  |  |
| Yellow pine (Ponderosa) |  |  | *Pinus ponderosa* | N | Pinu pond | Py |  | Bc |  |  |  |  |
| Red pine |  | Pin rouge | *Pinus resinosa* | N | Pinu resi | Pr, RP, rP | Pr, PiR | ON, QC, PE, NB, NS, NL |  |  |  |  |
| Pitch pine |  | Pin rigide (pin des corbeaux) | *Pinus rigida* | N | Pinu rigi | Pp | Pc, PiD | ON, QC |  |  |  |  |
| Paper birch, white |  | Bouleau à papier, Bouleau blanc | *Betula papyrifera* | N | Betu papy | Ea, WB, wB, Bw, Ep, BP | Bp | BC,AB,SK,MN,ON,QC,PE,NB,NS,NL,YK,NT,PANP | |  |  |  |
| Alaska paper birch |  |  | *Betula neoalaskana* | N | Betu neoa | Ep, Ea |  | BC |  |  |  |  |
| Alaska x paper birch hybrid |  |  | *Betula x winteri* | X | Betu winx | Exp |  | BC |  |  |  |  |
| Cherry birch |  |  | *Beula lenta* | N | Betu Lent | Bc |  | ON |  |  |  |  |
| Grey birch |  | Bouleau gris | *Betula populifolia* | N | Betu popu | Bg, gB, GB | Bg | ON, QC, PE, NS |  |  |  |  |
| Water birch |  |  | *Betula occidentalis* | N | Betu occi | Ew |  | BC |  |  |  |  |
| Yellow birch |  | Bouleau jaune | *Betula alleghaniensis* | N | Betu alle | By, YB, yB | Bj, BoJ | ON, QC, PE, NB, NS, NL |  |  |  |  |
| Black spruce |  | Épinette noire | *Picea mariana* | N | Pice mari | Sb, BS, bS, PM | En, EpN | BC,AB,SK,MN,ON,QC,PE,NB,NS,NL,YK,NT,WBNP,PANP | |  |  |  |
| Engelmann spruce |  |  | *Picea engelmannii* | N | Pice enge | Se, eS |  | BC, AB, NL |  |  |  |  |
| Engelmann x white |  |  | *Picea engelmannii x glauca* | X | Pice engx | Sxw |  | BC |  |  |  |  |
| Sitka x white |  |  | *Picea x lutzii* | X | Pice lutx | Sxl |  | BC |  |  |  |  |
| Sitka spruce |  |  | *Picea sitchensis* | N | Pice sitc | Ss, SS |  | BC, PE, NS, NL |  |  |  |  |
| Sitka x unknown hybrid |  |  | *Picea sitchensis x ?* | X | Pice sitx | Sxs |  | BC |  |  |  |  |
| Spruce hybrid |  |  | *Picea spp x* | X | Pice sppx | Sx |  | BC, PE |  |  |  |  |
| Red spruce |  | Épinette rouge | *Picea rubens* | N | Pice rube | rs, RS | Eu, EpH | ON, QC, PE, NB, NS |  |  |  |  |
| White spruce |  | Épinette blanche | *Picea glauca* | N | Pice glau | Sw, WS, wS, PG | Eb, EpL, G | BC,AB,SK,MN,ON,QC,PE,NB,NS,NL,YK,NT,WBNP,PANP | |  |  |  |
| Mountain alder |  |  | *Alnus incana* | N | Alnu inca | Dm |  | BC |  |  |  |  |
| Green and Sitka alder |  |  | *Alnus viridis* | N | Alnu viri | Dg |  | BC |  |  |  |  |
| Red alder |  |  | *Alnus rubra* | N | Alnu rubr | Dr |  | BC |  |  |  |  |
| Arbutus |  |  | *Arbutus menziesii* | N | Arbu menz | Ra |  | BC |  |  |  |  |
| Cascara |  |  | *Rhamnus purshianus* | N | Rham purs | Kc |  | BC |  |  |  |  |
| Bitter cherry |  |  | *Prunus emarginata* | N | Prun emar | Vb |  | BC |  |  |  |  |
| Sour cherry, pie or sour red |  |  | *Prunus cerasus* | N | Prun cera | Ch |  | ON |  |  |  |  |
| Black cherry |  | Cerisier tardif | *Prunus serotina* | N | Prun sero | Cb, BC | Ct | ON, QC, NS |  |  |  |  |
| Choke cherry |  |  | *Prunus virginiana* | N | Prun virg | Vv, Cv | Cv | BC, ON, QC |  |  |  |  |
| Pin cherry |  |  | *Prunus pensylvanica* | N | Prun pens | Vp |  | ON, QC, PE |  |  |  |  |
| Pacific dogwood |  |  | *Cornus nuttallii* | N | Corn nutt | Gp |  | BC |  |  |  |  |
| Western yew |  |  | *Taxus brevifolia* | N | Taxu brev | Tw |  | BC |  |  |  |  |
| White elm or American elm |  | Orme d’Amérique | *Ulmus americana* | N | Ulmu amer | wE, Ew, Em, EM, E | Oa | SK, MN, ON,QC,PE, NS |  |  |  |  |
| Slippery elm |  | Orme rouge | *Ulmus rubra* | N | Ulmu rubr | Es | Oo | ON, QC |  |  |  |  |
| Rock elm |  | Orme de Thomas | *Ulmus thomasii* | N | Ulmu thom | Eu | Ot | ON, QC |  |  |  |  |
| Narrow-leaf Cottonwood |  |  | *Populus angustifolia* | N | Popu angu | Cn, Pb |  | AB |  |  |  |  |
| Plains cottonwood |  |  | *Populus deltoides v. occidentalis* | N | Popu delo | pC, Pb |  | AB, ON, QC |  |  |  |  |
| Eastern cottonwood |  | Peuplier à feuilles deltoïdes | *Populus deltoides* | N | Popu delt | Pd | Pl, PeD | ON, QC, PE |  |  |  |  |
| Carolina poplar |  |  | *Populus X canadensis* | X | Popu cana | Pc |  | ON |  |  |  |  |
| Hybrid poplar, Southern cottonwood |  | Feuille hybride | *Populus deltoides* | X | Popu delx | Ad | Ph, PeH | ON, QC, PE |  |  |  |  |
| **\*Note - Some english and or french codes overlap between provinces, eg. Aw in Alberta = Aspen and Aw in Ontario = White Ash** | | | |  |  |  |  |  |  |  |  |  |
| **\*\* N = Native; V = Variety; X = Hybrid, E = Exotic; G = Generic** | | |  |  |  |  |  |  |  | Revised 6/13/2011 | |  |

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|  | **COMMON NAME** | |  | **TYPE** |  | **ENGLISH INVENTORY** | **QUEBEC INVENTORY** |  |  |  |  |  |
|  |  |  | **SCIENTIFIC NAME** | **(N, V, X** | **CAS COMMON CODE** | **SOURCE INVENTORY LIST** |  | **COMMENTS** |  |  |
| **ENGLISH** |  | **FRENCH \*** |  | **E,G) \*\*** |  | **CODES** | **CODES** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Black cottonwood |  |  | *Populus balsamifera v. trichocarpa* | V | Popu balt | Ac, BA, Pb, bP, bPo |  | BC, AB, YT, NT |  |  |  |  |
| Balsam poplar |  | Peuplier baumier | *Populus balsamifera v. balsamifera* | V | Popu balb | Ac, Acb, BA, Pb, bP, BP | Pa | BC,AB,SK,MN,ON,QC,PE,NB, NS,NL,YT,NT |  |  |  |  |
| Trembling aspen |  | Peuplier faux-tremble | *Populus tremuloides* | N | Popu trem | At, TA, Pt. Aw, tA, PT | Pt | BC,AB,SK,MN,ON,QC,NB,NS,NL,YK,NT, PANP | |  |  |  |
| Largetooth aspen |  | Peuplier à grandes dents | *Populus grandidentata* | N | Popu gran | Pl | Pd | ON, QC, NB |  |  |  |  |
| Black ash |  | Frêne noir | *Fraxinus nigra* | N | Frax nigr | Ab | Fo, FrN | ON, QC, PE, NS |  |  |  |  |
| White ash |  | Frêne d’Amérique (blanche) | *Fraxinus americana* | N | Frax amer | Aw, wA | Fa, FrA | ON, QC, PE, NS |  |  |  |  |
| Blue ash |  |  | *Fraxinus quadrangulata* | N | Frax quad | Aq |  | ON |  |  |  |  |
| Pumpkin ash |  |  | *Fraxinus profunda* | N | Frax prof | Ap |  | ON |  |  |  |  |
| Green ash |  |  | *Fraxinus pennsylvanica* | N | Frax penn | gA, GA |  | SK, MN, ON |  |  |  |  |
| Red ash |  | Frêne de Pennsylvanie (rouge) | *Fraxinus pennsylvanica* | N | Frax penn | Ag | Fp, FrP | ON, QC |  |  |  |  |
| Basswood |  | Tilleul d’Amérique | *Tilia americana* | N | Tili amer | Bd, BN | Ta | ON, QC, PE |  |  |  |  |
| American beech |  | Hêtre à grandes feuilles | *Fagus grandifolia* | N | Fagu gran | Be, BE | Hg | ON, QC, PE, NB, NS |  |  |  |  |
| Blue-beech, American hornbeam |  |  | *Carpinus caroliniana* | N | Carp caro | Bb |  | ON |  |  |  |  |
| Butternut |  | Noyés cendre | *Juglans cinerea* | N | Jugl cine | Bn | Nc | ON, QC, PE |  |  |  |  |
| Ironwood (hop hornbeam) |  | Ostryer de Virginie | *Ostrya virginiana* | N | Ostr virg | lw, IW | Ov | ON, QC, NS |  |  |  |  |
| Honey locust |  |  | *Gleditsia triacanthos* | N | Gled tria | Lh |  | ON |  |  |  |  |
| Black locust |  |  | *Robinia pseudoacacia* | N | Robi pseu | Lb |  | ON |  |  |  |  |
| Big leaf maple |  |  | *Acer macrophyllum* | N | Acer macr | Mb |  | BC |  |  |  |  |
| Sugar maple (hard maple) |  | Érable à sucre | *Acer saccharum* | N | Acer sacc | Mh, SM, sM | Es, ErS | ON, QC, PE, NB, NS |  |  |  |  |
| Red maple (soft maple) |  | Érable rouge | *Acer rubrum* | N | Acer rubr | Mr, RM, rM | Eo | ON, QC, PE, NB, NS, NL |  |  |  |  |
| Silver maple |  | Érable argenté | *Acer saccharinum* | N | Acer sach | MS, Ms | Ea | ON, QC |  |  |  |  |
| Mountain maple |  |  | *Acer spicatum* | N | Acer spic | Mt |  | ON |  |  |  |  |
| Striped maple |  |  | *Acer pensylvanicum* | N | Acer pens | Mp |  | ON |  |  |  |  |
| Rocky mountain maple |  |  | *Acer glabrum* | N | Acer glab | Mr |  | BC |  |  |  |  |
| Manitoba maple, Box elder |  |  | *Acer negundo* | N | Acer negu | mM, MM, Me |  | SK, MN, ON |  |  |  |  |
| Vine maple |  |  | *Acer circinatum* | N | Acer circ | Mv |  | BC |  |  |  |  |
| Freeman maple |  |  | *Acer X freemanii* | X | Acer free | Mf |  | ON |  |  |  |  |
| Black maple |  | Érable noir | *Acer nigrum* | N | Acer nigr | Mb | Ei | ON, QC |  |  |  |  |
| Bur oak |  | Chêne à gros fruits | *Quercus macrocarpa* | N | Quer macr | bO, Ob | Cg | MB, ON, QC |  |  |  |  |
| Garry oak |  |  | *Quercus garryana* | N | Quer garr | Qg |  | BC |  |  |  |  |
| Red oak |  | Chêne rouge | *Quercus rubra* | N | Quer rubr | OR, RO, rO | Cr, ChR | ON, QC, PE, NS |  |  |  |  |
| White oak |  | Chêne blanc | *Quercus alba* | N | Quer alba | Ow | Cb, ChB | ON, QC |  |  |  |  |
| Pin Oak |  |  | *Quercus palustris* | N | Quer palu | Op |  | ON |  |  |  |  |
| Black oak |  |  | *Quercus velutina (nigra)* | N | Quer velu | On |  | ON |  |  |  |  |
| Chinquapin oak, yellow oak |  |  | *Quercus muehlenbergii* | N | Quer mueh | Och |  | ON |  |  |  |  |
| Shumard oak |  |  | *Quercus shumardii* | N | Quer shum | Osw, Os |  | ON |  |  |  |  |
| Swamp white oak |  | Chêne bicolore | *Quercus bicolor* | N | Quer bico | Osw | Cc | ON, QC |  |  |  |  |
| American chestnut |  |  | *Castanea dentata* | N | Cast dent | Cd |  | ON |  |  |  |  |
| Horsechestnut |  |  | *Aesculus hippocastanum* | N | Aesc hipp | Hc |  | ON |  |  |  |  |
| Black walnut |  | Noyer noir | *Juglans nigra* | N | Jugl nigr | wb | Na | ON, QC |  |  |  |  |
| Black gum |  |  | *Nyssa sylvatica* | N | Nyss sylv | Gb |  | ON |  |  |  |  |
| Sassafras |  |  | *Sassafras albidum* | N | Sass albi | Sa |  | ON |  |  |  |  |
| Sycamore |  |  | *Platanus occidentalis* | N | Plan occi | Sy |  | ON |  |  |  |  |
| Hawthorn |  |  | *Crataegus spp* | N | Crat spp | Ht |  | ON |  |  |  |  |
| Hackberry |  |  | *Celtix occidentalis* | N | Celt occi | Hk |  | ON |  |  |  |  |
| Kentucky coffee tree |  |  | *Gymnocladus dioicus* | N | Gymn dioi | Kk |  | ON |  |  |  |  |
| Big leaf lindon |  |  | *Tilia platyphyllos* | N | Tili plat | Bl |  | ON |  |  |  |  |
| Little leaf lindon |  |  | *Tilia cordata* | N | Tili cord | Li |  | ON |  |  |  |  |
| Cucumber tree |  |  | *Magnolia acuminata* | N | Magn acum | Ct |  | ON |  |  |  |  |
| Northern catalpa, bean-tree |  |  | *Catalpa speciosa* | N | Cata spec | Cat |  | ON |  |  |  |  |
| American witch-hazel |  |  | *Hamamelis virginiana* | N | Hana virg | Haz |  | ON |  |  |  |  |
| Redbud |  |  | *Cercis canadensis* | N | Cerci cana | Red |  | ON |  |  |  |  |
| Red mulberry |  |  | *Morus rubra* | N | Moru rubr | Mo |  | ON |  |  |  |  |
| Tulip tree |  |  | *Liriodendron tulipifera* | N | Liri tuli | Tt |  | ON |  |  |  |  |
| Paw paw |  |  | *Asimina triloba* | N | Asim tril | Pa |  | ON |  |  |  |  |
| Pacific crab apple |  |  | *Malus fusca* | N | Malu fusc | Up |  | BC |  |  |  |  |
| Bebb's willow |  |  | *Salix bebbiana* | N | Sali bebb | Wb |  | BC |  |  |  |  |
| Black willow |  |  | *Salix nigra* | N | Sali nigr | Wi |  | ON |  |  |  |  |
| Pacific willow |  |  | *Salix lucida* | N | Sali luci | Wp |  | BC |  |  |  |  |
| Peachleaf willow |  |  | *Salix amygdaloides* | N | Sali amyg | Wa |  | BC |  |  |  |  |
| Pussy willow |  |  | *Salix discolor* | N | Sali disc | Wd |  | BC |  |  |  |  |
| Scouler's willow |  |  | *Salix scouleriana* | N | Sali scou | Ws |  | BC |  |  |  |  |
| Sitka willow |  |  | *Salix sitchensis* | N | Sali sitc | Wt |  | BC |  |  |  |  |
| Bitternut hickory |  | Caryer cordiforme | *Carya cordiformis* | N | Cary cord | Hi | Ce | ON, QC |  |  |  |  |
| Shagbark hickory |  | Caryer à fruits doux | *Carya orava* | N | Cary orav | Hi | Cf | ON, QC |  |  |  |  |
| Big shellbark hickory |  |  | *Carya laciniosa* | N | Cary laci | Hl |  | ON |  |  |  |  |
| Mockernut hickory |  |  | *Carya tomentosa* | N | Cary tome | Hm |  | ON |  |  |  |  |
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|  | **COMMON NAME** | |  | **TYPE** |  | **ENGLISH INVENTORY** | **QUEBEC INVENTORY** |  |  |  |  |
|  |  |  | **SCIENTIFIC NAME** | **(N, V, X** | **CAS COMMON CODE** | **SOURCE INVENTORY LIST** | **COMMENTS** |  |  |
|  | **ENGLISH** | **FRENCH \*** |  | **E,G) \*\*** |  | **CODES** | **CODES** |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pignut hickory |  | *Carya glabra* | N | Cary glab | Hp |  | ON |  |  |  |
|  | Scots pine | Pin sylvestre | *Pinus sylvestris* | E | Pinu sylv | sP, Ps, SP | Ps, PiS | BC, AB, ON, QC, NB, NS, PE, NL |  |  |  |
|  | Siberian larch |  | *Larix sibitica* | E | Lari sibi | SL |  | BC, AB, ON, QC, NB, NS |  |  |  |
|  | Austrian pine, European black pine |  | *Pinus nigra* | E | Pinu nigr | AP, YP |  | ON, PE, NS |  |  |  |
|  | European larch | Mélèze européen | *Larix decidua* | E | Lari deci | EL | MeU | QC, PE, NS, NL |  |  |  |
|  | Japanese larch | Mélèze japonais | *Larix kaempferi* | E | Lari kaem | JL | Mj, MeJ | QC, PE, NS |  |  |  |
|  | Norway spruce | Épinette de Norvège | *Picea abies* | E | Pice abie | NS, Sn | Ev, EpO | QC, PE, NS, NL |  |  |  |
|  | Colorado spruce |  | *Picea pungens* | E | Pice pung | Sc |  | ON |  |  |  |
|  | Koyama spruce |  | *Picea koyamai* | E | Pice koya | Sk |  | ON |  |  |  |
|  | Apple |  | *Malus pumila* | E | Malu pumi | Ua |  | BC |  |  |  |
|  | European birch |  | *Betula pendula* | E | Betu pend | Ee |  | BC, ON |  |  |  |
|  | Japanese birch |  | *Betula mandschurica var japonica* | E | Betu mand | jB |  | NL |  |  |  |
|  | Silver birch |  | *Betula pubescens* | E | Betu pube | Es |  | BC |  |  |  |
|  | Sweet cherry, Mazzard cherry |  | *Prunus avium* | E | Prun aviu | Vs |  | BC, ON |  |  |  |
|  | Port Orford-cedar |  | *Chamaecyparis lawsoniana* | E | Cham laws | Yp |  | BC |  |  |  |
|  | Noble fir |  | *Abies procera* | E | Abie proc | Bp |  | BC |  |  |  |
|  | Shasta red fir |  | *Abies magnifica var shastensis* | E | Abie magn | Bm |  | BC |  |  |  |
|  | White fir |  | *Abies concolor* | E | Abie conc | Bc |  | BC |  |  |  |
|  | Norway maple |  | *Acer platanoides* | E | Acer plat | Mn |  | BC |  |  |  |
|  | Sycamore maple |  | *Acer pseudoplatanus* | E | Acer pseu | Ms |  | BC |  |  |  |
|  | Incense-cedar |  | *Calocedrus decurrens* | E | Calc decu | Oa |  | BC |  |  |  |
|  | Giant sequoia |  | *Sequoadendron giganteum* | E | Sequ giga | Ob |  | BC |  |  |  |
|  | Coast redwood |  | *Sequoia sempervirens* | E | Sequ semp | Oc |  | BC |  |  |  |
|  | European mountain-ash |  | *Sorbus aucuparia* | E | Sorb aucu | Od |  | BC |  |  |  |
|  | Siberian elm |  | *Ulmus pumila* | E | Ulmu pumi | Oe |  | BC |  |  |  |
|  | Common pear |  | *Pyrus communis* | E | Pyru comm | Of |  | BC |  |  |  |
|  | Oregon ash |  | *Fraxinus latifolia* | E | Frax lati | Og |  | BC |  |  |  |
|  | Monterey pine |  | *Pinus radiata* | E | Pinu radi | Pm |  | BC |  |  |  |
|  | Sugar pine |  | *Pinus lambertiana* | E | Pinu lamb | Ps |  | BC |  |  |  |
|  | English oak |  | *Quercus robur* | E | Quer robu | Qe |  | BC |  |  |  |
|  | Hybrid larch | Mélèze hybride | *Larix x marschlinsii* | E | Lari x mar |  | Mh | QC |  |  |  |
|  | European poplar | Peuplier européen | *Populus nigra* | E | Popu nigr |  | Po, PeU | QC |  |  |  |
|  | Fir (any mix) | Sapin | *Abies spp.* | G | Abie spp | B, DF | Se | BC, QC |  |  |  |
|  | Hemlock (any mix) | Les Pruches | *Tsuga spp.* | G | Tsug spp | H |  | BC |  |  |  |
|  | Larch (any mix) | Les Mélèzes | *Larix spp.* | G | Lari spp | L |  | BC |  |  |  |
|  | Pine (any mix) | Les Pins | *Pinus spp.* | G | Pinu spp | P, PX, PI, PN | Pi | AB, ON, QC, NB,WBNP |  |  |  |
|  | Alder (any mix) | Les Aulnes | *Alnus spp* | G | Alnu spp | D, AL, Al | AL | BC, ON, QC, PE, NB,WBNP |  |  |  |
|  | Willow (any mix) | Les Saules | *Salix spp.* | G | Sali spp | W, Wi, WI, WW |  | BC, ON, PE, WBNP |  |  |  |
|  | Hickory (any mix) | Les Caryers | *Carya spp.* | G | Cary spp | Hi |  | ON |  |  |  |
|  | Poplar (any mix) (Aspen, Cottonwood or Poplar) | Les Peupliers | *Populus spp.* | G | Popu spp | A, Po, PO, TA, PT | Pe | AB, ON, QC, PE, NB, NS, WBNP, PANP |  |  |  |
|  | Maple (any mix) | Les Érables | *Acer spp.* | G | Acer spp | Mx, M | Er | ON, QC |  |  |  |
|  | Oak (any mix) | Les Chênes | *Quercus spp.* | G | Quer spp | OX | Ch | ON, QC |  |  |  |
|  | Cherry (any mix) | Les Cerisiers | *Prunus spp.* | G | Prun spp | V, Ch | Ct | BC, ON, QC, NB, NS |  |  |  |
|  | Elm (any mix) | Les Ormes | *Ulmus spp.* | G | Ulmu spp | Ex, EX, WE | Or | ON, QC |  |  |  |
|  | Birch (any mix) | Les Bouleaux | *Betula spp.* | G | Betu spp | BI | Bb | QC, NB | white and grey birch |  |  |
|  | Ash (black and white) | Les Frênes | *Fraxinus spp.* | G | Frax spp | AX, AS |  | ON, NS |  |  |  |
|  | Spruce (any mix) | Les Épinettes | *Picea spp.* | G | Pice spp | SX, XS, DS, SP | Ep, E, En | BC, ON, QC, NB, NS |  |  |  |
|  | Locust (honey or black) |  | *Robina spp.* | G | Robi spp | Lo |  | ON |  |  |  |
|  | Spruce-balsam fir or Balsam fir-spruce mix | Sapin/épinette rouge |  | G | Abie pice | SF, sF, FS | S | QC, PE, NB, NS |  |  |  |
|  | Hardwoods other, unclassified hardwood | Feuillus indéterminés |  | G | Hard unkn | OH, Zh, UH, HW, Xh | Fx, Fz, F, FeL | ON, QC, NB, NS | (discontinued in 2002 in NS), plantation F=<7m ht and FeL=>7m ht |  |  |
|  | Conifer other, unclassified softwood | Résineux indéterminés |  | G | Soft unkn | OC, Zc, US, Xc, OS | Rx, Rz, R, ReS | ON, QC, NB, NS | plantation R=<7m ht and ReS=>7m ht |  |  |
|  | Non commercial hardwoods | Feuillus non commerciaux |  | G | Nonc hard | NC | Fu, Fnc | QC, NB |  |  |  |
|  | Tolerant hardwood | Feuillus tolérants |  | G | Hard tole | TH | Ft | QC, PE, NB, NS | (discontinued in 2002 in NS) |  |  |
|  | Intolerant Hardwood | Feuillus intolérants |  | G | Hard into | IH | Fi | QC, PE, NB, NS | (discontinued in 2002 in NS) |  |  |
|  | Moist hardwoods | Feuillus sur station humide |  | G | Mois hard |  | Fh | QC |  |  |  |
|  | Unclassified Species |  |  | G | Uncl spp | US, Z |  | BC, NS |  |  |  |
|  | \* French names are identified only for species listed in Quebec inventories | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | \*\* N=Native, V=Variety, X=Hybrid, E=Exotic, and G=Generic | |  |  |  |  |  |  | 11/12/2009 |  |  |

**\*Note - Some english and or french codes overlap between provinces, eg. Aw in Alberta = Aspen and Aw in Ontario = White Ash**

**\*\* N = Native; V = Variety; X = Hybrid, E = Exotic; G = Generic** Revised 6/13/2011

**APPENDIX 9**

**CAS GENERIC SPECIES GROUP LIST**



Appendix 9

CAS GENERIC SPECIES GROUP LIST

Last Revision January 28, 2009

Several Canadian forest inventories use generic or grouped species codes in place of actual species codes when interpretation of similar species or species groups is difficult or not necessary. The purpose of this document is to identify which species are included within the generic species and group codes Refer to the CAS species list (Appendix 8)to translate common names into CAS species codes. Generic species groups are identified with a „G‟ in the Type column of the CAS species list.

This document is organized by inventory type or standard by province and territory. The generic species group name is identified on the left followed by the species included in that group. The code on the right is the generic code used by that province or territory. Non commercial tree species are generally not identified past the generic name for most inventories. The following list identifies those species that are identified:

Alders: Alnu viri, Alnu rugo

Willows: Sali bebb, Sali luci, Sali amyg, Sali disc, Sali scou, Sali sitc, Sali nigr

Cherries: Prun sero, Prun virg, Prun aviu, Prun pens

Mountain Ash: *Sorbus scopulina*, Sorbus decora, *Sorbus americana*

**British Columbia**

**Forest Cover Inventory**

|  |  |  |
| --- | --- | --- |
| Balsam Fir | Sub alpine fir, Amabilis fir, Grand fir | B |
| Hemlock | Western hemlock, mountain hemlock | H |
| Larch | Alpine larch, western larch, tamarack | L |
| Birch | Alaska paper birch, Common paper birch | E |
| Spruce | Sitka spruce, white spruce, Engelmann spruce, |  |
|  | hybrids (Englemann x white, Sitka x white, Sitka x |  |
|  | unknown) | S |
| **VRI** |  |  |
| Douglas-Fir | Douglas-fir, coastal Douglas-fir, interior Douglas-fir | F |
| Balsam Fir | sub alpine fir, amabilis fir, grand fir | B |
| Hemlock | western hemlock, mountain hemlock, hybrids |  |
|  | (Mountain x western hemlock) | H |
| Larch | alpine larch, western larch, tamarack | L |
|  |  |  |



|  |  |  |
| --- | --- | --- |
| Spruce | Sitka spruce, white spruce, Engelmann spruce, |  |
|  | hybrids (Englemann x white, Sitka x white, Sitka x |  |
|  | unknown) | S |
| Birch | Alaska paper birch, common paper birch, hybrids |  |
|  | (Alaska x paper birch) | E |
| Unknown Conifer | Species unknown (any species) | Xc |
| Unknown Hardwood | Species unknown (any species) | Xh |
| Other conifer | Species not on BC species list | Zc |
| Other hardwood | Species not on BC species list | Zh |
| **Alberta** |  |  |
| **Phase 3** |  |  |
| Spruce | white spruce, Engelmann spruce | Sw |
| Balsam | balsam fir, sub alpine fir | Fb |
| Larch | alpine larch, tamarack | Lt |
| Pine | lodgepole pine, whitebark pine, limber pine, jack pine | P |
| Hardwood | trembling aspen, balsam poplar, white birch | A |

Engelmann spruce and alpine firs are located in western upper foothills and Rocky Mountain areas. White spruce and balsam fir are in all other locations. Undifferentiated hardwood (A) used if species difficult to identify

|  |  |  |
| --- | --- | --- |
| **AVI** |  |  |
| Spruce | white spruce, Engelmann spruce | Sw |
| Pine | lodgepole pine, whitebark pine, limber pine, jack pine | P |
| Balsam fir | balsam fir, sub alpine fir | Fb |
| Larch | alpine larch, tamarack | Lt |
| Poplar | trembling aspen, balsam poplar, plains cottonwood, |  |
|  | Narrow-leaf cottonwood | A |

AVI recognizes separate species for spruce, pine, fir, larch, and poplar; however, generic codes were used if species separation or identification was difficult.

**Saskatchewan**

**UTM**

Generic species codes were not used.

**SFVI**

Generic species codes were not used.



**Manitoba**

**Pre FLI**

Generic species codes were not used.

**FLI**

Generic species codes were not used.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Ontario** | | |  |  |  |  |
| **FRI, FRI FIM, and FRI NBI** | | | | | |  |
| Other hardwood | | | beech, basswood, butternut, black cherry, cherry | | | |
|  |  |  | any (Prun sero, Prun virg, Prun pens, Prun avia) | | | |
|  |  |  | mix, white elm, hickory (Cary cord and Cary orav), | | | |
|  |  |  | ironwood, black or honey locust, black walnut, paw | | | |
|  |  |  | paw, sassafras, sycamore, tulip tree, black gum | | | OH |
| Pine, any mix | | | Austrian, jack, pitch, red, scots, eastern white | | | PX |
| Oak, any mix | | | red, black, bur, pin, shumard, swamp white, white | | | OX |
| Maple, any mix | | | black, hard (sugar), soft (red), Manitoba, mountain, | | | |
|  |  |  | Norway, silver, striped, | | | MX |
| Ash, any mix | | | black, blue, pumpkin, red (or green), white | | | AX |
| Elm, any mix | | | red (or slippery), rock, white (or American) | | | EX |
| Spruce, any mix | | | black, Colorado, koyama, Norway, red, white | | | SX |
| **Quebec** | | |  |  |  |  |
| **TIE (Troisième Inventaire Écoforestier)** | | | | | |  |
| Fir/white spruce mix | | | balsam fir and white spruce (except for l‟île | | | d‟ |
|  |  |  | Anticosti, les îles Mingan, and les îles de la | | | |
|  |  |  | Madeleine where white spruce is identified with a | | | |
|  |  |  | G) | | | S |
| Spruce | | | black spruce and red spruce | | | E |
| Conifer, any mix | | | spruce (black, white, red, or mix), fir, pine (white, | | | |
|  |  |  | red, jack), cedar, hemlock, larch, plantation | | | |
|  |  |  | softwood (<7m) | | | R |
| Conifer undetermined | | | any conifer | | | Rx |
| Plantation conifer (>7m) | | | plantation with unidentified conifer with height > 7 | | | ReS |
|  |  |  |  |  |  |  |

If R appears first and represents a pure softwood mix polygon (Résineux), then the second species listed after the R is the dominant species of the mix. If R appears as the first species in a softwood dominant mixedwood with intolerant hardwoods, then the conifer species will be larch, hemlock and cedar. If R appears first in a softwood dominated mixedwood with yellow birch or tolerant or moist hardwoods, then softwood can be any species. If R



appears as a second or third species in hardwood dominated mixedwood, then softwood can be any species.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Birch | | white birch, grey birch | | |  | Bb |
| Moist hardwoods | | elms, black ash, silver maple, yellow birch, | | | red |  |
|  |  | maple, balsam poplar | | |  | Fh |
| Tolerant hardwoods | | American beech, red oak, white oak, | | | hop- |  |
|  |  | hornbeam, yellow birch, red maple, sugar maple, | | | |  |
|  |  | basswood, hickory (Cary cord an Cary orav), | | | |  |
|  |  | butternut | | |  | Ft |
| Intolerant hardwoods | | white birch, poplars (Popu trem, Popu delt, Popu | | | |  |
|  |  | gran, Popu balb, Popu delx) | | |  | Fi |
| Noncommercial hardwood cherries (Prun virg and Prun pens), alders (Alnu | | | | | |  |
|  |  | viri and Alnu rugo, mountain ash (*Sorbus* | | | |  |
|  |  | *americana* and *Sorbus decora*), willow, service | | | |  |
|  |  | berry (*Amelanchier arborea* and *Amelanchier* | | | |  |
|  |  | *laevis*), mountain maple | | |  | Fnc |
| Hardwoods undeterminedany hardwood, plantation hardwood (<7m ht) | | | | |  | Fx, F |
| Plantation hardwood (>7m)plantation with unidentified hardwood (> 7m ht) | | | | | | FeL |
|  |  |  |  |  |  |  |
| **Prince Edward Island** | |  |  |  |  |  |
| Spruce/fir | | balsam fir, red spruce | | |  | SF |
| **New Brunswick** | |  |  |  |  |  |
| Spruce | | black spruce, red spruce, white spruce occur but | | | |  |
|  |  | individually do not make up 10% of stand, to a | | | |  |
|  |  | maximum of 20% of stand volume. | | |  | SP |
| Spruce/fir | | spruce is dominant (red spruce, white spruce, black | | | |  |
|  |  | spruce), mixed with balsam fir but do not | | | |  |
|  |  | individually make up 10% of stand, to a maximum | | | |  |
|  |  | of 20% of stand volume. | | |  | SF |
| Fir/spruce | | balsam fir is dominant mixed with spruce species | | | |  |
|  |  | but individually do not make up 10% of stand, up to | | | |  |
|  |  | 20% of stand volume. | | |  | FS |
| Pine | | pine mixed up to 20% of stand volume, | | | jack, |  |
|  |  | eastern white, red | | |  | PI |
| Other softwood | | larch, cedar, and hemlock occur but individually do | | | |  |
|  |  | not make up 10% of stand, grouped to a maximum | | | |  |
|  |  | of 20% of stand. | | |  | OS |
| Softwood | | any one or group of softwood species (PI, | | | OS) |  |
|  |  | occur but individually do not make up 10% of sand, | | | |  |
|  |  | to a maximum of 20%. | | |  | SW |



|  |  |  |  |
| --- | --- | --- | --- |
| Other hardwood | oak, ash, elm, basswood, ironwood, silver maple |  | OH |
| Tolerant hardwood | red maple, sugar maple, yellow birch, beech, and | |  |
|  | other hardwood (OH) occur but do not individually | |  |
|  | make up 10% of stand, to a maximum of 20%. |  | TH |
| Poplar | trembling aspen, largetooth aspen, balsam poplar |  | PO |
| Birch | white birch, grey birch |  | BI |
| Intolerant hardwood | poplar (PO) and birch (BI) and any hardwood not | |  |
|  | listed as TH or NC, individually do not make up | |  |
|  | 10% of stand, to a maximum of 20% |  | IH |
| Hardwood | any one or grouped hardwood species that | |  |
|  | individually does not make up 10% of stand, to a | |  |
|  | maximum of 20% |  | HW |
| Non commercial | hardwoods tree species, cherries, alders, willows, | |  |
|  | mountain maple, mountain ash, striped maple |  | NC |
| **Nova Scotia** |  |  |  |
| Spruce | red spruce and black spruce – discontinued in 2002 | | XS |
| Other softwood | larch, cedar, hemlock – discontinued in 2002 |  | OS |
| Other hardwood | oak, ash, elm, basswood, ironwood, silver maple |  | OH |
| Unclassified softwood | treated stands where vegetation is too short | to |  |
|  | determine species. |  | US |
| Unclassified hardwood | treated stands where vegetation is too short | to |  |
|  | determine species. |  | UH |
| Unclassified species | for mixedwood stands too short to determine | |  |
|  | species |  | UC |
| Intolerant hardwood | poplars and birch- discontinued in 2002. |  | IH |
| Tolerant hardwood | red maple, sugar maple, yellow birch, beech, other | |  |
|  | hardwood- discontinued in 2002. |  | TH |

**Newfoundland and Labrador**

Generic species codes were not used.

**Yukon Territories**

Generic species codes were not used.

**Northwest Territories**

Generic species codes were not used.



**APPENDIX 10**

**STAND ORIGIN (AGE) – SUMMARY OF CANADIAN**

**FOREST INVENTORIES**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 10 Stand Origin (Age) - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **TYPE** | **FIELD** | **Range** | **Common Inventory - Actual year or upper and lower bound for decade class or age classes** | | | | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |
| **BC** | Forest Cover Inventory | ACTUAL | AGE | Nearest year or nearest 10 years | e.g 160 or 166 | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| VRI | ACTUAL | AGE | Nearest year or decade | e.g. 166 or 1960 | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | | | |  |  |  |  |  |  |  |  |  |
|  | Phase 3 | ORIGIN | Origin | Class - 10 year less 1st and last digits of year | Decade e.g 87 = 1870 CLASS= 1870 - 1879 | | | |  | Actual e.g 1947 |  |  |  |  |  |  |  |
| **AB** |  |  |  |  |  | | | |  |  |  |  |  |  |  |  |  |
| AVI 2.1 | ORIGIN | Origin | Class - 10 year or actual | Decade e.g. 87 = 1870 CLASS= 1870 - 1879 | | | |  | Actual e.g 1947 |  |  |  |  |  |  |  |
|  |  |  |  |  |  | | | |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1+ | ORIGIN | Origin | Class - 10 year or actual | Decade e.g 87 = 1870 CLASS= 1870 - 1879 | | | |  | Actual e.g 1947 |  |  |  |  |  |  |  |
|  |  |  |  |  |  | | | |  |  |  |  |  |  |  |  |  |
| **SK** | UTM | ORIGIN | Origin | Class - 10 year less 1st and last digits of year | Decade e.g. 94 = 1940 CLASS= 1936-1945 | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SFVI 4.0 | ORIGIN | Origin | Nearest year or decade | e.g Nearest yr=a with 1957 e.g decade = d with 1950 with class 1946 to 1955 | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | PRE 1992 | NONE | NO DATA FIELD | Age not recorded prior to 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MB** |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |
| 1992 - 1997 | ORIGIN | YEAR\_ORG | Nearest Year | e.g. 1964 | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | | |  |  |  |  |  |  |
|  | FLI | ORIGIN | ORIGIN | Nearest year | e.g 1916 |  |  |  | inventory yr = 2001 fmu 13, 2002 fmu 14 | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI | ACTUAL | AGE | Nearest year | e.g 1925 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ON** | FRI FIM | ORIGIN | OAGE | Nearest year minus reference year | e.g 1910 |  |  |  |  |  |  |  |  |  |  |  |  |
| UAGE |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI NBI | ACTUAL OR | AGE | Nearest year | Whitefeather to nearest year, Taashekaywin and Kenogami use Origin, e.g 125 (whitefeather) all others use years of origin e.g 1910 | | | | | | | |  |  |  |  |  |
|  | ORIGIN |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Equienne (Even Aged) - 20 year classes |  | 10 | 30 | 50 | 70 | 90 | 120 |  |  |  |  |  |  |
|  |  |  |  |  | 0-20 | 21-40 | 41-60 | 61-80 | 81-100 | 101-INFINITY |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | |  |  | |  |  | | |  |  |  |  |
|  |  |  |  | Inequienne (Uneven Aged) | JIN (Young < 80 yrs) | |  | Lower limit=1 and upper limit=79 | | VIN (Old) >80 yrs) | Lower limit=80 and upper limit=infinity | | |  |  |  |  |
| **QC** | 3rd | CLASS | CAG\_CO |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Class d' age |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | A four or five digit number representing the overstory age and the understory age. For example; 12050 signifies that the dominant layer, | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Etagee (2-layered) | Two layered stand represented by two non consecutive age classes. | | | | | in this case overstory, has a 120 yr age class and the understory a 50 year age class. If the code was 50120 it would indicate the | | | | | | |  |
|  |  |  |  | dominant layer, the understory in this case, is 50 years old and the overstory 120 years old. Refer to the age class codes identified for | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | even aged stands to determine the upper and lower limit for CAS conversion. | | | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PE** | 2000 | - | NO DATA FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2003 | - | NO DATA FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NB** |  |  |  |  | bF |  | 3 | 4 | 5 | 6 | 7 | 8 |  |  |  |  |  |
| 2003 | CLASS | AGE | bF and S only classes |  | 21-30 | 31-40 | 41-50 | 51- 60 | 61-70 | 71 INFINITY |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | S |  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 16-20 | 31-45 | 46-60 | 61-75 | 76-90 | 91-105 | 106-120 | 121-INFINITY |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **NS** | Pre 2006 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | ACTUAL | AGE | Nearest Year to a Maximum of 110 | e.g. 98 - calculation based on ave. stand height and site | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Insular Newfoundland | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |  |  |
|  | 2005 | CLASS | AGE | 20yr Classes | 0-20 | 21-40 | 41-60 | 61-80 | 81-100 | 101-120 | 121-INFINITY |  |  |  |
| **NL** |  |  |  |  |  |  |
|  | Labrador |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 0-20 | 21-40 | 41-60 | 61-80 | 81-100 | 101-120 | 121-140 | 141-160 | 160-INFINITY |  |
|  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 | - | NO DATA FIELD | Age not recorded |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | | | |  |  |  |  |  |  |  |  |  |
| **PANP** | 1968 | CLASS | No Age Field. Can use C#COND | Variable classes | Can derive a general age class from Canopy and Understory Condition | | | | 1 = 10 yrs | 2 or 2A= 10 - 30 yrs | 3 or 3A= 30 - 60 yrs | 4 = 60 - 80 yrs | 5 or 5A = >80 yrs |  |  |  |  |
|  |  |  | and U#COND field |  | Class codes 1 to 5. Note: age as of 1968. | | |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2.1 | ACTUAL | AGE | Nearest year or nearest 10 years | e.g. 115 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NT** | 3.0 | ORIGIN | ORIGIN | Grouped in 10yr classes | e.g 1950 | Class = 1945-1955 | | actual = 1953 |  |  |  |  |  |  |  |  |  |
| MINORIGIN | actual shown if known |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**APPENDIX 11**

**SITE CLASS, AND SITE INDEX,**

**AND CAS CONVERSION**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 11 Site Class and Site Index and CAS Conversion**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **SITE CLASS** | |  |  |  |  |  | **CAS CONVERSION** | |  |
| **PROVINCE** | **STANDARD** | **FIELD** |  |  |  |  |  | **SITE INDEX** | **COMMENT** |  | |  |  |
| **UNPROD** | **POOR** | **MED** | **GOOD** | **HIGH** | **SITE CLASS** | | **SITE INDEX** |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | **SITE\_CLASS** | **U P M G** |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Forest Cover | SITE\_INDEX | L | P | M | G |  | 1-56 |  | L and P = P M = M G = G | | Null, Miss, SI number |  |
|  | Inventory | SITE |  |  |  |
| **BC** |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| VRI | SITE\_INDEX |  |  |  |  |  | 1-56 |  | SITE INDEX ONLY |  | Null, Miss, SI number |  |
|  |  |  |  |  |  |  |  |  |
|  | SITE |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | |  |  |
|  | AVI 2.1 | TPR | U | F | M | G |  |  |  | U=U F=P M=M G=G | |  |  |
| **AB** |  |  |  |  |  |  |  |  |  |  | |  |  |
| AVI 2.1+ | TPR | U | F | M | G |  |  |  | U=U F=P M=M G=G | |  |  |
|  |  |  |  |  |  |  |  |  |  |  | |  |  |
|  | Phase 3 | SITE INDEX | U | F | M | G |  |  |  | U=U F=P M=M G=G | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **SK** | UTM | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| SFVI 4.0 | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MB** | PRE 1998 | SITE |  | 3 | 2 | 1 |  |  |  | 3= P 2= M 1=G |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| FLI | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | |  |  |
|  | FRI | SITE | 4 | 3 | 2 | 1 | X |  |  | 4=P 3=P 2=M 1&X=G | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ON** | FRI FIM | OSC OSI | 4 | 3 | 2 | 1 | 0 | 0.1 - 40.0 |  | 4&3=P 2=M 1&0=G | | Null, Miss, SI number |  |
| USC OSI |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | |  |  |
|  | FRI NBI | SITE | 4 | 3 | 2 | 1 | X |  |  | 4&3=P 2=M 1&X=G | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **QC** | 3rd | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PE** | 2000 | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NB** | Pre 2003 | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2003 | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2006 | SITE (ST) |  |  |  |  |  |  | CLI Derived (Prior to |  |  |  |  |
| **NS** |  |  |  |  |  |  | 2001 for Sw only) |  |  |  |  |
|  |  |  |  |  |  |  |  | Sw: 0,1,2,3,4=P, 5-9=M, 10- | |  |  |
| 2006 | SITE |  |  |  |  |  |  | CLI Derived |  |  |
|  |  |  |  |  |  |  | 13=G | Hw: 0,1=P, |  |  |
|  | (STSw or STHw) |  |  |  |  |  |  | (For Sw and Hw) |  |  |
|  |  |  |  |  |  |  |  | 2 3=M 4 5=G |  |  |  |
| **NL** | 2005 | SITE |  | P | M | G | H |  | CLI Derived | P=P M=M G&H=G |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PANP** | 1968 | No Field |  |  |  |  |  |  | NO FIELD FOR SITE |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2.1 | SITE\_CLASS | L | P | M | G |  | 0.1 - 30.0 |  | L&P=P M=M G=G |  | Null, Miss, SI number |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NT** | 3.0 | SITE CLASS | 5 | 4 | 3 | 2 | 1 | 1.0 - 99.0 |  | 5=U 4=P 3=M 2&1=G | | Null, Miss, SI number |  |
| si\_50 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**APPENDIX 12**

**NON-FORESTED, NON-VEGETATED, AND UNPRODUCTIVE FOREST – SUMMARY OF CANADIAN FOREST INVENTORIES**

**CAS NON-FORESTED NON-VEGETATED, AND**

**UNPRODUCTIVE FOREST CODES**

**CAS NON-FORESTED, NON-VEGETATED,**

**CONVERSION TABLE**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 12 Non-Forested, Non-Vegetated, and Unproductive Forest - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PROVINCE** |  | **STANDARD** |  | **TYPE** |  | **FIELD** |  | **CODES** |  |  |  |  |  |  |  |  |  |  |  | Page 1 of 2 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive forest Lands |  | NPFOR\_DESC | A For (Alpine forest), NPF(non-productive - linked to forest label), NC (Non comercial), NCBR (Non commercial Brush) | | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  | Forest Cover |  | Non commercial forest land |  | NFOR\_DESC |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Inventory |  | Non Forested Vegetated |  | NPFOR \_DESC | A (Alpine), R (Rock), CL(Clay Bank), Slide, G (Gravel Bar), L (Lake), RIV (River), S (Swamp), Muskeg, C (Cultivated), M (Meadow), | | | | | | | | | GR (Gravel Pit) , ICE (Icefield), MUD, (Mud Flat) | | | | |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  | Naturally Non Vegetated |  | OR (Open Range), U (urban), NP Br (non productive brush), NPBU (non productive burn), NP (non productive miscellaneous), P (Hayfield), TIDE (Tidal Flat), SAND (Sand) | | | | | | | | | | | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | BC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Non Forested Vegetated |  | Several Options: LAND\_CD\_1, | ST (Shrub Tall), SL (Shrub Low), HE (Herbs), HF( Forbs), HG (Graminoids), BY (Bryoid), BM (Moss) BL (Lichen) | | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | BCLCS\_LV\_4 and 5, HERB\_TYP |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  | VRI |  | Naturally and Anthropogenic |  | Several Options: BCLCS\_LV\_ 5, | GL (Glacier), PN (Snow Cover), BR (Bedrock), TA (Talus), BI (Blockfield), MZ (Rubbly Mines Spoils), LB (Lava Bed), BU (Recent Burn) | | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | RS (River Sediments), ES (Exposed Soil), LS (Pond or Lake Sediments), RM (Reservoir Margin), BE (Beach), LL (Landing), RZ (Road Surface), MU (Mud Flat), CB (Cut Bank) | | | | | | | | | | | |  |  |  |  |
|  |  |  |  |  | Non Vegetated |  | NVEG\_TYPE\_1, LAND\_CD\_1 | MN (Moraine), GP (Gravel Pit), TZ (Tailings), RN (Railway Surface), UR (Urban), AP (Airport), MI (Open Pit Mine), OT (Other) | | | | | | | Can also derive from Land\_cover\_class\_code (includes Ro (Rock), EL (Exposed Land, and SI (Snow/Ice) | | | | | | |  |  |
|  |  |  |  |  |  |  |  | LA (Lake, RE (Reservoir), RI (River Stream), OC (Ocean), OP (Open) | | | |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  | S1, S2, S3, S4 | TM (Treed Muskeg), CS (Scrub Coniferous), DS (Scrub Deciduous) | | | |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Phase 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Naturally and Anthropogenic Non |  | S1, S2, S3, S4 | W (Water), FL (Flooded), OM (Open Muskeg), SA (Sand), CB (Cut Bank), RB (Rock Barren), BS (Soil Barren), GR (Grassland), CL (Cleared Land), CU (Cultivated) | | | | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Vegetated, Non Forested |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AB |  |  |  | Vegetated Anthropogenic |  | ANTH\_VEG, UANTH\_NON | CIP (Rights-of-way), CIW (Geophysical), CA (Annual Crops), CP (Perennial Crops), CPR (Rough Pasture) | | | | | | | CIU (Unknown) |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Non Vegetated Anthropogenic |  | ANTH\_NON, UANTH\_NON | ASC (Cities), ASR (Ribbon Development), AII (Industrial), AIM (Mines), AIF (Farmstead), AIG (Pits), AIE (Peat Extraction), AIH (Permanent Rights-of-way) | | | | | | | | | | | AIU (Unknown) | | AIW (Man-Made Water AVI 2.2 or | AIL (Logging) |  |
|  |  |  |  |  |  |  |
|  |  |  | AVI 2.1 |  |  | Wellhead CVI) | AIP (Pipeline) |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | AVI 2.1+ |  | Naturally Non Vegetated |  | NAT\_NON, UNAT\_NON | NMB (Recent Burns), NMC (Cut Bank), NMR (Rock), NMS (Sand), NWI (Snow/ Ice), NWL (Lake), NWR (River), NWF (Flooded) ,NMM (Mineral) ,NMG (Gravel) | | | | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forest Vegetated |  | NFL, UNFL | HG (Graminoid), BR (Byrophytes + Lichens), HF (Forbes), SO (Shrub Open), SC (Shrub Closed) | | | | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  | NP | 3100 Treed Muskeg, 3200 Treed Rock | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | UTM |  | Naturally and Anthropogenic |  | NP | 3800 Sand, 5100 Flooded, 3700 Clearing, 3400 Clear Rock, 5210 Lake, 5220 Large Stream or River, 5200 Water Surface Unknown | | | | | | | | |  | 4000 Pasture or Cropland | | |  |  |  |
|  |  |  |  | Non Vegetated |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated |  | NP | 3300 Clear Muskeg, 3500 Brushland, 3600 Meadow, 3900 Non productive Burnover, 9000 Not Typed | | | | | | |  |  |  | GR (Grassland) In | | SB (Scrub Brush) In | |  |  |
|  |  |  |  |  |  |  |  |  | Field R1 or R2 | | Field R1 or R2 | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | SK |  |  |  |  |  |  |  | | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  | Non Forested Vegetated |  | Non Forested | TS (Tall Shrub), LS ( Low Shrub), He (Herb), Fe (Fern), Gr (Grass), Mo (Moss), Li (Lichen), AV (Aquatic Vegetation) | | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Naturally Non Vegetated |  | Non Vegetated | UK (Unknown), CB (Cutbank), RK (Rock), SA (Sand), MS (Mineral Soil), GR (Gravel), SB (Sandbar), WA (Water) | | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  | SFVI 4.0 |  |  | LA (Lake), RI (River), FL (Flood), SL (Seasonal Flood), FP (Flooded Borrow Pit), ST (Stream) | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | ALA (Agriculture Pasture), POP (Cities), REC (Recreation Area), PEX (Peat Extraction), GPI (Gravel Pit), BPI (Borrow Pit), MIS (Mine), ASA (Active Sawmill Site), | | | | | | | | | | | |  |  |  |  |
|  |  |  |  |  | Non Vegetated Anthropogenic |  | Non Vegetated | NSA (Nonactive Sawmill Site), OIS (Other Industrial Site), OUS (Other Unspecified Site), AFS ( Air Facility Site), CEM (Cemetery), WEH (Well Head), TAR (Tower Site), | | | | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  | RWC (Road), RRC (Railway), TIC (Transmission), PLC (Pipeline), MPC (Multi Purpose or Other Corridor) | | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Vegetated |  |  |  | 801 (Barren Tundra), 802, 803 (Barren rock), 804 (Open Sand dunes), 801-804 (Barren- Barren Rock) | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | Non Forested Land | 800 Series | 811 (Hay land), 812 (Cropland), 813 (Pasture) 815 (Land Clearing In Progress), 816 (Abandoned | | | | | | Cultivated Land) 811-816 (Agriculture) | | | |  |  |  |  |  |
|  |  |  |  |  | Vegetated Anthropogenic |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 821 (Dry Upland Ridge Prairie) 822 (Moist Prairie) 823 (Wet Land) 824 (Sand Prairie) 821-824 (Meadows) | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  | Non Productive Forested Land | 700 Series | 701-704 (Treed Muskeg), 711-713-(Treed Rock), 721-725 (Shrub) 731-734 (Other ) | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  | Pre 1998 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Non Forested Vegetated |  | Non Forested Land | 831-839 | 831 (Muskeg) 832 ( String bogs), 835 (Marsh), 838(Mud/ Salt Flats) 839 (Sand Beaches) | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | | | | | | | |  | |  |  |  |  |  |
|  |  |  |  |  | Non Vegetated Anthropogenic |  | Non Forested land | 841-859 | 841 (Town), 842 (Air Strips), 843 (Roads, Railroads, Dykes, Dams) 844 (Transmission, Pipelines), 845 (Gravel Pits, | | | | | | | | Mines, Dumps) | |  |  |  |  |  |
|  | MB |  |  |  |  | 846 (Community Pasture) 847 (Drainage Ditch) 848 (Beaver Floods), 849 (Dugout, Water Holes), 851 (Oil Fields, Wells) | | | | | | | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Naturally Non Vegetated Water |  | Water | 901-995 | 901 (River) 991-995 (Lakes and Rivers), 900 (General water categroy) | | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated |  |  | SO (Open Shrub), SC (Closed Shrub), HG (Grassland), HF (Forb), HU (Undifferentiated), BR (Bryophyte), CL (Lichen) | | | | | | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | NNF\_ANTH | AL (Alder), CC (Hazel) CS (Dogwood) AS (Mountain Maple), VI (High Bush Cranberry), RA( Rose), DL (Honeysuckle), AU (Bearberry), VA (Leather Leaf, | | | | | | | | | | | Blueberry, Labrador Tea) | |  |  |  |
|  |  |  | FLI |  | Naturally Non Vegetated |  | Natural Non Forest and | NMB (Recent Burns), NMC (Cut Bank), NMF (Bluff), NMR (Rock), NMS (Dunes, Beaches, Sand), NMM (Mineral Soil), NMG (Gravel bars, Sand bars), NWL (Lakes), NWR (River), NWF (Flooded Uplands) | | | | | | | | | | | | | |  |  |
|  |  |  |  |  |  | Anthropogenic |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Vegetated Anthropogenic |  |  | CIP (Pipeline, Transmission, Tower Site), CIW (Well site, Geophysical), CIU (Land Cleared Unknown), ASC (Cities), ASP (Silv. Test Site), ASN (Recreation Note), AIN (Roads), AIR (Railway), AIG (Gravel Pits), AII (Industrial, | | | | | | | | | | | | | | |  |
|  |  |  |  |  |  |  | Dump), AIW (Lagoons, Reservoir, Flooded Pits), AIA (Air Strips), AIF (Farmstead), AIU (Unknown) | | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Naturally and Anthropogenic |  | R - NON PROD | 315 | (Agriculture) | 313 | (Rock) | 317, 302, 308 |  | (Unclassified) | 62 | (Island <8 Ha) | | 64 | (Lake) | 152 | (River) |  |  |
|  |  |  |  |  | Non Vegetated |  | MNR - CODE | DAL | Rock or RK | UCL |  | I | L | R |  |  |
|  |  |  | FRI |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Unproductive Forest, Non |  | MNR CODE | 310 | (Treed Muskeg) | 311 | (Open Muskeg) | 312 | (Brush and Alder) | |  |  |  | 316 | (Grass and Meadow) | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | ON |  |  |  | Forested Vegetated |  | TM | OM | BA |  |  |  | GR |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | FRI FIM |  | Same as FRI |  | MNR CODE | Same as FRI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | FRI NBI |  | Same as FRI |  | MNR CODE | Same as FRI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | | | | | | | |  |  |  |  |  |  |
|  |  |  |  |  | Categories de terrains: contains |  |  | EAU (Lakes and Rivers) , INO ( Flood), AL (Alder), DH (Denuded and Semi-Denuded Humid), DS (Denuded and Semi-Denuded Dry) | | | | | | | | | |  |  |  |  |  |  |
|  |  |  |  |  |  | Eau | AEP (Landing), AER ( Airport), BHE ( Dam) BAS ( Lagoon) BLE (Blueberry), CFO ( Forestry Camp), CAM (Campsite) | | | | | | | |  |  |  |  |  |  |  |  |
|  | QC |  | 3rd |  | Unproductive Forest, Naturally |  | Improductifs | CAR (Open Pit Mine), CEX (Research Centre) CHE (Hydro Centre), CU (Urban Centre), OBS (Towers), CV (RV Site), CF (Fire break) | | | | | | | | | |  |  |  |  |  |  |
|  |  |  | Non Vegetated, Non Vegetated |  |  |  |  |  |  |  |
|  |  |  |  | Vocation Non forestiere | DEM (Mine Tailing), DEP (Dump), GOL (Golf), GR (Gravel Pit), HAB (Settlement), VRG (Orchard), ILE (Wooded Island < 1ha) | | | | | | | | | |  |  |  |  |  |  |
|  |  |  |  |  | Anthropogenic, and Non Forested |  |  |  |  |  |  |  |
|  |  |  |  |  |  | TER\_CO | CNE (Botianical Garden), LTE (Transmission, Pipeline), MI (Mine), INC (Unknown), PPN (Plantation), CS (Ski Hill), RO (Roads) | | | | | | | | | |  |  |  |  |  |  |
|  |  |  |  |  | Vegetated |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | SC (Sawmill Site), DEF (Clearing), A (Agriculture), US (Factory), VIL (Rec Site), CIM (Car Wreck Sites) | | | | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Naturally and Anthropogenic Non |  |  | bo (Bog), al (Alder), so (Swamps open) | | |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Pre 2000 |  | Vegetated, Non Forested |  | CoverClass | cl (Cleared), clu (Cleared Unproductive), ag (Agriculture), gp (Gravel Pit), re (Recreation), Sd (Dune) | | | | | | |  |  |  |  |  |  |  |  |  |
|  | PE |  |  |  | Vegetated |  |  | (Lake or Pond = symbol) | |  |  |  |  |  |  |  |  |  |  |  | 6/13/2011 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Appendix 12 Non-Forested, Non-Vegetated, and Unproductive Forest - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PROVINCE** |  | **STANDARD** |  | **TYPE** |  | **FIELD** |  | **CODES** | |  |  |  |  |  | Page 2 of 2 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Vegetated Anthropogenic, |  |  | Agriculture: BLB (Blueberries), CRN (Cranberries), GRN (Grain), HAY (Hay), PAS (Pasture), POT (Potatoes), OTH (Other) | | | | | |  |  | Non |  |
|  |  |  |  |  | Naturally Non Vegetated, |  |  |  |  |  |
|  |  |  | 2000 |  |  | CoverClass | Agric., Non For., Non Wetland: BSB (Backshore Beach), BLD (Building), WWW (Coastal Inlet Water), GRS (Grass), PAV (Paved), SHR (Shrub), TREE (Tree), WAT (Water), | | | | | | | | BAR |  |
|  |  |  |  | Unproductive Forest, Non |  |  |
|  |  |  |  |  |  |  | (Bare Soil) | | |  |  |  |  |  |  |  |
|  |  |  |  |  | Forested Vegetated |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Pre 2003 |  | Non Forest |  |  | AC (Agriculture), OC (Occupied), RO (Rock), AF (Alder on Field), AC (Alder on Cut), GP (Pit), MI (Mine) | | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | |  |  |  |  |  |  |
|  |  |  |  |  | Non Vegetated Water |  | Water | LK (Lake), ON (Ocean), PN (Pond), RV (River), SL (Salt Lake) | | | |  |  |  |  |  |  |
|  |  |  |  |  | Non Forest vegetated Wetland |  | Wetland (VT) | AL (Alder), SV (Shrub other than alder) | | |  |  |  |  |  |  |  |
|  |  |  |  |  | Freshwater |  | Wetland (F) | AB (Aquatic bed), BC (Beach), BO (Bog), FE (Fen), FM (Marsh), FW (Flooded), SB (Shrub Wetland) | | | | |  |  |  |  |  |
|  |  |  |  |  | Coastal |  | Wetland ( C ) | BC (Beach), CM (Marsh), DU (Dune), RK (Rocky Shore), TF (Tidal Flat) | | | | |  |  |  |  |  |
|  | NB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | AGR (Agriculture) | CB (Cult. Berries), CN (Horticulture), CL (Cultivated), CO (Cultivated Orchards), CT (Xmas Trees), FO (Fundy Dykeland), FP (Fallow Pasture) | | | | | |  |  |  |  |
|  |  |  | 2003 |  |  |  |  |  |  |  |
|  |  |  |  | Non Forested Land: Non |  | DND (Defence) | BA (Base), EA (Exercise Area), IZ (Impact Zone) | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | IND (Industrial) | GP (Gravel Pit) IP (Industrial Plants), LF (Landfill Sites), MI (MIne), PB (Peat Bogs), QU (Quarry), SG (Sewage Lagoons) | | | | |  |  |  |  |  |
|  |  |  |  |  | Vegetated Anthropogenic, |  |  |  |  |  |  |
|  |  |  |  |  |  | INF (Infrastructure) | AI (Airstrips), CS (Communications), PP (Pipeline), RD (Roads), RR (Rail Roads), TM (Transmission Lines) | | | | |  |  |  |  |  |
|  |  |  |  |  | Naturally Non Vegetated |  |  |  |  |  |  |
|  |  |  |  |  |  | REC (Recreation) | CG (Campground), GC (Golf), LE (Leasure Area), PA (Parks), SK (Ski) | | | | |  |  |  |  |  |
|  |  |  |  |  | (Wildland) |  |  |  |  |  |  |
|  |  |  |  |  |  | SET (Settlement) | RU (Rural), UR (Urban) | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | WIL (Wildland) | BL (Barren Land), RF (River Flatlands), RO (Rock Outcrops) | | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | | |  |  |  |  |  |
|  |  |  | Pre 2006 |  | Non Forested vegetated, non vegetated |  |  | Alders, Barren, Blue Berry, Brush and Alders, Agriculture, Gravel Pit | | | | |  |  |  |  |  |
|  |  |  |  | anthropogenic, naturally non vegetated, and |  |  | Marsh/ Swamp, Open bogs, Urban, Rock Barren, Dump, Treed Bog | | | | |  |  |  |  |  |
|  |  |  |  |  | unproductive forest |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | Code 95-99 (Cover type) 70-99 (Non Forested) | | | |  |  |  |  |  |  |
|  | NS |  |  |  | Non Forested Vegetated, Non |  | FOR/ NON FOR | 95 (Coastal Offshore Non-Land), 96 (Lake Island), 97 (Off Shore Islands), 98 (Mainland Non Forested) | | | | |  |  |  |  |  |
|  |  |  | 2006 |  | Vegetated Anthropogenic, |  | 4-digit code, the first two digits (95- | 70 (Wetland General), 71 (Beaver Flow), 72 (Open Bog), 73 (Treed Bogs), 74 (Coast Wetlands), 75 (Wetland In Lake), 76 (Cliff, Dunes, Coastal Rocky) | | | | | | |  |  |  |
|  |  |  |  | Naturally Non Vegetated, and |  | 99), the second two digits | 77 ( Inland Water), 78 (Ocean) | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  | (33,38,39,70-99) | 83, 33 (Brush), 84 (Rock Barren), 85 (Barren), 86 (Agriculture), 87 (Urban), 88, 38 (Alders< 75%), 89, 39 (Alders > 75%), 91 (Blueberries) 92 (Misc) | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  | 93 (Land Fill), 94 (Beach), 95 (Gravel Pit), 96 (Pipeline Corridor ), 97 (Powerline), 98 (Road Corridor), 99 (Rail Lines) | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Pre 2005 |  | Non Forested Vegetated, Naturally |  |  | Rb( Rock Barren), Sb ( Soil Barren), C (Cleared Land), A (Agriculture), Rw (Right-of-way) , Res (Residential), | | | | | Bog , Treed bog (Symbol) |  |  |  |  |
|  |  |  |  | and Anthropogenic Non Vegetated |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated, Non |  | Non Forest Land | Rb( Rock Barren), Sb ( Soil Barren), Treed bog (Symbol), | | | | Organic Bog (Symbol), Wet Bog (Symbol), C (Cleared Land), A (Agriculture), Rw (Right-of-way) , Res (Residential), | | | |  |  |
|  | NL |  |  |  | Vegetated Anthropogenic, |  |  |  |
|  |  |  | 2005 |  | Naturally Non Vegetated |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Unproductive Forest |  | Non Productive Forest | S (>50% softwood species) H (>50% hardwood species). A non commercial height code (1 to 5) and crown closure code (1 to 4) are assigned. | | | | | | A biophysical class is assigned W (wet), D (dry), or R | | |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | (bedrock). | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | | | |  |  |  |  |  |  |
|  |  |  |  |  | Naturally Non Vegetated |  | shrln | Represents boundaries between land and water: Z(water), | | | |  |  |  |  |  |  |
|  |  |  |  |  | (Water) |  | U(unclassified or water areas), 8(unclassified area) | | | |  |  |  |  |  |  |
|  | WBNP |  | 1979 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Non Forested Vegetated, |  | v#pcm | Identified in vegetation plant community field. | | | 99(meadows), 1and 2(meadows seasonally submerged), 3(meadow seasonal short grass), 4(wet meadow), 5(semi- | | | | 17(wet muskeg), 18(shrub muskeg), | |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  | open prairie), 6(salt flats saline meadows), 98(ericaceous shrubland/thicket), 7(alder-willow thicket) | | |  | 13(disturbed after fire), 0(unclassified) | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | |  | | | |  |
|  |  |  |  |  | Non Forest Cover Class: contains |  | C#SPEC , U#SPEC | Identified in Overstory, Understory or Ground | | | Overstory, Understory field: 0 (nonforest or no data available); | | Ground Vegetation field: C (cleared land); FL (flooded land); M1 (lowland (wet site) herb | | | |  |
|  | PANP |  | 1968 |  | naturally and anthropogenic non |  | WATER (water body); ISLAND (island with no vegtation data | | and sedge cover); M2 (lowland (wet site) shrub cover; U1 (upland (dry site) herb and | | | |  |
|  |  |  |  | G#SPEC | Vegetation field | | |  |
|  |  |  |  |  | vegetated, non forested vegetated |  | available) |  | grass cover); U2 (upland (dry site) shrub cover) | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated(NV) |  | CLASS | S (Shrub), TS (Tall Shrub), TSo Tall Shrub Open, LS (Low Shrub), LSo Low Shru Open, H (Herb), C (Cryptogram), M (Mixed) | | | | | |  |  |  |  |
|  | YT |  | 2.1 |  | Non Vegetated Natural and |  | R (River) L (Lake), RS (River Sediment), E (Exposed Soil), S (Sand), B (Burned), RR (Bedrock or fragmented rock), Ro Rock , Ru | | | | | |  |  |  |  |
|  |  |  | Anthropogenic:Water (NW) |  | CL\_MOD |  |  |  |  |
|  |  |  |  |  |  | Rubble, O (Other) | | |  | RD (Road), G (Gravel Pit), T (Tailings) |  |  |  |  |  |
|  |  |  |  |  | Exposed (NE) Urban (NU) |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | LA (Lake), PO (Pond), RE (Reservoir), RI (River) SW (Salt Water) | | | | |  |  |  |  |  |
|  |  |  |  |  | Naturally and Anthropogenic |  |  | GL (Glacier), SC (Snow Cover), SI (Snow Ice), BR (Bedrock), LB (Lava Bed), RO (Rock Rubble), RT (Rubble Talus), MS (Mine Spoil) | | | | | |  |  |  |  |
|  |  |  |  |  |  | Type Class | AP (Airport), BE (Beach), BP (Urban), BU (Burn), CB (Cutbank), ES (Exposed Soil), GP (Ground Pit), LL (Landing), MO (Moraine) | | | | | |  |  |  |  |
|  | NT |  | 3.0 |  | Non Vegetated |  |  |  |  |  |
|  |  |  |  |  | MU (Mud Flat), PM (Open Pit Mine), LS (Pond Sediment), RR (Railway), RM (Reservoir Margin), RS (River Sediments), RD (Road Surface), TS (Tailings), EL | | | | | | |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | (Other) | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated |  | Type Class | ST (Tall Shrub), SL (Low Shrub), HG (Grass), HF (Forbs), HE (Herb), BM (Moss), BL (Lichen), BY (Bryoid) | | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

6/13/2011

**Appendix 12 CAS Non-Forested, Non-Vegetated, and Unproductive Forest Conversion**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PROVINCE** |  | **STANDARD** |  | **TYPE** |  | **FIELD** |  | **CAS Translation (Whenever a forest inventory includes crown closure for a non-forested attribute - then migrate into CROWN CLOSURE LYR field)** | | | | | | | | | |  |  |  | Page 1 of 2 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Forest Cover |  | Unproductive Forest |  | NPFOR\_DESC |  | A For = AL | NP=NP | NPL = NP |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Inventory |  |  | NFOR\_DESC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | (May be |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | converted to |  | Non Forested Vegetated |  | NPFOR \_DESC |  | A=AP | R=RK | CL-Claybank = EX | Slide = SL | Gravel Bar=WS | L-Lake = LA | RIV=RI | S-Swamp=SL | Muskeg=OM | C=CL | M=HG | TIDE = TF |  |  |  |  |
|  |  |  | VRI) |  |  |  | OR=HG | U=FA | NP Br=ST | NPBU=SD | NP=NP | G =WS | NC =SD | P-Hayfield= CL MUD=EX | | ICE=SI | GR = IN | SAND = SA | |  |  |  |
|  |  |  |  | Naturally Non Vegetated |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | NCBR = ST | NC = SD | OR = HG |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated |  | Several Options: LAND\_CD\_1, |  | ST=ST | SL=SL | HE=HE | HF=HF | HG=HG | BY=BR | BM=BR | BL=BR |  |  |  |  |  |  |  |  |
|  | BC |  |  |  |  | BCLCS\_LV\_4 and 5, HERB\_TYP |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Naturally and Anthropogenic |  |  |  | GL=SI | PN=SI | BR=RK | TA=RK | BI=RK | MZ-IN | LB=RK | GP=IN | TZ=IN | RN=FA | RS=WS | ES=EX | LS=WS | OT=OT |  |  |
|  |  |  |  |  |  | Several Options: BCLCS\_LV\_ 5, |  | RM=EX | BE=BE | LL=EX | RZ=FA | MU=WS | CB=EX | MN=EX | BU=EX |  |  | UR=SE | AP=FA | MI=IN |  |  |  |
|  |  |  | VRI |  | Non Vegetated |  | NVEG\_TYPE\_1, LAND\_CD\_1 |  | LA=LA | RE=LA | RI=RI | OC=OC |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | Land\_Cover\_Class\_Code, |  | GL=SI | PN=SI | BR=RK | TA=RK | BI=RK | MZ-IN | LB=RK | SI=SI | RO=RK | EL=EX | RS=WS | ES=EX | LS=WS | OT=OT |  |  |
|  |  |  |  |  | Land Cover Component (Can use |  |  | RM=EX | BE=BE | LL=EX | RZ=FA | MU=WS | CB=EX | MN=EX | GP=IN | TZ=IN | RN=FA | UR=SE | AP=FA | MI=IN |  |  |  |
|  |  |  |  |  | to identify non vegetated as well) |  | LAND\_CD\_1 |  | LA=LA | RE=LA | RI=RI | OC=OC | BU=EX | OP=EX |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  | OG |  | Treed Muskeg= TM |  | Scrub Coniferous=SC | | Scrub Deciduous=SD | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | UG |  | OG-6 |  | OG-6 |  | OG-6 |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Phase 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Naturally and Anthropogenic Non |  | OG |  | W=LA | FL=FL | Muskeg=OM | Sand=SA | Cut Bank=EX | Rock Barren=RK | Soil Barren=Ex | Grassland=HG | Clearedland=OT | Cultivated=CL |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Vegetated, Non Forested |  | UG |  | OG-8 | OG-8 | OG-7 | OG-7 | OG-7 | OG-7 | OG-7 | OG-7 | OG-7 | OG-7 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Vegetated Anthropogenic |  | ANTH\_VEG, UANTH\_VEG |  | CIP=FA | CIW=FA | CA=CL | CP=CL | CPR=CL | CIU=OT |  |  |  |  |  |  |  |  |  |  |
|  | AB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1 |  | Non Vegetated Anthropogenic |  | ANTH\_NON, UANTH\_NON |  | ASC=SE | ASR=SE | AII-IN | AIM=IN | AIF=SE | AIG=IN | AIE=IN | AIH=FA | AIW=FA | AIU=OT | AIL=HG | | AIP=FA |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | AVI 2.1+ |  | Naturally Non Vegetated |  | NAT\_NON, UNAT\_NON |  | NMB=EX | NMC=EX | NMR=RK | NMS=SA | NWI-SI | NWL=LA | NWR=RI | NWF=FL | NMM=RK | NMG=SD |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated |  | NFL, UNFL |  | HG=HG | BR=BR | HF=HF | SO=SL/ST | SC=ST/SL | NEED HEIGHT FIELD TO DETERMINE LOW SHRUB/TALL SHRUB | | | | SL=<2m |  |  |  |  |  |  |
|  |  |  |  |  |  |  | ST=>2m |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  | NP |  | 3100 | 3200 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | Treed Muskeg= TM | Treed Rock=TR |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | UTM |  | Naturally Non-Vegetated |  | NP |  | 3800 | 5100 | 3700 | 3400 | 5210 |  | 5220 |  | Water | 5200 |  | Water |  |  |  |  |
|  |  |  |  |  |  | Sand=SD | Flooded=FL | Clearing =OT | Clear Rock=RK | Water Lake Surface=LA | | River Surface, Large Stream=RI | |  | Unknown=FL |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated and |  | NP |  | 3300 | 3500 | 3600 | 3900 | Non | 4000 |  | 3700 | 3800 | 9000 | R1 or 2 GR=HG | | R1 or 2 SB=ST | |  |  |
|  |  |  |  |  | Non Vegetated Anthropogenic |  |  | Clear Muskeg=OM | Brushland=ST | Meadow=HG | Productive Burn-Over=SD | | Pasture or Cropland = CL | | Clearing=OT | Sand=SA | Not Typed OT |  |  |
|  | SK |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Non Forested Vegetated |  | Non Forested |  | TS=TS | LS=LS | NE=NE | FE=NF | GR=HG | MO=BR | LI=BR | AV=HF |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | SFVI 4.0 |  | Naturally Non Vegetated |  | Non Vegetated |  | UK=OT | CB=EX | RK=RK | SA=SA | MS=EX | GR=WS | SB=WS | WA=LA | LA=LA | RI=RI | FL=FL | SL=FL | FP=BP | ST=RI |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non-Vegetated Anthropogenic |  | Non Vegetated |  | ALA=CL | POP=SE | REC-FA | PEX=IN | GPI=IN | BPI=BP | MIS=IN | ASA=IN | NSA=IN | OIS=IN | OUS-IN |  |  |  |  |  |
|  |  |  |  |  |  |  | AFS=FA | CEM=SE | WEN=FA | TAR=FA | RWC=FA | RRC=FA | TIC=FA | PLC=FA | MPC-FA |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  | Non Vegetated |  | Non Forested Land |  | 801=BT | 802,803=RK | 804=SA | 811-813=CL | 815, 816=CL |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Natural and Anthropogenic |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  | Unproductive Forest |  | Non Productive Forested Land |  | 701-704=TM | 711-713=TR | 731-734=OT | 821-824=HG |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Pre 1998 |  | Non Forested Vegetated |  | Non Forested Land |  | 831=OM | 832=OM | 835=HG | 838=EX | 839=BE | 721-725=ST |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Vegetated Anthropogenic |  | Non Forested Land |  | 841=SE | 842=FA | 843=FA | 844=FA | 845=IN | 846=CL | 847=FA | 848=FL | 849=BP | 851=FA |  |  |  |  |  |  |
|  | MB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Naturally Non Vegetated Water |  | Water |  | 901=RI | 991=LA | 992=LA | 993=LA | 994=RI | 995=RI | 900=LA |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated |  |  |  |  |  |  |  |  |  |  |  |  | NOTE: shrub crown closure is included with the shrub code, e.g. SC6 | | | | |  |  |
|  |  |  |  |  |  |  |  |  | SO=SL | SC=ST | HG=HG | HF=HF | HU=HF | BR=BR | CL=BR |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | (closed shrub with 61% - 70% crown closure) | | | |  |  |  |
|  |  |  |  |  |  |  | NNF\_ANTH |  | AL=ST | CC=ST | CS=ST | AS=ST | VI=ST | RA=SL | DL=SL | AU=SL |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | FLI |  | Naturally Non Vegetated |  | Natural Non Forest and |  | NMB=EX | NMC=EX | NMF=RK | NMR=RK | NMS=SA | NMM=EX | NMG=WS | NWL=LA | NWR=RI | NWF=FL |  |  |  |  |  |  |
|  |  |  |  |  |  | Anthropogenic |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Vegetated Anthropogenic |  |  |  | CIP=FA | CIW=FA | CIU=OT | ASC=SE | ASP=FA | ASN=FA | AIH=FA | AIR=FA | AIG=IN | AII=IN | AIW=LG | AIA=FA | AIF=SE | AIU=OT |  |  |
|  |  |  |  |  |  |  |  | ASR=SE |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |
|  |  |  |  |  | Naturally and Anthropogenic |  | R - NON PROD |  | 315 DAL=CL | 316 GR=HG | 317 UCL=OT | 62 or 266 | 64 or 265 or 303 | 152 or 304 R=RI | 101 or 102 =LK | 308, 309 =FA | 314, 318, 320, | 94 | 666=OT | 6 Airstrip=FA | | 313 ROCK or | |  |
|  |  |  | FRI |  | Non Vegetated |  | MNR - CODE |  |  |  |  | ISL or I=IS | or 305 L=LA |  | (Reservoir) |  | 333 = OT | Railway=FA |  |  |  | RK=RK | |  |
|  |  |  |  |  | Unproductive Forest and Non |  | MNR CODE |  | 310 TM=TM | 311 OM=OM | 312 BA=ST |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Forested Vegetated |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | ON |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | FRI FIM |  | Same as FRI |  | MNR CODE |  | Same as FRI |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | FRI NBI |  | Same as FRI |  | MNR CODE |  | Same as FRI and |  | SC=SL | HG=HG | HF=HF | BR=BR | SA=SA |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6/13/2011 |  |  |

**Appendix 12 CAS Non-Forested, Non-Vegetated, and Unproductive Forest Conversion**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PROVINCE** |  | **STANDARD** |  | **TYPE** |  | **FIELD** |  | **CAS Translation (Whenever a forest inventory includes crown closure for a non-forested attribute - then migrate into CROWN CLOSURE LYR field)** | | | | | | | | | | |  |  |  | Page 2 of 2 | |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Categories de terrains: contains |  | Eau |  | EAU=LA | INO=FL | AEP=OT | AER=FA | BHE=IN |  | BAS=LG | BLE=CL | CFO=FA | CAM=FA | GOL=FA | GR=IN |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest, Naturally Non |  |  | CAR=IN | CEX=FA | CHE=IN | CU=SE | OBS=FA |  | CV=FA | CF=OT | DEM=IN | DEP=IN | RO=FA |  |  |  |  |  |  |
|  |  |  |  |  |  | Improductifs |  |  |  |  |  |  |  |  |
|  | QC |  | 3rd |  | Vegetated, Non Vegetated |  |  | HAB=SE | VRG=CL | ILE=IS | CNE=FA | LTE=FA |  | MI=IN | INC=OT | PPN=OT | CS=SE |  |  |  |  |  |  |  |
|  |  |  |  | Vocation Non forestiere |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Anthropogenic, and Non Forested |  |  | SC=IN | DEF=OT | A=CL | US=IN | VIL=FA |  | CIM=OT | AL=ST | DH=EX | DS=EX |  |  |  |  |  |  |  |
|  |  |  |  |  |  | TER\_CO |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Vegetated |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Pre 2000 |  | Naturally and Anthropogenic Non |  | CoverClass |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Vegetated, Non Forested |  |  | bo=TM | al=ST | so=SL | cl=OT | cln=OT |  | ag=CL | gp=IN | rc=FA | sd=SD | Lake=LA | Pond=LA |  |  |  |  |  |
|  | PE |  |  |  | Vegetated |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2000 |  | Non Vegetated Anthropogenic, |  | CoverClass |  | BAR=EX | BSB=BE | BLD=OT | WWW=OC | GRS=HG |  | PAV=FA | SHR=SL | TRE=OT | WAT=LA |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Naturally Non Vegetated, Unproductive |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Forest, Non Forested Vegetated |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Pre 2003 |  | Non Forest |  |  |  | AC=CL | OC=SE | RO=RK | AF=ST | AC=ST |  | GP=IN | MI=IN |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Vegetated Water |  | Water |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forest vegetated Wetland |  | Wetland (VT) |  | LK=LA | ON=OC | PN=LA | RV=RI | SL=LA |  | CM=HG | DU=SD | RK=RK | TF=TF |  |  |  |  |  |  |  |
|  | NB |  |  |  | Freshwater |  | Wetland (F) |  | AL=ST | SV=ST | AB=WS | BC=BE | BO=OM |  | FE=OM | FM=HG | FW=FL | SB=SL |  |  |  |  |  |  |  |
|  |  |  |  | Coastal |  | Wetland ( C ) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 2003 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Non Forested Land: Non |  | AGR (Agriculture) |  | CB=CL | CH=CL | CL=CL | CO=CL | CT=CL |  | FD=CL | FP=CL |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | DND (Defence) |  | BA=FA | EA=FA | IZ=FA | GP=IN | IP=IN |  | LF=IN | MI=IN | PB=IN | QU=IN | SG=LG |  |  |  |  |  |  |
|  |  |  |  |  | Vegetated Anthropogenic, |  |  |  | AR=FA |  |  |  |  |  |
|  |  |  |  |  |  | IND (Industrial) |  | AI=FA | CS=FA | PP=FA | RD=FA | RR=FA |  | TM=FA | CG=FA | GC=FA | PA=FA | SK=FA |  |  |  |  |  |
|  |  |  |  |  | Naturally Non Vegetated |  |  | RU=SE | UR=SE | BL=EX | RF=WS | RO=RK |  | LE=FA | TR=FA |  |  |  | RY=FA |  |  |  |  |  |
|  |  |  |  |  |  | INF (Infrastructure) |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | (Wildland) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | REC (Recreation) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested vegetated, non |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Pre 2006 |  | vegetated anthropogenic, |  | FOR/ NON FOR |  | Alders=ST | Barren=EX | Blueberry=CL | Brush & Alders=ST | Agriculture=CL | | Gravel Pit=IN |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | naturally non vegetated, and |  |  | Marsh/ Swamp=HG | Open Bog=OM | Urban=SE | Rock=RK | Dump=IN |  | Treed Bog=TM |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | NS |  |  |  | unproductive forest |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Non Forested Vegetated, Non |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 2006 |  | Vegetated Anthropogenic, |  | FOR/ NON FOR |  | 95=FA | 96=IS | 97=IS | 98=EX |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Naturally Non Vegetated, and |  |  | 74=OM |  | 75=OM | 76=RK | 77=LA | 78=OC |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 70=OM | 71=FL | 72=OM | 73=TM |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  |  |  | 83=ST | 84,85=EX | 86=CL | 87=SE | 88=ST |  | 89=ST | 91=CL | 92=OT | 93=IN | 94=BE | 95=IN | 96=FA | 97=FA | 98=FA | 99=FA |  |
|  |  |  | Pre 2005 |  | Non Forested Vegetated, Naturally and |  | Non Forested Land |  | 940 | 950 | 960 | 970 | 961,962 |  | 980 | 920 | 930 | 951 | 990 | 991 | 992 |  | 915=NULL | |  |
|  |  |  |  | Anthropogenic Non Vegetated |  |  |  |  |  |
|  |  |  |  |  |  | Rb=RK | Sb=EX | C=OT | A=CL | Rw=FA |  | Res=SE | Bog=BR | Treed bog=TM | Sand=SA | Lake=LA | River=RI | Saltwater=OC | |  |
|  | NL |  |  |  | Unproductive Forest |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 2005 |  | Non Forested Vegetated, Non |  | Non Commercial Forest | Non | 900,905,907 S = SC | 910 H = SD | (Also assign height code and crown closure code) | | | 920 | 930 |  | 925 | Wet | 970 | 980 | 961,962 | 960 | 992=OC | 990=LA |  |
|  |  |  |  |  |  |  |
|  |  |  |  | Vegetated Anthropogenic, Naturally |  | Forested Land |  | 940 Rb = RK | 950 Sb = EX | Organic Bog (symbol) = BR 906 HF with CO Mod. | | |  | Treed Bog (Symbol) = TM | | Bog (Symbol) = OM | | A = CL | Res = SE | RW = FA | C = OT | 991=RI | 951=SA |  |
|  |  |  |  |  | Non Vegetated |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | WBNP |  | 1979 |  | Non Forested Vegetated, Naturally Non |  | v#pcm, shrln |  | Identified within vegetation plant | | 1=HG | 3=HG | 5=HG |  | 98=SL | 13=HE | 18=SL | 6=HG | Z=LA U=LA |  |  |  |  |  |  |
|  |  |  | Vegetated (Water) |  |  | community field |  | 2=HG | 4=HG | 99=HG |  | 7=ST | 17=HG | 0=EX |  | 8=LA |  |  |  |  |  |  |
|  |  |  |  |  | Unproductive Forest |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | PANP |  | 1968 |  | Non Forest Cover Class: contains |  | C#SPEC , U#SPEC |  | Non Vegetated (C#SPEC, U#SPEC): | |  | 0 = Non Vegetated Anthropogenic (G#SPEC): C = OT | | | |  | Non Forested Vegetated (G#SPEC): | | | M1 Non Vegetated (G#SPEC): FL = FL | | | | |  |
|  |  |  | Naturally and Anthropogenic Non |  |  | OT; WATER = LA; ISLAND = IS | |  |  |  |  |  |  | = HG; M2 = SL; U1 = HG, U2 = SL | |  |  |  |  |  |  |  |
|  |  |  |  | G#SPEC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Vegetated, Non Forested Vegetated |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated(NV) |  | TYPE |  | VN=Vegetated, non forested; NW=Non vegetated water; NU=Non Vegetated, Urban/industrial; NE=Non vegetated, Exposed land; NS=Non Vegetated, Snow/Ice | | | | | | | | | |  |  | Anthropogenic vegetated = NU | | |  |  |
|  |  |  |  |  | Non Vegetated Natural and |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | YT |  | 2.1 |  |  | CLASS |  | S=ST | TS=ST | LS=SL | H=HE | C=BR |  | M=HE | Ro,Ru=RK |  | Tso,TSc=ST |  |  | Anthropogenic non vegetated = NU | | | |  |
|  |  |  | Anthropogenic:Water (NW) |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | Naturally non vegetated = NE, NS, NW | | | |  |
|  |  |  |  |  | Exposed (NE) Urban (NU) |  | CL\_MOD |  | R=RI | L=LA | RS=WS | E=EX | S=SD |  | B=EX | RR=RK | O=OT | RD=FA | G=IN | T=IN | Nonforest vegetated = VN | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Naturally and Anthropogenic |  | Type Class |  | LA=LA | PO=LA | RE=LA | RI=RI | SW=OC |  |  |  |  | AP=FA |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | GL=SI | SC=SI | SI=SI | BR=RK | LB=RK |  | RO=RK | RT=RK | MS=IN | BE=BE | BP=SE | BU=EX | CB=EX |  |  |  |
|  | NT |  | 3.0 |  | Non Vegetated |  |  |  |  |  |  |
|  |  |  |  |  |  | ES=EX | GP=IN | LL=EX | MU=EX | MU=EX |  | PM=IN | LS=WS | RR=FA | RM=EX | AS=WS | RP=FA | TS=IN | EL=OT |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Non Forested Vegetated |  | Type Class |  | ST=TS | SL=LS | HG=HG | HF=HF | HE=HE |  | BM=BR | BL=BR | BY=BR |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

6/13/2011

**Appendix 12 CAS Non-Forested, Non-Vegetated, and Unproductive Forest Codes**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NON FORESTED VEGETATED** | | | | | **UNPRODUCTIVE FOREST** | |  | **NON VEGETATED** | |  |  |
|  |  |  |  |  |
| **ANTHROPOGENIC** | |  | **NATURAL** |  |
|  |  |  |  |  |  |  |  |  |
|  |  | | |  |  |  |  |  |  |  |  |
| Tall Shrub | (>2m) | | | ST | Treed Muskeg | TM | Industrial | IN | Alpine | AP |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Low Shrub | (<2m) | | | SL | Treed Rock | TR | Facility/ Infrastructure | FA | Lake | LA |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Forbs |  |  |  | HF | Alpine Forest | AL | Cultivated | CL | River | RI |  |
|  |  |  |  |  |  |  |  |  |  | |  |
| Herbs |  |  |  | HE | Scrub Deciduous | SD | Settlement | SE | Ocean, Salt Water OC | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Graminoids |  |  |  | HG | Scrub Coniferous | SC | Lagoon | LG | Rock | RK |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Bryoid |  |  |  | BR | Non Productive Forest | NP | Borrowpit | BP | Sand | SA |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Open Muskeg |  |  |  | OM |  |  | Other | OT | Snow/Ice | SI |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Barren Tundra |  |  |  | BT |  |  |  |  | Slide | SL |  |
|  |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  |  |  |  |  | Exposed LandEX | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | Beach | BE |  |
|  |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  |  |  |  |  | Water Sediments WS | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | Flood | FL |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | Island | IS |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | Tidal Flats | TF |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

**APPENDIX 13**

**DISTURBANCE HISTORY – SUMMARY OF CANADIAN**

**FOREST INVENTORIES**

**CAS DISTURBANCE HISTORY CODES**

**DISTURBANCE HISTORY CAS CONVERSION**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 13 Disturbance History - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **FIELD** | | **YEAR** | **EXTENT** | **EXTENT** |  |  |  |  | **Bound** |  |  |  |  |  |  |  |  |  |  | **Codes** |  |  |  |  |  |  |  |
| **CODES** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 1-9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |  |  |  |  |  |  |  |  |  |  |  | EIGHT OR MORE |  |
|  | For. Cov. Inv. | Activity\_cd | | ACTIVITY\_YEAR | Activity\_Sub\_cd | INSECT | L | B |  | W | D | K | S | F |  | I |  |  |  |
|  | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% |  |  |  |  | EVENTS |  |
| **BC** |  |  |  |  |  | DISEASE= 1-4 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| VRI | Disturbance\_Type\_Code | | ACTIVITY\_START\_DATE | Disturbance | 1-9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |  |  |  |  |  |  |  |  |  |  |  | SIXTEEN OR MORE |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | INSECT | L | B |  | W | D | K | S | F |  | I |  |  |  |
|  | ACTIVITY\_END\_DATE | percentage | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% |  |  |  |  | EVENTS |  |
|  |  |  |  | DISEASE= 1-4 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Phase 3 | Disturbance | | YEAR | Severity | 1,2,3,4 | 1-25 | | 26-50 | | 51-75 | 76-100 | |  |  | V | W |  | X | Y |  | A | B |  | C | D |  | TWO EVENTS |  |
| **AB** |  |  | |  |  |  |  | |  | |  |  | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AVI 2.1 | MODIFIER | | YEAR | EXTENT | 1,2,3,4,5 | 1-25 | | 26-50 | | 51-75 | 76-95 | | 96-100 | | CC BU | WF CL |  | DI IK | UK WE | DT BT | SI SC | PL TH |  |  |  |  | TWO EVENTS |  |
|  |  |  | |  |  |  |  | |  | |  |  | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1+ | MODIFIER | | YEAR | EXTENT | 1,2,3,4,5 | 1-25 | | 26-50 | | 51-75 | 76-95 | | 96-100 | | CC BU | WF CL |  | DI IK | UK WE | DT BT | SI SC | PL TH |  |  |  |  | THREE EVENTS |  |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | UTM | Disturbance | | YEAR | NONE | NONE |  |  |  |  |  |  |  |  |  | CO BO | SCO |  | WCO | OP |  |  |  |  |  |  |  | THREE EVENTS |  |
| **SK** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SFVI 4.0 | Disturbance | | YEAR | EXTENT | 1,2,3,4,5 | 1-25 | | 26-50 | | 51-75 | 76-95 | | 96-100 | | CO BO | WI HA |  | IN DI | AK SL |  | SI |  |  |  |  |  | THREE EVENTS |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  | |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 1998 | No Field | | - | - | - | possibly use cutting class | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MB** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FLI | MOD1 | | ORIGIN1 | EXT 1 | 1,2,3,4,5 | 1-25 | | 26-50 | | 51-75 | 76-95 | | 96-100 | | CC BU | WF CL |  | DI IK | IK 1B | UK WE | BF SF | DT BT |  |  |  |  | TWO EVENTS |  |
|  |  |  | |  |  |  |  | |  | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI | No Field | | - | - | - | Barren and scattered (BS) = disturbed, stocking unkown | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | | | | |  | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |
| **ON** | FRI FIM | DEV STAGE | | No Values | No Values | No Values | LOW MGMT, DEPHARV=(HARV NSR) | | | | | LOW NAT, DEPNAT=(NAT NSR) | | | | |  |  | FTGNAT=(NAT SR) | | (STRIP CUT, FRSTPASS, SEED TREE, IMPROVE, | | | | |  |  | ONE EVENT |  |
| NEW PLANT NEW SEED=(HARV.SR) FTG PLANT, FTG SEED=(HARV SR) | | | | | | | | | |  |  | PRECUT, SEEDCUT FIRSTCUT LASTCUT SELECT) = (Partial Cut) | | | | | | | Productive land only |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | |  |  |  |  | |  | |  |  | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | NBI | Disturbance | | YEAR | EXTENT | 1,2,3,4,5 | 1-25 | | 26-50 | | 51-75 | 76-95 | | 96-100 | | BU | AK |  | FL | WF | IK | Silv codes |  |  |  |  |  | FIVE EVENTS |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | Intervention d'origine(Anthropogenic): if> 75% of area distributed | | | | | | | | | cpr | crs |  | cbt | cpe | ct | crb cba cef |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | etr | enm |  | pln | plb | ria |  |  |  |  |  | ONE EVENT |  |
|  |  | Major Disturbance | |  | Major natural and anthropogenic | |  | cpt cph prr crr |  |  |  |  |  |  |
|  |  | PER\_AN\_ORI |  |  |  |  |  |  |  |  |  | ens | p |  | plr | rea | rps |  |  |  |  |  |  |  |
|  |  | PER\_CO\_ORI | | disturbances | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **QC** | 3rd |  | Perturbation d'origine (Natural): if> 75% of area distributed | | | | | | | | | cht | dt |  | es | br | fr | ver |  |  |  |  |  | ONE EVENT |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | Intervention partielles: if,25% to 75% of area distributed | | | | | | | |  | con cdl cjg | ca cd cj cjp |  | ctr cp ce cpf | cpc drm drc | epc enr fer | crr rrb rrn rrr | deg esi cjg |  |  |  |  | ONE EVENT |  |
|  |  | Partial Disturbance | |  | Partial natural and anthropogenic | |  | dld cam cps | cjt cea cb |  | cpm | dr ec ece | rbv ecl | rr rrg rrp | epr cpi |  |  |  |  |  |
|  |  | PER\_AN\_MOY |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | PER\_CO\_MOY | | disturbances | | Perturbation moyenne: if 25% to 75% of area distributed | | | | | | | |  | brp | chp |  | dp | el | vep |  |  |  |  |  |  | ONE EVENT |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | br | pc |  | pp | cc | di | wf | pl |  | of |  |  | TWO EVENTS |  |
| **PE** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000 | History1 | | No Field | No Field |  |  |  |  |  |  |  |  |  |  | BR | CC |  | HR | IT | PC | PN | SE |  | TH |  |  | TWO EVENTS |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | History 2 | |  |  |  |  |  |  |  |  |  |  | WF | XS |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2003 | Disturbance | |  |  |  |  |  |  |  |  |  |  |  |  | C | B |  | W | H | V |  |  |  |  |  |  | ONE EVENT |  |
| **NB** |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | L1 ORIGIN | | No Field | No Field |  |  |  |  |  |  |  |  |  |  | W (Windthrow) | |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2003 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | L1 TRT | | Year of Treatment | No Field |  |  |  |  |  |  |  |  |  |  | BB CC | CL CT |  | PA PB | PC | FW RC | SA SC | SH SR |  | ST TP |  |  | ONE EVENT |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | PRE 2006 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NS** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | FOR/NON | | No Field | No Field |  | Extent built into disturbance code | | | | |  |  |  |  | 02=burn 06=windthrow | | 07=dead (<25%live) 08=dead 1(25-50%live) 09=dead2(51-70% live) | | | | | | |  |  |  | ONE EVENT |  |
|  |  |  |  |  |  |  |  |  |  |
|  | (Last two digits) | |  |  |  |  |  | 13= dead 3(25-50% dead) 14= dead 4(51-75%) 15 = dead 5(>75%) 60 = clearcut 61,62 = Partial cut | | | | | | | | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 2005 | Disturbance | | Disturbance Year | No Field |  |  |  |  |  |  |  |  |  |  | X | F |  | Z | W | M |  |  |  |  |  |  | ONE EVENT |  |
| **NL** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2005 | TYPE\_DISTURB | | YEAR\_DISTURB | No Field |  |  |  |  |  |  |  |  |  |  | X | Y |  | Z | W | M | Silviculture Treatments: PB, P, DS, SP, PCT, CT, CAR, CNR, | | | | | | TWO EVENTS |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | TYPE\_SILV | | YEAR\_SILV |  |  |  |  |  |  |  |  |  |  | Logging | Fire |  | Insect | Wind | Misc | MAR, PM, RC, GP, H, IS, DLT, AS, CTD | | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | |  | |  |  | |  | |  |  | |  |  |  |  | | |  |  |  |  |  |
| **WBNP** | 1979 | v#pcm | v#str | NO FIELD | v#ptc |  | This inventory has not been updated. There is no disturbance field. Disturbance identified at the time of inventory is limited to geological erosion and severe burns. | | | | | | | | | | | | | | | | | |  |  |  |  |  |
| erob# | eros# |  | Erosion (eros#): A, F, G, K, M, S, W, KA, MG, F, MF. Severe burn (v#pcm) = 13 with v#pct (percentage cover). Vegetation structure field (v#str) = D (Disturbed areas (fire). | | | | | | | | | | | | | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PANP** | 1968 | No Field | | No Field | No Field |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2.1 | DIST\_CODE1 | | YEAR | No Field | - |  |  |  |  |  |  |  |  |  | DB | DW |  | DD | DF | DL | DI | DS |  |  |  |  | TWO EVENTS |  |
| DIST\_CODE2 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NT** | 3.0 | DIS1CODE DIS2CODE | | DIS1YEAR DIS2YEAR | DIS1EXT | 1,2,3,4,5 | 1-25 | | 26-50 | | 51-75 | 75-95 | | 96-100 | | AV BT | BU CC |  | CR DT | DI FL | IK SC | UK WE | WI |  |  |  |  | THREE EVENTS |  |
| DIS2EXT |  |  |  |  |  |  |
| DIS3CODE | | DIS3YEAR |  |  |  |  |  |  |
|  |  | DIS3EXT |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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**Appendix 13 Disturbance History CAS Conversion**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **TYPE** | **FIELD** | **Translation to CAS CO = CUT PC = PARTIAL CUT BU = BURN WF = WINDFALL DI = DISEASE IK = INSECT FL = FLOOD WE = WEATHER SL = SLIDE OT = OTHER** | | | | | | | | | | | | | | | | |  |
| **DEAD TOPS or TREES = DT SILVICULTURE TREATMENTS = SI** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | For. Cov. Inv. |  | Activity\_cd | L=CO | W=W | K=OT | F=FL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | B=BU | D=D | S=SL | I = IK |  |  |  |  |  |  |  |  |  |  |  | ALL TREATMENTS=SI | |  |
| **BC** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| VRI |  | Disturbance | L=CO | W=W | K=OT | F=FL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | B=BU | D=D | S=SL | I = IK |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Phase 3 |  | Disturbance | V = OT W=WF X=CO | | Y=BU |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **AB** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| AVI 2.1 |  | Modifier | CC=CO | BU=BU | WF=WF | DI=DI | IK=IK |  | UK=OT | WE=WE | DT=DT | BT=OT | CL=OT |  |  |  |  | ALL TREATMENTS-SI | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1+ |  | Modiier |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **SK** | UTM |  | Disturbance | CO=CO | BO=BU | SCO=CO | WCO=CO |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SFVI 4.0 |  | Disturbance | CO=CO | BO=BU | WI=WF | HA=WE | IN=IK |  | DI=DI | AK=OT | SL=SL |  |  |  |  |  |  | ALL TREATMENTS = SI | |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pre 1998 |  | NO FIELD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MB** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FLI |  | MOD1 | CC=CO | BU=BU | WF=WF | CL=OT | DI=DI |  | DM=DI | IK=IK | IB=IK | UK=OT | BF=NT | SF=FL |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | MOD2 | BF=FL | WE=WE | DT=DT | BT=OT |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI |  | NO FIELD | Polygons with a Barren and Scattered code are disturbed; however cannot tell the type of disturbance | | | | | | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | | | | | | |  |  |  |  |  |  |  |  |  |  |  |
| **ON** | FRI FIM |  | DEVSTAGE | LOWMGMT, DEPHARV, NEWPLANT, NEWSEED, FTGPLANT, TTGSEED=CO | | | | | | |  |  |  |  |  |  |  |  |  |  |  |
|  | LOWNAT, DEPNAT, FTGNAT=BU, STRIPCUT, FRSTPASS, SEEDTREE, PRECUT, SEEDCUT, FIRSTCUT, LASTCUT, IMPROVE, SELECT=PC | | | | | | | | | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FRI NBI |  | Disturbance | BU=BU | WF=WF | AK=OT | IK=IK | FL=FL |  | CC=CO |  |  |  |  |  |  |  |  | ALL TREATEMENTS = SI | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | PER\_CO\_ORI | cpr, cph, crs, cbt, cba, cef, cpe, cpt, ct, crb, etr, crr = CO | | | | cht=WF |  | dt=OT | es=IK | br=BU | ver=WE | fr=OT |  | ens, enm, p, | | pln, plr, plb, rea, ria, rps, drm, drc, dr, | | |  |
| **QC** | 3rd |  |  |  |  | enr, fer, rrb, rrn, rrr, prr= SI | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | PER\_CO\_MOY | con, cdl, dld, cam, ca, cd, cj, cjg, cjp, cjt, cca, cb, cba, ctr, cp, cph, cpi, cps, ce, cea, cef, | | | | | | | vep = WE | brp=BU | chp = WF | dp = DI | el = IK | drm, drc, dr, deg, enr, fer, rrb, rrn, rrr, prr, rrp, rrg, rr | | | | |  |
|  |  |  |  |
|  |  |  |  | cpf, cpm, cpc, rbv, ecl, crr, epc, ece, ec, deg, esi, epr = PC | | | | |  |  |  | = SI | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PE** | Pre 2000 |  | Disturbance | BR=BU | WF=WF | PC=PC | PL=PC | PP=PC |  | CC=CO | DI=DI |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000 |  | History1 | BR=BU | WF=WF | CC=CO | PL=PC | HR=OT |  | IT=OT |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | History 2 |  |  |  |  |  |  |  |  |  | PN, SE, TH, XS = SI | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NB** | Pre 2003 |  |  | C=CO | B=BU | W=WF | H=PC | V=PC |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2003 |  | Treatment | CT=PC | PC=PC | SC=PC | ST=PC | TP=PC |  | SH=PC | SR=PC SA=PC | PA=PC | PB=BU | Can identify blowdown from origin=W | | |  |  | A, H, L, P, T, S, FP, PL, TI, | |  |
|  |  |  |  |  |  |
|  |  | GS=PC | PA=PC | ST=PC | CV=PC | RC=PC |  | FW=PC | BB=BU |  |  | CL = SI | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NS** | Pre 2006 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 |  | FOR/NON | 02 = BU | 06 = WF | 07 = OT extent 5 08 = OT extent 3 09 = OT extent 2 | | | | | 13 = OT extent 2 | 15 = OT extent 4 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  | (last two digits) | 60 = CO | 61 = PC | 62 = PC |  |  |  |  | 14 = OT extent 3 |  |  |  |  |  |  |  |  |  |
| **NL** | Pre 2006 |  |  | X=CO | Y=BU | Z=IK | W=WF | M=OT |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 |  | TYPE\_DISTURB | X=CO | Y=BU | Z=IK | W=WF | M=OT |  |  |  |  |  |  | Silviculture: PB, P, DS, SP, PCT, CT, CAR, CNR, MAR, PM, | | | | | |  |
|  |  |  |  |  |  |  |  |  |
|  |  | TYPE\_SILV |  |  |  |  |  |  | RC, GP, H, IS, DLT, AS, CTD=SI | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 |  | See fields eros#, | Need to access more than one field. Erosion (eros#): A, F, G, K, S, W, KA, FG = OT; M, MG, MF = SL. Severe fire use v#pcm code 13 = BU or v#str code D = BU | | | | | | | | | | | |  |  |  |  |  |  |
|  |  |  | v#pcm, or v#str |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PANP** | 1968 |  | No Field | No data recorded | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2.1 |  | DIST\_CODE1 | DB=BU | DL=CO | DW=WF | DI=IK | DD=DI |  | DS=SL | DF=FL |  |  |  |  |  |  |  |  |  |  |
|  | DIST\_CODE2 |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NT** | 3.0 |  | DIS1CODE | AV=SL | BT=OT | BU=BU | CC=CO | CR=OT |  | DT=OT | DI=DI | IK=IK | FL=FL | UK=OT | WE=WE | WI=WF |  |  | ALL TREATMENTS = SI | |  |
|  | DIS2CODE |  |  |  |  |
|  |  |  | DIS3CODE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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**Appendix 13 CAS Disturbance History Codes**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **DISTURBANCE TYPE** | |  | **DISTURBANCE YEAR** | **EXTENT** | **EVENTS PER POLYGON** |  |
|  |  |  |  |  |  |  |
| CUT | CO | | e.g 1998 | Lower Bound Upper Bound | 3 |  |
|  |  |  |  |
| PARTIAL CUT |  | PC |  |  |  |  |
| BURN | BU | |  |  |  |  |
| WINDFALL | WF | |  |  |  |  |
| DISEASE |  | DI |  |  |  |  |
| INSECT |  | IK |  |  |  |  |
| FLOOD |  | FL |  |  |  |  |
| WEATHER | WE | |  |  |  |  |
| SLIDE |  | SL |  |  |  |  |
| OTHER | OT | |  |  |  |  |
| DEAD TOPS OR TREES | DT | |  |  |  |  |
| SILVICULTURE TREATMENTS | | SI |  |  |  |  |

**APPENDIX 14**

**WETLAND – SUMMARY OF CANADIAN**

**FOREST INVENTORIES**

**CAS WETLAND CONVERSION**

**CAS WETLAND CODES**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**Appendix 14 Wetland - Summary of Canadian Forest Inventories**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **FIELD** |  | **CODES** |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | | |  |  |  |  |  |  |  |  |
| **BC** | Forest Cover Inventory | NO FIELD |  | NONE | Can partially derive very broad wetland classes | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| VRI | NO FIELD | Broad wetland category or can derive most wtlands from other attributes | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | | |  |  |  |  |  |  |  |  |
|  | PHASE 3 | NO FIELD |  | NONE | Can derive very broad wetland classes | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |
|  | AVI 2.1 | NO FIELD |  | NONE | Can derive from other attributes | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | | |  |  |  |  |
| **AB** |  |  |  |  |  |  |  |  | LOCAL MODIFIER | | |  |  |  |  |
|  |  |  |  |  |  |  |  | C (Internal Lawn/ Scar) | | |  |  |  |  |
|  | AVI2.1+ | WETLAND |  | USE ALBERTA WETLAND | WETLAND CLASS | VEGETATION MODIFIER (% Tree Cover) | | LANDFORM MODIFIER | R (Internal Lawn with island of peat plateau) | | | | | |  |
|  |  | I (Internal Lawns) | | |  |  |  |  |
|  |  | INVENTORY (AWI) | B, F, S, M, W, Z | Forest(>70%) Trees(6-70%) Open(<6%) | | X (permafrost) P( patterning) N (not present) |  |  |  |  |
|  |  |  |  |  |  |  |  |  | N (Lawns not present) | | | < 6%) |  |  |  |
|  |  |  |  |  |  |  |  |  | S (Shrub cover >25%, tree | | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | G (Grammoids, Shrub < 25% & Tree < 6%) | | | | | |  |
|  |  |  |  |  |  | | |  |  |  |  |  |  |  |  |
|  | UTM | NO FIELD |  | NONE | Can derive very broad wetland classes using drainage and texture classes | | |  |  |  |  |  |  |  |  |
| **SK** |  |  |  | | |  |  |  |  |  |  |  |  |  |  |
| SFVI | NO FIELD | NONE, can derive from other attributes or from ecosite | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |
|  | SFVI+ | WETLAND | USE AWI See AVI 2.1 + above | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | | | |  |  |  |  |  |  |  |
|  |  |  | 701 - 704 + 721 - 725 | | 701 ( Black Spruce Treed Muskeg) 702 (Larch Treed Muskeg) 703 (Eastern Cedar Treed Muskeg) 704 Taiga ( Northern | | | |  |  |  |  |  |  |  |
|  | Pre 1998 | Non Productive Forestland | Transition Forest) 721 (Willow) | | 722 (Alder) 723 (Dwarf Birch) 724 (Shrub) 725 (Shrub Prairie) 823 (Wet Meadow) | |  |  |  |  |  |  |  |
|  | 823 | 831 |  |  |  |  |  |  |  |
|  |  |  | 831 (Muskeg) 832 (String Bogs) 835 (Marsh) 838 (Mud salt flats) 848 (Beaver floods) | | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **MB** |  | WETECO1 |  | CODES 1-10 | 1 ( Open bog-low shrub), 2 (Open poor fen- low shrub), 3 (Open rich fen), 4 (Thicket swamp), 5 (Shore fen), 6 (Meadow marsh), 7 (Sheltered marsh), | | | | | | | 8 | |  |  |
|  | FLI |  | (Exposed marsh), 9 (Open water marsh- floating leaves/ peat substrate), 10 ( Open water marsh - submerged mineral substrate) | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |
|  | WETECO2 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | \* DOES NOT INCLUDE TREED WETLANDS - CAN DERIVE BROAD TREED WETLAND CLASSES USING OTHER ATTRIBUTES OR ECOSITE | | | | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | | | | |  |  |  |  |  |  |  |  |
|  | FRI | NO FIELD | NONE, CAN DERIVE 90% from Ecosite (does not differentiate productive forest wetland) | | | | |  |  |  |  |  |  |  |  |
| **ON** |  |  |  | | | |  | |  |  |  |  |  |  |  |
| FRI FIM | NO FIELD | NONE OR CAN DERIVE FROM ORIGINAL OR HARMONIZED ECOSITE | | | | \* NOTE: Different from FRI which used old (Original)Ecosite System. | |  |  |  |  |  |  |  |
|  |  |  |  | | |  |  |  |  |  |  |  |  |  |  |
|  | FRI NBI | WETLAND | Includes modified Alberta Wetland Inventory, See AVI 2.1 + above | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | | | | |  |  |  |  |  |  |  |  |
| **QC** | 3rd (TIE) | NO FIELD | CAN IDENTIFY WET AREAS FROM DRAINAGE CODES, OR ECOSITE OR DERIVE FROM OTHER ATTRIBUTES | | | | |  |  |  |  |  |  |  |  |
| CAN IDENTIFY Organic deposits from TYPE DE DEPOT | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PE** | 2000 | CoverClass | BOW (Bog) BKW (Brackish Water) DMW (Deep Marsh) MDW (Meadow) OWW (Open Water) SAW (Salt Marsh) SMW (Shallow Marsh) SDW (Sand Dune) SSW (Shrub Swamp) SFW (Seasonally Flooded Flat) | | | | | | | | | | | |  |
| WSW (Wooded Swamp) | |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NB** | OLD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2005 | WL | Freshwater: BO, FE, AB (Aquatic Bed) FM (Marsh) FW (Forested Wetland) SB (Shrub Wetland) AP (in FOREST layer, alder on poor sites) BP (Beaver Pond) Coastal: CM (Coastal Marsh) TF (Tidal Flat) | | | | | | | | | | | |  |
|  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | OLD |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **NS** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | FOR/NON (Last two digits of | 89 (Alders > 75%, See FOREST layer code 39 from 2001 onward) | | | 88 (Alders < 75%, See FOREST layer code 38 from 2001 onward) 83 (Brush - being replaced by FOREST layer code 33) | | | | | | 70 | | |  |
|  |  |
|  | four digit number) | (Wetland excluding open and treed bogs) 71 (Beaver flood) 73 (Treed Bogs) 72 (Open Bogs) 74 (Coast wetlands) 75 (Wetland in lake) | | | | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **NL** | 2005 | Non Commercial ForestNon |  | Organic Bog (Symbol), Treed Bog (Symbol), Wet Bog (Symbol), and Biophysical Class = W (Wet) assigned to S (Scrub softwood) and H (Scrub Hardwood) | | | | |  |  |  |  |  |  |  |
| Forested Land |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WBNP** | 1979 | v#pcm and v#str | CAN IDENTFY FROM v#pcm and | | v#pcm:7(willow-alder thicket); 98(ericaceous shrubland); 99 (meadows); | | | v#str:ST(shrubland thicket);M(graminoid/sedge prairie);N(fen);P(treed peatbog);PG(wet | | | | | | |  |
| v#str in concert with v#moi | | 1,2,3,4,5,6(meadows);17(wet muskeg); 18(shrub muskeg); 20,21(b-spruce) | | | graminoid muskeg);PGC(wet graminoid-herb muskeg);PST(shrub muskeg); MST(gr & shr) | | | | | | |  |
|  |  |  |  |
| **PANP** | 1968 | No Field | Can identify wetland grass or herb from wetland shrub using G#SPEC field: M1 (sedge and herb) and M2 (shrub) | | | | | No moisture field, treed wetlands can be identified from species or species mix; e.g. Larch | | | | | | |  |
| and black spruce most likely wetland. |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **YT** | 2001 | FOR TYPE | CAN DERIVE FOR MOST PART FROM moisture and veg cover type. Can use wetland code W (does not identify wetland type) | | | | | |  |  |  |  |  |  |  |
|  |  |  |  | | | | |  |  |  |  |  |  |  |  |
|  |  |  | Can start with LANDPOS wetland code (W) then derive from moisture and TYPE CLASS or forest cover atributes. | | | | |  |  |  |  |  |  |  |  |
| **NT** | 3.0 | WETLAND |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ALSO OPTIONAL WETLAND FIELD : WE (Wetland no distinction), MA (Marsh), SW (Swamp), FE (Fen), BO (Bog), SO (Shallow Open Water) | | | | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Appendix 14 CAS Wetland Conversion**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PROVINCE** | **STANDARD** | **TRANSLATION TO COMMON (1)** | | |  |
|  |  |  | | |  |
| **BC** | Forest Cover Inventory | NONE, NEED TO DERIVE FROM OTHER ATTRIBUTES | | |  |
|  |  |  |  |  |
| VRI | NONE, NEED TO DERIVE FROM OTHER ATTRIBUTES | | |  |
|  |  |
|  |  |  | | |  |
|  | PHASE 3 | NONE, NEED TO DERIVE FROM OTHER ATTRIBUTES | | |  |
| **AB** |  |  | | |  |
| AVI 2.1 | NONE, NEED TO DERIVE FROM OTHER ATTRIBUTES | | |  |
|  |  |  |  | |  |
|  | AVI 2.1+ | Use wetland field | B=B F=F S=S M=M W=W Z=Z or derive as per AVI 2.1 | |  |
|  |  |  | | |  |
|  | UTM | NONE, NEED TO DERIVE FROM OTHER ATTRIBUTES | | |  |
|  |  |  | | |  |
| **SK** | SFVI | NONE, NEED TO DERIVE FROM OTHER ATTRIBUTES or Ecosite | | |  |
|  |  |  | | |  |
|  | SFVI+ | Includes AWI same as AVI 2.1+ otherwise derive as per SFVI | | |  |
|  |  |  | | |  |
|  | Pre 1998 | 701 = Btnn 702 = Ftnn 703 = Stnn 704 = Ftnn 721 = Sons 722 = Sons 723 = Sons 724 = Sons 725 = Sons 823 = Mong | | |  |
| **MB** | 831 = Fons 832 = Ftpn 835 = Mong 838 = Tmnn 848 = Oonn | | |  |
|  |  |
| FLI | 1 = Bons 2 = Fons 3 = Fong 4 = Sons 5 = Fons 6 = Mong 7 = Mong 8 = Mong 9 = Mong 10 = Mong | | |  |
|  |  |
|  |  |  | | |  |
|  | FRI | If ecosite present then ES 34 = Btnn ES 35 = Ftnn ES 36 = Stnn ES 37 = Stnn ES 38 = Stnn ES 39 = Bons ES 40 = Ftnn ES 41 = Fong | | |  |
|  | ES 42 = Fong ES 43 = Fopn (Ftpn) ES 44 = Sons ES 45 = Fong ES 46 = Mong ES47 = Mong ES 48 = Mong | | |  |
|  |  |  |
| **ON** |  |  | | |  |
| FRI FIM | Use harmonized ecosite or previous ecosite system to derive wetland from other attributes | | |  |
|  |  |  | | |  |
|  | FRI NBI | Use wetland field (Same as AVI 2.1+) | | |  |
|  |  |  | | |  |
| **QC** | TIE | NONE, NEED TO DERIVE FROM OTHER ATTRIBUTES or Ecosite | | |  |
|  |  |  | | |  |
| **PE** | 2002 | BOW=Btnn BKW=Eonn DMW=Mong MDW=Mong SAW=Mong SFW=Tmnn SMW=Mong SSW=Sons WSW=Stnn | | |  |
|  |  |  |  |  |  |
| **NB** | OLD |  |  |  |  |
|  |  |  |  |  |
| 2005 | BO + veg type FS = Btnn BO + veg type SV = Bons FE + veg type FH or FS= Ftnn FE + veg type AW or SV = Fons AB = Oonn FM = Mong = FW = Stnn FW + | | |  |
|  |  |
|  | Impoundment Modifier BP = Oonn SB = Sons CM = Mcng TF = Tmnn | | |  |
|  |  |  |
|  | OLD |  |  |  |  |
| **NS** |  |  |  |  |  |
| 2006 | 70 = W 71 = Mong 72 = Bonn 73 = Btnn 74 = Ecnn 75 = Mong | | |  |
|  |  |
|  |  |  |  | |  |
| **NL** | 2005 | Organic Bog - Bons | Treed Bog = Btnn Wet Bog = Mong Softwood Scrub (S) or Hardwood scrub (H) with W (Wet) Biophysical Class = Stnn | |  |
|  |  |  | | |  |
| **WBNP** | 1979 | v#str: ST=Sons, M=Mong, MST=Sons, N=Ftnn, P=Btnn, PG=Fong, PGC=Mong, | | v#pcm: 1,2,3,4=Mong, 99=Mong, 98=Sons, 7=Sons, 17=Fong, 18=Fons, 19=Stnn 20=Btnn. Can use in concert with |  |
| PST=Fons |  | v#str and v#sp# (species) for further refinement. |  |
|  |  |  |  |
| **PANP** | 1968 | M1 = Fons; M2 = Sons | | |  |
|  |  |  |  |  |  |
| **YT** | 2001 | NONE |  |  |  |
|  |  |  | | |  |
| **NT** | 3.0 | WE = Stnn SO = Oonn MA = Mong SW = Stnn (Sons) FE = Ftnn, Fong, Fons BO = Btnn | | |  |
|  |  |  |  |  |  |

See Appendix 15 - Procedures for CAS Wetland Derivation Sept 14 2010

**Appendix 14 CAS Wetland Codes**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WETLAND TYPE** |  | **VEGETATION MODIFIER** |  | **LANDFORM MODIFIER** |  | **LOCAL MODIFIER** | | |  |  |
|  |  |  |  |  |  |  | | |  |  |
| Bog | B | Forestland | F | Permafrost present | X | Collapse scars | | | C |  |
|  |  |  |  |  |  |  | | |  |  |
| Fen | F | Treed | T | Patterning present | P | Internal lawn with Islands of | | | R |  |
| forested peat platea | | |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | | |  |  |
| Swamp | S | Not treed, freshwater, vegetated | O | No permafrost or patterning | N | Internal lawns | | | I |  |
|  |  |  |  |  |  |  | | |  |  |
| Marsh | M | Not treed, coastal, vegetated | C | Saline, alkaline | S | Lawns not present | | | N |  |
|  |  |  |  |  |  |  | | |  |  |
| Shallow open water | O | Mud, non vegetated | M | Null |  | Shrub covers > 25% | | | S |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Tidal flats | T | Null |  |  |  | Graminoids with shrub cover < | | | G |  |
|  |  |  |  |  |  | 25% |  |  |  |  |
| Estuary | E |  |  |  |  | Null | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Wetland (No distinction) | W |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

**APPENDIX 15**

**PROCEDURES FOR**

**CAS WETLAND DERIVATION**



**Appendix 15**

**PROCEDURES FOR CAS WETLAND DERIVATION**

**(Last Revision September 14, 2010)**

**Introduction**

The Boreal Avian Habitat Modeling project has produced a common attribute structure (CAS) to accommodate the various forest inventories across Canada. One attribute of interest is wetland; however, wetland is not identified for many forest inventories or not complete in others. This document identifies a means to derive a four-character CAS wetland code using existing forest attributes for each province or territory. A complete four- character identification or derivation of wetland is not always possible depending on the type of attributes recorded. Only a single generic (W) wetland code is possible to derive for some inventories and a complete four-character CAS wetland code may not be possible to derive for other inventories (usually two-character).

The classification scheme used for CAS follows the classes developed by the National Wetlands Working Group 5 and modified by Vitt/Halsey6. The scheme was further modified to take into account coastal wetlands and alkaline or saline habitats. This model identifies five major wetland classes based on wetland development from hydrologic, chemical, and biotic gradients that commonly have strong cross-correlations. Two of the classes: fen and bog are peat forming with greater than 40 cm of accumulated organics. The non-peat forming wetlands are subdivided as shallow open water, marsh (fresh and salt water), and swamp. The CAS wetland classes and codes are identified in Appendix 1 of the wetland document.

**British Columbia Forest Cover Inventory**

The Forest Cover Inventory does not lend itself to a very complete derivation of wetland because there is no moisture regime or other related classes to key on. A few non productive forest and non forest categories can be identified. The only source that would provide a more complete picture of wetland would be via the biogeoclimatic classification.

The inventory has been or is being converted to VRI. If this conversion has been done then follow the VRI instructions.

1. National Wetlands Working Group 1988. Wetlands of Canada. Ecological Land Classification Series No. 24.
2. Alberta Wetland Inventory Standards. Version 1.0. June 1977. L. Halsey and D. Vitt.



If species 1 = Sb or Lt and species 1 % = 100 and CC >50% and height >12m If species 1 = Sb or Lt and species 2 = Lt or Sb and CC >50% and height >12m If species 1 = Ep or Ea or Cw or Yc or Pl

If species 1 = Sb or Lt and species 2 = Lt or Sb and CC <50%

If species 1 = Lt and species 1 percent = 100 and CC = any and height < 12m

**1.0 Non Productive Forest**

Key on NP designation associated with a forest description where Species 1 = Sb or Cw or Yc.

NP Lowland Forest NP Swamp

Stnn

Stnn

Although lowland and swamp forests are identified as separate categories in the manual, there is no differentiation identified in the attribute fields; therefore an NP forest can range from rocky to wetland. Treed bogs cannot be differentiated from treed swamps. Pine (Pl) swamps can be identified if they are Species 1 or 2 and have Sb as Species 1 or 2 or Cw or Yc as Species 2.

**2.0 Non Forest**

Key on non forest attributes.

NP Br can include upland and wetland; therefore, it is only reliable regionally (Stnn).

Swamp (Symbol) Sons

Muskeg (Symbol) Stnn

**3.0 Ecosite**

Derivation of wetland from a biogeoclimatic ecosite classification is possible via the PEM (Predictive Ecosite Mapping) or TEM (Terrain) mapping programs; however it is beyond the scope of this project.

**British Columbia Vegetation Resource Inventory (VRI)**

A general wetland class can be assigned as outlined in Section 1.0 below. A more detailed wetland can be derived as per Section 2.0 and 3.0.

**1.0 General Wetland (W)**

The general wetland code identifies a broad wetland category with no distinction between wetland classes. Key on Landscape Position W (Wetland). Assign CAS wetland code „W‟.

**2.0 Treed Polygons**

Key on soil moisture regime 7 and 8, species composition, crown closure, and height:

If species 1 = Sb and species 1 percent = 100 and crown closure (CC), 50% and height, 12m Btnn

Stnn

Stnn

Stnn

Ftnn

Ftnn



**3.0 Vegetated Non-treed**

Key on moisture regime 7 and 8 and land cover components for vegetated and non vegetated categories:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ST | Shrub Tall (>2m) | | | Sons |
|  |  |  |  |  |
| SL | Shrub Low (<2m) | | | Sons |
| HE | Herb | | | Mong |
| HF | Herb Forb | | | Mong |
| HG | Herb Graminoid | | | Mong |
| BY | Bryoid | | | Fonn |
| BM | Bryoid Moss | | | Fonn |
| BL | Bryoid Lichen | | | Bonn |
| MU | Mudflat | | | Tmnn |

**4.0 Ecosite**

Derivation of wetland from a biogeoclimatic ecosite classification is possible via the PEM (Predictive Ecosite Mapping) or TEM (Terrain) mapping programs; however it is beyond the scope of this project.

**Alberta Phase 3**

Wetland classes must be derived from several fields because moisture regime does not exist. Focus must rely on non productive forest land and non-forest land. It is not possible to differentiate between fens, bogs, or marshes. Productive Sb and Lt polygons can also be wetland types but are not possible to differentiate.

**1.0 Open muskeg, Bog, or Marsh**

|  |  |  |
| --- | --- | --- |
| File name S1 | = OM (Open Muskeg), then = | Wo |
| File name S1 | = TM (Treed Muskeg), then = | Wt |
| File name S1 | = DS (Deciduous shrub), then = | Sons |
| File name S1 | = FL (Flooded Land), then = | Mong |

Note: DS could include some upland areas in foothill, mountain, and shield areas.

**2.0 Forest Land**

Need to include Sb and Lt stands that are classified as productive land. Suggest key on species Sb and Lt, and commercialism U (low uncommercial). This will include transitional stands that are probably moist upland types. It may include upland Sb types in foothill, mountain, and shield areas.

File name S1 = Sb or Lt or Bw and it is 100% and commercialism = U, then = Stnn



File name S1 = Sb or Lt or Bw and S2 = Lt, Sb, or Bw and commercialism = U Stnn

**Alberta Vegetation Inventory (AVI)**

Includes all versions of AVI 2.1, 2.1+ (enhanced), and 2.2 inventories. The soil moisture regime, tree species, non-forested, and crown closure fields will be required to derive wetlands. Wet anthropogenic cultivated (e.g. CA, CP and CPR) and seeded industrial (e.g. CIP and CIW) are not considered. Patterning in fens and permafrost features cannot be derived from AVI data. Multi-layered (stand structure = M) polygons will require a query of both layers to identify wetland classes. Some of the enhanced versions of AVI may contain an Alberta Wetland Inventory field.

**1.0 Alberta Wetland Inventory**

The CAS wetland coding is based on the Alberta Wetland Inventory; therefore, if this field is available then it will translate directly into CAS wetland.

|  |  |  |  |
| --- | --- | --- | --- |
| **2.0 Non-Forested Land** | | |  |
| Key on soil moisture regime (SMR) = W (wet): | | |  |
| If Non-forested = SO or SC, and crown closure > 3 (30%), then = | | | Sons |
|  |  |  |  |
| If Non-forested = HG and/or SC or SO and crown closure is < 3, then = | | | Mong |
| If Non-forested = HF, then = | | | Mong |
| If Non-forested = BR, then = | | | Fong |
| If Naturally non-vegetated = NMB | | | Sons |

Note: For multi- layered polygons (stand structure = M) with shrub over topping HG, HF, or BR, then polygon is a Sons if shrub layer has crown closure of > 3 (30%), otherwise will be Mong or Fong as indicated above.

**3.0 Forest Land**

Key on soil moisture regime (SMR) = W (wet)

If Forested and crown closure = A or B and Species 1 or 2 = Lt, then Ft

If Forested and crown closure = C and Species 1 or 2 = Lt, then Stnn

If Forested and crown closure = D and Species 1 or 2 = Lt, then Sfnn

If Forested and crown closure = A or B and Species 1 = Sb and Species 1 % =100, then Btnn

|  |  |  |  |
| --- | --- | --- | --- |
| If Forested and crown closure = C and Species 1 = Sb and Species 1 % =100, then | | | Stnn |
| If Forested and crown closure = D and Species 1 | = Sb and Species 1 % =100, then | | Sfnn |
| If Forested and crown closure = A, B, or C and Spp 1 = Sb or Fb and Spp 2 not = to Lt | | | Stnn |
| If Forested and crown closure = D and Spp 1 = Sb or Fb and Spp 2 not = to Lt | | Sfnn |  |
| If Forested and crown closure = A, B, or C and Species 1 = Sw, then | | Stnn |  |
| If Forested and crown closure = D and Species 1 | = Sw, then | Sfnn |  |
| If Forested and crown closure = A, B, or C and Species 1 = Bw or Pb, then | | Stnn |  |
| If Forested and crown closure = D and Species 1 | = Bw or Pb, then | Sfnn |  |
|  |  |  |  |



Note: For multi-layered polygons (stand structure = M) with two tree layers, a query of both layers will be required to derive wetland classes.

**Saskatchewan UTM Inventory**

The UTM inventory does not have a moisture regime field; therefore wetland must be derived from several attributes including drainage class, species, height class, crown closure class, and non productive lands. Non productive polygons are identified with symbols.

**1.0 Productive Forest Land**

If Drainage Code = PVP and or soil texture = O (Organic); or If Drainage Code = PD and texture = O, then:

|  |  |  |
| --- | --- | --- |
| If species 1 | = bS and bS = 100%, and crown closure = C or D, then | Stnn |
| If species 1 | = bS and bS = 100%, and crown closure =A or B, then | Btnn |
| If species 1 | = bS or tL or wB or mM and species 2 = tL or bS or wB or mM, then | Stnn |

Note: some Stnn polygons will be fens or bogs and some Btnn polygons will be fens.

**2.0 Non Productive Lands**

Drainage and texture codes are not applied to non productive lands.

|  |  |  |
| --- | --- | --- |
| Code 3100 | Treed Muskeg | Wt |
| Code 3300 | Clear Muskeg | Wo |
| Code 3500 | Brushland | Sons |
| Code 3600 | Meadow | Mong |
| Code 5100 | Flooded | Mong |

Note: some meadow and Brushland could be upland moist and very moist sites.

**Saskatchewan SFVI**

SFVI is very similar to AVI with key attributes being soil moisture regime, species, crown closure, height, and non forest land. Patterning in fens and permafrost features cannot be derived from SFVI data. Multi-layered polygons will require a query of all layers to identify wetland classes.

**1.0 Forested Land**

Moisture class code = MW (moderately wet):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| If species 1 | = bS and species 1 % =100, and crown closure <50%, and height <12m | | | Btnn |
| If species 1 | = any and crown closure >50% |  |  | Stnn |
|  |  |  |  |  |



|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| If species 1 = bS and species 1 % =100, and crown closure <50%, and height >12m | | | | | | | | | | | | | | | | | | | | | Stnn |
| If species 1 = any and crown closure > 70% | | | | | | | | | | |  | |  | | | | | |  | | Sfnn |
| Moisture class code = W (wet): | | | | |  |  | | | | | | | | | | | | | | |  |
| If species 1 = bS and species 1 % =100, and crown closure <50%, and height <12m | | | | | | | | | | | | | | | | | | | | | Btnn |
|  | |  |  |  | | |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |
| If species 1 = bS and species 1 % =100, and crown closure <50%, and height >12m | | | | | | | | | | | | | | | | | | | | | Stnn |
|  | |  |  |  | | |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |
| If species 1 = bS and species 1 % =100, and CC >50% and <70%, and height >12m | | | | | | | | | | | | | | | | | | | | | Stnn |
| If species 1 = bS and species 1 % =100, and CC >70%, and height >12m | | | | | | | | | | | | | | | | | | |  |  | Sfnn |
| Moisture class code = W or VW (very wet): | | | | | | | |  | |  | | | |  |  | | | | | |  |
| If species 1 = bS or tL or wB or bP or mM and species 2 = tL or bS or wB or bP or mM | | | | | | | | | | | | | | | | | | | | |  |
| And crown closure >50% and <70% and height >12m | | | | | | | | | | | | | | | | | | | | | Stnn |
|  | |  |  |  | | |  | |  | | | | | | |  |  |  |  | |  |
| If species 1 = bS or tL or wB or bP or mM and species 2 = tL or bS or wB or bP or mM | | | | | | | | | | | | | | | | | | | | |  |
| and crown closure > 70% | | | | | | | | | | | | | | | | | | | | | Sfnn |
|  | |  | |  | | |  | |  | | | | | | |  |  |  |  | |  |
| If species 1 = bS or tL and species 2 = bS or tL and CC < 50% and height < 12m | | | | | | | | | | | | | | | | | | | | | Ftnn |
| If species 1 = tL and species 1 % =100, and CC >50% and <70%, and height >12m | | | | | | | | | | | | | | | | | | | | | Stnn |
| If species 1 | = tL and species 1 % =100, and CC >70% | | | | | | | | | | | | | | | | |  |  | | Sfnn |
|  |  | | | | | |  | |  | | | | | | |  |  | | | |  |
| If species 1 | = tL and species 1 % =100, and CC <50% and height = any | | | | | | | | | | | | | | | | | | | | Ftnn |
|  |  | | | | | |  | |  | | | | | | |  |  | | | |  |
| If species 1 | = wB or mM or gA or wE and species 1 % = 100 and CC < 70% | | | | | | | | | | | | | | | | | | | | Stnn |
| If species 1 | = wB or mM or gA or wE and species 1 % = 100 and CC > 70% | | | | | | | | | | | | | | | | | | | | Sfnn |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Note: For multi-layered polygons with more than one tree layer, a query of all layers will be required to derive wetland classes.

**2.0 Non Forest Land**

If moisture class code = MW or W or VW: and non forested = HE or GR, then and non forested = MO, then and non forested = Av, then

Mong

Fonn

Oonn

and TS (includes all TS shrub species) or LS (includes all LS shrub species) and Sons crown closure is > 25%.

Note: For multi-layered polygons with shrub over topping GR, HE, or MO, then polygon is a Sons if shrub layer has crown closure of > 25%, otherwise will be Mong or Fong as indicated above.

**3.0 Ecosite**

Ecosite is relatively new; the following codes are in draft form. Note that there is no ecosite identified for shrubby swamp for all three ecoregions or marshes for Taiga Shield and Boreal Shield.

Taiga Shield Boreal Shield Boreal Plain



|  |  |  |  |
| --- | --- | --- | --- |
| TS 12 | BS 20 | BP 20 | Bonn |
| TS 11 | BS 19 | BP 19 | Bong |
| TS 10 | BS 18 | BP 18 | Bons |
| TS 9 | BS 17 | BP 17 | Btnn |
| TS 13 | BS 23, 22 | BP 21 | Ftnn |
| TS 14 | BS 23, 22 | BP 23, 22 | Fons |
| TS 15 | BS 24 | BP 24 | Fong |
| TS 16 | BS 25 | BP 25 | Fonn |
| TS 8 | BS 16 | BP 16 | Stnn |
| TS NA | BS NA | BP NA | Sons |
| TS NA | BS NA | BP 26 | Mong |

**Manitoba Prior to 1998**

For FRI 1.0, 1.1 and 1.2, a good estimation of wetland, both treed and non-treed, can be derived from the productive forest land, non productive forest, and non forested land codes. Taiga and tundra cannot identify wetland areas. A moisture code and landform code were added for FRI 1.3 (1996-1997). Key on the same attributes as described for FRI 1.0, 1.1. or 1.2 or key on moisture code 4 (wet) to derive a generic wetland. Landform code 8 (depressions, poorly drained) can also be used to derive a generic wetland.

**1.0 Non Productive**

Key on non productive forested land and non forested land:

Black spruce treed muskeg (701) = Btnn, Tamarack larch treed muskeg (702) = Ftnn, Eastern cedar treed muskeg (703) = Stnn, Willow (721) = Sons, Alder (722) = Sons, Dwarf birch (723) = Sons,

Shrub (724) = Sons,

Wet meadow (823) = Mong

Taiga (704) and Barrens-Tundra (801) will contain wetland; however it cannot be separated from upland.

**2.0 Productive**

Key on species cover type and sub type.

|  |  |  |
| --- | --- | --- |
| Tamarack | 30, 31, 32, 70, 71, 72 | Stnn |
| Cedar | 36, 37, 76, 77 | Stnn |
| Black spruce | 16, 17, 56, 57 | Stnn |
| Willow | 9E | Sons |
|  |  |  |



Pure black spruce cover type 13 can be wetland (Stnn). The only way to identify which stands are wetlands is if ecosite is identified. The ecosite codes that represent Stnn will be V30, V31, V32, and V33. Some black ash sites will be Stnn, particularly if dominant to black ash.

**3.0 Ecosite**

Ecosite (vegetation type) is available for forested areas only. If this attribute is provided, then key on this attribute for forested areas as an alternative to 2.0 above or use ecosite as an enhancement using other available attributes as well.

|  |  |  |
| --- | --- | --- |
| V2 | Black ash (White elm) hardwood (if have local knowledge) | Stnn |
| V19 | Cedar conifer and mixedwood | Stnn |
| V20 | Tamarack/Labrador tea | Stnn |
| V30 | Black spruce/Labrador tea/Feather moss (Sphagnum) | Stnn |
| V31 | Black spruce/Herb rich/Sphagnum (Feather moss) | Stnn |
| V32 | Black spruce/Herb poor/Sphagnum (Feather moss) | Ftnn |
| V33 | Black spruce/Sphagnum | Btnn |

Note: V20 can also be Ftnn (treed fens).

A soils type is also coded for FRI 1.2. Key on soil types for deep organic; S12F (feather moss) and S12S (Sphagnum) to identify locations of generic wetlands.

**Manitoba Forest Land Inventory (FLI)**

A wetland classification is included in FLI; however, it only identifies non-treed wetlands. There are some options for deriving treed wetlands. One is to key on ecosite and the other is to key on the regular forest attributes. Both options are provided below. A general wetland assignment (W) is also possible.

**1.0 General Wetland (W)**

Key on soil landscape model (LANDMOD) code O (organic) and W (wet channel sloughs). Assign these polygons with CAS code „W‟. This will identify most wetlands (treed and non-treed) at a general level.

**2.0 Non-Treed Wetland**

Non-treed wetlands are identified in FLI. They are identified with the field WETECO1 and WETECO2. WETECO1 is the predominant wetland type and is the field that should be used to derive the CAS wetland. To derive CAS wetland codes from non-treed FLI wetland codes do the following:

|  |  |  |
| --- | --- | --- |
| WE1 | Open bog-lowland shrub = | Bons |
| WE2 | Open poor fen-lowland = | Fons |
|  |  |  |



WE3 Open rich fen =

We4 Thicket swamp =

WE5 Shore fen =

WE6 Meadow marsh =

WE7 Exposed marsh =

WE8 Exposed marsh =

WE9 Open water marsh =

WE10 Open water marsh =

Fong

Sons

Fons

Mong

Mong

Mong

Mong

Mong

**3.0 Treed Wetland Using Ecosite**

Treed wetland ecosite codes and descriptions are found in *Forest Ecosystem Classification for* *Manitoba.* If they are provided in the ecosite field, then to derive treed CAS wetland codes seebelow:

|  |  |  |
| --- | --- | --- |
| V2 | Black ash (White Elm) hardwood = | Stnn |
| V19 | Cedar conifer and mixedwood = | Stnn |
| V20 | Tamarack/Labrador tea = | Ftnn |
| V30 | Black spruce/Labrador tea/feather moss (Sphagnum) =Stnn | |
| V31 | Black spruce/Herb-rich/Sphagnum (feather moss) = | Stnn |
| V32 | Black spruce/Herb-poor/Sphagnum (feather moss) = | Ftnn |
| V33 | Black spruce/Sphagnum = | Btnn |

**4.0 Wetland Derivation Using FLI Polygon Attributes When Ecosite or Wetland Fields Are Empty**

**4.1 Treed Wetlands**

If ecosite is not available or a more detailed derivation of forested wetland codes is preferred then key on the FLI forested attributes. To keep the wetland derivation simple, only refer to Layer 1 except when Layer 1 is a veteran layer (CANLAY with code V), then use Layer 2 (SEQ 2) instead to derive the wetland class.

First step is to key on moisture regime (MR) code W (wet). This will identify all wetland areas. Then key on species composition (SP1, SP2 and SP1PER, etc) for likely wetland tree species such as black spruce and tamarack:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| If SP1 = BS and SP1PER = 100 | | | | | Btnn |
| And CC (crown closure) <50% and HT (height) <12m | | | | |  |
| If SP1 = BS or TL and SP1PER = 100 | | | | | Stnn |
| And CC >50% and HT >12m | | | | |  |
|  |  |  |  |  |  |
| If SP1 = BS or TL and SP2 = TL or BS | | | | | Stnn |
| And CC >50% and HT >12m | | | | |  |
|  |  |  |  |  |  |
| If SP1 = WB or MM or EC or BA | | | | | Stnn |



If SP1 = BS or TL and SP2 = TL or BS

Ftnn

And CC <50%

If SP1 = TL and SP1PER = 100

Ftnn

And CC = any and HT <12m

**4.2 Non-Treed Wetlands**

First, always check to see if there are non-treed wetland codes in the WETECO1 field. If there are then see Section 2.0 for translation rules. If there are not any codes then key on Layer 1 for moisture regime (MR) code wet (W) and NNF\_ANTH (natural non-forested and anthropogenic attributes). If there is a veteran layer (CANLAY with code V), then go to Layer 2 (SEQ 2) and follow the same steps. There are three categories for NNF\_ANTH: Natural Non-Treed, Natural Non-Vegetated, and Anthropogenic. No wetland translation is necessary for Anthropogenic.

|  |  |  |  |
| --- | --- | --- | --- |
| **4.2.1 Natural Non-Vegetated** | | |  |
| NWF (Flooded Uplands) | | | Mong |
| **4.2.2 Natural Non-Treed** | | |  |
| First key moisture regime MR = W, then: | | |  |
| SO, SC and crown closure > 3 | | | Sons |
|  |  |  |  |
| HG, HF, HU, and SO, SC with crown closure <3 | | | Mong |
| BR | | | Fonn |
| CL | | | Bonn |

**Ontario FRI and FRI FIM**

The Ontario NBI (Whitefeather and Mishkeegogamang/Eabametoong) is not included because those inventories already have a wetland field that is based on the Alberta Wetland Inventory system on which the CAS wetland scheme is based. The FRI may or may not have an assigned ecosite for each polygon. If there is not an ecosite, then only a partial picture of wetland can be derived because FRI does not have a moisture regime field and productive forested wetlands cannot be determined from FRI attributes alone. Also, bogs and marshes cannot be separated from fens.

**1.0 Non Productive Forest Land**

Bogs cannot be separated from fens. If there is no ecosite then key on MNRCODE. This field will identify the non productive treed and non treed polygons.

|  |  |  |
| --- | --- | --- |
| MNRCODE 310 | Treed Muskeg | Ftnn |
| MNRCODE 311 | Open Muskeg | Fons |
| MNRCODE 312 | Brush and Alder | Sons |
|  |  |  |



**2.0 Productive Forest Land**

Some productive forest wetlands can be generalized and identified using species.

|  |  |
| --- | --- |
| If SPC is mixed SbL or LSb or LSbCe or SbLCe | Stnn |
| If SPC is mixed CeL or LCe or CeLSb or CeSbL | Stnn |
| If SPC is L and SPC% is 100 | Stnn |
| If SPC is Ab and SPC% is 100 | Stnn |
| If SPC is mixed BwL or LBw or BwCe or CeBw | Stnn |
| Short comings include: |  |
| Pure Sb wetlands are not identified |  |
| Many Bw wetlands are not identified |  |
| Some SbL are upland |  |

**3.0 Ecosite**

FRI FIM inventories after 2007 will use the new harmonized ecosites for Ontario (224 ecosites).

FRI prior to 2008 will use the regional ecosite codes.

|  |  |
| --- | --- |
| **3.1 NW Ontario** |  |
| Es 34 | Btnn |
| Es 35, 36, 37, 38 | Stnn |
| Es 38 | Stnn |
| Es 40 | Ftnn |
| Es 41, 42 | Fons |
| Es 43, 45 | Fong |
| Es 44 | Sons |
| Es 46, 47, 48, 49, 50 | Mong |

Es 51, 52, 53, 54, 55, 56 Oonn

Short comings: Es 35 and 36 can be fens (Ftnn) or a complex of bogs and fens.

|  |  |  |
| --- | --- | --- |
| **3.2 NE Ontario** | |  |
| Es 11 | | Btnn |
| Es 12, 13r | | Stnn |
| Es | 13p | Ftnn |
| Es | 14 | Btnn |

NE Ontario does not identify non treed wetland; therefore, will need to key on FRI codes OM (Open Muskeg – Fons) and BA (Brush and Alder – Sons). Marsh and bogs are included within OM and cannot be identified.



|  |  |  |
| --- | --- | --- |
| **3.3 Central Ontario** | |  |
| Es | 31 | Ftnn |
| Es | 32, 33, and 34 | Stnn |

Central Ontario does not identify non treed wetlands; therefore, will need to key on FRI codes OM (Open Muskeg – Fons) and BA (Brush and Alder – Sons). Marsh and bogs are included within OM and cannot be identified.

**3.4 Ecosites of Ontario (Harmonized ecosites)**

Ecosite number is preceded by a geographic range (Single letter code): A=Sub- arctic, B=Boreal, G=Great Lakes – St. Lawrence, and S=Southern; a vegetation cover modifier follows the ecosite code (Single or double letter code): Tt=Tall Treed, Tl=Low treed, S=Shrub, N=Non Woody, and X=Non Vegetated; e.g. B126Tl.

|  |  |
| --- | --- |
| 126 | Btnn |
| 127 to 133 | Stnn |
| 222 to 224 | Stnn |
| 134 and 135 | Sons |
| 136 | Fons |
| 137 and 138 | Bonn |
| 139 to 141 | Ftnn |
| 142 to 145 | Mong |
| 146 | Fong |
| 145 | Fons |
| 148 to 153 | Mong |

**Quebec Troisième Inventaire Écoforestier**

Wetlands must be determined from a number of sources to get as complete a wetland picture as possible. General or more detailed wetland types can be derived depending on data available. Two methods are possible; one uses the moisture regime or drainage type without or with combination of other cover type or forest attributes; the other method uses ecosite. More than one method or combination of attributes may be required. For example, polygons with a moisture regime and those identified as unproductive should be combined, or ecosite provides data for forested areas only.



**1.0 General Wetland (W)**

A general CAS wetland code „W‟ can be assigned to all polygons that have a moisture regime assigned to them. All polygons with RHY\_CO of 5 can be assigned CAS code „W‟. These will most likely be forested polygons. See Section 2.0 for unproductive forests wetland derivation.

A general CAS wetland code „W‟ can be assigned to all polygons that have a drainage class assigned to them. If code classe de drainage (CDR\_CO) is code 6, then a general CAS wetland code „W‟ can be assigned.

**2.0** **Unproductive Terrain**

Unproductive forest lands are identified in Code de Terrain. If TER\_CO is AL and moisture is wet then wetland = Sons or W if a general code is preferred. If TER\_CO is DH then wetland = W. DH includes open and semi open polygons, further differentiation is not possible.

**3.0 Forested Wetlands**

Forested wetlands can be assigned a more descriptive wetland code other than W. Key on moisture regime and species.

If régimes hydriques (RHY\_CO) is code 5 (Hydrique – wet), then:

If GES\_CO is EE and class de densité (CDE\_CO) = D and class de hauteur (CHA\_CO) = 4, 5, or 6 Btnn

If GES\_CO is EC, EPu, EMe, RMe, SE, ES, RE, MeE, MeC and classe de densité is C, B, or A and classe de hauteur is 3, 2, or 1, then wetland is Stnn

If GES\_CO is EE or MeMe and classe de densité is C, B, or A and classe de hauteur is any, then Stnn

If GES\_CO is CC, CPu, CE, CMe, RC, SC, CS, PuC, BbBb, EBb, BbBbE, BbE, Bb1E, then Stnn

If GES\_CO is EMe or MeE and classe de densité is D then Ftnn

If GES\_CO is MeMe and classe de densité is any and classe de hauteur is 4, 5, or 6: Ftnn

Any hardwoods (Fnc, Bj, Fh, Ft, Bb, Bb1, Pe, Pe1, Fi) or hardwood mix with wet moisture: Stnn

**4.0 Ecosite**

If have ecosite (TEC\_CO\_TEC) code type écologique, then wetland can be derived for forested ecosites only. Other sources will be required to include non forest ecosites or polygons (also see Terrains Improductifs for non forest wetlands).

|  |  |  |
| --- | --- | --- |
| RS 37 | Black spruce-fir sphagnum on mineral | Stnn |
| RS38 | Black spruce-fir sphagnum on organic | Ftnn |
| RS39 | Black spruce-fir sphagnum on organic | Stnn |
| RS18 | Cedar-fir on mineral | Stnn |
| RE37 | Black spruce sphagnum on mineral | Stnn |
| RE38 | Black spruce sphagnum on organic minerotrophe | Ftnn |



|  |  |  |
| --- | --- | --- |
| RE39 | Black spruce sphagnum on organic ombrotrophe | Btnn |
| RC38 | Cedar fir | Stnn |
| MJ18 | Yellow birch fir sugar maple on organic soil | Stnn |
| MF18 | Black ash fir on organic or mineral | Stnn |

A number of ecosites have a range from xeric to hydric. The hydric polygons cannot be differentiated from the upland polygons without other sources such as moisture regime. If have a moisture regime of code 5 then the following ecosites will be Stnn: FF 10, 20, 30, 50, 60; FC 10, MJ 10, MS 10, 20, 40, 60, 70; RB 50; RP 10; RS 10, 20, 20s, 40, 50, 70; RT 10; RE 20, 40, 70

**Prince Edward Island**

Wetland can be derived from two sources; the land use code or the wetland cover class.

**1.0** **Land Use Code**

A general CAS wetland code can be assigned if a sub code is identified as part of the land use code. If Land Use Code is FOR (Forestry) and Sub Code is WET (Wetland), then assign a CAS wetland code W. If Land Use Code is WET (Wetland) and Sub Code is FOR (Forest), then assign a CAS wetland code W.

|  |  |  |
| --- | --- | --- |
| **2.0** | **Wetland Cover Class** |  |
| Key on Cover Class with wetland codes: | |  |
| BOW | Bog | Btnn |
| BKW | Brackish Marsh | Eonn |
| DMW | Deep Marsh | Mong |
| MDW | Meadow | Mong |
| SAW | Salt Marsh | Mcng |
| SFW | Seasonally Flooded Flat | Tmnn |
| SMW | Shallow Marsh | Mong |
| SSW | Shrub Swamp | Sons |
| WSW | Wooded Swamp | Stnn |

**New Brunswick**

The New Brunswick Forest Inventory Classification System identifies a wetland category. Use fresh water (F) and Coastal (C) wetland identifiers. First locate wetland classes and vegetation cover types. Key on Freshwater (F) and Coastal (C) Wetland/Feature Type, then:



|  |  |  |
| --- | --- | --- |
| If wetland Class is: | |  |
| AB | Aquatic Bed | Oonn |
| BO | Bog and vegetation cover type= FS | Btnn |
| BO | Bog and vegetation cover type= SV | Bons |
| FE | Fen and vegetation cover type=FH | Ftnn |
| FE | Fen and vegetation cover type=FS | Ftnn |
| FE | Fen and vegetation cover type=AW | Fons |
| FE | Fen and vegetation cover type=SV | Fons |
| FM | Freshwater Marsh | Mong |
| FW | Forested Wetland | Stnn |
| FW | Forested Wetland with Impoundment Modifier (IM) | Oonn |
| SB | Shrub Wetland (includes alders on poor sites (AP) in FOREST Sons | |
| CM | Coastal Marsh and vegetation cover type= FV | Mcng |
| TF | Tidal Flat and vegetation cover type= FV or FU | Tmnn |

**Nova Scotia**

The Nova Scotia Spatially Referenced Forest Resources (SRFR) data base recognizes wetland within the non-forest categories. Forested wetlands are not identified and there is no moisture regime attribute to help derive forested wetlands; therefore, focus is placed on typical wetland tree species.

**1.0** **Non-Forest**

Key on the FOR/NON 4-digit code, the last two digits identifies forest and non-forest categories

|  |  |  |
| --- | --- | --- |
| in which wetlands are included. | |  |
| Non-forest code: | |  |
| 70 | Wetland General (any wet area other than open and treed bog) W | |
| 71 | Beaver Flowage | Mong |
| 72 | Open Bog | Bons |
| 73 | Treed Bog | Btnn |
| 74 | Ocean Wetland | Ecnn |
| 75 | Wetland in Lake | Mong |

The treed bog category includes treed fens and treed swamps. The tree species are not identified; therefore, no additional differentiation is possible.

**2.0** **Forest**

Brush and alders are identified in this category, moisture cannot be identified; therefore, upland verses wetland categories cannot be determined. Key on FOREST codes followed by tree species and tree attributes. Typical wetland tree species and mixes have been chosen to



identify possible wetland forested polygons. The short comings are that brush and alder types could include upland moist polygons. Pure black spruce stands are not included because they can also be upland polygons.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 33 | Brush and Species= BS, TL, EC, WB, YB, and AS | | | | | Sons |
| 38, 39 Alders and species= BS, TL, EC, WB, YB, and AS | | | | | | Sons |
| 00 | Natural Stand and Species= TL(100%) or TLBS or TLWB, | | | | |  |
|  | crown closure < 50% and height <12 m | | | | | Ftnn |
|  |  |  |  |  |  |  |

1. Natural Stand and Species= TL (100%) or TLBS or TLWB, crown closure > 50% Stnn

|  |  |  |
| --- | --- | --- |
| 00 | Natural Stand and Species=EC or ECTL 0r ECBS or ECWB | Stnn |
| 00 | Natural Stand and Species=AS or ASBS or ASTL | Stnn |
| 00 | Natural Stand and Species=BSLT | Stnn |

**Newfoundland and Labrador**

A complete picture of wetlands cannot be derived because there is not an attribute for soil moisture regime; therefore, forested wetlands must be determined using wetland tree species. Non commercial forest and non-forested land have wetland classes assigned. Polygons with tree species that can occur in either upland or wetland situations (bS, tL, wB) could be assigned a wetland class.

|  |  |  |
| --- | --- | --- |
| **1.0** | **Non Commercial Forest** |  |
| Key on Biophysical Class = wet (W): | |  |
| If Non Commercial Forest code = S (softwood scrub) | | Stnn |
| If Non Commercial Forest code = H (hardwood scrub) | | Stnn |
| **2.0** | **Non-Forested Land** |  |
| Organic Bog (symbol or code) | | Bons |
| Treed Bog (symbol or code) | | Btnn |
| Wet Bog (symbol or code) | | Mong |
| **3.0** | **Forest Land** |  |
| If species is bStL or bStLbF or bStLwB | | Stnn |
| If species is tL or tLbF or tLwB or tLbS or tLbSbF or tLbSwB | | Stnn |
| If species is wBtL or wBtLbS or wBbStL | | Stnn |
|  |  |  |



**4.0** **Ecosite**

Forested wetland ecosite data may be available based on the Forest Site Classification Manual

– Damman Forest Types of Newfoundland. Non forested wetland ecosites are not included (Except some shrub types). Transition to bog types (Sks 23 and Skn 22) and seepage sites (Bt 32 and Mg 30) are not included.

|  |  |  |
| --- | --- | --- |
| Ss 12 | Sphagnum – Black Spruce | Btnn |
| Sc 18 | Carex – Black Spruce | Ftnn |
| So 19 | Osmunda – Black Spruce | Ftnn |
| Al 31 | Lycopodium – Alder Swamp | Stnn |
| K 33 | Kalmia Heath – Sphagnum – Kalmia or Sphagnum – Empetrum | Sons |

**Yukon Territories**

**Yukon Vegetation Inventory Version 2.1**

Key on soil moisture regime, then use forested and non-forested categories. Two options are possible: one identifies a general wetland assignment that only identifies whether a polygon is wetland or not; the other option provides more detail within wetland types.

**1.0** **General Wetland**

If soil moisture regime (SMR) = W or A, then assign CAS wetland code W. All forested and non-forested wetland types can be identified with a general wetland category.

|  |  |  |
| --- | --- | --- |
| **2.0** | **Non-Forested Land** |  |
| Soil Moisture Regime = W (wet) and: | |  |
| If cover type class (CLASS) = S | | Sons |
| If cover type class (CLASS) =H | | Mong |
| If cover type class (CLASS) =M | | Sons |
| If cover type class (CLASS) =C | | Fons |
| Soil Moisture Regime = A (aquatic) | | Mong |
| **3.0** | **Forest Land** |  |
| Soil Moisture Regime (SMR) = W: | |  |
| If species 1 (SP1) = SB and SP1PER = 100 | |  |
| And crown closure (CC) < 50% and height (AVG\_HT) < 12 m | | Btnn |

If species 1 (SP1) = SB and SP1PER = 100

And crown closure (CC) > 50% and <70% and height (AVG\_HT) > 12 m Stnn



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| If species 1 | (SP1) = SB and SP1PER = 100 | | | | |  |
| And crown closure (CC) > 70% and height (AVG\_HT) > 12 m | | | | | | Sfnn |
|  | |  |  |  |  |  |
| If SP1 = SB or L and SP2 = L or SB | | | | | |  |
| And crown closure (CC) < 50% and height (AVG\_HT) < 12 m | | | | | | Ftnn |
|  | |  |  | | |  |
| If SP1 = SB or L or W and SP2 = L or SB or W | | | | | |  |
| And crown closure (CC) > 50% and height (AVG\_HT) > 12 m | | | | | | Stnn |
| If species 1 | (SP1) = L and SP1PER = 100 | | | | |  |
| And crown closure (CC) < 50% | | | | | | Ftnn |
|  |  |  |  | | |  |
| If species 1 | (SP1) = L or W and SP1PER = 100 | | | | |  |
| And crown closure (CC) > 50% and < 70% | | | | | | Stnn |
| If species 1 | (SP1) = L or W and SP1PER = 100 | | | | |  |
| And crown closure (CC) > 70% | | | | | | Sfnn |

**Northwest Territories**

**Forest Vegetation Inventory Versions 2.1 and 3.0**

Three options are possible depending on level of detail required and whether the attributes are recorded. The first option provides a general level that identifies the polygon as being a wetland or not. The second option looks at the forest and non-forest attributes to derive wetland and the third option looks at whether the optional wetland class has been recorded.

**1.0** **General Wetland**

If LANDPOS = W (wetland), then assign CAS wetland code W.

**2.0** **Wetland From Forest Attributes**

**2.1** **Non-Forested Polygons**

Stand Structure (STRUCTURE) = S

Soil Moisture Regime (Moisture) = sd (subhydric - wet) or hd (hydric – very wet):

|  |  |
| --- | --- |
| Type Class (TYPECLAS) = ST or SL | Sons |
| Type Class (TYPECLAS) =HG or HF or HE | Mong |
| Type Class (TYPECLAS) =BM | Fong |
| Type Class (TYPECLAS) =BL or BY | Boxc |
| Stand Structure (STRUCTURE) = H (Horizontal) |  |
| Soil Moisture Regime (Moisture) = sd (subhydric - wet): |  |
| TYPECLAS or MINTYPCLS = SL or HG | Boxc |
| Stand Structure (STRUCTURE) = H (Horizontal) |  |
| Soil Moisture Regime (Moisture) = hd (hydric -very wet): |  |
| TYPECLAS or MINTYPCLS = HG | Mong |
| Stand Structure (STRUCTURE) = M (Multi-layered) |  |
|  |  |



|  |  |  |  |
| --- | --- | --- | --- |
| Soil Moisture Regime (Moisture) = sd or hd: | | |  |
| TYPECLAS = SL or ST | | | Fons |
| **2.2 Forest Land** | | |  |
| If Stand Structure (STRUCTURE) = M or C or H, and | | |  |
| MINTYPCLS = SL, and | | |  |
| Soil Moisture Regime (SMR) = sd, and | | |  |
| Species 1 (SP1) = Sb or Pj and SP1PER = 100%or | | |  |
| SP1 =Sb or Pj and SP2 = Pj or Sb | | |  |
| and Crown Closure (CC) < 50% and HEIGHT <8 m | | | Btxc |
| If Stand Structure (STRUCTURE) = S, and | | |  |
| Soil Moisture Regime (SMR) = sd or hd, and | | |  |
| Species 1 (SP1) = Sb or Lt, and SP1PER = 100%, and | | |  |
| Crown Closure (CC) > 50% and < 70% | | | Stnn |
| If Soil Moisture Regime (SMR) = sd or hd, and | | |  |
| Species 1 (SP1) = Sb or Lt, and | | |  |
| Crown Closure (CC) > 70% | | | Sfnn |
| If Soil Moisture Regime (SMR) = sd or hd, and | | |  |
| Species 1 (SP1) = Sb or Lt and SP2 = Lt or Sb, and | | |  |
| HEIGHT < 12 m | | | Ftnn |
| If Soil Moisture Regime (SMR) = sd or hd, and | | |  |
| Species 1 (SP1) = Sb or Lt and SP2 = Lt or Sb, and | | |  |
| HEIGHT > 12 m | | | Stnn |
|  |  |  |  |
| If Soil Moisture Regime (SMR) = hd, and | | |  |
| Species 1 (SP1) = Sb or Lt, and SP1PER = 100%, and | | |  |
| Crown Closure (CC) < 50% | | | Ftnn |
| If Soil Moisture Regime (SMR) = sd or hd, and | | |  |
| Species 1 (SP1) = Sb or Lt or Bw or Sw | | |  |
| and SP2 = Lt or Sb or Bw or Sw and CC > 50% | | | Ftnn |
| If Soil Moisture Regime (SMR) = sd or hd, and | | |  |
| Species 1 (SP1) = Bw or Po | | | Stnn |

**3.0** **Wetland Class**

The NWT Forest Vegetation Inventory has wetland class as an option. If a wetland class

attribute has been recorded, then:

Key on WETLAND:



|  |  |  |
| --- | --- | --- |
| We | Wetland, no distinction | W |
| So | Shallow Open Water | Oonn |
| Ma | Marsh | Mong |
| Sw | Swamp and SP1 is populated | Stnn |
| Sw | Swamp and TYPECLAS + SL or ST | Sons |
| Fe | Fen and SP1 is populated | Ftnn |
| Fe | Fen and TYPECLAS = HG | Fong |
| Fe | Fen and TYPECLAS = SL or ST | Fons |
| Bo | Bog and SP1 is populated | Btxc |
| Bo | Bog and TYPECLAS = BY or BL or BM | Boxc |

**Wood Buffalo National Park**

Wood Buffalo National Park is a biophysical inventory completed in the 70‟s based on a mapping scale of 1:100,000. This mapping scale will dictate that polygons will more than likely be heterogeneous rather than homogeneous; therefore, a single polygon can include more than one vegetation cover type or wetland vegetation cover type. Up to nine biophysical vegetation types and up to seven vegetation plant communities can be described for each polygon. The biophysical vegetation and vegetation plant community codes are identical. The position of each vegetation type within a heterogeneous polygon cannot be determined (except when a polygon is identified with only one wetland type or types); however, a percentage cover of each vegetation plant community is provided. Also note that this inventory has not been updated since the original was completed. Fire history records will need to be accessed for a more current view of the vegetation cover.

There are a few options that can be used to identify polygons that contain wetland types based on assessing different fields. A wetland code will need to be derived for each of the wetland vegetation plant communities identified for each polygon. More than one wetland type may be identified within a polygon. The best option is to key on the vegetation plant community field (v#pcm) and associated vegetation structure field (v#str). Each polygon can have up to seven vegetation plant communities described (along with descriptions of moisture (v#moi), species (v#sp1-4), percent cover (v#pct) and height (v#htc)) of which any number can be wetland types.

The bveg# field (biophysical vegetation), identifies up to nine fields but does not identify the percentage cover of each type; therefore, it is recommended that this field not be used to derive wetland. The v#pcm fields (vegetation plant community) should be used instead. The v#str and v#moi (moisture) fields can be used as a confirmation of wetland status or used to further refine the classification such as between treed fen and treed bog. The v#str# field contains several codes that identify wetland type; however, they are redundant to the v#pcm field and if not identified below, they are not necessary. Vegetation community types 21 and 22 are black spruce types but it is uncertain if they are wetland or moist upland so they have not been included. The v#pct field identifies the percent cover of each vegetation plant community in 10 percent classes.



If v#pcm = 99

If v#pcm = 98

If v#pcm = 1 or 2 or 3 or 4

If v#pcm = 7

If v#pcm = 17

If v#pcm = 18

If v#pcm = 19 and v#str = N then Ftnn and if v#str = P then

If v#pcm = 20

Mong

Sons

Mong

Sons

Fong

Sons

Btnn

Stnn

**Prince Albert National Park**

Prince Albert National Park is a biophysical inventory based on 1968 photographs and a mapping scale of 1:50,000. This mapping scale will dictate that polygons will more than likely be heterogeneous rather than homogeneous; therefore, a single polygon can include more than one vegetation type or wetland vegetation type. Up to three biophysical vegetation types (including two-layered stands) and up to three ground vegetation types can be described for each polygon. The position of each vegetation type within a heterogeneous polygon cannot be determined (except when a polygon is identified with only one wetland type or types); however, a percentage cover of each vegetation plant community is provided. Also note that this inventory has not been updated since the original was completed. Fire history records will need to be accessed for a more current view of the current vegetation cover.

Three cover types (including two- layered stands) and up to three ground vegetation types (non forest) can be described for each polygon. A wetland code will need to be derived for each of the wetland types identified for each polygon. More than one wetland type may be identified within a polygon. The best option is to key on the overstory (C#SPEC), understory (U#SPEC) and ground vegetation (G#SPEC) fields.

There is no moisture regime field identified; therefore, wetlands will need to be derived or identified from other fields. Non treed wetlands are identified in G#SPEC fields:

|  |  |  |
| --- | --- | --- |
| M1 | [lowland (wet site) herb and sedge cover] | Fong or Mong or Wo |
| M2 | [lowland (wet site) shrub cover] | Sons or Fong |
| FL (flooded lands) | | Mong |

Open fen and marsh types cannot be differentiated. A choice will need to made for M1 or M2 as to which cover type is most prevalent or a generic wetland code (Wo) can be assigned.

Treed wetlands will need to be derived. Key on overstory C#SPEC or understory U#SPEC fields with support from C#HT (height), C#DENS (crown closure) and U#HT, U#DENS fields:



If C#SPEC and U#SPEC contain only PM and C#DENS is code 1 or 2 and C#HT is code 1 then Btnn

If C#SPEC and U#SPEC contain only PM and C#DENS is code 3 and C#HT is code 1, 2 or 3 then Stnn

If C#SPEC and U#SPEC contain only LL or PM and LL occur in either one of the layers (i.e. must have PM and LL in one of the layers) or PM and LL occur as mixed in either layer and C#HT code is 1 or 3 and C#DENS is code 1, 3, 5 or 7 then Ftnn

If C#SPEC and U#SPEC contain only LL or PM and LL occur in either one of the layers (i.e. must have PM and LL in one of the layers) or PM and LL occur as mixed in either layer and C#HT code is 5 or 7 and C#DENS is code 3 then Stnn

Note that overstory and understory may need to be combined to meet density totals. Also, some moist or very moist upland black spruce and larch types will be included.



**APPENDIX 1**

**CAS Wetland Classification Scheme**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **WETLAND CLASS** |  |  |
|  |  |  |  |
|  | **Bog** | B |  |
|  | **Fen** | F |  |
|  | **Swamp** | S |  |
|  | **Marsh** | M |  |
|  | **Shallow Open Water** | O |  |
|  | **Tidal Flats** | T |  |
|  | **Estuary** | E |  |
|  | **Wetland, no Distinction** | W |  |
|  | **Not Wetland** | Z |  |
|  | **Blank** |  |  |
|  | **VEGETATION MODIFIER** |  |  |
|  |  |  |  |
|  | **Forested closed canopy >70% tree** | F |  |
|  | **cover** |  |  |
|  | **Wooded open canopy >6% - 70% tree** | T |  |
|  | **cover** |  |  |
|  | **Open Non-Treed Freshwater <6% tree c** | O |  |
|  | **Open Non-Treed Coastal < 6% tree** | C |  |
|  | **cover** |  |  |
|  | **Mud** | M |  |
|  | **Blank** |  |  |
|  | **WETLAND LANDFORM MODIFIER** |  |  |
|  |  |  |  |
|  | **Permafrost present** | X |  |
|  | **Patterning present** | P |  |
|  | **No permafrost or patterning** | N |  |
|  | **Saline or alkaline present** | A |  |
|  | **Blank** |  |  |
|  |  |  |  |
|  |  |  |  |



**LOCAL LANDFORM MODIFIER**

|  |  |  |  |
| --- | --- | --- | --- |
| **Collapse scar present in permafrost** | | | C |
| **area** | | |  |
| **Internal lawn with islands of forested** | | | R |
| **peat plateau** | | |  |
| **Internal lawns (permafrost once** | | | I |
| **present)** | | |  |
| **Internal lawns not present** | | | N |
| **Shrub cover > 25%** | | | S |
|  |  |  |  |
| **Graminoids with shrub cover < 25%** | | | G |
| **Blank** | | |  |

Examples:

1. W Wetland no distinction, polygon only recognized as being a wetland with no further detail.

2) Btnn treed bog (forest cover 6 %– 70%), no permafrost and no lawns present.

1. Mcng Coastal marsh, vegetated with graminoids.
2. Tmnn Tidal mud flats.
3. BBog, no other information available.

|  |  |  |
| --- | --- | --- |
| 6) | Btxc | Treed bog with peat plateau permafrost and collapse scars. |
| 7) | Ftps | Patterned treed fen with dominant shrub |
| 8) | Moag | Alkaline marsh. |



**APPENDIX 1**

**CAS Wetland Classification Scheme**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **WETLAND CLASS** |  |  |
|  |  |  |  |
|  | **Bog** | B |  |
|  | **Fen** | F |  |
|  | **Swamp** | S |  |
|  | **Marsh** | M |  |
|  | **Shallow Open Water** | O |  |
|  | **Tidal Flats** | T |  |
|  | **Estuary** | E |  |
|  | **Wetland, no Distinction** | W |  |
|  | **Not Wetland** | Z |  |
|  | **Blank** |  |  |
|  | **VEGETATION MODIFIER** |  |  |
|  |  |  |  |
|  | **Forested closed canopy >70% tree** | F |  |
|  | **cover** |  |  |
|  | **Wooded open canopy >6% - 70% tree** | T |  |
|  | **cover** |  |  |
|  | **Open Non-Treed Freshwater <6% tree c** | O |  |
|  | **Open Non-Treed Coastal < 6% tree** | C |  |
|  | **cover** |  |  |
|  | **Mud** | M |  |
|  | **Blank** |  |  |
|  | **WETLAND LANDFORM MODIFIER** |  |  |
|  |  |  |  |
|  | **Permafrost present** | X |  |
|  | **Patterning present** | P |  |
|  | **No permafrost or patterning** | N |  |
|  | **Saline or alkaline present** | A |  |
|  | **Blank** |  |  |
|  |  |  |  |
|  |  |  |  |



**LOCAL LANDFORM MODIFIER**

|  |  |  |  |
| --- | --- | --- | --- |
| **Collapse scar present in permafrost** | | | C |
| **area** | | |  |
| **Internal lawn with islands of forested** | | | R |
| **peat plateau** | | |  |
| **Internal lawns (permafrost once** | | | I |
| **present)** | | |  |
| **Internal lawns not present** | | | N |
| **Shrub cover > 25%** | | | S |
|  |  |  |  |
| **Graminoids with shrub cover < 25%** | | | G |
| **Blank** | | |  |

Examples:

1. W Wetland no distinction, polygon only recognized as being a wetland with no further detail.

2) Btnn treed bog (forest cover 6 %– 70%), no permafrost and no lawns present.

1. Mcng Coastal marsh, vegetated with graminoids.
2. Tmnn Tidal mud flats.
3. BBog, no other information available.

|  |  |  |
| --- | --- | --- |
| 6) | Btxc | Treed bog with peat plateau permafrost and collapse scars. |
| 7) | Ftps | Patterned treed fen with dominant shrub |
| 8) | Moag | Alkaline marsh. |



**APPENDIX 16**

**ECOSITE – SUMMARY OF CANADIAN**

**FOREST INVENTORIES**

**(UNDER SEPARATE COVER - SEE EXCEL SPREADSHEET)**



**APPENDIX 17**

**SAMPLE OF EXPORT PROCEDURE**



**Appendix 17 Sample of Export Procedure**

**Alberta-Pacific Industries**

**Conversion Procedure (FMU A2)**

***Section I – Header Identification Information***



Header ID

Jurisdiction

Coordinate system

Projection

Datum

Inventory owner

Land owner

Permission

Tenure type

Inventory version

Inventory start year

Inventory finish year

Inventory acquisition ID

Inventory acquisition year

Inventory update year

**0001** (FMU A2)

Alberta (AB)

UTM

UTM

North American Datum 1983

Private (Alberta Pacific Industries, Inc.)

Crown (Province of Alberta)

Restriction (Permission from Al-Pac cleared for CAS use)

Forest Management Area

2.1+, AVI standard plus Enhanced attribute file

Original inventory started in 1999

Original inventory completed in 2000

1 (This is an internal ID for CAS)

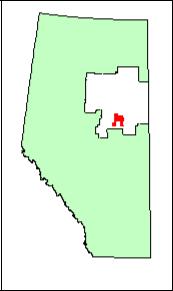
2008 (Date data are included in CAS)

Inventory has not been updated since

*Contact Information*

*Thumbnail*

Chris Kemble (for technical questions) Alberta-Pacific Forest Industries Inc (780) 525 – 8419



Dave Cheyne (for permission questions) Alberta-Pacific Forest Industries Inc (780) 525 – 8261



***Section 2 – Source Data***



Alberta-Pacific‟s forest inventory data comply with Alberta‟s Vegetation Inventory (AVI) standard, and have also been enhanced to meet Alberta Pacific‟s specific requirements (Enhanced table). Both the spatial and attribute data are stored in either an ESRI ArcGIS/Oracle or an ArcInfo software environment.

*Spatial*

The spatial data are stored by township with a single attribute field – the stand identifier, called the POLY\_NUM.

They implicitly also store the spatial properties, AREA and PERIMETER.

|  |  |  |  |
| --- | --- | --- | --- |
| AREA | 8 18 | F | 5 |
| PERIMETER | 8 | 18 | F 5 |
| POLY\_NUM | 10 | 10 | I |

*Projection Information*

GEOGCS["GCS\_North\_American\_1983\_CSRS98",

DATUM["D\_North\_American\_1983\_CSRS98",

SPHEROID["GRS\_1980",6378137.0,298.257222101]],

PRIMEM["Greenwich",0.0],

UNIT["Degree",0.0174532925199433]]

*Alberta Vegetation Inventory (AVI)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| MER | 1 | 1 | I |  |
| RNG | 2 | 2 | I |  |
| TWP | 3 | 3 | I |  |
| GID | 4 | 4 | I |  |
| MOIST\_REG |  | 1 | 1 | C |
| DENSITY | 1 1 | | | C |
| HEIGHT | 2 | 2 | | I |
| SP1 | 2 | 2 | C |  |
| SP1\_PER | 2 | | 2 | I |
| SP2 | 2 | 2 | C |  |
| SP2\_PER | 1 | | 1 | I |
| SP3 | 2 | 2 | C |  |
| SP3\_PER | 1 | | 1 | I |
| SP4 | 2 | 2 | C |  |
| SP4\_PER | 1 | | 1 | I |
| SP5 | 2 | 2 | C |  |
| SP5\_PER | 1 | | 1 | I |
| STRUC | 1 | 1 | | C |
| STRUC\_VAL |  | 1 | 1 | I |
| ORIGIN | 4 | 4 | I | |
| TPR | 1 | 1 | C |  |
| INITIALS | 2 | 2 | C | |
| NFL | 2 | 2 | C |  |
| NFL\_PER | 2 | | 2 | I |
| NAT\_NON |  | 3 | 3 | C |
| ANTH\_VEG |  | 3 | 3 | C |
| ANTH\_NON |  | 3 | 3 | C |
| MOD1 | 2 | 2 | C | |
| MOD1\_EXT |  | 1 | 1 | I |
| MOD1\_YR |  | 4 | 4 | I |
| MOD2 | 2 | 2 | C | |
| MOD2\_EXT |  | 1 | 1 | I |
| MOD2\_YR |  | 4 | 4 | I |
| DATA | 1 | 1 | C | |
| DATA\_YR |  | 4 | 4 | I |
| UMOIST\_REG |  | 1 | 1 C | |
| UDENSITY |  | 1 | 1 | C |
| UHEIGHT | 2 | | 2 | I |
| USP1 | 2 | 2 | C | |
| USP1\_PER |  | 2 | 2 | I |
|  |  |  |  |  |



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| USP2 | 2 | 2 | C |  |  |
| USP2\_PER | 1 | | 1 |  | I |
| USP3 | 2 | 2 | C |  |  |
| USP3\_PER | 1 | | 1 |  | I |
| USP4 | 2 | 2 | C |  |  |
| USP4\_PER | 1 | | 1 |  | I |
| USP5 | 2 | 2 | C |  |  |
| USP5\_PER | 1 | | 1 |  | I |
| USTRUC | 1 | 1 | | C | |
| USTRUC\_VAL |  | 1 | 1 | | I |
| UORIGIN | 4 | 4 |  | I |  |
| UTPR | 1 | 1 | C | |  |
| UINITIALS | 2 | 2 |  | C |  |
| UNFL | 2 | 2 | C |  |  |
| UNFL\_PER | 2 | | 2 |  | I |
| UNAT\_NON |  | 3 | 3 |  | C |
| UANTH\_VEG |  | 3 | 3 |  | C |
| UANTH\_NON |  | 3 | 3 | | C |
| UMOD1 | 2 | 2 |  | C |  |
| UMOD1\_EXT |  | 1 | 1 |  | I |
| UMOD1\_YR |  | 4 | 4 |  | I |
| UMOD2 | 2 | 2 |  | C |  |
| UMOD2\_EXT |  | 1 | 1 |  | I |
| UMOD2\_YR |  | 4 | 4 |  | I |
| UDATA | 1 | 1 | C | |  |
| UDATA\_YR | 4 | | 4 |  | I |
| POLY\_NUM | 10 | | 10 | | I |
| *Enhanced Inventory (Enhanced)* | | | | | |
| MER | 1 | 1 | I |  |  |
| RNG | 2 | 2 | I |  |  |
| TWP | 3 | 3 | I |  |  |
| GID | 4 4 | | I |  |  |
| DENSITY\_PER |  | 3 | 3 | | I |
| DECIMAL\_HT |  | 1 | 1 |  | I |
| STEMS\_HA | 5 | | 5 |  | I |
| MOIST\_CODE |  | 1 | 1 | | I |
| MOD3 | 2 | 2 | C | |  |
| MOD3\_EXT | 1 | | 1 |  | I |
| MOD3\_YR | 4 | | 4 | I | |
| INT\_TPR | 1 | 1 |  | C |  |
| UDENSITY\_PER | | 3 | | 3 | I |
| UDECIMAL\_HT |  | 1 | 1 | | I |
| USTEMS\_HA |  | 5 | 5 |  | I |
| UMOIST\_CODE |  | 1 |  | 1 | I |
| UMOD3 | 2 | 2 |  | C |  |
| UMOD3\_EXT |  | 1 | 1 |  | I |
| UMOD3\_YR |  | 4 | 4 |  | I |
| UINT\_TPR | 1 | 1 | | C | |
| TLG\_ID | 25 | 25 | | C | |
| POLY\_NUM | 10 | | 10 | | I |



***Section 3 – Conversion***



Three main steps need to be considered when converting Alberta-Pacific‟s forest inventory data to CAS files:

* Request FOREST cover from Alberta-Pacific Industries
* Run the attached AML code to create
* Creating the CAS\_ID
* Creating a single table comprised of the spatial information (AREA and PERIMETER), the AVI data and the enhanced data
* Creating *Source ASCII File* by inventory unit
* Creating *Source Shape File* by inventory unit

After requesting the ArcInfo cover from Al-Pac, Arc Macro Language (AML) programs can be applied to manipulate the input data. The part of this section lists a sample AML code that creates the *Source ASCII File* and *Source*

*Shape File*.

The ***CAS\_ID*** for Alberta-Pacific FMU L8 is composed of the following elements: Acronym for the Province of Alberta

(***AB***), the header identifier (***0001***), the respective township name in the following format ***T***xxx***R***yy***M***z where xxx is

the township number, yy is the range and z is the meridian number, and the stand number as a “0”-padded 4-

digit value. The four elements shall be separated by underscore characters (“\_”), for example:

***AB\_0001\_T086R14M4\_0123***. The CAS\_ID is used in the output shape file and the Source ASCII File.

Create a table or a view that combines the following three pieces of information: JOIN FOREST.PAT, FOREST.AVI and FOREST.ENHANCED tables (see last part of section for sample AML code).

Create the *Source ASCII File* exporting the joined table. Name the ASCII file using the first three elements of the CAS\_ID, for example ***AB\_0001\_T086R14M4.TXT***. The ASCII file shall only include the records for the corresponding inventory unit that is the township.

Create the shape file corresponding to the respective township, for example ***AB\_0001\_T086R14M4.SHP***. Confirm that the shape file includes the necessary files including the projection file: SHP, SHX, DBF and PRJ.



/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\* Set the correct root CAS\_ID number identifying the

/\* correct FMU and update year and the map sheet

/\* number.

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

&set CAS\_root = [response 'Enter CAS root' 0001]

&set MapSheet = [response 'Enter map sheet number' T086R14M4] &set MapSheet = [upcase %MapSheet%]

&set Twp = [substr %MapSheet% 1 1]

&set Rng = [substr %MapSheet% 5 1]

&set Mer = [substr %MapSheet% 8 1]

&if [quote %Twp%] <> 'T' or ~

[quote %Rng%] <> 'R' or ~

[quote %Mer%] <> 'M' &then

&return Error: Map sheet name must conform to f.e.: T086R14M4

&if ^ [exists forest -cover] &then

&return Error: FOREST cover missing!

&if [exists forest.dat -info] &then

killinfo forest.dat

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\* Join the two attribute files and the polygon

/\* attribute file into a new attribute data file

/\* from which the Source ASCII File can be careted

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

joinitem forest.pat forest.avi forest.dat poly\_num

joinitem forest.dat forest.enhanced forest.dat poly\_num

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\* Create CAS\_ID, map sheet, header\_id fields and

/\* re-arrange fields others

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

additem forest.dat forest.dat cas\_id 30 30 C 0 poly\_num

additem forest.dat forest.dat map\_sheet 20 20 C 0 cas\_id

additem forest.dat forest.dat header\_id 5 5 i 0 map\_sheet

additem forest.dat forest.dat area2 8 18 f 5 header\_id

additem forest.dat forest.dat perimeter2 8 18 f 5 area2

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\* Derive all appropriate field values

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

&data ARC INFO

ARC

SELECT FOREST.DAT

CONCATENATE CAS\_ID FROM 'AB\_', [quote %CAS\_root%], '\_', [quote %MapSheet%], '\_', POLY\_NUM MOVE [quote %MapSheet%] TO MAP\_SHEET

CALCULATE HEADER\_ID = %CAS\_root%

CALCULATE AREA2 = AREA

CALCULATE PERIMETER2 = PERIMETER

* STOP &end

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\* Remove any redundant fields

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

dropitem forest.dat forest.dat forest# forest-id area perimeter

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\* Create the preliminary Source ASCII File



/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

tables

sel forest.dat

change cas\_id c/ /0/g



alter;area2;area;;;;;;

alter;perimeter2;perimeter;;;;;;

[unquote ' ']

resel $recno = 1

purge

yes

unload %MapSheet%.cas delimited init

quit

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\* Creating Source Shape File

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

additem forest.pat forest.pat cas\_id 30 30 c

&data ARC INFO

ARC

SELECT FOREST.PAT

CONCATENATE CAS\_ID FROM 'AB\_', [quote %CAS\_root%], '\_', [quote %MapSheet%], '\_', POLY\_NUM

* STOP &end

tables

sel forest.pat

change cas\_id c/ /0/g

quit

dropitem forest.pat forest.pat forest# forest-id area perimeter poly\_num &if [exists %MapSheet%.shp -file] &then

&sys del %MapSheet%.shp

&if [exists %MapSheet%.shx -file] &then

&sys del %MapSheet%.shx

&if [exists %MapSheet%.dbf -file] &then

&sys del %MapSheet%.dbf

arcshape forest poly %MapSheet%.shp

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

/\* Introduce field names to the Source ASCII FIle

/\* and remove any single quotation marks (')

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

&type ===============================================

&type Finished: Include field names and remove

&type single quotes from Source ASCII File.

&type ===============================================



***Section 4 – Output Format***



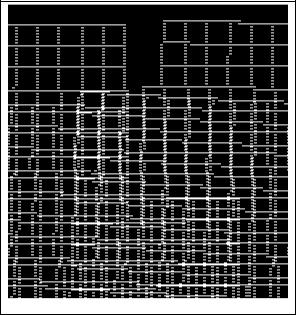
The output *Al-Pac Source ASCII File* is essentially a Comma Separated Value (CSV) file that includes the fields listed below; data types and their definition are irrelevant for the subsequent Perl processing. However, the sequence of fields is crucial. All fields present in Al-Pac‟s database should be present in the *Al-Pac Source ASCII File*.

CAS\_ID,MAP\_SHEET,HEADER\_ID,AREA,PERIMETER,POLYNUM,MER,RNG,TWP,GID,MOIST\_REG,DENSIT Y,HEIGHT,SP1,SP1\_PER,SP2,SP2\_PER,SP3,SP3\_PER,SP4,SP4\_PER,SP5,SP5\_PER,STRUC,STRUC\_VAL, ORIGIN,TPR,INITIALS,NFL,NFL\_PER,NAT\_NON,ANTH\_VEG,ANTH\_NON,MOD1,MOD1\_EXT,MOD1\_YR,MO D2,MOD2\_EXT,MOD2\_YR,DATA,DATA\_YR,UMOIST\_REG,UDENSITY,UHEIGHT,USP1,USP1\_PER,USP2,US P2\_PER,USP3,USP3\_PER,USP4,USP4\_PER,USP5,USP5\_PER,USTRUC,USTRUC\_VAL,UORIGIN,UTPR,UIN ITIALS,UNFL,UNFL\_PER,UNAT\_NON,UANTH\_VEG,UANTH\_NON,UMOD1,UMOD1\_EXT,UMOD1\_YR,UMOD 2,UMOD2\_EXT,UMOD2\_YR,UDATA,UDATA\_YR,DENSITY\_PER,DECIMAL\_HT,STEMS\_HA,MOIST\_CODE,M OD3,MOD3\_EXT,MOD3\_YR,INT\_TPR,UDENSITY\_PER,UDECIMAL\_HT,USTEMS\_HA,UMOIST\_CODE,UMOD 3,UMOD3\_EXT,UMOD3\_YR,UINT\_TPR,TLG\_ID

***Section 5 – Inventory Unit***



The Al-Pac inventory unit is referenced by the Alberta township grid.



***Section 6 – Quality Control***



Forest inventory databases will always have some errors; these are usually of two types: The first type of error reflects data entry errors including data omissions of updated inventory information; the second stems from misinterpretation of source aerial photography/imagery. Both errors have been accounted for in Alberta -Pacific‟s inventory database because rigorous quality control was applied during the creation process. Thus, we assume that Alberta-Pacific‟s inventory data are error-free, and may be exported directly to the *Source ASCII File* and the corresponding *Source Shape File* without further quality control. This assumption will not hold for most inventory data sets.

