

## Terrestrial T23A Soil Collection Raw Data Metadata

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### Rotation

Unique ID	T23A_IC00001
Attribute Definition	Reference describing when data was collected at a broad level (i.e., Prototype, Rotation 1, Rotation 2). The rotation number indicates the visit number (i.e. 1 = first visit, 2 = second visit or first revisit).
Value Type	Text
Code	Prototype = 2003--2006   Rotation 1 = 2007 onward   Rotation 2 = 2015 onward

### ABMI Site

Unique ID	T23A_IC00003
Attribute Definition	Reference number given to each ABMI data collection site. An alphabetized suffix distinguishes a new site from the old site(s). Off grid data collection sites are appended with an OG prefix, 2-5 letter project code prefix, and a 1-2 digit suffix.
Value Type	Number
Format	1-4 digits & 1 letter (if necessary); OG & 2-5 letter prefix, 1-4 digits, and 1-2 digit suffix
Range	1-1656; OG & 2-5 letter prefix (if applicable)

### Year

Unique ID	T23A_IC00002
Attribute Definition	Collection year.
Value Type	Date
Format	YYYY

### Field Date

Unique ID	T23A_IC00015
Attribute Definition	Day, month, and year data was collected.
Value Type	Date
Format	DD-Mon-YY
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable

Field Crew Member(s)

Unique ID	T23A_IC00379
Attribute Definition	Initials for the field technicians collecting the field data.
Value Type	Text
Format	2 or 3 letters (UPPERCASE) and 1 number (if necessary); 1 set of initials or a combination of many
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable

Quadrant

Unique ID	T23A_IC00260
Attribute Definition	Quadrant where soil core sample was obtained; all four quadrants must be listed per site.
Value Type	Code
Format	2 letter code (UPPERCASE)
Code	NE = Northeast Quadrant   SE = Southeast Quadrant   SW = Southwest Quadrant   NW = Northwest Quadrant
Missing Values	DNC = Did Not Collect

Primary Ecosite - Nutrient/Moisture Code

Unique ID	T23A_IC00162
Attribute Definition	Classification summarizing the primary stand type within the soil core sampling area (~2 metre radius) with regards to nutrient and moisture status of the soil (based on dominant vegetation composition).
Value Type	Code

Code	<p>1 - PX = Poor/Xeric - Bearberry, Lichen, Bog Cranberry common at some sites.   2 - PM = Poor/Mesic - Labrador Tea, Feather Moss, Bog Cranberry, Bilberry, and Grouse-berry common at some sites.   3 - MX = Medium/Xeric - Hairy Wild Rye, Bearberry, Canada Buffalo-berry, and Feather Moss common at some sites.   4 - MM = Medium/Mesic - Low-bush Cranberry, Canada Buffalo-berry, Blueberry, Alder, Rose, Saskatoon, Labrador Tea, Bearberry, Thimbleberry, Bog Cranberry, and Feather Moss may be common at some sites.   5 - MG = Medium/Hygic - Horsetail, Dogwood, Rose, Willow, and Feather Moss common at some sites.   6 - RG = Rich/Hygic - Dogwood, Fern, Feather Moss, Rose, Alder, Bracted Honeysuckle, Devil's Club, Fir common at some sites.   7 - NT = Not Treed.   8 - PD = Bog - Poor/Hydric - Labrador Tea, Peat Moss, Lichen, Bog Cranberry and Cloudberry may also be present (Soil saturated for part or all of the year. Undecomposed organic soil substrate).   9 - MD = Poor Fen - Medium/Hydric - Labrador Tea, Peat Moss, Sedge, Bog Cranberry, Dwarf Birch and Willow may also be present (Soil saturated for part or all of the year. Undecomposed organic soil substrate).   10 - RD (2005-2014) = Rich Fen - Rich/Hydric - Dwarf Birch, Willow, Sedge, Grass, Moss (soil saturated for part or all of the year; includes floating mats of vegetation).   10 - RDp (2015-later) = Rich Fen - Rich/Hydric - Dwarf Birch, Willow, Sedge, Grass, Moss (Soil saturated for part or all the year; undecomposed organic soil substrate; includes floating mats of vegetation).   10.5 - RDm = Wet Meadow - Rich/Hydric - Dominated by sedge, grass, presence of shrub and trees (e.g. willow). Conductivity &lt;15mS/cm; soil, saturated for part or all of the year. Well decomposed, organic soil substrate.   11 - VD = Marsh - Very Rich/Hydric - Cattail, Rush, Reed. Conductivity &lt;15 mS/cm, sedge and grass may also be present (Water is above the rooting zone for most or all of the year).   12 - SD = Swamp - Trees and shrubs present, poorly developed bryophytes, often with pools of water (Water is above the rooting zone for some of the year, mineral or humified organic soil rather than peaty)   13 - AD = Alkali - Conductivity &gt;15 mS/cm, white salt flats at water's edge, (Water is above the rooting zone for most or all of the year).   14 - OW = Open Water - No trees.</p>
Missing Values	DNC = Did Not Collect   PNA = Protocol Not Applicable   VNA = Variable Not Applicable

#### Primary Ecosite - Tree Species Modifier

Unique ID	T23A_IC00164
Attribute Definition	Classification summarizing the primary stand type within the soil core sampling area (~2 metre radius) with regards to tree species modifier .
Value Type	Code

Code	01a Pine = Jack Pine + Douglas Fir >80%   02a Pine = Jack Pine + Lodgepole Pine >50%   02b Other = Aspen + White Spruce + Engelmann Spruce + Subalpine Fir + Western White Pine >50%   02c Sb = Black Spruce >50%   03a None = No Trees   03b Pine = Jack Pine + Lodgepole Pine >50%   03c AwMix = Aspen >20%   03d Spruce = White Spruce + Engelmann Spruce + Subalpine Fir >50%   04a Pine = Jack Pine + Lodgepole Pine + Subalpine Fir >50%   04b PjMix = Aspen + White Birch + White Spruce > 20% AND Jack Pine >=20%   04c Aw = Aspen >50%   04d AwMix = Aspen > 20% AND White Spruce + Black Spruce + Lodgepole Pine >20%   04e Spruce = White Spruce >50%   05a Poplar = Balsam Poplar + Aspen >50%   05b Spruce = White Spruce + Engelmann Spruce >50%   05c Sb = Black Spruce >50%   06a Pine = Lodgepole Pine >50%   06b Poplar = Balsam Poplar + Aspen >50%   06c Spruce = White Spruce + Engelmann Spruce + Subalpine Fir >50%   07a Alpine = Elevation above tree line   07b Flood = Site disturbed frequently by flooding   07c Ice = Site disturbed frequently by ice or snow   07d Dry = Site in prairies/parkland and receives little precipitation   07e Geo = Geological features not suitable for tree growth   07f Human = Site disturbed recently by humans   08a Sb = >=10% tree cover (may only be in shrub/ground strata), Black Spruce >50%   08b Shrub = <10% tree cover   09a SbLt = >=10% tree cover (may only be in shrub/ground strata), Black Spruce + Tamarack >50%   09b Shrub = <10% tree cover   10a SbLt = >=10% tree cover (may only be in shrub/ground strata), Black Spruce + Tamarack >50%   10b Shrub = <10% tree cover AND >=10% shrub cover   10c None = <10% tree cover AND <10% shrub cover   10.5a Tree = >=10% tree cover (usually along wetland edge; may only be in shrub/ground strata   10.5b Shrub = <10% tree cover AND >=10% shrub cover   10.5c None = <10% tree cover AND <10% shrub cover   11a None = usually along a water body edge >=10% emergent vegetation cover, <10% tree cover   12a Tree = >10% tree cover   12b Shrub = <10% tree cover   13a None = <10% shrub/tree cover   14a Lake = In standing water <10% emergent vegetation cover   14b River = In flowing water <10% emergent vegetation cover
Missing Values	DNC = Did Not Collect   PNA = Protocol Not Applicable   VNA = Variable Not Applicable

### Primary Ecosite - Structural Stage

Unique ID	T23A_IC00163
Attribute Definition	Classification summarizing the primary stand type within the soil core sampling area (~2 metre radius) with regards to structural stage used to describe the site type.
Value Type	Code

Code	For full explanation of the code definitions, see Terrestrial/Wetland Metadata Appendix: Detailed Code Definitions. 1) = Tree Dominated Ecosites   Tree Height: TS = Short   TT = Tall   Tree Density: D = Dense   S = Sparse   Tree Arrangement: C = Complex   N = Non-Complex   2) = Non-Tree Dominated Ecosites   N = Non-Vegetated   Substrate Type: R = Rock   S = Sand   B = Beach   M = Mineral Soil   O = Organic Soil   G = Ground Vegetation Only:   Vegetation Type: B = Bryoid/Lichen   F = Forbs   G = Graminoid   R = Reeds and Rushes (Marsh)   Vegetation Density: D = Dense   M = Moderate   S = Sparse   S = Shrubs present   Shrub Height: L = Low   T = Tall   Shrub Density: D = Dense   M = Moderate   S = Sparse   3) = Open Water Dominated Communities   Vegetation Type: OV = Vegetated   ON = Non-Vegetated   Vegetation Height: S = Short Submerged   M = Medium Submerged   T = Tall Submerged   F = Floating   Vegetation Density: D = Dense   M = Moderate   S = Sparse
Missing Values	DNC = Did Not Collect   PNA = Protocol Not Applicable   VNA = Variable Not Applicable

#### Percent Area of Primary Ecological Site Classification

Unique ID	T23A_IC00227
Attribute Definition	Percent of the sampling area described by the primary ecotype (10% increments).
Value Type	Number
Format	2 digits
Range	10%-100%
Unit	percent
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable

#### Slope Position

Unique ID	T23A_IC00299
Attribute Definition	Position with respect to the slope for each quadrant where soil core samples are taken.
Value Type	Code
Format	1 letter (UPPERCASE) and 1 number (if necessary)

Code	C = Crest - situated in a relatively level area on the top of a hill   S1 = Slope - situated on the side of a hill, a modifier of 1 indicates slopes of 2-5 degrees,   S2 = Slope - situated on the side of a hill, a modifier of 2 indicates slopes of 6-10 degrees,   S3 = Slope - situated on the side of a hill, a modifier of 3 indicates slopes of 11-30 degrees,   S4 = Slope - situated on the side of a hill, a modifier of 4 indicates slopes of >30 degrees,   T = Toe - situated at the bottom of a hill where the ground surface transitions from a slope to level   L = Level - situated in an area with <2 degrees slope   D = Depression - situated in an area that accumulates water after rains
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable

Slope Direction

Unique ID	T23A_IC00298
Attribute Definition	Direction of the slope in degrees (looking downhill) where each of the four quadrants are located.
Value Type	Number
Format	1-3 digits
Range	0-359
Missing Values	DNC = Did Not Collect   PNA = Protocol Not Applicable   VNA = Variable Not Applicable

Location of Soil Core Sample

Unique ID	T23A_IC00203
Attribute Definition	Location of samples (cores) obtained per quadrant; minimum of 4 and maximum of 24 per quadrant.
Value Type	Number
Format	1-2 Digits
Range	1-24
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable

Soil Core Sample

Unique ID	T23A_IC00302
Attribute Definition	Code describing whether a soil core sample was taken, whether they were unique or only partial cores could be acquired, or whether there were no cores taken. 1 code or a combination of codes [2007-2008].
Value Type	Code
Format	1-3 letter code (UPPERCASE)

Code	AM = Animal Material encountered; core acquired.   DWM = Down Woody Material encountered; core acquired.   HD = Human Disturbance (i.e., exposed mineral soil); core (litter) acquired.   ICE = Ice; Partial core may have been acquired   R = Rock; Partial core may have been acquired.   RT = Roots; core acquired.   SL = Stump/Log; Partial core may have been acquired.   SW = Standing Water; core not acquired.   WT = Water Table; Partial core acquired from above water.   X = Core acquired; nothing unique   OT = Other
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable   NONE = Absent from site

#### Total Number of Soil Cores Taken

Unique ID	T23A_IC00328
Attribute Definition	The total number of soil cores taken from each quadrant [2007-2009].
Value Type	Number
Range	0 - 24
Missing Values	DNC = Did Not Collect   PNA = Protocol Not Applicable   VNA = Variable Not Applicable

#### Additional Soil (milliliters)

Unique ID	T23A_IC00095
Attribute Definition	Volume (ml) of additional soil (LFH only) acquired from the 4 minimum soil cores taken and/or extra soil left over from the 500 ml sample.
Value Type	Number
Format	1 or more digits
Range	0 and up
Unit	millilitre
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable

#### Mineral Soil Collected

Unique ID	T23A_IC00213
Attribute Definition	Indicates whether mineral soil was collected (C) or not (None).
Value Type	Code
Code	C = Mineral Soil Collected   NONE = No Mineral Soil Present
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable

LFH Collected

Unique ID	T23A_IC00987
Attribute Definition	Indicates whether LFH was collected (C) or not (None).
Value Type	Code
Code	C = LFH Collected   NONE = No LFH present
Missing Values	DNC = Did Not Collect   PNA = Protocol Not Applicable   VNA = Variable Not Applicable

Ecosite - Nutrient/Moisture Code

Unique ID	T23A_IC01318
Attribute Definition	Nutrient and moisture code for the ecological site classification of a vegetated site based on the dominant vegetation community that is present.
Value Type	Code



Code	<p>1 - PX = Poor/Xeric - Bearberry, Lichen, Bog Cranberry common at some sites.   2 - PM = Poor/Mesic - Labrador Tea, Feather Moss, Bog Cranberry, Bilberry, and Grouse-berry common at some sites.   3 - MX = Medium/Xeric - Hairy Wild Rye, Bearberry, Canada Buffalo-berry, and Feather Moss common at some sites.   4 - MM = Medium/Mesic - Low-bush Cranberry, Canada Buffalo-berry, Blueberry, Alder, Rose, Saskatoon, Labrador Tea, Bearberry, Thimbleberry, Bog Cranberry, and Feather Moss may be common at some sites.   5 - MG = Medium/Hygic - Horsetail, Dogwood, Rose, Willow, and Feather Moss common at some sites.   6 - RG = Rich/Hygic - Dogwood, Fern, Feather Moss, Rose, Alder, Bracted Honeysuckle, Devil's Club, Fir common at some sites.   7 - NT = Not Treed.   8 - PD = Bog - Poor/Hydric - Labrador Tea, Peat Moss, Lichen, Bog Cranberry and Cloudberry may also be present (Soil saturated for part or all of the year. Undecomposed organic soil substrate).   9 - MD = Poor Fen - Medium/Hydric - Labrador Tea, Peat Moss, Sedge, Bog Cranberry, Dwarf Birch and Willow may also be present (Soil saturated for part or all of the year. Undecomposed organic soil substrate).   10 - RD (2005-2014) = Rich Fen - Rich/Hydric - Dwarf Birch, Willow, Sedge, Grass, Moss (soil saturated for part or all of the year; includes floating mats of vegetation).   10 - RDp (2015-later) = Rich Fen - Rich/Hydric - Dwarf Birch, Willow, Sedge, Grass, Moss (Soil saturated for part or all of the year; undecomposed organic soil substrate; includes floating mats of vegetation).   10.5 - RDm = Wet Meadow - Rich/Hydric - Dominated by sedge, grass, presence of shrub and trees (e.g. willow). Conductivity &lt;15mS/cm; soil, saturated for part or all of the year. Well decomposed, organic soil substrate.   11 - VD = Marsh - Very Rich/Hydric - Cattail, Rush, Reed. Conductivity &lt;15 mS/cm, sedge and grass may also be present (Water is above the rooting zone for most or all of the year).   12 - SD = Swamp - Trees and shrubs present, poorly developed bryophytes, often with pools of water (Water is above the rooting zone for some of the year, mineral or humified organic soil rather than peaty)   13 - AD = Alkali - Conductivity &gt;15 mS/cm, white salt flats at water's edge, (Water is above the rooting zone for most or all of the year).   14 - OW = Open Water - No trees.</p>
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable

### Ecosite - Tree Species Modifier

Unique ID	T23A_IC01319
Attribute Definition	At every vegetation sampling location, the tree species modifier is used to classify the site if trees are present and is combined with the moisture/nutrient category to give an ecological site classification.
Value Type	Code

Code	<p>01a Pine = Jack Pine + Douglas Fir &gt;80%   02a Pine = Jack Pine + Lodgepole Pine &gt;50%   02b Other = Aspen + White Spruce + Engelmann Spruce + Subalpine Fir + Western White Pine &gt;50%   02c Sb = Black Spruce &gt;50%   03a None = No Trees   03b Pine = Jack Pine + Lodgepole Pine &gt;50%   03c AwMix = Aspen &gt;20%   03d Spruce = White Spruce + Engelmann Spruce + Subalpine Fir &gt;50%   04a Pine = Jack Pine + Lodgepole Pine + Subalpine Fir &gt;50%   04b PjMix = Aspen + White Birch + White Spruce &gt; 20% AND Jack Pine &gt;=20%   04c Aw = Aspen &gt;50%   04d AwMix = Aspen &gt; 20% AND White Spruce + Black Spruce + Lodgepole Pine &gt;20%   04e Spruce = White Spruce &gt;50%   05a Poplar = Balsam Poplar + Aspen &gt;50%   05b Spruce = White Spruce + Engelmann Spruce &gt;50%   05c Sb = Black Spruce &gt;50%   06a Pine = Lodgepole Pine &gt;50%   06b Poplar = Balsam Poplar + Aspen &gt;50%   06c Spruce = White Spruce + Engelmann Spruce + Subalpine Fir &gt;50%   07a Alpine = Elevation above tree line   07b Flood = Site disturbed frequently by flooding   07c Ice = Site disturbed frequently by ice or snow   07d Dry = Site in prairies/parkland and receives little precipitation   07e Geo = Geological features not suitable for tree growth   07f Human = Site disturbed recently by humans   08a Sb = &gt;=10% tree cover (may only be in shrub/ground strata), Black Spruce &gt;50%   08b Shrub = &lt;10% tree cover   09a SbLt = &gt;=10% tree cover (may only be in shrub/ground strata), Black Spruce + Tamarack &gt;50%   09b Shrub = &lt;10% tree cover   10a SbLt = &gt;=10% tree cover (may only be in shrub/ground strata), Black Spruce + Tamarack &gt;50%   10b Shrub = &lt;10% tree cover AND &gt;=10% shrub cover   10c None = &lt;10% tree cover AND &lt;10% shrub cover   10.5a Tree = &gt;=10% tree cover (usually along wetland edge; may only be in shrub/ground strata   10.5b Shrub = &lt;10% tree cover AND &gt;=10% shrub cover   10.5c None = &lt;10% tree cover AND &lt;10% shrub cover   11a None = usually along a water body edge &gt;=10% emergent vegetation cover, &lt;10% tree cover   12a Tree = &gt;10% tree cover   12b Shrub = &lt;10% tree cover   13a None = &lt;10% shrub/tree cover   14a Lake = In standing water &lt;10% emergent vegetation cover   14b River = In flowing water &lt;10% emergent vegetation cover</p>
Missing Values	DNC = Did Not Collect   VNA = Variable Not Applicable