Ministry of Forests and Range

VRIMS

VRIMS Vegetation Cover Polygon Validation Rules

Version 2.0.2.11
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1. Introduction

This document specifies the validation rules for Vegetation Cover Polygons defined in the VRID data model. It uses a relatively formal specification language which is intended to be human-readable and also easy and unambiguous to implement.

The rules given are primarily intended to validate newly entered data. Some rules are marked as [Conversion], to indicate that they apply at Conversion time only.

For each item, each rule specified must be true.

Rules are grouped into the following sections:

- Rules for each individual field
- Rules which apply to all fields in a single record type
- Rules which apply to the collection of all records of the same type under a single parent record
- Rules which apply to all records comprising a single polygon

Where no ambiguity exists, field names are shown without the prefix of their containing record name.

Code list definitions can be found in Appendix B. Appendix A is a glossary of terms used throughout the documentation that are not "Codes" but are important terms.

1.1 Notation Convention

This document is a table-based document, with several different table styles. In most cases, the tables will follow one of the following styles. In a few cases, the need of the rules dictated a modified style. In these cases, a description on how to read the style is included with the table.

FORMAT
Type: Format

Column	Format	Valid Value(s)
FCO.POLYGON_AREA	#.# Numeric (Decimal)	Floating Point (decimal) greater than or equal to 0 Floating Point value >= 0

The column titled "Column" is the column we're acting upon. The column titled "Format" column is the format. The "Format" column will show the available spacing of the column. For instance, a 1 – 5 digit number will show as: #####.

The final column is "Valid Value(s)" which are the values that can be used in this column (e.g. a number > 0 but less than 5000).

CONDITIONAL

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V** or **I**	VCPE.NON_PRODUCTIVE_DESCRIPTOR_CODE	*NULL* Empty value

The conditional table states where the value of one column, "Column," is equal to a certain value or range of values, then the value of another column, "Then Column," is equal to a certain value or range of values. **IF the table evaluates as** false, then there will be an error. For instance, if Inventory Standard Code is I or V but Non Productive Descriptor Code contains a value (is not null), then an error would occur.

The first untitled column will contain either "AND" or "OR." This allows for more complex conditionals where required. For instance:

Type: Conditionals

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**	VCPE.ALPINE_DESIGNATION_CODE	not *NULL*

The column VCPE.Alpine_Designation_Code must be not null, when Inventory Standard Code is V and BCLCS Level 1 Code is not U.

CONDITIONALS: Type 2

Type: Conditionals

	Column(s)	Is/Are …	Or Column(s) …	Is/Are …
	VCPE.ALPINE_DESIGNATION_CODE VCPE.MODIFYING_PROCESS_CODE VCPE.SITE_POSITION_MESO_CODE VCPE.SURFACE_EXPRESSION_CODE VCPE.SOIL_NUTRIENT_REGIME_CODE VCPE.DATA_SOURCE_ECOLOSYS_CODE	*NULL*	VCPE.ALPINE_DESIGNATION_CODE VCPE.MODIFYING_PROCESS_CODE VCPE.SITE_POSITION_MESO_CODE VCPE.SURFACE_EXPRESSION_CODE VCPE.SOIL_NUTRIENT_REGIME_CODE VCPE.DATA_SOURCE_ECOLOSYS_CODE	*not NULL*

A variation of the previous conditional is the "Column is value or Column is value." This type of field states that **all** columns in the "Column(s)" column must be the value of "Is/Are" **OR** all of the columns in the column titled "Or Column(s)" must be the value of the second "Is/Are." This is more like a format column, as it is specifying a correct value, however like the previous conditionals, multiple can be strung together to perform complex statements / rules.

MATH CONDITIONALS: Operation

Type: Math Conditionals **Produces:** WARNING

	Operation	Associated Records in Table …	… Column	Is …
	TOTAL	TREE_COVER_LAYER_ESTIMATED BY: TREE_COVER_LAYER_ESTIMATED_ID	TCL.CROWN_CLOSURE_PCT	
+			VCPE.SHRUB_CROWN_CLOSURE	
+			VCPE.HERB_COVER_PCT	

+			VCPE.BRYOID_COVER_PCT	
+	TOTAL	NON_VEGETATIVE_COVER_EST	NVCE.NON_VEG_COVER_PCT	< 100 or = 100

The Operation conditional states an operation to be performed on a column, or the total of all columns in a specified table, where the records are associated to the type (i.e. Tree Species Estimated) we're currently dealing with.

For example, in the above table we want the total of all records in the Tree Cover Layer Estimated table who relate to us through the use of the Tree Cover Layer Estimated Id. The total that we're getting is the sum of all Crown Closure Pct columns that we get out of this relationship.

We are then adding (the "+" value to the left of the Operation table), to the Shrub Crown Closure percent, herb cover, and bryoid cover percents, and any other values. The final row specifies what we want to make sure the value we've added is < 100 or equal to 100. If this does not evaluate to true an error will produce unless otherwise stated (in this case, it states a WARNING is produced).

MATH CONDITIONALS: Sum of Associated Records

Type: Math Conditionals **Produces:** WARNING

	Column	Is …	Then Sum Associated Records	Is …
	VCPE.ALPINE_DESIGNATION_CODE	**A**	**IN TABLE:** TREE_COVER_LAYER_ESTIMATED **ASSOC. BY:** TREE_COVER_LAYER_ESTIMATED_ID **SUM OF COLUMNS:** TCL.CROWN_CLOSURE_PCT	< 10 or = 10

Similar to above except that we're specifying that if VCPE.Alpine Designation Code is 'A', then the value of associated records in another table is < 10.

1.2 General Rules

- No rules are provided for F records, since they are assumed to already have been validated.
- No rules are provided for L records (Landscape Vegetation Inventory Standards).
- All values are nullable unless indicated otherwise
- Referential Integrity must exist for all subordinate tables related to the Vegetation Cover Polygon entity. (In other words, if a subordinate record exists, the parent polygon record must also exist).
- Unless explicitly specified in a rule, Record, Collection and Polygon-Level Rules are only evaluated if all referenced records are present and all referenced field values are non-null. If any of the input data MUST be present this must be specified explicitly, via Non-Null rules (typically as a field-level rule).

1.3 Minimum Data Requirements

All polygons must have the Inventory Standard field filled with a non-null value. If a null value is found, an error is reported and the remaining BVR's are bypassed.

All polygons must have the following fields, independent of their inventory standard:

- Inventory Standard
- Interpreter
- Project Name
- Reference Year
- Interpretation Date
- Spatial Data

Additionally, Forest Cover Objects must:

- Have a Forest Cover Object ID that is not = 0

1.4 Reference Documents

The following documents can be found at:

https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-inventory/forest-cover-inventories/photo-interpretation/standards

- VRIMS Personal Geodatabase Structure and Use;
- BC Land Classification Scheme;
- Addendum to BC Land Cover Classification Scheme;
- VRI Photo Interpretation Procedures;

2. Vegetation Cover Polygon

2.1.0 FCO.Polygon (Geometry)

Error Code: <E-VCP-Z-0010>

pe: Format

Column	Format	Valid Value(s)
FCO.POLYGON	GEOMETRY	Not Null

2.1.0b FCO.Polygon (Min Data Set Rule)

Error Code: <E-FCO-P-0005>

pe: Format

Column	Must Be
FCO.POLYGON	Not Null and Simple
FCO.INVENTORY_STANDARD_CODE	Not Null
FCO.INTERPRETER	Not Null
FCO.PROJECT_NAME	Not Null
FCO.REFERENCE_YEAR	Not Null
FCO.INTERPRETATION_DATE	Not Null

2.1.1 FCO.Polygon_Area (Forest Cover Object)

Error Code: <E-VCP-Z-0020>

Type: Format

Column	Format	Valid Value(s)
FCO.POLYGON_AREA	#.# Numeric (Decimal)	Floating Point (decimal) greater than or equal to 0 Floating Point value >= 0

2.1.2 VCPE.Non_Productive_Descriptor_Code

2.1.2a

Error Code: <E-VCP-Z-0270>

Type: Format

Column	Format	Valid Value(s)
VCPE.NON_PRODUCTIVE_DESCRIPTOR_CODE	XXXXX [A-Z<] 5 characters, A to Z and <	A, AF, C, CL, G, GR, ICE, L, M, MUD, NA, NP, NPBR, NPBU, NPF, NTA, OR, P, R,RIV, S, SAND, TIDE, U

2.1.2b

Error Code: <E-VCP-P-0280>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V** or **I**	VCPE.NON_PRODUCTIVE_DESCRIPTOR_CODE	*NULL* Empty value

2.1.3 VCPE.Input_Date

Error Code: <E-VCP-Z-0290>

Type: Format

Column	Format	Valid Value(s)
VCPE.INPUT_DATE	MM/DD/YYYY	*Valid Date before current date.*

[DEPRECATED]

~~**Type:** Conditionals~~

	~~Column~~	~~Is …~~	~~Then Column …~~	~~Is …~~
	~~FCO.INVENTORY_STANDARD_CODE~~	~~**V** or **I**~~	~~VCPE.INPUT_DATE~~	~~not *NULL* Contains Data~~

2.1.4 VCPE.Surface_Expression_Code

2.1.4a

Error Code: <E-VCP-Z-0360>

Type: Format

Column	Format	Valid Value(s)
VCPE.SURFACE_EXPRESSION_CODE	X	C, D, F, H, M, N, P, R, T, U

2.1.4b

Error Code: <E-VCP-P-0370>

Type: Conditionals

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**		
AND	VCPE.BCLCS_LEVEL5_CODE	not **LA** & not **RI** & not **RE** & not **OC**	VCPE.SURFACE_EXPRESSION_CODE	not *NULL* Contains Data

2.1.5 VCPE.Modifying_Process_Code

2.1.5a

Error Code: <E-VCP-Z-0380>

Type: Format

Column	Format	Valid Value(s)
VCPE.MODIFYING_PROCESS_CODE	X	A, B, F, N, U, V

2.1.5b

Error Code: <E-VCP-P-0390>

Type: Conditionals

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**		
AND	VCPE.BCLCS_LEVEL5_CODE	not **LA** & not **RI** & not **RE** & not **OC**	VCPE.MODIFYING_PROCESS_CODE	not *NULL* Contains Data

2.1.6 VCPE.Site_Position_Meso_Code

2.1.6a

Error Code: <E-VCP-Z-0400>

Type: Format

Column	Format	Valid Value(s)
VCPE.SITE_POSITION_MESO_CODE	X	C, D, F, L, M, T, U

2.1.6b

Error Code: <E-VCP-P-0410>

Type: Conditionals

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**		
AND	VCPE.BCLCS_LEVEL5_CODE	not **LA** & not **RI** & not **RE** & not **OC**	VCPE.SITE_POSITION_MESO_CODE	not *NULL* Contains Data

2.1.7 VCPE.Alpine_Designation_Code

2.1.7a

Error Code: <E-VCP-Z-0420>

Type: Format

Column	Format	Valid Value(s)
VCPE.ALPINE_DESIGNATION_CODE	X	A, N

2.1.7b

Error Code: <E-VCP-P-0430>

Type: Conditionals

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**	VCPE.ALPINE_DESIGNATION_CODE	not *NULL*

2.1.8 VCPE.Soil_Nutrient_Regime_Code

2.1.8a

Error Code: <E-VCP-Z-0440>

Type: Format

Column	Format	Valid Value(s)
VCPE.SOIL_NUTRIENT_REGIME_CODE	X	A, B, C, D, E, F

2.1.8b

Error Code: <E-VCP-P-0450>

Type: Conditionals

	Column	Is …	Then Column …	Is …		
	FCO.INVENTORY_STANDARD_CODE	**V**				
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**				
AND	VCPE.BCLCS_LEVEL5_CODE		not **LA** & not **RI** & not **RE** & not **OC** & not **GL** & not **RZ** & not **UR** & not **AP**		VCPE.SOIL_NURIENT_REGIME_CODE	not *NULL* Contains Data
ELSE IF	VCPE.BCLCS_LEVEL5_CODE		Is **LA** or is **RI** or is **RE** or is **OC or** is **GL or** is **RZ or** is **UR or** is **AP**		VCPE.SOIL_NURIENT_REGIME_CODE	'A'

2.1.9 VCPE.Data_Source_Ecosys_Class_Code

2.1.9a

Error Code: <E-VCP-Z-0460>

Type: Format

Column	Format	Valid Value(s)
VCPE.DATA_SOURCE_ECOSYS_CLASS_CODE	##	Value in DATA_SOURCE_ECOSYS_CLASS_CODE {0-14, 16-20, 22, 25-27, 30-31, 40-41, 50-51, 60-61}

2.1.9b

Error Code: <E-VCP-P-0470>

Type: Conditionals

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**		
AND	VCPE.BCLCS_LEVEL5_CODE	not **LA** & not **RI** & not **RE** & not **OC**	VCPE.DATA_SOURCE_ECOSYS_CLASS_CODE	not *NULL* Contains Data

2.1.10 VCPE.VRI_Dead_Stems_Per_Ha

2.1.10a

Error Code: <E-VCP-Z-0030>

Type: Format

Column	Format	Valid Value(s)
VCPE.VRI_DEAD_STEMS_PER_HA	#### [0 – 9999] Numbers 0 to 9,999.	Range: 0 - 9999

2.1.10b

Error Code: <E-VCP-P-0040>

Type: Conditionals

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**		
AND	number of associated **TCL** records	> 0	VCPE.VRI_DEAD_STEMS_PER_HA	not *NULL* Contains Data

2.1.11 VCPE.BCLCS_Level1_Code

Error Code: <E-VCP-Z-0050>

Type: Format

Column	Format	Valid Value(s)
VCPE.BCLCS_LEVEL1_CODE	X	N, U, V

See BCLC Rules

2.1.12 VCPE.BCLCS_Level2_Code

Error Code: <E-VCP-Z-0060>

Type: Format

Column	Format	Valid Value(s)
VCPE.BCLCS_LEVEL2_CODE	X	L, N, T, W

See BCLC Rules

2.1.13 VCPE.BCLCS_Level3_Code

Error Code: <E-VCP-Z-0070>

Type: Format

Column	Format	Valid Value(s)
VCPE.BCLCS_LEVEL3_CODE	X	A, U, W

See BCLC Rules

2.1.14 VCPE.BCLCS_Level4_Code

Error Code: <E-VCP-Z-0080>

Type: Format

Column	Format	Valid Value(s)
IF VCPE.BCLCS_LEVEL2_CODE <> 'W"	THEN	
VCPE.BCLCS_LEVEL4_CODE	XX	BI, BM, BY, EL, HE, HF, HG, RO, SI, SL, ST, TB, TC, TM

See BCLC Rules

2.1.15 VCPE.BCLCS_Level5_Code

Error Code: <E-VCP-Z-0090>

Type: Format

Column	Format	Valid Value(s)
VCPE.BCLCS_LEVEL5_CODE	XX	BE, BI, BR, BU, CB, CL, DE, ES, GL, GP, LA, LB, LL, LS, MI, MN, MU, MZ, OC, OP, OT, PN, RE, RI, RM, RN, RS, RZ, SP, TA, TZ, UR

See BCLC Rules

2.1.16 FCO.Interpreter(Forest Cover Object)

Error Code: <E-VCP-Z-0100>

Type: Format

Column	Format	Valid Value(s)
FCO.INTERPRETER	X (30) 30 character limit	String: 30 character limit

2.1.16.1 FCO.Interpreter(Forest Cover Object)

Error Code: <E-VCP-Z-????>

Type: Format

Column	Format	Valid Value(s)
FCO.INTERPRETER	X (30) 30 character limit	All alphas must be Upper Case with no spaces.

2.1.17 FCO.Interpretation_Date (Forest Cover Object)

2.1.17a

Error Code: <E-VCP-Z-0110>

Type: Format

Column	Format	Valid Value(s)
FCO.INTERPRETATION_DATE	MM/DD/YYYY	*Valid Date*

***note: Valid Date check not implemented due to multiple date formats that exist.**

2.1.17b

Error Code: <E-VCP-R-0120>

Column	Is	Then
FCO.INTERPRETATION_DATE	Before VCPE.REFERENCE_YEAR Or After Today's Midnight	Error: Interpretation Date cannot be before the Vegetation Cover Polygon Estimated Reference Year (Estimation Base Year) or in the future.

2.1.18 FCO.Project_Name (Forest Cover Object)

Error Code: <E-VCP-Z-0130>

Type: Format

Column	Format	Valid Value(s)
FCO.PROJECT_NAME	X (100) 100 character limit	String: 100 character limit

2.1.18.1 FCO.Project_Name (Forest Cover Object)

Error Code: <E-VCP-Z-????>

Type: Format

Column	Format	Valid Value(s)
FCO.PROJECT_NAME	X (100) 100 character limit	All Alphas are Upper-Case.

2.1.19 VCPE.Shrub_Height

Error Code: <E-VCP-Z-0140>

Type: Format

Column	Format	Valid Value(s)
VCPE.SHRUB_HEIGHT	##.##	0.00 < Height <= 15.00

2.1.19.1 VCPE.Shrub_Height

Error Code: <W-VCP-Z-????>

Type: Math Conditionals **Produces:** WARNING

Column	Format	Valid Value(s)
VCPE.SHRUB_HEIGHT	##.##	10.00 < Height <= 15.00

2.1.20 VCPE.Shrub_Crown_Closure

Error Code: <E-VCP-Z-0150>

Type: Format

Column	Format	Valid Value(s)
VCPE.SHRUB_CROWN_CLOSURE	### Numbers 1 to 100	0.00 < Percent <= 100

2.1.21 VCPE.Cover_Pattern_Code

Error Code: <E-VCP-Z-0160>

Type: Format

Column	Format	Valid Value(s)
VCPE.COVER_PATTERN_CODE	# Numbers 1 to 9	Range: 1 - 9

2.1.22 VCPE.Herb_Cover_Type_Code

Error Code: <E-VCP-Z-0170>

Type: Format

Column	Format	Valid Value(s)
VCPE.HERB_COVER_TYPE_CODE	XX	HE, HF, HG

2.1.23 VCPE.Herb_Cover_Pct

Error Code: <E-VCP-Z-0180>

Type: Format

Column	Format	Valid Value(s)
VCPE.HERB_COVER_PCT	### Numbers 1 to 100	0.00 < Percent <= 100

2.1.24 VCPE.Herb_Cover_Pattern_Code

Error Code: <E-VCP-Z-0190>

Type: Format

Column	Format	Valid Value(s)
VCPE.HERB_COVER_PATTERN_CODE	# Numbers 1 to 9	Range: 1 - 9

2.1.25 VCPE.Bryoid_Cover_Pct

Error Code: <E-VCP-Z-0200>

Type: Format

Column	Format	Valid Value(s)
VCPE.BRYOID_COVER_PCT	### Numbers 0 to 100	Range: 0 - 100

2.1.26 FCO.Inventory_Standard_Code (FOREST COVER OBJECT)

Error Code: <E-VCP-Z-0210>

Type: Format

Column	Format	Valid Value(s)
FCO.INVENTORY_STANDARD_CODE	X	F, I, V

2.1.27 FCO.Expiry_Date

Error Code: <E-FCO-R-0220>

Type: Format

Column	Format	Valid Value(s)
FCO.EXPIRY_DATE	*NULL*	*NULL*

2.1.28 VCPE.Reference_Year

Error Code: <E-VCP-Z-0230>

Type: Format

Column	Format	Valid Value(s)
FCO.REFERENCE_YEAR	#### Number: 4 Digits	YYYY (4 digit year: e.g. 2002) 1901 <= year <= **current year**

2.1.29 Record-Level Rules

2.1.29a

Error Code: <E-VCP-R-0240>

Type: Conditionals

	Column(s)	Is/Are …	Or Column(s) …	Is/Are …
	VCPE.ALPINE_DESIGNATION_CODE VCPE.MODIFYING_PROCESS_CODE VCPE.SITE_POSITION_MESO_CODE VCPE.SURFACE_EXPRESSION_CODE	*NULL*	VCPE.ALPINE_DESIGNATION_CODE VCPE.MODIFYING_PROCESS_CODE VCPE.SITE_POSITION_MESO_CODE VCPE.SURFACE_EXPRESSION_CODE	*not NULL*

	VCPE.SOIL_NUTRIENT_REGIME_CODE VCPE.DATA_SOURCE_ECOLOSYS_CODE		VCPE.SOIL_NUTRIENT_REGIME_CODE VCPE.DATA_SOURCE_ECOLOSYS_CODE	
OR	VCPE.BCLCS_LEVEL5_CODE	**LA** or **RI** or **RE** or **OC**		
AND	VCPE.MODIFYING_PROCESS_CODE VCPE.SITE_POSITION_MESO_CODE VCPE.SURFACE_EXPRESSION_CODE VCPE.DATA_SOURCE_ECOLOSYS_CODE	*NULL*	VCPE.MODIFYING_PROCESS_CODE VCPE.SITE_POSITION_MESO_CODE VCPE.SURFACE_EXPRESSION_CODE VCPE.DATA_SOURCE_ECOLOSYS_CODE	*not NULL*

Section processed as block.

2.1.29b

Error Code: <E-VCP-R-0250>

Type: Conditionals

	Column(s)	Is/Are …	Or Column(s) …	Is/Are …
	VCPE.SHRUB_HEIGHT VCPE.SHRUB_CROWN_CLOSURE VCPE.COVER_PATTERN_CODE	*NULL*	VCPE.SHRUB_HEIGHT VCPE.SHRUB_CROWN_CLOSURE VCPE.COVER_PATTERN_CODE	*not NULL*

2.1.29c

Error Code: <E-VCP-R-0260>

Type: Conditionals

	Column(s)	Is/Are …	Or Column(s) …	Is/Are …
	VCPE.HERB_COVER_TYPE_CODE VCPE.HERB_COVER_PCT VCPE.HERB_COVER_PATTERN_CODE	*NULL*	VCPE.HERB_COVER_TYPE_CODE VCPE.HERB_COVER_PCT VCPE.HERB_COVER_PATTERN_CODE	*not NULL*

2.1.29d

Error Code: <E-VCP-R-????>

Type: Conditionals

	Column(s)	Is/Are …	Then	Is/Are …
	FCO.INVENTORY_STANDARD_CODE	V		
AND	VCPE.BCLCS_LEVEL5_CODE	**LA** or **RI** or **RE** or **OC**	VCPE.MODIFYING_PROCESS_CODE VCPE.SITE_POSITION_MESO_CODE VCPE.SURFACE_EXPRESSION_CODE	= 'N' = 'D' = 'D'

2.1.29e

Error Code: <W-VCP-R-????>

Type: Conditionals **Produces:** WARNING

	Column(s)	Is/Are …
	VCPE.BCLCS_LEVEL1_CODE	**U**

2.1.30 Polygon-Level Rules

2.1.30a

Error Code: <W-VCP-P-0300>

Type: Math Conditionals **Produces:** WARNING

	Operation	Associated Records in Table …	… Column	Is …
	TOTAL	TREE_COVER_LAYER_ESTIMATED BY: TREE_COVER_LAYER_ESTIMATED_ID	TCL.CROWN_CLOSURE_PCT	
+			VCPE.SHRUB_CROWN_CLOSURE	
+			VCPE.HERB_COVER_PCT	
+			VCPE.BRYOID_COVER_PCT	
+	TOTAL	NON_VEGETATIVE_COVER_EST	NVCE.NON_VEG_COVER_PCT	<= 100

2.1.30b

Error Code: <E-VCP-P-0310>

Type: Math Conditionals **Produces:** ERROR

	Column	Is …	Then	Is …
	VCPE.ALPINE_DESIGNATION_CODE	**A**	**NUM OF TREE_COVER_LAYER'S**	= 0

2.1.30c

Error Code: <W-VCP-P-0320>

Type: Conditionals **Produces:** WARNING

	Column	Is …	Then Column …	Is …
	VCPE.SHRUB_CROWN_CLOSURE	> 20	LCCE.LAND_COVER_CLASS_CODE[X]	**ST** or **SL**
OR	TOTAL ASSOCIATED RECORS IN: LAND_COVER_COMPONENT_EST	>= 3		

Note: If there is large Shrub Crown Closure value, there must be a corresponding Land Cover record (unless the number of Land Cover records is at a maximum).

2.1.30d

Error Code: <W-VCP-P-0330>

Type: Conditionals **Produces:** WARNING

	Column	Is …	Then Column …	Is …
	VCPE.HERB_COVER_PCT	> 20	LCCE.LAND_COVER_CLASS_CODE[X]	**HE** or **HF** or **HG**
OR	TOTAL ASSOCIATED RECORS IN: LAND_COVER_COMPONENT_EST	>= 3		

Note: If there is large Herb Cover Percent value, there must be a corresponding Land Cover record (unless the number of Land Cover records is at a maximum).

2.1.30e

Error Code: <W-VCP-P-0340>

Type: Conditionals **Produces:** WARNING

	Column	Is …	Then Column …	Is …
	VCPE.BRYOID_COVER_PCT	> 20	LCCE.LAND_COVER_CLASS_CODE[X]	**BL** or **BM** or **BY**
OR	TOTAL ASSOCIATED RECORS IN: LAND_COVER_COMPONENT_EST	>= 3		

Note: If there is large Bryoid Cover Percent value, there must be a corresponding Land Cover record (unless the number of Land Cover records is at a maximum).

2.1.30f

Error Code: <E-VCP-P-0350>

Type: Conditionals **Produces:** ERROR

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL_1_CODE	**V**		
AND	**IN TABLE:** TREE_COVER_LAYER_ESTIMATED **ASSOC. BY:** TREE_COVER_LAYER_ESTIMATED_ID **SUM OF COLUMNS:** TCL.CROWN_CLOSURE_PCT	< 10		
AND	VCPE.SHRUB_CROWN_CLOSURE	> 20	VCPE.BCLCS_LEVEL4_CODE	**ST** or **SL**
ELSE	VCPE.HERB_COVER_PCT	> 20	VCPE.BCLCS_LEVEL4_CODE	**HE** or **HF** or **HG**
ELSE	VCPE.SHRUB_CROWN_CLOSURE	> ex[1]	VCPE.BCLCS_LEVEL4_CODE	**ST** or **SL**
ELSE	VCPE.HERB_COVER_PCT	> ex[1]	VCPE.BCLCS_LEVEL4_CODE	**HE** or **HF** or **HG**
ELSE	VCPE.BRYOID_COVER_PCT	> ex[2]	VCPE.BCLCS_LEVEL4_CODE	**BY** or **BM** or **BL**
ELSE	VCPE.SHRUB_CROWN_CLOSURE = VCPE.HERB_COVER_PCT = VCPE.BRYOID_COVER_PCT	> 0	VCPE.BCLCS_LEVEL4_CODE	**ST** or **SL**
ELSE	**IN TABLE:** TREE_COVER_LAYER_ESTIMATED **ASSOC. BY:** TREE_COVER_LAYER_ESTIMATED_ID **SUM OF COLUMNS:** TCL.CROWN_CLOSURE_PCT	>= 5	VCPE.BCLCS_LEVEL4_CODE	**TC** or **TB** or **TM**
		AND	VCPE.BCLCS_LEVEL2_CODE	**T**
ELSE	VCPE.SHRUB_CROWN_CLOSURE	> 0	VCPE.BCLCS_LEVEL4_CODE	**ST** or **SL**
ELSE	VCPE.HERB_COVER_PCT	> 0	VCPE.BCLCS_LEVEL4_CODE	**HE** or **HF** or **HG**
ELSE	VCPE.BRYOID_COVER_PCT	> 0	VCPE.BCLCS_LEVEL4_CODE	**BY** or **BM** or **BL**

Section processed as block.
Section signals that both parts must be true to be valid
ex# Expression list (see next page).

About the 'Else' Condition

- **If the first two columns** are not true in a line (row), the next condition (row) is tried.
- **If the first two columns** are true, and the second two columns are not true, an error is produced.

If the second two columns are true, then an error is not produced and no more checks are necessary. Type: Expression List

Key	Expression
ex[1]	VCPE.SHRUB_CROWN_CLOSURE + VCPE.HERB_COVER_PCT + VCPE.BRYOID_COVER_PCT / 3

Key	Expression
ex[2]	(VCPE.SHRUB_CROWN_CLOSURE + VCPE.HERB_COVER_PCT + VCPE.BRYOID_COVER_PCT) X 0.5

2.1.30g

Error Code: <E-VCP-P-????>

Type: Conditionals **Produces:** ERROR

	Column	Is …	Then Column …	Is …
	IF ANY TCL OR TSE UNDER THIS FCO HAS TCLE.DATA_SOURCE_INTERPRETED_CODE TCLE.DATA_SRC_VRI_LIVE_STEM_HA_CODE TCLE.DATA_SOURCE_BASAL_AREA_CODE TSE.DATA_SOURCE_HEIGHT_CODE TSE.DATA_SOURCE_AGE_CODE	7 or 11	FCO.OPENING_ID	**Not Null**

2.1.30h

Error Code: <E-VCP-P-????>

Type: Conditionals **Produces:** ERROR

	Column	Is …	Then
	THERE EXISTS TCL.LAYER_LEVEL_CODE	D	
THEN	VCPE.VRI_DEAD_STEMS_PER_HA	=	TCL.VRI_LIVE_STEMS_PER_HA

2.1.30i

Error Code: <W-VCP-P-????>

Type: Conditionals **Produces:** WARNING

	Column	Is …	Then Column …	Is …
	FCO.INVENTORY_STANDARD_CODE	'V'	TCL.BASAL_AREA	**>= 5**
AND	TCL.LAYER_LEVEL_CODE	'1'		
AND	TCL.CROWN_CLOSURE_PCT	>= 40		
AND	TS.SPECIES_ORDER	'1'		
AND	TS.AGE	>= 20		

AND	TS.HEIGHT	>10		

2.1.30j

Error Code: <E-VCP-P-????>

Type: Conditionals **Produces:** ERROR

	Column	Is …	Then
	VCPE.VRI_DEAD_STEMS_PER_HA	>=100	THERE EXISTS A TCL.LAYER_LEVEL_CODE = 'D'

2.1.30k

Error Code: <W-VCP-P-????>

Type: Conditionals **Produces:** WARNING

	Column	Is …	Then
	FCO.OPENING_ID	Not null	BCLCS-5 CANNOT BE IN ("LA","GL","TZ","RN","UR","GP","AP","MI","RE","RI","OC","MN","TA","BR","RO","PN","SI","LS")

2.1.30l

Error Code: <E-VCP-P-????>

Type: Conditionals **Produces:** ERROR

	Column	Is …	Then
	FCO.OPENING_ID	Not null	THERE EXISTS A TREE_COVER_LAYER

2.1.30m

Error Code: <E-VCP-P-????>

Type: Conditionals **Produces:** ERROR

	Column	Is …	Then
	FCO.OPENING_ID	Not null	
AND	THERE EXISTS A TREE_COVER_LAYER		
AND	TREE_COVER_LAYER[1].TREE_SPECIES[1].SPECIES_CODE	null	EST SITE INDEX, EST SITE INDEX SPECIES AND EST SITE INDEX SOURCE MUST NOT BE NULL

2.1.31 FCO.Data_Capture_Method_Code

Error Code: <E-VCP-Z-????>

Type: Format

Column	Format	Valid Value(s)
FCO.DATA_CAPTURE_METHOD_CODE	Code ##	4,7,8,11,12,14,15,16,23 (*)

(*) Note: Older deprecated DATA_CAPTURE_METHOD_CODE's will still appear in the VegGUI Dropdown lists; this is to allow the user to view what is currently in the PGDB. Only the above codes are technically valid.

3. Tree Cover Layer

3.1.1 TCL.Layer_Order

3.1.1a

Error Code: <E-TCL-Z-0650>

Type: Format

Column	Format	Valid Value(s)
TCL.LAYER_ORDER	X	1 – 9

3.1.1b

Error Code: <E-TCL-R-0660>

Type: Conditionals

	Operation	Is …	Then
	COUNT (ASSOCIATED TREE_COVER_LAYER'S)	> 1	TCL.LAYER_ORDER must be consecutive from 1 to number of layers

3.1.1c

Error Code: <E-TCL-R-0670>

Type: Conditionals

	Operation	Is …	Then Column	Is …
	COUNT (ASSOCIATED TREE_COVER_LAYER'S)	1	TCL.LAYER_ORDER	<> -1

3.1.1d

Error Code: <E-TCL-R-0680>

Type: Conditionals

	Operation	Is …	Then
	NUMBER OF TCL.LAYER_LEVEL_CODE ='D' FOR THIS FCO	>1	ERROR (REPORTED AS UNIQUE CONSTRAINT (DATABASE-INSTANCE.TCLS_UK) VIOLATED).

Note: There can be only a maximum of 1 associated 'D' layer per Forest Cover Object.

3.1.1e

Error Code: <E-TCL-R-0690>

Type: Conditionals

	Column	Is …	Then Column	Is …
	TCL.LAYER_LEVEL_CODE	**'D'**	TCL.LAYER_LEVEL_ORDER	TCL Layer Count

Note: A 'D'-Layer must be the last layer order of a given Forest Cover Object.

3.1.1f

Error Code: <E-TCL-R-0700>

Type: Conditionals

	Operation	Is …	Then
	NUMBER OF TCL.LAYER_LEVEL_CODE ='D' FOR THIS FCO	>1	A FOREST COVER OBJECT CAN HAVE ONLY ONE ASSOCIATED D-LAYER.

3.1.1g

Error Code: <E-TCL-R-????>

Type: Conditionals

	Operation	Is …	Then
	TCL.LAYER_LEVEL_CODE	'D'	THEN MUST EXIST A NON-D TCL.LAYER_LEVEL_CODE = '1' IN THE FOREST COVER OBJECT.

3.1.2 TCL.Forest_Cover_Rank_Code

3.1.2a

Error Code: <E-TCL-Z-0710>

Type: Format

Column	Format	Valid Value(s)
TCL.FOREST_COVER_RANK_CODE	1	1

3.1.2b

Error Code: <E-TCL-R-0720>

Type: Conditionals

	Operation	Is …	Then
	NUMBER OF TCL.FOREST_COVER_RANK_CODE = 1 FOR THIS FCO	>1	ERROR

3.1.2c

Error Code: <E-TCL-R-0730>

Type: Conditionals

	Column	Is …	Then Column	Is …
	TCL.LAYER_ORDER	**-1**	TCL.FOREST_COVER_RANK_CODE	Null

3.1.3 TCL.Data_Source_Interpreted_Code

3.1.3a

Error Code: <E-TCL-Z-0740>

Type: Format

Column	Format	Valid Value(s)
TCL.DATA_SOURCE_INTERPRETED_CODE	##	Not Null AND Value in DATA_SOURCE_INTERPRETED_CODE {0-14, 16-20, 22, 25-27, 30-31, 40-41, 50-51, 60-61, 71-75}

3.1.3b

Error Code: <E-TCL-P-0750>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V** or **I**		
AND	TCL.LAYER_ORDER	not **0**	TCL.DATA_SOURCE_INTERPRETED_CODE	not *NULL*

3.1.4 TCL.Tree_Species_Code (Estimated Site Tree Species Code)

3.1.4a

Error Code: <E-TCL-Z-0760>

Type: Format

Column	Format	Valid Value(s)
TCL.TREE_SPECIES_CODE	*See code list*	*See code list VRIMS_TREE_SPECIES_CODE*

3.1.4b

Error Code: <E-TCL-P-0770>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FIRST ASSOCIATED TREE SPECIES: TSE.AGE	< 30	TCL.TREE_SPECIES_CODE	not *NULL*

3.1.5 TCL.Estimated_Site_Index

3.1.5a

Error Code: <E-TCL-Z-0780>

Type: Format

Column	Format	Valid Value(s)
TCL.ESTIMATED_SITE_INDEX	##	2 – 99

3.1.5b

Error Code: <E-TCL-P-0790>

Type: Conditionals

	Column	Is …	Then Column	Is …

	FIRST ASSOCIATED TREE SPECIES: TSE.AGE	< 30	TCL.ESTIMATED_SITE_INDEX	not *NULL*

3.1.6 TCL.Estimated_SIndex_Source_Code

3.1.6a

Error Code: <E-TCL-Z-0800>

Type: Format

Column	Format	Valid Value(s)
TCL.ESTIMATED_SINDEX_SOURCE_CODE	X	A, C, E, H, I, P, S (*See code list*) *ESTIMATED_SINDEX_SOURCE_CODE*

3.1.6b

Error Code: <E-TCL-P-0810>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FIRST ASSOCIATED TREE SPECIES: TSE.AGE	< 30	TCL.ESTIMATED_SINDEX_SOURCE_CODE	not *NULL*

3.1.6c

Error Code: <E-TCL-P-0820>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V** or **I**	TCL.ESTIMATED_SINDEX_SOURCE_CODE	not **M,O,V**

3.1.7 TCL.Crown_Closure_Pct

3.1.7a

Error Code: <E-TCL-Z-0830>

Type: Format

Column	Format	Valid Value(s)
TCL.CROWN_CLOSURE_PCT	###	1 – 100

3.1.7c

Error Code: <E-TCL-R-0850>

	Column	Is …	Then Column	Is …
	IS AN ASSOCIATED D-LAYER	True		
AND	*TOTAL OF ASSOCIATED (NON D-LAYER)* TCL.CROWN_CLOSURE_PCT	<= 100		
AND	*TOTAL OF ASSOCIATED AND D-LAYER*	<= 200		

	TCL.CROWN_CLOSURE_PCT			

3.1.7d

Error Code: <E-TCL-P-0860>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V** or **I**		
AND	FCO.TREE_COVER_LAYER	**Not D**		
AND	TOTAL ASSOCIATED **TREE SPECIES**	> 0	TCL.CROWN_CLOSURE_PCT	not *NULL*

3.1.8 TCL.Basal_Area

3.1.8a

Error Code: <E-TCL-Z-0870>

Type: Format

Column	Format	Valid Value(s)
TCL.BASAL_AREA	###	0 – 200

3.1.8b

Error Code: <E-TCL-P-0880>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	TCL.LAYER_LEVEL_CODE	**Not D**		
AND	TOTAL ASSOCIATED **TREE SPECIES**	> 0	TCL.BASAL_AREA	not *NULL*

3.1.9 TCL.Data_Source_Basal_Area_Code

3.1.9a

Error Code: <E-TCL-Z-0890>

Type: Format

Column	Format	Valid Value(s)
TCL.DATA_SOURCE_BASAL_AREA_CODE	##	Value in DATA_SOURCE_BASAL_AREA_CODE {0-14, 16-20, 22, 25-27, 30-31, 40-41, 50-51, 60-61}

3.1.9b

Error Code: <E-TCL-R-0900>

Type: Conditionals

	Column	Is …	Then Column	Is …
	TCL.BASAL_AREA	not	TCL.DATA_SOURCE_BASAL_AREA_CODE	not *NULL*

		NULL		

3.1.10 TCL.VRI_Live_Stems_Per_Ha

3.1.10a

Error Code: <E-TCL-Z-0480>

Type: Format

Column	Format	Valid Value(s)
TCL.VRI_LIVE_STEMS_PER_HA	##### Number: 0 – 99999.999	0 – 99999.999

3.1.10b

Error Code: <E-TCL-P-0490>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	TCL.LAYER_LEVEL_CODE	**Not D**		
AND	TOTAL ASSOCIATED **TREE SPECIES**	> 0	TCL.VRI_LIVE_STEMS_PER_HA	not *NULL*

3.1.11 TCL.Data_Src_VRI_Live_Stem_Ha_Code

3.1.11a

Error Code: <E-TCL-Z-0500>

Type: Format

Column	Format	Valid Value(s)
TCL.DATA_SRC_VRI_LIVE_STEM_HA_CODE	##	Value in DATA_SRC_VRI_LIVE_STEM_HA_CODE {0-14, 16-20, 22, 25-27, 30-31, 40-41, 50-51, 60-61}

3.1.11b

Error Code: <E-TCL-R-0510>

Type: Conditionals

	Column	Is …	Then Column	Is …
	TCL.VRI_LIVE_STEMS_PER_HA	not *NULL*	TCL.DATA_SRC_VRI_LIVE_STEM_HA_CODE	not *NULL*

3.1.12 TCL_Cover_Pattern_ Code

3.1.12a

Error Code: <E-TCL-Z-0520>

Type: Format

Column	Format	Valid Value(s)
TCL.COVER_PATTERN_CODE	#	1 – 9

3.1.12b

Error Code: <E-TCL-P-0530>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	TCL.LAYER_LEVEL_CODE	**Not D**		
AND	TOTAL ASSOCIATED **TREE SPECIES**	> 0	TCL.COVER_PATTERN_CODE	not *NULL*

3.1.13 TCL.Vertical_Complexity_Code

3.1.13a

Error Code: <E-TCL-Z-0540>

Type: Format

Column	Format	Valid Value(s)
TCL.VERTICAL_COMPLEXITY_CODE	#	1 – 5

3.1.13b

Error Code: <E-TCL-P-0550>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	TCL.LAYER_LEVEL_CODE	**Not D**		
AND	TOTAL ASSOCIATED **TREE SPECIES**	> 0	TCL.VERTICAL_COMPLEXITY_CODE	not *NULL*

3.1.14 Record-Level Rules

Error Code: <E-TCL-R-0560>

Type: Conditionals

	Column(s)	Is/Are …	Or Column(s) …	Is/Are …
	TCL.TREE_SPECIES_CODE TCL.ESTIMATED_SITE_INDEX TCL.ESTIMATED_SINDEX_SOURCE_CODE	*NULL*	TCL.TREE_SPECIES_CODE TCL.ESTIMATED_SITE_INDEX TCL.ESTIMATED_SINDEX_SOURCE_CODE	*not NULL*

3.1.14b Record-Level Rules

Error Code: <E-TCL-R-????>

Type: Conditionals

	Column(s)	Is/Are …	Or Column(s) …	Is/Are …
	TCL.CROWN_CLOSURE_PCT	*> 0*	TCL.VRI_LIVE_STEMS_PER_HA	> 0

3.1.15 TSE Age & Height Rule

Error Code: <E-TCL-R-0570>

Type: Conditional

Operation	Associated Records in Table …	… Column	Is …
MAX (TSE.Species_Percent)	TREE_SPECIES_ESTIMATED BY: TREE_COVER_LAYER_ESTIMATED_ID	TSE.SPECIES_PERCENT	> 0.0
THEN	TREE_SPECIES_ESTIMATED BY: TREE_COVER_LAYER_ESTIMATED_ID	TSE.AGE	not *NULL*
AND	TREE_SPECIES_ESTIMATED BY: TREE_COVER_LAYER_ESTIMATED_ID	TSE.HEIGHT	not *NULL*

DESCRIPTION: If there are one or more records in the TREE_SPECIES_ESTMATED table associated with this TREE_COVER_LAYER_EST record, then the highest percentage species must have a defined Age **and** Height.

3.1.16 Duplicate Species

Error Code: <E-TCL-R-0580>

Type: Conditionals

	Column	Equals Column(s)…	Then …
	TSE[1].TREE_SPECIES_CODE	TSE[2]. TREE_SPECIES_CODE TSE[3]. TREE_SPECIES_CODE TSE[4]. TREE_SPECIES_CODE TSE[5]. TREE_SPECIES_CODE TSE[6]. TREE_SPECIES_CODE	ERROR
OR	TSE[2]. TREE_SPECIES_CODE	TSE[3]. TREE_SPECIES_CODE TSE[4]. TREE_SPECIES_CODE TSE[5]. TREE_SPECIES_CODE TSE[6]. TREE_SPECIES_CODE	ERROR
OR	TSE[3]. TREE_SPECIES_CODE	TSE[4]. TREE_SPECIES_CODE TSE[5]. TREE_SPECIES_CODE TSE[6]. TREE_SPECIES_CODE	ERROR
OR	TSE[4]. TREE_SPECIES_CODE	TSE[5]. TREE_SPECIES_CODE TSE[6]. TREE_SPECIES_CODE	ERROR
OR	TSE[5]. TREE_SPECIES_CODE	TSE[6]. TREE_SPECIES_CODE	ERROR

Note: TSE[#] – Refers to the associated Tree_Species_Estimated record. There can be up to six associated records.

3.1.17 Warnings

3.1.17a

Error Code: <W-TCL-P-0590>

Type: Conditionals

	Column	Is …	Warning Message …
	TCL.ESTIMATED_SITE_INDEX	> 26	
AND	VCPE.SOIL_NUTRIENT_REGIME_CODE	**A** or **B**	Unlikely site index and soil nutrient combination

3.1.17b

Error Code: <W-TCL-P-0600>

Type: Conditionals

	Column	Is …	Warning Message …
	TCL.ESTIMATED_SITE_INDEX	< 12	
AND	VCPE.SOIL_NUTRIENT_REGIME_CODE	**D** or **E**	Unlikely site index and soil nutrient combination

3.1.17c

Error Code: <W-TCL-P-0610>

Type: Conditionals

	Column	Is …	Warning Message …
	TCL.ESTIMATED_SITE_INDEX	> 20	
AND	VCPE.ALPINE_DESIGNATION_CODE	**A**	
AND	VCPE.SOIL_NUTRIENT_REGIME_CODE	**A**	Unlikely site index and Alpine Designation Combination

3.1.17d

Error Code: <W-TCL-P-0620>

Type: Conditionals

	Column	Is …	Warning Message …
	TCL.ESTIMATED_SITE_INDEX	< 5	
AND	VCPE.ALPINE_DESIGNATION_CODE	**N**	Unlikely site index and Alpine Designation Combination

3.1.17e

Error Code: <W-TCL-R-0630>

Type: Conditionals

	Column	Is …	Warning Message …
	TCL.LAYER_LEVEL_CODE	'S'	S-Layers have been deprecated (no longer used)

3.1.17f

Error Code: <E-TCL-R-0640>

	Column	Is …	Then
	FCO.INVENTORY_STANDARD_CODE	V	
AND	TCL.LAYER_LEVEL_CODE	1	
AND	NUM OF ASSOCIATED TREE_SPECIES RECORDS	**0**	TCL.ESTIMATED_SITE_INDEX CANNOT BE NULL

3.1.17g

Error Code: <W-TCL-R-????>

	Column	Is …	Warning Message …
	FCO.INVENTORY_STANDARD_CODE	V	
AND	TCL.VERTICAL_COMPLEXITY_CODE	!= 1	
AND	TSP.SPECIES_ORDER	**1**	
AND	TSP.AGE	**< 30**	If a Tree Cover Layer's Species Order 1 has an Age < 30 then the Vertical Complexity Code should be 1

4. Tree Species

4.1.1 TSE.Species_Order

Error Code: <E-TSP-Z-0910>

Type: Format

Column	Format	Valid Value(s)
TSE.SPECIES_ORDER	#	1 – 6 Numbers consecutive from 1

4.1.2 TSE.Tree_Species_Code

Error Code: <E-TSP-Z-0990>

Type: Format

Column	Format	Valid Value(s)
TSE.TREE_SPECIES_CODE	XXX	*See code list* *VRIMS_TREE_SPECIES_CODE*

4.1.3 TSE.Species_Pct

Error Code: <E-TSP-Z-1000>

Type: Format

Column	Format	Valid Value(s)
TSE.TREE_SPECIES_CODE	###	Whole number from 1 – 100

4.1.4 TSE.Age

4.1.4a

Error Code: <E-TSP-Z-1010>

Type: Format

Column	Format	Valid Value(s)
TSE.AGE	###	1 – 999

4.1.4b

Error Code: <E-TSP-P-1020>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	TCL.LAYER_LEVEL_CODE	**Not D**		
AND	TSE.SPECIES_ORDER	**1** or **2**	TSE.AGE	not *NULL*

4.1.4c

Placeholder < E-TSP-P-1040 >

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**I**		
AND	TSE. SPECIES_ORDER	**1**	TSE.AGE	not *NULL*

4.1.4d

Error Code: <E-TSP-P-1040>

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	TCL.LAYER_LEVEL_CODE	**D**		
AND	TSE. SPECIES_ORDER	**1**	TSE.AGE	not *NULL*

4.1.4e

Error Code: <E-TSP-R-1050>

Type: Conditionals

	Column	Is …	Then Column	Is …
	TSE. SPECIES_ORDER	**Not 1** or **2**	TSE.AGE	*NULL*

4.1.4f

Error Code: <E-TSP-R-1060>

Type: Conditionals

	Where	Is …	Then
	TSE.AGE / TSE.HEIGHT	**<= 0.6**	ERROR: INVALID AGE-HEIGHT COMBINATION

4.1.4g

Error Code: <W-TSP-R-1070>

Type: Conditionals

	Column	Is …	Then
	TSE.AGE	> 500	WARNING

4.1.5 TSE.Height

4.1.5a

Error Code: <E-TSP-Z-1080>

Type: Format

Column	Format	Valid Value(s)
TSE.HEIGHT	##.#	0.00 < Height <= 99.99

4.1.5b

Error Code: <E-TSP-P-1090>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		

AND	TCL.LAYER_LEVEL_CODE	**Not D**		
AND	TSE.SPECIES_ORDER	**1** or **2**	TSE.Height	not *NULL*

4.1.5c

Placeholder < E-TSP-P-1110>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**I**		
AND	TSE. SPECIES_ORDER	**1**	TSE.Height	not *NULL*

4.1.5d

Error Code: <E-TSP-P-1110>

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	TCL.LAYER_LEVEL_CODE	**D**		
AND	TSE. SPECIES_ORDER	**1**	TSE.Height	not *NULL*

4.1.5e

Error Code: <E-TSP-R-1120>

Type: Conditionals

	Column	Is …	Then Column	Is …
	TSE. SPECIES_ORDER	**Not 1** or **2**	TSE.Height	*NULL*

4.1.5f

Error Code: <W-TSP-R-1130>

Type: Conditionals

	Column	Is …	Then
	TSE.Height	> 80.0	WARNING

4.1.6 TSE.Data_Source_Age_Code

4.1.6a

Error Code: <E-TSP-Z-1140>

Type: Format

Column	Format	Valid Value(s)
TSE.DATA_SOURCE_AGE_CODE	##	Value in DATA_SOURCE_AGE_CODE {0-14, 16-20, 22, 25-27, 30-31, 40-41, 50-51, 60-61}

4.1.6b

Error Code: <E-TSP-P-1150>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V** or **I**		
AND	TSE.SPECIES_ORDER	**1**	TSE.DATA_SOURCE_AGE_CODE	not *NULL*

4.1.7 TSE.Data_Source_Height_COde

4.1.7a

Error Code: <E-TSP-Z-1160>

Type: Format

Column	Format	Valid Value(s)
TSE.DATA_SOURCE_HEIGHT_CODE	##	Value in DATA_SOURCE_HEIGHT_CODE {0-14, 16-20, 22, 25-27, 30-31, 40-41, 50-51, 60-61}

4.1.7b

Error Code: <E-TSP-P-1170>

Type: Conditionals

	Column	Is …	Then Column	Is …
	FCO.INVENTORY_STANDARD_CODE	**V** or **I**		
AND	TSE.SPECIES_ORDER	**1**	TSE.DATA_SOURCE_AGE_CODE	not *NULL*

4.1.8 Record-Level Rules

4.1.8a

Error Code: <E-TSP-R-1180>

Type: Conditionals

	Column(s)	Is/Are …
	TSE.SPECIES_ORDER TSE.TREE_SPECIES_CODE TSE.SPECIES_PCT	*Not NULL*

4.1.8b

Error Code: <E-TSP-R-1190>

Type: Conditionals

	Column(s)	Is/Are …	Or Column(s) …	Is/Are …
	TSE.AGE TSE.HEIGHT	*NULL*	TSE.AGE TSE.HEIGHT	*not NULL*

4.1.8c

Warning Code: <W-TSP-R-????>

Type: Conditionals

	Column(s)	Is/Are …	Then	Is/Are …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	TSE.DATA_SOURCE_HEIGHT_CODE	*22*	TSE.HEIGHT	*>= 2*

4.1.9 Collection-Level Rules

4.1.9a

Error Code: <E-TSP-R-1200>

Type: Conditionals

Operation	Associated Records in Table …	… Column	Is …
TOTAL	TREE_SPECIES_ESTIMATED BY: TREE_COVER_LAYER_ESTIMATED_ID	TSE.SPECIES_PERCENT	= 100

4.1.9b

Error Code: <E-TSP-R-1210>

Type: Conditionals

	Column(s)	Is	Than Column(s) …
	TSE[N].SPECIES_PCT	<=	TSE[N - 1].SPECIES_PCT

DESCRIPTION: Tree Species must be ordered from highest to lowest as their ID increases.

4.1.9c

Error Code: <E-TSP-R-1220>

Type: Conditionals

	Column(s)	Is/Are …	XOR Column(s) …	Is/Are …
	TCL[1] .TSE [1] . AGE	> 120	TCL[2] .TSE [1] . AGE	> 120
AND	TCL[1].LAYER_LEVEL_CODE	Not **D**		
AND	TCL[2].LAYER_LEVEL_CODE	Not **D**		

XOR – Is an Exclusive OR [Only one or the other, but not both].

4.1.9d

Error Code: <E-TSP-R-1230>

Type: Conditionals

	Column(s)	Is	Than Column(s) …
	TCL[1].TSE [1] . HEIGHT	Greater	TCL[2] .TSE [1] . HEIGHT
AND	TCL[1].LAYER_LEVEL_CODE	Not **D**	
AND	TCL[2].LAYER_LEVEL_CODE	Not **D**	

TCL [#] . TSE [1] – Refers to the highest rated species in the numbered tree covered layer.

4.1.9e

Error Code: <E-TSP-R-1240>

Type: Conditionals

	Column(s)	Is	Than Column(s) …
	TCL.LAYER_LEVEL_CODE	D	
AND	TCL.TSE[1]	Exists	TCL.TSE[1].AGE NOT NULL TCL.TSE[1].HEIGHT NOT NULL TCL.BASAL_AREA NOT NULL TCL.VRI_LIVE_STEMS_PER_HA NOT NULL

TCL . TSE [1] – Refers to the highest rated species in the numbered tree covered layer.

4.1.10 Warnings

4.1.10a

Error Code: <W-TSP-P-0920>

Type: Conditionals

	Column	Is …	Warning Message …
	TSE.HEIGHT	< 15	
AND	TCL.BASAL_AREA	> 50	Unlikely height and basal area combination

4.1.10b

Error Code: <W-TSP-P-0930>

Type: Conditionals

	Column	Is …	Warning Message …
	TCL.LAYER_ORDER	1	
AND	TSE. SPECIES_ORDER	1	
AND	TSE.AGE	> 300	
AND	TSE.HEIGHT	< 20	
AND	TCL.SOIL_NUTRIENT_REGIME_CODE	**D** or **E**	Unlikely age, height, and soil nutrient combination.

4.1.10c

Error Code: <W-TSP-P-0940>

Type: Conditionals

	Column	Is …	Warning Message …
	TCL.LAYER_ORDER	1	
AND	TSE. SPECIES_ORDER	1	
AND	TSE.AGE	< 60	
AND	TSE.HEIGHT	> 40	
AND	TCL.SOIL_NUTRIENT_REGIME_CODE	**A** or **B**	Unlikely age, height, and soil nutrient combination.

4.1.10d

Error Code: <W-TSP-P-0950>

Type: Conditionals

	Column	Is …	Warning Message …
	TCL.LAYER_ORDER	1	
AND	TSE.SPECIES_ORDER	1	
AND	TSE.AGE	> 20	
AND	TSE.HEIGHT	< 0.1	Leading Species Height is Questionable with Age.

4.1.10e

Error Code: <S-TSP-R-0960>

Type: Conditionals

	Where	Is …	Critical Warning Message
	TSE.AGE / TSE.HEIGHT	**>= 30.0**	CHECK AGE-HEIGHT COMBINATION

4.1.10f

Error Code: <W-TSP-R-0970>

	Column	Is …	Warning Message …
	TSE.AGE	> 500	Verify Age for possible inconsistency

4.1.10g

Error Code: <W-TSP-R-0980>

	Column	Is …	Warning Message …
	TSE.HEIGHT	> 80.0	Verify Height for possible inconsistency

5. Non Vegetative Cover

5.1.1 NVCE.Non_Veg_Order

Error Code: <E-NVC-Z-1250>

Type: Format

Column	Format	Valid Value(s)
NVCE.NON_VEG_ORDER	#	1 – 9 Numbers consecutive from 1

5.1.2 NVCE.Non_Veg_Cover_Pct

Error Code: <E-NVC-Z-1260>

Type: Format

Column	Format	Valid Value(s)
NVCE.NON_VEG_COVER_PCT	###	1 – 100

5.1.3 NVCE.Cover_Pattern_Code

Error Code: <E-NVC-Z-1270>

Type: Format

Column	Format	Valid Value(s)
NVCE.COVER_PATTERN_CODE	#	1 – 9

5.1.4 NVCE.Non_Veg_Cover_Type_Code

Error Code: <E-NVC-Z-1280>

Type: Format

Column	Format	Valid Value(s)
NVCE.NON_VEG_COVER_TYPE_CODE	XX	(*See code list*) *NON_VEG_COVER_TYPE_CODE*

5.1.5 NVCE.Layer_Level_ Code

Error Code: <E-NVC-Z-????>

Type: Format

Column	Format	Valid Value(s)
NVCE. LAYER_LEVEL_CODE	X	1-9

5.1.5 Record-Level Rules

5.1.5a

Error Code: <E-NVC-R-1290>

Type: Conditionals

	Column(s)	Is/Are …
	NVCE.NON_VEG_ORDER NVCE.NON_VEG_COVER_PCT NVCE.COVER_PATTERN_CODE NVCE.NON_VEG_COVER_TYPE	*Not NULL*

5.1.5b

Error Code: <E-NVC-R-1300>

	Column(s)	Is	Than Column(s) …
	NVCE[N].NON_VEG_COVER_PCT	<=	NVCE[N-1].NON_VEG_COVER_PCT

DESCRIPTION: Non Veg Cover Percent must be ordered from highest to lowest as their ID increases.

5.1.5c

Error Code: <W-NVC-R-????> Produces: WARNING

	Column(s)	Is
	NVCE[N].NON_VEG_COVER_TYPE_CODE	= 'OT'

5.1.6 Polygon-Level Rules [WARNING]

Error Code: <W-NVC-P-1310>

Type: Conditionals

	Where	Is	A Column	Equals
	NVCE.NON_VEG_COVER_PCT	>= 20	LCCE.LAND_COVER_CLASS_CODE	NVCE.NON_VEG_COVER_TYPE

DESCRIPTION: For every non-vegetation object whose cover is greater than or equal to 20%, a LCCE exists of the same type.

5.1.6b Duplicate NonVegType+NonVegCoverPattern

Error Code: <Not assigned>

Type: Conditional

	Column	Equals Column(s)…	Then …
	NVC[1].NON_VEG_COVER_TYPE + NVC[1].NON_VEG_COVER_PATTERN	NVC[2].NON_VEG_COVER_TYPE + NVC[2].NON_VEG_COVER_PATTERN OR NVC[3].NON_VEG_COVER_TYPE + NVC[3].NON_VEG_COVER_PATTERN OR	ERROR

		NVC[4].NON_VEG_COVER_TYPE + NVC[4].NON_VEG_COVER_PATTERN	
OR	NVC[2].NON_VEG_COVER_TYPE + NVC[2].NON_VEG_COVER_PATTERN	NVC[3].NON_VEG_COVER_TYPE + NVC[3].NON_VEG_COVER_PATTERN OR NVC[4].NON_VEG_COVER_TYPE + NVC[4].NON_VEG_COVER_PATTERN	ERROR
OR	NVC[3].NON_VEG_COVER_TYPE + NVC[3].NON_VEG_COVER_PATTERN	NVC[4].NON_VEG_COVER_TYPE + NVC[4].NON_VEG_COVER_PATTERN	ERROR

5.1.6c Consecutive Non-Veg Order Numbers

Error Code: <Not assigned>

Type: Conditional

Column	Format	Valid Value(s)
NVC.NON_VEG_ORDER	#	NVC.NON_VEG_ORDER must be consecutive from 1 to number of Non veg layers

5.1.6d Consecutive Non-Veg Layer Level Codes

Error Code: <E-NVC-P-????>

Type: Conditional

Column	Format	Valid Value(s)
NVC.LAYER_LEVEL_CODE	#	NVC.LAYER_LEVEL_CODE must be consecutive from 1 to number of Non veg layers

6. Land Cover

6.1.1 LCCE.Land_Cover_Order

Error Code: <E-LCC-Z-1320>

Type: Format

Column	Format	Valid Value(s)
LCCE.LAND_COVER_ORDER	#	1 – 4 In Ascending order

6.1.2 LCCE.Coverage_Pct

Error Code: <E-LCC-Z-1330>

Type: Format

Column	Format	Valid Value(s)
LCCE.COVERAGE_PCT	###	1 – 100

6.1.3 LCCE.Soil_Moisture_Regime_Code

Error Code: <E-LCC-Z-1340>

Type: Format

Column	Format	Valid Value(s)
LCCE.SOIL_MOISTURE_REGIME_CODE	#	0 – 8

6.1.4 LCCE.Land_Cover_Class_Code

Error Code: <E-LCC-Z-1350>

Type: Format

Column	Format	Valid Value(s)
LCCE.LAND_COVER_CLASS_CODE	XX	(*See code list*) *LAND_COVER_CLASS_CODE*

6.1.5 Record-Level Rules

Error Code: <E-LCC-R-1360>

Type: Conditional

	Column(s)	Is/Are …	Then Column(s) …	Is/Are …
	LCCE.LAND_COVER_ORDER	not **4**	LCCE.COVERAGE_PCT LCCE.SOIL_MOISTURE_REGIME_CODE LCCE.LAND_COVER_CLASS_CODE	all NULL or all not NULL
		AND	LCCE.LAND_COVER_CLASS_CODE	**IS NOT (LA** or **RI** or **RE** or **OC or** **GL)**

		OR	LCCE.COVERAGE_PCT LCCE.LAND_COVER_CLASS_CODE LCCE.SOIL_MOISTURE_REGIME_CODE	not NULL notNULL NULL
		AND	LCCE.LAND_COVER_CLASS_CODE	**LA** or **RI** or **RE** or **OC or** **GL**

6.1.5b

Error Code: <E-LCC-R-????>

Type: Conditional

	Column(s)	Is/Are …	Then Column(s) …	Is/Are …
	LCCE.LAND_COVER_CLASS_CODE	**LA** or **RI** or **RE** or **OC or** **GL**	LCCE.SOIL_MOISTURE_REGIME_CODE	**Null**

6.1.5c

Error Code: <W-LCC-R-????>

Type: Conditional **Produces:** WARNING

	Column(s)	Is/Are …	Then Column(s) …	Is/Are …
	LCCE.LAND_COVER_CLASS_CODE	**RZ**	LCCE.SOIL_MOISTURE_REGIME_CODE	**>2**

6.1.6 Collection-Level Rules

6.1.6a

Error Code: <E-LCC-R-1370>

Type: Conditionals

Column(s)	Is	Column(s)	When Column	Is
LCCE [N].COVERAGE_PCT	<=	LCCE [N - 1].COVERAGE_PCT	LCCE.LAND_COVER_ORDER	<= 4

DESCRIPTION: Land Cover Components must be ordered from highest coverage percent to lowest coverage percent as their ID increases.

6.1.6b

Error Code: <E-LCC-R-1380>

Type: Conditional

Operation	Associated Records in Table …	… Column	Is …
TOTAL	LAND_COVER_COMPONENT_EST	LCCE.COVERAGE_PCT	<= 100

6.1.6c

Error Code: <E-LCC-R-1390>

Type: Conditional

Operation	Associated Records in Table …	… Column	Is …

COUNT	LAND_COVER_COMPONENT_EST		<= 4

6.1.6d

Error Code: <E-LCC-P-1400>

Type: Conditionals

	Column	Is	Then …	Is …
	FCO.INVENTORY_STANDARD_CODE	**V**		
AND	VCPE.BCLCS_LEVEL1_CODE	not **U**	COUNT OF ASSOCIATED COLUMNS IN TABLE : LAND_COVER_COMPONENT_EST	>= 1

6.1.7 Polygon-Level Rules

6.1.7a

Error Code: <E-LCC-P-1410>

Type: Conditionals

	Column	Is	Then …	Is …
	LCCE.LAND_COVER_CLASS_CODE	**TC** or **TM** or **TB**	**COUNT** OF ASSOCIATED TSE RECORDS	>= 1

6.1.7b

Error Code: <E-LCC-P-1420>

Type: Conditionals

	Column	Is	Then …	Is …
	VCPE.SHRUB_CROWN_CLOSURE	**null**	TOTAL LCCE.COVERAGE_PCT OF **SL** OR **ST**	<= 20

6.1.7c

Error Code: <E-LCC-P-1430>

Type: Conditionals

	Column	Is	Then …	Is …
	VCPE.HERB_COVER_PCT	**null**	TOTAL LCCE.COVERAGE_PCT OF **HE** OR **HF** OR **HG**	<= 20

6.1.7d

Error Code: <E-LCC-P-1440>

Type: Conditionals

	Column	Is	Then …	Is …
	VCPE.BRYOID_COVER_PCT	**null**	TOTAL LCCE.COVERAGE_PCT OF **BL** OR **BM** OR **BY**	<= 20

6.1.7e and 6.1.7f

Error Code: <E-LCC-P-1450> and Error Code: <W-LCC-P-1460>

Type: Special Conditionals

Type: Conditionals: **Part 1**

	Column	Is	Then …	Else
Step 1	IF THERE EXISTS A NON-'D' TREE COVER LAYER WITH A TREE SPECIES 1	**True**	GOTO STEP 2	Bypass
Step 2	TOTAL SUM (OVER ALL LIVE TREE LAYERS), OF THE LAYERS CROWN CLOSURE.	**< 20%**	GOTO STEP 3	PERFORM PART 2 CHECK AS A FATAL ERROR CHECK
Step 3	THERE EXISTS A LCCE.LAND_COVER_CLASS_CODE[M] OF TB, TC OR TM	**True**	PERFORM PART 2 CHECK AS A FATAL ERROR CHECK	Perfom Part 2 Check as a WARNING (possible treed LCC missing)

Type: Conditionals **Part 2**

	Column	Is	Then …	Is …
	FCO.INVENTORY_STANDARD_CODE	V		
AND	TOTAL SUM (OVER ALL LIVE TREE LAYERS BASAL AREA)	> 0		
	LCCE.LAND_COVER_CLASS_CODE[M]	TB	TOTAL SUM (OVER ALL LIVE TREE LAYERS), OF THE TREE_SPECIES_CODE'S BASAL AREA (SPECIES % X LEVEL BASAL AREA)	>= 75% Deciduous
		AND	THERE EXISTS A LCCE.LAND_COVER_CLASS_CODE[M]	TB
OR	LCCE.LAND_COVER_CLASS_CODE[M]	TC	TOTAL SUM (OVER ALL LIVE TREE LAYERS), OF THE TREE_SPECIES_CODE'S BASAL AREA (SPECIES % X LEVEL BASAL AREA)	>= 75% Coniferous
		AND	THERE EXISTS A LCCE.LAND_COVER_CLASS_CODE[M]	TC
OR	LCCE.LAND_COVER_CLASS_CODE[M]	TM	TOTAL SUM (OVER ALL LIVE TREE LAYERS), OF THE TREE_SPECIES_CODE'S BASAL AREA (SPECIES % X LEVEL BASAL AREA)	> 0 And < 75% Coniferous and < 75% Deciduous
		AND	THERE EXISTS A LCCE.LAND_COVER_CLASS_CODE[M]	TM or TC and TB

OR

	Column	Is	Then …	Is …
	FCO.INVENTORY_STANDARD_CODE	Not V		
	LCCE.LAND_COVER_CLASS_CODE[M]	TB	TOTAL SUM (OVER ALL LIVE TREE LAYERS), OF THE TREE_SPECIES_CODE'S CROWN CLOSURE (SPECIES % X LEVEL CC)	>= 75% Deciduous
		AND	THERE EXISTS A LCCE.LAND_COVER_CLASS_CODE[M]	TB

OR	LCCE.LAND_COVER_CLASS_CODE[M]	TC	TOTAL SUM (OVER ALL LIVE TREE LAYERS), OF THE TREE_SPECIES_CODE'S CROWN CLOSURE (SPECIES % X LEVEL CC)	>= 75% Coniferous
		AND	THERE EXISTS A LCCE.LAND_COVER_CLASS_CODE[M]	TC
OR	LCCE.LAND_COVER_CLASS_CODE[M]	TM	TOTAL SUM (OVER ALL LIVE TREE LAYERS), OF THE TREE_SPECIES_CODE'S CROWN CLOSURE (SPECIES % X LEVEL CC)	> 0 And < 75% Coniferous and < 75% Deciduous
		AND	THERE EXISTS A LCCE.LAND_COVER_CLASS_CODE[M]	TM or TC and TB

6.1.7g

Error Code: <E-LCC-P-1470>

	Column	Is	Then …	Is …
	LCCE.LAND_COVER_CLASS_CODE	**LA**	THERE EXISTS A NVC.NON_VEG_COVER_TYPE_CODE	LA

6.1.7h Duplicate LCC+Moisture Regime

Error Code: <Not assigned>

Type: Conditional

	Column	Equals Column(s)…	Then …
	LCC[1].LAND_COVER_CLASS_CODE + LCC[1].SOIL_MOISTURE_REGIME_CODE	LCC[2].LAND_COVER_CLASS_CODE + LCC[2].SOIL_MOISTURE_REGIME_CODE OR LCC[3].LAND_COVER_CLASS_CODE + LCC[3].SOIL_MOISTURE_REGIME_CODE OR LCC[4].LAND_COVER_CLASS_CODE + LCC[4].SOIL_MOISTURE_REGIME_CODE	ERROR
OR	LCC[2].LAND_COVER_CLASS_CODE + LCC[2].SOIL_MOISTURE_REGIME_CODE	LCC[3].LAND_COVER_CLASS_CODE + LCC[3].SOIL_MOISTURE_REGIME_CODE OR LCC[4].LAND_COVER_CLASS_CODE + LCC[4].SOIL_MOISTURE_REGIME_CODE	ERROR
OR	LCC[3].LAND_COVER_CLASS_CODE + LCC[3].SOIL_MOISTURE_REGIME_CODE	LCC[4].LAND_COVER_CLASS_CODE + LCC[4].SOIL_MOISTURE_REGIME_CODE	ERROR

6.1.8

Error Code: <E-LCC-R-1385>

Type: Conditionals

	Column	Is …	Error Message …
	FCO.INVENTORY_STANDARD_CODE	**V**	
AND	AT LEAST ONE LCCE %	IS NOT NULL	

AND	TOTAL ASSOCIATED : LCCE.COVERAGE_PCT	<> 100	The Sum of Land Cover Estimated Cover Percentages must be 100%

6.1.10

Error Code: <E-LCC-P-????>

	Column	Is	Then …	Is …
	LCCE.LAND_COVER_CLASS_CODE	**SL**	THEN VCP.SHRUB_HEIGHT	< 2

*Note: If there exists an ST as well then do not do the test.

6.1.11

Error Code: <E-LCC-P-????>

	Column	Is	Then …	Is …
	LCCE.LAND_COVER_CLASS_CODE	**ST**	THEN VCP.SHRUB_HEIGHT	>= 2

*Note: If there exists an SL as well then do not do the test.

6.1.12 Warnings

7. Disturbance

7.1.1 Data Capture Method

Error Code: <W-DSE-R-1490>

Type: Conditionals **Produces:** Warning (Polygon)

	Column	Is …	Then Column	Is …
	DE.DISTURBANCE_TYPE_CODE	not *NULL*	DE.DATA_CAPTURE_METHOD_CODE	not *NULL*

7.1.2 Disturbance Type

Error Code: <W-DSE-R-1500>

Type: Conditionals **Produces:** Warning

	Column	Is …	Then Column	Is …
	DE.DISTURBANCE_TYPE_CODE	not *NULL*	DE.DISTURBANCE_START_YEAR	not *NULL*

7.1.3 Disturbance Start Year

7.1.3a

Error Code: <W-DSE-R-1510>

Type: Format **~~Produces:~~** ~~Warning~~

Column	Format	Valid Value(s)
DE.DISTURBANCE_START_YEAR	Date	Start Year Date is greater than or equal to January 1, 1901 but less than or equal to current date. Jan 1, 1900 <= start_year <= *current date*

7.1.3b

Error Code: <W-DSE-R-1520>

Type: Conditionals **~~Produces:~~** ~~Warning~~

	Column	Is …	Column
	DE.DISTURBANCE_START_YEAR	< less than	DE.DISTURBANCE_END_YEAR

7.1.4 Disturbance End Year

7.1.4a

Error Code: <W-DSE-R-1530>

Type: Format **~~Produces:~~** ~~Warning~~

Column	Format	Valid Value(s)
DE.DISTURBANCE_END_YEAR	Date	End Year Date is greater than or equal to January 1, 1901 but less than or equal to current date. Jan 1, 1900 <= end_year <= *current date*

7.1.4b

Error Code: <W-DSE-R-1540>

Type: Conditionals **Produces:** Warning

	Column	Is …	Then Column	Is …
	DE.DISTURBANCE_START_YEAR	*NULL*	DE.DISTURBANCE_END_YEAR	*NULL*

7.1.5 Disturbance Type Code

Error Code: <W-DSE-R-1550>

Type: Conditionals **Produces:** Warning (Polygon)

	Column	Is …
	DE.DISTURBANCE_TYPE_CODE'S LAST CHARACTER	C, F, I, P, S, W

7.1.6 Disturbance Type Code

Error Code: <E-DSE-Z-1560>

Type: Format

Column	Format	Valid Value(s)
DE.DISTURBANCE_TYPE_CODE'S	XXX	*See code list VRIMS_DISTURBANCE TYPE_CODE*

8. VegCap BVRs

Due to the nature of the differences between the VRIMS Services BVR's and VegCap BVR's with respect to certain VRIMS data items, there are instances when a Services BVR is superfluous because the item in question is cast as the object. A BVR will still need to exist in the VegCap GUI as it may be entered as a String item and then saved as the object in question.

Listed below are VegCap GUI specific BVR's with respect to data entry in VegCap.

8.1 FCO.Opening_Id (Forest Cover Object)

Type: Format

Column	Format	Valid Value(s)
FCO.OPENING_ID	[-]#	Numeric Whole Number.

Appendix A: Glossary

FCO.	Refers to the "FOREST_COVER_OBJECT" table.
LCCE.	Refers to the "LAND_COVER_COMPONENT_EST" table.
NVCE.	Refers to the "NON_VEGETATIVE_COVER_EST" table.
TCL.	Refers to the "TREE_COVER_LAYER_ESTIMATED" table.
TSE.	Refers to the "TREE_SPECIES_ESTIMATED" table.
VCPE.	Refers to the "VEGETATION_COVER_POLYGON_EST" table.
DE.	Refers to the "DISTURBANCE_EVENT" table.
<	Mathematical *Less Than* symbol
>	Mathematical *Greater Than* symbol
<=	Mathematical *Less Than or Equal to* symbol
>=	Mathematical *Greater Than or Equal to* symbol
=	Comparative operator (*equals*)
<>	Comparative operator (*not*)
NULL	A value which contains no data (empty)
not *NULL*	A value which contains data (not empty)
Conditional	A conditional's goal is to evaluate as a True statement (i.e. 1 is greater than 0). A single table is considered one Business Validation Rule. If the table cannot be defined as a True statement, then an Error or Warning (if defined) will be produced.

Appendix B: Code Tables

ADJUSTMENT_ATTRIBUTE_CODE	
Code	**Description**
DE	Disturbance End Year
DS	Disturbance Start Year
DT	Dominant Tree Species Height
LB	Layer Basal Area
LC	Layer Crown Closure
LF	Layer Forest Cover Rank
LL	Layer Level Code
LM	Layer Measured Utilization Level
LS	Layer Estimated Site Index
LSS	Layer Estimated Site Index Species
LT	Layer Trees Per Hectare
PB	Polygon Biogeoclimatic Ecosystem Classification
PC	Polygon Bryoid Cover Percentage
PH	Polygon Herb Cover Percentage
PM	Polygon Measurement Year
PN	Polygon Non Productive Descriptor
PP	Polygon Percentage Stockable Land
PS	Polygon Shrub Cover Percentage
PY	Polygon Yield Factor
TP	Tree Species Percentage
TS	Tree Species
TT	Tree Species Total Ages

ALPINE_DESIGNATION_CODE	
Code	**Description**
A	Alpine
N	Not Alpine

BCLCS_LEVEL1_CODE	
Code	**Description**
N	Non-Vegetated
U	Unreported
V	Vegetated

BCLCS_LEVEL2_CODE	
Code	**Description**
L	Land
N	Non-Treed
T	Treed
W	Water

BCLCS_LEVEL3_CODE	
Code	**Description**
A	Alpine
U	Upland
W	Wetland

BCLCS_LEVEL4_CODE	
Code	**Description**
BL	Bryoid - Lichens
BM	Bryoid - Moss
BY	Bryoids
EL	Exposed Land
HE	Herb
HF	Herb - Forbs
HG	Herb - Graminoids
RO	Rock/Rubble
SI	Snow/Ice
SL	Shrub - Low
ST	Shrub - Tall
TB	Treed - Broadleaf
TC	Treed - Coniferous
TM	Treed - Mixed

BCLCS_LEVEL5_CODE	
Code	**Description**
AP	Airport
BE	Beach
BI	Blockfield
BR	Bedrock
BU	Burned Area
CB	Cutbank
CL	Closed
DE	Dense
ES	Exposed Soils
GL	Glacier
GP	Gravel Pit
LA	Lake
LB	Lava Bed
LL	Landing
LS	Pond or Lake Sediments
MI	Open Pit Mine
MN	Moraine
MU	Mudflat Sediment
MZ	Rubbly Mine Spoils
OC	Ocean

BCLCS_LEVEL5_CODE	
OP	Open
OT	Other
PN	Snow Cover
RE	Reservoir
RI	River/Stream
RM	Reservoir Margin
RN	Railway Surface
RS	River Sediments
RZ	Road Surface
SP	Sparse
TA	Talus
TZ	Tailings
UR	Urban

BEC_ZONE_CODE	
Code	**Description**
AT	Alpine Tundra
BAFA	Boreal Altai Fescue Alpine
BG	Bunchgrass
BWBS	Boreal White and Black Spruce
CDF	Coastal Douglas Fir
CMA	Coastal Mountain-heather Alpine
CWH	Coastal Western Hemlock
ESSF	Engelmann Spruce - Subalpine Fir
ICH	Interior Cedar - Hemlock
IDF	Interior Douglas Fir
IMA	Interior Mountain-heather Alpine
MH	Mountain Hemlock
MS	Montane Spruce
PP	Ponderosa Pine
SBPS	Sub-Boreal Pine - Spruce
SBS	Sub-Boreal Spruce
SWB	Spruce - Willow - Birch

COVER_PATTERN_CODE	
Code	**Description**
1	Single to very few (<4) occurrences of limited extent, circular to irregular shape.
2	Single to very few (<4) occurrences of limited extent, linear or elongated shape.
3	Several (>3) sporadic occurrences of limited extent, circular to irregular shape.
4	Several (>3) sporadic occurrences of limited extent, linear or elongated shape.
5	Intimately intermixed units, often with gradiational transitions from one to the other.
6	Discontinuous but extensive occurrences, parallel to sub-parallel elongated in shape.
7	Limited continuous occurrence with few inclusions.
8	Continuous occurrence with several inclusions.
9	Continuous occurrence with very few inclusions.

DATA_CAPTURE_METHOD_CODE	
Code	**Description**
1	Landsat5
2	Landsat7
3	SPOT
4	Photogrammetric
5	Differential GPS
6	Non-Differential GPS
7	Digitizing
8	Scanning
9	Monorestitution
10	Tight Chaining
11	Results
12	Other
13	Free To Grow Specialist

DATA_SOURCE_AGE_CODE	
Code	**Description**
0	Photo-interpretation
1	Aircall, High Level Observation
2	Aircall, Low Level Observation
3	Phase 1 photo sample (pre-1990)
4	Inventory Ground Call
5	Standard fixed radius sample (pre-1979)
6	Phase 2 or Phase 3 sample (pre-1990)
7	Silviculture Survey
8	Ground Observation
9	Research plots (e.g. Sx trials, ecological site description)
10	Valuation cruise plot(s)
11	A record from a silv. information system that summarizes the stand structure following an activity or treatment.
12	Disturbance which is classified as NSR. No additional information other than type and year of disturbance.
13	Managed stand sample
14	Ground call, 2 or more points
15	EXPIRED : Lidar – Light Detection and Ranging.
16	Vegetation sample
17	Vegetation ground call
18	Vegetation air call
19	Natural growth sample
20	Volume and depletion sample
21	EXPIRED : Data captured using the Landscape Vegetation Inventory Standards
22	Photogrammetrically captured information
25	Pandemic/Catastrophic Event Adjustment (i.e. MPB, Spruce Budworm, etc.)
26	Fire Adjustment
27	Other Model Adjustments (i.e Basal Area)
30	LiDAR Model (i.e. derived) Values are calculated from the LiDar/ground model

31	LiDAR Model (i.e. derived) Values are calculated from the LiDar/ground model
40	LVI derived, values are calculated from the LVI models
41	LVI measured, values are from photo interpretation and/or measured directly from photo
50	Medium Resolution interpreted satalite imagery (greater than 10 m resolution)
51	High Resolution interpreted satelite imagery (less than 1o m Resolution)
60	Low Level, high res digital imagery interpreted(ie Digital Camera System, DCS) values from High res photo interpretation
61	Low Level, high res digital imagery measured(ie Digital Camera System, DCS) meas. directly from high res photography

DATA_SOURCE_BASAL_AREA_CODE	
Code	**Description**
0	Photo-interpretation
1	Aircall, High Level Observation
2	Aircall, Low Level Observation
3	Phase 1 photo sample (pre-1990)
4	Inventory Ground Call
5	Standard fixed radius sample (pre-1979)
6	Phase 2 or Phase 3 sample (pre-1990)
7	Silviculture Survey
8	Ground Observation
9	Research plots (e.g. Sx trials, ecological site description)
10	Valuation cruise plot(s)
11	A record from a silv. information system that summarizes the stand structure following an activity or treatment.
12	Disturbance which is classified as NSR. No additional information other than type and year of disturbance.
13	Managed stand sample
14	Ground call, 2 or more points
15	EXPIRED : Lidar – Light Detection and Ranging.
16	Vegetation sample
17	Vegetation ground call
18	Vegetation air call
19	Natural growth sample
20	Volume and depletion sample
21	EXPIRED : Data captured using the Landscape Vegetation Inventory Standards
22	Photogrammetrically captured information
25	Pandemic/Catastrophic Event Adjustment (i.e. MPB, Spruce Budworm, etc.)
26	Fire Adjustment
27	Other Model Adjustments (i.e Basal Area)
30	LiDAR Model (i.e. derived) Values are calculated from the LiDar/ground model
31	LiDAR Model (i.e. derived) Values are calculated from the LiDar/ground model
40	LVI derived, values are calculated from the LVI models
41	LVI measured, values are from photo interpretation and/or measured directly from photo
50	Medium Resolution interpreted satalite imagery (greater than 10 m resolution)
51	High Resolution interpreted satelite imagery (less than 1o m Resolution)
60	Low Level, high res digital imagery interpreted(ie Digital Camera System, DCS) values from High res photo interpretation
61	Low Level, high res digital imagery measured(ie Digital Camera System, DCS) meas. directly from high res photography

DATA_SOURCE_ECOSYS_CLASS_CODE	
Code	**Description**
0	Photo-interpretation
1	Aircall, High Level Observation
2	Aircall, Low Level Observation
3	Phase 1 photo sample (pre-1990)
4	Inventory Ground Call
5	Standard fixed radius sample (pre-1979)
6	Phase 2 or Phase 3 sample (pre-1990)
7	Silviculture Survey
8	Ground Observation
9	Research plots (e.g. Sx trials, ecological site description)
10	Valuation cruise plot(s)
11	A record from a silv. information system that summarizes the stand structure following an activity or treatment.
12	Disturbance which is classified as NSR. No additional information other than type and year of disturbance.
13	Managed stand sample
14	Ground call, 2 or more points
15	EXPIRED : Lidar – Light Detection and Ranging.
16	Vegetation sample
17	Vegetation ground call
18	Vegetation air call
19	Natural growth sample
20	Volume and depletion sample
21	EXPIRED : Data captured using the Landscape Vegetation Inventory Standards
22	Photogrammetrically captured information
25	Pandemic/Catastrophic Event Adjustment (i.e. MPB, Spruce Budworm, etc.)
26	Fire Adjustment
27	Other Model Adjustments (i.e Basal Area)
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DATA_SOURCE_HEIGHT_CODE	
Code	**Description**
0	Photo-interpretation
1	Aircall, High Level Observation
2	Aircall, Low Level Observation
3	Phase 1 photo sample (pre-1990)
4	Inventory Ground Call
5	Standard fixed radius sample (pre-1979)

6	Phase 2 or Phase 3 sample (pre-1990)
7	Silviculture Survey
8	Ground Observation
9	Research plots (e.g. Sx trials, ecological site description)
10	Valuation cruise plot(s)
11	A record from a silv. information system that summarizes the stand structure following an activity or treatment.
12	Disturbance which is classified as NSR. No additional information other than type and year of disturbance.
13	Managed stand sample
14	Ground call, 2 or more points
15	EXPIRED : Lidar – Light Detection and Ranging.
16	Vegetation sample
17	Vegetation ground call
18	Vegetation air call
19	Natural growth sample
20	Volume and depletion sample
21	EXPIRED : Data captured using the Landscape Vegetation Inventory Standards
22	Photogrammetrically captured information
25	Pandemic/Catastrophic Event Adjustment (i.e. MPB, Spruce Budworm, etc.)
26	Fire Adjustment
27	Other Model Adjustments (i.e Basal Area)
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DATA_SOURCE_INTERPRETED_CODE	
Code	**Description**
0	Photo-interpretation
1	Aircall, High Level Observation
2	Aircall, Low Level Observation
3	Phase 1 photo sample (pre-1990)
4	Inventory Ground Call
5	Standard fixed radius sample (pre-1979)
6	Phase 2 or Phase 3 sample (pre-1990)
7	Silviculture Survey
8	Ground Observation
9	Research plots (e.g. Sx trials, ecological site description)
10	Valuation cruise plot(s)
11	A record from a silv. information system that summarizes the stand structure following an activity or treatment.
12	Disturbance which is classified as NSR. No additional information other than type and year of disturbance.
13	Managed stand sample

14	Ground call, 2 or more points
15	EXPIRED : Lidar – Light Detection and Ranging.
16	Vegetation sample
17	Vegetation ground call
18	Vegetation air call
19	Natural growth sample
20	Volume and depletion sample
21	EXPIRED : Data captured using the Landscape Vegetation Inventory Standards
22	Photogrammetrically captured information
25	Pandemic/Catastrophic Event Adjustment (i.e. MPB, Spruce Budworm, etc.)
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71	Free Growing Survey
72	Conditional Free Growing
73	Not Free Growing
74	Pre-Stand Tending
75	Naturally Regenerated

DATA_SRC_VRI_LIVE_STEM_HA_CODE

Code	Description
0	Photo-interpretation
1	Aircall, High Level Observation
2	Aircall, Low Level Observation
3	Phase 1 photo sample (pre-1990)
4	Inventory Ground Call
5	Standard fixed radius sample (pre-1979)
6	Phase 2 or Phase 3 sample (pre-1990)
7	Silviculture Survey
8	Ground Observation
9	Research plots (e.g. Sx trials, ecological site description)
10	Valuation cruise plot(s)
11	A record from a silv. information system that summarizes the stand structure following an activity or treatment.
12	Disturbance which is classified as NSR. No additional information other than type and year of disturbance.
13	Managed stand sample
14	Ground call, 2 or more points
15	EXPIRED : Lidar – Light Detection and Ranging.
16	Vegetation sample

17	Vegetation ground call
18	Vegetation air call
19	Natural growth sample
20	Volume and depletion sample
21	EXPIRED : Data captured using the Landscape Vegetation Inventory Standards
22	Photogrammetrically captured information
25	Pandemic/Catastrophic Event Adjustment (i.e. MPB, Spruce Budworm, etc.)
26	Fire Adjustment
27	Other Model Adjustments (i.e Basal Area)
30	LiDAR Model (i.e. derived) Values are calculated from the LiDar/ground model
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DISTURBANCE_CODE	
Code	**Description**
DI	Disturbance

DISTURBANCE_TYPE_CODE	
Code	**Description**
A	Animal Damage
AB	Bear
AC	Cattle
AD	Deer
AE	Elk
AH	Hare or Rabbit
AM	Moose
AP	Porcupine
AS	Squirrel
AV	Vole
AX	Birds
AZ	Beaver
B	Wildfire
BE	Escape Burn
BG	Ground Fire
BR	Range Burn
BW	Wildlife Burn
C	Cone and Seed Insects
CAH	Cone Resin Midge (Asynapta hopkinsi)

DISTURBANCE_TYPE_CODE	
CBC	Fir (Fd) Cone Moth (Barbara colfaxiana)
CBX	Fir Cone Moth (Barbara sp.)
CCP	(Camptomyia pseudotsugae)
CDC	Spruce (Sx) Cone Gall Midge (Kaltenbachiola(Dasineura) canadensis)
CDD	Fir Seed Midge (Kaltenbachiola(Dasineura) abiesemia)
CDR	Spruce (Sx) Cone Axis Midge (Kaltenbachiola(Dasineura) rachiphaga)
CDX	Kaltenbachiola(Dasineura) Midges (Kaltenbachiola(Dasineura) spp.)
CEA	Fir Cone Maggot (Earomyia abietum)
CEB	(Earomyia barbara)
CEQ	(Earomyia aquilonia)
CEX	Earomyia Maggots (Earomyia spp.)
CFP	Fir (Fd) Cone Beetle (Ernobius punctulatus)
CHX	Budworms (Choristoneura spp.)
CIA	Fir Coneworm (Dioryctria abietivorella)
CIP	Fir (Fd) Coneworm (Dioryctria pseudotsugella)
CIR	Spruce (Sx) Coneworm (Dioryctria reniculelloides)
CIS	Pine Coneworm (Dioryctria rossi)
CIV	Ponderosa pine (Py) Coneworm (Dioryctria auranticella)
CIX	Coneworms (Dioryctria spp.)
CLO	Western Conifer Seed Bug (Leptoglossus occidentalis)
CMA	Ponderosa pine (Py) Seed Chalcid (Megastigmus albifrons)
CMC	Spruce (Sx) Seed Chalcid (Megastigmus piceae)
CML	Subalpine fir (Bl) Seed Chalcid (Megastigmus lasiocarpae)
CMP	Fir Seed Chalcid (Megastigmus pinus)
CMR	(Megastigmus rafni)
CMS	Fir (Fd) Seed Chalcid (Megastigmus spermotrophus)
CMT	Hemlock (Hw) W Seed Chalcid (Megastigmus tsugae)
CMX	Seed Chalcids (Megastigmus spp.)
CNP	Pine Cone Beetle (Conophthorus ponderosae)
CPS	(Pineus similis)
CRX	Cone Scale Midges (Resseliella spp.)
CSN	Spiral Spruce Cone Borer (Strobilomyia neanthracina)
CTO	Fir (Fd) Cone Gall Midge (Contarinia oregonensis)
CTW	Fir (Fd) Cone Scale Midge (Contarinia washingtonensis)
CVP	White pine (Pw) Cone Borer (Eucosma ponderosa)
CVR	Lodgepole pine (Pl) Cone Borer (Eucosma recissoriana)
CYC	Spruce (Sx) Seed Midge (Mayetiola carpophaga)
CYP	Ponderosa pine (Py) Seedworm (Cydia piperana)
CYS	Spruce (Sx) Seedworm (Cydia strobilella)
CYT	Cedar (Cw) Cone Midge (Mayetiola thujae)
CYX	Seedworms (Cydia spp.)
D	Diseases
DB	broom rust
DBF	fir broom rust (Melampsorella caryophyllacearum)
DBS	spruce broom rust (Chrysomyxa arctostaphyli)
DD	Stem Rot

DISTURBANCE_TYPE_CODE	
DDA	White Mottled Rot (Ganoderma applanatum)
DDB	birch trunk rot (Fomes fomentarius)
DDC	Brown Cubical Rot of Birch (Piptoporus betulinus)
DDD	sulfur fungus (Laetiporus sulphureus)
DDE	Rust Red Stringy Rot (Echindontium tinctorium)
DDF	brown crumbly rot (Fomitopsis pinicola)
DDG	Sterile Conk Trunk Rot of Birch (Inonotus obliquus)
DDH	hardwood trunk rot (Phellinus ignarius)
DDO	cedar brown pocket rot (Poria sericeomollis)
DDP	Red Ring Rot (Phellinus pini)
DDQ	quinine conk rot (Fomitopsis officinalis)
DDS	Schweinitzii Butt Rot (Phaeolus schweinitzii)
DDT	Aspen Trunk Rot (Phellinus tremulae)
DF	foliage disease
DFA	western pine aster rust (Coleosporium asterum)
DFB	Delphinella Needle Cast (Delphinella sp.)
DFC	large-spored spruce-labrador tea rust (Chrysomyxa ledicola)
DFD	spruce needle cast (Lirula macrospora)
DFE	elytroderma needle cast (Elytroderma deformans)
DFF	Marssonina Leaf Blights (Marssonina sp.)
DFG	Cottonwood Leaf Rust (Melampsora occidentalis)
DFH	larch needle cast (Hypodermella laricis)
DFI	Linospora Leaf Blotch (Linospora tetraspora)
DFK	Septoria Leaf Spot (Septoria populicola)
DFL	Pine needle cast (Lophodermella concolor)
DFM	larch needle blight (Meria laricis)
DFP	fir fireweed rust (Pucciniastrum epilobi)
DFR	Douglas-fir needle cast (Rhabdocline pseudotsugae)
DFS	redband needle blight (Mycosphaerella ScirrhiaY pini)
DFT	Sirococcus Tip Blight (sirococcus strobilinus)
DL	Disease Caused Dieback
DLD	dermea canker (Dermea pseudotsugae)
DLF	red flag disease (Potebniamyces balsamicola)
DLP	phomopsis canker (Phomopsis lokoyae)
DLS	sydowia (Sclerophoma) tip dieback (Sclerophoma pithyophila)
DLV	aspen-poplar twig blight (Venturia spp.)
DM	Dwarf Mistletoe
DMF	Douglas-fir Dwarf Mistletoe (Arceuthobium douglasii)
DMH	Hemlock Dwarf Mistletoe (Arceuthobium tsugense)
DML	Larch Dwarf Mistletoe (Arceuthobium laricis)
DMP	Lodgepole Pine Dwarf Mistletoe (Arceuthobium americanum)
DR	Root Disease
DRA	Armillaria Root Disease (Armillaria ostoyae)
DRB	Black Stain Root Disease (Leptographium wageneri)
DRC	Laminated Root Rot (cedar strain) (Phellinus weirii)
DRL	Laminated Root Rot (Inonotus sulphurascens)

DISTURBANCE_TYPE_CODE	
DRN	Annosus Root Disease (Heterobasidion annosum)
DRR	Rhizina Root Disease (Rhizina undulata)
DRT	Tomentosus Root Rot (Inonotus tomentosus)
DS	Stem Diseases (Cankers and Rusts)
DSA	Atropellis Canker (Lodgepole Pine) (Atropellis piniphila)
DSB	White Pine Blister Rust (Cronartium ribicola)
DSC	Comandra Blister Rust (Cronartium comandrae)
DSE	sooty bark canker (Encoelia pruinosa)
DSG	Western Gall Rust (Endocronartium harknessii)
DSH	hypoxylon canker (Hypoxylon mammatum)
DSP	cryptosphaeria canker (Cryptosphaeria populina)
DSR	ceratocystis canker (Ceratocystis fimbriata)
DSS	Stalactiform Blister Rust (Cronartium coleosporioides)
DST	target canker (Nectria galligena)
DSY	cytospora canker (Cytospora chrysosperma)
I	Insects
IA	Aphids
IAB	Balsam Woolly Adelgid (Adelges piceae)
IAC	Giant Conifer Aphid (Cinara species)
IAG	Cooley Spruce Gall Adelgid (Adelges cooleyi)
IAL	Larch (Lw) Cone Woolly Aphid (Adelges lariciatus)
IAS	Green Spruce Aphid (Elatobium abietinum)
IB	Bark Beetles
IBB	Western Balsam Bark Beetle (Dryocoetes confusus)
IBD	Douglas-fir Beetle (Dendroctonus pseudotsugae)
IBE	Silver Fir Beetle (Pseudohylesinus grandis)
IBF	Fir Engraver Beetle (Scolytus ventralis)
IBH	Hylurgops Beetle (Hylurgops rugipennis)
IBI	Engraver Beetles (Ips species)
IBL	Lodgepole Pine Beetle (Dendroctonus murryanae)
IBM	Mountain Pine Beetle (Dendroctonus ponderosae)
IBP	twig beetles (Pityogenes, Pityophthorus spp)
IBR	Fir Root Beetle (Pseudohylesinus granulatus)
IBS	Spruce Beetle (Dendroctonus rufipennis)
IBT	red turpentine beetle (Dendroctonus valens)
IBW	western pine beetle (Dendroctonus brevicomis)
ID	Defoliators
ID1	Leaf Beetles (Chrysomela spp)
ID2	Bruce Spanworm (Operophtera bruceata)
ID3	Winter Moth (Operophtera brumata)
ID4	Cottonwood Sawfly (Nematus currani)
ID5	Fall Webworm (Hyphantria cunea)
ID6	Aspen Leaf Miner (Phyllocristis populiella)
ID7	Woolly Alder Sawfly (Eriocampa ovata)
ID8	Aspen Leaf Roller
ID9	Birch Leaf Skeletonizer (Buccalatrix sp.)

DISTURBANCE_TYPE_CODE	
IDA	Black Army Cutworm (Actebia fennica)
IDB	Two-Year Budworm (Choristoneura biennis)
IDC	Larch Casebearer (Coleophora laricella)
IDD	western winter moth (Erranis tiliaria vancouverensis)
IDE	Spruce Budworm (Choristoneura fumiferana)
IDF	Forest Tent Caterpillar (Malacosoma disstria)
IDG	Greenstriped Forest Looper (Melanolophia imitata)
IDH	Western Blackheaded Budworm (Acleris gloverana)
IDI	pine needle sheath miner (Zellaria haimbachi)
IDJ	Gray forest loooper (Caripeta divista)
IDK	Northern Tent Caterpillar (Malacosoma californicum)
IDL	Western Hemlock Looper (Lambdina fiscellaria lugubrosa)
IDM	Gypsy Moth (Lymantria dispar)
IDN	birch leaf miner (Fenusa pusilla)
IDO	Filament bearer (Nematocampa fiamentaria)
IDP	larch sawfly (Pristophora erichsoni)
IDQ	Hemlock Needle Miner (Epinotia tsugana)
IDR	alder sawfly (Eriocampa ovata)
IDS	Conifer Sawflies
IDT	Douglas-fir Tussock Moth (Orgyia pseudotsugata)
IDU	satin moth (Leucoma salicis)
IDV	Variegated Cutworm (Peridroma saucia)
IDW	Western Spruce Budworm (Choristoneura occidentalis)
IDX	large aspen tortrix (Choristoneura conflictana)
IDZ	Western False Hemlock Looper (Nepytia freemani)
IEA	Unidentified Aspen Defoliation
IEB	Hemlock Sawfly (Neodiprion tsugae)
IEC	Larch Budmoth (Zairaphera improbana)
IED	Larch Looper (Semiothis sexmaculata)
IEF	Cottonwood Leaf Skeletonizer (Phyllonorycytes apparella)
IEG	Lodgepole pine sawfly (Neopdiprion sp.)
IEH	Phantom Hemlock Looper (Nepytia phantasmaria)
IEI	Saddleback Looper (Ectropis crepuscularia)
IEJ	Willow leafminer (Micrurapteryx salicifoliella)
IS	Shoot Insects
ISA	Bronze Birch Borer (Agrilus anxius)
ISB	Western Cedar Borer (Trachykele blondeli)
ISC	Poplar Borer (Saperda calcarata)
ISE	European Pine Shoot Moth (Rhyacionia buoliana)
ISG	gouty pitch midge (Cecidomyia piniinopsis)
ISP	Pitch Nodule Moths (Petrova species)
ISQ	sequoia pitch moth (Vespamima sequoiae)
ISS	western pine shoot borer (Eucosma sonomana)
ISW	Poplar and Willow Borer (Cryptorhynchus lapathi)
IW	Weevils
IWC	Conifer Seedling Weevil (Steremnius carinatus)

DISTURBANCE_TYPE_CODE	
IWM	Magdalis Species
IWP	Lodgepole pine Terminal Weevil (Pissodes terminalis)
IWS	White Pine Weevil (on spruce) (Pissodes strobi)
IWW	Warrens Root Collar Weevil (Hylobius warreni)
IWY	Cylindrocopturus weevil (Cylindrocopturus spp.)
IWZ	Yosemite bark weevil (Pissodes schwartzii)
L	Logging
M	Mite Damage (Trisetacus spp.)
N	Non-Biological (Abiotic) Injuries
NB	Fire
ND	Drought
NF	Flooding
NG	Frost
NGC	frost crack
NGH	Frost Heaved
NGK	Shoot/Bud Frost Kill
NH	Hail
NK	Fumekill
NL	lightning
NN	Road Salt
NR	Redbelt
NS	Slide
NW	Windthrow
NWS	windthrow - soil failure
NWT	windthrow - treatment or harvest related
NY	Snow or Ice (includes snow press)
NZ	Sunscald
P	Cone and Seedling Fungal Pathogens
PAX	(Alternaria spp.)
PBC	Gray Mould (Botrytris cinerea)
PCD	(Cylindrocarpon destructans)
PCF	Seed or Cold Fungus (Caloscypha fulgens)
PCP	Inland Spruce Cone Rust (Chrysomyxa pirolata)
PDT	Cedar Leaf Blight (Didymascella thujina)
PFX	(Fusarium spp.)
PPG	Damping-Off Disease (Phoma glomerata)
PPX	(Penicillium spp.)
PSS	Sirococcus Blight (Sirococcus strobilinus)
PTX	(Trichothecium spp.)
R	Site rehabilitation
T	Treatment Injuries
TC	Chemical injury
TL	Logging wounds
TM	other mechanical damage (non-logging)
TP	Planting (incorrectly planted)
TPM	Poor Planting Microsite

DISTURBANCE_TYPE_CODE	
TR	Pruning wound
TT	Thinning or Spacing wound
U	Damage Unknown
V	Problem Vegetation
VH	Herbaceous Competition
VP	Vegetation Press
VS	Shrub Competition
VT	Tree Competition

ESTIMATED_SINDEX_SOURCE_CODE	
Code	**Description**
A	Site index from adjacent stand
C	SI from Site Index Curve
E	SI from Biogeoclimatic Ecosystem Classification
H	SI from stand before harvest
I	SI from growth intercept
M	[DEPRECATED] SI from G, M, P, L site class conversion
O	[DEPRECATED] SI from provincial SIBEC rollover, Nov 1998
P	SI from Site Productivity Layer
S	Site index assigned by District Silviculture Section

FOREST_COVER_RANK_CODE	
Code	**Description**
1	Rank 1

HERB_COVER_TYPE_CODE	
Code	**Description**
HE	Herb
HF	Herb - Forbs
HG	Herb - Graminoids

INVENTORY_STANDARD_CODE	
Code	**Description**
F	FIP Data collected to FIP Standards
I	Veg Data Incomplete - Full set of VRI Attributes not collected
V	Veg Data collected to Veg Standards
L	Veg Data collected to Landscape Vegetation Inventory Standards

LAND_COVER_CLASS_CODE	
Code	**Description**
AP	Airport
BE	Beach
BI	Blockfield
BL	Bryoid Lichens
BM	Bryoid - Moss (bryophytes)

LAND_COVER_CLASS_CODE	
BR	Bedrock
BU	Burned Area
BY	Bryoid
CB	Cutbank
CL	Cultivated Land
DW	Down Dead Wood
EL	Exposed Land
ES	Exposed Soil
GL	Glacier
GP	Gravel Pit
HE	Herb
HF	Herb Forbs
HG	Herb Graminoids
LA	Lake
LB	Lava Bed
LL	Landing
LS	Pond or Lake Sediments
MI	Open Pit Mine
MN	Moraine
MU	Mudflat Sediment
MZ	Rubbly Mine Spoils
OC	Ocean
OT	Other
PN	Snow Cover
RE	Reservoir
RI	River/Stream
RM	Reservoir Margin
RN	Railway
RO	Rock/Rubble
RS	River Sediments
RZ	Road Surface
SI	Snow/Ice
SL	Shrub Low
ST	Shrub Tall
TA	Talus
TB	Treed Broadleaf
TC	Treed Coniferous
TM	Treed Mixed
TZ	Tailings
UC	Oil and Gas Pipeline Corridors, Transmission Line Corridors
UR	Urban

LAND_COVER_LEVEL_CODE	
Code	**Description**
1	First specific instance of a land cover component as attached to a polygon record
2	Second specific instance of a land cover component as attached to a polygon record

LAND_COVER_LEVEL_CODE	
3	Third specific instance of a land cover component as attached to a polygon record
4	All other specific instances of a land cover component as attached to a polygon record

LAYER_LEVEL_CODE	
Code	**Description**
S	Silviculture Layer
1	Tallest Layer
2	Second Tallest Layer
3	Third Tallest Layer
4	Fourth Tallest Layer
5	Fifth Tallest Layer
6	Sixth Tallest Layer
7	Seventh Tallest Layer
8	Eighth Tallest Layer
9	Ninth Tallest Layer
D	Dead Layer

LAYER_SUMMARIZATION_CODE	
Code	**Description**
1	Single Layer
2	Two Layers

MODIFYING_PROCESS_CODE	
Code	**Description**
A	Avalanching
B	River Channeling
F	Mass Movements
N	None
U	Flooding
V	Gully Erosion

NON_FOREST_DESCRIPTOR_CODE	
Code	**Description**
NC	Non Commercial
NCBR	Non Commercial Brush
NP	Non-productive
NSR	Not Sufficiently Restocked
NTA	No Typing Available

NON_PRODUCTIVE_CODE	
Code	**Description**
0	No Non Productive Description Identified
1	Icefield
2	Alpine
3	Rock
6	Gravel Pit

NON_PRODUCTIVE_CODE	
7	Sand
9	Clay Bank
10	Alpine Forest(with species etc.)
11	Non-Productive Brush
12	Non-Productive
13	Non-Productive Burn
15	Lake
16	Tidal Flat
18	Gravel Bar
25	River
26	Mud Flat
35	Swamp
42	Clearing
54	Urban/Roads
60	Hayfield
62	Meadow
63	Open Range
64	Non-Applicable (salt water)

NON_PRODUCTIVE_DESCRIPTOR_CODE	
Code	**Description**
A	Alpine
AF	Alpine Forest(with species etc.)
C	Cultivated
CL	Clay Bank
G	Gravel Bar
GR	Gravel Pit
ICE	Icefield
L	Lake
M	Meadow
MUD	Mud Flat
NA	Non-Applicable
NP	Non-Productive
NPBR	Non-Productive Brush
NPBU	Non-Productive Burn
NPF	Non-Productive Forest(with species etc.)
NTA	No Typing Available
OR	Open Range
P	Hayfield
R	Rock
RIV	River
S	Swamp
SAND	Sand
TIDE	Tidal Flat
U	Urban/Roads

NON_VEG_COVER_TYPE_CODE	
Code	**Description**
AP	Airport
BE	Beach
BI	Blockfield
BR	Bedrock
BU	Burned Area
CB	Cutbank
CL	Cultivated Land
DW	Down Dead Wood
ES	Exposed Soil
GL	Glacier
GP	Gravel Pit
LA	Lake
LB	Lava Bed
LL	Landing
LS	Pond or Lake Sediments
MI	Open Pit Mine
MN	Moraine
MU	Mudflat Sediment
MZ	Rubbly Mine Spoils
OC	Ocean
OT	Other
PN	Snow Cover
RE	Reservoir
RI	River/Stream
RM	Reservoir Margin
RN	Railway
RS	River Sediments
RZ	Road Surface
TA	Talus
TZ	Tailings
UR	Urban

PROJECTION_LAYER_CODE	
Code	**Description**
P	Primary Projection Layer
V	Veteran Projection Layer

SITE_POSITION_MESO_CODE	
Code	**Description**
C	Crest
D	Depression
F	Flat (Level)
L	Lower Slope
M	Middle Slope
T	Toe

U	Upper Slope

SOIL_MOISTURE_REGIME_CODE	
Code	**Description**
0	Very Xeric
1	Xeric
2	Subxeric
3	Submesic
4	Mesic
5	Subhygric
6	Hygric
7	Subhydric
8	Hydric

SOIL_NUTRIENT_REGIME_CODE	
Code	**Description**
A	Very Poor
B	Poor
C	Medium
D	Rich
E	Very Rich
F	Ultra rich (saline, excess accumulations of variety of salts)

SURFACE_EXPRESSION_CODE	
Code	**Description**
C	Cone
D	Depression
F	Fan
H	Hummock(s)
M	Rolling
N	None
P	Plain
R	Ridge(s)
T	Terrace(s)
U	Undulating

TREE_SPECIES_CODE	
Code	**Description – common name (alias)**
A	ASPEN, COTTENWOOD or POPLAR
AC	Poplar
ACB	Balsam Poplar
ACT	Black Cottonwood
AD	Southern Cottonwood

TREE_SPECIES_CODE	
AT	Trembling Aspen
AX	Poplar hybrid
B	FIR (Balsam)
BA	Amabilis Fir
BB	Balsam Fir
BC	White Fir
BG	Grand Fir
BL	Subalpine Fir
BM	Shasta Red Fir
BP	Noble Fir
C	CEDAR
CW	Western Red Cedar
D	ALDER
DR	Red Alder
E	BIRCH
EA	Alaska Paper Birch
EE	European Birch
EP	Paper Birch (white)
ES	Silver Birch (swamp)
EW	Water Birch
EXP	Alaska x Paper Birch hybrid
EY	Yellow Birch
F	DOUGLAS FIR
FD	Douglas Fir
FDC	Coastal Douglas Fir
FDI	Interior Douglas Fir
G	DOGWOOD
GP	Pacific Dogwood (western flowering)
H	HEMLOCK
HM	Mountain Hemlock
HW	Western Hemlock
HXM	Mountain x Western Hemlock hybrid
J	JUNIPER
JR	Rocky Mtn. Juniper
JS	Seaside Juniper
K	CASCARA
KC	Cascara
L	LARCH
LA	Alpine Larch
LD	Dahurian Larch
LS	Siberian Larch
LT	Tamarack
LW	Western Larch
M	MAPLE
MB	Bigleaf Maple (broadleaf)
ME	Box Elder

TREE_SPECIES_CODE	
MN	Norway Maple
MS	Sycamore Maple
MV	Vine Maple
OA	Incense Cedar
OB	Giant Sequoia
OC	Coast Redwood
OD	European Mountain Ash
OE	Siberian Elm (Southern Elm)
OF	Common Pear
OG	Oregon Ash
OH	White Ash
OI	Shagbark Hickory
OJ	Tree-of-heaven
OK	Japanese Walnut
P	PINE
PA	Whitebark Pine
PF	Limber Pine
PJ	Jack Pine
PL	Lodgepole Pine
PLC	Shore Pine (coast)
PLI	Lodgepole Pine (interior)
PM	Monterey Pine
PR	Red Pine
PS	Sugar Pine
PW	Western White Pine
PXJ	Lodgepole x Jack Pine hybrid
PY	Ponderosa Pine (yellow)
Q	OAK
QE	English Oak
QG	Garry Oak
QW	White Oak
R	ARBUTUS
RA	Arbutus (menziesii)
S	SPRUCE
SB	Black Spruce
SE	Engelmann Spruce
SN	Norway Spruce
SS	Sitka Spruce
SW	White Spruce
SX	Spruce hybrid
SXL	Sitka x White
SXS	Sitka x unknown hybrid
SXW	Engelmann x White
T	YEW
TW	Western Yew
U	APPLE

TREE_SPECIES_CODE	
UA	Apple
UP	Pacific Crab Apple
V	CHERRY
VB	Bitter Cherry
VP	Pin Cherry
VS	Sweet Cherry
VV	Choke Cherry
W	WILLOW
WA	Peachleaf Willow (Barclay's)
WB	Bebb's Willow
WD	Pussy Willow (gray-leaved)
WP	Pacific Willow
WS	Scouler's Willow
WT	Sitka Willow (tea-leaved)
X	unknown
XC	unknown conifer
XH	unknown hardwood
Y	CYPRESS
YC	Yellow Cedar
YP	Port Orford Cedar
Z	other tree, not on list
ZC	other conifer
ZH	other hardwood

VERTICAL_COMPLEXITY_CODE	
Code	**Description**
1	Very uniform
2	Uniform
3	Moderately uniform
4	Non-uniform
5	Very non-uniform

VRIMS_AUDIT_STATE_CODE	
Code	**Description**
AUT	Automatically Accepted
DEF	Deferred
MAN	Manually Accepted
NAU	Not Audited
REJ	Rejected

VRIMS_ERROR_CONTEXT_CODE	
Code	**Description**
POLY	Polygon
SRVC	Service
TRAN	Transaction

VRIMS_ERROR_LEVEL_CODE	
Code	**Description**
ERR	Error
INFO	Information
WARN	Warning

VRIMS_ERROR_TYPE_CODE	
Code	**Description**
BRV	Business Rule Validation
DAT	Database
PRO	Processing Error
SPA	Spatial

VRIMS_PROCESSING_STATE_CODE	
Code	**Description**
BI	Being Integrated
BP	Being Prepared
CO	Checked Out
FI	Failed Integration
FP	Failed Preparation
FPJ	Failed Projection
FR	Failed Replication
INBOX	Inbox
INT	Integrated
MI	Marked for Integration
MP	Marked for Purge
MS	Marked for Resubmit
MT	Marked for Retry
NEW	New
PG	Purged
PRE	Prepared
PROJ	Projected
REI	Replicated
REJ	Rejected
RS	Resubmit

VRIMS_SERVICE_CODE	
Code	**Description**
CS	Cleanup Service
INT	Integration Service
PROJ	Projection Service
REP	Replication Service

RP	Results Preparation Service
VP	Veg Preparation Service

VRIMS_SERVICE_STATE_CODE	
Code	**Description**
ERR	Halted on Error
PRO	Processing
IDLE	Idle

VRIMS_SYSTEM_MODE_CODE	
Code	**Description**
AUTO	Automatic
MAN	Manual
PROJ	Projection
REP	Replication
SB	Standby

VRIMS_SYSTEM_STATE_CODE	
Code	**Description**
CM	Changing Mode
ERR	Halted on Error
RUN	Running
ST	Starting Up
WAIT	Waiting for Operating Window

VRIMS_TRANSACTION_TYPE_CODE	
Code	**Description**
ADJ	Adjustment
NNT	Net New Transaction
REI	Reinventory
RES	Results
ROT	Read Only Transaction