Canada's National Forest Inventory
National Standard for Ground Plots

Data Dictionary

2023
Version 5.2.3

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Table of Contents

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Introduction

The tables listed in this data standard describe three types of attributes collected by the National Forest Inventory's ground plot sampling program: field, compiled, and lab. These attributes have been categorized into tables by field-sampling component. "Field" designated attributes will be collected in the field by each of the provinces and territories and submitted to the Canadian Forest Service (CFS) for summary and data warehousing. "Compiled" designated attributes, e.g. biomass and volume, will be estimated and compiled by the CFS, based on the field-collected measurements. "Lab" attributes will require lab processing and/or measurement of field samples in order to obtain the necessary data.

It is expected that the "Field" designated attributes represent a reproducible result and each Province or Territory's inventory program, prior to data submission, will conduct their own quality assurance procedures.

Objectives

The objectives of the National Standard for Ground Plots are:

1. To provide a list of required NFI ground plot attributes.
2. To facilitate a standard format for national compilation of the NFI ground plot attributes.
3. To provide definitions, measurement criteria, and reporting instructions.

Data Model

Table Relationships

NFI GROUND PLOT

→SITE INFORMATION

→PLOT DISTURBANCE (multiple disturbances possible per ground plot)

→PLOT ORIGIN (multiple origins possible per ground plot)

→PLOT TREATMENT (multiple treatments per ground plot)

→LARGE TREE PLOT, HEADER AND SUMMARY INFORMATION
(one large tree plot per ground plot)

→SPECIES COMPOSITION PERCENT
(multiple species possible per ground plot)

→LARGE TREE PLOT, TRACKING RENUMBERED TREES
(multiple renumbered trees possible per large tree plot)
→LARGE TREE PLOT, REMOVED TREES
(multiple removed trees possible per large tree plot)

→LARGE TREE LIST
(multiple large tree records possible per large tree plot)

→DAMAGE AGENTS
(multiple damage agents possible per large tree)

→ LARGE TREE PLOT, SITE TREE AND AGE INFORMATION
(multiple records possible per large tree plot)

→ANNUAL GROWTH INFORMATION
(multiple records possible per large tree)

→SMALL TREE PLOT, HEADER AND SUMMARY INFORMATION
(one small tree plot per ground plot)

→SMALL TREE PLOT, SPECIES LIST
(multiple small tree records possible per small tree plot)

→SMALL TREE PLOT, SPECIES COMPOSITION
(multiple species possible per ground plot)

→SHRUB PLOT, HEADER AND SUMMARY INFORMATION
(one shrub plot per ground plot)

→SHRUB PLOT, SPECIES LIST

(multiple records possible per shrub plot)

→STUMP PLOT, HEADER AND SUMMARY INFORMATION
(one stump plot per ground plot)

→STUMP LIST
(multiple stump records possible per stump plot)

→MICROPLOT, HEADER INFORMATION (one record per ground plot)

→ MICROPLOT, MEASURED PLOT SIZE
(multiple microplot records per ground plot)

→ MICROPLOT (multiple microplot records per ground plot)

→ECOLOGICAL PLOT HEADER INFORMATION

→ECOLOGICAL SPECIES LIST
(multiple species records possible per ecological plot)

→ECOLOGICAL BIODIVERSITY (one record per ground plot)

→WOODY DEBRIS, HEADER INFORMATION (one record per transect measured)

→SMALL WOODY DEBRIS
(multiple woody debris records possible per transect)

→COARSE WOODY DEBRIS - ROUND PIECES
(multiple woody debris records possible per transect)

→COARSE WOODY DEBRIS - ODD SHAPED PIECES AND ACCUMULATIONS
(multiple woody debris records possible per transect)

→WOODY DEBRIS - SUMMARY TABLE
(multiple records possible per ground plot)

→ SURFACE SUBSTRATE HEADER (one record per transect measured)

→SURFACE SUBSTRATE TALLY
(multiple surface substrate records per transect)

→SOIL SITE INFORMATION (one record per ground plot)

→SOIL PIT FEATURES (multiple features possible per soil pit)

→SOIL PIT HORIZON DESCRIPTION
(multiple records possible per pit)

→SOIL PIT DEPTH (one record per soil pit type)

→FOREST FLOOR ORGANIC SAMPLE INFORMATION
(multiple forest floor organic sample records possible per ground plot)

→MINERAL SOIL SAMPLE INFORMATION
(multiple mineral soil sample records possible per ground plot)

→ORGANIC SOIL SAMPLE INFORMATION
(multiple organic soil sample records possible per ground plot)

→RELATIVE ABUNDANCE FOR LARGE TREE SPECIES
(multiple records possible per ground plot)

→RELATIVE ABUNDANCE FOR SMALL TREE SPECIES
(multiple records possible per ground plot)

→RELATIVE ABUNDANCE FOR ECOLOGICAL SPECIES
(multiple records possible per ground plot)

→UNIQUE SPECIES LIST
(multiple records possible per ground plot)

→CLIMATE INFORMATION (multiple records possible per ground plot)

NOTE: All assessed plots must be included in the header tables, even if there is no additional information to report. To omit a plot from a header table indicates that it was not assessed for any of the attributes in the related tables. For example, if a plot was assessed for stumps, but there were no stumps located within the plot boundary, information for that plot still must be entered in the stump header table to indicate that stump measurements were not skipped over.

Table Structures

1. NFI GROUND PLOT, SITE INFORMATION (site_info)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot completion	PLOT_COMPLETION	Char 1	N
6	F	Reason the ground plot was not completed (if applicable)	INCOMP_REASON	Char 2	N
7	F	province	PROVINCE	Char 2	N
8	F	terrestrial ecozone	ECOZONE	Num 2	N
9	F	provincial ecosystem type	PROV_ECO_TYPE	Char 200	N
10	F	provincial ecosystem type reference	PROV_ECO_REF	Num 4	N
11	F	UTM northing	UTM_N	Num 7	N
12	F	UTM easting	UTM_E	Num 6	N
13	F	UTM zone	UTM_ZONE	Num 2	N
14	F	slope (%)	SLOPE	Num 3	N
15	F	aspect (°)	ASPECT	Num 3	N
16	F	elevation (m)	ELEVATION	Num 4	N
17	F	land base	LAND_BASE	Char 1	N
18	F	land cover	LAND_COVER	Char 1	N
19	F	landscape position	LAND_POS	Char 1	N
20	F	vegetation type	VEG_TYPE	Char 2	N
21	F	density class	DENSITY_CL	Char 2	N
22	F	stand structure	STAND_STRU	Char 4	N
23	F	succession stage	SUCC_STAGE	Char 2	N
24	F	wetland class	WETLAND_CLASS	Char 1	N
25	F	user information	USER_INFO	Char 255	N
26	C	ecocregion	EC_REGION	Num 3	N
27	C	ecodistrict	EC_DISTRICT	Num 4	N
28	C	plot-level, total large tree volume, standing live (m^3 ha^{-1})	PLOTVOL_STANDLIVE	Dec 6.2	N
29	C	plot-level, total large tree volume, standing dead (m^3 ha^{-1})	PLOTVOL_STANDDEAD	Dec 6.2	N
30	C	plot-level, total large tree volume, fallen live (m^3 ha^{-1})	PLOTVOL_FALLLIVE	Dec 6.2	N
31	C	plot-level, total small tree volume, live (m^3 ha^{-1})	PLOTVOL_SMTR_LIVE	Dec 6.2	N
32	C	plot-level, total small tree volume, dead (m^3 ha^{-1})	PLOTVOL_SMTR_DEAD	Dec 6.2	N
33	C	plot-level, gross annual volume increment (m^3 ha^{-1} yr^{-1})	GROSSVOL_INCR	Dec 4.2	N
34	C	gross mean annual volume increment (m^3 ha^{-1} yr^{-1})	GROSSVOL_MAI	Dec 4.2	N
35	C	plot-level, stump volume	PLOTVOL_STUMP	Dec 6.2	N
36	C	plot-level, stump biomass (Mg ha^{-1})	PLOTBIO_STUMP	Dec 7.2	N
37	C	plot-level, small stump biomass (Mg ha^{-1})	PLOTBIO_SMSTUMP	Dec 7.2	N
38	C	plot-level, live large tree biomass (Mg ha^{-1})	PLOTBIO_LGTR_LIVE	Dec 7.2	N
39	C	plot-level, dead large tree mass (Mg ha^{-1})	PLOTBIO_LGTR_DEAD	Dec 7.2	N
40	C	plot-level, live small tree biomass (Mg ha^{-1})	PLOTBIO_SMTR_LIVE	Dec 7.2	N
41	C	plot-level, dead small tree mass (Mg ha^{-1})	PLOTBIO_SMTR_DEAD	Dec 7.2	N
42	C	plot-level, live large shrub biomass (Mg ha^{-1})	PLOTBIO_LGSHRUB_LIVE	Dec 7.2	N

43	C	plot-level, dead large shrub mass (Mg ha^{-1})	PLOTBIO_LGSHRUB_DEAD	Dec 7.2	N
44	C	plot-level, small shrub biomass (Mg ha^{-1})	PLOTBIO_SMSHRUB	Dec 7.2	N
45	C	plot-level, herb biomass (Mg ha^{-1})	PLOTBIO_HERB	Dec 7.2	N
46	C	plot-level, bryophytes biomass (Mg ha^{-1})	PLOTBIO_BRYO	Dec 7.2	N
47	C	plot-level, fine woody debris biomass (Mg ha^{-1})	PLOTBIO_FWD	Dec 7.2	N
48	C	plot-level, small woody debris volume (m^3 ha^{-1})	PLOTVOL_SWD	Dec 6.2	N
49	C	plot-level, small woody debris biomass (Mg ha^{-1})	PLOTBIO_SWD	Dec 7.2	N
50	C	plot-level, coarse woody debris volume (m^3 ha^{-1})	PLOTVOL_CWD	Dec 6.2	N
51	C	plot-level, coarse woody debris biomass (Mg ha^{-1})	PLOTBIO_CWD	Dec 7.2	N
52	C	plot-level, woody debris volume (m^3 ha^{-1}) – round pieces	PLOTVOL_ROUNDWD	Dec 6.2	N
53	C	plot-level, woody debris biomass (Mg ha^{-1}) – round pieces	PLOTBIO_ROUNDWD	Dec 7.2	N
54	C	plot-level, woody debris volume (m^3 ha^{-1}) – odd-shaped pieces	PLOTVOL_ODDWD	Dec 6.2	N
55	C	plot-level, woody debris biomass (Mg ha^{-1}) – odd-shaped pieces	PLOTBIO_ODDWD	Dec 7.2	N
56	C	Maximum depth to which carbon content was calculated for mineral soil samples (cm).	SAMPLE_DEPTH_MIN	Dec 4.1	N
57	C	Maximum depth to which carbon content was calculated for organic soil samples (cm).	SAMPLE_DEPTH_ORG	Dec 4.1	N
58	C	Carbon content ≤ 8 mm forest floor, plot level (Mg C ha-1)	CC_FOR_FLOOR_8MM	Dec 5.1	N
59	C	Total carbon content forest floor, plot level (Mg C ha-1)	CC_FOR_FLOOR_TOTAL	Dec 5.1	N
60	C	Carbon content of 0-15 cm mineral soil layer (Mg C ha-1)	CC_MIN0_15	Dec 5.1	N
61	C	Carbon content of 15-35 cm mineral soil layer (Mg C ha-1)	CC_MIN15_35	Dec 5.1	N
62	C	Carbon content of 35-55 cm mineral soil layer (Mg C ha-1)	CC_MIN35_55	Dec 5.1	N
63	C	Carbon content ≤ 8 mm 0 - 15 cm below organic soil surface (Mg C ha-1)	CC_ORGANIC0_15_8MM	Dec 5.1	N
64	C	Total carbon content 0 - 15 cm below organic soil surface (Mg C ha-1)	CC_ORGANIC0_15_TOTAL	Dec 5.1	N
65	C	Carbon content ≤ 8 mm 15 - 35 cm below organic soil surface (Mg C ha-1)	CC_ORGANIC15_35_8MM	Dec 5.1	N
66	C	Total carbon content 15 - 35 cm below organic soil surface (Mg C ha-1)	CC_ORGANIC15_35_TOTAL	Dec 5.1	N
67	C	Carbon content ≤ 8 mm 35 - 55 cm below organic soil surface (Mg C ha-1)	CC_ORGANIC35_55_8MM	Dec 5.1	N
68	C	Total carbon content 35 - 55 cm below organic soil surface (Mg C ha-1)	CC_ORGANIC35_55_TOTAL	Dec 5.1	N
69	C	The average carbon concentration of ≤ 8 mm fraction organic soil and forest floor samples (g kg-1)	AVG_ORG_CARB	Dec 5.2	N
70	C	The average bulk density of ≤ 8 mm fraction of organic soil and forest floor samples (g cm-3)	AVG_BULK_DENSITY_ORG	Dec 5.2	N

2. PLOT DISTURBANCE (disturbance)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y

2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	natural disturbance agent(s)	DIST_AGENT	Char 20	Y
6	F	disturbance year (yyyy)	DIST_YR	Num 4	Y
7	F	extent of disturbance (%)	DIST_PCT	Num 3	N
8	F	extent of tree mortality (%)	MORT_PCT	Num 3	N
9	F	mortality basis	MORT_BASIS	Char 2	N
10	F	specific disturbance agent	AGENT_TYPE	Char 200	N

3. PLOT ORIGIN (origin)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	vegetation cover origin(s)	VEG_ORIG	Char 4	Y
6	F	regeneration type	REGEN_TYPE	Char 3	Y
7	F	regeneration year (yyyy)	REGEN_YR	Num 4	Y

4. PLOT TREATMENT (treatment)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	treatment type(s)	TREAT_TYPE	Char 2	Y
6	F	treatment year (yyyy)	TREAT_YR	Num 4	Y
7	F	treatment extent (%)	TREAT_PCT	Num 3	N

5. LARGE TREE PLOT, HEADER AND SUMMARY INFORMATION (ltp_header)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot type	PLOT_TYPE	Char 3	N
6	F	nominal plot size (ha)	NOM_PLOT_SIZE	Dec 5.4	N
7	F	measured plot size (ha)	MEAS_PLOT_SIZE	Dec 5.4	N
8	F	plot split	PLOT_SPLIT	Char 1	N
9	C	site index (m)	SITE_INDEX	Dec 3.1	N
10	C	site index genus	SITE_INDEX_GENUS	Char 4	N
11	C	site index species	SITE_INDEX_SPECIES	Char 3	N
12	C	site height	SITE_HEIGHT	Dec 3.1	N
13	C	average (Lorey) height (m)	LOREY_HEIGHT	Dec 3.1	N
14	C	site age (years)	SITE_AGE	Num 3	N
15	C	lab counted	NUM_LAB	Num 2	N
16	C	field counted	NUM_FIELD	Num 2	N
17	C	basal area, standing live (m^2 ha^{-1})	BASAL_AREA_STANDLIVE	Dec 5.2	N
18	C	basal area, standing dead (m^2 ha^{-1})	BASAL_AREA_STANDDEAD	Dec 5.2	N
19	C	basal area, fallen live (m^2 ha^{-1})	BASAL_AREA_FALLLIVE	Dec 5.2	N
20	C	stem density, standing live (stems ha^{-1})	STEM_DENSITY_STANDLIVE	Num 5	N
21	C	stem density, standing dead (stems ha^{-1})	STEM_DENSITY_STANDDEAD	Num 5	N
22	C	stem density, fallen live (stems ha^{-1})	STEM_DENSITY_FALLLIVE	Num 5	N

23	C	total unique large tree species	SPECIES_LTNUM	Num 3	N
24	C	Shannon index for large trees	BINDEX_LTSHANNON	Dec 5.2	N
25	C	Evenness index for large trees	BINDEX_LTEVEN	Dec 5.2	N
26	C	Margalef (species richness) index for large trees	BINDEX_LTMARGALEF	Dec 5.2	N
27	C	total stem wood biomass of live trees (Mg ha^{-1})	PLOTBIO_STEMWOOD_LIVE	Dec 7.2	N
28	C	total stem bark biomass of live trees (Mg ha^{-1})	PLOTBIO_STEMBARK_LIVE	Dec 7.2	N
29	C	total branches biomass of live trees (Mg ha^{-1})	PLOTBIO_BRANCHES_LIVE	Dec 7.2	N
30	C	total foliage biomass of live trees (Mg ha^{-1})	PLOTBIO_FOLIAGE_LIVE	Dec 7.2	N
31	C	total stem wood biomass of dead standing trees (Mg ha^{-1})	PLOTBIO_STEMWOOD_DEAD	Dec 7.2	N
32	C	total stem bark biomass of dead standing trees (Mg ha^{-1})	PLOTBIO_STEMBARK_DEAD	Dec 7.2	N
33	C	total branch biomass of dead standing trees (Mg ha^{-1})	PLOTBIO_BRANCHES_DEAD	Dec 7.2	N

5a. LARGE TREE SPECIES COMPOSITION PERCENT (ltp_tree_species_comp)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	measurement number	MEAS_NUM	Num 3	Y
4	C	species ranked abundance number	SPECIES_NUM	Num 2	Y
5	C	genus	GENUS	Char 4	N
6	C	species	SPECIES	Char 3	N
7	C	variety	VARIETY	Char 3	N
8	C	percent	PERCENT	Dec 4.1	N

5b. LARGE TREE LIST (ltp_tree)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot sector	SECTOR	Num 1	N
6	F	tree number	TREE_NUM	Num 4	Y
7	F	a change management field for plots being converted from split plots to full plots at remeasurement	ORIG_PLOT_AREA	Char 1	N
8	F	tree genus	LGTREE_GENUS	Char 4	N
9	F	tree species	LGTREE_SPECIES	Char 3	N
10	F	tree variety	LGTREE_VARIETY	Char 3	N
11	F	tree status	LGTREE_STATUS	Char 2	N
12	F	diameter at breast height (cm)	DBH	Dec 4.1	N
13	F	measured or estimated diameter	MEAS_EST_DBH	Char 1	N
14	F	tree height (m)	HEIGHT	Dec 3.1	N
15	F	measured or estimated height	MEAS_EST_HEIGHT	Char 1	N
16	F	crown class	CROWN_CLASS	Char 1	N
17	F	height to base of live crown (m)	CROWN_BASE	Dec 3.1	N
18	F	height to top of live crown (m)	CROWN_TOP	Dec 3.1	N
19	F	stem condition	STEM_COND	Char 1	N

20	F	crown condition	CROWN_COND	Num 1	N
21	F	bark retention	BARK_RET	Num 1	N
22	F	wood condition	WOOD_COND	Num 1	N
23	F	azimuth to tree (°)	AZIMUTH	Num 3	N
24	F	distance to tree face (m)	DISTANCE	Dec 4.2	N
25	C	crown length (m)	CROWN_LENGTH	Dec 3.1	N
26	C	total tree volume (m^3)	VOL_TOTAL	Dec 7.4	N
27	C	volume to projected tree height (m^3)	VOL_PRJ	Dec 7.4	N
28	C	projected height (m)	HEIGHT_PRJ	Dec 3.1	N
29	C	total tree biomass (kg)	BIOMASS_TOTAL	Dec 7.2	N
30	C	total stem wood biomass of live standing trees (kg of oven-dry material)	BIOMASS_STEMWOOD	Dec 7.2	N
31	C	total stem bark biomass of live standing trees (kg of oven-dry material)	BIOMASS_STEMBARK	Dec 7.2	N
32	C	total branch biomass of live standing trees (kg of oven-dry material)	BIOMASS_BRANCHES	Dec 7.2	N
33	C	total foliage biomass of live standing trees in (kg of oven-dry material)	BIOMASS_FOLIAGE	Dec 7.2	N
34	C	equation ID for computing stem wood biomass	BMEQ_WOOD	Num 5	N
35	C	equation ID for computing stem bark biomass	BMEQ_BARK	Num 5	N
36	C	equation ID for computing branch biomass	BMEQ_BRANCHES	Num 5	N
37	C	equation ID for computing foliage biomass	BMEQ_FOLIAGE	Num 5	N

5c. LARGE TREE PLOT, DAMAGE AGENTS (ltp_tree_damage)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	tree number	TREE_NUM	Num 4	Y
6	F	damage agents	DAMAGE_AGENT	Char 2	Y
7	F	damage location	DAMAGE_LOCATION	Num 2	Y
8	F	severity (%)	SEVERITY_PCT	Num 3	N
9	F	Severity	SEVERITY	Char 1	N

5d. LARGE TREE PLOT, REMOVED TREES (ltp_tree_removed)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	tree number	TREE_NUM	Num 4	Y
6	F	Reason	REASON	Char 1	N

5e. LARGE TREE PLOT, SITE TREE AND AGE INFORMATION (ltp_tree_age)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	quadrant	QUADRANT	Char 2	N
6	F	tree number	TREE_NUM	Num 4	Y

7	F	site tree type	SITE_TYPE	Char 2	N
8	F	outside bark diameter at bored height (cm)	BORE_DOB	Dec 4.1	N
9	F	bored height (m)	BORE_HT	Dec 2.1	N
10	F	site height suitability	SUIT_HT	Char 1	N
11	F	site age suitability	SUIT_AGE	Char 1	N
12	F	field age at bored height (years)	FIELD_AGE	Num 4	N
13	F	prorate code	PRO_CODE	Char 3	N
14	L	core length (cm)	CORE_LENGTH	Dec 7,4	N
15	L	distance to pith (cm)	DTP	Dec 7.4	N
16	L	lab count of annual increment rings	CORE_RINGS	Num 4	N
17	L	method used to determine lab age	LAB_METHOD	Char 1	N
18	L	lab age at bored height (years)	LAB_AGE	Num 4	N
19	L	confidence rating for lab age	CONFIDENCE	Num 1	N
20	L	mount reference	MOUNT_REF	Char 50	N
21	C	age correction factor (years to bored height)	AGE_CORR _YEARS	Num 2	N
22	C	total age estimate (years)	AGE_TOTAL	Num 4	N

5f. LARGE TREE PLOT, ANNUAL GROWTH INFORMATION (ltp_tree_growth)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	tree number	TREE_NUM	Num 4	Y
6	L	year (yyyy)	YEAR	Num 4	Y
7	L	growth (cm)	GROWTH	Dec 6.4	N

5g. LARGE TREE PLOT, TRACKING RENUMBERED TREES (ltp_tree_num_track)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	tree number	TREE_NUM	Num 4	Y
6	F	previous tree number	TREE_NUM_PREV	Num 4	Y

6. SMALL TREE PLOT, HEADER AND SUMMARY INFORMATION (stp_header)

Data Field	Field, Lab, Compiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot type	PLOT_TYPE	Char 3	N
6	F	nominal plot size (ha)	NOM_PLOT_SIZE	Dec 5.4	N
7	F	measured plot size (ha)	MEAS_PLOT_SIZE	Dec 5.4	N
8	F	plot split	PLOT_SPLIT	Char 1	N
9	C	total unique small tree species	SPECIES_SMTNUM	Num 3	N
10	C	Shannon index for small trees	BINDEX_STSHANNON	Dec 5.2	N
11	C	Evenness index for small trees	BINDEX_STEVEN	Dec 5.2	N
12	C	Margalef (species richness) index for small trees	BINDEX_STMARGALEF	Dec 5.2	N

13	C	total stem wood biomass of live standing stp trees (Mg ha^{-1})	PLOTBIO_SMT_STEMWOOD_LIVE	Dec 7.2	N
14	C	total stem bark biomass of live standing stp trees (Mg ha^{-1})	PLOTBIO_SMT_STEMBARK_LIVE	Dec 7.2	N
15	C	total branch biomass of live standing stp trees (Mg ha^{-1})	PLOTBIO_SMT_BRANCHES_LIVE	Dec 7.2	N
16	C	total foliage biomass of live standing stp trees in (Mg ha^{-1})	PLOTBIO_SMT_FOLIAGE_LIVE	Dec 7.2	N
17	C	total stem wood biomass of dead standing stp trees (Mg ha^{-1})	PLOTBIO_SMT_STEMWOOD_DEAD	Dec 7.2	N
18	C	total stem bark biomass of dead standing stp trees (Mg ha^{-1})	PLOTBIO_SMT_STEMBARK_DEAD	Dec 7.2	N
19	C	total branch biomass of dead standing stp trees (Mg ha^{-1})	PLOTBIO_SMT_BRANCHES_DEAD	Dec 7.2	N

6a. SMALL TREE PLOT, SPECIES LIST (stp_tree)

Data Field	Field, Lab, Compiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	small tree number	SMTREE_NUM	Num 4	Y
6	F	a change management field for plots being converted from split plots to full plots at remeasurement	ORIG_PLOT_AREA	Char 1	N
7	F	small tree genus	SMTREE_GENUS	Char 4	N
8	F	small tree species	SMTREE_SPECIES	Char 3	N
9	F	small tree variety	SMTREE_VARIETY	Char 3	N
10	F	small tree status	SMTREE_STATUS	Char 2	N
11	F	small tree DBH	SMTREE_DBH	Dec 2.1	N
12	F	small tree height	SMTREE_HT	Dec 3.1	N
13	F	measured or estimated small tree height	SMTREE_MEASEST_HT	Char 1	N
14	F	stem condition	STEM_COND	Char 1	N
15	C	total small tree volume (m3)	SMTREE_VOL_TOTAL	Dec 11.8	N
16	C	projected small tree height (m)	SMTREE_HT_PRJ	Dec 3.1	N
17	C	total small tree biomass (kg)	SMTREE_BIOMASS	Dec 9.4	N
18	C	total stem wood biomass of live standing stp trees (kg of oven-dry material)	BIOMASS_STEMWOOD	Dec 9.4	N
19	C	total stem bark biomass of live standing stp trees (kg of oven-dry material)	BIOMASS_STEMBARK	Dec 9.4	N
20	C	total branch biomass of live standing stp trees (kg of oven-dry material)	BIOMASS_BRANCHES	Dec 9.4	N
21	C	total foliage biomass of live standing stp trees in (kg of oven-dry material)	BIOMASS_FOLIAGE	Dec 9.4	N
22	C	equation ID for computing stem wood biomass	BMEQ_WOOD	Num 5	N

23	C	equation ID for computing stem bark biomass	BMEQ_BARK	Num 5	N
24	C	equation ID form computing branch biomass	BMEQ_BRANCHES	Num 5	N
25	C	equation ID for computing foliage biomass	BMEQ_FOLIAGE	Num 5	N
26	C	Total tree volume to the projected height of a broken top tree	SMTREE_VOL_PRJ	Dec 11.8	N

6b. SMALL TREE PLOT, SPECIES COMPOSITION (stp_tree_species_comp)

Data Field	Field, Lab, Compiled	Description (Units)	Field Name	Format	Index
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	measurement number	MEAS_NUM	Num 3	Y
4	C	Species ranked abundance number	SMTREE_SPECIES_NUM	Num 2	Y
5	C	genus	SMTREE_GENUS	Char 4	N
6	C	species	SMTREE_SPECIES	Char 3	N
7	C	variety	SMTREE_VARIETY	Char 3	N
8	C	percent composition based on proportion of total live tree basal area occupied by that species	SMTREE_PERCENT	Num 3	N

7. SHRUB PLOT, HEADER AND SUMMARY INFORMATION (shrub_header)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot type	PLOT_TYPE	Char 3	N
6	F	nominal plot size (ha)	NOM_PLOT_SIZE	Dec 5.4	N
7	F	measured plot size (ha)	MEAS_PLOT_SIZE	Dec 5.4	N

7a. SHRUB PLOT, SPECIES LIST (shrub_list)

Data Field	Field, Lab, Compiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	unique record number	RECORD_NUM	Num 4	Y
6	F	shrub genus	SHRUB_GENUS	Char 4	N
7	F	shrub species	SHRUB_SPECIES	Char 3	N
8	F	shrub variety	SHRUB_VARIETY	Char 3	N
9	F	shrub status	SHRUB_STATUS	Char 2	N
10	F	basal diameter class	BD_CLASS	Num 2	N
11	F	frequency	FREQUENCY	Num 3	N
12	C	total above ground biomass (kg of oven-dry material)	BIOMASS_TOTAL	Dec 6.2	N

13	C	total above ground woody biomass (kg of oven-dry material)	BIOMASS_WOOD	Dec 7.2	N
14	C	total foliage biomass (kg of oven-dry material)	BIOMASS_FOLIAGE	Dec 7.2	N
15	C	biomass equation ID for computing total above ground biomass	BMEQ_TOTAL	Num 5	N
16	C	biomass equation ID for computing above ground woody biomass	BMEQ_WOOD	Num 5	N
17	C	biomass equation ID for computing foliage biomass	BMEQ_FOLIAGE	Num 5	N

8. STUMP PLOT, HEADER AND SUMMARY INFORMATION (stump_header)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot type	PLOT_TYPE	Char 3	N
6	F	nominal plot size (ha)	NOM_PLOT_SIZE	Dec 5.4	N
7	F	measured plot size (ha)	MEAS_PLOT_SIZE	Dec 5.4	N
8	F	plot split	PLOT_SPLIT	Char 1	N

8a. STUMP LIST (stump_list)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	stump number	STUMP_NUM	Num 4	Y
6	F	a change management field for plots being converted from split plots to full plots at remeasurement	ORIG_PLOT_AREA	Char 1	N
7	F	stump genus	STUMP_GENUS	Char 4	N
8	F	stump species	STUMP_SPECIES	Char 3	N
9	F	stump variety	STUMP_VARIETY	Char 3	N
10	F	top diameter inside bark (cm)	STUMP_DIB	Dec 4.1	N
11	F	top diameter including bark, if present (cm)	STUMP_DIAMETER	Dec 4.1	N
12	F	stump decay class	STUMP_DECAY	Num 1	N
13	F	stump length	STUMP_LENGTH	Dec 3.2	N
14	C	total stump volume (m^3)	STUMP_VOLUME	Dec 8.5	N
15	C	total stump biomass (kg)	STUMP_BIOMASS	Dec 6.2	N

9. MICROPLOT, HEADER INFORMATION (microplot_header)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot type	PLOT_TYPE	Char 3	N
6	F	nominal plot size (ha)	NOM_PLOT_SIZE	Dec 7.6	N

9a. MICROPLOT, MEASURED PLOT SIZE (microplot_meas_plot_size)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	microplot number	MICRO_PLOT_NUM	Num 1	Y
6	F	measured plot size (ha)	MEAS_PLOT_SIZE	Dec 7.6	N

9b. MICROPLOT (microplot)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	microplot number	MICRO_PLOT_NUM	Num 1	Y
6	F	microplot layer id	MICRO_LAYER_ID	Num 1	Y
7	L	microplot biomass by layer (g)	MICRO_LAYER_BIOMASS	Dec 7.3	N

10. ECOLOGICAL PLOT HEADER INFORMATION (ecp_header)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot type	PLOT_TYPE	Char 4	Y
6	F	nominal plot size (ha)	NOM_PLOT_SIZE	Dec 7.6	N
7	F	measured plot size (ha)	MEAS_PLOT_SIZE	Dec 7.6	N

10a. ECOLOGICAL SPECIES LIST (ecp_species)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	plot type	PLOT_TYPE	Char 4	Y
6	F	ecological layer ID	EC_LAYERID	Char 3	Y
7	F	unique record identifier	SPECIES_INDEX	Num 3	Y
8	F	ecological genus	EC_GENUS	Char 50	N
9	F	ecological species	EC_SPECIES	Char 50	N
10	F	ecological variety	EC_VARIETY	Char 50	N
11	F	ecological species area percent (%)	EC_SPECIES_PCT	Dec 6.3	N

10b. ECOLOGICAL BIODIVERSITY (biodiversity_ec)

Data	**F**ield,	Description (Units)	Field Name	Format	Index

Field	Lab, Compiled				
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	measurement number	MEAS_NUM	Num 3	Y
4	C	ecological layer ID	EC_LAYERID	Char 3	Y
5	C	total unique ecological species	SPECIES_ECNUM	Num 3	N
6	C	Shannon index for ecological species	BINDEX_ECSHANNON	Dec 5.2	N
7	C	Evenness index for ecological species	BINDEX_ECEVEN	Dec 5.2	N

11. WOODY DEBRIS, HEADER INFORMATION (woody_debris_header)

Data Field	Field, Lab, Compiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	transect number	TRANSECT_NUM	Num 1	Y
6	F	nominal transect length (m)	NOM_TRANSECT_LENGTH	Dec 4.1	N
7	F	transect azimuth (°)	TRANSECT_AZIMUTH	Num 3	N
8	F	measured length of transect for SWD	SWD_MEASLEN	Dec 4.1	N
9	F	total distance along the transect assessed for round and odd shaped pieces of medium coarse woody debris (MCWD)	MCWD_MEASLEN	Dec 4.1	N
10	F	total distance along the transect assessed for round and odd shaped pieces of large coarse woody debris (LCWD)	LCWD_MEASLEN	Dec 4.1	N
11	F	small woody debris decay class	SWD_DECAY_CLASS	Num 1	N

11a. SMALL WOODY DEBRIS (> 1.0 cm diameter ≤ 7.5 cm) (woody_debris_small)

Data Field	Field, Lab, Compiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	transect number	TRANSECT_NUM	Num 1	Y
6	F	small woody debris diameter class	SWD_DIAM_CLASS	Num 1	Y
7	F	small woody debris tally of pieces by diameter class	SWD_TALLY	Num 7	N
8	F	small woody debris decay class	SWD_DECAY_CLASS_O	Num 1	N

11b. COARSE WOODY DEBRIS (> 7.5 cm diameter) - ROUND PIECES (woody_debris_round)

Data Field	Field, Lab, Compiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	transect number	TRANSECT_NUM	Num 1	Y
6	F	piece number	WD_PIECE_NUM	Num 3	Y

7	F	woody debris genus	WD_GENUS	Char 4	N
8	F	woody debris species	WD_SPECIES	Char 3	N
9	F	woody debris piece diameter (cm)	WD_DIAMETER	Dec 4.1	N
10	F	woody debris decay class	DECAY_CLASS	Num 1	N
11	F	tilt angle (°)	TILT_ANGLE	Num 2	N
12	C	density (g cm^{-3})	DENSITY	Dec 6.5	N

11c. COARSE WOODY DEBRIS – ODD SHAPED PIECES AND ACCUMULATIONS (woody_debris_odd)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	transect number	TRANSECT_NUM	Num 1	Y
6	F	piece number	WD_PIECE_NUM	Num 3	Y
7	F	accumulation or odd-shaped	ACCUM_ODD	Char 1	N
8	F	woody debris genus	WD_GENUS	Char 4	N
9	F	woody debris species	WD_SPECIES	Char 3	N
10	F	horizontal piece/accumulation length (cm)	HOR_LENGTH	Dec 5.1	N
11	F	vertical piece/accumulation depth (cm)	VER_DEPTH	Dec 4.1	N
12	F	decay class	DECAY_CLASS	Num 1	N
13	C	wood density (g cm^{-3})	DENSITY	Dec 6.5	N

11d. WOODY DEBRIS – SUMMARY (wd_summary)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	measurement number	MEAS_NUM	Num 3	Y
4	C	woody debris decay class	DECAY_CLASS	Num 1	Y
5	C	volume of small woody debris (m^3 ha^{-1})	PLOTVOL_SWD	Dec 6.2	N
6	C	biomass of small woody debris (Mg ha^{-1})	PLOTBIO_SWD	Dec 7.2	N
7	C	total volume of woody debris (m^3 ha^{-1})	PLOTVOL_WD	Dec 6.2	N
8	C	total biomass of woody debris (Mg ha^{-1})	PLOTBIO_WD	Dec 7.2	N
9	C	volume of round woody debris (m^3 ha^{-1})	PLOTVOL_ROUNDWD	Dec 6.2	N
10	C	biomass of round woody debris (Mg ha^{-1})	PLOTBIO_ROUNDWD	Dec 7.2	N
11	C	volume of odd shaped woody debris (m^3 ha^{-1})	PLOTVOL_ODDWD	Dec 6.2	N
12	C	biomass of odd shaped woody debris (Mg ha^{-1})	PLOTBIO_ODDWD	Dec 7.2	N

12. SURFACE SUBSTRATE HEADER (surface_substrate_header)

Data	**F**ield,	Description (Units)	Field Name	Format	Index

Field	**L**ab, **C**ompiled				
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	transect number	TRANSECT_NUM	Num 1	Y
6	F	transect azimuth (°)	TRANSECT_AZIMUTH	Num 3	N
7	F	measured length (m)	SS_MEASLEN	Dec 3.1	N
8	C	total measurements	TOTAL_MEAS	Num 3	N
9	C	surface substrate tally, organic matter	TALLY_SS_ORG	Num 3	N
10	C	average thickness organic matter (cm)	AVG_ORG_THICK	Dec 4.1	N
11	C	surface substrate tally, buried wood	TALLY_SS_BURIED	Num 3	N
12	C	average thickness buried wood (cm)	AVG_BURIED_THICK	Dec 4.1	N
13	C	surface substrate tally, decaying wood	TALLY_SS_DECAY	Num 3	N
14	C	surface substrate tally, bedrock	TALLY_SS_BED	Num 3	N
15	C	surface substrate tally, rock	TALLY_SS_ROCK	Num 3	N
16	C	surface substrate tally, mineral soil	TALLY_SS_MIN	Num 3	N
17	C	surface substrate tally, water	TALLY_SS_WATER	Num 3	N

12a. SURFACE SUBSTRATE TALLY (surface_substrate_tally)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	transect number	TRANSECT_NUM	Num 1	Y
6	F	station number	STATION_NUM	Num 2	Y
7	F	substrate type	SUBSTRATE_TYPE	Char 2	N
8	F	depth	DEPTH	Num 3	N
9	F	depth limit	DEPTH_LIMIT	Num 1	N

13. SOIL SITE INFORMATION (soil_site_info)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	CSSC soil classification	SOIL_CLASS	Char 9	N
6	F	profile depth (cm)	PROFILE_DEPTH	Dec 4.1	N
7	F	soil drainage class	DRAINAGE	Num 1	N
8	F	moisture class	MOISTURE	Num 1	N
9	F	soil parent material mode of deposition	DEPOSITION	Char 2	N
10	F	humus form	HUMUS_FORM	Char 2	N

13a. SOIL PIT DEPTH (soil_pit_depth)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y

3	C	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	C	measurement number	MEAS_NUM	Num 3	Y
5	C	soil pit code	PIT_NUM	Char 3	Y
6	C	Total depth to which mineral soil samples were collected at each pit (cm).	DEPTH_MIN	Dec 4.1	N
7	C	Total depth to which forest floor and/or organic soil samples were collected at each pit (cm).	DEPTH_ORG	Dec 4.1	N

13b. SOIL PIT FEATURES (soil_pit_features)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	soil pit code	PIT_NUM	Char 3	Y
6	F	soil feature	SOIL_FEATURE	Char 1	Y
7	F	depth to soil feature (cm)	DEPTH_FEATURE	Num 3	Y

13c. SOIL PIT HORIZON DESCRIPTION (soil_horizon_desc)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	soil pit code	PIT_NUM	Char 3	Y
6	F	horizon number	HORIZON_NUM	Num 2	Y
7	F	horizon designation	HORIZON	Char 6	N
8	F	depth to upper horizon boundary	HORIZON_UPPER	Dec 4.1	N
9	F	horizon thickness	THICKNESS	Dec 4.1	N
10	F	soil colour	COLOR	Char 1	N
11	F	soil texture	TEXTURE	Char 5	N
12	F	percent gravel (%)	CF_GRAV	Num 3	N
13	F	percent cobbles (%)	CF_COBB	Num 3	N
14	F	percent stones (%)	CF_STONE	Num 3	N

13d. FOREST FLOOR ORGANIC SAMPLE INFORMATION (for_flr_org_sample)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	soil pit code	PIT_NUM	Char 3	Y
6	F	sample number	SAMPLE_NUM	Num 2	Y
7	F	horizon designation	HORIZON	Char 20	N
8	F	horizon measurement	HORIZON_MEAS	Char 1	N
9	F	upper depth of sample (cm)	SAMPLE_UPPER	Dec 4.1	N
10	F	bottom depth of sample (cm)	SAMPLE_BOTTOM	Dec 4.1	N
11	F	volume of forest floor organic sample (cm^3)	VOLUME	Num 5	N

12	F	sample collection method	SAMPLE_METHOD	Char 1	N
13	F	sample width (cm)	SAMPLE_WIDTH	Num 2	N
14	F	sample length (cm)	SAMPLE_LENGTH	Num 2	N
15	L	mass of total forest floor sample, oven dried 70°C (g)	MASS_TOTAL	Dec 6.2	N
16	L	mass of live roots in the forest floor sample, oven dried 70°C (g)	MASS_LIVE_ROOT	Dec 6.2	N
17	L	mass of gravel and cobble in the forest floor sample (g)	MASS_GRAVEL	Dec 6.2	N
18	L	total mass of the > 8mm component of the forest floor sample, oven dried 70°C(g)	MASS_GT8MM	Dec 6.2	N
19	L	mass of black charcoal in the > 8 mm component of the forest floor sample, oven dried 70°C(g)	MASS_CHAR_GT8MM	Dec 6.2	N
20	L	mass of the ≤ 8 mm component of the forest floor sample, oven dried 70°C(g)	MASS_8MM	Dec 6.2	N
21	L	pH determined on the ≤ 8 mm component of the forest floor sample	PH_8MM	Dec 4.2	N
22	L	total nitrogen (g kg^{-1}) of the ≤ 8 mm component of the forest floor sample	N_8MM	Dec 4.2	N
23	L	total carbon (g kg^{-1}) of the ≤ 8 mm component of the forest floor sample	TC_8MM	Dec 5.2	N
24	L	total organic carbon (g kg^{-1}) of the ≤ 8 mm component of the forest floor sample	TOC_8MM	Dec 5.2	N
25	L	total inorganic carbon (carbonates) (g kg^{-1}) of the ≤ 8 mm component of the forest floor sample	CO3_8MM	Dec 5.2	N
26	L	total carbon (g kg^{-1}) of the > 8 mm component of the forest floor sample	TC_GT8MM	Dec 5.2	N
27	L	total organic carbon (g kg^{-1}) of the > 8 mm component of the forest floor sample	TOC_GT8MM	Dec 5.2	N
28	L	total inorganic carbon (carbonates) (g kg^{-1}) of the > 8 mm component of the forest floor sample	CO3_GT8MM	Num 5.2	N
29	L	measured organic carbon value or not	TOC_REAL	Char 1	N
30	L	total nitrogen (g kg^{-1}) of the > 8 mm component of the forest floor sample	N_GT8MM	Dec 4.2	N
31	L	available phosphorus (mg kg^{-1}) of the ≤ 8 mm component of the forest floor sample	P_8MM	Num 4	N
32	L	total phosphorus (mg kg^{-1}) of the ≤ 8 mm component of the forest floor sample	TOTAL_P_8MM	Num 4	N
33	L	exchangeable K (cmol kg^{-1}) of the ≤ 8 mm component of the forest floor sample	K_8MM	Dec 5.3	N
34	L	exchangeable Ca (cmol kg^{-1}) of the ≤ 8 mm component of the forest floor sample	CA_8MM	Dec 5.2	N
35	L	exchangeable Mg (cmol kg^{-1}) of the ≤ 8 mm component of the forest floor sample	MG_8MM	Dec 5.2	N
36	L	exchangeable Na (cmol kg^{-1}) of the ≤ 8 mm component of the forest floor sample	NA_8MM	Dec 5.3	N
37	L	cation exchange capacity (cmol kg^{-1})	CEC_8MM	Dec 5.2	N

		of the ≤ 8 mm component of the forest floor sample			
38	L	total sulfur (g kg^{-1}) of the ≤ 8 mm component of the forest floor sample	S_8MM	Dec 5.3	N
39	L	total phosphorus (mg kg^{-1}) of the > 8 mm component of the forest floor sample	TOTAL_P_GT8MM	Num 4	N
40	L	total sulfur (g kg^{-1}) of the > 8 mm component of the forest floor sample	S_GT8MM	Dec 5.3	N
41	L	internal designation of lab number	LAB_NUM	Char 25	N
42	C	bulk density ≤ 8mm forest floor (g cm^{-3})	BULK_DENSITY_8MM	Dec 4.3	N
43	C	bulk density of total forest floor sample (g cm^{-3})	BULK_DENSITY_TOTAL	Dec 4.3	N
44	C	carbon content per unit area of the ≤ 8mm component of the forest floor sample (kg m^{-2})	LAYER_CC_8MM	Dec 5.2	N
45	C	carbon content per unit area of the total forest floor sample (kg m^{-2})	LAYER_CC_TOTAL	Dec 5.2	N

13e. MINERAL SOIL SAMPLE INFORMATION (soil_mineral_sample)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	soil pit code	PIT_NUM	Char 3	Y
6	F	soil sample number	SAMPLE_NUM	Num 2	Y
7	F	horizon designation	HORIZON	Char 20	N
8	F	horizon measurement	HORIZON_MEAS	Char 1	N
9	F	upper depth of sample (cm)	SAMPLE_UPPER	Dec 4.1	N
10	F	bottom depth of sample (cm)	SAMPLE_BOTTOM	Dec 4.1	N
11	F	volume of mineral soil sample (cm^3)	VOLUME	Dec 6.1	N
12	F	mass of rocks discarded from sample (g)	MASS_DISC_ROCKS	Dec 6.2	N
13	F	sample collection method	SAMPLE_METHOD	Char 1	N
14	L	mass of total mineral sample, air dried (g)	MASS_TOTAL	Dec 6.2	N
15	L	mass of mineral soil sample organic matter and roots (g)	MASS_ROOT	Dec 6.2	N
16	L	mass of mineral soil sample cobbles > 75mm – 250mm (g)	MASS_COBBLE	Dec 6.2	N
17	L	mass of mineral soil sample gravel > 2mm - 75mm (g)	MASS_GRAVEL	Dec 6.2	N
18	L	mass of mineral soil sample ≤ 2 mm (g)	MASS_2MM	Dec 6.2	N
19	L	water content of air-dry ≤ 2mm soil (kg kg^{-1})	SOIL_MOISTURE	Dec 5.4	N
20	L	water content of air-dry roots (kg kg^{-1})	ROOT_MOISTURE	Dec 5.4	N
21	L	silt content, mineral soil (%)	SILT	Dec 5.2	N
22	L	clay content, mineral soil (%)	CLAY	Dec 5.2	N
23	L	soil textural class	SOIL_TEXTURE	Char 4	N
24	L	pH	PH	Dec 4.2	N
25	L	total carbon (g kg^{-1})	TC	Dec 5.2	N
26	L	total organic carbon (g kg^{-1})	TOC	Dec 5.2	N
27	L	total inorganic carbon (carbonates) (g kg^{-1})	CO3	Dec 5.2	N

28	L	measured organic carbon value or not	TOC_REAL	Char 1	N
29	L	total nitrogen (g kg^{-1})	N	Dec 4.2	N
30	L	available phosphorus (mg kg^{-1})	P	Num 4	N
31	L	total phosphorus (mg kg^{-1})	TOTAL_P	Num 4	N
32	L	exchangeable K (cmol kg^{-1})	K	Dec 5.3	N
33	L	exchangeable Ca (cmol kg^{-1})	CA	Dec 5.2	N
34	L	exchangeable Mg (cmol kg^{-1})	MG	Dec 5.2	N
35	L	exchangeable Na (cmol kg^{-1})	NA	Dec 5.3	N
36	L	cation exchange capacity (cmol kg^{-1})	CEC	Dec 5.2	N
37	L	total sulfur (g kg^{-1})	S	Dec 5.3	N
38	L	pyrophosphate Al and Fe (mg kg^{-1})	AL_FE	Num 5	N
39	L	Internal designation of lab number	LAB_NUM	Char 25	N
40	C	Coarse fragment content, gravimetric percent gravel (%)	CF_GRAV	Num 3	N
41	C	Coarse fragment content, gravimetric percent cobbles (%)	CF_COBB	Num 3	N
42	C	Coarse fragment content, gravimetric percent stones (%)	CF_STONE	Num 3	N
43	C	bulk density of ≤ 2mm mineral soil (g cm^{-3})	BULK_DENSITY_2MM	Dec4.3	N
44	C	bulk density of total mineral sample (g cm^{-3})	BULK_DENSITY_TOTAL	Dec 4.3	N
45	C	carbon content per unit area (kg m^{-2})	LAYER_CC	Dec 5.2	N

13f. ORGANIC SOIL SAMPLE INFORMATION (soil_org_sample)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	F	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	F	measurement date (yyyy-mon-dd)	MEAS_DATE	Date 11	N
4	F	measurement number	MEAS_NUM	Num 3	Y
5	F	soil pit code	PIT_NUM	Char 3	Y
6	F	sample number	SAMPLE_NUM	Num 2	Y
7	F	horizon designation	HORIZON	Char 20	N
8	F	horizon measurement	HORIZON_MEAS	Char 1	N
9	F	upper depth of sample (cm)	SAMPLE_UPPER	Dec 4.1	N
10	F	bottom depth of sample (cm)	SAMPLE_BOTTOM	Dec 4.1	N
11	F	volume of organic soil sample (cm^3)	VOLUME	Num 5	N
12	F	sample collection method	SAMPLE_METHOD	Char 1	N
13	F	sample width (cm)	SAMPLE_WIDTH	Num 2	N
14	F	sample length (cm)	SAMPLE_LENGTH	Num 2	N
15	L	mass of total organic soil sample, oven dried 70°C(g)	MASS_TOTAL	Dec 6.2	N
16	L	mass live roots in the organic soil sample, oven dried 70°C(g)	MASS_LIVE_ROOT	Dec 6.2	N
17	L	mass of gravel and cobble in the organic soil sample (g)	MASS_GRAVEL	Dec 6.2	N
18	L	total mass of the > 8 mm component of the organic soil sample, oven dried 70°C (g)	MASS_GT8MM	Dec 6.2	N
19	L	mass of black charcoal in the > 8 mm component of the organic soil sample, oven dried 70°C (g)	MASS_CHAR_GT8MM	Dec 6.2	N
20	L	mass of the ≤ 8 mm component of the organic soil sample, oven dried 70°C (g)	MASS_8MM	Dec 6.2	N
21	L	pH determined on the ≤ 8 mm	PH_8MM	Dec 4.2	N

		component of the organic soil sample			
22	L	total nitrogen (g kg^{-1}) of the ≤ 8 mm component of the organic soil sample	N_8MM	Dec 4.2	N
23	L	total carbon (g kg^{-1}) of the ≤ 8 mm component of the organic soil sample	TC_8MM	Dec 5.2	N
24	L	total organic carbon (g kg^{-1}) of the ≤ 8 mm component of the organic soil sample	TOC_8MM	Dec 5.2	N
25	L	total inorganic carbon (carbonates) (g kg^{-1}) of the ≤ 8 mm component of the organic soil	CO3_8MM	Dec 5.2	N
26	L	total carbon (g kg^{-1}) of the > 8 mm component of the organic soil sample	TC_GT8MM	Dec 5.2	N
27	L	total organic carbon (g kg^{-1}) of the > 8 mm component of the organic soil sample	TOC_GT8MM	Dec 5.2	N
28	L	total inorganic carbon (carbonates) (g kg^{-1}) of the > 8 mm component of the organic soil	CO3_GT8MM	Dec 5.2	N
29	L	measured organic carbon value or not	TOC_REAL	Char 1	N
30	L	total nitrogen (g kg^{-1}) of the > 8 mm component of the organic soil sample	N_GT8MM	Dec 4.2	N
31	L	available phosphorus (mg kg^{-1}) of the ≤ 8 mm component of the organic soil sample	P_8MM	Num 4	N
32	L	total phosphorus (mg kg^{-1}) of the ≤ 8 mm component of the organic soil sample	TOTAL_P_8MM	Num 4	N
33	L	exchangeable K (cmol kg^{-1}) of the ≤ 8 mm component of the organic soil sample	K_8MM	Dec 5.3	N
34	L	exchangeable Ca (cmol kg^{-1}) of the ≤ 8 mm component of the organic soil sample	CA_8MM	Dec 5.2	N
35	L	exchangeable Mg (cmol kg^{-1}) of the ≤ 8 mm component of the organic soil sample	MG_8MM	Dec 5.2	N
36	L	exchangeable Na (cmol kg^{-1}) of the ≤ 8 mm component of the organic soil sample	NA_8MM	Dec 5.3	N
37	L	cation exchange capacity (cmol kg^{-1}) of the ≤ 8 mm component of the organic soil sample	CEC_8MM	Dec 5.2	N
38	L	total sulfur (g kg^{-1}) of the ≤ 8 mm component of the organic soil sample	S_8MM	Dec 5.3	N
39	L	total phosphorus (mg kg^{-1}) of the > 8 mm component of the organic soil sample	TOTAL_P_GT8MM	Num 4	N
40	L	total sulfur (g kg^{-1}) of the > 8 mm component of the organic soil sample	S_GT8MM	Dec 5.3	N
41	L	internal designation of lab number	LAB_NUM	Char 50	N
42	C	bulk density ≤ 8mm organic soil (g cm^{-3})	BULK_DENSITY_8MM	Dec 4.3	N
43	C	bulk density of total organic soil sample (g cm^{-3})	BULK_DENSITY_TOTAL	Dec 4.3	N
44	C	carbon content per unit area of the ≤ 8mm component of the organic soil sample (kg m^{-2})	LAYER_CC_8MM	Dec 5.2	N
45	C	carbon content per unit area of the total organic soil sample (kg m^{-2})	LAYER_CC_TOTAL	Dec 5.2	N

14. RELATIVE ABUNDANCE FOR LARGE TREE SPECIES (rel_abundance_lgtree)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	measurement number	MEAS_NUM	Num 3	Y
4	C	species ranked abundance number	SPECIES_NUM	Num 2	Y
5	C	genus	GENUS	Char 4	N
6	C	species	SPECIES	Char 3	N
7	C	variety	VARIETY	Char 3	N
8	C	relative abundance, large trees	SPECIES_LTREL	Dec 4.3	N

15. RELATIVE ABUNDANCE FOR SMALL TREE SPECIES (rel_abundance_smtree)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	measurement number	MEAS_NUM	Num 3	Y
4	C	species ranked abundance number	SPECIES_NUM	Num 2	Y
5	C	genus	GENUS	Char 4	N
6	C	species	SPECIES	Char 3	N
7	C	variety	VARIETY	Char 3	N
8	C	relative abundance, small trees	SPECIES_STREL	Dec 4.3	N

16. RELATIVE ABUNDANCE FOR ECOLOGICAL SPECIES (rel_abundance_ec)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	measurement number	MEAS_NUM	Num 3	Y
4	C	ecological layer ID	EC_LAYERID	Char 3	Y
5	C	species ranked abundance number	SPECIES_NUM	Num 2	Y
6	C	genus	GENUS	Char 50	N
7	C	species	SPECIES	Char 50	N
8	C	variety	VARIETY	Char 50	N
9	C	relative abundance, ecological species	SPECIES_ECREL	Dec 4.3	N

17. UNIQUE SPECIES LIST (species_list)

Data Field	**F**ield, **L**ab, **C**ompiled	Description (Units)	Field Name	Format	Index
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	measurement number	MEAS_NUM	Num 3	Y
4	C	A unique number assigned to each living taxon in the plot	SPECIES_INDEX	Num 3	Y
5	C	genus	GENUS	Char 50	N
6	C	species	SPECIES	Char 50	N
7	C	variety	VARIETY	Char 50	N

18. CLIMATE INFORMATION (climate)

Data	**F**ield,	Description (Units)	Field Name	Format	Index

Field	**L**ab, **C**ompiled				
1	C	network label	NFI_PLOT	Num 7	Y
2	C	location id	LOC_ID	Num 1	Y
3	C	year	YEAR	Num 4	Y
4	C	mean diurnal range (°C)	MEAN_DIURNAL_RANGE	Dec 3.1	N
5	C	isothermality	ISOTHERMALITY	Dec 3.2	N
6	C	temperature seasonality (C of V)	TEMP_SEASONALITY	Dec 3.2	N
7	C	max temperature of warmest period (°C)	MAXTEMP_WARMEST	Dec 3.1	N
8	C	min temperature of coldest period (°C)	MINTEMP_COLDEST	Dec 3.1	N
9	C	temperature annual range (°C)	TEMP_ANNUAL_RANGE	Dec 3.1	N
10	C	mean temperature of wettest quarter (°C)	MEANTEMP_WETTEST_QTR	Dec 3.1	N
11	C	mean temperature of driest quarter (°C)	MEANTEMP_DRIEST_QTR	Dec 3.1	N
12	C	mean temperature of warmest quarter (°C)	MEANTEMP_WARMEST_QTR	Dec 3.1	N
13	C	mean temperature of coldest quarter (°C)	MEANTEMP_COLDEST_QTR	Dec 3.1	N
14	C	annual precipitation (mm)	ANNUAL_PRECIP	Num 4	N
15	C	precipitation of wettest period (mm)	PRECIP_WETTEST_PRD	Num 4	N
16	C	precipitation of driest period (mm)	PRECIP_DRIEST_PRD	Num 3	N
17	C	precipitation seasonality (C of V)	PRECIP_SEASONALITY	Num 3	N
18	C	precipitation of wettest quarter (mm)	PRECIP_WETTEST_QTR	Num 4	N
19	C	precipitation of driest quarter (mm)	PRECIP_DRIEST_QTR	Num 4	N
20	C	precipitation of warmest quarter (mm)	PRECIP_WARMEST_QTR	Num 4	N
21	C	precipitation of coldest quarter (mm)	PRECIP_COLDEST_QTR	Num 4	N
22	C	Julian day number of start of growing season	GROW_SEASON_START	Num 4	N
23	C	Julian day number of end of growing season	GROW_SEASON_END	Num 4	N
24	C	number of days of growing season	GROW_SEASON_LENGTH	Num 4	N
25	C	total precipitation for period 1 (mm)	TOT_PRECIP_PRD1	Dec 5.1	N
26	C	total precipitation for period 3 (mm)	TOT_PRECIP_PRD3	Dec 5.1	N
27	C	growing degree-days above base temperature for period 3 (degree days)	GDD_PRD3	Num 4	N
28	C	annual mean temperature (°C)	ANNUAL_MEANTEMP	Dec 6.2	N
29	C	annual minimum temperature (°C)	ANNUAL_MINTEMP	Dec 6.2	N
30	C	annual maximum temperature (°C)	ANNUAL_MAXTEMP	Dec 6.2	N
31	C	mean temperature for period 3 (°C)	MEANTEMP_PRD3	Dec 6.2	N
32	C	temperature range for period 3 (°C)	TEMP_RANGE_PRD3	Dec 6.2	N
33	C	January mean monthly minimum temp. (°C)	MEAN_MINTEMP_JAN	Dec 4.2	N
34	C	February mean monthly minimum temp. (°C)	MEAN_MINTEMP_FEB	Dec 4.2	N
35	C	March mean monthly minimum temp. (°C)	MEAN_MINTEMP_MAR	Dec 4.2	N
36	C	April mean monthly minimum temp. (°C)	MEAN_MINTEMP_APR	Dec 4.2	N
37	C	May mean monthly minimum temp. (°C)	MEAN_MINTEMP_MAY	Dec 4.2	N
38	C	June mean monthly minimum temp. (°C)	MEAN_MINTEMP_JUN	Dec 4.2	N
39	C	July mean monthly minimum temp. (°C)	MEAN_MINTEMP_JUL	Dec 4.2	N
40	C	August mean monthly minimum temp. (°C)	MEAN_MINTEMP_AUG	Dec 4.2	N
41	C	September mean monthly minimum temp. (°C)	MEAN_MINTEMP_SEP	Dec 4.2	N
42	C	October mean monthly minimum temp. (°C)	MEAN_MINTEMP_OCT	Dec 4.2	N
43	C	November mean monthly minimum temp. (°C)	MEAN_MINTEMP_NOV	Dec 4.2	N
44	C	December mean monthly minimum temp. (°C)	MEAN_MINTEMP_DEC	Dec 4.2	N
45	C	January mean monthly maximum temp. (°C)	MEAN_MAXTEMP_JAN	Dec 4.2	N
46	C	February mean monthly maximum temp. (°C)	MEAN_MAXTEMP_FEB	Dec 4.2	N
47	C	March mean monthly maximum temp. (°C)	MEAN_MAXTEMP_MAR	Dec 4.2	N
48	C	April mean monthly maximum temp. (°C)	MEAN_MAXTEMP_APR	Dec 4.2	N
49	C	May mean monthly maximum temp. (°C)	MEAN_MAXTEMP_MAY	Dec 4.2	N
50	C	June mean monthly maximum temp. (°C)	MEAN_MAXTEMP_JUN	Dec 4.2	N
51	C	July mean monthly maximum temp. (°C)	MEAN_MAXTEMP_JUL	Dec 4.2	N
52	C	August mean monthly maximum temp. (°C)	MEAN_MAXTEMP_AUG	Dec 4.2	N
53	C	September mean monthly maximum temp. (°C)	MEAN_MAXTEMP_SEP	Dec 4.2	N
54	C	October mean monthly maximum temp. (°C)	MEAN_MAXTEMP_OCT	Dec 4.2	N
55	C	November mean monthly maximum temp. (°C)	MEAN_MAXTEMP_NOV	Dec 4.2	N
56	C	December mean monthly maximum temp. (°C)	MEAN_MAXTEMP_DEC	Dec 4.2	N

57	C	January total monthly precipitation (mm)	TOTAL_PRECIP_JAN	Dec 6.2	N
58	C	February total monthly precipitation (mm)	TOTAL_PRECIP_FEB	Dec 6.2	N
59	C	March total monthly precipitation (mm)	TOTAL_PRECIP_MAR	Dec 6.2	N
60	C	April total monthly precipitation (mm)	TOTAL_PRECIP_APR	Dec 6.2	N
61	C	May total monthly precipitation (mm)	TOTAL_PRECIP_MAY	Dec 6.2	N
62	C	June total monthly precipitation (mm)	TOTAL_PRECIP_JUN	Dec 6.2	N
63	C	July total monthly precipitation (mm)	TOTAL_PRECIP_JUL	Dec 6.2	N
64	C	August total monthly precipitation (mm)	TOTAL_PRECIP_AUG	Dec 6.2	N
65	C	September total monthly precipitation (mm)	TOTAL_PRECIP_SEP	Dec 6.2	N
66	C	October total monthly precipitation (mm)	TOTAL_PRECIP_OCT	Dec 6.2	N
67	C	November total monthly precipitation (mm)	TOTAL_PRECIP_NOV	Dec 6.2	N
68	C	December total monthly precipitation (mm)	TOTAL_PRECIP_DEC	Dec 6.2	N
69	C	January climate moisture index (cm)	CMI_JAN	Dec 5.2	N
70	C	February climate moisture index (cm)	CMI_FEB	Dec 5.2	N
71	C	March climate moisture index (cm)	CMI_MAR	Dec 5.2	N
72	C	April climate moisture index (cm)	CMI_APR	Dec 5.2	N
73	C	May climate moisture index (cm)	CMI_MAY	Dec 5.2	N
74	C	June climate moisture index (cm)	CMI_JUN	Dec 5.2	N
75	C	July climate moisture index (cm)	CMI_JUL	Dec 5.2	N
76	C	August climate moisture index (cm)	CMI_AUG	Dec 5.2	N
77	C	September climate moisture index (cm)	CMI_SEP	Dec 5.2	N
78	C	October climate moisture index (cm)	CMI_OCT	Dec 5.2	N
79	C	November climate moisture index (cm)	CMI_NOV	Dec 5.2	N
80	C	December climate moisture index (cm)	CMI_DEC	Dec 5.2	N

Data Dictionary

The data tables for NFI ground plot data are listed below. Indexed attribute definitions have only been listed once at their first occurrence.

1. GROUND PLOT SITE INFORMATION (site_info)

Indexed attributes: NFI_PLOT, MEAS_NUM.

**Note: Completion of this table is mandatory for the processing of ground plots.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. NFI_PLOT and MEAS_NUM must be unique. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3

Rule(s)	Must have value. Combination of NFI_PLOT and MEAS_NUM must be unique. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM of previous measurement.

Attribute	Plot completion (Field)
Variable name	PLOT_COMPLETION
Description	Indicates whether the ground plot was measured in full (F), in part (P), or not at all (U).
Permitted values/range	**F**: Full plot measured **P**: Partial plot measured **U**: Plot not measured **N**: Not reported
Format	Char 1
Rule(s)	Must have value.

Attribute	Reason the ground plot was not completed in full (Field)
Variable name	INCOMP_REASON
Description	Indicates why the ground plot could not be measured in full.
Permitted values/range	**AD:** Access denied **HZ:** Hazardous **NF:** Plot straddles forested and non-forested polygons **SP:** Plot was split in a previous measurement **IN**: NFI plot components incremental to the provincial/territorial inventory program were not assessed **OT:** Other **NA:** Not applicable (i.e. plot was measured in full) NR: Not reported
Format	Char 2
Rule(s)	Must have value If PLOT_COMPLETION = F then INCOMP_REASON = NA If PLOT_COMPLETION = N then INCOMP_REASON = NR

Attribute	Province (Field)
Variable name	PROVINCE
Description	A two-letter code describing the province or territory that the data corresponds to.
Permitted values/range	**BC**: British Columbia **AB**: Alberta **SK**: Saskatchewan **MB**: Manitoba **ON**: Ontario **QC**: Quebec **NS**: Nova Scotia **NB**: New Brunswick **PE**: Prince Edward Island **NL**: Newfoundland and Labrador **NU**: Nunavut **NT**: Northwest Territories **YT**: Yukon Territory
Format	Char 2
Rule(s)	Must have value Province codes cross-referenced with network labels.

Attribute	Terrestrial ecozone (Field)
Variable name	ECOZONE
Description	Ecological land classification code describing a uniquely classified, ecologically distinctive area in Canada. Each area is viewed as a discrete system which has resulted from interplay of geographic, land form, soil, vegetation, climatic wildlife, water and human factors which may be present (Environment Canada, 2002).

Permitted values/range	**1**: Arctic Cordillera **2**: Northern Arctic **3**: Southern Arctic **4**: Taiga Plains **5**: Taiga Shield **6**: Boreal Shield **7**: Atlantic Maritime **8**: Mixedwood Plains **9**: Boreal Plains **10**: Prairies **11**: Taiga Cordillera **12**: Boreal Cordillera **13**: Pacific Maritime **14**: Montane Cordillera **15**: Hudson Plains
Format	Num 2
Rule(s)	Must have value Refer to terrestrial ecozone map (Environment Canada, 2002).

Attribute	Provincial ecosystem type (Field)
Variable name	PROV_ECO_TYPE
Description	Ecosystem type identifier classified to the site association/site series level using the applicable ecosystem classification for the province the site is in. Do not use commas as this may cause an error when importing/exporting csv (comma delineated) files.
Permitted values/range	All levels of ecosystem type should be used in the assignment of provincial ecosystem type. An example in B.C. would be: Coastal Western Hemlock zone; moist maritime subzone; montane variant; 01 HwBa site series.
Format	Char 200
Rule(s)	May be blank.

Attribute	Ecosystem type reference (Field)
Variable name	PROV_ECO_REF
Description	Refers to reference or publication used for ecosystem provincial ecosystem type classification scheme. Number assignment refers to a list of provincial classification manuals. Enter –1 for unreported.
Permitted values/range	1 to 9999, -1
Format	Num 4
Rule(s)	Must have value.

Attribute	UTM Northing Coordinate (Field)
Abbreviation	UTM_N
Description	The UTM northing coordinate that describes the centre point location of a ground plot upon the national grid. The coordinate is measured and report to the nearest meter.
Measurement criteria	UTM easting coordinates in meters.
Permitted values/range	4614000 to 9297000
Format	Num 7
Rules	Must have value.

Attribute	UTM Easting Coordinate (Field)
Abbreviation	UTM_E
Description	The UTM easting that describes the centre point location of a ground plot upon the national grid. The coordinate is measured and report to the nearest meter,
Measurement criteria	UTM easting coordinates in meters.
Permitted values/range	250000 to 750000
Format	Num 6
Rules	Must have value.

Attribute	UTM Zone (Field)
Abbreviation	UTM_ZONE
Description	The UTM zone that the centre point location of a photo plot upon the national grid falls into.

Permitted values/range	7 to 22
Format	Num 2
Rules	Must have value. UTM_ZONE in current measurement must equal UTM_ZONE in previous measurement.

Attribute	Slope (Field)
Variable name	SLOPE
Description	A measurement of the slope gradient. Slope is measured, in the field, using a clinometer or similar instrument and is reported in **percent**. Slope that is measured in degrees is converted using the formula: % slope = 100 * tan(deg. slope * π/180) For flat terrain, enter a value of 0%. -1: Missing.
Permitted values/range	0 to 150, -1
Format	Num 3
Rule(s)	Must have value. Warning will be raised when SLOPE > 100%.

Attribute	Aspect (Field)
Variable name	ASPECT
Description	The orientation of the slope. Aspect is measured, in the field, using a compass and is reported in **degrees**. Due north = 0°. For flat terrain (slope ≤ 2%), aspect must be coded as 999 (flat). Enter -1 for missing data.
Permitted values/range	0 to 359; 999, -1
Format	Num 3
Rule(s)	Must have value. ASPECT cannot equal 999 unless SLOPE ≤ 2%. If slope > 2% then aspect must be between or equal to 0 and 359 or -1.

Attribute	Elevation (Field)
Variable name	ELEVATION
Description	Elevation at plot centre. Record in meters (**m**). -1: Missing.
Permitted values/range	0 to 5951, -1
Format	Num 4
Rule(s)	Must have value

Attribute	Land base (Field)
Variable name	LAND_BASE
Description	A unique identification letter for the first level of the *NFI Land Cover Classification System*. Signifies the presence or absence of vegetation within the ground plot. Based on the majority condition in the plot.
Permitted values/range	**V**: vegetated (establishment plots) **N**: non-vegetated (re-measurement plots only) **U**: unknown
Format	Char 1
Rule(s)	Must have value LAND_BASE ≠ 'U' unless PLOT_COMPLETION = 'U' Refer to *NFI Land Cover Classification* document for specific definitions.

Attribute	Land cover (Field)
Variable name	LAND_COVER
Description	A unique identification letter for the second level of the *NFI Land Cover Classification System*. Signifies the presence or absence of trees for vegetated ground plots.

Permitted values/range	For vegetated plots: **T**: treed **N**: non-treed For non-vegetated plots (re-measurement plots only): **L**: land **W**: water **U**: unknown
Format	Char 1
Rule(s)	Must have value. LAND_COVER ≠ 'U' unless PLOT_COMPLETION = 'U' IF LAND_BASE = 'V' THEN LAND_COVER = 'T' OR 'N'. IF LAND_BASE = 'N' THEN LAND_COVER = 'L' OR 'W'. IF LAND_COVER = 'L' THEN MEAS_NUM > 0 AND LAND_BASE = 'N' (Genrates a warning) IF LAND_BASE = 'V' AND crown closure (visual estimate) ≥ 10% THEN LAND_COVER = 'T'. IF LAND_BASE = 'V' and crown closure (visual estimate) < 10% THEN LAND_COVER = 'N'. Refer to *NFI Land Cover Classification* document for specific definitions.

Attribute	Landscape position (Field)
Variable name	LAND_POS
Description	A unique identification letter for the third level of the *NFI Land Cover Classification System*. Signifies the location of the plot relative to drainage.
Permitted values/range	**W**: wetland **U**: upland **A**: alpine **N**: not known
Format	Char 1
Rule(s)	Must have value. Refer to *NFI Land Cover Classification* document for specific definitions.

Attribute	Vegetation type (Field)
Variable name	VEG_TYPE
Description	A unique identification letter for the fourth Level of the *NFI Land Cover Classification System*. Signifies the distinct type of vegetation within the plot from a broad perspective.
Permitted values/range	For vegetated, treed plots: **TC**: coniferous **TB**: broadleaf **TM**: mixed For vegetated, non-treed plots (re-measurement plots only): **ST**: shrub tall **SL**: shrub low **HE**: herb **HF**: herb forb **HG**: herb graminoid **BY**: bryoid **BM**: bryoid moss **BL**: bryoid lichen For non-vegetated plots: **SI**: snow/ice **RO**: rock rubble **EL**: exposed land Plots containing lakes or ocean: **WA**: water **U**: unknown
Format	Char 2

Rule(s)	Must have value. VEG_TYPE ≠ 'U' unless PLOT_COMPLETION = 'U' For vegetated, treed plots: IF LAND_COVER = 'T' THEN VEG_TYPE = 'TC', 'TB' or 'TM'. **TC**: basal area of coniferous species ≥ 75% total tree basal area in plot. **TB**: basal area of deciduous species ≥ 75% total tree basal area in plot. **TM**: neither coniferous nor broadleaf tree species account for ≥ 75% of the total tree basal area in plot. For vegetated, non-treed plots: IF LAND_BASE = 'V' AND LAND_COVER = 'N' then veg_type = ST, SL, HE, HF, HG, BY, BM or BL. **ST**: LAND_BASE = 'V' AND LAND_COVER = 'N'. Ground cover of shrubs in plot ≥ 20% OR ground cover of shrubs > 33% total vegetation cover in plot. Average height of shrubs in the plot ≥ 2 m. **SL**: LAND_BASE = 'V' AND LAND_COVER = 'N'. Ground cover of shrubs in plot ≥ 20% OR ground cover of shrubs > 33% total vegetation cover in plot. Average height of shrubs in the plot < 2 m. **HE, HF, HG, BY, BM, BL**: Refer to *NFI Land Cover Classification* document for specific definitions. IF LAND_COVER = 'L' THEN VEG_TYPE = 'SI', 'RO', or 'EL'. IF LAND_COVER = 'W' THEN VEG_TYPE = 'WA'.

Attribute	Density class (Field)
Variable name	DENSITY_CL
Description	A unique identification letter for the fifth level of the *NFI Land Classification System*. This signifies the vegetation densities for vegetated plots. Note: "open" has two definitions for open vegetated plots depending on the cover type. Shrub, or herb cover is considered open between 26% and 60% crown closure whereas bryoid cover is considered open when crown closure is less than or equal to 50% of the plot.
Permitted values/range	For vegetated plots: **DE**: dense **OP**: open **SP**: sparse **CL**: closed For non-vegetated plots (re-measurement plots only): SI (snow/ice) from level 4 is further classified: **GL**: glacier **SC**: snow cover RO (rock/rubble) from level 4 is further classified: **BR**: bedrock **RT**: rubble, talus, blockfield **MS**: rubbly mine spoils **LB**: lava bed EL (exposed land) from level 4 is further classified: **RS**: river sediments **ES**: exposed soil **LS**: pond or lake sediments **RM**: reservoir or margin **BE**: beach **LL**: landing **BU**: burned area **RP**: road surface **MU**: mudflat sediment **CB**: cutbank **MO**: moraine **GP**: gravel pit **TS**: tailings **RR**: railway surface **BP**: buildings and parking **AP**: airport **PM**: open pit mine **SW**: shallow water **OT**: other **U**: unknown

Format	Char 2
Rule(s)	Must have value DENSITY_CL ≠ 'U' unless PLOT_COMPLETION = 'U' IF LAND_BASE = 'V' THEN DENSITY_CL = 'DE', 'OP' , 'SP, or 'CL'. IF VEG_TYPE = 'SI' THEN DENSITY_CL = 'GL' or 'SC'. IF VEG_TYPE = 'RO' THEN DENSITY_CL = 'BR', 'RT', 'MS', or 'LB'. IF VEG_TYPE = 'EL' THEN DENSITY_CL = 'RS', 'ES', 'LS', 'RM', 'BE', 'LL', 'BU', 'RP', 'MU', 'CB', 'MO', 'GP', 'TS', 'RR', 'BP', 'AP', 'PM', or 'OT'. IF MEAS_NUM = 0 (establishment) THEN DENSITY_CL in ('DE', 'OP', 'SP'). Refer to *NFI Land Cover Classification* document for specific definitions.

Attribute	Stand structure (Field)
Variable name	STAND_STRU
Description	The structure of the prevailing forest cover in the plot (if treed). Evaluated based on the vertical structure of the stand.
Permitted values/range	**SNGL**: single storied **MULT**: two or more distinct canopy layers **COMP** : complex, non-distinct layers **NA**: non-applicable **U**: unknown
Format	Char 4
Rule(s)	Must have value. IF LAND_COVER = 'T' then STAND_STRU ≠ NA IF LAND_COVER ≠ 'T' then STAND_STRU = NA

Attribute	Successional stage (Field)
Variable name	SUCC_STAGE
Description	Two-letter code describing successional status.
Permitted values/range	**ES**: early seral stage **MS**: mid-seral stage **LS**: late seral stage **TS**: mature seral stage **OG**: old growth seral stage **UR**: unreported
Format	Char 2
Rule(s)	Must have value.

Attribute	Wetland classification (Field)
Variable name	WETLAND_CLASS
Description	Wetland classification of site based on the Canadian wetland Classification System (National Wetlands Working Group 1997).
Permitted values/range	**B:** Bog **F:** Fen **S:** Swamp **M**: Marsh **W:** Shallow Water **N:** Non-wetland, terrestrial system (upland) **U:** Unreported
Format	Char 1
Rule(s)	Must have value.

Attribute	User information (Field)
Variable name	USER_INFO
Description	User information/comments on the measurements in the plot. Do not use commas as this may cause an error when importing/exporting csv (comma delineated) files.
Permitted values	Must have value IF NFI_PLOT ≥ 2000000. May be blank if NFI_PLOT < 2000000.
Format	Char 255
Rule(s)	May be blank.

Attribute	Ecoregion (Compiled)
Variable name	EC_REGION
Description	A subdivision of an ecoprovince characterized by distinctive regional ecological factors, including climate, physiography, vegetation, soil, water, and fauna. For example, the Maritime Barrens ecoregion (no. 114) is one of nine ecoregions within the Newfoundland ecoprovince (http://sis.agr.gc.ca/cansis/nsdb/ecostrat/intro.html#ecological%20land%20classification)
Permitted values/range	1 to 217, -1
Format	Num 3
Rule(s)	Must have value

Attribute	Ecodistrict (Compiled)
Variable name	EC_DISTRICT
Description	A subdivision of an ecoregion (different from ecoclimatic region) characterized by a distinctive assemblages of relief, landforms, geology, soil, vegetation, water bodies and fauna (http://sis.agr.gc.ca/cansis/nsdb/ecostrat/intro.html). They are consecutively numbered from 1 to 1031. In the final review, the following were removed from the map and database: 172, 240, 330, 673, 719, 721, 722, 725, 842, and 845. The ecodistrict is the smallest unit of national ecosystem mapping.
Permitted values/range	1 to 1031 (excluding 172, 240, 330, 673, 719, 721, 722, 725, 842, 845), -1, -9.
Format	Num 4
Rule(s)	Must have value

Attribute	Plot-level, total large tree volume, standing live (Compiled)
Variable name	PLOTVOL_STANDLIVE
Description	Total volume (**m^3 ha^{-1}**) for all **standing live trees** ≥ 1.3 m in height, having roots attached to the bole or an identifiable root collar and DBH ≥ 9.0 cm. Includes volume inside bark of the main stem, stump and top**.**
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Plot-level, total large tree volume, standing dead (Compiled)
Variable name	PLOTVOL_STANDDEAD
Description	Total volume (**m^3 ha^{-1}**) for all **standing dead trees ≥** 1.3 m in height, having roots attached to the bole or an identifiable root collar and DBH ≥9.0 cm. Includes volume inside bark of the main stem, including stump and top**.**
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Plot-level, total large tree volume, fallen live (Compiled)
Variable name	PLOTVOL_FALLLIVE
Description	Total volume (**m^3 ha^{-1}**) for all **fallen live trees** ≥ 1.3 m in height, having roots attached to the bole or an identifiable root collar and DBH ≥9.0 cm. Includes volume inside bark of the main stem, including stump and top. Volume calculation excludes fallen dead (measured as woody debris).
Permitted values/range	0 to 9999.99
Format	Dec 6.2
Default	Must have value
Rule(s)	Check range of values.

Attribute	Plot-level, total live small tree volume (Compiled)
Variable name	PLOTVOL_SMTR_LIVE
Description	Total volume (**m^3 ha^{-1}**) for all **live** small trees with a measurable DBH < 9.0 cm. For the purposes of this inventory attribute, a tree is defined as a woody plant, usually with a single stem and a definite crown that is capable of reaching a mature height of 5.0 m in situ.
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Plot-level, total dead small tree volume (Compiled)
Variable name	PLOTVOL_SMTR_DEAD
Description	Total volume (**m^3 ha^{-1}**) for all **dead** small trees with a measurable DBH < 9.0 cm. For the purposes of this inventory attribute, a tree is defined as a woody plant, usually with a single stem and a definite

	crown that is capable of reaching a mature height of 5.0 m in situ.
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Plot-level, gross annual volume increment (Compiled)
Variable name	GROSSVOL_INCR
Description	Current annual gross volume increment (**m^3 ha^{-1} yr^{-1}**) for the entire plot. Calculated from growth and yield, tree measurement information. Volume calculation includes accretion + ingrowth + mortality.
Permitted values/range	0 to 99.99
Format	Dec 4.2

Attribute	Plot-level, gross mean annual volume increment (Compiled)
Variable name	GROSSVOL_MAI
Description	Mean annual gross volume increment (**m^3 ha^{-1} yr^{-1}**) for the entire plot. Calculated from volume and age data summaries. Volume calculation includes accretion + ingrowth + mortality.
Permitted values/range	0 to 99.99
Format	Dec 4.2

Attribute	Plot-level, stump volume (Compiled)
Variable name	PLOTVOL_STUMP
Description	Total volume (**m^3 ha^{-1}**) for all stumps with a top diameter inside bark of ≥ 4 cm.
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Stump biomass (Compiled)
Variable name	PLOTBIO_STUMP
Description	Total above ground biomass (**Mg ha^{-1}**) for all stumps with a top diameter inside bark of ≥ 4 cm.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Small stump biomass (Compiled)
Variable name	PLOTBIO_SMSTUMP
Description	Total above ground biomass (**Mg ha^{-1}**) for all stumps with a top diameter inside bark of < 4 cm.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, live large tree biomass (Compiled)
Variable name	PLOTBIO_LGTR_LIVE
Description	Total above ground biomass of all live trees ≥ 1.3 m in height and ≥ 9.0 cm diameter at breast height. Expressed in **Mg ha^{-1}** of oven-dry material.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, dead large tree mass (Compiled)
Variable name	PLOTBIO_LGTR_DEAD
Description	Total above ground mass of all standing dead trees ≥ 1.3 m in height and ≥ 9.0 cm diameter at breast height. Expressed in **Mg ha^{-1}** of oven-dry material.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, live small tree biomass (Compiled)
Variable name	PLOTBIO_SMTR_LIVE
Description	Total above ground biomass of live small trees. For the purposes of this inventory attribute, a small tree is defined as a woody plant, usually with a single trunk and definite crown, which is greater than 10 cm in height and < 9.0 cm DBH. Expressed in **Mg ha^{-1}** of oven-dry material.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, dead small tree mass (Compiled)

Variable name	PLOTBIO_SMTR_DEAD
Description	Total above ground mass of standing dead small trees. For the purposes of this inventory attribute, a small tree is defined as a woody plant, usually with a single trunk and definite crown, which is greater than 10 cm in height and < 9.0 cm DBH. Expressed in **Mg ha^{-1}** of oven-dry material.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, live large shrub biomass (Compiled)
Variable name	PLOTBIO_LGSHRUB_LIVE
Description	Total above ground biomass of live shrubs ≥ 1.3 m in height. Expressed in **Mg ha^{-1}** of oven-dry material.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, dead large shrub mass (Compiled)
Variable name	PLOTBIO_LGSHRUB_DEAD
Description	Total above ground mass of dead shrubs ≥ 1.3 m in height. Expressed in **Mg ha^{-1}** of oven-dry material.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, small shrub biomass (Compiled)
Variable name	PLOTBIO_SMSHRUB
Description	Total above ground biomass of shrubs (live and/or dead) < 1.3 m in height. Expressed in **Mg ha^{-1}** of oven-dry material.
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, herb biomass (Compiled)
Variable name	PLOTBIO_HERB
Description	Total above ground biomass of the herb layer (**Mg ha^{-1}** of oven-dry material).
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, bryophytes biomass (Compiled)
Variable name	PLOTBIO_BRYO
Description	Total above ground biomass of the bryophyte layer (**Mg ha^{-1}** of oven-dry material).
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, fine woody debris biomass (Compiled)
Variable name	PLOTBIO_FWD
Description	Total above ground biomass of fine woody debris (**Mg ha^{-1}** of oven-dry material). Fine woody debris measurements obtained from destructive sampling of microplots. Defined as material 0.5 cm to < 1.0 cm in diameter. Includes bark where present.
Permitted values	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, small woody debris volume (Compiled)
Variable name	PLOTVOL_SWD
Description	Total volume **(m^3 ha^{-1})** for all small woody debris (≥ 1.0 cm to ≤ 7.5 cm). Includes bark where present.
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Plot-level, small woody debris biomass (Compiled)
Variable name	PLOTBIO_SWD
Description	Total above ground biomass of small woody debris (**Mg ha^{-1}** of oven-dry material) ≥ 1.0 cm to ≤ 7.5 cm in diameter. Determined from woody debris line transects. Includes bark where present.
Permitted values	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, coarse woody debris volume (Compiled)
Variable name	PLOTVOL_CWD
Description	Total volume **(m^3 ha^{-1})** for all coarse woody debris > 7.5 cm in diameter. Includes all round and odd-shaped pieces. Includes bark where present.
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Plot-level, coarse woody debris biomass (Compiled)
Variable name	PLOTBIO_CWD
Description	Total above ground biomass of coarse woody debris (**Mg ha^{-1}** of oven-dry material) > 7.5 cm in diameter. Determined from woody debris line transects. Includes all round and odd-shaped pieces. Includes bark where present.
Permitted values	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, coarse woody debris volume – round pieces (Compiled)
Variable name	PLOTVOL_ROUNDWD
Description	Total volume **(m^3 ha^{-1})** for all coarse woody debris round pieces > 7.5 cm in diameter. Includes bark where present.
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Plot-level, coarse woody debris biomass – round pieces (Compiled)
Variable name	PLOTBIO_ROUNDWD
Description	Total above ground biomass of coarse woody debris round pieces (**Mg ha^{-1}** of oven-dry material) > 7.5 cm in diameter. Determined from woody debris line transects. Includes bark where present.
Permitted values	0 to 99999.99
Format	Dec 7.2

Attribute	Plot-level, coarse woody debris volume odd-shaped pieces (Compiled)
Variable name	PLOTVOL_ODDWD
Description	Total volume **(m^3 ha^{-1})** for all coarse woody debris odd-shaped pieces > 7.5 cm in diameter. Includes bark where present.
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Plot-level, coarse woody debris biomass odd-shaped pieces (Compiled)
Variable name	PLOTBIO_ODDWD
Description	Total above ground biomass of coarse woody debris odd-shaped pieces (**Mg ha^{-1}** of oven-dry material) > 7.5 cm in diameter. Determined from woody debris line transects. Includes bark where present.
Permitted values	0 to 99999.99
Format	Dec 7.2

Attribute	Maximum depth to which mineral soil carbon content was compiled at the plot (Compiled)
Variable name	SAMPLE_DEPTH_MIN
Description	Maximum depth to which carbon content was calculated for mineral soil samples. Reported to the nearest 0.1 **cm**.
Permitted values/range	0.0 to 200.0
Format	Dec 4.1

Attribute	Maximum depth to which organic soil carbon content was compiled at the plot (Compiled)
Variable name	SAMPLE_DEPTH_ORG
Description	Maximum depth to which carbon content was calculated for organic soil samples Reported to the nearest 0.1 **cm**.
Permitted values/range	0.0 to 200.0
Format	Dec 4.1

Attribute	Carbon content ≤ 8 mm forest floor, plot level (Compiled)
Variable name	CC_FOR_FLOOR_8MM
Description	Carbon content of the ≤ 8 mm fraction of the forest floor, scaled up to provide a plot level per hectare

	value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information.
Permitted values/range	0.0 to 1200.0
Format	Dec 5.1

Attribute	Carbon content forest floor, plot level (Compiled)
Variable name	CC_FOR_FLOOR_TOTAL
Description	Carbon content of the sum of ≤ 8 mm and > 8mm fractions of the forest floor, scaled up to provide a plot level per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information. A value of -7 indicates that the data required for calculating this field was not being collected at the time the plot was sampled.
Permitted values/range	0.0 to 1200.0, -7
Format	Dec 5.1

Attribute	Carbon content from 0 to 15 cm below the mineral soil surface, plot level (Compiled)
Variable name	CC_MIN0_15
Description	The carbon content of the mineral soil from 0 to 15 cm or maximum depth of soil sampling (whichever is lower). Includes buried organic horizons, if present. Scaled up to provide a per hectare value. Reported in **Mg C ha^{-1}**. Refer to the Nationa. Compilation Standard for Ground Plots: Compilation Procedures document for more information.
Permitted values/range	0.0 to 1200.0
Format	Dec 5.1

Attribute	Carbon content from 15 to 35 cm below the mineral soil surface, plot level (Compiled)
Variable name	CC_MIN15_35
Description	The carbon content of the mineral soil from 15 to 35 cm or maximum depth of soil sampling (whichever is lower). Includes buried organic horizons, if present. Scaled up to provide a per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information.
Permitted values/range	0.0 to 1200.0
Format	Dec 5.1

Attribute	Carbon content from 35 to 55 cm below the mineral soil surface, plot level (Compiled)
Variable name	CC_MIN35_55
Description	The carbon content of the mineral soil from 35 to 55 cm or maximum depth of soil sampling (whichever is lower). Includes buried organic horizons, if present. Scaled up to provide a per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information.
Permitted values/range	0.0 to 1200.0
Format	Dec 5.1

Attribute	Carbon content ≤ 8 mm from 0 to 15 cm below the organic soil surface, plot level (Compiled)
Variable name	CC_ORGANIC0_15_8MM
Description	Carbon content of the ≤ 8mm fraction of the organic soil occurring in the 0-15 cm layer of the profile, scaled up to provide a plot level per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information.
Permitted values/range	0.0 to 1200.0
Format	Dec 5.1

Attribute	Total carbon content from 0 to 15 cm below the organic soil surface, plot level (Compiled)

Variable name	CC_ORGANIC0_15_TOTAL
Description	Carbon content of the sum of ≤ 8 mm and > 8mm fractions of the organic soil occurring in the 0-15 cm layer of the profile, scaled up to provide a plot level per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information. A value of -7 indicates that the data required for calculating this field was not being collected at the time the plot was sampled.
Permitted values/range	0.0 to 1200.0, -7
Format	Dec 5.1

Attribute	Carbon content ≤ 8 mm from 15 to 35 cm below the organic soil surface, plot level (Compiled)
Variable name	CC_ORGANIC15_35_8MM
Description	The carbon content of the ≤ 8mm fraction of the organic soil occurring in the 15-35 cm layer of the profile, scaled up to provide a plot level per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information.
Permitted values/range	0.0 to 1200.0
Format	Dec 5.1

Attribute	Total carbon content from 15 to 35 cm below the organic soil surface, plot level (Compiled)
Variable name	CC_ORGANIC15_35_TOTAL
Description	Carbon content of the sum of ≤ 8 mm and > 8mm fractions of the organic soil occurring in the 15-35 cm layer of the profile, scaled up to provide a plot level per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information. A value of -7 indicates that the data required for calculating this field was not being collected at the time the plot was sampled.
Permitted values/range	0.0 to 1200.0, -7
Format	Dec 5.1

Attribute	Carbon content ≤ 8 mm from 35 to 55 cm below the organic soil surface, plot level (Compiled)
Variable name	CC_ORGANIC35_55_8MM
Description	The carbon content of the ≤ 8mm fraction of the organic soil occurring in the 35-55 cm layer of the profile, scaled up to provide a plot level per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information.
Permitted values/range	0.0 to 1200.0
Format	Dec 5.1

Attribute	Total carbon content from 0 to 15 cm below the organic soil surface, plot level (Compiled)
Variable name	CC_ORGANIC35_55_TOTAL
Description	Carbon content of the sum of ≤ 8 mm and > 8mm fractions of the organic soil occurring in the 35-55 cm layer of the profile, scaled up to provide a plot level per hectare value. Reported in **Mg C ha^{-1}**. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information. A value of -7 indicates that the data required for calculating this field was not being collected at the time the plot was sampled.
Permitted values/range	0.0 to 1200.0, -7
Format	Dec 5.1

Attribute	Average carbon concentration of ≤ 8 mm organic soil and forest floor samples (Compiled)
ariable name	AVG_ORG_CARB

Description	The average carbon concentration of ≤ 8 mm fraction organic soil and forest floor samples (**g kg^{-1}**)
Permitted values/range	0 to 999.99
Format	Dec 5.2

Attribute	Average bulk density of ≤ 8 mm organic soil and forest floor samples (Compiled)
Variable name	AVG_BULK_DENSITY_ORG
Description	average bulk density of ≤ 8 mm fraction of organic soil and forest floor samples (**g cm^{-3}**)
Permitted values/range	0 to 999.99
Format	Dec 5.2

2. PLOT DISTURBANCE (disturbance)

Indexed attributes: NFI_PLOT, MEAS_NUM, DIST_AGENT, DIST_YR.

**Note: This table should be completed for all plots.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.

Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Natural disturbance agent(s) (Field)
Variable name	DIST_AGENT
Description	Agents of natural disturbance
Permitted values/range	**FIRE**: Plot has experienced a fire. **WIND**: Vegetation in plot has experienced windthrow. **SNOW**: Vegetation in plot has experienced significant snow damage. **INSECT**: Vegetation in plot has experienced insect attack. (Note: It can take several years of defoliation to do permanent damage to a tree. The threshold for significant defoliation varies with pest). **INSECT2**: Vegetation in plot has experienced insect attack. (Note: It can take several years of defoliation to do permanent damage to a tree. The threshold for significant defoliation varies with pest). **DISEASE**: Vegetation in plot has experienced a disease outbreak. **DISEASE2**: Vegetation in plot has experienced a disease outbreak. **ICE**: Vegetation in plot has experienced ice damage. **OTHER**: Plot has experienced other disturbances. Enter the code 'other' followed by a word that better describes the type of disturbance agent, separated by a hyphen (e.g., OTHER-FLOODING). **UNKNOWN**: Plot disturbance is unknown. **NONE:** No disturbance observed.
Format	Char 30
Rule(s)	Must have value.

Attribute	Disturbance year(s) (Field)
Variable name	DIST_YR
Description	An estimate of the year of the disturbance. Enter -9 for not applicable (i.e. no disturbance). -1: Missing.
Permitted values/range	> 1400 to year of MEAS_DATE; -9, -1
Format	Num 4 (YYYY)
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM, DIST_AGENT and DIST_YR must be a unique. If DIST_AGENT = 'none' then DIST_YR = -9

Attribute	Extent of disturbance (Field)
Variable name	DIST_PCT
Description	For the purposes of this inventory, a disturbance is described as a discreet force that has caused significant change in structure and/or composition of the plot vegetation (e.g. a change resulting in the normal growth pattern of the forest being significantly reduced). Extent of disturbance measured in **percentage** of area of the plot. Enter -1 for missing data.
Permitted values/range	0 to 100, -1
Format	Num 3
Rule(s)	Must have value. If DIST_AGENT = 'none' then DIST_PCT = 0

Attribute	Extent of tree mortality (Field)
Variable name	MORT_PCT
Description	Extent of tree mortality, within the disturbed area, reported to the nearest **percent**. Enter -1 for missing data. Enter -9 if there are no trees in the plot.
Permitted values/range	0 to 100, -1, -9
Format	Num 3
Rule(s)	Must have value. If a noticeable disturbance is present in the plot, but there are no dead trees, then MORT_PCT = 0 AND MORT_BASIS = 'NA'. If DIST_AGENT = 'none' then MORT_PCT = 0

Attribute	Mortality basis (Field)

Variable name	MORT_BASIS
Description	Basis for mortality extent.
Permitted values/range	**VL**: Volume **BA**: Basal area **CA**: Crown area **ST**: Stem numbers **AR**: Area **NA**: Non-applicable (e.g. there are no trees in the plot, no trees were killed, or no disturbance) **M**: Missing
Format	Char 2
Rule(s)	Must have value. If a noticeable disturbance is present in the plot, but there are no dead trees, then MORT_PCT = 0 AND MORT_BASIS = 'NA'. If there are no trees in the plot THEN MORT_PCT = -9 AND MORT_BASIS = 'NA'. If DIST_AGENT = 'none' then MORT_BASIS = 'NA' IF MORT_PCT > 0 THEN MORT_BASIS ≠ 'NA' IF MORT_PCT = 0 or -9 THEN MORT_BASIS = 'NA' IF MORT_PCT = -1 THEN MORT_BASIS = 'M' OR 'NA'

Attribute	Specific disturbance agent (Field)
Variable name	AGENT_TYPE
Description	A data field for comments. Do not use commas as this may cause an error when importing/exporting csv (comma delineated) files.
Permitted values/range	Examples of typical comments entered in the agent_type field: Name of suspected disturbance agent (i.e. Armillaria, spruce budworm) Specific erosion agents include: Natural erosion caused by soil instability. Erosion caused by surface water runoff. Erosion caused by avalanche. Erosion caused by harvesting operations (including roads). Erosion caused by heavy equipment traffic. Erosion caused by road construction (other than harvest roads). Erosion caused by mining. Erosion caused by forest fire. Erosion caused by wind. Other causes of erosion or cause not understood.
Format	Char 200
Rule(s)	May be blank.

3. PLOT ORIGIN (origin)

Indexed attributes: NFI_PLOT, MEAS_NUM, VEG_ORIG, REGEN_TYPE, REGEN_YR.

**Note: This table should be completed for all plots.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999

Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Vegetation cover origin(s) (Field, Records)
Variable name	VEG_ORIG
Description	Origin of the vegetation cover in the plot.
Permitted values/range	**SUCC**: The establishment of trees through secondary succession. **HARV**: Regeneration after harvest. **DIST**: Regeneration after other disturbance. **AFOR**: Aforestation– the establishment of trees on an area that was lacking in forest cover for some time or that was never forested. **UNK**: Vegetation cover origin is unknown. **NA:** Not applicable as site is temporarily non-treed
Format	Char 4
Rule(s)	Must have value.

Attribute	Type of regeneration (Field, Records)
Variable name	REGEN_TYPE
Description	The method used in the continuous renewal of a forest stand (i.e., establishment of new young trees) by natural or artificial means.
Permitted values/range	**NAT**: Natural regeneration. **SUP**: Natural regeneration with supplementary planting (< 50%). **PLA**: Planted regeneration. **SOW**: Seeded regeneration. **UNK**: Unknown. **NA:** Not applicable as site is temporarily non-treed

Format	Char 3
Rule(s)	Must have value If VEG_ORIG = 'NA' then REGEN_TYPE = 'NA'

Attribute	Year of regeneration (Field, Records)
Variable name	REGEN_YR
Description	An estimate of the year of regeneration. Must be related to vegetation cover origin. Enter -1 for missing. Enter -9 for not applicable.
Permitted values/range	1400 to present year, -1, -9
Format	Num 4 (YYYY)
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM, VEG_ORIG, REGEN_TYPE and REGEN_YR must be unique. If REGEN_YR ≠ -1 or -9, then 1400 ≤ REGEN_YR ≤ year of MEAS_DATE If VEG_ORIG = 'NA' then REGEN_YR = -9

4. PLOT TREATMENT (treatment)

Indexed attributes: NFI_PLOT, MEAS_NUM, TREAT_TYPE, TREAT_YR.

**Note: All plots should be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)

Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Treatment type(s) (Field, Records)
Variable name	TREAT_TYPE
Description	An activity or treatment that has occurred in a vegetation layer of the plot.
Permitted values/range	**CC**: Stand has been harvested in full (> 80% by crown area of the previous forest cover has been removed. **PC**: Stand has been harvested in part (< 80% by crown area of the previous forest cover has been removed). **DC**: Deforestation **CL**: Cleaning, including brushing and weeding. **JS**: Juvenile spacing – altering the number of stems in the stand. **PR**: Pruning **PT**: Pre-commercial thinning – reduction of number of stems to increase spacing. **CT**: Commercial thinning – partial cut in older immature stands. **FT**: Fertilization **SP**: Mechanical site preparation **PB**: Prescribed burning **HC**: Herbicide **OT**: Other **NO:** No treatment observed **NR:** Not reported FP: FLUXNET treatment code IC: FLUXNET treatment code
Format	Char 2
Rule(s)	Must have value 'FP' and 'IC' are valid entries IF NFI_PLOT > 2,000,000.

Attribute	Treatment year(s) (Field, Records)
Variable name	TREAT_YR
Description	An estimate of the year of treatment. Treatment year must be related to treatment. Enter -9 if not applicable (i.e. no treatment observed). Enter -1 for missing data.
Permitted values/range	1800 to present year, -1, -9
Format	Num 4 (YYYY)
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM, TREAT_TYPE and TREAT_YR must be unique. 1800 ≤ TREAT_YR ≤ year of the MEAS_DATE. If TREAT_TYPE = 'NO' then TREAT_YR = -9 If TREAT_TYPE ≠ 'NO' then TREAT_YR ≠ -9

Attribute	Treatment extent (Field, Records)
Variable name	TREAT_PCT
Description	Extent of treatment, expressed as a **percentage** of the total plot area. Enter -9 if not applicable (i.e. no treatment observed). Enter -1 for missing data.
Permitted values/range	1 to 100, -1, -9
Format	Num 3

Rule(s)	Must have value If TREAT_TYPE = 'NO' then TREAT_PCT = -9 If TREAT_TYPE ≠ 'NO' then TREAT_PCT ≠ -9

5. LARGE TREE PLOT, HEADER AND SUMMARY INFORMATION (ltp_header)

Indexed attributes: NFI_PLOT, MEAS_NUM.

**Note: This table should be completed for all plots where a large tree plot was assessed (even if there were no large trees present to measure).

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999

Format	Num 3
Rule(s)	Must have value. Combination of NFI_PLOT and MEAS_NUM must be unique. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Plot type (Field)
Variable name	PLOT_TYPE
Description	Description of the ground plot design used to collect sample measurements.
Permitted values	**LTC** = circular large tree plot **LTS** = square large tree plot
Format	Char 3
Rule(s)	Must have value. PLOT_TYPE in current measurement must be same as PLOT_TYPE in previous measurement.

Attribute	Nominal plot size (Field)
Variable name	NOM_PLOT_SIZE
Description	The nominal size (area) of the sample plot in **ha**. -1: Not submitted
Permitted values	0.03 to 0.1000; -1
Format	Dec 5.4
Rule(s)	Must have value Warning will be raised if plot size $\neq$ 0.04 ha.

Attribute	Measured plot size (Field)
Variable name	MEAS_PLOT_SIZE
Description	The measured size (area) of the sample plot in **ha**. Excludes portions of the plot that were not measured due to inaccessibility.
Permitted values	0.0075 to 0.1000
Format	Dec 5.4
Rule(s)	Must have value Warning will be raised if plot size $\neq$ 0.04 ha.

Attribute	Plot split (Field)
Variable name	PLOT_SPLIT
Description	This information is not being collected after August 1, 2007, but will be retained in the database as legacy data. An indication as to whether or not this plot was split in the initial measurement. **F**: full plot was measured **H**: half plot was measured **Q**: quarter plot was measured **N:** no longer reported. This value will automatically be assigned to this field for plots measured after August 1, 2007.
Permitted values/range	F, H, Q, N
Format	Char 1

Attribute	Site index (Compiled)
Variable name	SITE_INDEX
Description	An expression of forest site quality based on the height, at a breast-height age of 50 years, of the dominant and codominant trees in the large tree plot. Expressed in **m**.
Permitted values/range	0.1 to 99.9
Format	Dec 3.1
Rule(s)	Must have value.

Attribute	Site index genus (Compiled)
Variable name	SITE_INDEX_GENUS

Description	Site index genus code. Use the first four letters of the scientific genus name. If unknown conifer use code **GENC**, if unknown hardwood use code **GENH**. Enter GENUS = '**UNKN**' and SPECIES = 'SPP' for unknown.
Permitted values/range	For a list of acceptable genus codes, refer to the *NFI Tree Species List (Appendix A).*
Format	Char 4
Rule(s)	SITE_INDEX_GENUS codes must conform to standard set by the *NFI Tree Species List* (Appendix A).

Attribute	Site index species (Compiled)
Variable name	SITE_INDEX_SPECIES
Description	Site index species code. Use the first three letters of the scientific species name. If unknown species, use code **SPP**.
Permitted values/range	For a list of acceptable species codes, refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3
Rule(s)	Must have value SITE_INDEX_SPECIES codes must conform to standard set by the *NFI Tree Species List* (Appendix A).

Attribute	Site height (Compiled)
Variable name	SITE_HEIGHT
Description	The average height of dominant and co-dominant trees of the main species forming the stand (site trees), expressed in **m**.
Permitted values/range	1.3 to 99.9
Format	Dec 3.1

Attribute	Average (Lorey) height (Compiled)
Variable name	LOREY_HEIGHT
Description	The average height of all live trees in the plot, weighted by their basal area, expressed in **m**.
Permitted values/range	1.3 to 99.9
Format	Dec 3.1

Attribute	Site age (Compiled)
Variable name	SITE_AGE
Description	The average total age of the dominant and co-dominant trees of the main species forming the stand (site trees), expressed in **years**.
Permitted values/range	1 to 999
Format	Num 3

Attribute	Lab counted (Compiled)
Variable name	NUM_LAB
Description	A field to indicate the number of lab-counted tree cores used in the determination of site age.
Permitted values/range	0 to 99
Format	Num 2

Attribute	Field counted (Compiled)
Variable name	NUM_FIELD
Description	A field to indicate the number of field-counted tree cores used in the determination of site age.
Permitted values/range	0 to 99
Format	Num 2

Attribute	Basal area, standing live (Compiled)
Variable name	BASAL_AREA_STANDLIVE
Description	Summed cross-sectional area (**m^2 ha^{-1}**), measured at breast height, of tree boles for all standing live trees within the LTP. Minimum DBH measured = 9.0 cm.
Permitted values/range	0.0 to 999.99
Format	Dec 5.2

Attribute	Basal area, standing dead (Compiled)
Variable name	BASAL_AREA_STANDDEAD
Description	Summed cross-sectional area (**m^2 ha^{-1}**), measured at breast height, of tree boles for all standing dead trees within the LTP. Minimum DBH measured = 9.0 cm.

Permitted values/range	0.0 to 999.99
Format	Dec 5.2

Attribute	Basal area, fallen live (Compiled)
Variable name	BASAL_AREA_FALLIVE
Description	Summed cross-sectional area (**m^2 ha^{-1}**), measured at breast height, of tree boles for all fallen live trees within the LTP. Minimum DBH measured = 9.0 cm.
Permitted values/range	0.0 to 999.99
Format	Dec 5.2

Attribute	Stem density, standing live (Compiled)
Variable name	STEM_DENSITY_STANDLIVE
Description	The number of standing live **stems ha^{-1}** including stems with a minimum DBH = 9.0 cm.
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Stem density, standing dead (Compiled)
Variable name	STEM_DENSITY_STANDDEAD
Description	The number of standing dead **stems ha^{-1}** including stems with a minimum DBH = 9.0 cm.
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Stem density, fallen live (Compiled)
Variable name	STEM_DENSITY_FALLLIVE
Description	The number of fallen live **stems ha^{-1}** including stems with a minimum DBH = 9.0 cm.
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Total unique large tree species (Compiled)
Variable name	SPECIES_LTNUM
Description	The total number of unique species of live standing large trees in an area (species richness).
Permitted values/range	0 to 999
Format	Num 3

Attribute	Shannon index for large trees (Compiled)
Variable name	BINDEX_LTSHANNON
Description	The Shannon diversity index, which is a measure of the species richness and evenness for large trees.
Permitted values/range	0 to 999.99
Format	Dec 5.2

Attribute	Evenness index for large trees (Compiled)
Variable name	BINDEX_LTEVEN
Description	The Pielou evenness index. Reported as how close the numbers of individual live large trees of each species are.
Permitted values/range	0 to 999.99
Format	Dec 5.2

Attribute	Margalef (species richness) index for large trees (Compiled)
Variable name	BINDEX_LTMARGALEF
Description	The Margalef (species richness) index, which measures the total number of live large tree species in an area.
Permitted values/range	0 to 999.99
Format	Dec 5.2

Attribute	Total stem wood biomass of live standing trees (Compiled)
Variable name	PLOTBIO_STEMWOOD_LIVE
Description	The total stem wood biomass of live standing and live fallen trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total stem bark biomass of live standing trees (Compiled)
Variable name	PLOTBIO_STEMBARK_LIVE
Description	The total stem bark biomass of live standing and live fallen trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total branch biomass of live standing trees (Compiled)
Variable name	PLOTBIO_BRANCHES_LIVE
Description	The total branch biomass of live standing and live fallen trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total foliage biomass of live standing ltp trees in (Compiled)
Variable name	PLOTBIO_FOLIAGE_LIVE
Description	The total foliage biomass of live standing and live fallen trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total stem wood biomass of dead standing trees (Compiled)
Variable name	PLOTBIO_STEMWOOD_DEAD
Description	The total stem wood biomass of dead standing trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total stem bark biomass of dead standing trees (Compiled)
Variable name	PLOTBIO_STEMBARK_DEAD
Description	The total stem bark biomass of dead standing trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total branch biomass of dead standing trees (Compiled)
Variable name	PLOTBIO_BRANCHES_DEAD
Description	Total branch biomass of dead standing trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

5a. LARGE TREE SPECIES COMPOSITION PERCENT (ltp_tree_species_comp)

Indexed attributes: NFI_PLOT, MEAS_NUM, SPECIES_NUM.

**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.

Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.

Attribute	Species ranked abundance number (Compiled)
Variable name	SPECIES_NUM
Description	Identifies the species rank in the plot by percentage of basal area per hectare for live trees. Species number will be ordered consecutively from 1, with 1 being the largest tree species percent value in the plot.
Permitted values/range	1 to 20
Format	Num 2

Attribute	Genus (Compiled)
Variable name	GENUS
Description	Genus code. Use the first four letters of the scientific genus name. If unknown conifer use code **GENC**, if unknown hardwood use code **GENH**. Enter GENUS = 'UNKN' and SPECIES = 'SPP' for unknown.
Permitted values/range	For a list of acceptable genus codes, refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4

Attribute	Species (Compiled)
Variable name	SPECIES
Description	Species code. Use the first three letters of the scientific species name. If unknown species, use code **SPP**.
Permitted values/range	For a list of acceptable species codes, refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3

Attribute	Variety (Compiled)
Variable name	VARIETY
Description	May be left blank if variety is unknown or not present.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A) for valid combinations of genus/species/variety codes.
Format	Char 3

Attribute	Species percent (Compiled)
Variable name	PERCENT
Description	Percentage of the species in the plot determined by basal area per hectare in the large tree plot, expressed as a **percent**. Recorded to the nearest tenth of a percent.
Permitted values/range	0.1 to 100.0.
Format	Dec 4.1

5b. LARGE TREE LIST (ltp_tree)

Indexed attributes: NFI_PLOT, MEAS_NUM, TREE_NUM.

**Note: Only plots that have large trees to tally need to be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Plot sector (Field)
Variable name	SECTOR
Description	The large tree plot is divided into eight sectors. Plot sectors are numbered in ascending order, starting with sector 1, with is always the first sector clockwise from due north. Record the sector the large tree being measured is located in. -1 for missing values.
Permitted values/range	1 to 8; -1
Format	Num 1
Rule(s)	Must have value.

Attribute	Tree number (Field)
Variable name	TREE_NUM
Description	Unique number assigned to each tree in the plot. All Large trees are tagged with a tree number so they can be tracked between measurements. Large trees retain their assigned tree number at each measurement for tracking purposes, except where documented in the 'Large tree plot, tracking renumbered trees' table (ltp_tree_num_track). The exception to this is Alberta, where large trees are not tagged or tracked, and therefore may be assigned a new number at each measurement. Use 8000 series for trees with dbh < 9.0 cm (if trees with diameters < 9.0 cm have been selected as site trees). Use 9000 series for trees outside the plot with dbh ≥ 9.0 cm (if surrogate site trees are being selected from outside the plot in an effort to avoid damaging trees inside the plot when collecting core samples).
Permitted values/range	1 to 9,999
Format	Num 4
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM and TREE_NUM must be unique. If a tree number was present in table *LARGE TREE LIST* of previous measurement the same tree number must be present in table *LARGE TREE LIST* or table *LARGE TREE PLOT, REMOVED TREES* of current measurement.

Attribute	Original plot area (Field)
Variable name	ORIG_PLOT_AREA
Description	A change management field for plots being converted from split plots to full plots. This field is used to identify the trees that occur within the area of the plot measured during the previous measurement cycle. Data collected from these trees will be used to derive change from the previous measurement. At the next measurement cycle, data from the full plot can be used for change estimation. **Y**: Tree occurs within the area of the plot measured during last measurement cycle **N**: Tree occurs outside of the area of the plot measured during the last measurement cycle. **X**: Does not apply. Used only for trees numbered in the 8000 or 9000 range (small diameter or out of plot surrogate site trees). **U:** Unknown NOTE: If plot was measured in full at the last measurement cycle all trees should be given a value of Y for ORIG_PLOT_AREA.
Permitted values/range	Y, N, X, U
Format	Char 1

Rule(s)	Must have value. If TREE_NUM > 7999 the ORIG_PLOT_AREA = 'X'

Attribute	Tree genus (Field)
Variable name	LGTREE_GENUS
Description	Large tree (DBH ≥ 9.0 cm) genus code. Use the first four letters of the scientific genus name. If unknown conifer use code **GENC**, if unknown hardwood use code **GENH**. Enter LGTREE_GENUS = 'UNKN' and LGTREE_SPECIES = 'SPP' for unknown.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4
Rule(s)	Must have value Codes must conform to standard outlined by *NFI Tree Species List* (Appendix A). Tree genus in current measurement must be the same as tree genus in previous measurement for the same tree number unless tree genus was coded as GENC or GENH in previous measurement.

Attribute	Tree species (Field)
Variable name	LGTREE_SPECIES
Description	Large tree species code. Use the first three letters of the scientific species name. If unknown, use code **SPP**.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3
Rule(s)	Must have value Tree species in current measurement must be the same as tree species in previous measurement for the same tree number unless tree species was coded as SPP in previous measurement.

Attribute	Tree variety (Field)
Variable name	LGTREE_VARIETY
Description	Use the first three letters of the scientific variety name.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A) for valid combinations of genus/species/variety codes.
Format	Char 3
Rule(s)	May be blank if LGTREE_VARIETY not present. Tree variety in current measurement must be the same as tree variety in previous measurement for the same tree number unless tree variety was blank in previous measurement.

Attribute	Tree status (Field)
Variable name	LGTREE_STATUS
Description	An indicator of tree status. Note that dead fallen trees are NOT tallied in this section. They are counted as woody debris. Classify if the tree is live or dead and whether it is self-supporting (standing) or not self-supporting (fallen) at the time of measurement.
Permitted values/range	**LS**: Live standing Live trees have enough foliage to keep them alive (live cambium is present), are intact and rooted into the ground. Lack of foliage for some species, of course, is no indication of death during some seasons. Standing trees are self-supporting (that is, the tree would remain standing if all supporting materials were removed). **LF**: Live fallen See previous definition of "live". Fallen live trees are not self-supporting and would not remain standing if all supporting materials were removed. **DS**: Dead standing Dead trees are obviously (physiologically) dead. They are still self-supporting (rooted into the ground) and would remain standing if all supporting materials were removed, e.g. snags. **M**: Missing data
Format	Char 2
Rule(s)	Must have value If LGTREE_STATUS = 'DS' in previous measurement then same tree number must have LGTREE_STATUS ≠ 'LS' or 'LF' in current measurement.

Attribute	Diameter at breast height (Field)
Variable name	DBH

Description	The diameter at breast height of each large tree within the Large Tree Plot. Breast height is 1.3 m above high side ground level and measured perpendicular to the tree bole. Refer to the NFI ground plot protocol for detailed definitions and procedures. DBH is recorded to the nearest 0.1 **cm**. Enter -1 for missing data.
Permitted values/range	0.1 to 999.9, -1
Format	Dec 4.1
Rule(s)	Must have value Warning will be raised for DBH > 600.0 cm. If TREE_NUM < 8000 or ≥ 9000 then DBH ≥ 9.0 or -1 If TREE_NUM ≥ 8000 and < 9000 then DBH ≥ 0.1 and < 9.0 or -1 If LGTREE_STATUS = 'LS' or 'LF' in current measurement then same tree number must have DBH ≥ previous measurement.

Attribute	Measure or estimated DBH (Field)
Variable name	MEAS_EST_DBH
Description	An indicator of whether the DBH was actually measured or estimated. DBH will be estimated where physical circumstances do not permit an actual measurement.
Permitted values/range	**M**: DBH was measured. **E**: DBH was estimated.
Format	Char 1
Rule(s)	Must have value

Attribute	Tree height (Field)
Variable name	HEIGHT
Description	The height of each large tree within the Large Tree Plot. Height is measured from the ground level on the high side along the stem to the top of the stem. Refer to the NFI ground plot protocol for detailed definitions and procedures. Tree height is reported to the nearest 0.1 **m**. Enter -1 for missing data.
Permitted values/range	1.3 to 99.9, -1
Format	Dec 3.1
Rule(s)	Must have value If LGTREE_STATUS = 'DS' in previous measurement then same tree number must have HEIGHT ≤ previous measurement. If STEM_COND = 'I' and LGTREE_STATUS = 'LS' or 'LF' in current measurement then same tree number must have HEIGHT ≥ previous measurement.

Attribute	Measured or estimated height (Field)
Variable name	MEAS_EST_HEIGHT
Description	An indicator of whether tree height was measured, estimated, or calculated.
Permitted values/range	**M**: tree height was an actual field measurement **C**: tree height was calculated (e.g. using height diameter curves) **E**: tree height was estimated by field crew **S**: not specified Note that prior to August 2007, a code of 'E' was applied to estimated or calculated heights.
Format	Char 1
Rule(s)	Must have value

Attribute	Crown class (Field)
Variable name	CROWN_CLASS
Description	Crown class is a ranking by crown position of a tree in relation to other trees in the immediate area surrounding the tree being measured. Crown class is assigned to all standing live trees. Dead trees and fallen live trees will not have a crown class assigned. Refer to *NFI Ground Plot Guidelines* for detailed definitions and procedures.
Permitted values/range	**D**: Dominant **C**: Co-dominant **I**: Intermediate **S**: Suppressed **V**: Veteran **N**: Not applicable (e.g. broken top resulting in missing crown, dead standing trees, or live fallen trees). **M**: Missing
Format	Char 1

Rule(s)	Must have value. A warning will be generaged if LGTREE_STATUS = 'LS' and CROWN_CLASS = 'N' and STEM_COND ≠ 'B'). If LGTREE_STATUS = 'LF' or 'DS' then CROWN_CLASS = 'N'. If LGTREE_STATUS = 'LF' or 'DS' in previous measurement then same tree number must have CROWN_CLASS = 'N' in current measurement.

Attribute	Height to base of live crown (Field)
Variable name	CROWN_BASE
Description	The distance along the bole from the high side ground level to the base of the live crown. The primary objective is to estimate the "effective" extent of live crown for growth projections. Recorded to the nearest 0.1 **m**. -1: Missing. -9: Non-applicable (e.g. LGTREE_STATUS = 'DS' or 'LF').
Permitted values/range	0.0 to 99.9, -1, -9
Format	Dec 3.1
Rule(s)	Must have value. HEIGHT ≥ CROWN_BASE IF LGTREE_STATUS = 'DS' or 'LF' THEN CROWN_BASE = -9. If CROWN_BASE = -9 in previous measurement then same tree number must have CROWN_BASE = -9 in current measurement.

Attribute	Height to top of live crown (Field)
Variable name	CROWN_TOP
Description	The distance along the bole from the high side ground level to the top of the live crown. The primary objective is to estimate the "effective" extent of live crown for growth projections. Recorded to the nearest 0.1 **m**. Unless there is dieback CROWN_TOP will generally = HEIGHT. -1: Missing. -9: Non-applicable (e.g. LGTREE_STATUS = 'DS' or 'LF').
Permitted values/range	0.0 to 99.9, -1, -9
Format	Dec 3.1
Rule(s)	Must have value If LGTREE_STATUS = 'DS' or 'LF' THEN CROWN_TOP = -9. If CROWN_TOP = -9 in previous measurement then same tree number must have CROWN_TOP = -9 in current measurement. If CROWN_TOP ≠ '-1' or '-9' then CROWN_TOP must be ≥ CROWN_BASE

Attribute	Stem condition (Field)
Variable name	STEM_COND
Description	An indicator of whether the stem of the tree is broken or intact.
Permitted values/range	**B:** Broken **I:** Intact **M:** Missing
Format	Char 1
Rule(s)	Must have value.

Attribute	Crown condition (Field)
Variable name	CROWN_COND
Description	A measure of the condition of the crown in relation to a normal live crown (lower crown loss due to self-pruning is not included). Enter -1 for missing data.
Permitted values/range	**1:** All foliage, twigs, and branches present. **2:** Some or all foliage lost, possibly some twigs lost, all branches usually present. **3:** No foliage, up to 50% of twigs lost, most branches present. **4:** No foliage or twigs, up to 50% of branches lost. **5:** No foliage or twigs. Some sound and rotting branch stubs may be present. **6:** No foliage, twigs, branches, or branch stubs. **-1:** Missing data
Format	Num 1
Rule(s)	Must have value

Attribute	Bark retention (Field)

Variable name	BARK_RET
Description	An indicator of the proportion of bark retained on the tree. Enter -1 for missing data.
Permitted values/range	**1:** All bark present. **2:** Bark lost on damaged areas only (< 5% lost). **3:** Most bark present, bare patches, some bark may be loose (5%–25% lost). **4:** Bare sections, firm and loose bark remains (26%–50% lost). **5:** Most bark gone, firm, and loose bark remains (51%–75% lost). **6:** Trace of bark remains (76%–99% lost). **7:** No bark (100% lost). **-1:** Missing
Format	Num 1
Rule(s)	Must have value. BARK_RET code in current measurement must be ≥ BARK_RET code in previous measurement for same tree number.

Attribute	Wood condition (Field)
Variable name	WOOD_COND
Description	An indicator of the soundness of the stem. Enter -1 for missing data.
Permitted values/range	**1:** No decay. **2:** Probable limited internal decay and/or deformities. **3:** Limited decay, wood essentially hard. **4:** Wood mostly hard but decay spreading, soft wood present. **5:** Balance of hard and soft wood, spongy sections. **6:** More soft and spongy wood than hard wood. **7:** No more hard wood, all soft or spongy, powdery sections. **8:** Hollow shell, outer wood mostly hard or firm. **-1:** Missing data
Format	Num 1
Rule(s)	Must have value. WOOD_COND code in current measurement must be ≥ WOOD_COND code in previous measurement for same tree number.

Attribute	Azimuth to tree (Field)
Variable name	AZIMUTH
Description	A measurement of the azimuth from the plot centre to the face of the tree. Reported to the nearest **degree**. Enter –1 for AZIMUTH and DISTANCE if trees were not stem mapped.
Permitted values/range	0 to 360, -1
Format	Num 3
Rule(s)	Must have value.

Attribute	Distance to tree face (Field)
Variable name	DISTANCE
Description	A measurement of the horizontal distance from the plot centre to the face of the tree. Reported to the nearest 0.01 **m**. Enter –1 for AZIMUTH and DISTANCE if trees were not stem mapped.
Permitted values/range	0.01 to 99.99, -1
Format	Dec 4.2
Rule(s)	IF PLOT_TYPE = 'LTC' and TREE_NUM < 8000 then DISTANCE < large tree plot radius. IF PLOT_TYPE = 'LTS' and TREE_NUM < 8000 then DISTANCE < ½*(large tree plot diagonal). Must have value.

Attribute	Live crown length (Compiled)
Variable name	CROWN_LENGTH
Description	A measurement of live crown length. The vertical distance from the top of the live crown to the base of the live crown. Crown length is recorded to the nearest 0.1 **m**. Missing data will be reported as -1. 'DS' and 'LF' trees will be reported as -9.
Permitted values/range	0.1 to 99.9; -1, -9
Format	Dec 3.1
Rule(s)	Must have value CROWN_LENGTH = CROWN_TOP – CROWN_BASE

Attribute	Total tree volume (Compiled)
Variable name	VOL_TOTAL
Description	Total volume by tree, reported to the nearest 0.0001 **m³**, for all trees ≥ 1.3 m in height, having roots attached to the bole or an identifiable root collar; and greater than or equal to 9.0 cm DBH. Includes volume inside bark of the main stem, including stump and top of all standing live and dead trees in the large tree plot.
Permitted values/range	0.0001 to 999.9999
Format	Dec 7.4

Attribute	Volume to projected tree height (Compiled)
Variable name	VOL_PRJ
Description	Volume of the tree calculated to the projected height of the tree before its break (**m³**). For non-broken trees VOL_PRJ = VOL_TOTAL.
Permitted values/range	0.0001 to 999.9999
Format	Dec 7.4

Attribute	Projected tree height (Compiled)
Variable name	HEIGHT_PRJ
Description	The projected height to the top of the large tree before the break occurred. Calculated for broken trees and for trees with missing height values. Projected height is reported to the nearest 0.1 **m**.
Permitted values/range	1.3 to 99.9
Format	Dec 3.1

Attribute	Total tree biomass (Compiled)
Variable name	BIOMASS_TOTAL
Description	Total above ground biomass by tree, for all trees ≥ 1.3 m in height, having roots attached to the bole or an identifiable root collar; and greater than or equal to 9.0 cm at DBH. Includes all standing live and dead trees. Reported to the nearest 0.01 **kg** of oven-dry material.
Permitted values/range	0.01 to 99999.99
Format	Dec 7.2

Attribute	Total stem wood biomass of live standing trees (Compiled)
Variable name	BIOMASS_STEMWOOD
Description	The total stem wood biomass of live standing trees (**kg** of oven-dry material)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total stem bark biomass of live standing trees (Compiled)
Variable name	BIOMASS_STEMBARK
Description	The total stem bark biomass of live standing trees (**kg** of oven-dry material)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total branch biomass of live standing trees (Compiled)
Variable name	BIOMASS_BRANCHES
Description	The total branch biomass of live standing trees (**kg** of oven-dry material)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total foliage biomass of live standing trees in (Compiled)
Variable name	BIOMASS_FOLIAGE
Description	The total foliage biomass of live standing trees in (**kg** of oven-dry material)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Biomass equation ID for computing stem wood biomass (Compiled)
Variable name	BMEQ_WOOD
Description	The biomass equation ID for computing stem wood biomass

Permitted values/range	0 to 99999
Format	Num 5

Attribute	Biomass equation ID for computing stem bark biomass (Compiled)
Variable name	BMEQ_BARK
Description	The biomass equation ID for computing stem bark biomass
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Biomass equation ID form computing branch biomass (Compiled)
Variable name	BMEQ_BRANCHES
Description	The biomass equation ID form computing branch biomass
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Biomass equation ID for computing foliage biomass (Compiled)
Variable name	BMEQ_FOLIAGE
Description	The biomass equation ID for computing foliage biomass
Permitted values/range	0 to 99999
Format	Num 5

5c. LARGE TREE PLOT, DAMAGE AGENTS (ltp_tree_damage)

Indexed attributes: NFI_PLOT, MEAS_NUM, TREE_NUM, DAMAGE_AGENT, DAMAGE_LOCATION.

**Note: This table should include at least one record for every tree in each large tree plot.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM previous measurement.

Attribute	Tree number (Field)
Variable name	TREE_NUM
Description	A unique number assigned to each recorded in the small tree plot. Note that the NFI does not tag or track individual small trees between successive measurements. The tree number assigned to a small tree in one measurement will likely not be the same number assigned in successive measurements. The NFI only tags and tracks trees in the large tree plot that meet the definition of a large tree.
Permitted values/range	1 to 9,999
Format	Num 4
Rule(s)	Must have value

Attribute	Damage agent(s) (Field)		
Variable name	DAMAGE_AGENT		
Description	A description of the damage agents affecting each tree in the large tree plot.		
Permitted values/range	**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 **D**: Diseases **DB**: Broom rusts **DD**: Stem rot **DF**: Foliage disease **DL**: Disease-caused dieback of leader **DM**: Dwarf mistletoe **DR**: Root disease **DS**: Stem disease	**I**: Insects **IA**: Aphids **IB**: Bark beetles **ID**: Defoliators **IS**: Shoot insects **IW**: Root and terminal weevils **N**: Non-biological injuries **NB**: Fire **ND**: Drought **NF**: Flooding **NG**: Frost **NH**: Hail **NK**: Fume kill **NL**: Lightening **NN**: Road salt **NR**: Redbelt **NS**: Slide **NW**: Windthrow **NX**: Scarring and rubbing **NY**: Snow or ice **NZ**: Sunscald	**T**: Treatment injuries **TC**: Chemical **TH**: Harvested **TL**: Logging **TP**: Planting **TM**: Other mechanical damage (non-logging) **TR**: Pruning **TT**: Thinning or spacing **M**: mite damage **VH**: herbaceous competition **VP**: vegetation press **VS**: shrub competition **VT**: tree competition **U**: Damage evident but causal agent unknown **O**: no detectable abiotic or biotic damage **S**: not reported

Format	Char 2
Rule(s)	Must have value.

Attribute	Damage location code (Field)
Variable name	DAMAGE_LOCATION
Description	Location of damage on individual tree.
Permitted values/range	**0**: Below ground **1**: Lower third only **2**: Middle third only **3**: Upper third only **4**: Lower and middle thirds **5**: Middle and upper thirds **6**: Lower and upper thirds **7**: Entire tree **-1**: Non-applicable **-9**: Missing data
Format	Num 2
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM, TREE_NUM, DAMAGE_AGENT and DAMAGE_LOCATION must be unique.

Attribute	Severity Percent (Field)
Variable name	SEVERITY_PCT
Description	This information is not being collected after August 1, 2007, but will be retained in the database as legacy data. The severity of the effect on the tree. Assessed subjectively using a **percent** value or left blank (severity is difficult to assess without training). Enter –1 for non-applicable. Enter -9 for missing data. A value of -7 (no longer collected) will be automatically assigned to this field for plots measured after August 1, 2007.
Permitted values	1 to 100, -1, -9, -7
Format	Num 3
Rule(s)	Must have value.

Attribute	Severity (Field)
Variable name	SEVERITY
Description	The severity of the effect of the damage agent on the tree. Assessed subjectively. Enter N for non-applicable. Enter S for missing data.
Permitted values	**L:** Low - Damage agent appears to have minimal impact on tree growth or vitality. **M:** Moderate - Damage agent has some obvious impact on a portion of the tree but its impact is limited. **H:** High - Damage agent has obvious impact on the tree with evidence of decay or suppression of tree growth evident. **C:** Critical - Damage agent has critically impacted and killed the tree [dead trees] or the damage agent is severely impacting the tree and is expected to kill the tree in the near future. **U:** Unknown - Damage agent is evident on a “dead” tree but no evidence that this specific damage agent killed the tree. **N:** Not Applicable **S:** Missing
Format	Char 1
Rule(s)	Must have value. If DAMAGE_AGENT = 'O', then SEVERITY must = 'N'.

5d. LARGE TREE PLOT, REMOVED TREES (ltp_tree_removed)

Indexed attributes: NFI_PLOT, MEAS_NUM, TREE_NUM.

**Note: All trees removed from the large tree list since the last measurement cycle should be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Tree number (Field)
Variable name	TREE_NUM

Description	Tree number.
Permitted values/range	1 to 9,999
Format	Num 4
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM and TREE_NUM must be unique. A tree number must not occur in table *LARGE TREE LIST* or table *LARGE TREE PLOT, REMOVED TREES* of current measurement if the same tree number existed in table *LARGE TREE PLOT, REMOVED TREES* of previous measurement.

Attribute	Reason for removal (Field)
Variable name	REASON
Description	Trees measured in the previous measurement cycle may be removed from the large tree list at the time of remeasurement if they no longer meet the definition of a large tree. This field indicates the reason the tree no longer meets the definition of a large tree.
Permitted values/range	**C:** tree cut below the 1.3 m mark, **B:** tree broken below the 1.3 m mark **D:** tree no longer meets the minimum diameter requirement (e.g. bark has fallen off a dead standing tree) **F:** tree is now dead fallen (i.e. woody debris) **U:** tree cannot be found on re-measurement. **O:** other **N:** not specified
Format	Char 1
Rule(s)	Must have value

5e. LARGE TREE PLOT, SITE TREE AND AGE INFORMATION (ltp_tree_age)

Indexed attributes: NFI_PLOT, MEAS_NUM, TREE_NUM.

**Note: Only trees sampled for age need to be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9

Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Quadrant (Field)
Variable name	QUADRANT
Description	Indicates the quadrant where the site tree is located.
Permitted values/range	**NE:** North East quadrant **SE:** South East quadrant **SW:** South West quadrant **NW:** North West quadrant **OP:** Out of plot selection **NR**: Not reported
Format	Char 2
Rule(s)	Must have value

Attribute	Tree number (Field)
Variable name	TREE_NUM
Description	Unique tree number.
Permitted values/range	1 to 9,999
Format	Num 4
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM and TREE_NUM must be unique.

Attribute	Site tree type (Field)
Variable name	SITE_TYPE
Description	Record the criteria used for selecting the site tree.
Permitted values/range	**T:** Top height tree **TL:** Top height, leading species tree **TS:** Top height, second leading species tree **TO:** Top height, other major species tree **TR:** Top height, residual tree **L:** Leading species tree **S:** Second leading species tree **O:** Other major species **R:** Residual trees **N:** Non-standard tree selection **U:** Unreported
Format	Char 2
Rule(s)	Must have value

Attribute	Outside bark diameter at bored height (Field)
Variable name	BORE_DOB
Description	Diameter outside bark at location of boring. Reported to the nearest 0.1 **cm**. Enter -1 for missing value.
Permitted values/range	0.1 to 999.9 or -1
Format	Dec 4.1
Rule(s)	Must have value

Attribute	Bored height (Field)
Variable name	BORE_HT
Description	Height (above high side ground level) where boring was made. Reported to the nearest 0.1 **m**.
Permitted values/range	0.0 to 9.9, -1
Format	Dec 2.1
Rule(s)	Must have value

Attribute	Site height suitability (Field)
Variable name	SUIT_HT
Description	Indicates whether the height of the tree is suitable for use in compiling site height and site index for the plot. **Y**: yes **N**: no **M:** missing data
Permitted values/range	Y, N, M
Format	Char 1
Rule(s)	Must have value.

Attribute	Site age suitability (Field)
Variable name	SUIT_AGE
Description	Indicates whether the age of the tree is suitable for use in compiling site age and site index for the plot. **Y**: yes **N**: no **M**: missing data
Permitted values/range	Y, N, M
Format	Char 1
Rule(s)	Must have value.

Attribute	Field age (Field)
Variable name	FIELD_AGE
Description	Field determined age in **years**. Useful as a backup age count in case core samples are lost in transit to the lab. Enter '-8' to indicate that tree core was not collected during this measurement cycle, but was collected in a previous measurement cycle (tree age can be calculated). Enter –1 if field age data is missing.
Permitted values/range	1 to 9999, -8, -1
Format	Num 4
Rule(s)	Must have value

Attribute	Prorate Code (Field)
Variable name	PRO_CODE
Description	Indicates the reason a full boring was not possible
Permitted values/range	**ROT:** tree core is rotten **CRC:** cannot reach centre with increment borer **OTH:** other **NA:** not applicable **NR:** not reported
Format	Char 3
Rule(s)	Must have value.

Attribute	Core length (Lab)
Variable name	CORE_LENGTH

Description	The dry length of the increment core upon which the ring count was made. Reported in **cm**. Enter –1 for missing data.
Permitted values/range	0 to 999.9999, -1
Format	Dec 7.4
Rule(s)	Must have value

Attribute	Distance to pith (Lab)
Variable name	DTP
Description	The dry distance remaining between the measured core length and the pith of the tree. Reported in **cm**. Enter –1 for missing data
Permitted values/range	0 to 999.9999, -1
Format	Dec 7.4
Rule(s)	Must have value

Attribute	Lab count of annual increment rings (Lab)
Variable name	CORE_RINGS
Description	Measured number of annual increment rings in the core sample.
Permitted values/range	1 to 9999, -1
Format	Num 4
Rule(s)	Must have value

Attribute	Lab method (Lab)
Variable name	LAB_METHOD
Description	Method used by lab to measure/estimate tree age at bored height: **A:** Used when the core included all the rings from the bark to the pith. Rings were quantified using either CooRecorder or the Velmex (trees with exceptionally fine rings). **B:** Used when the core extended from the bark edge to within 2 to 3 cm of the pith and the curvature of the rings was evident in the innermost rings of the core. Age was estimated in two steps. Firstly, the rings were quantified using CooRecorder or Velmex. The DTP was then calculated using a "concentric ring tool". The number of missing rings was then estimated by dividing the DTP by the average width of the last three complete rings in the core. **C:** Used when the collected core didn't include the pith and the ring curvature was not evident. Same method as B, except that DTP was estimated by proportion using a ratio of fresh diameter to measured core length for trees of the same species in the same area. **U:** Unreported
Format	Char 1
Rule(s)	Must have value

Attribute	Lab age (Lab)
Variable name	LAB_AGE
Description	Age of tree at cored height as determined by the lab. Reported in **years**. Enter –1 if missing or not applicable (tree not sampled for age)
Permitted values/range	1 to 9999, -1
Format	Num 4
Rule(s)	Must have value

Attribute	Confidence rating (Lab)
Variable name	CONFIDENCE

Description	A rating of the confidence of the lab age. **1:** Estimated error is less than 1 year **2:** Estimated error is less than 2 years **3:** Estimated error is less than 3 years **4:** Estimated error is less than 5 years **5:** Estimated error is 10 years or more, error in age estimate may be up to 25% of the age. **-1:** Not Reported
Permitted values/range	1 to 5, -1
Format	Num 1
Rule(s)	Must have value

Attribute	Mount reference (Lab)
Variable name	MOUNT_REF
Description	Lab reference to the physical core sample. Enter 'M' if missing.
Format	Char 50
Rule(s)	Must have value

Attribute	Age correction (Compiled)
Variable name	AGE_CORR_YEARS
Description	Estimate of the number of full years of tree growth below the boring height. Reported in **years**.
Permitted values/range	0 to 999, -1
Format	Num 3

Attribute	Total age (Compiled)
Variable name	AGE_TOTAL
Description	An estimate of the total age of the tree. Reported in **years**.
Permitted values/range	1 to 9999, -1
Format	Num 4

5f. LARGE TREE PLOT, ANNUAL GROWTH INFORMATION (ltp_tree_growth)

Indexed attributes: NFI_PLOT, MEAS_NUM, TREE_NUM, YEAR.

**Note: Only trees assessed for annual growth need to be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)

Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Tree number (Field)
Variable name	TREE_NUM
Description	Tree number. Trees must be numbered in ascending order.
Permitted values/range	1 to 9,999
Format	Num 4
Rule(s)	Must have value

Attribute	Year (Lab)
Variable name	YEAR
Description	The year the annual growth relates to.
Permitted values/range	1000 to current year
Format	Num 4 [YYYY]
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM, TREE_NUM and YEAR must be unique. YEAR must be < year of MEAS_DATE

Attribute	Growth (Lab)
Variable name	GROWTH
Description	Annual growth in **cm**, as determined in the lab.
Permitted values/range	0 to 99.9999
Format	Dec 6.4
Rule(s)	Must have value

5g. LARGE TREE PLOT, TRACKING RENUMBERED TREES (ltp_tree_num_track)

Indexed attributes: **NFI_PLOT, MEAS_NUM, PREV_TREE_NUM, NEW_TREE_NUM**

**Note: Only trees that have been assigned a new tree number during the current measurement should be recorded in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	New tree number (Field)

Variable name	TREE_NUM
Description	The tree number assigned to the tree in the current measurement.
Permitted values/range	1 to 9,999
Format	Num 4
Rule(s)	Must have value

Attribute	Previous tree number (Field)
Variable name	TREE_NUM_PREV
Description	The tree number assigned to the tree at measurement preceding this one.
Permitted values/range	1 to 9,999, -1
Format	Num 4
Rule(s)	Must have value The tree number assigned to the tree at the previous measurement.

6. SMALL TREE PLOT, HEADER AND SUMMARY INFORMATION (stp_header)

Indexed attributes: **NFI_PLOT, MEAS_NUM**.

**Note: This table should be completed for all plots where a small tree plot was assessed (even if there were no small trees present to measure).

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)

Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Combination of NFI_PLOT and MEAS_NUM must be unique. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Plot type (Field)
Variable name	PLOT_TYPE
Description	Description of the ground plot design used to collect sample measurements.
Permitted values/range	**STC** = circular small tree plot **STS** = square small tree plot
Format	Char 3
Rule(s)	Must have value PLOT_TYPE in current measurement must be the same as PLOT_TYPE in previous measurement.

Attribute	Nominal plot size (Field)
Variable name	NOM_PLOT_SIZE
Description	The nominal size (area) of the sample plot. Reported in **ha**.
Permitted values/range	0.0020 to 0.04000, -1
Format	Dec 5.4
Rule(s)	Must have value

Attribute	Measured plot size (Field)
Variable name	MEAS_PLOT_SIZE
Description	The measured size (area) of the sample plot. Reported in **ha**. Excludes portions of the plot that were not measured due to inaccessibility.
Permitted values/range	0.0005 to 0.0400
Format	Dec 5.4
Rule(s)	Must have value

Attribute	Plot split (Field)
Variable name	PLOT_SPLIT
Description	This information is not being collected after August 1, 2007, but will be retained in the database as legacy data. An indication as to whether or not this plot was split in the initial measurement. **F**: full plot was measured **H**: half plot was measured **Q**: quarter plot was measured **N:** no longer reported. This value will automatically be assigned to this field for plots measured after August 1, 2007.
Permitted values/range	F, H, Q, N
Format	Char 1

Attribute	Total unique small tree species (Compiled)
Variable name	SPECIES_SMTNUM
Description	The total number of unique live standing small tree species in an area (species richness).
Permitted values/range	0 to 999
Format	Num 3

Attribute	Shannon index for small trees (Compiled)
Variable name	BINDEX_STSHANNON
Description	The Shannon diversity index, which is a measure of the species richness and evenness for live small trees.
Permitted values/range	0 to 999.99
Format	Dec 5.2

Attribute	Evenness index for small trees (Compiled)
Variable name	BINDEX_STEVEN
Description	The Pielou evenness index. Reported as how close the numbers of individual live small trees of each species are.
Permitted values/range	0 to 999.99
Format	Dec 5.2

Attribute	Margalef (species richness) index for small trees (Compiled)
Variable name	BINDEX_STMARGALEF
Description	The Margalef (species richness) index, which measures the total number of live small tree species in an area.
Permitted values/range	0 to 999.99
Format	Dec 5.2

Attribute	Total stem wood biomass of live standing small trees (Compiled)
Variable name	PLOTBIO_SMT_STEMWOOD_LIVE
Description	The total stem wood biomass of live standing small trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total stem bark biomass of live standing small trees (Compiled)
Variable name	PLOTBIO_SMT_STEMBARK_LIVE
Description	The total stem bark biomass of live standing small trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total branch biomass of live standing small trees (Compiled)
Variable name	PLOTBIO_SMT_BRANCHES_LIVE
Description	The total branch biomass of live standing small trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total foliage biomass of live standing small trees in (Compiled)
Variable name	PLOTBIO_SMT_FOLIAGE_LIVE
Description	The total foliage biomass of live standing small trees in (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total stem wood biomass of dead standing small trees (Compiled)
Variable name	PLOTBIO_SMT_STEMWOOD_DEAD
Description	The total stem wood biomass of dead standing small trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total stem bark biomass of dead standing small trees (Compiled)
Variable name	PLOTBIO_SMT_STEMBARK_DEAD
Description	The total stem bark biomass of dead standing small trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total branch biomass of dead standing small trees (Compiled)

Variable name	PLOTBIO_SMT_BRANCHES_DEAD
Description	Total branch biomass of dead standing small trees (**Mg ha^{-1}**)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

6a. SMALL TREE PLOT, SPECIES LIST (stp_tree)

Indexed attributes: **NFI_PLOT, MEAS_NUM, SMTREE_NUM**.

**Note: Only plots that have small trees to tally need to be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3

Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Small tree number (Field)
Variable name	SMTREE_NUM
Description	Tree number. Trees must be numbered in ascending order.
Permitted values/range	1 to 9999
Format	Num 4
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM and SMTREE_NUM must be unique.

Attribute	Original plot area (Field)
Variable name	ORIG_PLOT_AREA
Description	A change management field for plots being converted from split plots to full plots. This field is used to identify the trees that occur within the area of the plot measured during the previous measurement cycle. Data collected from these trees will be used to derive change from the previous measurement. At the next measurement cycle, data from the full plot can be used for change estimation. **Y**: Tree occurs within the area of the plot measured during last measurement cycle **N**: Tree occurs outside of the area of the plot measured during the last measurement cycle. **U:** Unknown NOTE: If plot was measured in full at the last measurement cycle all trees should be given a value of Y for ORIG_PLOT_AREA.
Permitted values/range	Y, N, U
Format	Char 1
Rule(s)	Must have value.

Attribute	Small tree genus (Field)
Variable name	SMTREE_GENUS
Description	A list of all small tree species in the plot with a measurable DBH < 9.0 cm. Use the first 4 letters of the scientific genus name. If unknown conifer use **GENC**, if unknown hardwood use **GENH**. Enter SMTREE_GENUS = 'UNKN' and SMTREE_SPECIES = 'SPP' for unknown.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4
Rule(s)	Must have value Combination of SMTREE_GENUS, SMTREE_SPECIES and SMTREE_VARIETY must agree with *NFI Tree Species List* codes.

Attribute	Small tree species (Field)
Variable name	SMTREE_SPECIES
Description	Use the first 3 letters of the scientific species name. If unknown, use code **SPP**.
Permitted values/range	Refer to the NFI Tree Species List.
Format	Char 3
Rule(s)	Must have value

Attribute	Small tree variety (Field)
Variable name	SMTREE_VARIETY
Description	Use the first 3 letters of the scientific variety name.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A) for valid combinations of genus/species/variety codes.
Format	Char 3
Rule(s)	May be blank if variety not present.

Attribute	Small tree status (Field)
Variable name	SMTREE_STATUS
Description	Describes the condition of the small tree.

Permitted values/range	**LS**: Live standing Live trees have enough foliage to keep them alive (live cambium is present), are intact and rooted into the ground. Lack of foliage for some species, of course, is no indication of death during some seasons. Standing trees are self-supporting (that is, the tree would remain standing if all supporting materials were removed). **LF**: Live fallen See previous definition of "live". Fallen live trees are not self-supporting and would not remain standing if all supporting materials were removed. **DS**: Dead standing Dead trees are obviously (physiologically) dead. They are still self-supporting (rooted into the ground) and would remain standing if all supporting materials were removed, e.g. snags. **M**: Missing data
Format	Char 2
Rule(s)	Must have value

Attribute	Small tree DBH (Field)
Variable name	SMTREE_DBH
Description	DBH of small trees with a DBH < 9.0 cm in the small tree plot. Expressed to the nearest 0.1 **cm**. Enter -1 for missing data.
Permitted values/range	0.1 cm to 8.9 cm, -1
Format	Dec 2.1
Rule(s)	Must have value

Attribute	Small tree height (Field)
Variable name	SMTREE_HT
Description	Height of small trees with a DBH < 9.0 cm in the small tree plot. Expressed to the nearest 0.1 **m**. If estimated, estimate to the nearest 0.5 meter. Enter -1 for missing data.
Permitted values/range	1.3 to 20.0, -1
Format	Dec 3.1
Rule(s)	Must have value Height must be ≥ 1.3 m.

Attribute	Measured or estimated small tree height (Field)
Variable name	SMTREE_MEASEST_HT
Description	Code indicating whether the small tree height was an actual measurement or it was estimated (modelled).
Permitted values/range	**M**: tree height was an actual field measurement **C**: tree height was calculated (e.g. using height diameter curves) **E**: tree height was estimated by field crew **S**: not specified
Format	Char 1
Rule(s)	Must have value

Attribute	Stem condition (Field)
Variable name	STEM_COND
Description	An indicator of whether the stem of the tree is broken or intact.
Permitted values/range	**B:** Broken **I:** Intact **M:** Missing
Format	Char 1
Rule(s)	Must have value.

Attribute	Small tree volume (Compiled)
Variable name	SMTREE_VOL_TOTAL
Description	Total volume of each small tree in the small tree plot. Includes volume inside bark of the main stem, including stump and top of all standing live and dead small trees. Small tree volume must be calculated for all trees < 9.0 cm in DBH. Reported in **m^3**.
Permitted values/range	0.00000001 to 999.99999999
Format	Dec 11.8

Attribute	Projected small tree height (Compiled)
Variable name	SMTREE_HT_PRJ
Description	The projected height to the top of the small tree before the break occurred. Calculated for broken trees ≥ 1.3 meters in height and for trees with missing height values. Projected height is reported to the nearest 0.1 **m**.
Permitted values/range	1.3 to 20.0
Format	Dec 3.1

Attribute	Small tree biomass (Compiled)
Variable name	SMTREE_BIOMASS
Description	Total above ground biomass of small trees (**kg** of oven-dry material).
Permitted values/range	0.0001 to 99999.9999
Format	Dec 9.4

Attribute	Total stem wood biomass of live standing small trees (Compiled)
Variable name	BIOMASS_STEMWOOD
Description	The total stem wood biomass of live standing small trees (**kg** of oven-dry material)
Permitted values/range	0.0000 to 99999.9999
Format	Dec 9.4

Attribute	Total stem bark biomass of live standing small trees (Compiled)
Variable name	BIOMASS_STEMBARK
Description	The total stem bark biomass of live standing small trees (**kg** of oven-dry material)
Permitted values/range	0.0000 to 99999.9999
Format	Dec 9.4

Attribute	Total branch biomass of live standing small trees (Compiled)
Variable name	BIOMASS_BRANCHES
Description	The total branch biomass of live standing small trees (**kg** of oven-dry material)
Permitted values/range	0.0000 to 99999.9999
Format	Dec 9.4

Attribute	Total foliage biomass of live standing small trees in (Compiled)
Variable name	BIOMASS_FOLIAGE
Description	The total foliage biomass of live standing small trees in (**kg** of oven-dry material)
Permitted values/range	0.0000 to 99999.9999
Format	Dec 9.4

Attribute	Biomass equation ID for computing stem wood biomass (Compiled)
Variable name	BMEQ_WOOD
Description	The biomass equation ID for computing stem wood biomass
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Biomass equation ID for computing stem bark biomass (Compiled)
Variable name	BMEQ_BARK
Description	The biomass equation ID for computing stem bark biomass
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Biomass equation ID form computing branch biomass (Compiled)
Variable name	BMEQ_BRANCHES
Description	The biomass equation ID form computing branch biomass
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Biomass equation ID for computing foliage biomass (Compiled)

Variable name	BMEQ_FOLIAGE
Description	The biomass equation ID for computing foliage biomass
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Projected volume (Compiled)
Variable name	SMTREE_VOL_PRJ
Description	Total tree volume to the projected height of a broken top tree (**m^3**)
Permitted values/range	0.00000001 to 999.99999999
Format	Dec 11.8

6b. SMALL TREE PLOT, SPECIES COMPOSITION (stp_tree_species_comp)

Indexed attributes: **NFI_PLOT, MEAS_NUM, SM_TREE_SPECIES_NUM.**

**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.

Attribute	Species ranked abundance number (Compiled)
Variable name	SMTREE_SPECIES_NUM
Description	Identifies the species rank in the plot by percentage of basal area per hectare for live trees. Species number will be ordered consecutively from 1, with 1 being the largest tree species percent value in the plot.
Permitted values/range	1 to 20
Format	Num 2

Attribute	Small tree genus (Compiled)
Variable name	SMTREE_GENUS
Description	A list of all small tree species in the plot with a measurable DBH < 9.0 cm. Use the first 4 letters of the scientific genus name. If unknown conifer use **GENC**, if unknown hardwood use **GENH**. Enter SMTREE_GENUS = '**UNKN**' and SMTREE_SPECIES = 'SPP' for unknown.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4
	Must have value Combination of SMTREE_GENUS, SMTREE_SPECIES and SMTREE_VARIETY must agree with *NFI Tree Species List* codes.

Attribute	Small tree species (Compiled)
Variable name	SMTREE_SPECIES
Description	Use the first 3 letters of the scientific species name. If unknown, use code **SPP**.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3
Rule(s)	Must have value

Attribute	Small tree variety (Compiled)
Variable name	SMTREE_VARIETY
Description	Use the first 3 letters of the scientific variety name.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A) for valid combinations of genus/species/variety codes.
Format	Char 3
Rule(s)	May be blank if variety not present.

Attribute	Percent composition by species (Compiled)
Variable name	SMTREE_PERCENT
Description	The **percent** composition based on proportion of total live tree basal area occupied by that species.
Permitted values/range	0 to 100
Format	Num 3

7. SHRUB PLOT, HEADER AND SUMMARY INFORMATION (shrub_header)

Indexed attributes: **NFI_PLOT, MEAS_NUM**.

**Note: This table should be completed for all plots where shrubs were assessed (even if there were no shrubs present to measure).

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.

Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Combination of NFI_PLOT and MEAS_NUM must be unique. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Plot type (Field)
Variable name	PLOT_TYPE
Description	Description of the ground plot design used to collect sample measurements.
Permitted values/range	**STC** = circular shrub plot **STS** = square shrub plot
Format	Char 3
Rule(s)	Must have value PLOT_TYPE in current measurement must be the same as PLOT_TYPE in previous measurement.

Attribute	Nominal plot size (Field)
Variable name	NOM_PLOT_SIZE
Description	The nominal size (area) of the sample plot. Reported in **ha**.

Permitted values/range	0.0020 to 0.0400, -1
Format	Dec 5.4
Rule(s)	Must have value

Attribute	Measured plot size (Field)
Variable name	MEAS_PLOT_SIZE
Description	The measured size (area) of the sample plot. Reported in **ha**. Excludes portions of the plot that were not measured due to inaccessibility.
Permitted values/range	0.0005 to 0.0400
Format	Dec 5.4
Rule(s)	Must have value

7a. SHRUB PLOT, SPECIES LIST (shrub_list)

Indexed attributes: **NFI_PLOT, MEAS_NUM, RECORD_NUM**

**Note: Only plots that have shrubs ≥ 1.3 meters in height within the measured plot area need to be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)

Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Record number (Field)
Variable name	RECORD_NUM
Description	Unique number assigned to each record.
Permitted values/range	1 to 9999
Format	Num 4
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM and RECORD_NUM must be unique.

Attribute	Shrub genus (Field)
Variable name	SHRUB_GENUS
Description	Record the genus of the stems being tallied using the first 4 letters of the scientific genus name. If unknown, use code **UNKN**.
Permitted values/range	
Format	Char 4
Rule(s)	Must have value

Attribute	Shrub species (Field)
Variable name	SHRUB_SPECIES
Description	Record the species of the stems being tallied using the first 3 letters of the scientific species name. If unknown, use code **SPP**.
Permitted values/range	
Format	Char 3
Rule(s)	Must have value

Attribute	Shrub variety (Field)
Variable name	SHRUB_VARIETY
Description	Record the variety of the stems being tallied using the first 3 letters of the scientific variety name. If unknown, leave blank.
Permitted values/range	
Format	Char 3
Rule(s)	May be blank if variety unknown or not applicable.

Attribute	Shrub status (Field)
Variable name	SHRUB_STATUS
Description	Record the condition of the stems being tallied.
Permitted values/range	**LV**: Live shrubs. **DS**: Dead standing shrubs **-** Dead shrubs that are still self-supporting (rooted into the ground) and would remain standing if all supporting materials were removed, e.g. snags.
Format	Char 2
Rule(s)	Must have value

Attribute	Basal diameter class (Field)
Variable name	BD_CLASS
Description	Record the basal diameter class of the stems being tallied. Basal diameter is measured at the ground line or just above the root collar, whichever is higher. Enter -1 for missing data.

Permitted values/range	**-1:** Missing data **0:** 0.1 cm to 1.0 cm **1:** 1.1 cm to 3.0 cm **2:** 3.1 cm to 5.0 cm **3:** 5.1 cm to 7.5cm **4:** 7.6 cm to 10.0 cm **5:** 10.1 cm to 12.5 cm **6:** 12.6 cm to 15.0 cm **7:** 15.1 cm to 17.5 cm **8:** 17.6 cm to 20.0 cm **9:** 20.1 cm to 22.5 cm **10:** 22.6 cm to 25.0 cm **11**: 25.1 cm to 27.5 cm
Format	Num 2
Rule(s)	Must have value

Attribute	Frequency (Field)
Variable name	FREQUENCY
Description	Record the number of primary stems tallied for each unique combination of genus/species/variety/status/diameter class occurring in the plot.
Permitted values/range	1 to 999
Format	Num 3
Rule(s)	Must have value

Attribute	Shrub biomass (Compiled)
Variable name	BIOMASS_TOTAL
Description	Total above ground biomass (**kg** of oven-dry material).
Permitted values/range	0.01 to 9999.99
Format	Dec 6.2

Attribute	Total woody above ground biomass (Compiled)
Variable name	BIOMASS_WOOD
Description	Total woody above ground biomass (**kg** of oven-dry material)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Total foliage biomass (Compiled)
Variable name	BIOMASS_FOLIAGE
Description	Total foliage biomass (**kg** of oven-dry material)
Permitted values/range	0.00 to 99999.99
Format	Dec 7.2

Attribute	Biomass equation ID for computing total biomass (Compiled)
Variable name	BMEQ_TOTAL
Description	The biomass equation ID for computing total above ground biomass
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Biomass equation ID for computing above ground woody biomass (Compiled)
Variable name	BMEQ_WOOD
Description	The biomass equation ID for computing above ground woody biomass
Permitted values/range	0 to 99999
Format	Num 5

Attribute	Biomass equation ID for computing foliage biomass (Compiled)
Variable name	BMEQ_FOLIAGE
Description	The biomass equation ID for computing foliage biomass
Permitted values/range	0 to 99999
Format	Num 5

8. STUMP PLOT, HEADER AND SUMMARY INFORMATION (stump_header)

Indexed attributes: **NFI_PLOT, MEAS_NUM**.

**Note: This table should be completed for all plots where a stump plot was assessed (even if there were no stumps present to measure).

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Combination of NFI_PLOT and MEAS_NUM must be unique. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Plot type (Field)
Variable name	PLOT_TYPE
Description	Description of the ground plot design used to collect sample measurements.
Permitted values/range	**STC** = circular stump tree plot **STS** = square stump tree plot
Format	Char 3
Rule(s)	Must have value. PLOT_TYPE in current measurement must be same as PLOT_TYPE in previous measurement.

Attribute	Nominal plot size (Field)
Variable name	NOM_PLOT_SIZE
Description	The nominal size (area) of the sample plot. Reported in **ha**.
Permitted values/range	0.0020 to 0.0400, -1
Format	Dec 5.4
Rule(s)	Must have value

Attribute	Measured plot size (Field)
Variable name	MEAS_PLOT_SIZE
Description	The measured size (area) of the sample plot. Reported in **ha**. Excludes portions of the plot that were not measured due to inaccessibility.
Permitted values/range	0.0005 to 0.0400
Format	Dec 5.4
Rule(s)	Must have value

Attribute	Plot split (Field)
Variable name	PLOT_SPLIT
Description	This information is not being collected after August 1, 2007, but will be retained in the database as legacy data. An indication as to whether or not this plot was split in the initial measurement. **F**: full plot was measured **H**: half plot was measured **Q**: quarter plot was measured **N:** no longer reported. This value will automatically be assigned to this field for plots measured after August 1, 2007.
Permitted values/range	F, H, Q, N
Format	Char 1

8a. STUMP LIST (stump_list)

Indexed attributes: **NFI_PLOT, MEAS_NUM, STUMP_NUM**.

**Note: Only plots with stumps to tally need to be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.

Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Stump number (Field)
Variable name	STUMP_NUM
Description	Stump number. Stumps must be numbered in ascending order. Includes all stumps < 1.3 m in length.
Permitted values/range	1 to 9999
Format	Num 4
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM and STUMP_NUM must be unique.

Attribute	Original plot area (Field)
Variable name	ORIG_PLOT_AREA

Description	A change management field for plots being converted from split plots to full plots. This field is used to identify the stumps that occur within the area of the plot measured during the previous measurement cycle. Data collected from these stumps will be used to derive change from the previous measurement. At the next measurement cycle, data from the full plot can be used for change estimation. **Y**: Tree occurs within the area of the plot measured during last measurement cycle **N**: Tree occurs outside of the area of the plot measured during the last measurement cycle. **U:** Unknown NOTE: If plot was measured in full at the last measurement cycle all trees should be given a value of Y for ORIG_PLOT_AREA.
Permitted values/range	Y, N, U
Format	Char 1
Rule(s)	Must have value.

Attribute	Stump genus (Field)
Variable name	STUMP_GENUS
Description	Use the first 4 letters of the scientific genus name. If unknown conifer use **GENC**, if unknown hardwood use **GENH**. Enter STUMP_GENUS = '**UNKN**' and STUMP_SPECIES = 'SPP' for unknown.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4
Rule(s)	Must have value Combination of STUMP_GENUS, STUMP_SPECIES and STUMP_VARIETY must agree with *NFI Tree Species List.*

Attribute	Stump species (Field)
Variable name	STUMP_SPECIES
Description	Use the first 3 letters of the scientific species name. If unknown, use code **SPP**.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3
Rule(s)	Must have value

Attribute	Stump variety (Field)
Variable name	STUMP_VARIETY
Description	Use the first 3 letters of the scientific variety name.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A) for valid combinations of genus/species/variety codes.
Format	Char 3
Rule(s)	May be blank if variety is not present.

Attribute	Stump DIB (Field)
Variable name	STUMP_DIB
Description	Top inside bark diameter of stump in **cm**.
Permitted values/range	4.0 to 999.9, -1
Format	Dec 4.1
Rule(s)	Must have value

Attribute	Stump diameter (Field)
Variable name	STUMP_DIAMETER
Description	Top diameter of stump including bark, if present. If no bark present then STUMP_DIAMETER = STUMP_DIB. Reported in **cm**. Enter –1 for missing data.
Permitted values/range	4.0 to 999.9, -1
Format	Dec 4.1
Rule(s)	Must have value STUMP_DIAMETER ≥ STUMP_DIB if neither is equal to -1.

Attribute	Stump decay class (Field)
Variable name	STUMP_DECAY
Description	Average decay class of the stump. Decay classes are based on the majority condition of the entire

	stump. The five classes used to describe the decay class of the stump are the same ones that are used to describe woody debris, but with a focus on wood texture for classification. For more detailed code descriptions, refer to the NFI Ground Sampling Guidelines document. Decay class 0 indicates that a decay class was unmeasured or combines all decay classes.
Permitted values/range	0 to 5, -1
Format	Num 1
Rule(s)	Must have value

Attribute	Stump length (Field)
Variable name	STUMP_LENGTH
Description	Length, measured to the nearest 0.01 **m**. Enter -1 for missing data.
Permitted values/range	0.01 to 1.29. -1
Format	Dec 3.2
Rule(s)	Must have value STUMP_LENGTH < 1.30 m

Attribute	Stump volume (Compiled)
Variable name	STUMP_VOLUME
Description	Total volume of each stump in the stump plot. Stump volume is calculated for all stumps ≥ 4.0 cm DIB. Reported in **m³**.
Permitted values/range	0 to 999.9999
Format	Dec 8.5

Attribute	Stump biomass (Compiled)
Variable name	STUMP_BIOMASS
Description	Total above ground biomass of stump (**kg** of oven-dry material).
Permitted values/range	0 to 9999.99
Format	Dec 6.2

9. MICROPLOT, HEADER INFORMATION (microplot_header)

Indexed attributes: **NFI_PLOT, MEAS_NUM**

**Note: This table should be completed for all plots where microplots were destructively sampled.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID

Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Combination of NFI_PLOT and MEAS_NUM must be unique. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Plot type (Field)
Variable name	PLOT_TYPE
Description	Description of the ground plot design used to collect sample measurements.
Permitted values/range	**MPC** = circular mini-plot **MPS** = square mini-plot
Format	Char 3
Rule(s)	Must have value

Attribute	Nominal plot size (Field)
Variable name	NOM_PLOT_SIZE
Description	The nominal area of the microplot. Reported in **ha**. Plot size is reported as the total microplot area. Enter -1 for missing data.
Permitted values/range	0.000025 to 0.001; -1
Format	Dec 7.6
Rule(s)	Must have value

9a. MICROPLOT, MEASURED PLOT SIZE (microplot_meas_plot_size)

Indexed attributes: **NFI_PLOT, MEAS_NUM, MICRO_PLOT_NUM**

**Note: This table should be completed for all plots where microplots were destructively sampled.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.

Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Microplot number (Field)
Variable name	MICRO_PLOT_NUM
Description	Shrub/herb microplot number.
Permitted values/range	0 to 4 0 = samples were combined by layer for all 4 microplots.
Format	Num 1
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM and MICRO_PLOT_NUM must be unique.

Attribute	Measured plot size (Field)
Variable name	MEAS_PLOT_SIZE
Description	The measured area of the microplot. Excludes portions of the plot that were not measured due to inaccessibility. Reported in **ha**.

Permitted values/range	0.0 to 0.001000
Format	Dec 7.6
Rule(s)	Must have value

9b. MICROPLOT (microplot)

Indexed attributes: **NFI_PLOT, MEAS_NUM, MICRO_PLOT_NUM, MICRO_LAYER_ID**.

**Note: This table should be completed for all plots where microplots were destructively sampled.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3

Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Microplot number (Field)
Variable name	MICRO_PLOT_NUM
Description	Shrub/herb microplot number.
Permitted values/range	0 to 4 0 = samples were combined by layer for all 4 microplots.
Format	Num 1
Rule(s)	Must have value

Attribute	Microplot layer (Field)
Variable name	MICRO_LAYER_ID
Description	Identify the type of material sampled using the codes below.
Permitted values/range	**1**: Shrub/tree - all woody plants and small trees < 1.3 m tall that do not have a measurable DBH. **2**: Herbaceous - all herbaceous species, regardless of height. Includes herbs, graminoids, and . forbs. For detailed definitions refer to the *NFI Ground Plot Sampling Guidelines* document. **3**: Bryoid - mosses, lichens and liverworts, slime molds and mushrooms. **4**: Fine woody debris - woody debris ≤ 1.0 cm in diameter **5:** Small Stumps - stumps with top diameter inside bark of < 4.0 cm)
Format	Num 1
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM, MICRO_PLOT_NUM and MICRO_LAYER_ID must be unique.

Attribute	Microplot biomass by layer (Lab)
Variable name	MICRO_LAYER_BIOMASS
Description	Total above ground biomass of shrubs and herbs, bryoids and fine woody debris (FWD) by layer (**grams** of oven-dry material). Samples are collected in the field and then oven-dried and weighed in the lab. Must have value. Enter -1 for missing data.
Permitted values/range	0 to 9999.999; -1
Format	Dec 7.3

10. ECOLOGICAL PLOT SUMMARY INFORMATION (ecp_header)

Indexed attributes: **NFI_PLOT, MEAS_NUM**, PLOT_TYPE.

**Note: This table should be completed for all plots where an ecological plot data was assessed.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Plot type (Field)
Variable name	PLOT_TYPE
Description	Description of the ecological plot design used to collect sample measurements. Numbers are used to denote plots where more than one plot is used to measure ecological species. If only one plot or transect was used, use the first number in the series, e.g. 'EC1' or 'ET1' etc.
Permitted values/range	**EC1 to EC16** = circular ecological plot(s) **ES1 to ES16** = square ecological plot(s) **ET1 to ET16** = ecological transect(s)
Format	Char 4
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM and PLOT_TYPE must be unique.

Attribute	Nominal plot size (Field)
Variable name	NOM_PLOT_SIZE
Description	The nominal area of the ecological sample plot. Reported in **ha**. Enter -1 for missing data.
Permitted values/range	0.000025 to 1.0; -1
Format	Dec 7.6
Rule(s)	Must have value

Attribute	Measured plot size (Field)
Variable name	MEAS_PLOT_SIZE
Description	The measured area of the ecological sample plot. Excludes portions of the plot that were not measured due to inaccessibility. Reported in **ha**.
Permitted values/range	0.000025 to 1.0
Format	Dec 7.6
Rule(s)	Must have value

10a. ECOLOGICAL SPECIES LIST (ecp_species)

Indexed attributes: NFI_PLOT, MEAS_NUM, PLOT_TYPE, EC_LAYERID, SPECIES_INDEX
+
**Note: This table should be completed for all plots where ecological plot data was assessed.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Plot type (Field)
Variable name	PLOT_TYPE
Description	Description of the ecological plot design used to collect sample measurements. Numbers are used to denote plots where more than one plot is used to measure ecological species. If only one plot or transect was used, use the first number in the series, e.g. 'EC1' or 'ET1' etc.
Permitted values/range	**EC1 to EC16** = circular ecological plot(s) **ES1 to ES16** = square ecological plot(s) **ET1 to ET16** = ecological transect(s)
Format	Char 4
Rule(s)	Must have value

Attribute	Ecological layer ID (Field)
Variable name	EC_LAYERID

Description	The ecological layer in which the species occurs. A species may occur in more than one layer at a plot. Each unique combination of species and layer should be entered as a separate record. **A** Tree Layer: Any species taller than 10 m in height. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **A1** A subcategory of layer A reported by some jurisdictions prior to August 1, 2007. Tree Layer: Any species taller than 10 m in height **AND dominant in canopy**. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **A2**. A subcategory of layer A reported by some jurisdictions prior to August 1, 2007. Tree Layer: Any species taller than 10 m in height **AND subdominant in canopy**. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **B1** Tall Shrub Layer: Includes woody species (tree and shrub) > 2.0 m and < 10 m in height. **B2** Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 2.0 m in height. Tree species at least two years old. **B2a** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007.Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 2.0 m and ≥ 0.5 m in height. **B2b** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007.Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 0.5 m in height. **B2c** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007. Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is ≤ 1.3 m in height. **B2d** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007. Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is > 1.3 m in height. **C** Herb Layer: Herbaceous species including forbs, ferns, grasses, sedges, rushes, saprophytes, club-mosses, horsetails, and some low woody species. **D** Bryoid Layer: Includes mosses, liverworts, foliose and frucitose lichens, and tree seedlings less than 2 years old. Prior to 2007, some jurisdictions reported additional layers not assessed by the NFI program. These are the definitions associated with those layers: **8** Floating-leaf aquatic **9** Submerged aquatic **10** Needle litter **11** Leaf litter **12** Woody material **13** Rock exposed **14** Water exposed

	15 Soil exposed
Permitted values/range	
Format	Char 3
Rule(s)	Must have value.

Attribute	Species Index (Field)
Variable name	SPECIES_INDEX
Description	A unique number assigned to each record within an ecological layer.
Permitted values/range	1 to 999
Format	Num 3
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM, PLOT_TYPE, EC_LAYERID and SPECIES_INDEX must be unique.

Attribute	Ecological genus (Field)
Variable name	EC_GENUS
Description	A field for recording the scientific genus name of each plant taxa occurring within each layer of the ecological plot.
Permitted values/range	This field may contain the full scientific genus name or, if collected prior to 2021, a 4 letter genus code (generally the first 4 letters of the scientific genus name).
Format	Char 50
Rule(s)	Must have value Genus/species/var combination must be unique within an ecological layer.

Attribute	Ecological species (Field)
Variable name	EC_SPECIES
Description	A field for recording the scientific species name of each plant taxa occurring within each layer of the ecological plot.
Permitted values/range	This field may contain the full scientific species name or, if collected prior to 2021, a 3 letter species code (generally the first 3 letters of the scientific species name).
Format	Char 50
Rule(s)	Must have value. Genus/species/var combination must be unique within an ecological layer.

Attribute	Ecological variety or subspecies (Field)
Variable name	EC_VARIETY
Description	An optional field for recording the varietal or subspecies of each plant taxa occurring within each layer of the ecological plot.
Permitted values/range	This field may contain the full scientific subspecies or varietal name or, if collected prior to 2021, a 3 letter code (generally the first 3 letters of the scientific subspecies or varietal name).
Format	Char 50
Rule(s)	May be blank.

Attribute	Ecological species area percent (Field)
Variable name	EC_SPECIES_PCT
Description	Estimate of the percent cover for each ecological species in the plot. Excludes fine woody debris layer. Reported in **percent**. Enter -1 for missing data.
Permitted values/range	0.001 to 100.000; -1
Format	Dec 6.3
Rule(s)	Must have value.

10b. ECOLOGICAL BIODIVERSITY (biodiversity_ec)

Indexed attributes: **NFI_PLOT, MEAS_NUM, EC_LAYERID**

**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.
Attribute	Ecological layer ID (Compiled)
Variable name	EC_LAYERID

Description	The ecological layer in which the species occurs. A species may occur in more than one layer at a plot. Each unique combination of species and layer should be entered as a separate record. **A** Tree Layer: Any species taller than 10 m in height. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **A1** A subcategory of layer A reported by some jurisdictions prior to August 1, 2007. Tree Layer: Any species taller than 10 m in height **AND dominant in canopy**. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **A2**. A subcategory of layer A reported by some jurisdictions prior to August 1, 2007. Tree Layer: Any species taller than 10 m in height **AND subdominant in canopy**. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **B1** Tall Shrub Layer: Includes woody species (tree and shrub) > 2.0 m and < 10 m in height. **B2** Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 2.0 m in height. Tree species at least two years old. **B2a** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007.Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 2.0 m and ≥ 0.5 m in height. **B2b** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007.Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 0.5 m in height. **B2c** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007. Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is ≤ 1.3 m in height. **B2d** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007. Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is > 1.3 m in height. **C** Herb Layer: Herbaceous species including forbs, ferns, grasses, sedges, rushes, saprophytes, club-mosses, horsetails, and some low woody species. **D** Bryoid Layer: Includes mosses, liverworts, foliose and frucitose lichens, and tree seedlings less than 2 years old. Prior to 2007, some jurisdictions reported additional layers not assessed by the NFI program. These are the definitions associated with those layers: **8** Floating-leaf aquatic **9** Submerged aquatic **10** Needle litter **11** Leaf litter **12** Woody material **13** Rock exposed **14** Water exposed

	15 Soil exposed
Permitted values/range	
Format	Char 3
Rule(s)	Must have value.

Attribute	Total unique ecological species (Compiled)
Variable name	SPECIES_ECNUM
Description	The total number of all unique ecological species (trees, shrubs, herbs and bryoids). Reported by ecological layer (species richness).
Permitted values/range	0 to 999
Format	Num 3

Attribute	Shannon index for ecological species (Compiled)
Variable name	BINDEX_ECSHANNON
Description	The Shannon diversity index, which is a measure of the species richness and evenness for ecological species. Reported by ecological layer, using percent cover.
Permitted values/range	0 to 999.99
Format	Dec 5.2

Attribute	Evenness index for ecological species (Compiled)
Variable name	BINDEX_ECEVEN
Description	The Pielou evenness index. Reported as how close, in percent cover, each species are within an ecological layer.
Permitted values/range	0 to 999.99
Format	Dec 5.2

11. WOODY DEBRIS HEADER INFORMATION (woody_debris_header)

Indexed attributes: **NFI_PLOT, MEAS_NUM, TRANSECT_NUM**.

**Note: this table includes small and coarse woody debris only (e.g. pieces > 1.0 cm in diameter). FWD (pieces ≤ 1.0 cm in diameter) are collected and reported in the microplot section.
**Note: This table should be completed for all plots where small or coarse woody debris was assessed (even if there were no woody debris present to measure).

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID

Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Transect number (Field)
Variable name	TRANSECT_NUM
Description	The transect number.
Permitted values/range	1 to 9
Format	Num 1
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM and TRANSECT_NUM must be unique.

Attribute	Nominal transect length (Field)
Variable name	NOM_TRANSECT_LENGTH
Description	The nominal length of the sample transect. Reported in **m**.
Permitted values/range	10.0 to 150.0
Format	Dec 4.1
Rule(s)	Must have value

Attribute	Transect azimuth (Field)
Variable name	TRANSECT_AZIMUTH
Description	The transect azimuth. Reported in **degrees**.
Permitted values/range	0 to 360
Format	Num 3
Rule(s)	Must have value

Attribute	Small woody debris measured transect length (Field)
Variable name	SWD_MEASLEN
Description	The total distance along the transect assessed for small woody debris. Excludes length of transect intersected by major roads, water, etc. Recorded to the nearest 0.1 **m**.
Permitted values/range	0 to 150.0
Format	Dec 4.1

Rule(s)	Must have value. SWD_MEASLEN ≤ NOM_TRANSECT_LENGTH.

Attribute	Medium coarse woody debris – round and odd shaped pieces, measured transect length (Field)
Variable name	MCWD_MEASLEN
Description	The total distance along the transect assessed for round and odd shaped pieces of medium coarse woody debris (MCWD). Excludes length of transect intersected by major roads, water, etc. Recorded to the nearest 0.1 **m**.
Permitted values/range	0.0 to 150.0
Format	Dec 4.1
Rule(s)	Must have value. MCWD_MEASLEN ≤ NOM_TRANSECT_LENGTH

Attribute	Large coarse woody debris – round and odd shaped pieces, measured transect length (Field)
Variable name	LCWD_MEASLEN
Description	The total distance along the transect assessed for round and odd shaped pieces of large coarse woody debris (LCWD). Excludes length of transect intersected by major roads, water, etc. Recorded to the nearest 0.1 **m**.
Permitted values/range	0.0 to 150.0
Format	Dec 4.1
Rule(s)	Must have value. LCWD_MEASLEN ≤ NOM_TRANSECT_LENGTH

Attribute	Small woody decay class (Field)
Variable name	SWD_DECAY_CLASS
Description	An average decay class is assigned to all pieces of small woody debris along each tansect. Decay classes are based on the majority condition of the entire piece. The five classes used to describe the WD condition are based primarily upon wood texture, and secondarily on other wood characteristics. For detailed descriptions, refer to *NFI Ground Sampling Guidelines* document. Decay class 0 indicates that a decay class was unmeasured or combines all decay classes. Enter -1 if missing.
Permitted values/range	0 to 5, -1
Format	Num 1
Rule(s)	Must have value.

11a. SMALL WOODY DEBRIS (> 1.0 cm diameter ≤ 7.5 cm) (woody_debris_small)

Indexed attributes: **NFI_PLOT, MEAS_NUM, TRANSECT_NUM**, **SWD_DIAM_CLASS**.

**Note: This table should be completed for transects along which small woody debris were tallied.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Transect number (Field)
Variable name	TRANSECT_NUM
Description	The transect number.
Permitted values/range	1 to 9
Format	Num 1
Rule(s)	Must have value.

Attribute	Small woody debris diameter class (Field)
Variable name	SWD_DIAM_CLASS
Description	Small woody debris sampling diameter class. All small woody debris pieces must be > 1.0 cm in diameter and ≤ 7.5 cm in diameter. Small woody debris is sampled in the field using corresponding 'go-no-go' tool assigned diameter classes.
Permitted values/range	SWD diameter classes are as follows: **1**: > 1.0 cm to ≤ 3.0 cm **2**: > 3.0 cm to ≤ 5.0 cm **3**: > 5.0 cm to ≤ 7.5 cm
Format	Num 1
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM, TRANSECT_NUM and SWD_DIAM_CLASS must be unique.

Attribute	Small woody debris tally of pieces by diameter class (Field)
Variable name	SWD_TALLY
Description	Tally of pieces of SWD by diameter class.
Permitted values/range	0 to 9999999
Format	Num 7

Rule(s)	Must have value.

Attribute	Small woody decay class (Field)
Variable name	SWD_DECAY_CLASS_O
Description	Small woody debris decay class information is being reported in the woody_debris_header table after August 1, 2007, but this field will be retained in the woody_debris_small table to host legacy data. Small woody debris sampling decay class. An average decay class is assigned to all pieces of small woody debris. Decay classes are based on the majority condition of the entire piece. The five classes used to describe the WD condition are based primarily upon wood texture, and secondarily on other wood characteristics. For detailed descriptions, refer to *NFI Ground Sampling Guidelines* document. Decay class 0 indicates that a decay class was unmeasured or combines all decay classes. A value of -7 (no longer collected) will automatically be added to this field for plots collected after August 1, 2007.
Permitted values/range	0 to 5, -7
Format	Num 1
Rule(s)	Must have value.

11b. COARSE WOODY DEBRIS (> 7.5 cm diameter) – ROUND PIECES (woody_debris_round)

Indexed attributes: **NFI_PLOT, MEAS_NUM, TRANSECT_NUM**, **WD_PIECE_NUM**.

**Note: This table should be completed for transects along which round coarse woody debris were tallied.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.

Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Transect number (Field)
Variable name	TRANSECT_NUM
Description	The transect number.
Permitted values/range	1 to 9
Format	Num 1
Rule(s)	Must have value.

Attribute	Piece number (Field)
Variable name	WD_PIECE_NUM
Description	Woody debris piece number. Piece numbers are assigned in ascending order along the transect. Pieces measured in this table must be > 7.5 in diameter.
Permitted values/range	1 to 999
Format	Num 3
Rule(s)	Must have value. Combination of NFI_PLOT. MEAS_NUM, TRANSECT_NUM and WD_PIECE_NUM must be unique.

Attribute	Woody debris genus (Field)
Variable name	WD_GENUS
Description	Woody debris genus codes are assigned using the codes listed in the *NFI Tree Species List.* For unknown softwood, use **GENC** and for unknown hardwood use **GENH**. Enter WD_GENUS = '**UNKN**' and WD_SPECIES = 'SPP' for unknown.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4
Rule(s)	Must have value. Combination of genus/species code must agree with *NFI Tree Species List.*

Attribute	Woody debris species (Field)
Variable name	WD_SPECIES
Description	Woody debris species codes are assigned using the codes listed in the *NFI Tree Species List.* Tree list species codes use the first three letters of the scientific species name. For unknown species, use **SPP**.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3
Rule(s)	Must have value. Combination of genus/species code must agree with *NFI Tree Species List.*

Attribute	Woody debris piece diameter (Field)
Variable name	WD_DIAMETER
Description	Piece diameter as determined by calipers or diameter tape measurement. Reported to the nearest 0.1 **cm**.
Permitted values/range	7.6 to 999.9
Format	Dec 4.1
Rule(s)	Must have value

Attribute	Woody debris decay class (Field)
Variable name	DECAY_CLASS
Description	Coarse woody debris sampling decay class. Decay classes are based on the majority condition of the entire piece. The five classes used to describe the CWD condition are based primarily upon wood texture, and secondarily on other wood characteristics. For detailed descriptions, refer to *NFI Ground Sampling Guidelines* document. Decay class 0 indicates that a decay class was unmeasured or combines all decay classes.
Permitted values/range	0 to 5
Format	Num 1
Rule(s)	Must have value.

Attribute	Tilt angle (Field)
Variable name	TILT_ANGLE
Description	Reported in **degrees**. Tilt angle is only required in the case of round pieces and is not required in the case of odd-shaped pieces or accumulations. Typically measured in the field using a clinometer. Enter -1 for missing data.
Permitted values/range	0 to 90, -1
Format	Num 2
Rule(s)	Must have value

Attribute	Wood density (Compiled)
Variable name	DENSITY
Description	The density of the woody debris, based on a combination of the species codes and wood condition (DECAY_CLASS). Reported in (**g cm^{-3}**). Wood density data is necessary for the compilation of biomass and will be provided by the NFI project office.
Permitted values/range	0.00001 to 2.65000 (rock)
Format	Dec 6.5

11c. COARSE WOODY DEBRIS – ODD SHAPED PIECES AND ACCUMULATIONS. (woody_debris_odd)

Indexed attributes: **NFI_PLOT, MEAS_NUM, TRANSECT_NUM**, **WD_PIECE_NUM**.

**Note: This table should be completed for transects along which round coarse woody debris were tallied.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID

Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Transect number (Field)
Variable name	TRANSECT_NUM
Description	The transect number.
Permitted values/range	1 to 9
Format	Num 1
Rule(s)	Must have value.

Attribute	Piece number (Field)
Variable name	WD_PIECE_NUM
Description	Woody debris piece number. Piece numbers are assigned in ascending order along the transect. Pieces measured in this table must be > 7.5 in diameter.
Permitted values/range	1 to 999
Format	Num 3
Rule(s)	Must have value. Combination of NFI_PLOT. MEAS_NUM, TRANSECT_NUM and WD_PIECE_NUM must be unique.

Attribute	Accumulation or odd-shaped piece (Field)
Variable name	ACCUM_ODD
Description	A one-letter code indicating whether the woody debris measurements apply to an accumulation or odd-shaped piece. **A**: accumulation measured **O**: odd-shaped piece measured **M**: Missing data
Permitted values/range	A, O, M
Format	Char 1
Rule(s)	Must have value.

Attribute	Woody debris genus (Field)
Variable name	WD_GENUS

Description	Woody debris genus codes are assigned using the codes listed in the *NFI Tree Species List.* For unknown softwood, use **GENC** and for unknown hardwood use **GENH**. Enter WD_GENUS = '**UNKN**' and WD_SPECIES = 'SPP' for unknown.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4
Rule(s)	Must have value. Combination of genus/species code must agree with *NFI Tree Species List.*

Attribute	Woody debris species (Field)
Variable name	WD_SPECIES
Description	Woody debris species codes are assigned using the codes listed in the *NFI Tree Species List.* Tree list species codes use the first three letters of the scientific species name. For unknown species, use **SPP**.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3
Rule(s)	Must have value. Combination of genus/species code must agree with *NFI Tree Species List.*

Attribute	Horizontal piece length (Field)
Variable name	HOR_LENGTH
Description	Odd shaped pieces are measured as a rectangle. The width and height of the rectangle, that represents a cross-sectional area of the piece along the plane formed by the line transect, are measured. For examples of measuring odd-shaped pieces, refer to the *NFI Ground Sampling Guidelines*. Reported to the nearest 0.1 **cm**.
Permitted values/range	0.1 to 9999.9
Format	Dec 5.1
Rule(s)	Must have value.

Attribute	Vertical piece depth (Field)
Variable name	VER_DEPTH
Description	Odd shaped pieces are measured as a rectangle. The width and height of the rectangle, that represents a cross-sectional area of the piece along the plane formed by the line transect, are measured. For examples of measuring odd-shaped pieces, refer to the *NFI Ground Sampling Guidelines*. Reported in to the nearest 0.1 **cm**.
Permitted values/range	0.1 to 999.9
Format	Dec 4.1
Rule(s)	Must have value.

Attribute	Woody debris decay class (Field)
Variable name	DECAY_CLASS
Description	Coarse woody debris sampling decay class. Decay classes are based on the majority condition of the entire piece. The five classes used to describe the CWD condition are based primarily upon wood texture, and secondarily on other wood characteristics. For detailed descriptions, refer to *NFI Ground Sampling Guidelines* document. Decay class 0 indicates that a decay class was unmeasured or combines all decay classes.
Permitted values/range	0 to 5
Format	Num 1
Rule(s)	Must have value.

Attribute	Wood density (Compiled)
Variable name	DENSITY
Description	The density of the woody debris, based on a combination of the species codes and wood condition (DECAY_CLASS). Reported in (**g cm^{-3}**). Wood density data is necessary for the compilation of biomass and will be provided by the NFI project office.
Permitted values/range	0.00001 to 2.65000 (rock)
Format	Dec 6.5

11d. WOODY DEBRIS – SUMMARY (wd_summary)

**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.

Attribute	Woody debris decay class (Compiled)
Variable name	DECAY_CLASS
Description	Coarse woody debris sampling decay class. Decay classes are based on the majority condition of the entire piece. The five classes used to describe the CWD condition are based primarily upon wood texture, and secondarily on other wood characteristics. For detailed descriptions, refer to *NFI Ground Sampling Guidelines* document. Decay class 0 indicates that a decay class was unmeasured or combines all decay classes.
Permitted values/range	0 to 5
Format	Num 1
Rule(s)	Must have value.

Attribute	Volume of small woody debris (Compiled)
Variable name	PLOTVOL_SWD
Description	The volume of small woody debris (**m^3 ha^{-1}**)

Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Biomass of small woody debris (Compiled)
Variable name	PLOTBIO_SWD
Description	The biomass of small woody debris (**Mg ha^{-1}**)
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Total volume of woody debris (Compiled)
Variable name	PLOTVOL_WD
Description	The total volume of woody debris measured along the transect (SWD, MCWD, LCWD) (**m^3 ha^{-1}**)
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Total biomass of woody debris (Compiled)
Variable name	PLOTBIO_WD
Description	The total biomass of woody debris measured along the transect (SWD, MCWD, LCWD (**Mg ha^{-1}**)
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Volume of round woody debris (Compiled)
Variable name	PLOTVOL_ROUNDWD
Description	The volume of round woody debris (**m^3 ha^{-1}**)
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Biomass of round woody debris (Compiled)
Variable name	PLOTBIO_ROUNDWD
Description	The biomass of round woody debris (**Mg ha^{-1}**)
Permitted values/range	0 to 99999.99
Format	Dec 7.2

Attribute	Volume of odd shaped woody debris (Compiled)
Variable name	PLOTVOL_ODDWD
Description	The volume of odd shaped woody debris (**m^3 ha^{-1}**)
Permitted values/range	0 to 9999.99
Format	Dec 6.2

Attribute	Biomass of odd shaped woody debris (Compiled)
Variable name	PLOTBIO_ODDWD
Description	The biomass of odd shaped woody debris (**Mg ha^{-1}**)
Permitted values/range	0 to 99999.99
Format	Dec 7.2

12. SURFACE SUBSTRATE HEADER (surface_substrate_header)

Indexed attributes: **NFI_PLOT, MEAS_NUM, TRANSECT_NUM**.

Note: This table should be completed for each ground plot.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.

Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Transect number (Field)
Variable name	TRANSECT_NUM
Description	The transect number.
Permitted values/range	1 to 9
Format	Num 1
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM and TRANSECT_NUM must be unique.

Attribute	Transect azimuth (Field)
Variable name	TRANSECT_AZIMUTH
Description	The transect azimuth. Reported in **degrees**. Enter -1 for missing data.
Permitted values/range	0 to 360; -1
Format	Num 3

Rule(s)	Must have value

Attribute	Transect measured length (Field)
Variable name	SS_MEASLEN
Description	Total length of transect along which surface substrate was actually measured. E.g. excludes length of transect intersected by major roads, water, etc. Recorded to the nearest 0.1 **m**.
Permitted values/range	0.0 to 99.9
Format	Dec 3.1
Rule(s)	Must have value.

Attribute	Total number of surface substrate measurements
Variable name	TOTAL_MEAS (Compiled)
Description	Total number of surface substrate measurements made along the transect. For example, if the transect is 30.0 m long, TOTAL_MEAS = 15 (for surface substrate tallied every 2nd meter).
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value.

Attribute	Surface substrate tally of measurements, organic matter (Compiled)
Variable name	TALLY_SS_ORG
Description	A tally of surface substrate measurements along the transect line representative of the ground plot area covered by organic matter. Surficial accumulations of organic materials, including the following: organic layers ≥ 1 cm thick overlying mineral soil, cobbles, stones or bedrock; layers of decaying wood < 10 cm thick; large animal droppings; and areas covered by mats of bunchgrass (mats include L horizons). Reported as a tally of the number of occurrences along a given transect.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. TALLY_SS_ORG ≤ TOTAL_MEAS

Attribute	Average thickness of organic matter (Compiled)
Variable name	AVG_ORG_THICK
Description	The average depth (**cm**) of the organic matter surface substrate (if present).
Permitted values/range	0.0 to 500.0
Format	Dec 4.1
Rule(s)	Must be 0.0 if organic matter not present in plot.

Attribute	Surface substrate tally of measurements, buried wood (Compiled)
Variable name	TALLY_SS_BURIED
Description	A tally of surface substrate measurements along the transect line representative of the ground plot area covered by buried wood. Class 5 woody debris with > 50% thickness **below** surrounding surface. Does not include freshly fallen material that has yet become to decompose. May be covered with mosses, lichens, liverworts, or other plants. If an organic layer has developed over the wood, buried wood must be > 10 cm thick otherwise it is classed as "organic matter". Reported as a tally of the number of occurrences along a given transect.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. TALLY_SS_BURIED ≤ TOTAL_MEAS

Attribute	Average thickness of buried wood (Compiled)
Variable name	AVG_BURIED_THICK
Description	The average depth (**cm**) of the buried wood surface substrate (if present).
Permitted values/range	0.0 to 500.0

Format	Dec 4.1
Rule(s)	Must be 0.0 if buried wood not present.

Attribute	Surface substrate tally of measurements, decaying wood (Compiled)
Variable name	TALLY_SS_DECAY
Description	A tally of surface substrate measurements along the transect line representative of the ground plot area covered by decaying wood. Fallen trees, large branches on the ground surface, and partially buried stumps with an exposed edge: Does not include freshly fallen material that has yet begun to decompose and material that is suspended above the surface (e.g. decay class 1 and 2 logs). In such cases, substrate type is measured below or immediately adjacent to the log. May be covered with mosses, lichens, liverworts, or other plants. If an organic layer has developed over the wood, decaying wood must have > 50% of its thickness above the surrounding surface, otherwise it is classed as "buried wood". Reported as a tally of the number of occurrences along a give transect.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. TALLY_SS_DECAY ≤ TOTAL_MEAS

Attribute	Surface substrate tally of measurements, bedrock (Compiled)
Variable name	TALLY_SS_BED
Description	A tally of surface substrate measurements along the transect line representative of the ground plot area covered by bedrock. Exposed consolidated mineral material. May have a partial covering of mosses, lichens, liverworts, or other epilithic plants. Does not qualify as bedrock if covered by unconsolidated mineral or organic material ≥ 1 cm in thickness. Reported as a tally of the number of occurrences along a given transect.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. TALLY_SS_BED ≤ TOTAL_MEAS

Attribute	Surface substrate tally of measurements, rock or cobbles and stones (Compiled)
Variable name	TALLY_SS_ROCK
Description	A tally of surface substrate measurements along the transect line representative of the ground plot area covered by rock or cobbles and stones. Rock or cobbles and stones including exposed unconsolidated rock fragments > 7.5 cm in diameter. May be covered by mosses, lichens, liverworts, epilithic plants (plants attached to an inorganic substrate); or an organic layer < 1 cm in thickness. Does not include gravels < 7.5 cm in diameter. Reported as a tally of the number of occurrences along a given transect.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. TALLY_SS_ROCK ≤ TOTAL_MEAS

Attribute	Surface substrate tally of measurements, mineral soil (Compiled)
Variable name	TALLY_SS_MIN
Description	A tally of surface substrate measurements along the transect line representative of the ground plot area covered by mineral soil. Unconsolidated mineral material of variable texture not covered by organic materials. May have a partial cover of mosses, lichens, and liverworts. Often associated with cultivation, tree tip-ups, active erosion or deposition, severe fires, trails, or late snow retention areas. Includes small cobbles and gravel < 7.5 cm in diameter. Areas of living grass or forb cover where mineral soil is visible between stems are classed as mineral soil, as are exposed Ah or Ae horizons. Reported as a tally of the number of occurrences along a given transect.
Permitted values/range	0 to 999
Format	Num 3

Rule(s)	Must have value. TALLY_SS_MIN ≤ TOTAL_MEAS

Attribute	Surface substrate tally of measurements, water (Compiled)
Variable name	TALLY_SS_WATER
Description	A tally of surface substrate measurements along the transect line representative of the ground plot area covered by streams, puddles, or areas of open water in bogs or fens. This does not include "casual" or non-permanent water. The sample point should be recorded to reflect the conditions at the time of sampling, e.g. a gravel or sandbar below the high water mark for a stream would be recorded as mineral soil. Reported as a tally of the number of occurrences along a given transect.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. TALLY_SS_WATER ≤ TOTAL_MEAS

12a. SURFACE SUBSTRATE (surface_substrate_tally)

Indexed attributes: NFI_PLOT, MEAS_NUM, TRANSECT_NUM, STATION_NUM

Note: This table should be completed for each ground plot.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)

Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Transect number (Field)
Variable name	TRANSECT_NUM
Description	The transect number.
Permitted values/range	1 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Station number (Field)
Variable name	STATION_NUM
Description	The number of the station measured along the transect.
Permitted values/range	1 to 25
Format	Num 2
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM, TRANSECT_ NUM and STATION_NUM must be unique.

Attribute	Substrate type (Field)
Variable name	SUBSTRATE_TYPE
Description	The surface substrate identified at the station
Permitted values/range	**DW**: Decayed wood **BR**: Bedrock **RC**: Rock or cobbles **MS**: Mineral soil **OM**: Organic matter **BW**: Buried wood **WA**: Water
Format	Char 2
Rule(s)	Must have value

Attribute	Depth (Field)
Variable name	DEPTH
Description	The depth of the substrate in **cm** down to mineral soil or to another impenetrable object. Depth is measured for organic matter and buried wood substrate types only. Enter -9 if not applicable (i.e. SUBSTRATE_TYPE is not OM or BW). Enter -1 for missing data.
Permitted values/range	1 to 500, -1, -9
Format	Num 3
Rule(s)	Must have value if SUBSTRATE_TYPE = OM or BW (enter -1 if missing); otherwise must be -9.

Attribute	Depth limit (Field)
Variable name	DEPTH_LIMIT
Description	The impenetrable object the depth was measured to. Enter -9 if not applicable (i.e. SUBSTRATE_TYPE is not OM or BW). Enter -1 for missing data.

Permitted values/range	**1**: Mineral soil **2**: Bedrock **3**: Frozen Layer **4**: Sound Wood **5**: Other or unknown impenetrable object **6**: Maximum depth achieved (500cm) **-1**: Missing data **-9**: Non-applicable
Format	Num 1
Rule(s)	Must have value if SUBSTRATE_TYPE = OM or BW (enter -1 if missing); otherwise must be -9.

13. SOIL SITE INFORMATION (soil_site_info)

Indexed attributes: NFI_PLOT, MEAS_NUM.

**Note: All plots where soil was sampled or described should be included in this table.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. NFI_PLOT and MEAS_NUM must be unique. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Combination of NFI_PLOT and MEAS_NUM must be unique. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	CSSC soil classification (Field)
Variable name	SOIL_CLASS
Description	CSSC Soil Classification. **Order, Great Group and Sub-group.** Classified to the subgroup level if possible but at least to the Order level (minimum). Enter –1 for unreported.
Permitted values/range	Refer to the Canadian System of Soil Classification (CSSC, 1998) for reporting instructions. Code non-soils as 'NA'. Enter -1 for missing data.
Format	Char 9
Rule(s)	Must have value

Attribute	Profile depth (Field)
Variable name	PROFILE_DEPTH
Description	The depth of the soil pit from which soil characteristics were described. Measurement is to the nearest 0.1 **cm**. Enter -1 for unreported.
Permitted values/range	0.0 to 250.0, -1
Format	Dec 4.1
Rule(s)	Must have value

Attribute	Soil drainage class (Field)
Variable name	DRAINAGE
Description	Six classes of soil drainage are recognized (National Soil Survey Committee 1974; Agriculture Canada Expert Committee on Soil Survey 1987). **1**: Very Rapidly **2**: Rapidly **3**: Well **4**: Moderately Well **5**: Imperfectly **6**: Poorly **7**: Very Poorly **-1**: Missing **-9**: Non-applicable
Permitted values/range	1 to 7; -1, -9
Format	Num 1
Rule(s)	Must have value

Attribute	Soil moisture class (Field)
Variable name	MOISTURE
Description	Soil moisture class.
Permitted values/range	**1**: Xeric, water removed extremely rapidly in relation to supply; soil is moist for a negligible time after precipitation **2**: Mesic, water removed somewhat slowly in relation to supply; soil may remain moist for a significant, but sometimes short period of the year. Available soil moisture reflects climatic inputs. **3**: Hygric, water removed slowly enough to keep soil wet for most of the growing season; permanent seepage and mottling; gleyed colours common. **-1**: Missing (unreported) **-9**: Non-applicable
Format	Num 1
Rule(s)	Must have value

Attribute	Mode of deposition of soil parent material (Field)
Variable name	DEPOSITION
Description	This is the dominant soil parent material mode of deposition as reported or implied by the source (Agriculture Canada Expert Committee on Soil Survey, 1983).
Permitted values/range	Unconsolidated **A**: Anthropogenic **C**: Colluvial **E**: Eolian **F**: Fluvial **L**: Lacustrine **M**: Morainal **S**: Saprolite **V**: Volcanic **W**: Marine **UU**: Unspecified Unconsolidated Consolidated **R**: Bedrock Ice **I**: Ice Organic **B**: Bog **FE**: Fen **SW**: Swamp **UO**: Unspecified Organic Genetic Material
Format	Char 2
Rule(s)	Must have value

Attribute	Humus form (Field)
Variable name	HUMUS_FORM
Description	Form of the organic and organic-enriched mineral horizons at the soil surface. Humus form is reported to at least the Order level, minimum. Humus form codes and their definitions were taken from the Canada Soil Information System (Expert Committee on Soil Survey, 1982).
Permitted values/range	**L**: Mull **LV**: compact **LF**: fine **LM**: medium **LC**: coarse **D**: Moder **DM**: mull-like **DT**: typical **DR**: raw **R**: Mor **RF**: fibri-mor **RH**: humi-fibrimor **RM**: fibri-humimor **RI**: humi-mor **P**: Peaty Mor **PH**: humic **PM**: mesic **PF**: fibric **AM**: Anmoor **UR**: Unreported
Format	Char 2
Rule(s)	Must have value

13a. SOIL PIT DEPTH (soil_pit_depth)

Indexed attributes: **NFI_PLOT, MEAS_NUM, PIT_NUM**.

**Note: This table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Compiled)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.

Attribute	Soil pit code (Compiled)
Variable name	PIT_NUM
Description	Soil pit coder. Allows for multiple pits to be sampled, 1 minimum.
Permitted values/range	**MP1:** Microplot 1 **MP2:** Microplot 2 **MP3:** Microplot 3 **MP4:** Microplot 4 **LP0:** Large (representative) soil pit **PT1:** Other location 1

	PT2: Other location 2 **PT3:** Other location 3 **PT4:** Other location 4
Format	Char 3
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM and PIT_NUM must be unique.

Attribute	Total depth to which mineral soil samples were collected (Compiled)
Variable name	DEPTH_MIN
Description	Total depth to which mineral soil samples were collected at each pit (**cm**)
Permitted values/range	0.0 to 999.9
Format	Dec 4.1

Attribute	Total depth to which organic samples were collected (Compiled)
Variable name	DEPTH_ORG
Description	Total depth to which forest floor and/or organic soil samples were collected at each pit (**cm**).
Permitted values/range	0.0 to 999.9
Format	Dec 4.1

13b. SOIL PIT FEATURES (soil_pit_features)

Indexed attributes: **NFI_PLOT, MEAS_NUM, PIT_NUM**, **SOIL_FEATURE**, **DEPTH_FEATURE**.

**Note: This table should be completed for the primary soil pit at each plot.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)

Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Soil pit code (Field)
Variable name	PIT_NUM
Description	Soil pit code. Allows for multiple pits to be sampled.
Permitted values/range	**LP0:** Large (representative) soil pit **PT1:** Other location 1 **PT2:** Other location 2 **PT3:** Other location 3 **PT4:** Other location 4
Format	Char 3
Rule(s)	Must have value.

Attribute	Soil feature (Field)
Variable name	SOIL_FEATURE
Description	Soil feature noted from soil pit.
Permitted values/range	Soil features may include the following: **W**: Water table or seepage **M**: Mottles (not applicable in organic soils) **R**: Root-restricting pan **B**: Bedrock **F**: Frozen layer **C**: Carbonates **S**: Missing (unreported) **N**: Non-applicable
Format	Char 1
Rule(s)	Must have value

Attribute	Depth to soil feature (Field)
Variable name	DEPTH_FEATURE
Description	Observed depth in **cm** to soil feature, measured from "zero depth" to soil feature. "Zero depth" is mineral soil surface for mineral soils, and ground surface for organic soils.
Permitted values/range	0 to 200 -9: Non-applicable (to be used if soil_feature value is N)
Format	Num 3
Rule(s)	Depth to soil feature field must have value when soil feature field is filled. Must have value. Combination of NFI_PLOT, MEAS_NUM, PIT_NUM, SOIL_FEATURE and DEPTH_FEATURE must be unique.

13c. SOIL PIT HORIZON DESCRIPTION (soil_horizon_desc)

Indexed attributes: **NFI_PLOT, MEAS_NUM, PIT_NUM, HORIZON_NUM**.

**Note: This table should be completed for the primary soil pit at each plot.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Soil pit code (Field)
Variable name	PIT_NUM
Description	Soil pit code. Allows for multiple pits to be sampled.

Permitted values/range	**LP0:** Large (representative) soil pit **PT1:** Other location 1 **PT2:** Other location 2 **PT3:** Other location 3 **PT4:** Other location 4
Format	Char 3
Rule(s)	Must have value.

Attribute	Horizon number (Field)
Variable name	HORIZON_NUM
Description	Indicates the order of the horizon measurements.
Permitted values/range	1 to 99
Format	Num 2
Rule(s)	Must have value Horizons must be numbered consecutively, starting with one for the uppermost horizon listed first. Combination of NFI_PLOT, MEAS_NUM, PIT_NUM and HORIZON_NUM must be unique.

Attribute	Horizon (Field)
Variable name	HORIZON
Description	The horizon designations conform to CSSC codes (Agriculture Canada expert committee on soil survey 1998).
Permitted values/range	Refer to CSSC (1998).
Format	Char 6
Rule(s)	Must have value.

Attribute	Horizon upper depth (Field)
Variable name	HORIZON_UPPER
Description	The absolute distance from "zero depth" to the top of the layer being described (**cm**). "Zero depth" is the boundary between the forest floor organic material and the mineral or deep organic soil material. The uppermost layer of mineral or organic soil will have a horizon upper depth of 0 cm. Enter -1 for missing values.
Permitted values/range	0 to 200.0; -1
Format	Dec 4.1
Rule(s)	Must have value.

Attribute	Horizon thickness (Field)
Variable name	THICKNESS
Description	The thickness of the horizon being described in **cm**. Code as -1 if missing (for example, the thickness of the bottom horizon cannot always be determined)
Permitted values/range	0 to 300.0, -1
Format	Dec 4.1
Rule(s)	Must have value.

Attribute	Soil colour (Field)
Variable name	COLOR
Description	A description of the general colour of the rooting-zone mineral soil. Codes based on the Munsell Colour Chart codes.
Permitted values/range	**D**: Dark, chocolate brown or black (Munsell colour value < 4 when moist) **M**: Medium, intermediate colour (most commonly encountered) **L**: Light, very pale soil (Munsell colour value > 6 when moist) **N**: Not applicable (bedrock, no soil) **S**: Missing
Format	Char 1
Rule(s)	Must have value.

Attribute	Soil texture for each mineral horizon (Field)
Variable name	TEXTURE
Description	Soil textural class determined in the field from a hand estimation of the percentage of clay and sand. Soil textural classes and codes are determined from the CSSC (1998) soil texture triangle.
Permitted values/range	**HC:** Heavy Clay

	C: Clay **SC:** Sandy clay **VFSC:** Very fine Sandy Clay **FSC:** Fine Sandy Clay **MSC:** Medium Sandy Clay **CSC:** Coarse Sandy Clay **VCSC:** Very coarse Sandy Clay **SCL:** Sandy clay loam **VFSCL:** Very fine Sandy Clay Loam **FSCL:** Fine Sandy Clay Loam **MSCL:** Medium Sandy Clay Loam **CSCL:** Coarse Sandy Clay Loam **VCSCL:** Very coarse Sandy Clay Loam **CL:** Clay loam **SI:** Silt **SIL:** Silty loam **SIC:** Silty clay **SICL:** Silty clay loam **SIS:** Silty sand **SIVFS:** Silty very fine sand **SIFS:** Silty fine sand **SIMS:** Silty medium sand **SICS:** Silty coarse sand **SIVCS:** Silty very coarse sand **L:** Loam **SL:** Sandy loam **VFSL:** Very fine Sandy Loam **FSL:** Fine Sandy Loam **MSL:** Medium Sandy Loam **CSL:** Coarse Sandy Loam **VCSL:** Very coarse Sandy Loam **LS:** Loamy sand **LVFS:** Loamy very fine sand **LFS:** Loamy fine sand **LMS:** Loamy medium sand **LCS:** Loamy coarse sand **LVCS:** Loamy very coarse sand **S:** Sand **VFS:** Very fine sand **FS:** Fine sand **MS:** Medium sand **CS:** Coarse sand **VCS:** Very coarse sand **R** = Rock **NA**: For non-mineral layers. **M:** Missing data
Format	Char 5
Rule(s)	Must have value.

Attribute	Coarse fragment content, volumetric percent gravel (Field)
Variable name	CF_GRAV
Description	The **percent** coarse fragment content by volume of the mineral horizon. (Diameter < 7.5 cm or length < 15 cm.) -1: Missing (unreported) -9: Not applicable (non-mineral horizons)
Permitted values/range	0 to 100; -1, -9
Format	Num 3
Rule(s)	Must have value. CF_GRAV + CF_COBB + CF_STONE ≤ 100.

Attribute	Coarse fragment content, volumetric percent cobbles (Field)

Variable name	CF_COBB
Description	The **percent** coarse fragment (diameter = 7.5 to 25 cm or length = 15 to 38 cm) content by volume of the mineral horizon. -1: Missing (unreported) -9: Not applicable (non-mineral horizons)
Permitted values/range	0 to 100; -1, -9
Format	Num 3
Rule(s)	Must have value. CF_GRAV + CF_COBB + CF_STONE ≤ 100.

Attribute	Coarse fragment content, volumetric percent stones (Field)
Variable name	CF_STONE
Description	The **percent** coarse fragment (diameter > 25 cm or length > 38 cm) content by volume of the mineral horizon. -1: Missing (unreported) -9: Not applicable (non-mineral horizons)
Permitted values/range	0 to 100; -1, -9
Format	Num 3
Rule(s)	Must have value. CF_GRAV + CF_COBB + CF_STONE ≤ 100.

13d. FOREST FLOOR ORGANIC SAMPLE INFORMATION (for_flr_org_sample)

Indexed attributes: **NFI_PLOT, MEAS_NUM, PIT_NUM**, SAMPLE_NUM.

**Note: This table should be completed for each plot where forest floor organic samples were collected.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1

Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Soil pit code (Field)
Variable name	PIT_NUM
Description	Code of the pit from which the sample was collected. Allows for multiple pits to be sampled.
Permitted values/range	**MP1:** Microplot 1 ⋮ **MP8:** Microplot 8 **LP0:** Large (representative) soil pit **PT1:** Other location 1 **PT2:** Other location 2 **PT3:** Other location 3 **PT4:** Other location 4
Format	Char 3
Rule(s)	Must have value.

Attribute	Sample number (Field)
Variable name	SAMPLE_NUM
Description	A unique number assigned to each forest floor sample collected from a given soil pit or microplot (PIT_NUM). At each pit, samples should be numbered in ascending order.
Permitted values/range	1 to 20
Format	Num 2
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM, PIT_NUM and SAMPLE_NUM must be unique.

Attribute	Horizon Designation (Field)
Variable name	HORIZON
Description	The horizon designations conform to CSSC codes (Agriculture Canada expert committee on soil survey 1998). When sampling by depth a combination of classes may be needed. Use '/' to separate codes, e.g. 'L/F/H'. 'NR' indicates that HORIZON was not reported.
Permitted values/range	Refer to CSSC (1998).
Format	Char 20
Rule(s)	Must have value if HORIZON_MEAS = P; otherwise may be blank.

Attribute	Horizon measurement (Field)
Variable name	HORIZON_MEAS
Description	Indicates whether samples were collected by depth increment, or by pedogenic indicator.
Permitted values/range	**D**: horizon sampled by depth **P**: horizon sampled by pedogenic indicator

	N: missing value
Format	Char 1
Rule(s)	Must have value

Attribute	Upper depth of sample (Field)
Variable name	SAMPLE_UPPER
Description	The upper depth of the sample collected, measured from the surface of the forest floor (0.0 cm). If forest floor is collected as a single layer, SAMPLE UPPER = 0.0 cm. Record to the nearest 0.5 **cm**. Enter -1 for missing data.
Permitted values/range	0.0 to 40.0, -1
Format	Dec 4.1
Rule(s)	Must have value.

Attribute	Bottom depth of sample (Field)
Variable name	SAMPLE_BOTTOM
Description	The average bottom depth of the sample collected, measured from the surface of the forest floor (0.0 cm). Report to the nearest 0.5 **cm**. Enter -1 for missing data.
Permitted values/range	0.1 to 200.0, -1
Format	Dec 4.1
Rule(s)	Must have value

Attribute	Volume of forest floor organic sample (Field)
Variable name	VOLUME
Description	Excavated volume of forest floor organic sample. If an aluminium template was used to sample forest floor, volume can be calculated by multiplying SAMPLE_WIDTH x SAMPLE_LENGTH x (SAMPLE_UPPER - SAMPLE_BOTTOM). Report to the nearest **mL**. Enter -1 for missing data or if unable to excavate e.g. plot is located on solid bedrock with no organic material.
Permitted values/range	1 to 50000, -1
Format	Num 5
Rule(s)	Must have value.

Attribute	Sample collection method (Field)
Variable name	SAMPLE_METHOD
Description	A field indicating the technique used for the collection of the sample.
Permitted values/range	**T**: Sampled but method not specified **F**: Not sampled **H**: Sample collected using hole excavation/template technique **S**: Sample collected using a small diameter core (< 60 mm) **C**: Sample collected using a large diameter core (60 to 100 mm)
Format	Char 1
Rule(s)	Must have value

Attribute	Sample width (Field)
Variable name	SAMPLE_WIDTH
Description	Excavated width of organic material. For example, if a 20 x 20 cm template was used SAMPLE_WIDTH would = 20 cm Report to the nearest **cm**. Enter -1 for missing data or if unable to excavate (e.g. plot is located on solid bedrock with no organic material). Enter -9 if not applicable (i.e. sample was not collected using a template)
Permitted values/range	1 to 30; -1, -9
Format	Num 2
Rule(s)	Must have value.

Attribute	Sample length (Field)
Variable name	SAMPLE_LENGTH
Description	Excavated length of organic material. For example, if a 20 x 20 cm template was used

	SAMPLE_LENGTH would = 20 cm Report to the nearest **cm**. Enter -1 for missing data or if unable to excavate (e.g. plot is located on solid bedrock with no organic material). Enter -9 if not applicable (i.e. sample was not collected using a template)
Permitted values/range	1 to 30; -1, -9
Format	Num 2
Rule(s)	Must have value.

Attribute	Mass of total forest floor sample, oven dried 70°C (Lab)
Variable name	MASS_TOTAL
Description	The mass of the total forest floor sample, oven-dry (70°C). Report as **g**. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.01 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_GT8MM + MASS_LIVE_ROOT + MASS_GRAVEL + MASS_8MM must be ≤ MASS_TOTAL. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised. If MEAS_DATE > July 31, 2007, then MASS_TOTAL cannot = -7

Attribute	Mass of forest floor sample live roots (Lab)
Variable name	MASS_LIVE_ROOT
Description	The mass of the live root portion of the oven-dry (70°C) forest floor sample. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_LIVE_ROOT must be ≤ MASS_TOTAL If MEAS_DATE > July 31, 2007, then MASS_LIVE_ROOT cannot = -7

Attribute	Mass of forest floor sample gravel (Lab)
Variable name	MASS_GRAVEL
Description	The mass of the gravel portion of the oven dried (70°C) forest floor sample, including cobbles and stones if present. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 8000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_GRAVEL must be ≤ MASS_TOTAL If MEAS_DATE > July 31, 2007, then MASS_GRAVEL cannot = -7

Attribute	Mass of forest floor sample > 8mm (Lab)
Variable name	MASS_GT8MM
Description	The mass of the > 8 mm portion of the oven-dry (70°C) forest floor sample, excluding gravel, cobble, and live roots. Report as **g**. Zeroes (0) are real values, i.e. if sample has no > 8mm portion. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_GT8MM must be ≤ MASS_TOTAL. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised.

	If MEAS_DATE > July 31, 2007, then MASS_GT8MM cannot = -7

Attribute	Mass of black charcoal in the > 8mm component of the forest floor sample (Lab)
Variable name	MASS_CHAR_GT8MM
Description	The mass of the black charcoal in the > 8 mm portion of the oven-dry (70°C) forest floor sample. Report as **g**. Zeroes (0) are real values, i.e. if sample has no charcoal. Enter -1 for missing data. Enter -7 if not requisitioned
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_CHAR_GT8MM must be ≤ MASS_TOTAL

Attribute	Mass of forest floor sample ≤ 8mm (Lab)
Variable name	MASS_8MM
Description	The mass of the ≤ 8 mm portion of the oven-dry (70°C) forest floor sample, excluding gravel and live roots. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 8000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_8MM must be ≤ MASS_TOTAL. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised. If MEAS_DATE > July 31, 2007, then MASS_8MM cannot = -7

Attribute	pH (Lab)
Variable name	PH_8MM
Description	pH (hydrogen ion concentration) of the ≤ 8mm oven dried (70°C) portion of the forest floor sample as measured in $CaCl_2$. Enter -1 for missing data. Enter -7 if not requisitioned.
Permitted values/range	2.00 to 10.00, -1, -7
Format	Dec 4.2
Rule(s)	Must have value.

Attribute	Total Nitrogen (Lab)
Variable name	N_8MM
Description	Total nitrogen content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 99.99, -1, -7,-8
Format	Dec 4.2
Rule(s)	Must have value.

Attribute	Total carbon (Lab)
Variable name	TC_8MM
Description	Total carbon content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **g kg^{-1}**. Enter -1 for missing data.
Permitted values/range	0.10 to 999.99, -1
Format	Dec 5.2

Rule(s)	Must have value

Attribute	Organic carbon content (Lab)
Variable name	TOC_8MM
Description	The organic carbon content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. This field is only requisitioned for samples where pH ≥ 6.7. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.10 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value. Must be less than or equal to TC_8MM unless TC_8MM < 0. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised.

Attribute	Carbonate (Lab)
Variable name	CO3_8MM
Description	Total inorganic carbon (carbonates) of the ≤ 8mm portion of the oven dried (70°C) forest floor sample, finely ground to 1mm. This field is only requisitioned for samples where pH ≥ 6.7. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Total carbon (Lab)
Variable name	TC_GT8MM
Description	Total carbon content of the > 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Zeroes (0) are real values, i.e. if sample has no > 8mm component. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned.
Permitted values/range	0 to 999.99, -1, -7
Format	Dec 5.2
Rule(s)	Must have value

Attribute	Organic carbon content (Lab)
Variable name	TOC_GT8MM
Description	The organic carbon content of the > 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. This field is only requisitioned for samples with pH ≥ 6.7. Zeroes (0) are real values, i.e. if sample has no > 8mm component. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value. Must be less than or equal to TC_GT8MM unless TC_GT8MM < 0. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised.

Attribute	Carbonate (Lab)
Variable name	CO3_GT8MM
Description	Total inorganic carbon (carbonates) of the > 8mm portion of the oven dried (70°C) forest floor sample, finely ground to 1mm. This field is only requisitioned for samples with pH ≥ 6.7. Zeroes (0) are real values, i.e. if sample has no > 8mm component. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned.

	Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Measured organic carbon or not (Lab)
Variable name	TOC_REAL
Description	A logical field to indicate whether total organic carbon is a measured value (**T**) or not (**F**). Report as "T" if total organic carbon was determined by Carbon elemental analysis. Report attribute as "F" if total organic carbon was estimated using the Loss on Ignition (LOI) method. If the organic carbon has been estimated from LOI, conversion is achieved by multiplying by 1.724 (assuming 58% of organic is organic carbon). Enter '**N**' if not applicable.
Permitted values/range	T, F, N
Format	Char 1
Rule(s)	Must have value

Attribute	Total Nitrogen (Lab)
Variable name	N_GT8MM
Description	Total nitrogen content of the > 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Zeroes (0) are real values, i.e. if sample has no > 8mm component. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 99.99, -1, -7,-8
Format	Dec 4.2
Rule(s)	Must have value.

Attribute	Available phosphorus (Lab)
Variable name	P_8MM
Description	The available phosphorus content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 9999, -1, -7, -8
Format	Num 4
Rule(s)	Must have value.

Attribute	Total phosphorus (Lab)
Variable name	TOTAL_P_8MM
Description	Total phosphorus content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	1 to 9999, -1, -7, -8
Format	Num 4
Rule(s)	Must have value.

Attribute	Exchangeable potassium (Lab)
Variable name	K_8MM
Description	Exchangeable potassium content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.

Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Exchangeable calcium (Lab)
Variable name	CA_8MM
Description	Exchangeable calcium content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Exchangeable magnesium (Lab)
Variable name	MG_8MM
Description	Exchangeable magnesium content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Exchangeable sodium (Lab)
Variable name	NA_8MM
Description	Exchangeable sodium content of ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Cation exchange capacity (Lab)
Variable name	CEC_8MM
Description	The total cation exchange capacity of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Total Sulfur (Lab)
Variable name	S_8MM
Description	Total sulfur content of the ≤ 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.

Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Total phosphorus (Lab)
Variable name	TOTAL_P_GT8MM
Description	Total phosphorus content of the > 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Zeroes (0) are real values, i.e. if sample has no > 8mm component. Report as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 9999, -1, -7, -8
Format	Num 4
Rule(s)	Must have value.

Attribute	Total Sulfur (Lab)
Variable name	S_GT8MM
Description	Total sulfur content of the > 8mm oven dried (70°C) portion of the forest floor sample, finely ground to 1mm. Zeroes (0) are real values, i.e. if sample has no > 8mm component. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 99.999, -1, -8,-7
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Internal designation of lab number (Lab)
Variable name	LAB_NUM
Description	Unique number given by lab to each sample processed. For example, PE20040001 Prince Edward Island, 2004, lab number 0001 (unique 4 digit number). Enter M (missing) if no lab number reported. Do not use commas as this may cause an error when importing/exporting csv (comma delineated) files.
Permitted values/range	
Format	Char 25
Rule(s)	Must have value.

Attribute	Bulk density ≤ 8mm forest floor (Compiled)
Variable name	BULK_DENSITY_8MM
Description	The bulk density of the ≤ 8mm portion of the forest floor, oven-dry (70°C), sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Report as **g cm^{-3}**. Missing or out of range data will be reported as -1
Permitted values/range	0.010 to 1.000, -1
Format	Dec 4.3
Rule(s)	Must have value

Attribute	Bulk density forest floor (Compiled)
Variable name	BULK_DENSITY_TOTAL
Description	The bulk density of the total forest floor sample, oven-dry (70°C), sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Report as **g cm^{-3}**. Missing or out of range data will be reported as -1
Permitted values/range	0.010 to 1.000, -1
Format	Dec 4.3
Rule(s)	Must have value

Attribute	Sample layer carbon content (Compiled)
Variable name	LAYER_CC_8MM
Description	Concentration of carbon per unit area of the ≤ 8mm component of the forest floor sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Reported in **kg m^{-2}**. Missing or out of range data will be reported as -1
Permitted values/range	0.00 to 999.99, -1
Format	Dec 5.2

Attribute	Sample layer carbon content (Compiled)
Variable name	LAYER_CC_TOTAL
Description	Concentration of carbon per unit area of the total forest floor sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Reported in **kg m^{-2}**. - 1 : données manquantes ou hors norme
Permitted values/range	0.00 to 999.99, -1
Format	Dec 5.2

13e. MINERAL SOIL SAMPLE INFORMATION (soil_mineral_sample)

Indexed attributes: **NFI_PLOT, MEAS_NUM, PIT_NUM**, SAMPLE_NUM.

**Note: This table should be completed for all plots where mineral soil samples were collected.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)

Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Soil pit number (Field)
Variable name	PIT_NUM
Description	Soil pit number or microplot number from which the sample is collected. Allows for multiple pits to be sampled.
Permitted values/range	**MP1:** Microplot 1 ⋮ **MP8:** Microplot 8 **LP0:** Large (representative) soil pit **PT1:** Other location 1 **PT2:** Other location 2 **PT3:** Other location 3 **PT4:** Other location 4
Format	Char 3
Rule(s)	Must have value.

Attribute	Sample number (Field)
Variable name	SAMPLE_NUM
Description	A unique number assigned to each mineral soil sample collected from a given soil pit or microplot (PIT_NUM). At each pit, samples should be numbered in ascending order.
Permitted values/range	1 to 20
Format	Num 2
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM, PIT_NUM and SAMPLE_NUM must be unique.

Attribute	Horizon designation(Field)
Variable name	HORIZON
Description	The horizon designations conform to CSSC codes (Agriculture Canada expert committee on soil survey 1998). When sampling by depth a combination of classes may be needed. Use '/' to separate codes, e.g. 'Ah/Bt'. 'NR' indicates that HORIZON was not reported.
Permitted values/range	Refer to CSSC (1998).
Format	Char 20
Rule(s)	Must have value if HORIZON_MEAS = P; otherwise may be blank.

Attribute	Horizon measurement (Field)
Variable name	HORIZON_MEAS
Description	Indicates whether samples were collected by depth increment, or by pedogenic indicator.
Permitted values/range	**D**: sampled by depth **P**: sampled by pedogenic indicator **N**: missing value
Format	Char 1
Rule(s)	Must have value

Attribute	Upper depth of sample (Field)
Variable name	SAMPLE_UPPER
Description	The distance from the surface of the uppermost mineral horizon (0 cm) to the top of the excavated sample. Record to the nearest 0.1 **cm**. Enter -1 for missing data.
Permitted values/range	0 to 200.0, -1
Format	Dec 4.1
Rule(s)	Must have value.

Attribute	Bottom depth of sample (Field)
Variable name	SAMPLE_BOTTOM
Description	The distance from the top of the uppermost mineral horizon to the bottom of the excavated sample. Record to the nearest 0.1 **cm**. Enter -1 for missing data.
Permitted values/range	0.1 to 200.0, -1
Format	Dec 4.1
Rule(s)	Must have value

Attribute	Volume of mineral soil sample (Field)
Variable name	VOLUME
Description	Excavated volume of mineral soil sample. Report to the nearest **mL**. Enter -1 for missing data or if unable to excavate. Record 0.0 mL if unable to excavate sample, e.g. plot is located on solid bedrock with no soil.
Permitted values/range	1 to 30000, -1
Format	Num 5
Rule(s)	Must have value.

Attribute	Mass of rocks discarded from sample after sample volume was recorded (Field)
Variable name	MASS_DISC_ROCKS
Description	Mass of rocks (> 7.5 cm) discarded from the mineral soil sample after volume was recorded but before sample was submitted to the lab. This is an optional field step. Report to the nearest **g**. Enter -9 if not applicable (i.e. no rocks were discarded from sample before submission to lab).
Permitted values/range	0.01 to 9999.99, -1, -9
Format	Dec 6.2
Rule(s)	Must have value.

Attribute	Sample collection method (Field)
Variable name	SAMPLE_METHOD
Description	A field indicating the technique used for the collection of the sample.
Permitted values/range	**T**: Sample collected, but method not specified **F**: Not sampled **H**: Sample collected using hole excavation/template technique **S**: Sample collected using a small diameter core (< 50 mm) **C**: Sample collected using a large diameter core (60 to 100 mm)
Format	Char 1
Rule(s)	Must have value

Attribute	Mass of total mineral soil sample, air dried (Lab)
Variable name	MASS_TOTAL
Description	The mass of the total mineral soil sample, air dried. Report as **g**. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.01 to 7000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value

	If MASS_TOTAL ≥ 0 then MASS_COBBLE + MASS_ROOT + MASS_GRAVEL + MASS_2MM must be ≤ MASS_TOTAL. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised. If MEAS_DATE > July 31, 2007, then MASS_TOTAL cannot = -7

Attribute	Mass of mineral soil sample organic matter, roots (Lab)
Variable name	MASS_ROOT
Description	The mass of the organic matter and root component of the air-dry mineral soil sample. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_ROOT must be ≤ MASS_TOTAL If MEAS_DATE > July 31, 2007, then MASS_ROOT cannot = -7

Attribute	Mass of mineral soil sample cobbles > 75mm-250mm (Lab)
Variable name	MASS_COBBLE
Description	The mass of the cobble component (> 75 mm and < than 250 mm) of the air-dry mineral soil sample. Include the mass of stones (> 250 mm), if present. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_COBBLE must be ≤ MASS_TOTAL If MEAS_DATE > July 31, 2007, then MASS_COBBLE cannot = -7

Attribute	Mass of mineral soil sample gravel > 2mm-75mm (Lab)
Variable name	MASS_GRAVEL
Description	The mass of the gravel component (> 2mm and < 75 mm) of the air-dry mineral soil sample. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_GRAVEL must be ≤ MASS_TOTAL If MEAS_DATE > July 31, 2007, then MASS_GRAVEL cannot = -7

Attribute	Mass of mineral soil sample ≤ 2mm (Lab)
Variable name	MASS_2MM
Description	The mass of the ≤ 2mm portion of the air-dry mineral soil sample. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 7000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_2MM must be ≤ MASS_TOTAL If MEAS_DATE > July 31, 2007, then MASS_2MM cannot = -7

Attribute	Water content of air-dry ≤ 2mm soil (Lab)
Variable name	SOIL_MOISTURE
Description	The water content of the ≤ 2mm soil is calculated from a sub-sample of air-dry soil dried to 105°C. Expressed as kg of moisture per kg of the oven-dried weight of the soil. Report as **kg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)

Permitted values/range	0.0001 to 0.9999, -1, -7
Format	Dec 5.4
Rule(s)	Must have value.

Attribute	Water content of air-dry roots (Lab)
Variable name	ROOT_MOISTURE
Description	The water content of the air-dry roots and organic matter is dried to 70°C. This field was added in 2008 and is only requisitioned when the mass of roots > 1% total mass of sample. Report as **kg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned.
Permitted values/range	0.0001 to 0.9999, -1, -7
Format	Dec 5.4
Rule(s)	Must have value.

Attribute	Silt content, mineral soil percent (Lab)
Variable name	SILT
Description	The silt content of the ≤ 2mm air dried portion of the mineral soil sample. Report as **percent**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned.
Permitted values/range	0.00 to 100.00 , -1, -7
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Clay content, mineral soil percent (Lab)
Variable name	CLAY
Description	The clay content of the ≤ 2mm air dried portion of the mineral soil sample. Report as **percent**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned.
Permitted values/range	0.00 to 100.00, -1, -7
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Soil textural class(Lab)
Variable name	SOIL_TEXTURE
Description	Soil texture as determined from hydrometer measurements, and the CSSC Textural Triangle. Textural Class of the sample is determined by referencing values for %Sand and %Clay on the Textural Triangle. The point of Intersection of these 2 values determines the Textural Class. Report as one of the thirteen textural classes listed in permitted range.
Permitted values/range	**HC**: Heavy Clay **C**: Clay **SC**: Sandy clay **SCL**: Sandy clay loam **CL**: Clay loam **SI**: Silt **SIL**: Silt loam **SIC**: Silty clay **SICL**: Silty clay loam **L**: Loam **SL**: Sandy loam **LS**: Loamy sand **S**: Sand or **M**: for missing data. **F**: if not requisitioned
Format	Char 4
Rule(s)	Must have value.

Attribute	pH (Lab)
Variable name	PH
Description	pH (hydrogen ion concentration) of the ≤ 2mm air dried portion of the mineral soil sample as measured in $CaCl_2$. Report value found. Enter -1 for missing data. Enter -7 if not requisitioned.
Permitted values/range	2.50 to 10.00; -1, -7
Format	Dec 4.2
Rule(s)	Must have value.

Attribute	Total carbon (Lab)
Variable name	TC
Description	Total carbon content of the ≤ 2mm air dried portion of the mineral soil sample, finely ground to 149 microns (100 mesh). A moisture correction (to 105°C) is applied for reporting. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007) Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value If MEAS_DATE > July 31, 2007, then TC cannot = -7

Attribute	Total organic carbon (Lab)
Variable name	TOC
Description	The organic carbon content of the ≤ 2mm air dried portion of the mineral soil sample, finely ground to 149 microns (100 mesh). This field is only requisitioned for samples where pH ≥ 6.7. A moisture correction (to 105°C) is applied for reporting. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value. Must be less than or equal to TC unless TC < 0. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised.

Attribute	Carbonates (Lab)
Variable name	CO3
Description	Total inorganic carbon (carbonates) of the ≤ 2mm air dried portion of the mineral soil sample, finely ground to 149 microns (100 mesh). This field is only requisitioned for samples where pH ≥ 6.7. A moisture correction (to 105°C) is applied for reporting. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Measured organic carbon or not (Lab)
Variable name	TOC_REAL
Description	A logical field to indicate whether total organic carbon is a measured value (**T**) or not (**F**). Report as "T" if total organic carbon was determined by Carbon elemental analysis. Report attribute as "F" if total organic carbon was estimated using the Loss on Ignition (LOI) method. If the organic carbon has been estimated from LOI, conversion is achieved by multiplying by 1.724 (assuming 58% of organic is organic carbon). Enter '**N**' if not applicable.
Permitted values/range	T, F, N
Format	Char 1

Rule(s)	Must have value

Attribute	Total nitrogen (Lab)
Variable name	N
Description	The total nitrogen content of the ≤ 2mm portion of the air dried mineral soil sample, finely ground to 149 microns (100 mesh). A moisture correction (to 105°C) is applied for reporting. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 99.99, -1, -7, -8
Format	Dec 4.2
Rule(s)	Must have value.

Attribute	Available phosphorus (Lab)
Variable name	P
Description	The available phosphorus content of the ≤ 2mm air dried portion of the mineral soil sample. A moisture correction (to 105°C) is applied for reporting. Report as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 9999, -1, -7, -8
Format	Num 4
Rule(s)	Must have value.

Attribute	Total phosphorus (Lab)
Variable name	TOTAL_P
Description	Total phosphorus content of the ≤ 2mm air dried portion of the mineral soil sample. A moisture correction (to 105°C) is applied for reporting. Report as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 9999, -1, -7, -8
Format	Num 4
Rule(s)	Must have value.

Attribute	Exchangeable potassium (Lab)
Variable name	K
Description	Exchangeable potassium content of the ≤ 2mm air dried portion of the mineral soil sample. A moisture correction (to 105°C) is applied for reporting. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Exchangeable calcium (Lab)
Variable name	CA
Description	Exchangeable calcium content of the ≤ 2mm air dried portion of the mineral soil sample. A moisture correction (to 105°C) is applied for reporting. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2

Rule(s)	Must have value.

Attribute	Exchangeable magnesium (Lab)
Variable name	MG
Description	Exchangeable magnesium content of the ≤ 2mm air dried portion of the mineral soil sample. A moisture correction (to 105°C) is applied for reporting. Report as **cmol kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	5.2
Rule(s)	Must have value.

Attribute	Exchangeable sodium (Lab)
Variable name	NA
Description	Exchangeable sodium content of the ≤ 2mm air dried portion of the mineral soil sample. A moisture correction (to 105°C) is applied for reporting. Report as cmol kg^{-1}. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Cation exchange capacity (Lab)
Variable name	CEC
Description	The total cation exchange capacity of the ≤ 2mm air dried portion of the mineral soil sample. A moisture correction (to 105°C) is applied for reporting. Report as **cmol kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	00.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Total sulfur (Lab)
Variable name	S
Description	The total sulfur content of the ≤ 2mm portion of the air dried mineral soil sample, finely ground to 149 microns (100 mesh). A moisture correction (to 105°C) is applied for reporting. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Pyrophosphate Al and Fe (Lab)
Variable name	AL_FE
Description	Sum of analyzed values of Al and Fe found in the ≤ 2mm air dried portion of the mineral soil sample. A moisture correction (to 105°C) is applied for reporting. Report total as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	1 to 99999, -1, -7, -8
Format	Num 5

Rule(s)	Must have value.

Attribute	Internal designation of lab number (Lab)
Variable name	LAB_NUM
Description	Unique number given by lab to each sample processed. For example, PE20040001 Prince Edward Island, 2004, lab number 0001 (unique 4 digit number). Enter M (missing) if no lab number reported. Do not use commas as this may cause an error when importing/exporting csv (comma delineated) files.
Permitted values/range	
Format	Char 25
Rule(s)	Must have value.

Attribute	Coarse fragment content, gravimetric percent gravel (Compiled)
Variable name	CF_GRAV
Description	The gravimetrically calculated content of gravel (diameter < 7.5 cm or length < 15 cm) in the mineral horizons represented by the sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Reported as **percent**. **0**: No gravels present. **-1**: Missing
Permitted values/range	0 to 100, -1
Format	Num 3
Rule(s)	Must have value. CF_GRAV + CF_COBB + CF_STONE ≤ 100.

Attribute	Coarse fragment content, gravimetric percent cobbles (Compiled)
Variable name	CF_COBB
Description	The gravimetrically calculated content of cobble (diameter = 7.5 to 25 cm or length = 15 to 38 cm) in the mineral horizon represented by the sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Reported as **percent**. **0**: No cobbles present. **-1**: Missing
Permitted values/range	0 to 100, -1
Format	Num 3
Rule(s)	Must have value. CF_GRAV + CF_COBB + CF_STONE ≤ 100.

Attribute	Coarse fragment content, gravimetric percent stones (Compiled)
Variable name	CF_STONE
Description	The gravimetric content of stone (diameter > 25 cm or length > 38 cm) in the mineral horizon represented by the sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Reported as **percent**. **0**: No stones present. **-1**: Missing
Permitted values/range	0 to 100, -1
Format	Num 3
Rule(s)	Must have value. CF_GRAV + CF_COBB + CF_STONE ≤ 100.

Attribute	Bulk density of ≤ 2mm mineral soil (Compiled)
Variable name	BULK_DENSITY_2MM
Description	The bulk density of the ≤ 2mm portion of the mineral soil. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Report in **g cm^{-3}**. Missing or out of range data will be reported as -1.
Permitted values/range	0.010 to 2.650, -1
Format	Dec 4.3

Rule(s)	Must have value

Attribute	Bulk density of total mineral sample (Compiled)
Variable name	BULK_DENSITY_TOTAL
Description	The bulk density of the total mineral soil sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Report in **g cm^{-3}**. Missing or out of range data will be reported as -1.
Permitted values/range	0.010 to 2.650, -1
Format	Dec 4.3
Rule(s)	Must have value

Attribute	Sample layer carbon content (Compiled)
Variable name	LAYER_CC
Description	Concentration of carbon per unit area of the mineral soil sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Reported in **kg m^{-2}**. Missing or out of range data will be reported as -1.
Permitted values/range	0 to 999.99, -1
Format	Dec 5.2

13f. ORGANIC SOIL SAMPLE INFORMATION (soil_org_sample)

Indexed attributes: **NFI_PLOT, MEAS_DATE, MEAS_NUM, PIT_NUM**, SAMPLE_NUM.

**Note: This table should be completed for all plots where organic soil samples were collected.

Attribute	NFI network label (Field)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement date (Field)
Variable name	MEAS_DATE
Description	The date of information capture in the field.
Permitted values/range	Jan 1, 1992 to present date.
Format	Date 11 (YYYY-MON-DD)
Rule(s)	Must have value. Jan 1, 1992 to present date. Measurement dates and measurement numbers correspond chronologically.

Attribute	Measurement number (Field)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers. MEAS_NUM in current measurement must be 1 + MEAS_NUM in previous measurement.

Attribute	Soil pit code (Field)
Variable name	PIT_NUM
Description	Code of the pit from which the sample was collected. Allows for multiple pits to be sampled.
Permitted values/range	**MP1:** Microplot 1 ⋮ **MP8:** Microplot 8 **LP0:** Large (representative) soil pit **PT1:** Other location 1 **PT2:** Other location 2 **PT3:** Other location 3 **PT4:** Other location 4
Format	Char 3
Rule(s)	Must have value.

Attribute	Sample number (Field)
Variable name	SAMPLE_NUM
Description	A unique number assigned to each organic soil sample collected from a given soil pit or microplot (PIT_NUM). At each pit, samples should be numbered in ascending order.
Permitted values/range	1 to 20
Format	Num 2
Rule(s)	Must have value. Combination of NFI_PLOT, MEAS_NUM, PIT_NUM and SAMPLE_NUM must be unique.

Attribute	Horizon Designation (Field)
Variable name	HORIZON
Description	The horizon designations conform to CSSC codes (Agriculture Canada expert committee on soil survey 1998). When sampling by depth a combination of classes may be needed. Use '/' to separate codes, e.g. 'OF/OM'. 'NR' indicates that HORIZON was not reported.
Permitted values/range	Refer to CSSC (1998).
Format	Char 20
Rule(s)	Must have value if HORIZON_MEAS = P; otherwise may be blank.

Attribute	Horizon measurement (Field)
Variable name	HORIZON_MEAS
Description	Indicates whether samples were collected by depth increment, or by pedogenic indicator.
Permitted values/range	**D**: horizon sampled by depth **P**: horizon sampled by pedogenic indicator **N**: missing value

Format	Char 1
Rule(s)	Must have value

Attribute	Upper depth of sample (Field)
Variable name	SAMPLE_UPPER
Description	The upper depth of the sample collected, measured from the surface of the organic soil (0.0 cm). Record to the nearest 0.5 **cm**. Enter -1 for missing data.
Permitted values/range	0.0 to 150.0, -1
Format	Dec 4.1
Rule(s)	Must have value.

Attribute	Bottom depth of sample (Field)
Variable name	SAMPLE_BOTTOM
Description	The average bottom depth of the sample collected, measured from the surface of the organic soil (0.0 cm). Report to the nearest 0.5 **cm**. Enter -1 for missing data.
Permitted values/range	0.1 to 200.0, -1
Format	Dec 4.1
Rule(s)	Must have value

Attribute	Volume of organic soil sample (Field)
Variable name	VOLUME
Description	Excavated volume of organic soil sample. If an aluminium template was used to sample organic soil, volume can be calculated by multiplying SAMPLE_WIDTH x SAMPLE_LENGTH x (SAMPLE_UPPER - SAMPLE_BOTTOM). Report to the nearest **mL**. Enter -1 for missing data or if unable to excavate e.g. plot is located on solid bedrock with no organic material.
Permitted values/range	1 to 50000, -1
Format	Num 5
Rule(s)	Must have value.

Attribute	Sample collection method (Field)
Variable name	SAMPLE_METHOD
Description	A field indicating the technique used for the collection of the sample.
Permitted values/range	**T**: Sampled but method not specified **F**: Not sampled **H**: Sample collected using hole excavation/template technique **S**: Sample collected using a small diameter core (< 60 mm) **C**: Sample collected using a large diameter core (60 to 100 mm)
Format	Char 1
Rule(s)	Must have value

Attribute	Sample width (Field)
Variable name	SAMPLE_WIDTH
Description	Excavated width of organic material. For example, if a 20 x 20 cm template was used SAMPLE_WIDTH would = 20 cm Report to the nearest **cm**. Enter -1 for missing data or if unable to excavate (e.g. plot is located on solid bedrock with no organic material). Enter -9 if not applicable (i.e. sample was not collected using a template)
Permitted values/range	1 to 30; -1, -9
Format	Num 2
Rule(s)	Must have value.

Attribute	Sample length (Field)
Variable name	SAMPLE_LENGTH
Description	Excavated length of organic material. For example, if a 20 x 20 cm template was used SAMPLE_LENGTH would = 20 cm Report to the nearest **cm**.

	Enter -1 for missing data or if unable to excavate (e.g. plot is located on solid bedrock with no organic material). Enter -9 if not applicable (i.e. sample was not collected using a template)
Permitted values/range	1 to 30; -1, -9
Format	Num 2
Rule(s)	Must have value.

Attribute	Mass of total organic soil sample, oven dried 70°C (Lab)
Variable name	MASS_TOTAL
Description	The mass of the total organic soil sample, oven-dry (70°C). Report as **g**. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.01 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_GT8MM + MASS_LIVE_ROOT + MASS_GRAVEL + MASS_8MM must be ≤ MASS_TOTAL. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised. If MEAS_DATE > July 31, 2007, then MASS_TOTAL cannot = -7

Attribute	Mass of organic soil sample live roots (Lab)
Variable name	MASS_LIVE_ROOT
Description	The mass of the live root portion of the oven-dry (70°C) organic soil sample. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_LIVE_ROOT must be ≤ MASS_TOTAL If MEAS_DATE > July 31, 2007, then MASS_LIVE_ROOT cannot = -7

Attribute	Mass of organic soil sample gravel (Lab)
Variable name	MASS_GRAVEL
Description	The mass of the gravel portion of the oven dried (70°C) organic soil sample, including cobbles and stones if present. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 8000.00, -1. -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_GRAVEL must be ≤ MASS_TOTAL If MEAS_DATE > July 31, 2007, then MASS_GRAVEL cannot = -7

Attribute	Mass of organic soil sample > 8mm (Lab)
Variable name	MASS_GT8MM
Description	The mass of the > 8 mm portion of the oven-dry (70°C) organic soil sample, excluding gravel, cobble, and live roots. Zeroes (0) are real values, i.e. if sample has no > 8mm portion. Report as **g**. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_GT8MM must be ≤ MASS_TOTAL. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised. If MEAS_DATE > July 31, 2007, then MASS_GT8MM cannot = -7

Attribute	Mass of black charcoal in the > 8mm component of the organic soil sample (Lab)

Variable name	MASS_CHAR_GT8MM
Description	The mass of the black charcoal in the > 8 mm portion of the oven-dry (70°C) organic soil sample. Report as **g**. Zeroes (0) are real values, i.e. if sample has no charcoal. Enter -1 for missing data. Enter -7 if not requisitioned
Permitted values/range	0.00 to 5000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_CHAR_GT8MM must be ≤ MASS_TOTAL

Attribute	Mass of organic soil sample ≤ 8mm (Lab)
Variable name	MASS_8MM
Description	The mass of the ≤ 8 mm portion of the oven-dry (70°C) organic soil sample, excluding gravel and live roots. Report as **g**. Zeroes (0) are real values. Enter -1 for missing data. Enter -7 if not requisitioned (valid only for samples collected prior to August 1, 2007)
Permitted values/range	0.00 to 8000.00, -1, -7
Format	Dec 6.2
Rule(s)	Must have value. If MASS_TOTAL ≥ 0 then MASS_8MM must be ≤ MASS_TOTAL. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised. If MEAS_DATE > July 31, 2007, then MASS_8MM cannot = -7

Attribute	pH (Lab)
Variable name	PH_8MM
Description	pH (hydrogen ion concentration) of the ≤ 8mm oven dried (70°C) portion of the forest floor sample as measured in $CaCl_2$. Enter -1 for missing data. Enter -7 if not requisitioned.
Permitted values/range	2.00 to 10.00, -1, -7
Format	Dec 4.2
Rule(s)	Must have value

Attribute	Total Nitrogen (Lab)
Variable name	N_8MM
Description	Total nitrogen content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 99.99, -1, -8,-7
Format	Dec 4.2
Rule(s)	Must have value.

Attribute	Total carbon (Lab)
Variable name	TC_8MM
Description	Total carbon content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **g kg^{-1}**. Enter -1 for missing data.
Permitted values/range	0.10 to 999.99, -1
Format	Dec 5.2
Rule(s)	Must have value

Attribute	Organic carbon content (Lab)
Variable name	TOC_8MM
Description	The organic carbon content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely

	ground to 1mm. This field is only requisitioned for samples where pH ≥ 6.7. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.10 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value. Must be less than or equal to TC_8MM unless TC_8MM < 0. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised.

Attribute	Carbonate (Lab)
Variable name	CO3_8MM
Description	Total inorganic carbon (carbonates) of the ≤ 8mm portion of the oven dried (70°C) forest floor sample, finely ground to 1mm. This field is only requisitioned for samples where pH ≥ 6.7. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Total carbon (Lab)
Variable name	TC_GT8MM
Description	Total carbon content of the > 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Zeroes (0) are real values, i.e. if sample has no > 8mm portion. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned.
Permitted values/range	0 to 999.99, -1, -7
Format	Dec 5.2
Rule(s)	Must have value

Attribute	Organic carbon content (Lab)
Variable name	TOC_GT8MM
Description	The organic carbon content of the > 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. This field is only requisitioned for samples where pH ≥ 6.7. Zeroes (0) are real values, i.e. if sample has no > 8mm portion. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value. Must be less than or equal to TC_GT8MM unless TC_GT8MM < 0. There is a 2% tolerance around this rule, if 2% is exceeded a warning will be raised.

Attribute	Carbonate (Lab)
Variable name	CO3_GT8MM
Description	Total inorganic carbon (carbonates) of the > 8mm portion of the oven dried (70°C) forest floor sample, finely ground to 1mm. This field is only requisitioned for samples where pH ≥ 6.7. Zeroes (0) are real values, i.e. if sample has no > 8mm portion. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Measured organic carbon or not (Lab)
Variable name	TOC_REAL
Description	A logical field to indicate whether total organic carbon is a measured value (**T**) or not (**F**). Report as "T" if total organic carbon was determined by Carbon elemental analysis. Report attribute as "F" if total organic carbon was estimated using the Loss on Ignition (LOI) method. If the organic carbon has been estimated from LOI, conversion is achieved by multiplying by 1.724 (assuming 58% of organic is organic carbon). Enter '**N**' if not applicable.
Permitted values/range	T, F, N
Format	Char 1
Rule(s)	Must have value

Attribute	Total Nitrogen (Lab)
Variable name	N_GT8MM
Description	Total nitrogen content of the > 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Zeroes (0) are real values, i.e. if sample has no > 8mm portion. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 99.99, -1, -7, -8
Format	Dec 4.2
Rule(s)	Must have value.

Attribute	Available phosphorus (Lab)
Variable name	P_8MM
Description	The available phosphorus content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 9999, -1, -7, -8
Format	Num 4
Rule(s)	Must have value.

Attribute	Total phosphorus (Lab)
Variable name	TOTAL_P_8MM
Description	Total phosphorus content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	1 to 9999, -1, -7, -8
Format	Num 4
Rule(s)	Must have value.

Attribute	Exchangeable potassium (Lab)
Variable name	K_8MM
Description	Exchangeable potassium content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Exchangeable calcium (Lab)
Variable name	CA_8MM
Description	Exchangeable calcium content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **cmol kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Exchangeable magnesium (Lab)
Variable name	MG_8MM
Description	Exchangeable magnesium content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Exchangeable sodium (Lab)
Variable name	NA_8MM
Description	Exchangeable sodium content of ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Cation exchange capacity (Lab)
Variable name	CEC_8MM
Description	The total cation exchange capacity of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **cmol kg^{-1}.** Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.01 to 999.99, -1, -7, -8
Format	Dec 5.2
Rule(s)	Must have value.

Attribute	Total Sulfur (Lab)
Variable name	S_8MM
Description	Total sulfur content of the ≤ 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0.001 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Total phosphorus (Lab)
Variable name	TOTAL_P_GT8MM
Description	Total phosphorus content of the > 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Zeroes (0) are real values, i.e. if sample has no > 8mm portion. Report as **mg kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 9999, -1, -7, -8
Format	Num 4
Rule(s)	Must have value.

Attribute	Total Sulfur (Lab)
Variable name	S_GT8MM
Description	Total sulfur content of the > 8mm oven dried (70°C) portion of the organic soil sample, finely ground to 1mm. Zeroes (0) are real values, i.e. if sample has no > 8mm portion. Report as **g kg^{-1}**. Enter -1 for missing data. Enter -7 if not requisitioned. Enter -8 if value is below the minimum detectable concentration for the test.
Permitted values/range	0 to 99.999, -1, -7, -8
Format	Dec 5.3
Rule(s)	Must have value.

Attribute	Internal designation of lab number (Lab)
Variable name	LAB_NUM
Description	Unique number given by lab to each sample processed. For example, PE20040001 Prince Edward Island, 2004, lab number 0001 (unique 4 digit number). Enter M (missing) if no lab number reported. Do not use commas as this may cause an error when importing/exporting csv (comma delineated) files.
Permitted values/range	
Format	Char 50
Rule(s)	Must have value.

Attribute	Bulk density ≤ 8mm organic soil (Compiled)
Variable name	BULK_DENSITY_8MM
Description	The bulk density of the ≤ 8mm portion of the organic soil, oven-dry (70°C), sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Report as **g cm^{-3}**. Missing or out of range data will be reported as -1
Permitted values/range	0.010 to 1.000, -1
Format	Dec 4.3
Rule(s)	Must have value

Attribute	Bulk density organic soil (Compiled)
Variable name	BULK_DENSITY_TOTAL
Description	The bulk density of the total organic soil sample, oven-dry (70°C), sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Report as **g cm^{-3}**. Missing or out of range data will be reported as -1
Permitted values/range	0.010 to 1.000, -1
Format	Dec 4.3
Rule(s)	Must have value

Attribute	Sample layer carbon content (Compiled)
Variable name	LAYER_CC_8MM
Description	Concentration of carbon per unit area of the ≤ 8mm component of the organic soil sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for

	more information on how this attribute is calculated. Reported in **kg m^{-2}**. Missing or out of range data will be reported as -1.
Permitted values/range	0.00 to 999.99; -1
Format	Dec 5.2

Attribute	Sample layer carbon content (Compiled)
Variable name	LAYER_CC_TOTAL
Description	Concentration of carbon per unit area of the total organic soil sample. Refer to the National Compilation Standard for Ground Plots: Compilation Procedures document for more information on how this attribute is calculated. Reported in **kg m^{-2}**.
Permitted values/range	0.00 to 999.99, -1
Format	Dec 5.2

14. RELATIVE ABUNDANCE FOR LARGE TREE SPECIES (rel_abundance_lgtree)

Indexed attributes: **NFI_PLOT, MEAS_NUM, SPECIES_NUM.**

**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999

Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.

Attribute	Species ranked abundance number (Compiled)
Variable name	SPECIES_NUM
Description	For live standing trees, each unique combination Genus/Species/Variety in the plot is numbered in order, from most abundant to least abundant based on stem count.
Permitted values/range	0 to 99
Format	Num 2
Rule(s)	Must have value.

Attribute	Genus (Compiled)
Variable name	GENUS
Description	Genus code. The first four letters of the scientific genus name. Unidentified genus is coded as **GENC** for conifers**, GENH** for hardwoods, or **UNKN** if unknown.
Permitted values/range	For a list of acceptable genus codes, refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4

Attribute	Species (Compiled)
Variable name	SPECIES
Description	Species code. The first three letters of the scientific species name. Unidentified species is coded as **SPP**.
Permitted values/range	For a list of acceptable species codes, refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3

Attribute	Variety (Compiled)
Variable name	VARIETY
Description	Variety code. The first 3 letters of the scientific variety name. Left blank if variety is unidentified.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A) for valid combinations of genus/species/variety codes.
Format	Char 3
Rule(s)	May be blank

Attribute	Relative abundance for large trees (Compiled)
Variable name	SPECIES_LTREL
Description	The relative abundance, by species, of large tree species in an area. It is expressed as a **proportion**.
Permitted values/range	0.000 to 1.000
Format	Dec 4.3

15. RELATIVE ABUNDANCE FOR SMALLTREE SPECIES (rel_abundance_smtree)

Indexed attributes: **NFI_PLOT, MEAS_NUM**, **SPECIES_NUM**.

**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.

Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.

Attribute	Species ranked abundance number (Compiled)
Variable name	SPECIES_NUM
Description	For live standing trees, each unique combination of live standing small tree Genus/Species/Variety in the plot is numbered in order, from most abundant to least abundant based on stem count.
Permitted values/range	0 to 99
Format	Num 2
Rule(s)	Must have value.

Attribute	Genus (Compiled)
Variable name	GENUS
Description	Genus code. The first four letters of the scientific genus name. Unidentified genus is coded as **GENC** for conifers**, GENH** for hardwoods, or **UNKN** if unknown.
Permitted values/range	For a list of acceptable genus codes, refer to the *NFI Tree Species List* (Appendix A).
Format	Char 4

Attribute	Species (Compiled)
Variable name	SPECIES
Description	Species code. The first three letters of the scientific species name. Unidentified species is coded as **SPP**.
Permitted values/range	For a list of acceptable species codes, refer to the *NFI Tree Species List* (Appendix A).
Format	Char 3

Attribute	Variety (Compiled)

Variable name	VARIETY
Description	Variety code. The first 3 letters of the scientific variety name. Left blank if variety is unidentified.
Permitted values/range	Refer to the *NFI Tree Species List* (Appendix A) for valid combinations of genus/species/variety codes.
Format	Char 3
Rule(s)	May be blank

Attribute	Relative abundance for small trees (Compiled)
Variable name	SPECIES_SMTREL
Description	The relative abundance, by species, of small tree species in an area. It is expressed as a **proportion**.
Permitted values/range	0.000 to 1.000
Format	Dec 4.3

16. RELATIVE ABUNDANCE FOR ECOLGICAL SPECIES (rel_abundance_ec)

Indexed attributes: **NFI_PLOT, MEAS_NUM**, **EC_LAYERID, SPECIES_NUM**.

**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3

Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.

Attribute	Ecological layer ID (Compiled)
Variable name	EC_LAYERID

Description	The ecological layer in which the species occurs. A species may occur in more than one layer at a plot. Each unique combination of species and layer should be entered as a separate record. **A** Tree Layer: Any species taller than 10 m in height. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **A1** A subcategory of layer A reported by some jurisdictions prior to August 1, 2007. Tree Layer: Any species taller than 10 m in height **AND dominant in canopy**. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **A2**. A subcategory of layer A reported by some jurisdictions prior to August 1, 2007. Tree Layer: Any species taller than 10 m in height **AND subdominant in canopy**. These are usually tree species. For the ecology plots, no sub-division of height within this layer is necessary. **B1** Tall Shrub Layer: Includes woody species (tree and shrub) > 2.0 m and < 10 m in height. **B2** Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 2.0 m in height. Tree species at least two years old. **B2a** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007.Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 2.0 m and ≥ 0.5 m in height. **B2b** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007.Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is < 0.5 m in height. **B2c** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007. Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is ≤ 1.3 m in height. **B2d** A subcategory of layer B1 reported by some jurisdictions prior to August 1, 2007. Low Shrub Layer: Includes woody species (tree and shrub) where the entire plant is > 1.3 m in height. **C** Herb Layer: Herbaceous species including forbs, ferns, grasses, sedges, rushes, saprophytes, club-mosses, horsetails, and some low woody species. **D** Bryoid Layer: Includes mosses, liverworts, foliose and frucitose lichens, and tree seedlings less than 2 years old. Prior to 2007, some jurisdictions reported additional layers not assessed by the NFI program. These are the definitions associated with those layers: **8** Floating-leaf aquatic **9** Submerged aquatic **10** Needle litter **11** Leaf litter **12** Woody material **13** Rock exposed **14** Water exposed

	15 Soil exposed
Permitted values/range	
Format	Char 3
Rule(s)	Must have value.

Attribute	Species ranked abundance number (Compiled)
Variable name	SPECIES_NUM
Description	Each unique combination of Genus/Species/Variety in an ecological layer numbered in order, from most abundant to least abundant based on percent cover.
Permitted values/range	0 to 99
Format	Num 2
Rule(s)	Must have value.

Attribute	Genus (Compiled)
Variable name	GENUS
Description	Genus code. The first four letters of the scientific genus name. Unidentified genus is coded as **GENC** for conifers**, GENH** for hardwoods, or **UNKN** if unknown.
Permitted values/range	
Format	Char 50

Attribute	Species (Compiled)
Variable name	SPECIES
Description	Species code. The first three letters of the scientific species name. Unidentified species is coded as **SPP**.
Permitted values/range	
Format	Char 50

Attribute	Variety (Compiled)
Variable name	VARIETY
Description	Variety code. The first 3 letters of the scientific variety name. Left blank if variety is unidentified.
Permitted values/range	
Format	Char 50
Rule(s)	May be blank

Attribute	Relative abundance for ecological species (Compiled)
Variable name	SPECIES_ECREL
Description	The relative abundance, by taxon, in an ecological layer, based on percent cover. Expressed as a proportion.
Permitted values/range	0.000 to 1.000
Format	Dec 4.3

17. UNIQUE SPECIES LIST (species_list)

Indexed attributes: **NFI_PLOT, MEAS_NUM, SPECIES_INDEX**
**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.

Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Measurement number (Compiled)
Variable name	MEAS_NUM
Description	A newly established plot will have measurement number = 0. First re-measurement would be 1, etc.
Permitted values/range	0 to 999
Format	Num 3
Rule(s)	Must have value. Measurement numbers are consecutive starting from 0 (e.g. 0, 1, 2, 3 not 1, 3). Measurement date and measurement number must correspond chronologically, e.g. more recent dates correspond with larger measurement numbers.

Attribute	Species Index (Field)
Variable name	SPECIES_INDEX
Description	A unique number assigned to each living taxon in the plot.
Permitted values/range	1 to 999
Format	Num 3
Rule(s)	Must have value Combination of NFI_PLOT, MEAS_NUM, PLOT_TYPE, EC_LAYERID and SPECIES_INDEX must be unique.

Attribute	Genus (Compiled)
Variable name	GENUS
Description	The scientific genus name of each plant taxa identified at the NFI plot.
Permitted values/range	This field may contain the full scientific genus name or, if collected prior to 2021, a 4 letter genus code (generally the first 4 letters of the scientific genus name).
Format	Char 50

Attribute	Species (Compiled)
Variable name	SPECIES
Description	The scientific species name of each plant taxa identified at the NFI plot.
Permitted values/range	This field may contain the full scientific species name or, if collected prior to 2021, a 3 letter species code (generally the first 3 letters of the scientific species name).
Format	Char 50

Attribute	Variety (Compiled)
Variable name	VARIETY
Description	An optional field for recording the varietal or subspecies of each plant taxa identified at the NFI plot.
Permitted values/range	This field may contain the full scientific subspecies or varietal name or, if collected prior to 2021, a 3 letter code (generally the first 3 letters of the scientific subspecies or varietal name).
Format	Char 50
Rule(s)	May be blank

18. CLIMATE INFORMATION (climate)

Indexed attributes: **NFI_PLOT, YEAR**
**Note: this table is compiled by the CFS project office.

Attribute	NFI network label (Compiled)
Variable name	NFI_PLOT
Description	The Number National Forest Inventory label that identifies the point on the network associated with the ground plot. Note that values > 2000000 indicate FLUXNET, PERD or other data source information.
Permitted values/range	NFI: 1 to 1600000 FLUXNET: 2000000 to 2299999 PERD: 2300000 to 2399999 CRD: 2400000 to 2499999 MT: 2500000 to 2599999 EM: 2600000 to 2699999 KB: 2700000 to 2709999 ME: 2800000 to 2809999 UK: 2900000 to 2909999 SC: 3000000 to 3009999
Format	Num 7
Rule(s)	Must have value. No letters allowed in the format.

Attribute	Location ID (compiled)
Variable name	LOC_ID
Description	A unique ground plot location associated with a given National Forest Inventory grid point label (NFI_PLOT). Therefore, concatenations of NFI_PLOT and LOC_ID attributes identify unique NFI ground plot geospatial locations, which are ideally re-measured over time. The initial location where a ground plot is established and measured is LOC_ID = 0, while subsequent integers each indicate an additional ground plot location associated with that NFI_PLOT. LOC_ID is incremented in order of ground plot establishment date.
Permitted values/range	0 to 9
Format	Num 1
Rule(s)	Must have value

Attribute	Year (Compiled)
Variable name	YEAR
Description	Year associated with climate information.
Permitted values/range	1900 to present
Format	Num 4
Rule(s)	Must have value Combination of NFI_PLOT and YEAR must be unique.

Attribute	Mean diurnal range (Mean (period max-min)) (Compiled)
Variable name	MEAN_DIURNAL_RANGE
Description	The mean of all the monthly diurnal temperature ranges (˚**C**). Each monthly diurnal range is the difference between that month's maximum and minimum temperature.
Permitted values/range	3.0 to 20.0

Format	Dec 3.1
Rule(s)	Must have value

Attribute	Isothermality (Compiled)
Variable name	ISOTHERMALITY
Description	The mean diurnal range divided by the annual temperature range.
Permitted values/range	0.10 to 0.50
Format	Dec 3.2
Rule(s)	Must have value

Attribute	Temperature Seasonality (C of V) (Compiled)
Variable name	TEMP_SEASONALITY
Description	The temperature Coefficient of Variation (C of V) is the standard deviation of the monthly mean temperatures expressed as a percentage of the mean of those temperatures (i.e. the annual mean). For this calculation, the mean in **degrees Kelvin** is used. This avoids the possibility of having to divide by zero, but does mean that the values are usually quite small.
Permitted values/range	1.00 to 8.00
Format	Dec 3.2
Rule(s)	Must have value

Attribute	Max Temperature of Warmest Period (Compiled)
Variable name	MAXTEMP_WARMEST
Description	The highest temperature of any monthly maximum temperature (˚**C**).
Permitted values/range	10.0 to 35.0
Format	Dec 3.1
Rule(s)	Must have value

Attribute	Min Temperature of Coldest Period (Compiled)
Variable name	MINTEMP_COLDEST
Description	The lowest temperature of any monthly minimum temperature (˚**C**).
Permitted values/range	-55.0 to 5.0
Format	Dec 3.1
Rule(s)	Must have value

Attribute	Temperature Annual Range (Compiled)
Variable name	TEMP_ANNUAL_RANGE
Description	The difference between the Max Temperature of Warmest Period and the Min Temperature of Coldest Period (˚**C**).
Permitted values/range	10.0 to 75.0
Format	Dec 3.1
Rule(s)	Must have value

Attribute	Mean Temperature of Wettest Quarter (Compiled)
Variable name	MEANTEMP_WETTEST_QTR
Description	The wettest quarter of the year is determined (to the nearest week), and the mean temperature of this period is calculated (˚**C**).
Permitted values/range	-35.0 to 25.0
Format	Dec 3.1
Rule(s)	Must have value

Attribute	Mean Temperature of Driest Quarter (Compiled)
Variable name	MEANTEMP_DRIEST_QTR
Description	The driest quarter of the year is determined (to the nearest week), and the mean temperature of this period is calculated (˚**C**).
Permitted values/range	-40.0 to 25.0
Format	Dec 3.1
Rule(s)	Must have value

Attribute	Mean Temperature of Warmest Quarter (Compiled)
Variable name	MEANTEMP_WARMEST_QTR
Description	The warmest quarter of the year is determined (to the nearest week), and the mean temperature of this period is calculated (˚**C**).
Permitted values/range	0.0 to 25.0
Format	Dec 3.1
Rule(s)	Must have value

Attribute	Mean Temperature of Coldest Quarter (Compiled)
Variable name	MEANTEMP_COLDEST_QTR
Description	The coldest quarter of the year is determined (to the nearest week), and the mean temperature of this period is calculated (˚**C**).
Permitted values/range	-40.0 to 10.0
Format	Dec 3.1
Rule(s)	Must have value

Attribute	Annual Precipitation (Compiled)
Variable name	ANNUAL_PRECIP
Description	The sum of all the monthly precipitation estimates (**mm**).
Permitted values/range	0 to 5000
Format	Num 4
Rule(s)	Must have value

Attribute	Precipitation of Wettest Period (Compiled)
Variable name	PRECIP_WETTEST_PRD
Description	The precipitation of the wettest week or month, depending on the time step (**mm**).
Permitted values/range	0 to 1500
Format	Num 4
Rule(s)	Must have value

Attribute	Precipitation of Driest Period (Compiled)
Variable name	PRECIP_DRIEST_PRD
Description	The precipitation of the driest month (**mm**).
Permitted values/range	0 to 250
Format	Num 3
Rule(s)	Must have value

Attribute	Precipitation Seasonality(C of V) (Compiled)
Variable name	PRECIP_SEASONALITY
Description	The Coefficient of Variation (C of V) is the standard deviation of the monthly precipitation estimates expressed as a percentage of the mean of those estimates (i.e. the annual mean).
Permitted values/range	0 to 250
Format	Num 3
Rule(s)	Must have value

Attribute	Precipitation of Wettest Quarter (Compiled)
Variable name	PRECIP_WETTEST_QTR
Description	The wettest quarter of the year is determined (to the nearest week), and the total precipitation over this period is calculated (**mm**).
Permitted values/range	0 to 2500
Format	Num 4
Rule(s)	Must have value

Attribute	Precipitation of Driest Quarter (Compiled)
Variable name	PRECIP_DRIEST_QTR
Description	The driest quarter of the year is determined (to the nearest week), and the total precipitation over this period is calculated (**mm**).
Permitted values/range	0 to 1000

Format	Num 4
Rule(s)	Must have value

Attribute	Precipitation of Warmest Quarter (Compiled)
Variable name	PRECIP_WARMEST_QTR
Description	The warmest quarter of the year is determined (to the nearest week), and the total precipitation over this period is calculated (**mm**).
Permitted values/range	0 to 1000
Format	Num 4
Rule(s)	Must have value

Attribute	Precipitation of Coldest Quarter (Compiled)
Variable name	PRECIP_COLDEST_QTR
	The coldest quarter of the year is determined (to the nearest week), and the total precipitation over this period is calculated (**mm**).
Description	0 to 2000
Format	Num 4
Rule(s)	Must have value

Attribute	Julian day number of start of growing season (Compiled)
Variable name	GROW_SEASON_START
Description	The growing season was defined as starting when the mean daily temperature was greater than or equal to 5˚C for 5 consecutive days beginning March 1.
Permitted values/range	-9999 to 225
Format	Num 4
Rule(s)	Must have value

Attribute	Julian day number of end of growing season (Compiled)
Variable name	GROW_SEASON_END
Description	The growing season ended when the minimum temperature was less than -2˚C beginning August 1.
Permitted values/range	-9999 to 364
Format	Num 4
Rule(s)	Must have value

Attribute	Number of days of growing season (Compiled)
Variable name	GROW_SEASON_LENGTH
Description	The number of days from the first day of the growing season to the last day of the growing season.
Permitted values/range	-9999 to 356
Format	Num 4
Rule(s)	Must have value

Attribute	Total precipitation for period 1 (Compiled)
Variable name	TOT_PRECIP_PRD1
Description	The total precipitation in the three months prior to growing season (**mm**).
Permitted values/range	-9999 to 2000.0
Format	Dec 5.1
Rule(s)	Must have value

Attribute	Total precipitation for period 3 (Compiled)
Variable name	TOT_PRECIP_PRD3
Description	The total precipitation in the entire growing season (**mm**).
Permitted values/range	-9999 to 4500.0
Format	Dec 5.1
Rule(s)	Must have value

Attribute	Growing degree-days above base_temp for period 3 (Compiled)
Variable name	GDD_PRD3
Description	Growing degree days in the entire growing season (base temperature 5 ˚C).

Permitted values/range	-9999 to 3000
Format	Num 4
Rule(s)	Must have value

Attribute	Annual mean temperature (Compiled)
Variable name	ANNUAL_MEANTEMP
Description	The mean of the average monthly temperatures (˚**C**)
Permitted values/range	-9999 to 15.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	Annual minimum temperature (Compiled)
Variable name	ANNUAL_MINTEMP
Description	Average of the 12 monthly minimum temperatures (˚**C**)
Permitted values/range	-9999 to 10.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	Annual maximum temperature (Compiled)
Variable name	ANNUAL_MAXTEMP
Description	Average of the 12 monthly maximum temperatures (˚**C**)
Permitted values/range	-9999 to 20.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	Mean temperature for period 3 (Compiled)
Variable name	MEANTEMP_PRD3
Description	Mean temperature for the entire growing season (˚**C**)
Permitted values/range	-9999 to 20.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	Temperature range for period 3 (Compiled)
Variable name	TEMP_RANGE_PRD3
Description	Temperature range for the entire growing season (˚**C**).
Permitted values/range	-9999 to 40.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	January mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_JAN
Description	Mean of the minimum daily temperatures for January (˚**C**).
Permitted values/range	-55.00 to 10.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	February mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_FEB
Description	Mean of the minimum daily temperatures for February (˚**C**).
Permitted values/range	-55.00 to 10.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	March mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_MAR
Description	Mean of the minimum daily temperatures for March (˚**C**).
Permitted values/range	-45.00 to 10.00
Format	Dec 4.2

Rule(s)	Must have value

Attribute	April mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_APR
Description	Mean of the minimum daily temperatures for April (˚**C**).
Permitted values/range	-35.00 to 10.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	May mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_MAY
Description	Mean of the minimum daily temperatures for May (˚**C**).
Permitted values/range	-20.00 to 15.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	June mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_JUN
Description	Mean of the minimum daily temperatures for June (˚**C**).
Permitted values/range	-10.00 to 20.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	July mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_JUL
Description	Mean of the minimum daily temperatures for July (˚**C**).
Permitted values/range	-5.00 to 25.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	August mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_AUG
Description	Mean of the minimum daily temperatures for August (˚**C**).
Permitted values/range	-10.00 to 25.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	September mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_SEP
Description	Mean of the minimum daily temperatures for September (˚**C**).
Permitted values/range	-15.00 to 20.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	October mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_OCT
Description	Mean of the minimum daily temperatures for October (˚**C**).
Permitted values/range	-25.00 to 15.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	November mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_NOV
Description	Mean of the minimum daily temperatures for November (˚**C**).
Permitted values/range	-40.00 to 10.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	December mean monthly minimum temperature (Compiled)
Variable name	MEAN_MINTEMP_DEC
Description	Mean of the minimum daily temperatures for December (˚**C**).
Permitted values/range	-55.00 to 10.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	January mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_JAN
Description	Mean of the maximum daily temperatures for January (˚**C**).
Permitted values/range	-50.00 to 15.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	February mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_FEB
Description	Mean of the maximum daily temperatures for February (˚**C**).
Permitted values/range	-40.00 to 15.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	March mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_MAR
Description	Mean of the maximum daily temperatures for March (˚**C**).
Permitted values/range	-30.00 to 20.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	April mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_APR
Description	Mean of the maximum daily temperatures for April (˚**C**).
Permitted values/range	-20.00 to 25.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	May mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_MAY
Description	Mean of the maximum daily temperatures for May (˚**C**).
Permitted values/range	-5.00 to 30.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	June mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_JUN
Description	Mean of the maximum daily temperatures for June (˚**C**).
Permitted values/range	0.00 to 35.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	July mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_JUL
Description	Mean of the maximum daily temperatures for July (˚**C**).
Permitted values/range	0.00 to 40.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	August mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_AUG
Description	Mean of the maximum daily temperatures for August (˚**C**).
Permitted values/range	0.00 to 40.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	September mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_SEP
Description	Mean of the maximum daily temperatures for September (˚**C**).
Permitted values/range	-5.00 to 35.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	October mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_OCT
Description	Mean of the maximum daily temperatures for October (˚**C**).
Permitted values/range	-15.00 to 25.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	November mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_NOV
Description	Mean of the maximum daily temperatures for November (˚**C**).
Permitted values/range	-35.00 to 15.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	December mean monthly maximum temperature (Compiled)
Variable name	MEAN_MAXTEMP_DEC
Description	Mean of the maximum daily temperatures for December (˚**C**).
Permitted values/range	-45.00 to 15.00
Format	Dec 4.2
Rule(s)	Must have value

Attribute	January total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_JAN
Description	Total monthly precipitation for January (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	February total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_FEB
Description	Total monthly precipitation for February (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	March total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_MAR
Description	Total monthly precipitation for March (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	April total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_APR

Description	Total monthly precipitation for April (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	May total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_MAY
Description	Total monthly precipitation for May (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	June total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_JUN
Description	Total monthly precipitation for June (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	July total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_JUL
Description	Total monthly precipitation for July (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	August total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_AUG
Description	Total monthly precipitation for August (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	September total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_SEP
Description	Total monthly precipitation for September (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	October total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_OCT
Description	Total monthly precipitation for October (**mm**).
Permitted values/range	0.00 to 1000.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	November total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_NOV
Description	Total monthly precipitation for November (**mm**).
Permitted values/range	0.00 to 1500.00
Format	Dec 6.2
Rule(s)	Must have value

Attribute	December total monthly precipitation (Compiled)
Variable name	TOTAL_PRECIP_DEC
Description	Total monthly precipitation for December (**mm**).
Permitted values/range	0.00 to 1500.00

Format	Dec 6.2
Rule(s)	Must have value

Attribute	January climate moisture index (Compiled)
Variable name	CMI_JAN
Description	The difference between precipitation and potential evapotranspiration for the month of January (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	February climate moisture index (Compiled)
Variable name	CMI_FEB
Description	The difference between precipitation and potential evapotranspiration for the month of February (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	March climate moisture index (Compiled)
Variable name	CMI_MAR
Description	The difference between precipitation and potential evapotranspiration for the month of March (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	April climate moisture index (Compiled)
Variable name	CMI_APR
Description	The difference between precipitation and potential evapotranspiration for the month of April (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	May climate moisture index (Compiled)
Variable name	CMI_MAY
Description	The difference between precipitation and potential evapotranspiration for the month of May (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	June climate moisture index (Compiled)
Variable name	CMI_JUN
Description	The difference between precipitation and potential evapotranspiration for the month of June (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	July climate moisture index (Compiled)
Variable name	CMI_JUL
Description	The difference between precipitation and potential evapotranspiration for the month of July (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	August climate moisture index (Compiled)
Variable name	CMI_AUG
Description	The difference between precipitation and potential evapotranspiration for the month of August (**cm**).
Permitted values/range	-100 to 150

Format	Dec 5.2
Rule(s)	May be blank

Attribute	September climate moisture index (Compiled)
Variable name	CMI_SEP
Description	The difference between precipitation and potential evapotranspiration for the month of September (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	October climate moisture index (Compiled)
Variable name	CMI_OCT
Description	The difference between precipitation and potential evapotranspiration for the month of October (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	November climate moisture index (Compiled)
Variable name	CMI_NOV
Description	The difference between precipitation and potential evapotranspiration for the month of November (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

Attribute	December climate moisture index (Compiled)
Variable name	CMI_DEC
Description	The difference between precipitation and potential evapotranspiration for the month of December (**cm**).
Permitted values/range	-100 to 150
Format	Dec 5.2
Rule(s)	May be blank

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Appendix A:

Canada's National Forest Inventory

Tree Species List

September, 2014
Version 4.5

NATIVE CONIFERS

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
amabilis fir	sapin gracieux	Abies amabilis	ABIE	AMA		
balsam fir	sapin baumier	Abies balsamea	ABIE	BAL		
Rocky Mountain alpine fir	sapin bifolié	Abies bifolia	ABIE	BIF		
grand fir	sapin grandissime	Abies grandis	ABIE	GRA		
subalpine fir	sapin subalpin	Abies lasiocarpa	ABIE	LAS		
unidentified fir	sapin non identifié	Abies spp.	ABIE	SPP		
yellow-cedar	chamaecyparis jaune	Chamaecyparis nootkatensis	CHAM	NOO		
unidentified cypress	chamaecyparis non identifié	Chamaecyparis spp.	CHAM	SPP		
unidentified softwood	conifères non identifié		GENC	SPP		
Rocky mountain juniper	genévrier des Rocheuses	Juniperus scopulorum	JUNI	SCO		TS
unidentified juniper	genévrier non identifié	Juniperus spp.	JUNI	SPP		
Eastern redcedar	genévrier de Virginie	Juniperus virginiana	JUNI	VIR		TS
Tamarack	mélèze laricin	Larix laricina	LARI	LAR		
subalpine larch	mélèze subalpin	Larix lyallii	LARI	LYA		
Western larch	mélèze de l'Ouest	Larix occidentalis	LARI	OCC		
unidentified larch	mélèze non identifié	Larix spp.	LARI	SPP		
Engelmann spruce	épinette d'Engelmann	Picea engelmannii	PICE	ENG		
Engelmann x white	hybride épinette d'Engelmann et épinette blanche	Picea engelmannii x glauca	PICE	ENG	GLA	
white spruce	épinette blanche	Picea glauca	PICE	GLA		
Sitka x white	hybride épinette de Sitka et épinette blanche	Picea xlutzii	PICE	LUT	X	
black spruce	épinette noire	Picea mariana	PICE	MAR		
red spruce	épinette rouge	Picea rubens	PICE	RUB		
Sitka spruce	épinette de Sitka	Picea sitchensis	PICE	SIT		
Sitka x unidentified	hybride épinette de Sitka et épinette non identifié	Picea sitchensis xunknown	PICE	SIT	X	
unidentified spruce	épinette non identifié	Picea spp.	PICE	SPP		
whitebark pine	pin à blanche écorce	Pinus albicaulis	PINU	ALB		
jack pine	pin gris	Pinus banksiana	PINU	BAN		
lodgepole pine	pin tordu	Pinus contorta	PINU	CON		
shore pine	pin tordu	Pinus contorta var. contorta	PINU	CON	CON	
lodgepole pine	pin tordu latifolié	Pinus contorta var. latifolia	PINU	CON	LAT	
limber pine	pin flexible	Pinus flexilis	PINU	FLE		
Western white pine	pin argenté	Pinus monticola	PINU	MON		
lodgepole x jack pine	pin tordu x pin gris	Pinus xmurraybanksiana	PINU	MUR		
Ponderosa pine	pin ponderosa	Pinus ponderosa	PINU	PON		
red pine	pin rouge	Pinus resinosa	PINU	RES		
pitch pine	pin rigide	Pinus rigida	PINU	RIG		
unidentified pine	pin non identifié	Pinus spp.	PINU	SPP		

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
eastern white pine	pin blanc	Pinus strobus	PINU	STR		
Douglas-fir	Douglas vert	Pseudotsuga menziesii	PSEU	MEN		
Interior Douglas-fir	Douglas bleu	Pseudotsuga menziesii var. glauca	PSEU	MEN	GLA	
Coastal Douglas-fir	Douglas vert	Pseudotsuga menziesii var. menziesii	PSEU	MEN	MEN	
western yew	if de l'Ouest	Taxus brevifolia	TAXU	BRE		
unidentified yew	if non identifié	Taxus spp.	TAXU	SPP		
eastern white-cedar	thuya occidental	Thuja occidentalis	THUJ	OCC		
western redcedar	thuya géant	Thuja plicata	THUJ	PLI		
unidentified thuja	thuja non identifié	Thuja spp.	THUJ	SPP		
eastern hemlock	pruche du Canada	Tsuga canadensis	TSUG	CAN		
western hemlock	pruche de l'Ouest	Tsuga heterophylla	TSUG	HET		
mountain hemlock	pruche subalpine	Tsuga mertensiana	TSUG	MER		
mountain x western hemlock hybrid	hybride pruche subalpine et pruche de l'Ouest	Tsuga mertensiana x heterophylla	TSUG	MER	HET	
unidentified hemlock	pruche non identifié	Tsuga spp.	TSUG	SPP		

*Notes: 'x' denotes hybridization. **Form:** TS = Very small tree or shrubby tree, shrub on some sites according to Farrar's *Trees in Canada*.

NATIVE HARDWOODS

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
vine maple	érable circiné	Acer circinatum	ACER	CIR		TS
Freeman maple	érable Autumn Blaze	Acer x freemanii (Acer rubrum × Acer saccharinum)	ACER	FRE		
Douglas maple	érable nain	Acer glabrum var. douglasii	ACER	GLA	DOU	TS
bigleaf maple	érable à grandes feuilles	Acer macrophyllum	ACER	MAC		
Manitoba maple (box-elder)	érable négondo (à Giguère)	Acer negundo	ACER	NEG		
black maple	érable noir	Acer nigrum	ACER	NIG		
striped maple	érable de Pennsylvanie	Acer pensylvanicum	ACER	PEN		
red maple	érable rouge	Acer rubrum	ACER	RUB		
silver maple	érable argenté	Acer saccharinum	ACER	SAC		
sugar maple	érable à sucre	Acer saccharum	ACER	SAH		
sugar maple	érable à sucre	Acer saccharum var. saccharum	ACER	SAH	SAC	
mountain maple	érable à épis	Acer spicatum	ACER	SPI		TS
unidentified maple	erable non identifié	Acer spp.	ACER	SPP		

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
Ohio buckeye	marronnier glabre	Aesculus glabra	AESC	GLA		
gray alder	aulne rugueux	Alnus incana	ALNU	INC		TS
speckled alder	aulne rugueux	Alnus incana ssp. rugosa	ALNU	INC	RUG	TS
mountain alder	aulne à feuilles minces	Alnus incana ssp. tenuifolia	ALNU	INC	TEN	
red alder	aulne rouge	Alnus rubra	ALNU	RUB		
speckled alder	aulne rugueux	Alnus rugosa	ALNU	RUG		TS
Hazel alder	aulne blanc	Alnus serrulata	ALNU	SER		TS
Sitka alder	aulne de Sitka	Alnus sinuata	ALNU	SIN		TS
unidentified alder	aulne non identifié	Alnus spp.	ALNU	SPP		
Siberian alder	aulne de Sibérie	Alnus viridis ssp. fruticosa	ALNU	VIR	FRU	TS
Sitka alder	aulne de Sitka	Alnus viridis ssp. sinuata	ALNU	VIR	SIN	TS
Saskatoon-berry	amélanchier à feuilles d'aulne	Amelanchier alnifolia	AMEL	ALN		TS
downy serviceberry	amélanchier aborescent	Amelanchier arborea	AMEL	ARB		TS
mountain serviceberry	amélanchier de Bartram	Amelanchier bartramiana	AMEL	BAR		TS
Pacific serviceberry	amélanchier de l'Ouest	Amelanchier florida	AMEL	FLO		TS
smooth juneberry	amélanchier glabre	Amelanchier laevis	AMEL	LAE		TS
roundleaf juneberry	amélanchier sanguin	Amelanchier sanguinea	AMEL	SAN		TS
Gaspé serviceberry	amélanchier de Gaspésie	Amelanchier sanguinea	AMEL	SAN	GAS	TS
unidentified serviceberry	amélanchier non identifié	Amelanchier spp.	AMEL	SPP		
arbutus	arbousier d'Amérique	Arbutus menziesii	ARBU	MEN		
unidentified asimina	asiminier non identifié	Asimina	ASIM	SPP		
pawpaw	asiminier trilobé	Asimina triloba	ASIM	TRI		
Alaska paper birch	bouleau d'Alaska	Betula alaskana	BETU	ALA		
yellow birch	bouleau jaune	Betula alleghaniensis	BETU	ALL		
blueleaf birch	bouleau bleu	Betula xcaerulea	BETU	CAE		
mountain paper birch	bouleau à feuilles cordées	Betula cordifolia	BETU	COR		
Kenai birch	bouleau Kenai	Betula kenaica	BETU	KEN		
cherry birch	bouleau flexible	Betula lenta	BETU	LEN		
Alaska paper birch	bouleau d'Alaska	Betula neoalaskana	BETU	NEO		
water birch	bouleau fontinal	Betula occidentalis	BETU	OCC		
white birch	bouleau à papier (blanc)	Betula papyrifera	BETU	PAP		
Alaska paper birch	bouleau d'Alaska	Betula papyrifera var. neoalaskana	BETU	PAP	NEO	
white birch	bouleau à papier (blanc)	Betula papyrifera var. papyrifera	BETU	PAP	PAP	

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
gray birch	bouleau gris	Betula populifolia	BETU	POP		
unidentified birch	bouleau non identifié	Betula spp.	BETU	SPP		
Alaska x paper birch hybrid	x hybride du bouleau de l'Alaska	Betula xwinteri	BETU	WIN		
blue-beech	charme de Caroline	Carpinus caroliniana	CARP	CAR		
American hornbeam	charme de la Caroline de Virginie	Carpinus caroliniana ssp. virginiana	CARP	CAR	VIR	
unidentified hornbeam	charme non identifié	Carpinus spp.	CARP	SPP		
bitternut hickory	caryer cordiforme	Carya cordiformis	CARY	COR		
red hickory	caryer glabre	Carya glabra var. odorata	CARY	GLA	ODO	
shellbark hickory	caryer lacinié	Carya liciniosa	CARY	LAC		
shagbark hickory	caryer ovale	Carya ovata	CARY	OVA		
shagbark hickory	caryer ovale	Carya ovata var. ovata	CARY	OVA	OVA	
unidentified hickory	caryer non identifié	Carya spp.	CARY	SPP		
mockernut	caryer blanc	Carya tomentosa	CARY	TOM		
American chestnut	châtaignier d'Amérique	Castanea dentata	CAST	DEN		
unidentified chestnut	châtaignier non identifié	Castanea spp.	CAST	SPP		
hackberry	micocoulier occidental	Celtis occidentalis	CELT	OCC		
unidentified hackberry	micocoullier non identifié	Celtis spp.	CELT	SPP		
dwarf hackberry	micocoulier rabougri	Celtis tenuifolia	CELT	TEN		TS
button-bush	céphalante occidental	Cephalanthus occidentalis	CEPH	OCC		TS
redbud	gainier rouge	Cercis canadensis	CERC	CAN		
alternate-leaf dogwood	cornouiller à feuilles alternes	Cornus alternifolia	CORN	ALT		TS
eastern flowering dogwood	cornouiller fleuri	Cornus florida	CORN	FLO		TS
Pacific dogwood	cornouiller de Nuttall	Cornus nuttallii	CORN	NUT		
unidentified dogwood	cornouiller non identifié	Cornus spp.	CORN	SPP		
redosier dogwood	cornouiller stolonifère	Cornus stolonifera	CORN	STO		TS
fireberry hawthorn	aubépine dorée	Crataegus chrysocarpa	CRAT	CHR		
dotted hawthorn	aubépine ponctuée	Crataegus punctata	CRAT	PUN		
hawthorn	aubépine	Crataegus spp.	CRAT	SPP		TS
silverberry	chalef argenté	Elaeagnus commutata	ELAE	COM		TS
burning-bush euonymus	fusain pourpre	Euonymus atropurpureus	EUON	ATR		TS
American beech	hêtre à grandes feuilles	Fagus grandifolia	FAGU	GRA		
unidentified beech	hêtre non identifié	Fagus spp.	FAGU	SPP		
glossy buckthorn	nerprun bourdaine	Frangula alnus	FRAN	ALN		
white ash	frêne blanc	Fraxinus americana	FRAX	AME		

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
black ash	frêne noir	Fraxinus nigra	FRAX	NIG		
red ash	frêne rouge	Fraxinus pennsylvanica	FRAX	PEN		
northern red ash	frêne d'Austin	Fraxinus pennsylvanica var. austini	FRAX	PEN	AUS	
green ash	frêne vert	Fraxinus pennsylvanica var. subintegerrima	FRAX	PEN	SUB	
blue ash	frêne anguleux	Fraxinus quadrangulata	FRAX	QUA		
unidentified ash	frêne non identifié	Fraxinus spp.	FRAX	SPP		
unidentified hardwood	feuillus non identifié		GENH	SPP		
honey-locust	févier épineux	Gleditsia triacanthos	GLED	TRI		
Kentucky coffetree	chicot févier	Gymnocladus dioicus	GYMN	DIO		
witch-hazel	hamamélis de Virginie	Hamamelis virginiana	HAMA	VIR		TS
unidentified holly	houx non identifié	Ilex spp.	ILEX	SPP		TS
mountain holly	faux houx	Ilex mucronata	ILEX	MUC		TS
common winterberry	houx verticillé	Ilex verticillata	ILEX	VER		TS
butternut	noyer cendré	Juglans cinerea	JUGL	CIN		
black walnut	noyer noir	Juglans nigra	JUGL	NIG		
unidentified walnut	noyer non identifié	Juglans spp.	JUGL	SPP		
unidentified liriodendron	tulipier de Virginie	Liriodendron spp.	LIRI	SPP		
tulip-tree	tulipier de Virginie	Liriodendron tulipifera	LIRI	TUL		
cucumber-tree	magnolia acuminé	Magnolia acuminata	MAGN	ACU		
wild crab apple	pommier odorant	Malus coronaria	MALU	COR		
Pacific crab apple	pommier du Pacifique	Malus fusca	MALU	FUS		
unidentified apple	pommier non identifié	Malus spp.	MALU	SPP		
red mulberry	mûrier rouge	Morus rubra	MORU	RUB		
Pacific bayberry	myrique du Pacifique	Myrica californica	MYRI	CAL		TS
mountain-holly	némopanthe mucroné	Nemopanthus mucronatus	NEMO	MUC		TS
unidentified nemopanthus	Némopanthe mucroné	Nemopanthus spp.	NEMO	SPP		TS
tupelo	nyssa	Nyssa spp.	NYSS	SPP		
black-gum	nyssa sylvestre	Nyssa sylvatica	NYSS	SYL		
unidentified hop-hornbeam	ostryer non identifié	Ostrya spp.	OSTR	SPP		
ironwood (hop-hornbeam)	ostryer de Virginie	Ostrya virginiana	OSTR	VIR		
sycamore	platane occidental	Platanus occidentalis	PLAT	OCC		
unidentified sycamore	platane non identifié	Platanus spp.	PLAT	SPP		
narrowleaf cottonwood	peuplier à feuilles étroites	Populus angustifolia	POPU	AGU		
balsam poplar	peuplier baumier	Populus balsamifera	POPU	BAL		

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
balsam poplar	peuplier baumier	Populus balsamifera ssp balsamifera	POPU	BAL	BAL	
eastern cottonwood	peuplier deltoïde	Populus deltoides	POPU	DEL		
eastern cottonwood	peuplier deltoïde	Populus deltoides ssp. deltoides	POPU	DEL	DEL	
southern (or plains) cottonwood	peuplier deltoïde de l'Ouest	Populus deltoides ssp. monilifera	POPU	DEL	MON	
largetooth aspen	peuplier à grandes dents	Populus grandidentata	POPU	GRA		
Jack's hybrid poplar	peuplier hybride de Jack	Populus xjackii	POPU	JAC		
hybrid poplars	peuplier non identifié	Populus spp.	POPU	SPP		
unidentified poplar	peuplier non identifié	Populus spp.	POPU	SPP		
trembling aspen	peuplier faux-tremble	Populus tremuloides	POPU	TRE		
black cottonwood	peuplier de l'Ouest	Populus trichocarpa	POPU	TRI		
bitter cherry	cerisier amer	Prunus emarginata	PRUN	EMA		
Canada plum	prunier noir	Prunus nigra	PRUN	NIG		
pin cherry	cerisier de Pennsylvanie	Prunus pensylvanica	PRUN	PEN		
black cherry	cerisier tardif	Prunus serotina	PRUN	SER		
unidentified cherry	prunier non identifié	Prunus spp.	PRUN	SPP		
choke cherry	cerisier de Virginie	Prunus virginiana	PRUN	VIR		TS
choke cherry	cerisier de Virginie	Prunus virginiana var. virginiana	PRUN	VIR	VIR	TS
common hoptree	ptéléa trifolié	Ptelea trifoliata	PTEL	TRI		
white oak	chêne blanc	Quercus alba	QUER	ALB		
swamp white oak	chêne bicolore	Quercus bicolor	QUER	BIC		
northern pin oak	chêne ellipsoïdal	Quercus ellipsoidalis	QUER	ELL		
Garry oak	chêne de Garry	Quercus garryana	QUER	GAR		
bur oak	chêne à gros fruits	Quercus macrocarpa	QUER	MAC		
Chinquapin oak	chêne jaune	Quercus muehlenbergii	QUER	MUE		
pin oak	chêne des marais	Quercus palustris	QUER	PAL		
dwarf Chinquapin oak	chêne nain	Quercus prinoides	QUER	PRI		TS
red oak	chêne rouge	Quercus rubra	QUER	RUB		
Shumard oak	chêne de Shumard	Quercus shumardii	QUER	SHU		
unidentified oak	chêne non identifié	Quercus spp.	QUER	SPP		
black oak	chêne noir	Quercus velutina	QUER	VEL		
glossy buckthorn	nerprun bourdaine	Rhamnus frangula	RHAM	FRA		
cascara buckthorn	nerprun cascara	Rhamnus purshiana	RHAM	PUR		
unidentified buckthorn	nerprun non identifié	Rhamnus spp.	RHAM	SPP		
unidentified sumac	sumac non identifié	Rhus spp.	RHUS	SPP		TS

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English	French		Genus	Species	Var	Form
staghorn sumac	sumac vinaigrier	Rhus typhina	RHUS	TYP		TS
black locust	robinier faux-acacia	Robinia pseudoacacia	ROBI	PSE		
unidentified robinia	robinier non identifié	Robinia spp.	ROBI	SPP		
peachleaf willow	saule à feuilles de pêcher	Salix amygdaloides	SALI	AMY		
Bebb willow	saule de Bebb	Salix bebbiana	SALI	BEB		TS
pussy willow	saule discolore	Salix discolor	SALI	DIS		TS
shining willow	saule brillant	Salix lucida	SALI	LUC		TS
Pacific willow	saule du Pacifique	Salix lucida ssp. lasiandra	SALI	LUC	LAS	TS
shining willow	saule brillant	Salix lucida ssp. lucida	SALI	LUC	LUC	TS
black willow	saule noir	Salix nigra	SALI	NIG		
Balsam willow	saule baumier	Salix pyrifolia	SALI	PYR		TS
Scouler willow	saule de Scouler	Salix scouleriana	SALI	SCO		TS
Sitka willow	saule de Sitka	Salix sitchensis	SALI	SIT		TS
unidentified willow	saule non identifié	Salix spp.	SALI	SPP		TS
red-berry elder	sureau rouge du Pacifique	Sambucus callicarpa	SAMB	CAL		TS
american elder	sureau blanc	Sambucus canadensis	SAMB	CAN		TS
blue-berry elder	sureau bleu	Sambucus cerulea	SAMB	CER		TS
red elderberry	sureau rouge	Sambucus racemosa	SAMB	RAC		TS
Sassafras	sassafras officinale	Sassafras albidum	SASS	ALB		
unidentified sassafras	sassafras non identifié	Sassafras	SASS	SPP		
silver buffalo-berry	shépherdie argentée	Shepherdia argentea	SHEP	ARG		TS
American mountain-ash	sorbier d'Amérique	Sorbus americana	SORB	AME		TS
showy mountain-ash	sorbier des montagnes	Sorbus decora	SORB	DEC		
mountain-ash	sorbier	Sorbus spp.	SORB	SPP		
Basswood	tilleul d'Amérique	Tilia americana	TILI	AME		
unidentified linden	tilleul non identifié	Tilia spp.	TILI	SPP		
poison-sumac	sumac à vernis	Toxicodendron vernix	TOXI	VER		TS
white elm	orme d'Amérique	Ulmus americana	ULMU	AME		
red elm	orme rouge	Ulmus rubra	ULMU	RUB		
unidentified elm	orme non identifié	Ulmus spp.	ULMU	SPP		
rock elm	orme liège	Ulmus thomasii	ULMU	THO		
Nannyberry	viorne flexible	Viburnum lentago	VIBU	LEN		TS
Viburnum	viorne	Viburnum spp.	VIBU	SPP		TS
common prickly-ash	clavalier d'Amérique	Zanthoxylum americanum	ZANT	AME		TS

*Notes: 'x' denotes hybridization. **Form:** TS = Very small tree or shrubby tree, shrub on some sites according to Farrar's *Trees in Canada*.

EXOTICS

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
white fir	sapin argenté	Abies concolor	ABIE	CON		
red fir	sapin rouge	Abies magnifica	ABIE	MAG		
Shasta red fir	sapin rouge	Abies magnifica var. shastensis	ABIE	MAG	SHA	
Nordmann fir	sapin de Nordmann	Abies nordmanniana	ABIE	NOR		
Spanish fir	sapin d'Espagne	Abies pinsapo	ABIE	PIN		
noble fir	sapin noble	Abies procera	ABIE	PRO		
Amur maple	érable ginnala	Acer ginnala	ACER	GIN		TS
Japanese maple	érable palmé	Acer palmatum	ACER	PAL		TS
Norway maple	érable de Norvège	Acer platanoides	ACER	PLA		
sycamore maple	érable sycomore	Acer pseudoplatanus	ACER	PSE		
red horsechestnut	marronnier rouge	Aesculus xcarnea	AESC	CAR		
horsechestnut	marronier d'Inde	Aesculus hippocastanum	AESC	HIP		
ailanthus	ailante glanduleux	Ailanthus altissima	AILA	ALT		
European black alder	aulne glutineux	Alnus glutinosa	ALNU	GLU		
Japanese angelica-tree	angélique du Japon	Aralia elata	ARAL	ELA		
monkey puzzle	araucaria du Chili	Araucaria araucana	ARAU	ARA		
European white birch	bouleau verruqueux	Betula pendula	BETU	PEN		
silver (downy) birch	bouleau pubescent	Betula pubescens	BETU	PUB		
incense cedar	cèdre à encens	Calocedrus decurrens	CALO	DEC		
Siberian pea-tree	caragana arborescent	Caragana arborescens	CARA	ARB		TS
Chinese chestnut	châtaignier de Chine	Castanea mollissima	CAST	MOL		
southern catalpa	catalpa commun	Catalpa bignonioides	CATA	BIG		
northern catalpa	catalpa à feuilles cordées	Catalpa speciosa	CATA	SPE		
Atlas cedar	cèdre de l'Atlas	Cedrus atlantica	CEDR	ATL		
Deodar cedar	cèdre de l'Himalaya	Cedrus deodara	CEDR	DEO		
Cedar-of-Lebanon	cèdre du Liban	Cedrus libani	CEDR	LIB		
Katsura-tree	cercidiphyllum du Japon	Cercidiphyllum japonicum	CERC	JAP		
Port-Orford-cedar	chamaecyparis de Lawson	Chamaecyparis lawsoniana	CHAM	LAW		
Hinoki-cypress	chamaecyparis du Japon	Chamaecyparis obtusa	CHAM	OBT		
Sawara-cypress	chamaecyparis de Sawara	Chamaecyparis pisifera	CHAM	PIS		
Yellow-wood	virgilier à bois jaune	Cladrastis lutea	CLAD	LUT		
Kousa dogwood	cornouiller de Kousa	Cornus kousa	CORN	KOU		

Common Name		Scientific Name	Code			
English	French		Genus	Species	Var	Form
Cornelian cherry	cornouiller mâle	Cornus mas	CORN	MAS		
European beech	hêtre commun	Fagus sylvatica	FAGU	SYL		
Oregon ash	frêne de l'Orégon	Fraxinus latifolia	FRAX	LAT		
unidentified exotic	les espèces exotiques non identifié		GENX	SPP		
Ginkgo	ginkgo bilobé	Ginkgo biloba	GINK	BIL		
European larch	mélèze d'Europe	Larix decidua	LARI	DEC		
Japanese larch	mélèze du Japon	Larix kaempferi	LARI	KAE		
Siberian larch	mélèze de Sibérie	Larix sibirica	LARI	SIB		
Norway spruce	épicéa commun	Picea abies	PICE	ABI		
Colorado spruce	épinette du Colorado	Picea pungens	PICE	PUN		
sugar pine	pin à sucre	Pinus lambertiana	PINU	LAM		
Austrian pine	pin noir d'Autriche	Pinus nigra	PINU	NIG		
Monterey pine	pin de Monterey	Pinus radiata	PINU	RAD		
Scots pine	pin sylvestre	Pinus sylvestris	PINU	SYL		
European white poplar	peuplier blanc	Populus alba	POPU	ALB		
Lombardy poplar	peuplier noir d'Italie	Populus nigra	POPU	NIG		
sweet cherry	cerisier sauvage	Prunus avium	PRUN	AVI		
common pear	poirier commun	Pyrus communis	PYRU	COM		
English oak	chêne pédonculé	Quercus robur	QUER	ROB		
Weeping willow	saule pleureur doré	Salix alba var. vitellina	SALI	ALB	VIT	
giant sequoia	séquoia géant	Sequoiadendron giganteum	SEQU	GIG		
coast redwood	séquoia toujours vert	Sequoia sempervirens	SEQU	SEM		
European mountain-ash	sorbier des oiseleurs	Sorbus aucuparia	SORB	AUC		
Common lilac	lilas commun	Syringa vulgaris	SYRI	VUL		TS
English yew	if commun	Taxus baccata	TAXU	BAC		
Siberian elm	orme de Sibérie	Ulmus pumila	ULMU	PUM		
European cranberry viburnum	viorne obier	Viburnum opulus	VIBU	OPU		TS

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