

# LANDFIRE Reference Database

## REMAP DATA DICTIONARY

 Fields highlighted in yellow are data we collect from the source data sets that are contributed.

Contact: Brenda Lundberg (406) 329-3405 email: [brenda.lundberg.ctr@usgs.gov](mailto:brenda.lundberg.ctr@usgs.gov)



# Table of Contents

<u>Data Tables</u>	<u>Page</u>
Communities.....	2
Exotics.....	3
FBInputs.....	3
FEInputs.....	4
LFProductionQA.....	4
Points.....	5
Seedlings.....	6
SiteChanges.....	6
Species.....	7
Stands.....	7
Trees.....	9
Visits.....	9

## Section I: Data Tables

### Communities

This table contains data describing the plant community present within the sampled unit.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
SourceEcoSys	Ecological System assigned in the source dataset to describe existing vegetation within the sampled unit.
SourceAlliance	NVCS Alliance assigned in the source dataset to describe existing vegetation within the sampled unit.
SourceAssocn	NVCS Association assigned in the source dataset to describe existing vegetation within the sampled unit.
SourceCovType	Other cover type assigned in the source dataset to describe existing vegetation within the sampled unit.
SourceCTSys	System used in the source dataset to characterize existing vegetation within the sampled unit.
SourcePhysCl	Physiographic class of the sampled unit, if FIA record.
SourceWaterOnPlot	Description of water observed on plot, if FIA record.
EcoSysLifeformPrimary	Primary physiognomic (lifeform) label of the Ecological System assigned to this sampled unit.
EcoSysLifeformAll	All physiognomic (lifeform) label(s) of the Ecological System assigned to this sampled unit.
EcoSysCd	Code for the Ecological System currently assigned to the sampled unit. See lutCommunitiesEcoSys for code definitions.
EcoSys	Name of Ecological System currently assigned to the sampled unit.
EcoSysMeth	Method by which current Ecological System was assigned to the sampled unit.
NVCSGroupCd	Code for National Vegetation Classification (NVCS) group assigned to the sampled unit. See lutCommunitiesNVCSGroup for code definitions
NVCSGroup	Name of National Vegetation Classification (NVCS) group assigned to the sampled unit.
AKEVTCd	Code for LANDFIRE Existing Vegetation Type, as Viereck/Fleming map unit, currently assigned to the sampled unit. (Alaska only.) See lutCommunitiesAKEVT for code definitions.
AKEVT	Name of LANDFIRE Existing Vegetation Type, as Viereck/Fleming map unit, currently assigned to the sampled unit. (Alaska only.)
DomLifeform	Lifeform from which the dominant and co-dominant taxa (DomSp and CoDomSp) were selected during most recent application of the LANDFIRE EVT AutoKey.
DomSp	Dominant taxon within the sampled unit, based on percentage cover, as derived from the most recent application of the LANDFIRE EVT AutoKey.
DomSpLifeform	Lifeform of the dominant taxon within the sampled unit, as derived from the most recent application of the LANDFIRE EVT AutoKey.
DomSpCov	Cover (%) of the dominant taxon within the sampled unit, as derived from the most recent application of the LANDFIRE EVT AutoKey.
CoDomSp	Co-dominant taxon within the sampled unit, based on percentage cover, as derived from the most recent application of the LANDFIRE EVT AutoKey.
CoDomSpLifeform	Lifeform of the co-dominant taxon within the sampled unit, as derived from the most recent application of the LANDFIRE EVT AutoKey.
CoDomSpCov	Cover (%) of the co-dominant taxon within the sampled unit, as derived from the most recent application of the LANDFIRE EVT AutoKey.
SourcePV	Label assigned in the source dataset to describe potential vegetation within the sampled unit.

SourcePVCd	Code for potential vegetation of the sampled unit, as assigned in the source dataset.
SourcePVRefCode	Code for the reference (classification system) in which the SourcePVCd can be found.
SourcePVSys	Code for system used to categorize potential vegetation in the source dataset; "100" = classification of disturbance-maintained vegetation (e.g., into PNVGs), "200" = classification of climax community (e.g., into habitat types).

## Exotics

This table contains cover estimates or presence data for exotic plants on plots not included in the Species table.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
Item <i>Required</i>	Accepted Symbol from the NRCS Plants Database ca. December 2013.
SciName	Scientific Name from the NRCS Plants Database ca. December 2013.
Lifeform	Lifeform of item. F= forb, G = graminoid, S = shrub, T = tree.
Duration	Duration of item, if herbaceous. A = annual, P = perennial.
NativityFlag	Coded as "1" if identified as "Introduced to U.S." or "Cultivated, or not in the U.S." in NRCS Plants DB but does not meet criterion for "3" or "3" if in LANDFIRE list of exotics of concern.
CovAbs	Absolute cover (%) of item. If no cover reported, the following categories indicate level of infestation: P = present, L = low, M = moderate, H = high.

## FBInputs

This table contains fuel data relevant to fire-behavior modeling from sampling units identified in the table SUnitsFuel. Additional data relevant to both fire-behavior and fire-effects modeling are included in the FEInputs table.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
LwdyCov	Cover (%) of live trees and shrubs in sampling plane (i.e., below 6 feet).
DwdyCov	Cover (%) of dead trees and shrubs in sampling plane (i.e., below 6 feet).
WdyHgt	Average height (feet) of trees and shrubs in sampling plane (i.e., below 6 feet).
LherbCov	Cover (%) of live herbaceous vegetation.
DherbCov	Cover (%) of dead herbaceous vegetation.
HerbHgt	Average height (feet) of herbaceous vegetation.
IntegFbedDpth	Average shrub/herb heights (feet).
StandHgt	Typical height (feet) of vegetation taller than 6 feet.
CanBaseHgt	Typical lowest point above the ground (feet) at which there is sufficient amount of live and/or dead woody vegetation to spread a fire vertically into the overstory vegetation.
CanCov	Cover (%) of woody vegetation taller than 6.5 feet.
FBFM13	Fire Behavior Fuel Model (Anderson 1982). See lutFBInputsFBFM13 for code definitions.
FBFM40	Fire Behavior Fuel Model (Scott and Burgan 2005). See lutFBInputsFBFM40 for code definitions.

## FEInputs

This table contains fuel data relevant to fire-effects modeling from sampling units identified in the table SunitsFuel.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
FWD1hBmass	1-hour fuel (small Fine Woody Debris [FWD]; 0.00-0.24 inches diameter) biomass (tons/acre).
FWD10hBmass	10-hour fuel (medium FWD; 0.25-0.99 inches diameter) biomass (tons/acre).
FWD100hBmass	100-hour fuel (large FWD; 1.00-2.99 inches diameter) biomass (tons/acre).
FWDTotBmass	1 to 100-hour fuel (total FWD) biomass (tons/acre).
CWDSndBmass	1000-hour sound fuel biomass (tons/acre).
CWDRotBmass	1000-hour rotten fuel biomass (tons/acre).
CWDTotBmass	1000-hour fuel (total Coarse Woody Debris [CWD]; 3.00 inches in diameter and greater) biomass (tons/acre).
CWD9plusSndBmass	10,000-hour sound fuel biomass (tons/acre).
CWD9plusRotBmass	10,000-hour rotten fuel biomass (tons/acre).
CWD9plusTotBmass	10,000-hour fuel (total Coarse Woody Debris [CWD]; 9.00 inches in diameter and greater) biomass (tons/acre).
DuffLittDpth	Combined duff and litter depth (inches).
DuffDpth	Duff depth (inches).
DuffBmass	Duff biomass (tons/acre).
LittDpth	Litter depth (inches).
LittBmass	Litter biomass (tons/acre).
SlshBmass	Slash biomass (tons/acre).
TotFuelBmass	Combined biomass of FWD, CWD, duff, and litter (tons/acre).
LWdyBmass	Biomass (tons/acre) of live trees and shrubs in sampling plane (i.e., below 6 feet).
DWdyBmass	Biomass (tons/acre) of dead trees and shrubs in sampling plane (i.e., below 6 feet).
TotWdyBmass	Biomass (tons/acre) of live and dead trees and shrubs in sampling plane (i.e., below 6 feet).
LHerbBmass	Biomass (tons/acre) of live herbaceous vegetation.
DHerbBmass	Biomass (tons/acre) of dead herbaceous vegetation.
TotHerbBmass	Biomass (tons/acre) of live and dead herbaceous vegetation.
FCCSPROTOFuelbed	Fire behavior fuel model selected from 113 options in the FCCS Prototype Fuelbed set.
FLM	Fuel-loading model.

## LFPProductionQA

This table includes information about the limitations and utility of certain data from each sampled unit.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
FieldComments	General, unedited comments from field personnel.
QAFlag	Error(s) or questionable data identified by LFRDB team? 0 = no error(s) or suspect data identified by LFRDB team, 1 = yes: error(s) or suspect data identified by LFRDB team. Use with caution.
QAFlagComment	Description of error(s) or suspect data.
DistOutRng	Distance (meters) that this plot falls outside the expected range for its Ecological System, as per NatureServe's distribution map(s).

DisturbFlag	Possible relevant change due to fire, wind, logging, or insects. See tblSiteChanges for more details.
XwalkFlag	If crosswalked, was the original community type label other than an Ecological System? 0 = no, 1 = yes.
AirInterp	If crosswalked, was the original community type assessed from the air? 0 = no, 1 = yes.
PixelX	X location of co-occupied pixel.
PixelY	Y location of co-occupied pixel.
EVTConfidence	Confidence in LF_EVT assignment upon review by LANDFIRE vegetation ecologist. H = high-quality training site, M = moderate-quality training site, L = low-quality training site.
EVTDiscard	Record withdrawn from training set used to model/map EVT? 0 = no, 1 = yes.
EVTDiscardComment	Reason for withdrawing record from training set used to model/map EVT.
SourceLifeformCoverQA	QAQC codes describing the extent of plant species-level data afforded by the source. See lutLFProductionQALifeformCoverQA for code definitions.
LFLifeformCoverQA	QAQC codes for lifeform cover derived for LANDFIRE. See lutLFProductionQALifeformCoverQA for code definitions.
SppCoverQA	QAQC codes describing the extent of plant species-level data afforded by the source. See lutLFProductionQASppCoverQA for code definitions.
SppHeightQA	QAQC codes for suspect plant height data (i.e., reported values out of expected range for the lifeform). See lutLFProductionQASppHeightQA for code definitions.
PhotoQA	QAQC notes from comparison of plot data with plot photos.

## Points

This table includes the geo-reference for each sampled unit and keys to additional data tables.

Name	Description
PointID	Unique identifier for this sampling location.
<i>Required</i>	
Lat	Latitude, WGS 84, in decimal degrees to the nearest 100 seconds for this point.
Long	Longitude, WGS 84, in decimal degrees to the nearest 100 seconds for this point.
LFX	Albers x coordinate, as used in LANDFIRE production, for this point.
LFY	Albers y coordinate, as used in LANDFIRE production, for this point.
LFCoordSys	Code for well-known text defining full coordinate system to which LFX and LFY are referenced. See lutPointsLFCoordSys for code definitions.
LFZone	LANDFIRE mapping zone in which this point is located.
AKRID	Numerical ID for Auto-Key Region
RSLCTile	RSLC Tile GRIDID
VPU	Vegetation production unit
SourceFtrClass	Feature class, if spatial data originally received as GIS layer. T = point, Y = polygon.
SourcePtID	Unique identifier for this point from the source dataset.
SourcePolyID	Unique identifier for original polygon from which this point is derived.
PolyQA	Results of QA on original polygons. 1 = Polygon passed QA; 2 = Polygon edited by EROS; 3 = Polygon passed QA, but EVT wrong; 4 = Polygon edited by EROS, but EVT wrong; 5 = 3 digit EVT code, unusable for final EVT modeling; 6 = Clouds in Imagery.
PolySz	Size of final polygon used in LANDFIRE.
LocMeth	Method by which this point or original polygon was located. G = captured with a GPS unit in the field, M = digitized or otherwise derived in office, X = unknown.
HoldForVal	Should data associated with this point be withheld for validation? 0 = no, 1 = yes.
Remeasured	Are there data for multiple visits to this point in this database? 0 = no, 1 = yes.

## Seedlings

This table includes data describing trees less than 1 inch at the point of diameter measure.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
Subplot <i>Required</i>	Subplot on which this tree was measured, if applicable
Spe <i>Required</i>	Accepted Symbol from the NRCS Plants Database ca. December 2013.
CountCd	Code for number of individuals of this type on the plot.
Count	Actual number of individuals of this type on the plot.
TPH	Number of trees per hectare that this record represents.

## SiteChanges

This table contains data, where available, describing disturbances, treatments, or other events likely to have affected the vegetation or fuel characteristics of the sampling unit.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
Disturb1	Type of disturbance 1.
LFD1Code	LANDFIRE Code for disturbance 1. See lutSiteChangesLFD for code definitions.
Disturb1Sev	Severity of disturbance 1.
Disturb1Yr	Year of disturbance 1.
Disturb2	Type of disturbance 2.
LFD2Code	LANDFIRE Code for disturbance 2. See lutSiteChangesLFD for code definitions.
Disturb2Sev	Severity of disturbance 2.
Disturb2Yr	Year of disturbance 2.
Disturb3	Type of disturbance 3.
LFD3Code	LANDFIRE Code for disturbance 3. See lutSiteChangesLFD for code definitions.
Disturb3Sev	Severity of disturbance 3.
Disturb3Yr	Year of disturbance 3.
Trtmnt1	Type of treatment 1.
LFT1Code	LANDFIRE Code for treatment 1. See lutSiteChangesLFT for code definitions.
Trtmnt1Yr	Year of treatment 1.
Trtmnt2	Type of treatment 2.
LFT2Code	LANDFIRE Code for treatment 2. See lutSiteChangesLFT for code definitions.
Trtmnt2Yr	Year of treatment 2.
Trtmnt3	Type of treatment 3.
LFT3Code	LANDFIRE Code for treatment 3. See lutSiteChangesLFT for code definitions.
Trtmnt3Yr	Year of treatment 3.
SourceComments	Comments pertaining to disturbance from field personnel.

## Species

This table lists and characterizes the plants reported from each sampling unit.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
Item <i>Required</i>	Accepted Symbol from the NRCS Plants Database ca. December 2013.
SciName	Scientific Name from the NRCS Plants Database ca. December 2013.
Lifeform	Lifeform of item. F= forb, G = graminoid, H = herb, N = nonvascular, S = shrub, T = tree.
Duration	Duration of item, if herbaceous. A = annual, P = perennial.
NativityFlag	Coded as "1" if identified as "Introduced to U.S." or "Cultivated, or not in the U.S." in NRCS Plants DB but does not meet criterion for "3" or "3" if in LANDFIRE list of exotics of concern.
LFAbsCov	Absolute cover (%) of item, as currently derived for LANDFIRE.
LFRelCov	Relative cover (%) of item, as currently derived for LANDFIRE.
LFHgt	Height (meters) of item, as currently derived for LANDFIRE.

## Stands

This table contains data characterizing the origin and structure of the stand in which the sampled unit falls.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
StOrigin	Method of stand regeneration, where 1 = clear evidence of artificial regeneration. An artificially regenerated stand is established by planting or artificial seeding.
PltdSp	Scientific name of the predominant artificially regenerated tree species.
FIAStAge	FIA estimate of average total age, to the nearest year, of the plurality of all live trees not overtopped in the predominant stand-size class
OtherStAge	Other datasource estimate of average age, in years, of the canopy trees. May be categorical or a range of dates.
StSzCd	Code for the predominant diameter class of live trees within the stand, derived by algorithm, for FIA plots. See lutStandsStSzCd for code definitions.
FISzCd	Code for the predominant diameter class of live trees within the stand, assigned in the field, for FIA plots. See lutStandsFISzCd for code definitions.
SiteClCd	Site productivity class, for FIA plots. See lutStandsSiteClCd for code definitions.
GSStkCd	Growing-stock stocking level, for FIA plots. See lutStandsStkCd for code definitions.
ALStkCd	All live stocking level, for FIA plots. See lutStandsStkCd for code definitions.
SiCond	Site index (meters), for FIA plots.
SiSp	Site index species code, for FIA plots.
SourceTreeCovFld	Tree cover (%) from original field call(s), i.e., accounting for most overlap, but based on lifeform assignments in the source dataset.
SourceTreeCovMld	Tree cover (%) modeled using stem-map method, but based on lifeform assignments in the source dataset.
SourceTreeCovMldMeth	Versions of stem-map model and Bechtold equations used to derive the tree cover estimates used to generate species-level cover values.

SourceShrubCov	Shrub cover (%) from original field call(s), i.e., accounting for most overlap, but based on lifeform assignments in the source dataset.
SourceForbCov	Forb cover (%) from original field call(s), i.e., accounting for most overlap, but based on lifeform assignments in the source dataset.
SourceGramCov	Graminoid cover (%) from original field call(s), i.e., accounting for most overlap, but based on lifeform assignments in the source dataset.
SourceHerbCov	Herbaceous cover (%) from original field call(s), i.e., accounting for most overlap, but based on lifeform assignments in the source dataset.
SourceNvasCov	Nonvascular plant cover (%) from original field call(s), i.e., accounting for most overlap, but based on lifeform assignments in the source dataset.
LFTreeCov	Tree cover (%) based on NatureServe's lifeform assignments, as currently derived for LANDFIRE.
LFTreeCovAdj	Tree cover (%) adjusted for overlap and based on NatureServe's lifeform assignment, as currently derived for LANDFIRE.
LFTreeCovMdl	Tree cover (%) modeled using stem-map method, but based on NatureServe's lifeform assignments.
LFTreeCovMdlMeth	Versions of stem-map model and Bechtold equations used to derive the tree cover estimates.
LFConiferTreeCov	Conifer tree cover (%) based on NatureServe's lifeform assignments, as currently derived for LANDFIRE.
LFShrubCov	Shrub cover (%) based on NatureServe's lifeform assignments, as currently derived for LANDFIRE.
LFShrubCovAdj	Shrub cover (%) adjusted for overlap and based on NatureServe's lifeform assignment, as currently derived for LANDFIRE.
LFHerbCov	Herbaceous cover (%) based on NatureServe's lifeform assignments, as currently derived for LANDFIRE.
LFHerbCovAdj	Herbaceous cover (%) adjusted for overlap and based on NatureServe's lifeform assignment, as currently derived for LANDFIRE.
LFNvasCov	Nonvascular plant cover (%) based on NatureServe's lifeform assignments, as currently derived for LANDFIRE.
SourceTreeHgt	Tree height (meters) from original field call(s), based on lifeform assignments in the source dataset.
SourceStandHgtCalc	Mean height (meters) of live trees (based on lifeform assignments in the source dataset) derived as single metric most appropriate to represent the dominant cohort of trees within the sampled unit.
SourceDomTreeHgtCalc	Mean height (meters) of live trees (based on lifeform assignments in the source dataset) $\geq$ 5.0-in. diameter that are either open-grown, dominant, or codominant.
SourceSapHgtCalc	Mean height (meters) of live trees (based on lifeform assignments in the source dataset) $<$ 5.0-in. diameter (i.e., saplings) that are either open-grown, dominant, or codominant.
SourceHgtCalcMeth	Method used to derive tree height from the source tree data.
SourceMaxTreeHgt	Height (meters) of tallest tree (based on lifeform assignments in the source dataset) within the sampling unit.
SourceShrubHgt	Shrub height (meters) from original field call(s), based on lifeform assignments in the source dataset.
SourceHerbHgt	Height (meters) of herbaceous vegetation from original field call(s), based on lifeform assignments in the source dataset.
SourceVegHgtAvg	Average height (meters) of vegetation from original field call(s).
LFTreeHgt	Tree height (meters) as currently derived for LANDFIRE (based on NatureServe's lifeform assignments).
LFTreeHgtMdl	Mean height (meters) of live trees (based on NatureServe's lifeform assignments) derived as single metric most appropriate to represent the dominant cohort of trees within the sampled unit (as currently derived for LANDFIRE).
LFTreeHgtMdlMeth	Method used to derive modeled tree height for current LANDFIRE applications.
LFShrubHgt	Shrub height (meters) as currently derived for LANDFIRE (based on NatureServe's lifeform assignments).

LFHerbHgt	Height (meters) of herbaceous vegetation as currently derived for LANDFIRE (based on NatureServe's lifeform assignments).
NBCDBAWHgt	Basal-area weighted stand height (meters*10) from the National Biomass and Carbon Dataset (NBCD) 2000.
LidarCanopyTop	Average height (meters) of the canopy as derived from a lidar-based height model applied across a 30-m grid.
LidarSamplingDate	Date on which the lidar data were collected.

## Trees

This table includes data describing trees greater than 1 inch at the point of diameter measure.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
Tag <i>Required</i>	Number used to uniquely identify this tree on this plot.
Tree	Number used to uniquely identify this tree on this subplot, if applicable.
Subplot	Subplot on which this tree was measured, if applicable.
Azimuth	Direction (degrees) from subplot center to the center of the base of this tree (or its geographic center, if multi-stemmed).
Dist	Horizontal distance (meters) from subplot center to the pith at the base of this tree (or its geographic center, if multi-stemmed).
Spe	Accepted Symbol from the NRCS Plants Database ca. December 2013.
Status	Status of this tree. L = live, D = dead, R = removed.
DamAgentCd	Cause of damage. See lutTreesDamAgentCd for code definitions.
Dia	Diameter (centimeters), taken either at breast height (DBH) or root collar (DRC).
Hgt	Actual height (meters) of this tree.
HgtSource	Code for the source of the tree height estimate. See lutTreesHgtSource for code definitions.
HgtTypeCd	Means by which height was determined. See lutTreesHgtTypeCd for code definitions.
CR	Compacted crown ratio.
UCR	Uncompacted crown ratio.
CHBC	Height (meters) to the base of the live crown.
CHBCSource	Means by which height to the base of the live crown was determined. See lutTreesCHBCSource for code definitions.
CCCd	Crown class code. See lutTreesCCCd for code definitions.
TPH	Number of trees per hectare that this individual represents.

## Visits

This table includes basic information about each sampling event.

Name	Description
EventID <i>Required</i>	Unique identifier for this sampling event.
PointID	Unique identifier for this sampling location.
YYYY	Year of this sampling event.
MM	Month of this sampling event.
DD	Day of month sampled.
DDD	Day of year sampled.
Type	Type of assessment (e.g., field visit, aerial survey).
Purpose	Purpose of assessment (e.g., inventory, monitoring, research, mapping).

Cycle	Cycle number, if FIA record.
RecordNo	Record number, in chronological order (by date), for this point.
Kind	Sample kind code, if FIA record. See lutVisitsKind for code definitions.
SourceID	Code for data source. See lutVisitsSourceID for code definitions.
SourceEventID	Unique identifier of this sampling event from the source dataset.
DesignCD	Sampling design code, if FIA record. See lutVisitsDesignCd for code definitions.
FIAPhase	Phase of plot, if FIA record. Phase 2 (FIA P2) plots do not have fuels data and Phase 3 (FIA P3) plots do have fuels data.
Protocol	Sampling protocol. If FIA record, enter field manual version
Photo1	Photo 1 of sampling unit.
Photo2	Photo 2 of sampling unit.
Photo3	Photo 3 of sampling unit.
Photo4	Photo 4 of sampling unit.
RdDistCd	Code for distance to improved road, if FIA record. See lutVisitsRdDistCd for code definitions.
RoadDist	Distance from this point to nearest road (meters) based on TIGER line data.
LFMasterID	Unique identifier of this sampling event, used for circa 2001 LANDFIRE National production.
LFVersion	Version of the LANDFIRE data products associated with this sampling event.