Information on the International Soil Carbon Network Database Datumtypes

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This document gives detailed information on the input and output variables used by the ISCN database. These are the variables that populate the data submission templates (input) and the database reports/tables (output). The database is both relational and hierarchical, and its variables appear at one or more of the following levels: Site, Cluster, Profile, Layer, Fraction, Gas, Other, Metadata, Disturbance, and Treatment. A Site is the geo-referenced location where the data were collected, and may be comprised of one or more soil Profiles. Profiles may be grouped by spatial proximity, experimental treatments, etc. using Cluster designations. A Profile is comprised of individually collected and reported horizons or depth increments (called Layers). The Layer and Fraction levels share many the same variables; data for nonfractionated bulk soils are reported at the Layer level and data for any constituent fractions (e.g., density or size) are reported at the Fraction level.

Non-soil data: In addition or exclusion to soils data from Profiles or Layers, a Site may occasionally possess data from Gas or Other sample types. These sample types may be grouped by location, or grouped with specific Profiles or Layers from which they were derived, using Cluster designations.

Metadata is be reported for every contributed dataset; for data users the Metadata level is the source of contributor, citation and data provenance information. Disturbance and Treatment variables are optional and used to report information about events or manipulations that may have affected the data.

Some text variables have controlled vocabularies and are denoted by ‘has CV’ in the Units column. Only the established values can be used, in order to promote consistent data reporting across users. For these variables, follow the link at the head of this document to ‘Download latest controlled vocabulary document’.

The ‘Rowtext’ column shows the internal database name for each variable. User-facing names are in the ‘Name’ column. The ‘Parameters’ column enumerates any parameters for that variable. An example is the datum for the latitude and longitude.

Questions can be sent to the ISCN Network Coordinator.

This is a beta release of the ISCN Database products. Several features of the database, data submissions guidelines and quality checks are still under development. Please send any feedback to iscn-support@fluxdata.org.

Sample Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
collection_method	Sample Collection Method		text	Description or reference for the method of gas or other sample type collection. If gas, include relevant data such as incubation temp, moisture and time; if other document whether the sample was collected directly in the field, any additional processing or isolation steps in the laboratory. Controlled vocabulary: core_pit	
rc_lab	Radiocarbon Laboratory ID		text	Laboratory code for radiocarbon laboratory. Complete list of past and present laboratory codes can found published in Radiocarbon in November 2011 (http://www.radiocarbon.org/Info/labcodes.html). Controlled vocabulary: rc_lab	rc_lab_number;;;;

Soil Layer, Fraction, Gas and/or Other Sample Variables					
Rowtext	Name	Units	Type	Description	Parameters
13c	δ13C	‰	real	Per mille signature of δ13C relative to Pee Dee Belemnite.	
14c_age	Uncalibrated Radiocarbon Age	bp	real	Uncalibrated radiocarbon age of bulk soil in layer, as calculated from corrected fraction modern, using the Libby half-life value of 5568 years.	;;14c_age_sigma;;
15n	δ15N	‰	real	Per mille signature of δ15N relative to air (international standard).	
c_method	Carbon Analysis Method		text	Provide reference or describe the sample preparation and analysis methods used to determine carbon concentrations, whether Total Carbon, organic C, or Loss on Ignition.	
c_to_n	C:N	mass %	real	Mass ratio of total carbon to total nitrogen, as calculated from the total carbon and total nitrogen concentrations of the bulk layer, fraction, or other sample type.	

Soil Layer, Fraction, Gas and/or Other Sample Variables					
Rowtext	Name	Units	Type	Description	Parameters
c_tot	Total Carbon	%	real	Percent by weight of carbon in the dried, milled soil sample. This measurement will typically correspond to analytical results from an elemental analyzer.	
fraction_modern	Fraction Modern		real	Deviation of the bulk sample or fraction from modern. Modern is defined as 95% of the radiocarbon concentration (in AD 1950) of NBS Oxalic Acid standard, 13C-corrected.	;;fraction_modern_sigma;
loi	Loss on Ignition	%	real	Percent by weight of the organic content of the <2mm fraction is the organic material lost after ignition. It is reported on a <2 mm base. Please document the method in the associated Carbon Analysis Method.	
n_tot	Total Nitrogen	%	real	Percent by weight of nitrogen (organic and inorganic) in an oven-dried sample (the laboratory analytical concentration).	
no_soc	No soil carbon computation	g cm-2	real	Unable to compute Soil Organic Carbon (soc) without gap filling. The data value is set to 0. This variable can be used to simply locate samples with missing or out of range carbon or bulk density measurements.	
oc	Organic Carbon	%	real	Percent by weight of carbon in a dried soil sample after acidification with HCl, OR organic carbon as estimated by Walkley-Black Modified Acid-Dichromate (e.g. 'Organic Carbon' in the NRCS database). Please document the method in the associated Carbon Analysis Methods.	

Soil Layer, Fraction, Gas and/or Other Sample Variables					
Rowtext	Name	Units	Type	Description	Parameters
root_quant_size	Root Quantity and Size		text	Use USDA NRCS conventions from the USDA-NRCS-NSSC Field Book for Describing and Sampling Soils (Staff 2002; p.2 -56): Record the average quantity from 3 to 5 representative unit areas. Size classes of roots being considered: very fine, < 1mm; fine, 1 – 2mm diameter.	;root_live_flag;;
soc	Calculated Soil Organic Carbon Stock	g cm-2	real	The data contributor's calculated soil organic carbon stock value for the site, cluster, profile or layer.	soc_lcount;soc_depth;soc_sigma;soc_pcount
soc_AKfill	Calculated Soil Organic Carbon Stock (AK gap fill per Kris Johnson)	g cm-2	real	The calculated soil organic carbon stock value for the site, cluster, profile or layer. The calculated value uses the Alaska rules for gap filling per Kris Johnson.	
soc_method	Calculated Soil Organic Carbon Stock Method		text	A description of the methods used to calculate (including any gap-filling) site, cluster, profile or layer soil organic carbon stocks.	
soc_nofill	Calculated Soil Organic Carbon Stock (no gap fill)	g cm-2	real	The calculated, non-gapfilled soil organic carbon stock value for the site, cluster, profile or layer.	

Layer Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
hzn_desgn	Horizon Designation		text	Follow conventions of the USDA-NRCS-NSSC Field Book for Describing and Sampling Soils (Staff 2002; pp. 2-2 through 2-4). Note that datasets originally using another convention will be modified for this column. If a different convention was used it can be entered in Horizon Designation Other.	layer_top;layer_bot;hzn_major;
hzn_desgn_other	Horizon Designation Other		text	Horizon designation following a convention other than NRCS. Please document the convention in the associated Horizon Designation Other Note.	layer_top_other;layer_bot_other;hzn_desgn_old;

Layer Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
hzn_desgn_other_note	Horizon Designation Other Note		text	Provide a reference for the horizon designations employed if they differ from NRCS standards in the USDA-NRCS-NSSC Field Book for Describing and Sampling Soils (Staff 2002).	
hzn_type	Horizon Type		text	Used to distinguish between mineral and organic samples for lumping and calculations. Autogenerated from Horizon Designation. Controlled vocabulary: hzn_type	
layer_name	Layer Name		text	A unique name for a single sampled layer. This can be a name that denotes depth, sequence, etc.	
layer_note	Soil Layer Notes		text	A description of the sampled layer. For example, a full NRCS horizon description.	layer_number;;labeled_addition;

Fraction Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
fraction_agent	Fractionation Agent		text	The laboratory or analytical device or chemical compound used to isolate the fraction, e.g., "sodium polytungstate" or "sieve".	
fraction_c_perc	Fraction proportion of sample carbon	%	real	The proportion of total sample (i.e., bulk layer) carbon contained in the fraction.	
fraction_mass_perc	Fraction proportion of sample mass	%	real	The proportion of the total sample (i.e., bulk layer) mass represented by the fraction.	
fraction_name	Fraction Sample Name		text	A unique name for a single fraction.	
fraction_note	Fraction Notes		text	The contributor's concise description of the fractionation process.	fraction_number;;labeled_addition;
fraction_scheme	Fractionation Scheme		text	The scheme used to isolate the fraction, e.g., density, size, aggregate, chemical. Controlled vocabulary: fract_scheme	fraction_scheme_units;fraction_property;;

Soil Layer and/or Fraction Variables					
Rowtext	Name	Units	Type	Description	Parameters
bd_method	Bulk Density Method		text	Please reference or describe the methods used to determine bulk density.	
bd_other	Bulk Density Other	g cm-3	real	Grams of oven-dried soil per cubic centimeter. Please document the method used in the associated Bulk Density Method including the soil particle fraction used.	
bd_samp	Bulk Density, Coarse Fragments Removed	g cm-3	real	Grams of oven-dried soil per cubic centimeter, with soil particles greater than 2 mm and roots greater that 1 cm diameter removed.	
bd_tot	Bulk Density With Coarse Fragments	g cm-3	real	Grams of oven-dried soil per cubic centimeter, with soil particles greater than 2 mm and roots greater that 1 cm diameter included.	
bd_whole	Bulk Density Minus Estimated Coarse Fragments	g cm-3	real	Grams of oven-dried soil per cubic centimeter, with the content of soil particles >2mm and roots >1cm diameter estimated and subtracted.	
burn_ev	Evidence of Burning		text	Descriptive information indicating evidence of burning within the layer. Controlled vocabulary: burn	
caco3	CaCO3	%	real	Inorganic carbon concentration as measured or estimated by the contributor. Please document the method in the associated Processed Site Organic Carbon Content Method.	
cat_exch	Cation Exchange Capacity	cmol h+ kg-1	int	Cation Exchange Capacity. Document the extractant solution in the metadata worksheet, Lab Analysis Method.	
clay_tot_psa	Percent Clay	%	real	Percent by weight of soil particles less than 0.002 mm in the sample remaining after removal of particles greater than 2 mm and roots greater than 1 cm diameter. See Gee, G.W. & Bauder, J.W. 1986.	
color	Moist Munsell Color		text	Color of moist soil based on the Munsell soil color chart.	

Soil Layer and/or Fraction Variables					
Rowtext	Name	Units	Type	Description	Parameters
gwc	Gravimentric % Moisture	%	real	Gravimetric water content of the sampled layer.	
ph_cacl	Soil pH CaCl2		text	1:2 soil-CaCl2 is the pH of a sample measured in 0.01M CaCl2 at a 1:2 soil:solution ratio.	
ph_h2o	Soil pH 1:1		real	1:1 distilled water and soil paste. If pH was done by a different method, then enter it into one of the other soil pH fields.	
ph_method	pH Method		text	Provide reference or describe the sample preparation and analysis methods used for determinations of pH if not 1:1 soil and distilled water paste or in CaCl2.	
ph_other	Soil pH Other		real	pH measurements other than 1:1 soil and distilled water paste or in CaCl2. Please document the method in the associated pH Method.	
root_weight	<2mm Root Mass	g	text	Dry weight of roots ≤2 mm in diameter in the sample.	
sand_tot_psa	Percent Sand	%	real	Percent by weight of soil particles greater than 0.05 mm in the sample remaining after removal of particles greater than 2 mm and roots greater than 1 cm diameter. See Gee, G.W. & Bauder, J.W. 1986.	
silt_tot_psa	Percent Silt	%	real	Percent by weight of soil particles in the size range from 0.002 to 0.050 mm in the sample remaining after removal of particles greater than 2 mm and roots greater than 1 cm diameter. See Gee, G.W. & Bauder, J.W. 1986.	
textureClass	Texture Class		text	Soil texture classification. If no information is provided, this will be automatically generated from %sand, %silt, %clay data (coarse = ≥50% sand; fine = <50% sand).	
vwc	Volumetric % Moisture	%	real	Water content of the soil sample expressed as a percent of total sample volume.	

Soil Layer and/or Fraction Variables					
Rowtext	Name	Units	Type	Description	Parameters
wpg2	Coarse Fragments	%	real	The weight fraction of particles with >2 mm diameter is reported as a gravimetric percent on a whole soil base. Please include metadata in the Coarse Fragments Method column (e.g. estimate or quantitative).	
wpg2_method	Coarse Fragments Method		text	Provide a reference for or describe the methods used to determine coarse fragment content.	

Gas Sample Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
gas_name	Gas Sample Name		text	A unique name for a single gas sample. This can be a name that denotes depth, sequence, type, etc.	
gas_note	Gas Sample Notes		text	Descriptive information about the gas sample.	gas_number;gas_time_series;labeled_addition;collection_loc

Gas Sample Variables					
Rowtext	Name	Units	Type	Description	Parameters
13c_CH4	δ13C (CH4)	‰	real	CH4 permil signature of 13C relative to Pee Dee Belemnite.	
13c_CO2	δ13C (C02)	‰	real	CO2 permil signature of 13C relative to Pee Dee Belemnite.	
14c_age_CH4	Uncalibrated Radiocarbon Age (CH4)		real	Uncalibrated radiocarbon age of CH4, as calculated from corrected fraction modern, using the Libby half-life value of 5568 years.	;;14c_age_ch4_sigma;
14c_age_CO2	Uncalibrated Radiocarbon Age (CO2)		real	Uncalibrated radiocarbon age of CO2, as calculated from corrected fraction modern, using the Libby half-life value of 5568 years.	;;14c_age_co2_sigma;
14c_CH4	Δ14C (CH4)	‰	real	CH4 permil signature of 14C relative to NBS Oxalic Acid standard, 13C-corrected.	;;14c_ch4_sigma;
14c_CO2	Δ14C (C02)	‰	real	CO2 permil signature of 14C relative to NBS Oxalic Acid standard, 13C-corrected.	;;14c_co2_sigma;
c_conc_CH4	CH4 Concentration	ppm	real	Concentration of CH4 in the unprocessed gas sample.	

Gas Sample Variables					
Rowtext	Name	Units	Type	Description	Parameters
c_conc_CO2	CO2 Concentration	ppm	real	Concentration of CO2 in the unprocessed gas sample.	
fraction_modern_CH4	Fraction Modern (CH4)		real	Deviation of the CH4 sample from modern. Modern is defined as 95% of the radiocarbon concentration (in AD 1950) of NBS Oxalic Acid standard, 13C-corrected.	;;fraction_modern_ch4_sigma;
fraction_modern_CO2	Fraction Modern (CO2)		real	Deviation of the CO2 sample from modern. Modern is defined as 95% of the radiocarbon concentration (in AD 1950) of NBS Oxalic Acid standard, 13C-corrected.	;;fraction_modern_co2_sigma;

Other Sample Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
other_name	Other Sample Name		text	A unique name for the single sample, as designated by the contributor.	
other_note	Other Sample Type Notes		text	Descriptive notes about the "other" sample.	other_number;;labeled_addition;
processing_method	Other Sample Processing Method		text	Description of the laboratory method used to prepare the sample for radiocarbon analysis. For example, describe the method used to isolate microbial biomass or the method and chemicals used to isolate a specific compound.	

Other Sample Variables					
Rowtext	Name	Units	Type	Description	Parameters
compound	Compound Name		text	If the sample is an individual isolated compound, indicate the name of the compound.	compound_formula;;;
plant_species	Plant Species		text	If sample is plant tissue, name of the plant species. If plant species is not known, leave blank.	

Profile Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
profile_note	Profile Notes		text	A unique name for a single profile. This can be the same as the cluster and/or site name if there is only one profile at the cluster/site.	;transect_flag;;

Profile Variables					
Rowtext	Name	Units	Type	Description	Parameters
add_taxon_flag	Complete Taxonomy Flag		text	Indicate whether there is more taxonomic information for this profile by entering “yes”, otherwise leave the field blank. Controlled vocabulary: yes_blank	
layer_method	Layer Sampling Method		text	Description of how the individual layers of the soil profile were sampled as genetic horizons, fixed depth intervals, some combination or other.	
observation_date	Observation Date	yyyy-mm-dd or mm/dd/yyyy	date	The date at which the profile was taken at the site.	
prof_cryo	Profile Cryoturbated Flag		text	The profile shows a significant degree of cryoturbation. Controlled vocabulary: yes_blank	
profile_method	Profile Sampling Method		text	Description of the methods used to sample the soil profile, e.g., quantitative pit, core, bucket auger, etc.	
sampler_names	Sampler Names		text	The names of the persons who described and sampled the profile.	
soil_series	Soil Series		text	The NRCS soil series of the profile (http://soils.usda.gov/technical/classification/taxonomy/).	
soil_taxon	Soil Taxonomy		text	The taxonomic classification of the soil profile following NRCS convention (http://soils.usda.gov/technical/classification/taxonomy/).	
surface_veg	Surface Vegetation		text	Describe the dominant vegetation at the exact location of the profile.	
thaw_depth_profile	Thaw Depth of the Profile	cm	text	The depth to the frozen surface of the profile. For Alaska sites, this applies only if sampled after August 15 and should be left blank if sampled before.	

Cluster Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
cluster_name	Cluster Name		text	A unique name for a single cluster of profiles at a site. This can be the same as the site name if there is only one profile cluster at the site.	
cluster_note	Cluster Notes		text	Various notes on and descriptions of the cluster other than those listed under "site notes.".	

Site Metadata Variables					
Rowtext	Name	Units	Type	Description	Parameters
site_name	Site Name		text	A unique name for a site that corresponds to a georeferenced point.	
site_note	Site Notes		text	Various notes on and descriptions of the site other than C flux, climate, photo or vegetation. May include local names for physiographic features, which may or may not appear on USGS Topographic Quadrangles.	

Site Variables					
Rowtext	Name	Units	Type	Description	Parameters
2d_position	2D Position		text	2-dimensional position of the site on the Landform on which it is located. See USDA-NRCS -NSSC Field Book for Describing and Sampling Soils (Staff 2002; pp. 3-38 through 3 -41). This information supplements Landscape and Landform to describe the geographic setting of the site. Controlled vocabulary: 2d_position	
add_note	Additional Data Note		text	Add links or publication references for any additional belowground data available for the site (soil chemistry, microbial measurements).	

Site Variables					
Rowtext	Name	Units	Type	Description	Parameters
aspect_cl	Site Aspect Class		text	The cardinal direction that the slope faces at a site. Use this field if only if you do not provide the azimuth of the Site Aspect in compass degrees. Controlled vocabulary: direction	
aspect_deg	Site Aspect	degree	real	The numerical observation of aspect at the site. The compass bearing (corrected for declination) that a slope faces, looking downslope. If the site has no slope leave blank.	
cflux_note	C Flux Notes		text	Provide references or links to carbon flux measurements that have been conducted at the site.	
climate_note	Climate Notes		text	Provide references or links to climate data for the site.	
climate_station	Meterological Station		text	Name of nearest climate station.	
depth_water	Depth to Water Table	cm	real	Measure or estimate the depth from the ground surface to the stabilized contact with free-standing water in an open bore-hole or well at the time of sampling.	
drainagecl	Drainage Class		text	The drainage class of the soil sampled at the site according to the specific terminology employed in the USDA-NRCS-NSSC Field Book for Describing and Sampling Soils (Staff 2002; p. 1-10). Controlled vocabulary: drainage	
eco_note	Ecoregion Note		text	Special information about the site that makes it anomalous from the USDA Omernik ecoregion in which it is located.	
ecoregion	Omernik Ecoregion		text	Omernik ecoregion classification.	
elevation	Elevation	m	real	The elevation at the site as determined by topo map, GPS, altimeter, etc. Contributed value is assumed accurate within several meters regardless of method used.	

Site Variables					
Rowtext	Name	Units	Type	Description	Parameters
fapar	Fraction of Absorbed PAR	%	real	Fraction of PAR abosrbed by vegetation, modeled by Max Planck Institute.	
ffdays	Frost Free Days	days	text	The expected number of days between the last freezing temperature (0 degrees Celsius) in spring and the first freezing in fall.	
flood_freq	Flooding Frequency		text	The annual probability of a flood event expressed as a class according to the terminology employed in the USDA-NRCS-NSSC Field Book for Describing and Sampling Soils (Staff 2002, pg. 1-11). Controlled vocabulary: flood_freq	
geo_form	Geologic Formation		text	The basic lithostratigraphic unit used to describe, delimit, and interpret sedimentary, extrusive igneous, metavolvanic, and metasedimentary or sediment bodies (excludes metamorphic and intrusive igneous rocks), based on lithic characteristics and stratigraphic position. A formation is commonly, but not necessarily, tabular and stratified and is of sufficient extent to be mappable at the earth's surface or traceable in the subsurface at convenient map scales.	
gpp_mte_gl	Annual gross primary production (MTE-GL)	g m-2 yr-1	real	Annual gross primary production using Model Tree Ensemble. See Jung et al. 2011, JGR-Biogeo, trained with site level GPP data estimated according to Lasslop et al. (2010, Global Change Biol).	
gpp_mte_mr	Annual gross primary production (MTE-MR)	g m-2 yr-1	real	Annual gross primary production using Model Tree Ensemble. See Jung et al. 2011, JGR-Biogeo, trained with site level GPP data estimated according to Reichstein et al. (2005, Global ChangeBiol).	

Site Variables					
Rowtext	Name	Units	Type	Description	Parameters
landform	Landform		text	The type of Landform on which the site is located. See USDA-NRCS-NSSC Field Book for Describing and Sampling Soils (Staff 2002; pp. 3-12 through 3-16). This information can be nested between Landscape and 2D Position to describe the setting of the site. Controlled vocabulary: landform	landform_mod;;;
landscape	Landscape		text	The type of Landscape on which the site occurs, according to USDA-NRCS-NSSC Field Book for Describing and Sampling Soils (Staff 2002; p. 3-11) This information can be arranged in hierarchy above Landform and 2D Position to describe the geographic setting of the site. Controlled vocabulary: landscape	
landuse	LANDSAT landuse		text	LANDSAT-based cover classes from the USGS-MRLC National Land Cover Database (2001). Controlled vocabulary: landsat	landuse_code;;;
lat	Latitude	dec. deg	real	The latitudinal coordinate, in decimal degrees, to the appropriate level of spatial accuracy (up to five decimal degrees; WGS84 Latitude/Longitude datum preferred).	datum;location_acc;;
long	Longitude	dec. deg	real	The longitudinal coordinate, in decimal degrees, to the appropriate level of spatial accuracy (up to five decimal degrees; WGS84 Latitude/Longitude datum preferred).	datum;location_acc;;
map	Mean Annual Precipitation	mm	real	The arithmetic average of the total annual (liquid) precipitation , preferably taken over the standard "normal" period, 1961-1990.	

Site Variables					
Rowtext	Name	Units	Type	Description	Parameters
map_cru	Mean Annual Precipitation (CRU)	mm	real	Mean Annual Precipitation, derived from Climate Research Unit data at Max Planck Institute.	
mast	Mean Annual Soil Temperature	°c	real	The mean annual soil temperature, preferably measured at a depth of 50 cm below the soil surface, or at the upper boundary of a root-limiting layer.	
mat	Mean Annual Temperature	°c	real	The arithmetic average of the daily maximum and minimum temperatures for a calendar year, preferably taken over the standard "normal" period, 1961.	
mat_cru	Mean Annual Temperature (CRU)	°c	real	Mean Annual Temperature, derived from Climate Research Unit data at Max Planck Institute.	
parent	Parent Material		text	The geologic or organic precursors to the soil at the site.	
pet_eraint	Potential Evapotranspiration (EraInterim)	mm	real	Potential annual evapotranspiration from ECMWF EraInterim, www.ecmwf.int/research/era/do/get/era-interim, provided by Max Planck Institute.	
pet_vic	Potential Evapotranspiration (VIC-Model)	mm	real	Potential annual evapotranspiration from the VIC-Model by Sheffield & Wood 2007, JGR-Atm provided by Max Planck Institute.	
photo_note	Photo Notes		text	References or links to photos from the site.	
plot_area	Plot Area	m-2	real	If applicable; this is the area of a site that corresponds to one georeferenced point from which two or more profiles were sampled.	
polar_flag	Polar site		text	Site is above the Brooks range.	
pond_freq	Ponding Frequency		text	The number of times ponding occurs over a period of time. Controlled vocabulary: pond_freq	
pre_veg	Pre-existing Vegetation		text	If known, note the pre-existing vegetation of the site before disturbance.	

Site Variables					
Rowtext	Name	Units	Type	Description	Parameters
primary_feature	Primary Feature		text	See AK_NRCS Geomorphic Descriptions.doc for definitions. Landform, Landform modifier, 2D position, Primary Feature and Secondary Feature can be combined for complete characterization of the site. Add further notes about Landform in the Landform Notes field. Controlled vocabulary: primary_feature	secondary_feature;;;
province	Province		text	A politically defined sub-region of a country, for any country that does not describe these sub-divisions as "states".	country;;;
runoff	Local Runoff Class		text	Runoff potential class for the soil, assigned based on local/state/MLRA criteria. Controlled vocabulary: runoff	
site_alias	Site Aliases		text	Identifies any alternates to or synonyms of the site name.	
site_perm	Site Permeability		text	A class rating of the overall ability of air and water to move through the soil profile. The class limits are as defined in the National Soil Survey Handbook. Controlled vocabulary: site_perm	
slope	Slope	%	real	The angle of the ground surface through the site and in the direction that overland water would flow. Make observations facing downslope to avoid errors associated with some brands of clinometers. If the site has no slope leave blank.	
soiltemp_note	Soil Temperature Notes		text	Indicate information about additional soil temperature data available about this site. Please include references and links if possible.	
stand_age	Maximum Stand Age	years	int	The maximum stand age at the site in years.	

Site Variables					
Rowtext	Name	Units	Type	Description	Parameters
stand_maturity	Stand Maturity		text	If the site is forested, how mature was the stand at the time of sampling? The class may be determined by tree cores if available. If stand age is known, then 0-4 years: “young, regenerative”, 4-79 years: “even-aged, aggrading, and 80+ years: “mature even-age” or “mature, uneven-age”. Choose “not applicable” for grassland or agricultural areas. If unknown, leave blank. Controlled vocabulary: stand_maturity	
state	State		text	State or territory. At output, may also include province for any contry that does not describe political subdivision as "states". Controlled vocabulary: us_states	county;country;;
successional_status	Successional Status		text	Description of the assumed successional status at the site. This description is of necessity highly subjective.	
thaw_depth_site	Thaw Depth of the Site	cm	real	The depth at which permafrost will usually thaw each summer for the site. Usually an average of many measurements over the site. This may or may not be from the thaw depth measured from individual profiles and hence may be different from Thaw Depth of the profile.	
veg_note	Additional Vegetation Data Notes		text	Provide references or links here if additional site-level vegetation data are available (e.g. species composition, basal area, aboveground biomass).	
vegclass	Vegetation Classification Code		text	The type of vegetation at the site, described according to a TBD international classification scheme.	

Site Variables					
Rowtext	Name	Units	Type	Description	Parameters
vegclass_local	Local Vegetation Classification Code		text	The type of vegetation at the site, described according to the classification scheme commonly used at the site. Indicate the scheme in the Local Vegetation Classification Type. Leave blank if unknown or no local classification applies.	vegclass_local_type;;;
vegclass_nat	US National Vegetation Classification Standard		text	The type of vegetation at the site, described according to the Federal Geographic Data Committee's classification scheme (http://www.fgdc.gov/standards/projects/FGDC-standards-projects/vegetation/NVCS_V2_FINAL_2008-02.pdf). Classify the site according to the four uppermost descriptive levels (Class, Subclass, Formation, Division).	
water_table_duration	Wet Soil Moisture Duration	days	int	The cumulative annual duration that a water table can be expected to exist in the soil.	