

Guidance Document for Using National Resources Inventory Grazing Land On-Site Data Tables for Developing Ecological Site Descriptions March 2022

Background

The NRI rangeland on-site data tables presented on this website were constructed only for use in Ecological Site Description (ESD) work by individuals receiving approval through a confidentiality agreement provided for this project. Individuals should contact the NRI Grazing Land Help Desk (nri-graze-help@iastate.edu) to obtain a copy of the confidentiality agreement. **These data are considered sensitive and are not to be distributed or used for other purposes.**

The table contents are summarized from NRI data collected on non-Federal rangelands during 2003 to 2020 and on BLM managed rangelands during 2011 to 2020. The tables include only those points (referred to as locations in the remainder of this document and in the tables) for which the entire 150-ft circular macroplot contained a single ESD. All partial or combination ecological site locations are excluded from the tables. The table download web site is sorted by MLRA. The zip files, linked on the web page by MLRA, contain XML files listed by ESD number. Each file has at least one data collection location. An ESD number that does not appear means that the ESD was not sampled, has an alternative number, or was not extracted from the database due to multiple ESDs in the macroplot. The tables on this website are constructed from a subset of the locations and therefore aggregations of these summaries will not match estimates provided in NRI rangeland reports. The tables contain data summaries for individual locations where information has been recorded using protocols that are similar to ESD required protocols.

More information on procedures used for collecting NRI Grazing Land On-Site data may be found at: <https://grazingland.cssm.iastate.edu/>.

Description of Tables

The first of 15 worksheet tabs is **SI (ESD Site Information)**. Column A lists 39 data elements that describe the site, the date and time data were collected (Capture Date), or some condition on that location. These elements will help the examiner sort locations into groups based on some criteria, data elements, or threshold conditions. Column B and each column to the right is a unique location/point presorted based on a progressively higher similarity index found on Row 45. The unique location/point listed on Row 6 of the column is situated exactly in the same column of all tabs in this ESD file. The locations follow the same order in each worksheet. The final columns on the right summarize data elements for the locations listed for the ESD. Some data fields are blank because of additions or deletions to the collection protocol over the 13-year period. The geographic position of the location/point is protected information but has been transposed onto a land survey Township found on Row 14. The point occurs somewhere within that 36 square miles.

CLIMATE – The climate table is included among the worksheets. The climate table displays precipitation in inches and temperature is in degrees Fahrenheit. National maps of the climate data are also posted on the site. Use the maps to get regional insights to the 31 variables described in the row Headers of Column A. These climatic variables have some potential to affect growth. Most are explanatory by name so each state needs to research which variables or combination of variables are most important for growing conditions on an annual basis. This analysis will help explain signals collected in the location data (e.x. Bare Ground). Some variables show seasonal differences which may be validly considered for growing conditions. Because the variable's effect on growth vary by location, the PRISM geospatial model data is displayed for each location so that a blank means that the climatic variable was MORE than the 30-year measurement means 1991 to 2020. Depending on the variable, more than the mean may be good or poor growing conditions. Difference is included if the survey year measurement is LESS than the 30-year measurement mean. The summary variables are taken from the NRCS National Range & Pasture Handbook, and from the BIOCLIM set of variables used for species modeling (<http://www.worldclim.org/bioclim>). Daily PRISM data from 1991-2020 provided the raw values (<http://www.prism.oregonstate.edu/>).

PROD_RCWT is reconstructed production in pounds per acre by plant code, subtotal by functional group, and total for the point (location). Care should be taken on the functional group subtotals since the functional group assigned to a plant code is based on PLANTS.gov information which occasionally lists multiple growth forms. Make sure the growth form is correct for the way the plant grows in your part of the world.

Note that no production data are collected on BLM managed lands. This is reflected as missing data in the PROD_RCWT and PROD_UNRCWT worksheets.

PROD_UNRCWT is unreconstructed production. This is as-clipped air-dry pounds/acre without adjustments for climate, growth curve, and percent ungrazed. Data collector estimates and adjustments are included. One may want to review climate summaries for the location to fine tune adjustments as the data collector was only able to estimate percent of climate at the time of data collection. Frame size and data collector input of ESD average production is the amount used for similarity index calculations. Percent dry weight by species will be of value on other seasonal projects or future NRI data collection.

The **FCAN (first canopy cover)** worksheet contains the top-most canopy hits from the line point intercept (LPI) protocol as a percent of the number of marks along the transects where the LPI readings are taken. Percent by species, subtotal by functional group, and total foliar cover for the point is columned.

FCAN and the other tables in the following tabs will have a summary of Minimum, Maximum, Mean, Constancy, and Percentage for species across all locations. Constancy is the frequency with which a species occurs in all locations. These summaries are located in the right-most columns.

The **BASL (basal hit)** worksheet contains the bottom-most (basal) LPI hits as a percent of the number of marks along the transect where the LPI readings are taken. Functional group subtotals are provided. Please note that the 'soil' row is not bare ground. Bare Ground, where the LPI line call was none and none (i.e., no canopy hit and the basal hit was soil), is located on the SI worksheet.

The **LPI (Line Point Intercept)** worksheet summarizes all plant and litter hits throughout the canopy. This plant list column is more extensive than the FCAN. Additionally, this worksheet contains a constancy measure which will aid in decisions as to which plant codes are modal and best to list in EDIT for the ecological site.

PLNTH (Plant Height) provides the average measured height (in inches) by species and functional group for data collected since 2009. Prior to 2009, plant heights were recorded without the associated plant species and for these data this table provides the overall average plant height.

The **RHLTH (rangeland health)** worksheet will help identify at what level the ecological processes were working at that location. The rating for each of the 17 indicators and a summary of the number of departure ratings for each attribute is totaled. Since 2014, field crews used preponderance of evidence to determine and record attribute ratings for departures from reference conditions. These attribute ratings are also included on the worksheet.

The **DIST (disturbance)** worksheet lists 25 past (over a year) and present (within the past year) disturbances visually observed at the site. Some blanks are due to changes in this protocol. Use the dropdown sort button in the upper right-hand corner of the column. Check the Y in the bottom box. Disturbances may help explain lower than expected numbers (e.g. low litter if past fire or brush management occurred on the site).

CGAP (canopy gap) provides both gap size of one foot or more and distance measurements between gaps.

BGAP (basal gap) only contains data when the data collector marks the site for ESD data collection. The table contains measurements for distances (greater than or equal to 1 foot) along the transect absent of any plant bases.

PLANTCENSUS (plant census) provides lists of plants observed at each site. Estimated plant tallies by category (1-10, 11-100, 101-500, 501-1000, and >1000 plants) are reported. The table lists plants by plant symbols. Refer to the **PLANT_INFO** table to view the common or scientific name associated with each symbol.

NOTES displays all notes recorded in the field or during review. Notes are identified to protocol screen.

PLANT_INFO lists the species codes from 2013 USDA Plants Database; scientific name and Author; common name; and synonym code for the plants recorded for the locations presented in the tables. Since the other tables list the species by plant code, this table may be used to reference the associated names.

Contact Gene Fults gfults@iastate.edu or Ken Spaeth Ken.Spaeth@usda.gov for comments.