NRCS Natural Resources Conservation Service

Instructions

Range Inventory Worksheet NE-ECS-1

Instructions for use of NE-ESC-1

Eco Site: Enter the Ecological Site Name.

Plant Community Name: Enter the reference plant community or vegetation state name.

MLRA: Enter the valid Major Land Resource Area within which the site is found.

Photo or Map ID: Enter the aerial photo number, topographic map (quad) name, or other identification of the photo or map used when completing the inventory.

Specialist: Enter the name of the person(s) who completed the inventory.

Date: Enter the date the inventory was completed.

Field Office: Enter the name of the NRCS Field Office or other administrative office that is responsible for the area within which the site is located.

Location: Use at least one of the methods for identifying where the site is located as precisely as possible. Sec. (Section). 1 (Township) R (Range); if this method is used, be sure to mark the location in the section in the box provided. UTM (Universal Transverse Mercator); this will likely be from a GPS unit. Long. (Longitude) and Lat. (Latitude; this will also likely be from a GPS unit; however, if determined from a topographic map, attempt to determine degrees, minutes, and seconds for both longitude and latitude.

Cooperator: Enter the name of the person(s) or entity responsible for the management of the area within which the site is located.

Nearest Climate Station (optional): You can leave blank if unknown or if you plan on using the nearest established NOAA Climate Station. However, if you are aware of a significant alternate set of climate data that may be available in the area (i.e., privately collected, collected for special research or other purposes), enter the name of the station or some other identifier (person(s) responsible for collecting the data) so that the data can be retrieved.

OCULAR ESTIMATE OF PLANT COMPOSITION (first table)

Plant Group % Comp.: Enter the percent of total annual production and percent cover for each group. This can be estimated, or entered after completing the transect and/or clipping for total production. For the shrubs and possibly the forbs groups, it may be desirable to enter an estimate (or results of a separate transect) of foliar cover here. If the percent cover is other than basal, make a note of this either here or on the "Notes" line.

Phenology: This is optional, but highly recommended if a full double-sampling clipping is done. The suggested codes to be entered here are as follows:

GRASSES

D	**Dormant:** Use only once for winter dormancy
GS	**Growth Starts:** Initial spring green-up; to 2.5 cm blade length for short grasses, to 5 cm for large grasses; report this stage only once; if leaves longer, to to "Vegetative Stage"; annuals may have "GS" in fall also.
VS	**Vegetative Stage:** Elongation of vegetative culms, from "Growth Starts" to "Boot".
BT	**Boot:** From when first floral parts noted in boot-sheath (early0boot), through emergence of head from boot (floral-stalk), through heads fully out of boot, until just before anthers emerge from florets.

AN **Antheses:** Anthers emerge and are evident; if this stage is missed, report next stage observed.

DS **Dough Seed:** Seeds with milky juice; if this stage is missed, report next stage observed.

HS **Hard Seed:** seeds firm or hard, not with milky joice; few if any seeds have dropped; if missed, report next state.

SD **Seed Dissemination:** Some seeds have dropped, or seeds drop with inflorescence hit; if missed, report next stage.

MA **Mature:** From when >50% if the seeds have dropped, but plant still mostly green through the first prominent vegetative drying indicating the start of dormancy or the first summer "Plants Dry" stage.

PD **Plant Dry:** Summer dormancy before fall green-up, if any. This stage converted to "Dormant" if no fall regrowth

RG **Re-growth:** For plants that green-up again with late summer or fall rain; regrowth is noted as "RG", then "BT2", "AN2", etc. Note that "GS" and "VS" are not used in he same growing season. Annuals, such as BRTE, may have "GS" in the fall.

FORBS

D **Dormant:** No green leaves; dried rosettes and stalks for perennials; annuals as seed.

GS **Growth Starts:** The initial spring, summer or fall sprouting and leaf growth of seedlings, or the spring green-up or rosettes of perennials; report only once.

Vs **Vegetative Stage:** Until floral buds or flower stalks appear. If this stage is missed, report next stage observed.

FB **Floral Bud/Floral Stalk & First Bloom to Full Bloom:** From floral bud swelling or floral stalk extension through first bloom to full bloom (peak flowering).

FS **Late Floral:** From peak flowering through floral senescence (including soft seed).

SR **Seed Ripe:** Hard seed or ripe fruit; if missed, report next stage observed.

SD **Seed Dissemination:** If >50% of seed have dropped/ if this stage is missed, report next stage observed.

LV **Late Vegetation:** From seed dissemination through leaf drying for perennials or death of annuals. If missed, report next stage observed.

PD **Plant Dead or Dormant:** After leaf drop of perennials, or complete leaf drying (color change) and no further growth of perennials, or death or annuals.

SHRUBS

D **Dormant:** Winter period after leaf drop for deciduous shrubs; seed dissemination for evergreens.

BG **Begin Growth:** Leaf buds swell and break, first leaves seen; report only once, if missed, report next stage observed.

LG **Leaf Growth:** Enlargement of leaves prior to twig growth.

TG **Twig Growth:** Elongation of internodes before "Floral Bud to Full Bloom" stage.

FB **Floral Bud to Full Bloom:** From swelling of floral buds, through first bloom and through peak flowering.

FS **Late Floral:** From peak flowering to floral senescence including soft seed.

SR **Seed Ripe:** Hard seed or ripe fruit; if missed, report next state observed.

SD **Seed Dissemination:** Enough seed or fruit fall to be noticeable; if >50% of seed have dropped, report next state.

LV **Late Vegetative and Leaf Drop:** From seed dissemination, through leaf yellowing and leaf drop for deciduous shrubs; may not be distinguishable from dormancy for evergreen shrubs.

SD **Summer Dormancy:** Period between leaf-drop and fall regrowth, if exhibited.

RG **Summer or Fall Regrowth:** For shrubs that put on new leaves after fall rain; same as "BG" and "LG" of first growth cycle in spring; use "TG2", "FB2", etc., if exhibited.

Symbol or Plant Common Name or Scientific Name: List common names, or symbol or scientific name as shown in the National PLANTS database.

Weight (lb./acre): Enter the air-dry weight for each species; this can be an ocular estimate or calculated by multiplying the ocular estimate of percent composition times the total annual production.

Total: Enter the total annual production (air-dry weight); this will be the average of the "lb/acre" column from the "Clipping for Total Production" table. This could be an ocular estimate of total annual production if the confidence level is sufficient.

TREND DETERMINATIONS:

Generally, ratings on the left of each attribute will indicate trend toward the Historical Slimax Plant Community; however, this is not always the case. A person can generally look at where the "circles" fall and get a rough idea of what the apparent trend might be.

Vigor of Key Species: Evaluate the key species for the following attributes: size and appearance of plants, height and number of stems, number and size of fruiting bodies or seed heads, size or area of foliage, date of renewal of spring growth and rate of foliage development, herbage production, and possible foliage color. Take into consideration the other site characteristics.

Desired seedlings/young/plants: Select based on numbers of desirable seedling or young plants, and also consider if various age classes are represented (refer to the NRPH, page 4-16).

Decadent plants: Evaluate based on overall appearance of key species. Bunch grasses may have dead centers, and desirable shrubs may have numerous dead or non-productive stems.

Invading undesirable plants: Consider both "invaders" or plants that may be encroaching from adjacent plant communities (e.g., junipers/cedar, greasewood, etc.).

Plant residues/litter: Rate based on what is normally expected for the site. This is one attribute that a "circle" on the far left may not indicate a trend "toward" the HCPC.

Overall plant community stability: Rate based on other factors already considered.

Surface Erosion: Rate based on what is normally expected for the site. Evidence of surface erosion may be observed by signs of litter movement (e.g., "litter dams").

Percent Bare Ground: Rate based on what is normally expected for the site

Crusting: Look for signs of soil crusting (e.g., vesicular crusts) or capping, beyond what is normally expected for the site.

Compaction: Rate based on what is normally expected for the site, and consider current conditions.

Gullies & Rills: Look for evidence of rill formation. For gullies, look for evidence of gully formation "on the site." If gullies are present in adjacent draws, and the draw is on an identified ecological site, rate those gullies when evaluating the other site.

Overall Soil Degradation: Rate based on the other factors already considered.

Range Trend (toward or away from HCPC): Rate based on your experience and on the other factors already considered. A rating of "High" on overall plant community stability may not necessarily mean the apparent trend is "toward" the HCPC. Also, if you are not relatively sure that the trend is "toward" or "away from" the HCPC, it is most likely "not apparent".

Planned Trend (toward or away from DPC): Rate only if you are planning and managing for a Desired Plant Community (DPC) other than the Historic Climax Plant Community.

SITE HISTORY:

Precipitation: Either enter the current seasons precipitation in inches (October 1 to present) or enter a descriptor such as "below average", "normal", "above average", "much above average", etc.

End of Season Percent Utilization: Select the range which most closely describes the utilization level at the end of the grazing season or at the time of the evaluation. If the actual utilization percentage has been determined, write it in on the blank provided at the end of the first line.

Use History: Describe the past grazing history: none, slight, moderate or heavy. If different levels of use were practiced in the more distant past than in the more recent past, briefly describe (e.g., >5 yrs. ago – heavy; recently – slight).

Kind of Animal: List the dominant herbivores utilizing the site.

Season of Use: Show season(s) when area is grazed: (-) = unknown, spring, summer, fall, winter.

Wildlife Species: List the kinds of wildlife expected or in evidence on the site: deer, badger, quail, etc.

Burning History: (-) = unknown; 1 = rarely, if ever, burned; 2 = occasionally burned; 3 = systematically burned; 4 = burned _____ years ago (enter code and years).

Logging History: (-) = unknown; 1 = not logged; 2 = logged _____ years ago (enter code and years).

Cropping History: (-) = unknown; 1 = not cropped; 2 = cropped _____ years ago (enter code and years).

PHYSIOGRAPHY:

Elevation: Enter the elevation where the site is located.

Slope: Enter the average slope where the site is located.

Azimuth: Enter the aspect of the slope (N, NE, E, SE, S, SW, W, or NW).

Major Landform and Landscape: Consult with a soil scientist.

Slope Component: Circle the typical slope component where the site is located.

Kind of Slope: Select the descriptor that best describes the slope; generally straight, concave, or convex.

Other observations/comments: Enter any other comments related to physiographic features such as depth to watertable, microrelief, drainage class, frequency/duration of flooding or ponding, etc.

TRANSECT DATA:

Species: Enter common name, symbol, or scientific name of species that are basal cover "hits".

Tally: Enter a dot or line for each plant, bare soil, rock, litter, or cryptogam "hit".

Total: Total each row of "hits", and then total all "hits" at the bottom.

%: Divide total for each row by the "Total Tally", and multiply by 100 to arrive at percent.

CLIPPING FOR TOTAL PRODUCTION:

Plot Size: Enter the size of the plot used to determine total production.

Plot #: This is optional; enter a number for each plot that is clipped. If the clipped plots are placed at certain locations along the line transect, enter those measurements here for each plot.

Grams clipped: Enter the total grams of the clipped plant material in the plot.

Percent dry weight: Enter the percent dry weight of the clipped plant material (i.e., for 60%, enter 0.60). This can be determined by drying the material down, or you can reference the NRPH Exhibit 4-2,in order to estimate a value

Conv. Factor: Enter a conversion factor related to the size of plot used:

0.96 sq. ft.	100	4.80 sq. ft.	20
1.92 sq. ft	50	9.60 sq. ft.	10
2.40 sq. ft	40	96.0 sq. ft.	1

lb./acre: Take grams clipped, times percent dry weight, times the conversion factor to arrive at the lb./acre.

Average: Calculate and enter the average lb./acre of all the clipped plots.

TRANSECT AND PHOTO INFORMATION:

Transect information: Enter transect location in enough detail to re-locate the transect if it is desired to sample the transect at a later date.

Mark One: If the sample site is too small to have a 100 foot transect, then a shorter transect can be placed. Dropping a point every six inches on a 50 foot transect will allow for 100 points. If you measure the line-point transect in some other fashion, describe what methodology was used.

Photo #: Enter the number of the photo.

Description: Give a brief description of the photo so they can be labeled at a later time.

Notes: Use this space for any additional notes that will further describe the site or situation.

Special Considerations: Describe any special features or considerations related to the site (e.g., critical habitat, riparian zone, threatened or endangered species or special concern species, etc.).

Associated Sites: List sites that are associated with or adjacent to the inventoried site on the landscape.

General Observations: Describe any additional observations in relation to events or other situations (e.g., rodent use, excessive insect damage, recent fire events, unusual flood or other erosion events, off-road vehicle use, etc.).

Depth: This section is to be used if a hole is dug to look at the soil characteristics. The gauge can be used in inch increments, for a total depth of 50 inches, or you can write in a different depth on the gauge.

Notes: In the space provided (or to the side), write in any soil characteristics observed. This will usually be texture, but notes can be made about effervescing with acid, depth of roots, etc.

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