

Soil – Vegetation Inventory Method (SVIM)

scanned from:

United States
Department of the Interior
Bureau of Land Management

Rangeland Inventory & Monitoring Supplemental Studies

Technical Reference 4400-5
September 1992

BLM/SC/PT-92/005+4400

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XI. SOIL-VEGETATION INVENTORY METHOD

Editor's Note: The procedures for collecting data using this method were transcribed from old BLM Manual 4412.14, "Soil-Vegetation Inventory Method," Release 4-58, dated 8/10/79.

The Soil-Vegetation Inventory Method (SVIM) is the Bureau of Land Management's (BLM's) method for conducting basic soil and vegetation inventories (consistent with BLM Manual Sections 5200, 6602, 6672, 7161, and 7312). The procedures provide a uniform, systematic method for inventorying soil and vegetation resources and collecting data for use in Unit Resource Analysis (URA), Management Framework Plans (MFP), Activity Plans, and environmental assessments. It is designed to be used in conjunction with BLM Manual section 6602, Integrated Habitat Inventory and Classification System (IHICS). The method does not preclude site specific studies (for special purposes), other approved inventories (various forest inventories, forage surveys, etc.), or more detailed inventories based upon it. Although SVIM does not inventory all renewable resources, it provides a sampling frame for wildlife species occurrence inventories and gathers basic data used by other resources (recreation, watershed, etc.). It is an integrated inventory system in that other renewable resource inventories are based upon, or directly related to, its procedures. To gather more detailed data, it may be necessary to conduct intensive studies on specific areas of concern. Continuous studies are also essential to monitor changes in base inventory data for necessary adjustments in management as resource conditions change. Such studies must include, but are not limited to: actual grazing use, wild animal occurrence, rangeland condition and trend studies, vegetation production and utilization, climatic variation, shrub transects or vegetation plots, ground cover determinations, and watershed transects.

A. Pre-Planning Analysis

All inventory and planning efforts must be preceded by a pre-planning analysis in accordance with BLM Manual section 1601. The pre-planning analysis identifies the issues and problems that impact the planning area and determines planning requirements, including the level of soil and vegetation inventory necessary for the area. The results of the preplanning analysis are documented in written guidance to the inventory planning team (Section XI.A.1). This guidance clearly defines the level of detail that must be met during data collection efforts to adequately address the issues and problems identified.

1. Inventory Plan

An inventory plan, based on guidance from the pre-planning analysis, must be developed prior to conducting the inventory. An interdisciplinary team must be appointed by the District in the pre-planning analysis, the team must set forth in writing the extent and intensity of the inventory. The inventory plan should be attached to and become a part of the pre-planning analysis. The inventory plan is approved by the District Manager and reviewed by the State Director prior to initiation of the inventory. A suggested outline for the inventory plan is as follows:

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- a. Purpose.
- b. Objectives.
- c. Description of inventory area.
- d. Information required based on issues.
- e. Inventory design.
- f. Personnel and funding requirements and/or constraints.
- g. Logistics.
- h. Field measurements and procedures.
- i. Compilation procedures.
- j. Reporting (progress and results) requirements.
- k. Approval process.
- l. Files maintenance.

2. Progress Reviews

The inventory plan must set forth when and how progress reviews will be conducted. The District Manager must appoint a progress review team consisting of resource specialists from the District staff, with assistance from State or other BLM office specialists if desired. Reviews consist of assuring adequate quality and quantity of inventory progress and resolving any problems incurred.

3. Pre-Inventory Preparation

Pre-inventory preparation is extremely important if the inventory is to be successful. Many factors must be considered and many preparatory details organized efficiently and sequentially in order to insure systematic conduct and completion of field work.

4. Inventory Party

The inventory party normally consists of a party chief, a soil survey team, and a vegetation inventory (transecting) team. If specified in the inventory plan, the soil survey and mapping team may be combined into a single team to complete the mapping of the inventory area. The soil survey team may be Soil Conservation Service (SCS), BLM, combined SCS-BLM, or contract personnel. The inventory party must be carefully selected. Members' knowledge, experience, education, and training is extremely important.

- a. **Chief of Party.** The chief of party, who should be a permanent BLM employee, must be selected with a great deal of emphasis placed on experience, integrity, character, attitude, ethics, knowledge, and competence. He/she should be knowledgeable and experienced in objectives and procedures of soil-vegetation inventories and acquainted with Bureau interrelated programs. He/she should be a

person of good judgment and have had supervisory experience. He/she is responsible for organizing and directing the inventory, coordinating field data collection, making work assignments, keeping equipment in good operating order, providing for the welfare of the party members, and reporting progress of the inventory. Whether the soil survey is being conducted by the SCS, jointly by SCS and BLM, or by contract, the party chief is responsible for coordinating the vegetation and wildlife inventories with the soil survey.

- b. **Party Members.** The soil survey mapping, and vegetation inventory teams must consist of qualified specialist, including range specialists, foresters, soil scientists, and wildlife biologists. All specialists on the inventory party must work closely together throughout the inventory.
 - (1) **Soil Survey Team.** The soil survey is responsible for soil mapping the area and must consist of qualified soil scientists organized to conduct the soil survey in accordance with standard soil survey procedures. The soil survey team may be SCS, BLM, a combination of SCS-BLM employees, or the soil survey may be contracted. Soil survey team members must work very closely with range specialists in designing mapping units. The SCS has final responsibility for correlating all soil surveys.
 - (2) **Mapping Team.** The mapping team is responsible for delineation of ecological sites, seral stages (condition classes), and present vegetation communities and must consist of experienced range specialists, foresters, wildlife biologists, and soil scientists who are familiar with the plant and animal communities of the inventory area.
 - (3) **Vegetation Inventory (Transecting) Team.** The vegetation inventory team collects site specific vegetation data and must consist of qualified resources specialists who are organized and trained to collect the data described in Section XI.D.
 - (4) **Phenological Data Collection Team.** It may be desirable to assign the responsibility of collecting the data for phenological adjustment factors as set forth in Section XI.D.6 to one or two individuals. This will assure accurate data collection in a timely manner for this important phase of the inventory. This team also may collect samples for air-dry weight conversion data (Section XI.D.7).

5. Preparing for the Inventory

The chief of party formulates a plan of operation, assembles material, makes necessary arrangements, and coordinates with appropriate District staff members. He/she must assemble all forms, maps, photos, and other equipment, and supplies necessary for conducting the inventory. See Illustration 19 for an equipment list.

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a. *Base Maps*

- (1) *Aerial Photographs.* It is essential to have a complete set of aerial photographs solely for inventory purposes. These should be acquired well in advance of the inventory. To facilitate the inventory, recent aerial photography (less than 10 years old) is desirable. Aerial photographs at the scale of 1:24,000 are best suited to the inventory requirements and ease of data transfer to orthophoto quads. Aerial photographs are used for field mapping and the mapped information is then transferred in the office to orthophoto quads or other base maps.
- (2) *Orthophoto Quads.* Orthophoto quads (1:24,000) are a desirable mapping base and, if used, should be acquired well in advance of the field inventory. If not available, each State should try to obtain coverage. A 2- to 3-year lead time is needed to obtain adequate coverage.
- (3) *Topographic and Planimetric Maps.* Use topographic and planimetric maps or any high quality maps accurately showing the relative position and nature of the inventory area features. Among the most usable would be GS topographic quadrangles, although other topographic or planimetric maps also may be of considerable assistance.
- (4) *Administrative Maps.* Provide administrative maps which include management unit, grazing allotments, range improvements, timber harvest, fish and wildlife habitat, and land status as references for party members during inventory.

b. *Reference Material.* Review existing information for the inventory area and assemble pertinent information for use and orientation of inventory party members. This includes:

- (1) *Inventories.* Past inventories (range, watershed, wildlife habitat, visual resources, recreation, timber, etc.) including current URA's.
- (2) *Literature.* Literature concerning area soils, geology, vegetation, fish and wildlife species, archeology, presence of threatened or endangered species, etc. (Consult universities, local SCS offices, etc.)
- (3) *National List of Scientific Plant Names.* Standard symbols from the National List of Scientific Plant Names, published by the SCS, and used on all vegetation inventory forms. This is the most complete list available on a national basis. It may be desirable (for field use) to compile a list of plant species found in the inventory area from the National List.
 - (a) *Plant List Rules.* To provide for uniformity and avoid duplication, the following rules were followed in developing the National List of Scientific Plant Names:

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- i. **Alphanumeric Codes.** Automatic data processing requires short plant name symbols. Four- to eight-letter alphanumeric plant name symbols must be used.
 - ii. **Genus.** A basic five-letter symbol, consisting of first five genus letters, is used for the genus name. If the name has less than five letters, "+" signs are added to make a five-letter symbol. For example, the genus for fir trees, Abies, has the five-letter symbol ABIES; for wheatgrasses, Agropyron, the symbol is AGROP; for bluegrasses, Poa, the symbol is POA++; and for maples, Acer, the symbol is ACER+. If needed, tie-breakers are added to the basic five-letter symbol. For example, CHRYS is the first five letters of several genera—Chrysopsis, Chrysopogon, Chrysothamnus, and Chrysanthemum. Alphabetically, the genus symbol for the first one is CHRYS and for the others CHRYS2, CHRYS3, etc.
 - iii. **Species.** The basic plant name (species) symbol consists of the first two letters of the genus name and the first two of the species name. For example, the symbol for Kentucky bluegrass, POA pratensis, is POPR. In alphabetic order, all other plants having the same four-letter symbol must have tie-breakers in numeric sequence starting with 2. Examples: POPR2, POPR3, etc.
 - iv. **Variety.** The first letter of the variety name, either natural or cultivar, is added to the basic four-letter plant name symbol. Examples: Pinus ponderosa variety arizonica has the five-letter symbol PIPOA. Symbols for cultivars must be developed when the cultivar list is generated.
- (b) **Species Not Listed.** When species which have not been assigned a code in the National List are encountered, use the following procedure:
- i. **Form Entry.** On all vegetation inventory forms, enter the first two letters of the genus name and the first two of the species name. In addition, add an asterisk to denote the absence of an assigned code.
 - ii. **Notification of Absence from List.** Upon identifying a species which is not included in the National List, the person noting the absence must forward the information to the Service Center Director (D-460). This staff must coordinate with the SCS to obtain a code for each such species encountered.
- (4) **Location of Fish and Wildlife Species.** Review information on probable location of fish and wildlife species with particular emphasis on endangered, threatened, or sensitive species, big game ranges, concentration areas, and important biological areas. Document new information in URA.

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- (5) *Location of Threatened or Endangered Plants.* Review and assemble information for URA on probable location of threatened or endangered plant species, including descriptions and pictures.
- c. ***Comparison Area Information.*** Identify existing and probable comparison areas (Section XI.D.8.a) and document data on Form 4412-41, Documentation of Comparison Areas, (Illustration 20), for determining site potential, seral stage (condition class), and apparent trend. Comparison areas are especially useful for evaluating riparian vegetation. It may be necessary to construct exclosures along stream segments and measure successional changes to determine potential vegetation in the riparian zones.
- d. ***Inventory Schedule.*** Plan and schedule the inventory well in advance with appropriate priorities and Annual Work Plan procedures. The time of year the inventory will be conducted must be determined by the chief of party in consultation with appropriate District staff members. Soil inventories and soil and ecological site mapping can be conducted any time weather permits. Within practical limits, the vegetation data collection should not begin until the growing season is sufficiently advanced to insure a representative growth of vegetation. Work may continue into the fall until conditions prevent accurate classification and production estimates. It may be desirable to strategically place utilization cages in representative portions of the inventory area prior to the inventory. This is helpful in reconstructing utilized plants as well as adjusting for full plant growth in the summary and interpretative phases.

6. Training

Training inventory party members is the responsibility of the chief of party and other qualified resource specialists. This includes scheduling and preparing training in procedures, e.g., mapping units, data collection, plant identification, aerial photo interpretation, etc.

- a. ***Prior to the Inventory.*** The inventory party must be trained in all facets of the SVIM. District and State resource specialists should inform the inventory party about items to look for and explain how all information will be gathered and documented consistent with the inventory plan.
- b. ***During Inventory.*** The efficiency and accuracy of the inventory crew members depend upon their initial training. During this initial period, coordination with the District staff is extremely important. Spend enough time to acquaint each party member with the inventory area, main roads, landmarks, fish and wildlife crucial areas, and important biological areas.
- (1) ***Uniformity.*** Uniformity in following the inventory procedures is essential. All vegetation inventory team members must work together for a sufficient period of time to assure uniformity in following inventory procedures.

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- (2) *Individual Training.* The chief of party must work individually with each member of the vegetation inventory team to further improve and assure uniformity and accuracy of work and to check progress.
- (3) *Coordination.* Procedures must be continually coordinated throughout the inventory. Vegetation inventory team members must work together for at least a portion of a day each week to correlate estimates and to resolve problems that may arise in field procedures.
- (4) *Progress Reviews.* Progress reviews, including field checks of inventory crew work, should occur as set forth in the inventory plan (Section XI.A.2).

B. Field Inventory Mapping

Mapping must be done by trained range specialists, wildlife biologists, foresters, and soil scientists, working closely together. Field mapping consists of delineating site writeup areas (SWAs) (Section XI.B.3) based on present plant communities within boundaries of potential plant communities—range sites, woodland sites (suitability groups), or forest types (Illustration 21). Field mapping must be completed for the inventory area prior to stratification and collection of vegetation data. It is desirable to complete mapping a year in advance of collecting vegetation data. All mapping must be in accordance with Office of Management and Budget National Mapping Standards, Circular A-16.

1. Sources and Criteria for Mapping

- a. *Sources of Potential Plant Community Information.* The following sources should be reviewed for information concerning the potential plant community:
 - (1) Range site descriptions.
 - (2) Woodland site descriptions.
 - (3) Potential forest type descriptions (habitat types).
 - (4) Comparison area data.
- b. *Criteria for Mapping Present Vegetation.* Significant changes in the following factors must be considered in delineating present vegetation communities:
 - (1) Vegetation species composition (kinds, proportions, and amounts of present vegetation).
 - (2) Vegetation ground cover.
 - (3) Vegetation height.
 - (4) Vegetation age class (especially in forested areas).
 - (5) Topography.
 - (6) Other factors identified in the inventory plan.

2. Potential Plant Community Mapping

- a. ***Guidance on Potential Plant Communities.*** The SCS National Range Handbook (NRH-1, July 13, 1976) should be consulted for information on range and woodland sites (suitability groups). The SCS has described range sites covering much of the public land. In some cases woodland sites descriptions may also be available. Early contact and coordination with local SCS offices is essential. Information which should be obtained from the SCS includes: soil surveys, copies of soil survey field sheets, technical range and woodland site descriptions and guides, and information from the SCS Range Data System. Information on forest types may be obtained from applicable published reports by Forest Service Experimental Stations, universities, etc.
- b. ***Mapping Process with a Completed Soil Survey.*** In areas where soil survey and range site descriptions are complete, a range site-soil series correlation should be available in the final soil survey report. The survey report may also identify soil series that support woodland sites or forest types (habitat types) where the potential plant communities have been defined. From these data a legend can be developed to correlate the soil maps with the appropriate range site, woodland site, or forest type. This legend should be provided to the mapping team for field use.

Preliminary Interpretations: Prior to going to the field, the mapping team can make some preliminary interpretations based on the soil maps and site legend and aerial photographs. Each preliminary delineation must be checked on the ground to accurately determine the range site, woodland site, or forest type. On most soil surveys, a number of the soil mapping units may be either associations or complexes. The mapping team has to determine the percentage of each of the components when they determine the range site, woodland site, or forest type.

- c. ***Mapping Without a Completed Soil Survey.*** In areas where soil surveys are not completed, the SCS must be contacted to obtain any available soil or ecological site data. The SCS may be able to assist in training and in establishing the mapping legend. The mapping team must work together in the field to achieve consistency in SWA delineation based upon range sites, woodland sites, or forest types. The soil scientist must insure that soils are considered in delineations. If at all possible, a soil survey should be completed prior to or concurrently with delineation of ecological sites. When it is necessary to delineate range sites, woodland sites, or forest types without a soil survey, Form 4412-38, Soil Description Field Data, (Illustration 22), is used to record soil data. The soil scientist completes one for each established phase of series and three for unnamed phases of series.

3. Present Plant Community Mapping

Potential plant communities (range and woodland sites and forest types) are further subdivided into the present vegetation communities, using criteria listed in Section XI.B.1.b. Each identified range site is divided into seral stage (condition classes) and/or present vegetation communities by the mapping team. Woodland sites and forest types

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are divided only into present vegetation communities, unless site guides for seral stage (condition class) determinations are available.

Site Writeup Area (SWA) Delineation: The smallest delineation geographical unit to be used as a base for collecting vegetation data is the SWA. It may consist of an entire ecological unit (range site, woodland site, or forest (habitat) type), or a portion of a unit if more than one seral stage (condition class) or present vegetation community exists. It may contain more than one present and/or potential plant community where soil-vegetation complexes occur and are intermingled to the extent they cannot be individually delineated. It must not cross allotment boundaries. This is essential in order to compile data by grazing allotment. SWAs may be mapped down to a minimum of 6 acres. SWAs may also be delineated on soil mapping units or pastures boundaries if specified in the inventory plan.

- a. *Range Sites.* The mapping team must divide each mapped range site into seral stage(s) (condition class[es]) and present vegetation communities (Illustration 20). Detailed procedures for mapping range sites and condition classes are found in the SCS National Range Handbook (See Section XI.B.2).
 - (1) *Seral Stage (Condition Class) Classification.* Each delineated range site must be placed in a seral stage (condition class), or further divided into seral stages if more than one stage (class) exists within a given range site. Classifying range sites into seral stages is done initially by making visual estimates of plant composition. Determine the initial stage (class) of areas within a range site by comparing the present plant community with that of the climax community, as indicated by the range condition guide. For the existing plant community, count as climax no more than the maximum weight (or percentage of total production) shown on the guide for any species in the climax community. Total the amount of all climax species, not in excess of that shown on the guide, to indicate the relative ecological rating. The rating must be between 0 and 100, depending on how closely the existing plant community resembles the potential plant community for the range site. (See the SCS National Range Handbook for discussion of range condition determinations.) The mapping team may want to develop a field worksheet to record these initial condition determinations.
 - (2) *Seral Stages (Condition Classes).* Use the following seral stages (condition classes) to express the degree to which the composition of the present plant community reflects that of the potential. It is not necessary to use both seral stage and condition class terminology in referring to the specific ecological plant communities. Both terms are shown here merely to illustrate the relationship of the seral stages (new terminology) to the established condition class terminology.

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Present Seral Stage	Condition Class	Estimated Percentage of Plant Community that is Potential for the Range Site
Climax	Excellent	76 - 100
High	Good	51 - 75
Medium	Fair	26 - 50
Low	Poor	0 - 25

- (3) **Present Vegetation.** After range sites have been initially classified into seral stages (condition classes), it may be necessary to further divide these stages based on the present vegetation communities. For example, a range site may be in a low stage (poor condition) with heavy sagebrush on part of the site and cheatgrass on the remainder. These two diverse vegetation communities must be delineated. Significant changes in vegetation composition and ground cover should be consistent in mapping the present vegetation community. The smallest unit delineated within a range site is the Site Writeup Area (SWA). The mapping team must assign a SWA number to each SWA delineated and also complete certain sections of Form 4412-26, Transect Data Sheet, (Illustration 23), and Form 4412-30, Stratification Data and General Characteristics, (Illustration 24). Automatic Data Processing Codes for Vegetation Types and Subtypes, Form 4412-30a, (Illustration 25), and Standard Land-Form Coding and Descriptions, Form 4412-30B, (Illustration 26), are used in completing Form 4412-30 and 4412-38.
- b. **Woodland Sites.** Each delineated woodland site must be divided by stage (condition) if guides are available, or by present vegetation communities. The smallest unit delineated within a woodland site is the SWA. The mapping team must assign a SWA number to each SWA delineated, and also complete certain sections of Form 4412-26 (Illustration 23) and Form 4412-30 (Illustration 24).
- c. **Forest Types.** Forest types are divided into stands—uniform plant communities of trees as to timber type, age class, vigor, height, ground cover, and stocking. The smallest delineated unit within a forest type is the site writeup area (SWA), or stand. The mapping team must assign a SWA number to each delineated SWA, and also complete certain sections of Form 4412-26 (Illustration 23) and Form 4412-30 (Illustration 24).

4. Feature Mapping

Feature mapping must be accomplished primarily by the mapping team. If the vegetation inventory team observes any features missed by the mapping team, they should record them. Any permanent cultural or topographic features and/or biological features (Section XI.F.2 for special feature areas, and BLM Manual Section 6602) and existing improvements, such as fences, roads, water developments, etc., not shown on existing maps must be indicated on aerial photographs and transferred to topographic maps or orthophoto quads, using standard mapping symbol. The Bureau's standard map symbol list (Manual Section 9161, BLM Map Symbol Handbook) covers the more important

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natural, cultural, and control feature symbols used in inventory field mapping. Barriers to livestock and/or wildlife and wild horse and burros must be noted.

5. Water Resources

Show all water resources, such as marshes, reservoirs, springs, seeps, streams, etc., on the map. To the maximum extent possible, aquatic and riparian vegetation information must be integrated into the SVIM procedures.

6. Planimetric Control

If planimetric control is not adequate, it is necessary to locate all known section corners. Photo identified USGS primary control (triangulation) stations are very helpful and should be located wherever possible. In order to prepare accurate maps from aerial photographs, locate at least two corners per township. These should be well spaced. When corners are found, indicate the precise location on the photographs with a needle prick. Mark a cross over the hole on the reverse side of the picture with the sections to which the corner is common written into the angles of the cross. Record the township, range, date, and the identifying individual's initials on the back of the photograph. Mark assumed corners not positively identified similarly and write the words "probable corner" on the back near the description.

C. Soil Considerations

The basic soil taxon is the soil series. Taxa other than the soil series may constitute only a very minor portion of any legend. Thus, almost all soil mapping units are composed of phases of soil series, either mono- or multi-taxa with some families or subgroups and miscellaneous areas as indicated by soil characteristics and geomorphic conditions. Size of delineations are dominately controlled by the scale of map and mapping unit composition.

Soil Inventory Standard. It is Bureau policy to make soil inventories that meet the standards of the National Cooperative Soil Survey as stated in the SCS National Soils Handbook, Soil Survey Manual, Soil Taxonomy, and BLM Section 7312 - Soils. The soil survey is published as an interim or special soil survey report of areas for in-service use.

1. Mapping Intensity

As a minimum, the intensity of soil inventories within the Bureau is a third-order survey at a scale of 1:24,000 and phases of series. At this intensity, soil mapping units consist primarily of associations with some consociations, complexes, undifferentiated groups that are defined primarily in terms of phases of soil series. There is a need to consider phases of families/familia, subgroups, and miscellaneous areas as indicated by soil and geomorphic conditions. This does not mean families and phases of families are the primary taxa for the inventory area, but are legitimate components when used to define the potentials or limitation of unique areas. This major goal is to identify soil mapping units that can be correlated into range sites, woodland sites, forest land types, and, in some instances, important resource values identified in the pre-planning analysis. The constraints that control the intensity of mapping unit must be defined in the inventory plan.

2. Map Scales

The Bureau's standard map scale is 1:24,00 (Section XI.A.5.a). The minimum size delineation for soil and vegetation inventories is about 6 acres for distinctly suitable areas for wildlife habitat such as riparian areas for food and cover, and cliffs or promontories for raptors (Section XI.F.2 for instructions on handling special habitat features). Districts now having 1:20,000 or 1:31,680 scale photography may use these scales for the inventories. It is suggested that smaller scale photography up to 1:63,360 be enlarged to a scale of 1:31,680 or 1:24,000. Minimum size delineations are as follows:

Scale	Acres	Inches/Miles
1:20,000	4.0	3.16
1:24,000	6.0	2.64
1:31,680	10.0	2.0

3. Soil Symbols and Recording

Symbols to be used to identify soil series are defined in BLM manual section 7312 - Soils. Each phase of a soil series, miscellaneous land type, etc., is given a symbol and defined locally. All mapping units and symbols must be identified in the soil identification legend. All mapping units within an inventory area must be assigned a symbol and recorded in the legend for the soil survey area.

D. Vegetation Field Inventory

The following vegetation sampling procedures are recommended for use in delineated site writeup areas (SWA's). Alternative procedures, such as those outlined in Section 600 of the SCS National Range Handbook may be used, provided the alternative procedures supply comparable data for computer processing by the Service Center and all the standard forms are used in recording field data. Procedures are set forth in the sequence in which they are conducted. These are minimum standards. Additional transects or more intense sampling may occur, if so indicated in the inventory plan.

1. Stratification

Similar SWA's are grouped together for sampling purposes. If a SWA contains a complex of soil-vegetation units, individual components are placed in stratum composed of similar soil-vegetation units. The size of the geographical area to be stratified is determined and documented in the inventory plan. The complexity of the ecological situation, as well as local needs, determines whether stratification is made by allotment, group of allotments, environmental impact statement (EIS) area, planning unit, resource area, or District. The inventory plan sets forth the criteria for stratification.

- a. *Stratum.* A stratum consists of a grouping of SWA's or similar soil-vegetation components (percent of SWA) having the same range site, woodland site, or forest type in the same seral stage (condition class) and/or present vegetation community. If an area is critical wildlife habitat, this may serve as additional criteria for stratification.

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- b. **Documentation.** All strata are assigned a number and listed on Form 4412-30, Stratification Data and General Characteristics (Illustration 24). The SWA's within a stratum are also listed on Form 4412-30.
- c. **Sampling.** Mapping should be completed prior to sampling for the entire geographical area to be sampled. SWA's to be sampled must be randomly selected from each stratum. For example, if it is determined there are 40 SWA's within a stratum, each of the 40 SWA's must have an equal chance of being selected for sampling.

Number of Transects. The goal is to select the minimum number of transects needed to adequately (as defined in the inventory plan) characterize existing vegetation. The precise number of transects allocated per stratum, or the number of SWA's to be sampled, will depend upon inventory objectives, budget constraints, and vegetation variability. Exactly how the number of transects selected is determined must be documented in the inventory plan.

2. Step-Point Transect

Record a minimum of one 200-point transect in each site writeup area (SWA) to be sampled. Transects must traverse the SWA in a manner which obtains a representative sample. Terrestrial transects generally run across the long axis of a SWA, although other layouts may be used. Transects in riparian SWA's are situated at a 90-degree angle from the stream or river axis. Additional transects are placed along the stream axis whenever changes in vegetation composition are apparent. If more than one range site and associated vegetation occurs within a SWA, determine the percentage of each site and/or vegetation community within the SWA and establish a transect to sample each separately. If a distinctive strip pattern exists, establish a transect in each community. If an indistinct mottled pattern exists, establish one transect and record each community on separate forms. Data collected from this transect include ground cover, both basal and canopy.

- a. **Transect layout.** The mapping team must determine how the transect is to be laid out on the SWA's to be sampled and depict the transect location on the aerial photograph or overlay. (See Illustration 27, Transect layout, for procedure in determining points to be read and options in laying out transects.) At the beginning point of the transect take a photograph in the direction of the transect line to show a general view of the SWA. File the photographs with the inventory records in the District Office.
- b. **Obstructions.** When obstructions such as juniper trees, cholla cactus, or ledge rocks, etc., are encountered, the transect can be projected by a rod or stick with the length of the pace (e.g., 6') marked (Illustration 28, Projected Hits with Obstructions). Record the ground cover by observing the hit along the original transect line. Return to pace transect line as soon as possible and resume pacing. Normally "hits" along that portion of transects that intersect unnaturally disturbed areas, such as roads and trails, are not recorded. However, if unnatural e.g. disturbed areas, make up a significant portion of the SWA (e.g. heavily roaded by past mining activity or off-road-vehicle use) record the hits or use other techniques such as recent aerial

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photographs to estimate the percentage of disturbed area within the SWA. When disturbed areas are encountered, proceed three paces past disturbance and continue recording along the same transect line.

- c. **Recording.** At each point to be read, record the following (Diagrammatic Sketch of Step-Point Data and Recording Procedures, Illustration 29, and Form 4412-26, Transect Data Sheet, Illustration 23):
- (1) **Basal Hits.** Identify ground cover and record as either basal hits or live vegetation (including mosses and lichens), litter (persistent or nonpersistent), gravel, cobbles or stones, bare ground, or bedrock. Live vegetation must always be identified by plant symbols (see SCS National List of Scientific Plant Names).
 - (a) Identify "hits" by a 1/8 inch mark, preferably a 1/8 inch wide and 1/16 inch deep, on the toe of the sole of boot. Wider notches affect the decision as what to record.
 - (b) If two or more items such as bare ground and litter appear in the notch, record the item which occupies the majority of the notch.
 - (c) Identity of the cover must be expressed as a single category; therefore, where two or more apparently equal categories are identified, the preferred identity is: first, vegetation; second, litter; third, gravel; forth, cobble, fifth, stone; sixth, bare ground.
 - (d) Identify the cover category or "hit" directly beneath the notch, unless the vegetation and/or litter is pushed out of its natural canopy. Record the cover category that appears under the disturbed material at the ground surface.
 - (2) **Canopy.** Identify and record the overstory (canopy) above the mark or notch within the line of sight. (See Illustration 29 for examples of various situations.)

3. Vegetation Production and Characterization Plots

These plots are used to record production and certain plant characteristics.

a. *Types of Plots.*

- (1) **Weight-Estimate Plots.** The weight estimate may be any multiple of .96 square feet (.96, 1.92, 4.8, 9.6, 19.2, 48.0, etc.). The 9.6 square-foot plot is usually best suited for use in areas of sparse vegetation. Given the greater productivity of riparian versus upland vegetation, weight-estimate plots in riparian SWAs may have to be reduced in size (i.e., .96 sq.ft.). The weight-estimate plot may be delineated by a circular hoop or a palo for linear rectangular plots (See Illustration 30, Vegetation Characterization Plot Layout—Circular Plots). The same size and type of plot should be used for the entire transect.
- (2) **Shrub and Tree Characterization Plots.** The shrub and tree characterization plot may be a 1/100-acre or 1/200-acre plot. The 1/100-acre plot is used in sparse stands of shrubs while the 1/200-acre plot may be used in dense stands of

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shrubs. The same size of plot should be used for the entire transect. The center point of this plot is the center of the weight-estimate plot. The 1/100-acre plot is delineated by an 11.7-foot fine cable or chain as a radius, and the 1/200-acre plot is delineated by an 8.3-foot fine cable or chain as a radius (Illustration 30).

- (3) *Forest Land Plots.* If it is determined in the inventory plan that more intense data is required on forest lands, establish a forest plot using the center of the weight estimate plot. The forest plot consists of two concentric circular plots having a radius of 11.7-feet (1/100 acre plot) and 37.2-feet (1/10 acre).

- b. *Plot Layout.* Establish plots at every 20th point of the step point transect. Place the rear edge of the weight estimate plot at the toe of the boot where the hit was recorded (Illustration 30). Each transect will have a minimum of 10 weight-estimate plots. Plots may be established in clusters if so determined in the inventory plan. The shrub and tree characterization plot and the forest lands plot must be established, using the center of the weight-estimate plot as the center for these plots.

c. *Recordings*

- (1) *Weight-Estimate Plot.* The following vegetation records are made from this plot in the order listed.

(a) *Vegetation Characterization*

- i. Average availability, phenology, and utilization for each plant species for each weight estimate plot is recorded on Form 4412-27, Weight Estimate and Vegetation Characterization (Illustration 31).
- ii. Form and age class for each plant of grasses and forbs and average height by grass and forb species with totals for each category is recorded on Form 4412-27 (Illustration 31). Record this data on a minimum of 3 of the 10 weight-estimate plots. More plots may be recorded if more intensive sampling is required.

- (b) *Weight Estimate of Vegetation Production.* Record weight-estimate data on Form 4412-27. (See Illustration 31, page 2, for form entry instructions and Illustration 32 for a schematic sketch of the weight-estimate plot layout.) Make records for each of the 10 plots. At least 2 of the 10 plots are clipped and weighed. Make estimates before the plants are clipped and weighed, as follows: Pre-select 2 of the 10 plots which are to be clipped; make weight-estimates prior to clipping; clip and weigh; record both the estimated and the actual weights on Form 4412-27. Circle the actual weight entries on the form.

- i. *Recording Actual Weights.* Record actual green weights for each species as weighed and/or estimated on each plot.

Height Classes. Include height estimates of all current year's growth of each plant species by the following height classes: 0' to 3', 3' to 4½', 4½' to 7', and 7' up (Illustration 32).

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Accuracy. During training periods and before individuals can proceed, the chief of the party assures that each member is consistently estimating weights within 10 percent of actual weights.

- ii. Weight Units. Because the relationship of weight to volume is not consistent, base production and composition determinations on weight estimates, not on comparison of relative volumes. The weight unit method is an efficient means of estimating production and lends itself readily to self-training. This method is based on the following:

A weight unit is established for each plant species occurring on the area being examined, and can consist of part of a plant, an entire plant, or a group of plants.

The size and weight of a unit varies according to the kind of plant. For example, a unit of 5 to 10 grams is suitable for small grass or forb species. Weight units for large plants may be several kilograms.

Other considerations include: length, width, thickness, and number of stems and leaves; ratio of leaves to stems; and growth or relative compactness of species.

- iii. Establishing Weight Unit for Species.

Decide on a weight unit (in grams or kilograms) that is appropriate for the species.

Select part of a plant, an entire plant, or a group of plants likely to equal this weight.

Harvest and weigh the plant material to determine actual weight.

Repeat this process until the desired weight unit can be estimated with reasonable accuracy.

Maintain proficiency in estimating by periodically harvesting and weighing to check estimates or production.

- iv. Number of Plots. A minimum of 10 weight estimate plots must be established per transect. If it is decided that more precise sampling with statistical reliability is needed, make an analysis in accordance with Illustration 33, Sampling Precision and Probability, to determine the number of additional plots necessary to achieve the reliability desired. Statistically reliable sampling is especially important if serious resource problems exist or major land-use adjustments are anticipated within a given allotment or inventory area.

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- (2) *Shrub and Tree Characterization Plot.* A minimum of 3 shrub and tree characterization plots must be established along each transect. The following data is recorded for shrubs and trees from the 1/100 acre or 1/200 acre plot (Illustration 30):

- (a) Form and age class for 5 shrubs and trees of each species;
- (b) Average height, and crown diameter by species; and
- (c) Total number of plants by species.

- (3) *Forest Land Plots.* Forest land plots are established if it is determined in the inventory plan that tree data in addition to that collected off the shrub and tree characterization plot is required.

4. Vegetation Species Occurrence

Record on Form 4412-26, Transect Data Sheet, (Illustration 23) any plant species observed in the site writeup area which is not recorded on step-point transect or plot record.

5. Endangered, Threatened, or Locally Endemic Plants

Each inventory party member must be provided with pertinent information on endangered, threatened, or locally endemic plant species likely to occur within the inventory area. Such information must include descriptions of plants, pictures, and unique plant habitats. Areas of high potential for supporting threatened, endangered, or locally endemic species must be described and identified in field maps to assist inventory members. Record observed plants on the species list, Form 4412-26 (Illustration 23). Take color photographs of observed plants.

6. Data Collection for Phenology Adjustment Factor

Data are required to develop factors to adjust vegetation production recorded at the time of inventory to maximum production for the season. To generate this data, it is necessary to clip and weigh all major species in the inventory area and also record the dimensions of study plants on Form 4412-28, Dry/Green Weight Conversion Factor Data, (Illustration 34). Specific study sites are selected for collection of phenology adjustment factor data. Data should be collected for all phenology stages by plant species. It may be desirable to collect data every 2 weeks. A minimum of 10 plants of each species should be recorded. A special team may be assigned the responsibility of collecting this data (Section XI.A.4.b.(4)).

7. Obtaining Air-Dry Weight Conversion Data

Converting green weight to air-dry weight is necessary in the compilation and interpretation phase. In order to make this conversion, vegetation samples must be collected at the same time the phenology adjustment factor data is collected (described in Section XI.D.6 above). Store samples in paper bags in a dry place and weigh them periodically

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until a consistently low weight is obtained. Collect these samples by species at each phenology stage for all major plant species in the inventory area. Recordation can be expedited by marking the following items on the paper bag with a rubber stamp prior to going to the field: plant species, date collected, elevation, phenology stage, green weight, and dry weight. Record this date on Form 4412-28 (Illustration 34).

8. Comparison Area Data

To determine potential vegetation communities and production, it is necessary to identify and study comparison areas. This is also important for several other interpretations.

- a. ***Site Potential Comparison Area.*** For many range sites the SCS has identified natural plant communities (relic areas) which can be used to determine potential. To substantiate existing data and to provide potential natural plant community data for sites not already covered, additional comparison areas need to be identified. Locate relatively natural, undisturbed comparison areas in order to develop potential plant communities for the various sites in the inventory area. The natural plant community of a site, in the absence of abnormal disturbances and physical site deterioration, will be approaching the climax community for that site. It is the total plant community that is best adapted to the unique combination of environmental factors. It should be the plant community that is in dynamic equilibrium with the environment. Such natural disturbances as drought, wild fires, native fauna grazing, and insects are inherent in the development of any native plant community. Plant communities protected from these natural influences for long periods do not always typify the goal for a desirable plant community. (See Rangeland Reference Areas, Society for Range Management, Range Science Series Number 3, March 1975).
 - (1) ***Selection.*** A site is recognized and described on the basis of soils and the climax plant community which it is capable of supporting. However, management's goal is not necessarily to restore or maintain such a plant community. The goal may be to establish a somewhat altered plant community which provides adequate soil and moisture conservation yet produces benefits more useful to the objectives of the decisionmaker than the climax vegetation.
 - (2) ***Locating Comparison Areas.*** District personnel should be on a constant lookout for riparian and terrestrial comparison areas. These areas should be identified, their locations recorded on Form 4412-41, Documentation of Comparison Areas, (Illustration 20), and studies as outlined below initiated or continued even though inventories are scheduled some time in the future. Repeat studies to substantiate data.
 - (3) ***Determining Comparison Areas.*** Use the following methods in determining the natural plant community of a site:
 - (a) Evaluate vegetation and associated soils on areas that have been subjected to minimal abnormal disturbances.
 - (b) Evaluate and interpret research data dealing with ecology, management, and soils of plant communities.

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- (c) Review early historical accounts and botanical literature of the area.
- (d) Check the SCS Range Data Systems (RDS), which provides much data useful in identifying potential communities in many areas.
- (e) Check potential sites for use as comparison areas which includes:
 - i. Fenced enclosures.
 - ii. Fenced rights-of-way which have not been recently disturbed. Do not use areas which receive additional moisture through runoff from highway, or other unnatural areas.
 - iii. Portions of grazing allotments currently not used by livestock due to lack of water, natural barriers, etc.
 - iv. Protected reserves, e.g., military reservations.
 - v. Old cemeteries.
- (4) *Studying Comparison Areas.* Characteristics of a plant community obtained from a single source are not likely to be conclusive. In evaluating plant information, consideration must be given of such factors as drought versus unusually favorable years, effects of recent fire, excessive rodent concentrations, insect damage, plant disease, and excessive soil removal or deposition by wind or water. Every effort must be made to examine plant communities throughout the area of occurrence on the site and at different seasons and during different years. The initial description of a natural plant community should be considered as an approximation subject to modification as additional knowledge is gained.
 - (a) Conduct all the inventory studies described above on the comparison area, using the prescribed procedures.
 - (b) Take pictures of soil profiles and vegetation at each comparison area.
 - (c) Repeat studies, using the SVIM procedures, from year-to-year to refine and substantiate data. Collect primarily ground cover and production data in these repeat studies.
- (5) *Protecting Comparison Areas.* Make every effort to protect identified comparison areas from future disturbances such as livestock grazing, mining, or other surface disturbing activities. The protection of these areas is necessary for continuing studies. It may be appropriate to place a BLM protective withdrawal on identified comparison areas. This can be accomplished under regulation 43 CFR Subpart 6225, Withdrawal of Natural Areas. Document comparison areas by completing Form 4412-41, Documentation of Comparison Areas, (Illustration 20). Assign a number to each comparison area. The number must consist of the following: State, District, township, range, consecutive number within the township and range.

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- b. **Watershed Comparison Areas.** Data gathered during the course of the inventory can be used to provide guidance in determining changes in erosion condition rating (Soil Surface Factor [SSF] Rating) and ground cover. (See BLM Manual Section 7322.11B7 for additional guidance on selecting watershed comparison areas.)

Type of Areas. Data obtained in the following types of areas can be used for watershed comparison area purposes: degraded areas adjacent to water, trails, etc.; mechanically treated areas, e.g., chaining, plowing, riling, etc., and chemically treated areas.

9. Determining Erosion Condition Class

Soil Surface Factor (SSF) information must be completed for each site writeup area sampled and recorded on the space provided on Form 4412-26, Transect Data Sheet, (Illustration 23). Complete an SSF writeup for each SWA sampled, assessing the erosion ratings of the surrounding area. (See Section XVI, Soil Surface Factor.) The determination of SSF is made after the transect has been completed. In determining SSF, it is necessary to evaluate the entire SWA and not localize the evaluation.

E. Forest Lands Inventory

Determine in the inventory plan if forestry data will be collected. Forest land mapping and the completion of Form 4412-37, Photo Sample Record, (Illustration 35), should occur during the mapping phase (Section XI.B). This form may be completed for all the inventory area, if so desired.

1. Conducting Inventory

The minimum mapping size of forest types is usually 40 acres or larger. For purposes of this inventory, a tree is defined as a woody plant having at least one well defined stem and a more or less well-formed crown, capable of attaining a height of at least 8 feet.

2. Recording

The initial forestry data is recorded on Form 4412-37, Photo Sample Record, (Illustration 35). This allows entry of stand or SWA information on trees, shrubs, grasses, and forbs. The use of this form for initial forestry input does not mean that other, more detailed forms may not be used along with intensive forest and rangeland surveys. The identified vegetation types may be used for preliminary typing, stratification, and mapping.

F. Wildlife Resources Field Inventory

Illustration 36 depicts the interrelationships between SVIM and wildlife resources inventories (Integrated Habitat Inventory and Classification System, BLM Manual Section 6602; Big Game Studies, and BLM Manual Section 6630; and Aquatic studies BLM Manual Section 6670).

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1. Opportunistic Animal Sightings

Any wildlife observed during the inventory must be recorded on Form 4412-39, Wildlife-Recreation Observation Report, (Illustration 37), for each SWA sampled. The Wildlife-Recreation Observation Report is given to the District wildlife biologist for any followup action deemed appropriate. (More intensive sampling may be conducted later, using Form 6602-1, Animal Species Occurrence by Habitat Type, Illustration 38 [BLM Manual Section 6602].)

2. Special Habitat Features

During the inventory of a SWA, note special wildlife habitat features on aerial photographs and quads and record them on Form 6602-2, Special Habitat Feature, (Illustration 39, and refer to BLM Manual Section 6602). Features to be mapped will have been determined during the pre-planning analysis and stated in the inventory plan. This will identify areas which the wildlife biologist may want to investigate in detail at a later date. Special habitat features may include soil or vegetation units smaller than 6 acres (Section XI.B.4).

3. Riparian Areas

Riparian areas are extremely important and, therefore, require special attention in the SVIM procedures. Map and sample all riparian areas (existing and potential).

Recordings

- a. *Vegetation Condition* (shrub and tree characterization plot) of the riparian habitat must be obtained by using the SVIM.
- b. *Tree Species* within the riparian site must be recorded on Form 4412-27, Weight Estimate and Vegetation Characterization (Section XI.D.3.c.(2) and Illustration 31).

4. Optional Data - Identifying Sagebrush Species

Various sagebrush species have different palatability. Because of problems in identifying different species, a key has been developed for sagebrush species. (This key is available from the Service Center D-460.) Use portable black light (flashlight type) to assist in sagebrush species identification.

G. Recreation Field Inventory

For each SWA sampled, use Form 4412-39, Wildlife-Recreation Observation Report, (Illustration 37). Note the occurrence of recreation visitor use, incident, cultural features, or significant natural history feature observed. Give this observation report to the District recreation specialist for any followup action deemed appropriate.

H. Inventory Narrative Report

Upon completion of the field portion of the inventory, the party chief prepares a narrative report. This must be a concise report covering the important items concerning the inventory. One copy of the report is submitted to the State Director, and another retained in the permanent District files for future reference purposes. The following items should be included:

1. Description of inventory:
 - a. Field season,
 - b. Inventory party; and
 - c. Procedures.
2. Inventory activities:
 - a. Problems encountered and solutions,
 - b. Variations and modifications to inventory plan; and
 - c. Data gaps or problems
3. Recommendations:
 - a. Additional data needed; and
 - b. Changes for future inventories.
4. Approval of inventory:
 - a. Party Chief;
 - b. Area Manager; and
 - c. District Manager.

I. Additional Required Data

In order to compile the soil-vegetation data, certain other data must be compiled and submitted with the inventory to the Service Center Director (D212) for computer compilation. These include:

1. Site Writeup Area Acres (by legal description), Form 4412-29 (Illustration 40).
2. Forage Requirement Data, Form 4412-31 (Illustration 41).
3. Livestock Use Data, Form 4412-32 (Illustration 42).
4. Phenology Adjustment Data, Form 4412-33 (Illustration 43). This is completed if the District computes its own phenology adjustment factors.
5. Ecological Site Description, Form 4412-34 (Illustration 44).

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6. Diet/Use Factor by Animal and Season, Form 4412-35 (Illustration 45).
7. Wildlife Use Data, Form 4412-36 (Illustration 46).
8. Suitability for Livestock Grazing, Form 4412-40 (Illustration 47). This is completed after inventory data is compiled, and submitted to the Service Center (D212) prior to vegetation allocation.

Equipment For Soil-Vegetation Inventory Method

Vegetation

1. Hoops for use in defining circular plots of desired size:

.96 sq. ft. = 41.7 inches circumference
1/10th guide or .096 sq. ft. = 13.2 inches circumference
1.92 sq. ft. = 59.0 inches circumference
1/10th guide or .192 sq. ft. = 18.64 inches circumference
4.8 sq. ft. = 93.2 inches circumference
1/10th guide or .48 sq. ft. = 29.5 inches circumference
9.6 sq. ft. = 131.8 inches circumference

Palo which extends to a length of 9.6 ft. with calibrations for .96, 1.92, 4.8 ft.

2. Accurate spring balances with 1 or 2 gram calibrations.
3. A 6 by 10-inch cloth sack or plastic bag.
4. Letter-size tatum holder, clipboard, or aluminum holder.
5. Supply of field forms.
6. An 11.7-foot fine cable or chain with a spike tied on one end for measuring 1/100-acre plots.
7. Clippers for clipping vegetation.
8. An 8-foot tape measure delineated in tenth's.
9. Pocket stereoscope.
10. Orthophoto quads, aerial photos, USGS quads, and maps.
11. Abney level or Clinometer.
12. Rapidograph pen.
13. India ink.
14. Photo pricker.
15. Tally register.
16. Hand stapler.
17. Tentative plant species list and appropriate vegetation keys.
18. Plastic bags for plant collection.
19. Compass.
20. Cruiser vest for carrying equipment.

Soil Inventory

1. Aerial photo 1:24,000 to 1:12,000 topographic map (7-1/2 or 15') —if aerial photos not available.
2. Tiling spade (sharpshooter).
3. Soil auger - 2 3/4" diameter with extension handle and two auger heads (sand and standard).
4. Geologist's rock hammer.
5. Chisel-pointed bar.
6. Pick
7. Acidity - Alkalinity (ph) kit - P.H. kit.
8. Hydrochloric acid solution - 10 percent solution.
9. 10X hand lens.
10. Clinometer or Abney level.
11. Measuring tape - both metric and English units.
12. Knife - 4- to 5-inch blade.
13. Munsell soil color charts.
14. Plastic bottle - 1/2 pint to 1 quart size.
15. Marking pencils - for photo. Photography equipment for field photography.
16. Office equipment - drafting tools (pens, lettering set, drafting and overlay paper, rulers and french curves, and scales for measuring distance).
17. Vehicles - 4-wheel drive for field inventory mounted with power probe; helicopter for pre-inventory, tractor w/back-hoe.

Documentation of Comparison Areas

Form 4412-41
(July 1979)

Bureau of Land Management
Standard Unit Record
For
Site Control Data
Documentation of Comparison Areas

Record Type		V	4
State		W	T
District		0	2
Township		0	9 N
Range		2	0 W
Comparison Area No.		0	0 1

DOCUMENTATION OF COMPARISON AREAS

1. Name of area BLODGETT CREEK
2. Location T9N, R20W, SW1/4, NE1/4 Sec. 21
(Legal Description)
3. Ownership of land BLM
4. Size and dimensions of comparison area 20 acres
5. Vegetation community ARTR2, AGSP
6. SCS Range Site Name (if named), and number SANDY UPLAND D34X0214
7. Soils Taxonomic Unit 4001
 - a. Soil profile _____
8. Major plant species ARTR2, AGSP, FEID, SIHY

9. Management or use past 50 years (if known) FENCED AREA WHICH
HAS RECEIVED NO LIVESTOCK GRAZING
10. Type of area (exclosure, right of way, etc.) EXCLOSURE

11. Evidence of possible influences (e.g., rodents, insects, disease, etc.)
NONE
12. Altitude 5500 Exposure NW Slope 10%
13. General description of area LOCATED UP BLODGETT
CREEK ROAD 1.3 miles from US 191

Documentation of Comparison Areas

14. Date established (if previously established) _____
15. Vegetation sampling: yes
- a. Has vegetation been sampled? yes
- b. When and by what methods? SVIM, JUNE, 1979
- c. Where are records retained? BUDGETT DISTRICT OFFICE
16. Photographs:
- a. When? _____
- b. Type of photo's? 35 mm color
- c. Where retained? BUDGETT D.O.
17. Geologic formation _____
18. Is area protected from future disturbance? yes
- a. If not, what needs to be done to protect the area, both legally and physically? _____
- Report by Slyde Duoley Date 6/15/79

(Please fill in as many blanks as possible and include a map showing location of area.)

Ecological Site, Seral Stage (Condition Class),
and Site Writeup Area Mapping

1. Delineate ecological sites (range sites, woodland sites, or forest types).
 2. Divide range sites into seral stages, (condition classes) if more than one seral stage (condition class) exists within a range site.
 3. Further divide seral stages (condition classes) into present vegetation communities if more than one vegetation community exists within the stage (class).
 4. The smallest delineation becomes a site writeup area (SWA). Place a SWA number within the SWA.
- All SWA's that are in the same range site, woodland site, or forest type and present vegetation community are placed in the same stratum for sampling.
5. The mapping team must determine how the vegetation transect is to be laid out on the representative SWA's which are to be sampled. On the areal photograph depict the location of the transect.
 6. The mapping team must complete the pertinent site control data items on Form 4412-26, Transect Data Sheet. (See Illustration 34.)

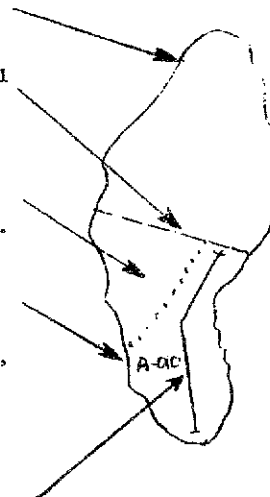


Illustration 22

Soil Description Field Data

Form 4412-38
(July 1979)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SOIL DESCRIPTION
FIELD DATA

RECORD TYPE
STATE
DISTRICT
PLANNING UNIT
SOIL NUMBER
SOIL STATUS
ACTION (A=ADD, D=DELETE)

Soil Type (5) ALPHA FINE SANDY LOAM Date (6) 7-4-75 Collector (7) CHW:CC

Classification (8) LOAMY-SKELETAL, MEER MESIC, XEROLIC, CALCAREOUS

Location (9) 100 FT. WEST, 150 FT. NORTH OF SW COR. SEC. 7, T. 1 N., R. 3 W.

N. Veg. (10) ART, ORHY Climate (11) 13" 54°E 61°E

Parent Material (12) ALLUVIAL FROM BASIC IGNEOUS AND SEDIMENTARY ROCK

Land Form (13) ALLUVIAL FAN

Relief (14) CONVEY Drainage (15) WELL

Elevation (16) 5400 Gr. Water (17) D.F.P.

Slope (18) 8% Moisture (19) Moist to 9 INCHES

Aspect (20) N 10° Root Distrib. (21) 3.4 INCHES

Erosion (22) SLIGHT Rooting Fragments (23) 2 Coarser than V.F.S.

Permeability (24) MODERATE

(24) Control section average

Horizon	Depth	Moist		Texture	Structure	Consistence			Reaction	Bound-ary	(28)	Notes
		Dry	Moist			Dry	Moist	Let				
A1	0-2	10YR 6/2	10YR 3/3	COB. BR.	11P1	sh	fr	ss	8.4	9.2	15	15
B2	2-9	10YR 6/3	10YR 3/4	cl	KEOL	sh	fr	ss	8.2	9.5	24	15
C1a	9-20	10YR 7/2	10YR 5/2	gl	m	h	fr	ss	8.5	9.5	24	15
C2a	20-34	10YR 6/3	10YR 5/3	gsl	m	h	fr	ss	8.6	9.5	24	15
D1C3	34-60	10YR 5/4	10YR 4/1	gsl	ag	l	fr	ss	8.4		24	15

Additional notes

INSTRUCTIONS

- Standard two-digit code from BLN Manual Section 1265.
- Soil number assigned to the series.
- Status of the soil series name - proposed (P), tentative (T) or established (E).
- "A" when new data is entered; "D" when series data is changed.
- Soil series name, type, and phase.
- Year, month, and day.
- Collectors last name.
- Classification at the family level.
- Measured distance from a known or assumed section corner, range, and township.
- Major overstory and understory plants.
- Mean annual precipitation, soil temperature at 20 meters and mean summer soil temperature.
- General characteristics in terms of alluvium, residual, colluvium, etc., and the kinds of rocks the soil is forming within.

- See glossary of terms for land form descriptions.
- Concave, convex, single or complex.
- Describe in terms of very poorly drained, poorly drained, somewhat poorly drained, moderately well drained, well drained, etc., as described in Soil Survey Manual - Agriculture Handbook 18, Pages 170-172.
- Class of salinity or alkalinity in terms of slight, moderate or strong, if applicable.
- Best estimate if topographic maps are not available.
- Depth at which a water table is observed.
- Defined in terms of classes. See Soil Taxonomy - Agriculture Handbook 436, Pages 472-475.
- Percent slope at site of description.
- Indicate whether soil is dry, slightly moist, moist or wet when examined, and approximate depth.
- Direction the slope faces and its bearing.
- Depth of the majority of root penetration, (a few fine roots at depth does not qualify).
- To be used only in the classification of soil. VFS=Very Fine Soil.
- Class of eroded soils in terms of none, slightly, moderately, severely or very severely eroded.
- Class in terms of very slow, slow, moderately slow, moderate, moderately rapid, rapid, or very rapid.
- Enter terms as defined in Soil Taxonomy - Agriculture Handbook 436, Pages 459-481, and other definitions and abbreviations for soil descriptions that are appropriate for your State.
- Additional data applicable for the soil profile, such as pores, calcium carbonate, clay films, roots, etc.

Transect Data Sheet

Form 4412-26
(June 1979)U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SOIL-VEGETATION INVENTORY METHOD

TRANSECT DATA SHEET

(11)
AERIAL PHOTO

ARS-14-102;

(12)
RECORDER

JNB

RECORD TYPE (1) V 1
 FORMAT CODE (2) D
 BLM ADMIN UNIT (ST/DI/RA/PU) . (3) 4:1:0:2:4:8:0:2:
 ALLOTMENT (4) 4:0:1:1:
 PASTURE (5) 0:2:
 SITE WRITEUP AREA (SMA) . . . (6) B:0:0:1:
 TRANSECT NUMBER (7) 0:1:
 COMPARISON AREA (8) C:
 DATE (YYMMDD) (9) 7:9:0:0:1:5:
 ACTION CODE (A,B) (10) A:

GROUND COVER DATA		(14) HITS	(15) PLANT LIST			(16) SOIL FACTOR ITEMS		(16) RATING
BASAL	DOT COUNT		SYMBOL	SYMBOL	SYMBOL			
BARE GROUND	██ ██ ██ ██	60	SIHY			SOIL MOVEMENT . . .	5	
PERSISTENT LITTER . . .	██	14	STCΦ3			SURFACE LITTER . . .	3	
NON-PERSISTENT LITTER	██ ██	32	PΦSE			SURFACE ROCK . . .	4	
GRAVEL (2mm - 3") . . .	██	12	BBTE			PEDESTALLING . . .	4	
COBBLE (3" - 10") . . .		2	SAKA			FLOW PATTERNS . . .	5	
STONE (> 10")		1				RILLS	2	
BEDROCK						GULLIES	2	
(17) SOIL SURFACE FACTOR TOTAL							25	

(18) LEVEL OF TRANSECT HIT					(19) HITS	(18) LEVEL OF TRANSECT HIT					(19) HITS
BASAL	CANOPY 1	CANOPY 2	CANOPY 3	DOT COUNT		BASAL	CANOPY 1	CANOPY 2	CANOPY 3	DOT COUNT	
SPCΦ				..	2						
ARTR2				□	8						
B	N			..	3						
B	SPCΦ			██	9						
AGSP	ARTR2	PIED		..	2						
N	ΦRHY			..	2						
B	P			..	4						
B	N			□	8						
B	AGSP			..	2						
GEMA				██	14						
AGSM				..	3						
B	ARAR8			██	11						
P	ARTR2			██	11						

(Continued on reverse)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0

Transect Data Sheet

(Continued from front)

(18) LEVEL OF TRANSECT HIT					(19) HITS	INSTRUCTIONS FOR RECORD TYPE VI	
BASAL	CANOPY 1	CANOPY 2	CANOPY 3	DOT COUNT		DATA ITEM ELEMENT	INSTRUCTIONS
						(1) DE 3529	RECORD TYPE: Preprinted on form.
						(2) DE 3579	FORMAT CODE: Preprinted on form.
						(3) DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.
						(4) DE 0968	ALLOTMENT: Enter designated RMA's four-character number.
						(5) DE 3905	PASTURE: Enter pasture numbers; blank if none. (Must be unique within Allotment.)
						(6) DE 3507	SITE WRITEUP AREA: Enter SWA number.
						(7) DE 3508	TRANSECT: Enter Transect number.
						(8) DE 3572	COMPARISON AREA: If data is from Comparison Area, enter "C"; otherwise leave blank.
						(9) DE 6618	DATE: Enter Date of data collection (Yr, Mo, Day).
						(10) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.
						(11) DE 6525	RECORDER: Enter Recorder's initials.
						(12) DE 5712	AERIAL PHOTO: Enter Photo-ID or Map Identifier.
						(13) DE 3526	GROUND COVER DATA: Record Dot Counts by Basal Categories.
						(14) DE 3527	HITS: Record total number of hits for each basal category (use section to left for dot count tally). (See BLM Manual Section 4412.14, Illustration 38, for diagrammatic sketches of step point data and recording procedures.) When a hit is duplicated on a transect it can be dot-counted rather than making a new entry.
						(15) DE 2646	PLANT LIST: Record other plant species observed but not encountered on pace transect.
						(16) DE 4817	SOIL FACTOR ITEMS: Enter a value for each item as determined for Site Writeup Area. This is the recorded ratings from the required soil surface factor form. (See BLM Manual Section 7322.11B.)
						(17) DE 4818	SOIL SURFACE FACTOR TOTAL: Record SSF total. This is an optional entry item.
						(18) DE 3526	LEVEL OF TRANSECT HITS: Enter appropriate ground cover and/or plant symbol encountered at each level. (See BLM Manual Section 4412.14, Illustration 38, for diagrammatic information.)
						(19) DE 7557	HITS: Record total number of Hits. Use column to left for Dot-Count tally.

WORK AREA/REMARKS

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0

Stratification Data And General Characteristics

[illegible]

Stratification Data And General Characteristics

INSTRUCTIONS FOR RECORD TYPE VB

DATA ITEM ELEMENT	INSTRUCTIONS	DATA ITEM ELEMENT	INSTRUCTIONS
(1) DE 3529	RECORD TYPE: Preprinted on form.	(12) DE 0968	ALLOTMENT: Enter designated RNAS four-character number.
(2) DE 3579	FORMAT CODE: Preprinted on form.	(13) DE 9905	PASTURE: Enter pasture number; blank if none (Must be unique within allotment.)
(3) DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.	(14) DE 2706	VEGETATION SUB-TYPE: Enter standard vegetation sub-type code. (See Form 4412-30a for proper codes.)
(4) DE 3547	CLIMATIC ADJUSTMENT FACTOR: Enter climatic adjustment factor to be used to adjust production data to an average year. If no factor is entered, it will be assumed that no climatic adjustment is needed.	(15) DE 2625	CONDITION CLASS (Seral Stage): Enter initial condition class assigned by mapping team. Code as follows: E - Excellent (Climax) 76 to 100 % of potential G - Good (High) 51 to 75 % of potential F - Fair (Medium) 26 to 50 % of potential P - Poor (Low) 0 to 25 % of potential
(5) DE 6618	DATE: Enter Date of data collection (Yr, Mo, Day).	(16) DE 3874	% SLOPE: Enter average slope for the SWA in nearest whole percent.
(6) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.	(17) DE 6523	SLOPE ASPECT: Enter average slope aspect for SWA as follows: N - North NW - Northwest W - West SW - Southwest S - South SE - Southeast E - East NE - Northeast F - Flat
(7) DE 3507	Site Writeup Area: Enter SWA number.	(18) DE 5132	LANDFORM: Enter landform code for SWA. (See Form 4412-30a for proper codes.)
(8) DE 3508	TRANSECT: Enter transect number.	(19) DE 4649	PHASES OF SOIL SERIES: Enter the phases of soil series from the State Soil Inventory legend.
(9) DE 3516	% OF SWA: Enter percent of SWA which is within the stratum. If the entire SWA is in the stratum enter "100" (Fractions of a percent are not allowed)		
(10) DE 3528	ECOLOGICAL SITE: Enter range or woodland site number according to the following example: D 3 4 A 0 0 1 A N U C where D = Major Land Resource Region 34 = Major Land Resource Area A = Subarea (If no subarea enter "X") 001 = Consecutive Site Number and ANUC = States in which range site is correlated, e.g. Arizona, New Mexico, Utah, and Colorado.		
(11) DE 3906	STRATUM: Record a stratum number for each entry.		

Automatic Data Processing (ADP) Codes for Vegetation Types and Sub-Types

Form 4412-30a
(July 1979)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

Automatic Data Processing (ADP) Codes for Vegetation Types and Sub-Types

TYPE	CODE NUMBERS	SUB-TYPE
1. GRASS	1001	SHORT GRASS
	1002	MID GRASS
	1003	TALL GRASS
2. GRASSLIKE	2001	SEDGE
	2002	RUSH
3. PERENNIAL FORBS	3001	PERENNIAL FORB
4. SHRUBS	4001	BLACK GREASEWOOD
	4002	BAILEY'S GREASEWOOD
	4011	CREOSOTO BUSH
	4012	TARBUSH
	4013	BROOM DALEA
	4015	WINTERFAT
	4021	MESQUITE
	4031	SHADSCALE
	4032	NUTTAL SALTBRUSH
	4033	MAT SALTBRUSH
	4034	FOURWING SALTBRUSH
	4035	OTHER SALTBRUSHES
	4036	DESERT SALTBRUSH ATPO
	4037	MIXED DESERT SHRUB
	4041	BIG SAGEBRUSH
	4042	LOW SAGEBRUSH
	4043	BLACK SAGEBRUSH
	4044	OTHER SAGEBRUSHES
	4045	RABBITBRUSH
	4046	SAND SAGE
	4051	CHAMISE
	4052	MANZANITA
	4053	CEANOTHUS
	4054	SHINNERY OAK
	4055	CHAPARRAL
	4056	MOUNTAIN MAHOGANY
	4057	BITTERBRUSH
	4058	OAKBRUSH
	4059	SERVICEBERRY

Automatic Data Processing (ADP) Codes for Vegetation Types and Sub-Types

TYPE	CODE NUMBERS	SUB-TYPE
4. SHRUBS (CON.)	4060	MIXED MOUNTAIN SHRUB
	4061	BLACKBRUSH
	4062	CACTUS
	4063	JOSHUA TREE
	4064	YUCCA
	4065	WHITE THORN
	4066	PALOVERDE CERCI
	4067	BURSAGE FRDE-FRDU
	4068	CATCLAW
	4069	SOTOL
	4070	MARIOLA
	4071	SNAKEWEED
	4072	FRINGED SAGEBRUSH
	4073	CLUBMOSS
	4074	WILLOW
	4075	TURPENTINE BRUSH HALA
	4076	BURROWEED HATE
	4077	MORMAN TEA
	4078	SKUNK BUSH
	4079	OCOTILLA
	4080	SACAHUISTE
	4081	ALDER
	4999	OTHER SHRUBS
5. BROADLEAF TREES	5074	WILLOW
	5075	DESERT WILLOW
	5077	BIRCH-ALASKA
	5079	BALSAM POPLAR- COTTONSEED
	5081	RED ALDER
	5082	POPLAR-BIRCH
	5083	ASPEN
	5084	CALIFORNIA BLACK OAK
	5085	COTTONWOOD
	5086	MAPLE
	5087	ORGON WHITE OAK
	5088	MADRONE
	5089	TAN OAK
	5999	OTHER BROADLEAF TREES
6. CONIFER	6001	DOUGLAS FIR
	6002	DOUGLAS FIR-WESTERN HEMLOCK
	6003	PORT ORFORD CEDAR
	6004	DOUGLAS FIR-WHITE FIR
	6011	PONDEROSA PINE

Automatic Data Processing (ADP) Codes for Vegetation Types and Sub-Types

TYPE	CODE NUMBERS	SUB-TYPE
6. CONIFER (CON.)	6012	JEFFREY PINE
	6013	PONDEROSA PINE-SUGAR PINE-FIR
	6014	SUGAR PINE
	6015	INCENSE CEDAR
	6021	WESTERN WHITE PINE
	6031	WHITE FIR
	6032	RED FIR
	6033	GRAND FIR
	6034	PACIFIC SILVER FIR
	6035	ENGLISHMANN SPRUCE
	6036	ENGLISHMANN SPRUCE- SUBALPINE FIR
	6037	WHITE SPRUCE
	6038	BLUE SPRUCE
	6039	NOBLE FIR
	6041	WESTERN RED CEDAR
	6042	SITKA SPRUCE
	6043	BLACK SPRUCE
	6047	MOUNTAIN HEMLOCK
	6048	WESTERN HEMLOCK
	6055	WESTERN LARCH
	6056	GRAND FIR-LARCH- DOUGLAS FIR
	6057	PONDEROSA PINE-LARCH- DOUGLAS FIR
	6058	LARCH TAMARACK-ALSKA
	6061	LODGEPOLE PINE
	6071	REDWOOD
	6091	COULTER PINE
	6092	DIGGER PINE-OAK
	6093	PINYON-JUNIPER
	6094	KNOBCONE PINE
	6095	BRISTLECONE PINE
	6096	WHITEBARK PINE- LIMBER PINE
	6097	PINYON
	6088	JUNIPER
	6999	OTHER CONIFER
7. CRYTOGAMS	7001	LICHEN-MOSS
	7002	MOSS
	7003	LICHEN
	7004	FERN
	7999	OTHER

Automatic Data Processing (ADP) Codes for Vegetation Types and Sub-Types

TYPE	CODE NUMBERS	SUB-TYPE
8. BARREN	8001	BADLAND
	8002	BEACHES
	8003	BLOWN-OUT LAND
	8004	CINDER LAND
	8005	DRY LAKE BED
	8006	DUMPS
	8007	DUNE LAND
	8008	GULLIED LAND
	8009	GYP SUM LAND
	8010	LAVA FLOWS
	8011	OIL-WASTE LAND
	8012	PITS
	8013	PLAYAS
	8014	QUARRIES
	8015	RIVERWASH
	8016	ROCK OUTCROP
	8017	RUBBLE LAND
	8018	SALT FLATS
	8019	SCORIA LAND
	8020	SLICKENS
	8021	SLICK SPOTS
	8999	OTHER
9. ANNUAL GRASSES	9001	CHEATGRASS
	9002	MEDUSAHEAD RYE
	9003	RED BROME
	9005	THREE-AWN
	9006	SIX-WEEKS GRAMA
	9999	OTHER
10. ANNUAL FORBS	0001	FILAGREE
	0002	HALOGETON
	0999	OTHER

Standard Land-Form Coding and Descriptions

FORM 4412-30B
(JULY 1979)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

STANDARD LAND-FORM CODING AND DESCRIPTIONS
(FOR USE IN COMPLETING FORMS 4412-30 AND 4412-38)

- ALF** Alluvial Fan: the fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream. (Webster)
- ALP** Alluvial Plain:
1. A level or gently sloping flat or a slightly undulating land surface resulting from extensive deposition of alluvial materials by running water. (Webster)
 2. A plain formed by lateral coalescence of alluvial fans (a piedmont alluvial plain). (Webster)
- BAL** Badland(s): a region characterized by the intricate and sharp erosional sculpture of generally weak rocks usually forming nearly horizontal beds, generally developing in decomposed granite, loess, or other soft material, lacking or having only scanty vegetation, and consisting of steep, burrowed, or fantastically formed hills, labyrinthine drainage, and normally dry watercourses or arroyos. (Webster)
- BFE** Basin Floor External: a basin floor which drains into another area.
- BFI** Basin Floor Internal: a basin from which there is no outward drainage.
- BMR** Bog Marsh Riparian
- BTT** Butte: an isolated hill or a small mountain with steep or precipitous sides and a top variously flat, rounded, or pointed that may be residual mass isolated by erosion, a volcanic cone, or an exposed volcanic neck, and that usually has a smaller summit area than a mesa. (Webster)
- CAL** Caldera(s): a crater whose diameter is many times that of the volcanic vent because of the collapse or subsidence of the central part of a volcano or because of explosions of extraordinary violence. (Webster)
- CAN** Canyon: a deep narrow valley with precipitous sides characteristic of regions where downward cutting of the streams greatly exceeds weathering; Gorge. (Webster)
- CES** Cuesta: southwest; a sloping plain especially with the upper end at the crest of a cliff; a hill or ridge with a steep face on one side and gentle slope on the other. (Webster)
- DOM** Dome: a rounded mountaintop or vast mound of ice. (Webster)
-

Standard Land-Form Coding and Descriptions (continued)

FPL Flood Plain:

1. A flat or nearly flat surface that may be submerged by floodwaters. (Webster)
2. A plain built up or in the process of being built up by stream deposition. (Webster)

GCR Glacial Cirque

GMR Glacial Moraine: the ridge-like accumulation of sediments deposited by a glacier.

GOW Glacial Outwash: the stratified material deposited by streams of melt-water as it flows away from a glacier.

GTO Glacial Trough

GUL Gully: a miniature valley or gorge worn in the earth originally by running water through which water usually runs only after rains. (Webster)

HBK Hogback: a ridge of land formed by the outcropping edges of tilted strata; broadly, a ridge with a sharp summit and steeply sloping sides. (Webster)

HIL Hill: a natural elevation of land of local area and well-defined outline; a more or less rounded elevation as contrasted with a peaked or precipitous one. (Webster)

IPR Intermittent Playa Riparian:

KRS Karst

LCP Lacustrine Plain: a flat or nearly flat surface.

MSA Mesa: a usually isolated hill or mountain having abrupt or steeply sloping sides and a level top that is composed of a resistant, nearly horizontal stratum of rock and is usually greater in area than that of a butte; a small isolated plateau. (Webster)

MTN Mountain and Deeply Dissected Plateaus: a steep elevation with a restricted summit area projecting 1000 feet or more above the surrounding land surface. (Webster)

OLR Lake Riparian

ORR Reservoir Riparian

OSR Stream Riparian

Standard Land-Form Coding and Descriptions (concluded)

- PED** Pediment: a broad, gently sloping bedrock surface with low relief that is situated at the foot of a much steeper mountain slope in an arid or semi-arid region; is usually covered with a thin veneer of alluvial gravel and sand and is an erosional surface in contrast to a depositional piedmont plain. (Webster)
- PEP** Peneplain or Plateau: an erosion surface of considerable area and slight relief - also called endrumpt. (Webster)
- PMT** Piedmont: lying or formed at the base of mountain. (Webster)
- PYA** Playa: an undrained desert basin that becomes at times a shallow lake on which evaporation may leave a deposit of salt or gypsum. (Webster)
- RDG** Ridge: a range of hills or mountains or the upper part of such a range; an extended elevation between valleys. (Webster)
- SBS** Subsidence: an area with subsidence from subsurface mining.
- SDL** Saddle: a ridge connecting two higher elevation, a low point in the crest line of a ridge. (Webster)
- SDN** Sand Dune: a hill or ridge of sand piled up by the wind commonly found along shores, along some river valleys, and generally where there is dry surface sand during some part of the year. (Webster)
- SNK** Sinkhole
- SRP** Scarp: a line of cliffs produced by faulting or erosions. Fault Scarp - cliff or escarpment directly resulting from an uplift along one side of a fault. (Webster)
- SUR** Sub-Riparian
- TRC** Terrace; a level and ordinarily rather narrow plain, usually with a steep front bordering a river, a lake, or the sea; a topographic bench. (Webster)
- VAL** Valley:
1. An elongate depression of the earth's surface commonly situated between ranges of hills or mountains and often comprising a drainage area.
 2. An area of generally flat land extending many miles inland and drained or watered by a large river and its tributary streams. (Webster)
- WMR** Web Meadow Riparian
-

Transect Layout

THE MAPPERS MUST DECIDE HOW THE TRANSECT CAN BEST BE LAID OUT TO OBTAIN A RELIABLE SAMPLE. SEVERAL OPTIONS ARE AVAILABLE AND THE TRANSECT DESIGN MUST BE DETERMINED ON A CASE-BY-CASE BASIS. IT IS RECOMMENDED THAT, WHERE FEASIBLE, THE TRANSECT BE LAID OUT ACROSS THE LONGEST AXIS AS DESCRIBED IN OPTION I BELOW.

I. LAYING OUT TRANSECT ACROSS THE LONGEST AXIS OF SWA-

STEP 1. MEASURE THE DISTANCE ACROSS THE LONGEST AXIS OF SITE WRITEUP AREA IN FEET WITH A USGS 1:24,000 SCALE (ORTHOPHOTO QUADS) (SEE APPENDIX 10, GUIDE TO MAP SCALES).

STEP 2. DIVIDE THE DISTANCE MEASURED BY 200 (THE NUMBER OF POINTS IN THE STEP-POINT TRANSECT).

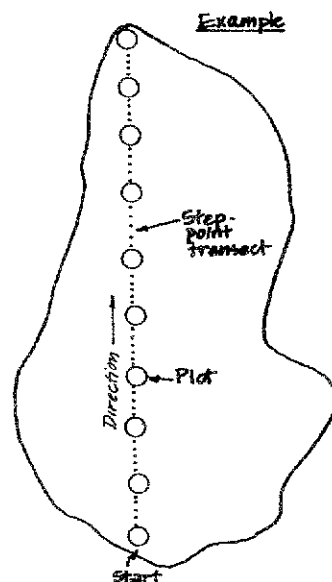
STEP 3. DIVIDE THE DISTANCE BETWEEN POINTS BY THE LENGTH OF YOUR PACE (A PACE IS TWO STEPS) TO GET THE NUMBER OF PACES BETWEEN POINTS.

STEP 4. MEASURE THE COMPASS BEARING OF THE LINE BY PROTRACTION OFF THE ORTHOPHOTO QUAD OR AERIAL PHOTO

STEP 5. PROCEED TO STARTING POINT.

STEP 6. TAKE PHOTOGRAPH OF THE SITE WRITEUP AREA ALONG THE TRANSECT LINE.

STEP 7. THE FIRST POINT IS HALF THE NUMBER OF PACES CALCULATED IN STEP 3. PACE TO THIS POINT TO BEGIN RECORDING.



Step 1 - 9000 ft.

Step 2 - $\frac{9000 \text{ ft.}}{200 \text{ pts.}} = 45 \text{ ft. between points}$

Step 3 - $\frac{45 \text{ ft.}}{6 \text{ ft. pace}} = 7.5 \text{ paces (rounded down to 7)}$

Step 4 - Bearing measured is 76°

Step 7 - $\frac{7 \text{ paces}}{2} = 3.5 \text{ paces (rounded down to 3) to first point}$

Transect Layout

STEP 8. COMPLETE 20 POINTS
OF THE STEP-POINT TRANSECT

Example
Step 8 - RUN TRANSECT
ON COMPASS BEARING
OF 76°

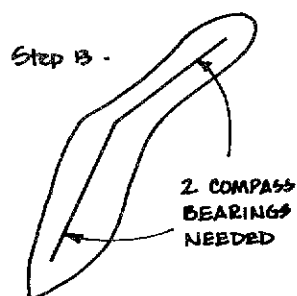
STEP 9. PLACE THE WEIGHT-ESTIMATE/
CHARACTERIZATION HOOP OR PALO
AT THE 20th POINT. CONDUCT
CHARACTERIZATIONS OF GRASSES
AND FORBS AND RECORD WEIGHTS
OF ALL SPECIES.

STEP 10. DETERMINE THE CENTER POINT
OF THE 1/100th ACRE OR 1/200th ACRE
PLOT AND CONDUCT SHRUB
CHARACTERIZATIONS AND COUNTS.

STEP 11. REPEAT STEPS 8, 9, and 10
TO COMPLETE 200 POINTS FOR THE
STEP-POINT TRANSECT AND 10 WEIGHT-
ESTIMATE CHARACTERIZATION AND
1/100th OR 1/200th ACRE PLOTS.

STEP 12. COMPLETE SPECIES LIST.

STEP 13. CONTINGENCY ACTIONS ON
LONG STRINGERS WITH DOG LEGS
MEASURE UP THE CENTER OF
THE STRINGER FOR THE TOTAL
DISTANCE. THE ONLY DIFFERENCE
WILL BE THE MEASUREMENT OF
2 COMPASS BEARINGS.



Transect Layout

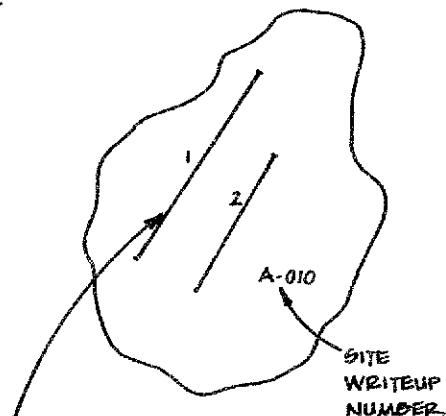
II. MORE THAN ONE VEGETATION-SOIL UNIT PER SITE WRITEUP AREA.

WHERE MAPPERS HAVE DETERMINED THERE IS MORE THAN ONE VEGETATION-SOIL UNIT WITHIN A SITE WRITEUP AREA THE VEGETATION INVENTORY PROCEEDS AS FOLLOWS:

Example

A. DISTINCTIVE STRIP PATTERN

WHERE STRIPS ARE EASILY DISCERNIBLE AT LEAST ONE TRANSECT SHOULD BE PLACED WITHIN EACH OF THE VEGETATION-SOIL UNITS. SUCH TRANSECTS MUST BE MECHANICALLY LOCATED AND NOT RANDOMLY LOCATED AS DESCRIBED IN I ABOVE. THE MAPPING TEAM SHOULD LAY OUT HOW THE TRANSECTS SHOULD BE RUN.

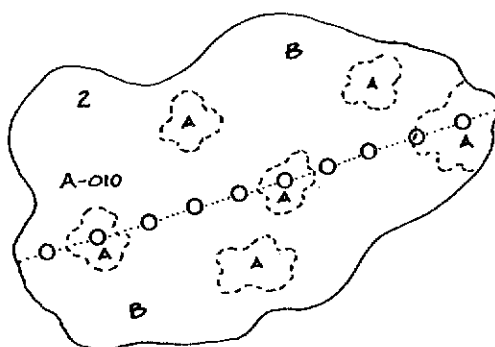


TRANSECT 1. SAMPLES ONE VEGETATION-SOIL UNIT AND TRANSECT 2. SAMPLES THE OTHER VEGETATION-SOIL UNIT. BOTH ARE WITHIN SITE WRITEUP AREA A-010. THE PERCENTAGE OF THE SITE WRITEUP AREA MUST BE DETERMINED FOR EACH TRANSECT.

Transect Layout

B. INDISTINCT MOTTLED PATTERN

WHERE VEGETATION-SOIL UNITS ARE NOT EASILY DISCERNIBLE ON AERIAL PHOTOGRAPHS TRANSECT LAYOUT MUST BE AS DESCRIBED IN I ABOVE. RECORDS MUST BE MADE OF STEP-POINT AND WEIGHT-ESTIMATE/CHARACTERIZATION DATA SEPARATELY BY VEGETATION-SOIL UNITS AS THEY ARE ENCOUNTERED. THIS PROCEDURE IS SHOWN IN THE FOLLOWING EXAMPLE:

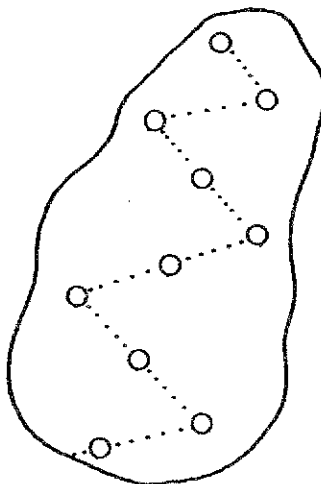
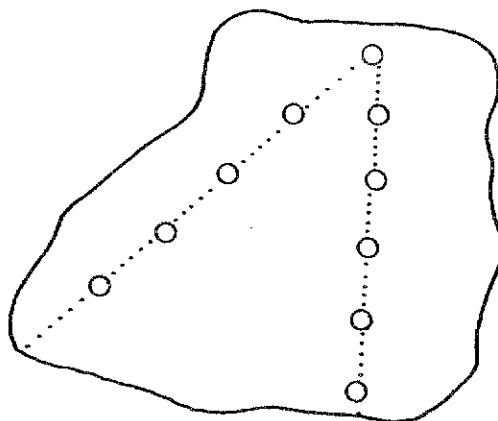
RECORDS BY VEGETATION-SOIL UNITS

A (TRANSECT 2)		B (TRANSECT 1)	
STEP-POINT	PLOT	STEP-POINT	PLOT
		1-31	1
32-62	2	63-115	3,4
116-124	5,6	126-170	7,8
171-200	9,10		

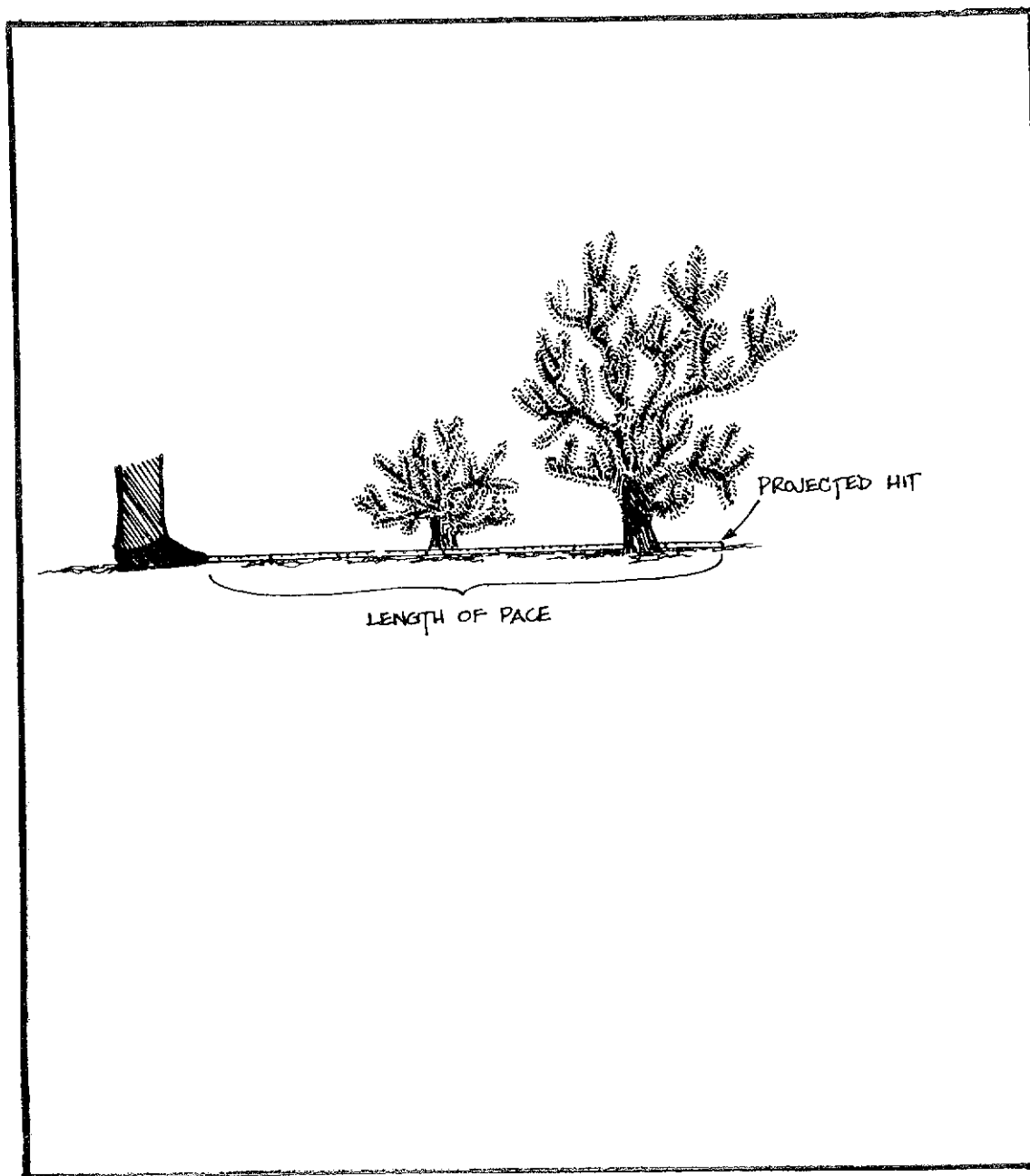
THE PERCENTAGE OF THE SITE WRITEUP AREA MUST BE DETERMINED FOR EACH OF THE VEGETATION-SOIL UNITS.

III OTHER OPTIONS FOR TRANSECT LAYOUT

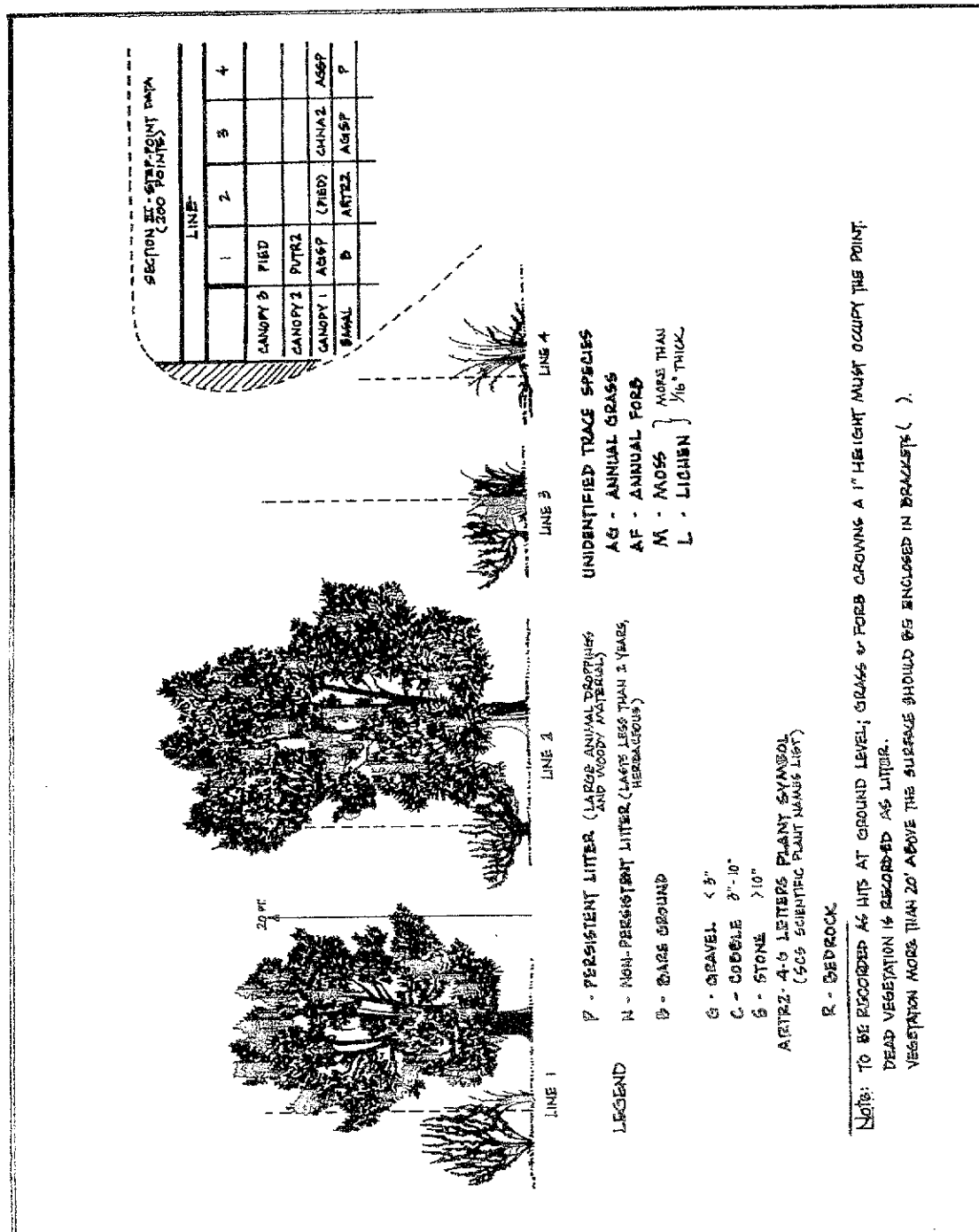
USE THE SAME PROCEDURES AS SET FORTH IN
OPTION I EXCEPT THE DISTANCE AND COMPASS
BEARING OF EACH TRANSECT LEG WILL HAVE
TO BE CALCULATED.



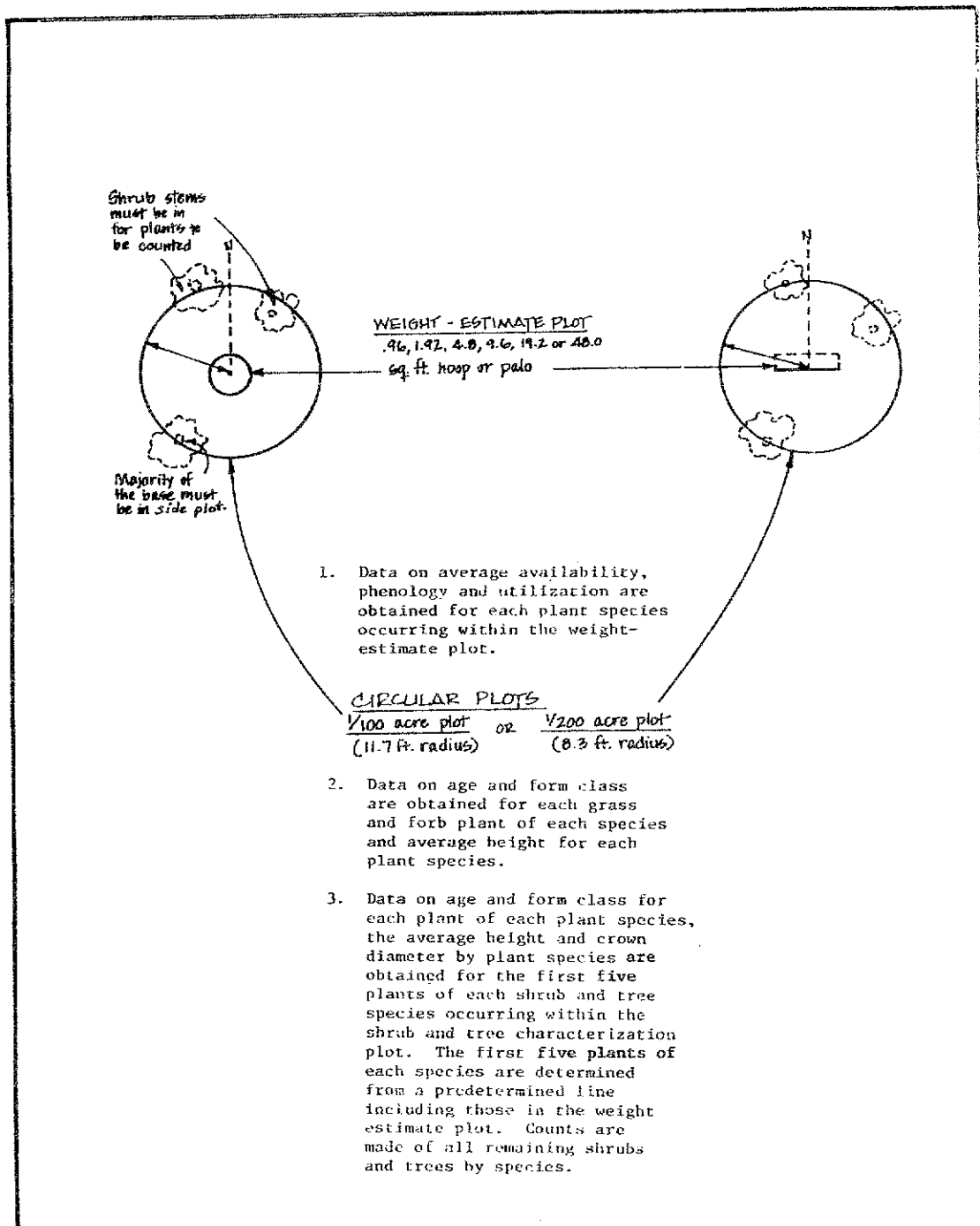
Projected Hits With Obstructions



Diagrammatic Sketches of Step-Point Data and Recording Procedures



Vegetation Characterization Plot Layout - Circular Plots



Vegetation Characterization Plot Layout - Circular Plots

PHENOLOGY STAGES: GRASSES, FORBS, SHRUBS, AND TREES

<u>CODE NO.</u>	<u>DESCRIPTION</u>
1	Begin Growth
2	Vegetative Stage
3	Boot Stage
4	Peak Flowering
5	Seed Ripe
6	Mature
7	Dormant
8	Regrowth

FORM CLASSES

<u>CODE NO.</u>	<u>DESCRIPTION</u>
	<u>Grasses</u> <u>Forbs</u> <u>Shrubs and Trees</u>
1	Normal & Vigorous Normal & Vigorous Normal & Vigorous
2	Dying Center /////////////// ///////////////
3	Hollow Center Portion Dead or Dying Portion Dead or Dying
4	Clump Edge /////////////// ///////////////
5	Dead Dead Dead

AGE CLASSES

<u>CODE NO.</u>	<u>DESCRIPTION</u>
	<u>Grasses</u> <u>Forbs</u> <u>Trees</u> <u>Shrubs</u>
S - Seedling	Base less than 1/4" dia. X X Established new plants not more than 2 or 3 years old
P - Pole Sapling	//////////////////// /// X ///////////////
Y - Young	Base 1/4" to 1" dia. X X Intermediate age classed between seedling and mature
M - Mature	Base greater than 1" dia. X X Seed producing age but not decadent
O - Old	//////////////////// /// X ///////////////
D - Decadent	Over 25% of plant dead X X X
R - Resprout	//////////////////// /// /// Established plants having regrowth following crown kill usually caused by fire. Fully recovered resprouts are classified in appropriate age class.

AVAILABILITY CLASSES: GRASSES, FORBS, SHRUBS, AND TREES
(Annual Growth Only)

<u>CODE NO.</u>	<u>DESCRIPTION</u>
A - Available	100 percent available
P - Partially Available	75 percent available
H - Half Available	50 percent available
L - Limited Availability	25 percent available
U - Unavailable	0 percent available

UTILIZATION CLASSES: GRASSES, FORBS, SHRUBS, AND TREES

<u>CODE NO.</u>	<u>DESCRIPTION</u>
0	0 Utilization of Current Year's Growth
1	1 to 20%
2	21 - 40%
3	41 - 60%
4	61 - 80%
5	81 - 100%

Weight Estimate and Vegetation Characterization

Form 4412-27
(June 1979)

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SOIL-VEGETATION INVENTORY METHOD

WEIGHT ESTIMATE
AND
VEGETATION CHARACTERIZATION

RECORD TYPE (1) V 2
FORMAT CODE (2) 0
BLM ADMIN UNIT (ST/DI/RA/PO) . . (3) UT:0:2:4:8:0:2:
ALLOTMENT (4) H:0:1:1:
PASTURE (5) 0:2:
SITE WATERSHED AREA (SMA) . . . (6) B:0:0:1:
TRANSECT NUMBER (7) 0:1:
DATE (YYMMDD) (8) 7:2:0:0:1:5:
ACTION CODE (A,D) (9) A:

PLOT SIZES:
TREES & SHRUBS (10) ☒ 1/100 ☐ 1/200
GRASSES & FORBS (11) ☐ .9% ☐ 1.92 ☐ 4.80 ☒ 9.60 ☐ 19.20 ☐ 43.06 ☐ OTHER Specify

PLOTS TO BE CLIPPED AND CHARACTERIZED (12)
CLIP: 1 2 3 4 5 6 7 8 9 10
CHAR: 1 2 3 4 5 6 7 8 9 10

WEIGHT ESTIMATE DATA										VEGETATION CHARACTERIZATION					
(13) PLOT NO.	(14) PLANT SYMBOL	(15) AVE AVAIL	(16) AVE PHEN	(17) AVE UTIL	(18) ESTIMATED WEIGHT IN GRAMS				(19) AVE HEIGHT	(20) AVE CROWN DIAM.	(21) AVE CLASS	(22) AVE CLASS	(23) COUNT	(24) NUMBER CHARTD	(25) NOT CHARTD
1	AGSP	A	3	0	20										
	FEED	A	2	1	10										
	ORHY	P	3	1	5										
	BASA	A	3	0	5										
	ARTR2	A	2	0	30										
✓	PUTR	A	2	0	20	10									
2	AGSP	A	3	1	15				8	M	1		4		
	ORHY	P	3	0	10				7	M	1		3		
	BASA	A	3	0	5				5	M	1		2		
	ARTR2	A	2	0	35				2	M	1		5	4	
	PUTR	A	2	0	10	10			1.2	1.0	M	1	3	3	
✓	PUTR								4.1	2.0	Y	1	2		
3	AGSP	A	3	0	10	10									
	ORHY	A	2	2	5	5									
	BASA	A	3	0	3	0									
✓	ARTR2	A	2	0	33	35									
4	AGSP	A	3	0	12										
	FEED	A	3	1	5										
	ORHY	A	2	2	7										
	BASA	A	2	0	2										
	ARTR	A	2	0	31										
	CHUTB	A	2	0	27										
✓	ARARS	A	2	1	15										

(Continued on reverse)

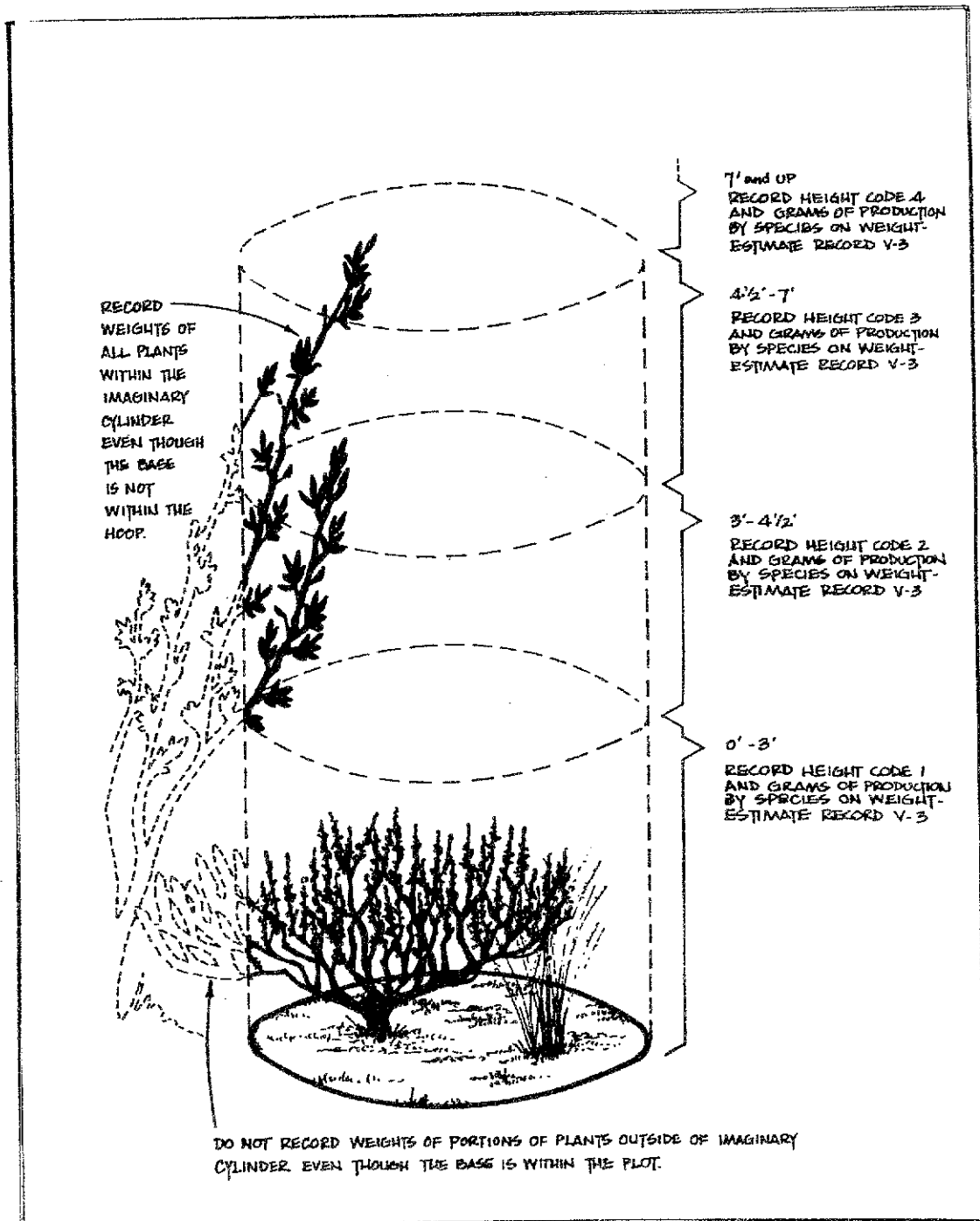
APCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890

Weight Estimate and Vegetation Characterization

INSTRUCTIONS FOR RECORD TYPE V2

DATA ITEM ELEMENT	INSTRUCTIONS	DATA ITEM ELEMENT	INSTRUCTIONS
(1) DE 3529	RECORD TYPE: Preprinted on form.	(18) DE 3532	GRAMS PER PLOT: Record weight in grams per plant species for each height category as follows: HT1 - 0 to 3' HT2 - 3 to 4 1/2' HT3 - 4 1/2 to 7' HT4 - OVER 7' A minimum of two plots per transect must be clipped and weighed. Enter the estimated weight for all plots. Enter and circle actual clipped weight on the clipped plots.
(2) DE 3579	FORMAT CODE: Preprinted on form.	(19) DE 3504	HEIGHT: Record average height in feet and tenths of feet for each species encountered in plot.
(3) DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.	(20) DE 3522	CROWN DIAMETER: Record the average crown diameter in feet and tenths of feet for each species encountered in plot.
(4) DE 0968	ALLOTMENT: Enter designated RMAS four-character number.	(21) DE 3502	AGE CLASS: For each plant species record each age class encountered on plot. Use separate lines for each age class. Codes are as follows: S - Seedling Y - Young M - Mature D - Decadent O - Old (trees only) P - Pole Sapling (trees only) R - Resprout (shrubs only) (See BLM Manual Section 4412, Illustration 39, Page 2, for detailed explanation.)
(5) DE 3905	PASTURE: Enter pasture number; blank if none. (Must be unique within allotment.)	(22) DE 3503	FORM CLASS: Record form class encountered on plot for each species. Use separate lines for each form class. Codes are as follows: 1 - Normal and Vigorous 2 - Dying Center (grasses only) 3 - Hollow Center (grasses) 4 - Dead or dying (forbs, shrubs, trees) 5 - Dead
(6) DE 3507	SITE WRITUP AREA: Enter SWA number.	(23) DE 3918	NUMBER CHARACTERIZED: Enter total number of plants characterized. Characterize all grasses and forbs, and a minimum of five shrubs and trees per species. The balance of the shrubs and trees within the plot are counted and recorded under item (24). Dot count column to left may be used to tally plant species characterized.
(7) DE 3508	TRANSECT: Enter Transect number.	(24) DE 3511	NUMBER NOT CHARACTERIZED: Enter the number of shrubs and trees not characterized in excess of the five characterized.
(8) DE 6618	DATE: Enter Date of data collection (Yr, Mo, Day).		
(9) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.		
(10) DE 3514	TREES and SHRUBS: Check plot size for trees and shrubs (1/100 acre or 1/200 acre).		
(11) DE 3510	GRASSES and FORBS: Check plot size (sq. ft.) for grasses and forbs.		
(12)	PLOTS TO BE CLIPPED AND CHARACTERIZED: Circle plots to be clipped and characterized (for field use only).		
(13) DE 3512	PLOT NO.: Enter plot number from which weight estimate and characterization data is being collected.		
(14) DE 2646	PLANT SYMBOL: Enter SCS standard plant symbol.		
(15) DE 3830	AVAILABILITY: Enter average availability by plant species occurring in the plot. Code as follows: A - Available 100 % P - Partially Available 75 % H - Half Available 50 % L - Limited Availability 25 % U - Unavailable 0 %		
(16) DE 3712	PHENOLOGY: Enter average phenology by plant species occurring in the plot. Code as follows: 1 - Begin Growth 2 - Vegetative Stage 3 - Boot Stage 4 - Peak Flowering 5 - Seed Ripe 6 - Mature 7 - Dormant 8 - Resrowth		
(17) DE 3832	UTILIZATION: Enter average utilization by plant species occurring in the plot. Code as follows: 0 = 0 % 1 = 01 to 20 % 2 = 21 to 40 % 3 = 41 to 60 % 4 = 61 to 80 % 5 = 81 to 100 %		

Weight-Estimate Plot Layout



Sampling Precision and Probability

The number of plots required for a sufficient sample depends upon variation among plots, confidence or probability level we wish to have in our data, and the precision with which we wish to sample. Sampling with high precision with supreme confidence in the data requires a different number of sample plots than when we are satisfied with either a lower precision or less confidence, or both.

The formula for calculating number of plots necessary to sample with a desired precision and level of probability (confidence) is as follows:

$$N = \left(\frac{ts}{px} \right)^2$$

Where: N = number of plots necessary to sample within certain prescribed precision and confidence;

t = value which establishes the level of probability (confidence);

s = standard deviation, a measure of variability;

p = sampling precision (this value is expressed as a percentage and varies depending upon the sampling precision desired);

x = the mean or average of a group of values.

The value for “ t ” varies with the probability of confidence level chosen. The value of “ t ” for different confidence levels or probability is as follows based on a sample of ten and twenty plots:

Probability:	50%	60%	70%	80%	90%	95%	98%	99%
“ t ” value: (10 plots)	0.70	0.88	1.10	1.38	1.83	2.26	2.82	3.25
“ t ” value (20 plots)	0.69	0.86	1.07	1.33	1.73	2.09	2.54	2.86

For example, choosing a probability or confidence level of 99 percent means we can be certain that 99 times out of a 100 our sample size will provide the precision required; at a confidence level of 95 percent, the odds are 19 to 1; at 80 percent, the odds are 8 out of 10; etc.

The values for “ s ” and “ x ” are calculated from the sample of 10 plots which have been clipped or estimated.

The value for “ p ” may be 5, 10, 20, 25, etc. percent or some other percentage chosen. It is the precision with which we wish to sample.

In a formula expressed thus:

$$N = \left(\frac{2.26s}{.10\bar{x}} \right)^2$$

We will sample with ± 10 percent of the population mean or average with 95 percent confidence that the number of plots (N) sampled will provide this precision.

The calculation of "s" (standard deviation) is somewhat complex even with a good calculator and seated at your desk in the office. It is even more difficult in the field. An estimate of the value "s" can be derived from the following table ^{1/}.

^{1/} Source: Snedecor, George W. and William G. Cochran, 1974.
Statistical Methods. Iowa State University Press, Ames, Iowa 573 p.

If N is near this number	Then S is roughly estimated by dividing the range in values by
5	2
10	3
25	4
100	5

Examples of using the above formula for different confidence levels and precision follow. Assume 10 individual plots have been randomly selected along the transect line and total yield of current years growth is clipped or estimated and recorded as follows:

Plot(N)	Current Yield, gms.
1	57
2	43
3	64
4	51
5	49
6	60
7	71
8	48
9	66
10	54
Total	563 grams

$$\text{Mean } (\bar{x}) = \frac{563}{10} = 56.3 \text{ grams}$$

$$s = \frac{71-43}{3} = \frac{28}{3} = 9.3$$

(from table above for N=10)

Example 1: Sample within ± 10 percent of the mean with 95 percent confidence.

$$N = \left(\frac{2.26 \times 9.3}{.10 \times 56.3} \right)^2 = \left(\frac{21.0}{5.63} \right)^2 = (3.73)^2 = 14 \text{ plots}$$

Four additional plots are needed in addition to the 10 already clipped or estimated to sample with the precision and confidence desired.

Example 2: Sample ± 5 percent of the mean with 99 percent confidence:

$$N = \left(\frac{3.25 \times 9.3}{.05 \times 56.3} \right)^2 = \left(\frac{30.2}{2.82} \right)^2 = (10.71)^2 = 115 \text{ plots}$$

Considering money and manpower, it is probably impossible to sample with this precision and confidence in most biological communities.

Example 3: Sample within ± 10 percent of the mean with 90 percent confidence:

$$N = \left(\frac{1.83 \times 9.3}{.10 \times 56.3} \right)^2 = \left(\frac{17.0}{5.63} \right)^2 = (3.02)^2 = 9 \text{ plots}$$

The original 10-plot sample was adequate to sample with this precision and probability.

After sampling the estimated precision obtained can be calculated by solving for "p" in the original formula as follows:

$$P = \frac{t s}{\sqrt{n} x}$$

Using a hypothetical example, assume the following yields were recorded from 10 plots:

Plot(N)	Current Yield, gms.
1	12
2	89
3	43
4	19
5	70
6	52
7	38
8	44
9	29
10	61
Total	457 grams

$$\text{Mean } (\bar{x}) = \frac{457}{10} = 45.7 \text{ grams}$$

$$S = \frac{89-12}{3} = \frac{77}{3} = 25.7 \text{ grams}$$

To sample this site within ± 10 percent of the mean with 95 percent confidence requires the following number of plots:

$$N = \left(\frac{2.26 \times 25.7}{.10 \times 45.7} \right)^2 = \left(\frac{58.1}{4.57} \right)^2 = (12.7)^2 \times = 161 \text{ plots}$$

It is determined that it is impractical to collect data from this many more plots. Ten additional plots are sampled. The sampling precision for the total 20 plots is calculated as follows:

1st Sample		2nd Sample	
Plot	(N) Yield, gms.	Plot	Yield, gms.
1	12	11	59
2	89	12	32
3	43	13	27
4	19	14	66
5	70	15	41
6	52	16	54
7	38	17	77
8	44	18	20
9	29	19	55
10	61	20	47
		Total	935 grams

Mean (\bar{x}) 46.8 grams

$$S = \frac{89-12}{4} = \frac{77}{4} = 19.2 \text{ grams}$$

"t" value for 20 plots = 2.09 at 95 percent probability level.

Therefore:

$$P = \frac{2.09 \times 19.2}{\sqrt{20} \times 46.8} = \frac{2.09 \times 19.2}{4.47 \times 46.8} = \frac{40.1}{209.2} = 0.19 \text{ precision}$$

The 20-plot sample actually provided an estimate within ± 19 percent of the true mean with 95 percent confidence.

An example calculation based upon a certain confidence level could be as follows:

Situation:

The preplanning analysis for the area has indicated serious resource problems in the area. The decision maker has accepted the minimum sampling level as ± 20 percent of the average vegetation production with 80 percent confidence level. Therefore, the number of plots necessary to meet this minimum level is calculated as follows:

Calculations:

$$N = \left(\frac{1.38 s}{.20 \bar{x}} \right)^2$$

An example follows based on data from 10 plots:

	Plot Yield, gms
	74
	16
	127
	43
	84
	36
	52
	25
	61
Total	<u>537</u>

$$\text{Mean } (\bar{x}) = 53.7$$

$$s = \frac{127-16}{3} = \frac{111}{3} = 37.0$$

$$N = \left(\frac{1.38 \times 37.0}{.20 \times 53.7} \right)^2 = \left(\frac{51.1}{10.74} \right)^2 = (4.76)^2 = 23 \text{ plots}$$

Weight production must be determined from an additional 13 plots to obtain the minimum sampling intensity.

**Table of "T" Values
and
Determination of "S"**

Number of Plots	To Find "S" Divide Range of Values By:	Probability (Confidence Level)	
		80 Percent	75 Percent
2	1.0	3.078	2.521
3	1.5	1.886	1.636
4	1.7	1.638	1.444
5	2.0	1.533	1.362
6	2.2	1.476	1.316
7	2.4	1.440	1.287
8	2.6	1.415	1.267
9	2.8	1.397	1.252
10	3.0	1.383	1.241
11	3.1	1.372	1.233
12	3.1	1.363	1.226
13	3.2	1.346	1.219
14	3.2	1.350	1.214
15	3.3	1.345	1.210
16	3.4	1.341	1.207
17	3.5	1.337	1.204
18	3.5	1.333	1.201
19	3.6	1.330	1.198
20	3.6	1.328	1.197
21	3.7	1.325	1.194
22	3.8	1.235	1.193
23	3.9	1.321	1.191
24	4.0	1.319	1.190
25	4.0	1.218	1.189
26	4.1	1.316	1.187
27	4.1	1.315	1.186
28	4.1	1.314	1.185
29	4.2	1.313	1.184
30	4.2	1.311	1.183
31	4.2	1.310	1.182
	5.0	1.282	1.159

Dry/Green Weight Conversion Factor Data

Form 4412-28
(June 1977)

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SOIL-VEGETATION INVENTORY METHOD

Page 1 of 1

RECORD TYPE (1) 26
FORMAT CODE (2) B
BLM ADMIN UNIT (STATE/AFFILIATE) (3) UT-1024802
DATE (MM/DD/YYYY) (4) 7/9/86
ACTION CODE (A-D) (5) A

DRY/GREEN WEIGHT CONVERSION FACTOR DATA

(6) PLANT SYMBOL	(7) PHENOLOGY	(8) GREEN WEIGHT	(9) % AIR - DRY WEIGHT	(10) DRY WEIGHT	(11) G R A S S E S STEM DIMENSIONS MINIMUM MAXIMUM	(12) FORBS, SHRUBS, TREES CROWN DIMENSIONS MINIMUM MAXIMUM	(13) SPECIES AVERAGE HEIGHT	(14) AVERAGE LEAFER LENGTH
AGSP	3	20			25 x 30	x	9	
		30			20 x 27	x	8	
		17			10 x 30	x	7	
		22			15 x 18	x	8	
		14			12 x 15	x	7	
		12			15 x 20	x	9	
		19			15 x 30	x	8	
		18			20 x 30	x	7	
		16			25 x 30	x	7	
		17			15 x 15	x	8	
AGSP	3	85	82	70	AIR DRY SAMPLE			
					x	x		
ARTR2	2	100			x	1.2 x 1.3	1.2	
		60			x	1.0 x 1.5	1.2	
		75			x	1.7 x 1.8	1.3	
		85			x	1.2 x 1.2	1.2	
		60			x	1.0 x 2.0	2.0	
		90			x	1.5 x 1.5	1.1	
		120			x	1.6 x 1.7	1.3	
		65			x	1.3 x 1.4	1.2	
		70			x	1.4 x 1.7	1.1	
ARTR2	2	200	83	165	AIR DRY SAMPLE			
					x	x		
					x	x		
					x	x		
					x	x		
					x	x		
					x	x		
					x	x		

ABCDEFGHIJKLMNPQRSTUVWXYZ 1234567890

Dry/Green Weight Conversion Factor Data

I N S T R U C T I O N S F O R R E C O R D T Y P E V 6

DATA ITEM ELEMENT	INSTRUCTIONS
(1) DE 3529	RECORD TYPE: Preprinted on form.
(2) DE 3579	FORMAT CODE: Preprinted on form.
(3) DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.
(4) DE 6618	DATE: Enter date of data collection (Yr,Mo,Day).
(5) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.
(6) DE 2646	PLANT SYMBOL: Enter SCS standard plant symbol.
(7) DE 3712	PHENOLOGY: Enter standard phenology by plant species. Code as follows: <ul style="list-style-type: none"> 1 - Resin Growth 2 - Vegetative Stage 3 - Boot Stage 4 - Peak Flowering 5 - Seed Ripe 6 - Mature 7 - Dormant 8 - Regrowth
(8) DE 3941	GREEN WEIGHT: Enter grams weighed at time plant clipped.
(9) DE 3546	% AIR-DRY WEIGHT: Enter the percent air-dry weight is of green weight.
(10) DE 3942	DRY WEIGHT: Enter air-dry weight in grams of clipped material.
(11) DE 3533	BASAL DIMENSIONS: Enter basal dimensions in feet and hundredths of feet for grasses.
(12) DE 3534	CROWN DIMENSIONS: Enter crown dimensions in feet and tenths of feet for forbs, shrubs, and trees.
(13) DE 3504	SPECIES AVERAGE HEIGHT: Enter height in feet and tenths of feet for each species.
(14) DE 7313	AVERAGE LEADER LENGTH: Enter average leader length in feet and tenths of feet (shrubs and trees).

Photo Sample Record

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT										Page _____ of _____											
PHOTO SAMPLE RECORD																					
OTHER																					
1 TRANSACTION CLERK 8196		6 STATE ADOPT 0001		11 MASTER UNIT 3891		16 BUREAU OF LAND MANAGEMENT 1103		20 TRANSFER													
2 TYPE OF PHOTO RECORD 3114		7 DISTRICT 0101		12 SUBUNIT UNIT 3892		17 DATE 6/25/51															
3 SEALS 3111		8 RESOURCE AREA 0416		13 STATE GEO 0101		18 INTERPRETER 3106															
4 INVENTOR UNIT 3108		9 PLANNING UNIT 1105		14 COUNTY 0101		19 NAME 1103															
5 NO. OF UNITS 3112		10 SUBUNIT 3107		15 UTM ZONE 3113		19 NAME 1103															
PHOTO IDENTIFICATION				PHOTO INTERPRETATION				ADDITIONAL DATA													
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
TRANSDUCER NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.	PHOTO NO.
AS 21	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104
AS 21	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104	661	6104
<p>ABCEFGHIJKLMNOPQRSTUVWXYZ 1234567890</p>																					

Photo Sample Record

PHOTO IDENTIFICATION				PHOTO INTERPRETATION												AUXILIARY DATA																
22	23	24	25	1845 76				1845 77				1845 78				1845 79				30	31	32	33	34	35	36	37	38	39	40	41	42
				STAMP	NO.	DATE	TIME	NO.	DATE	TIME	NO.	DATE	TIME	NO.	DATE	TIME	NO.	DATE	TIME													
					</																											

All of the required codes are found in the Forest Data Element Dictionary.

The large dark number to the left or above the data element name is the item number, the four-digit number following is the data element number which is the reference number in the data element dictionary. The "X" or spaces following or below the data items indicate the number of characters that must be filled in if data is recorded for that data element.

- Item 1.** **Transaction Code** (6196) - Indicates what action is being taken with the current entry, i.e., new data, change, or correlation of old data, etc.

- Item 2.** **Type of Photo Record** (5714) - For SVIM this is always the stand (or site write-up area) record.

- Item 3.** **Series** (5711) - The three-digit number is used to control area data and for editing. The numbers run consecutively from 001 to 999. They are assigned by the interpreter who maintains a log of the numbers. The series number must change any time there is a change in the following items: STATE, DISTRICT, RESOURCE AREA, PLANNING UNIT, SURVEY UNIT, COUNTY, and PHOTO MISSION. They may change when there is a change in a SUBUNIT or PHOTO BLOCK. These numbers are unique within an inventory unit.

- Item 4.** **Inventory Unit** (5708) - Record the three-digit number which identifies the inventory unit. This may be a whole State, District, or parts of Districts. This number is unique within a State.

- Item 5.** **No. of Lines** (5712) - Record the total number of points interpreted within each series. This number must equal the number of lines filled out in the body of the record.

- Item 6.** **State Administration** (0004) - Record the two-character alpha code for the State that administers the inventory unit.

- Item 7.** **District** (0543) - Record the two-digit code. See data element number 0543 in the Data Dictionary. Record only the numeric portion of the code.

- Item 8.** **Resource Area** (0418) - Record the last two digits of the code shown in the Data Element Dictionary.

- Item 9. Planning Unit (1075)** - Record the last two digits of the code shown in the Data Element Dictionary.
- Item 10. Subunit (5707)** - If subunits or compartments (or block) record the four-digit identification number; otherwise leave blank.
- Item 11. Master Unit (5891)** - Record the two-digit code for identification of master units in western Oregon. Other States leave blank.
- Item 12. Survey Unit (5892)** - Record the two-digit code. This code is used to identify United States Forest Service survey units to coordinate the flow inventory information between the Bureau and the Forest Service.
- Item 13. State, Geographic (0690)** - Record the two-character alpha code. The geographic State in which the data is being recorded, as opposed to the administrative State. For example, data on a SWA or stand located in eastern Washington State which falls in the geographic State of Washington and administrative State of Oregon.
- Item 14. County (0546)** - Enter the three-digit code for the county, borough, parish, etc. (See the Data Element Dictionary.)
- Item 15. Universal Transverse Mercator (UTM) Zone (7515)** - Record the two-digit code which is found in the lower left corner of the 7-1/2 min. quad maps.
- Item 16. Sustained Yield Unit (5705)** - Record two-digit code (all new codes are assigned by the Denver Service Center). This code is used to tie the extensive forest inventories to other inventories. Leave blank if the area is not in a sustained yield unit.
- Item 17. Date (6630)** - Record a six-digit number of which the first two are the last two digits of the year, the next two are the month, and the last two are the day the data was recorded.
- Item 18. Interpreter (5709)** - Record the first initial and last name and code of the photo interpreter who does the photo interpretation. The field uses the codes assigned to each interpreter. This number is unique within an inventory unit.
- Item 19. BLM Forest Owner (5903)** - Record the one-digit code that indicates the type of BLM ownership. An entry required only in Oregon. Other States may leave blank.

Item 20. Remarks - Record any pertinent information such as problems, etc. Page ____ of ____.
Enter page number of series and the total number of pages in that series.

Item 21. Edit - Enter initials of supervisor giving final edit to the Photo Sample Record.

Item 22. Photo Identification (5713)

Photo Symbol: xxxxx

Record the appropriate contract symbol (five-digit code) as designated in the photo contract. This symbol may be found in the upper right-hand or left-hand corner of the photograph and may be alphanumeric. Right justify coding if necessary. If all photos within the same unit contain the same symbol, this item may be written down only once per sheet. Draw arrow down column.

Roll Number: xx

Record the roll number as defined in the photo contract - this may be alphanumeric. Note: Some BLM and other photography do not have roll numbers but have flight line numbers instead.

Example: 1 EMK 73-3-81. The "3" is the roll number. This number will be recorded as a two digit code, 03.

2 COL 78-21-08. The "21" is a flight line number; treat it the same way as roll number, i.e., 21.

Photo Number: xxxx

Each photo has its own separate photo number or identification. This is the third set of numbers or letters in the top right-hand corner. They are coded as a four-digit codes. Example: EMK 74-3-81, coded 0081.

Item 23. Point Number: xx

The numbering system is based on the photo grid. Number the grid from top to bottom or from left to right, as shown in the examples below:

ID 1:15840				ID 1:20000				
:01.	04.	07.	10.:	:01.	02.	03.	04.	05.:
:02.	05.	08.	11.:	:06.	07.	08.	09.	10.:
:03.	06.	09.	12.:	:11.	12.	13.	14.	15.:
				:16.	17.	18.	19.	20.:

In using this system, points falling on BLM land must be numbered on the photo and then transferred to the master set of maps. They must be numbered identically on the map. This item may be left blank on SVIM and stand surveys.

- Item 24. **Stand Number (5921) or SWA Number (3507)** - Each stand or site write-up area is assigned a unique four-character number. This number is held unique within a planning unit. The area is a plant community possessing sufficient uniformity in relation to composition, special arrangement, and/or condition to be distinguishable from adjacent communities. Site write-up areas are mapped within a range site or areas which are similar in growth potential. A log must be maintained for stand or site write-up area numbers. These numbers must not be duplicated within a planning unit.

Photo Interpretation

- Item 25. **Photo Land Use (6101)** - Record a two-digit code. This is the first interpretation step to determine the primary land-use class. The major categories are Forest Land and Nonforest Land. These classes are subdivided into major type classes as determined by administrative and biological needs.

The categories are:

Forest Land

codes

20-29 Even age stands

30-39 Two-story stands

40-49 Nonproductive forest land

Nonforest Land

60-69 Nonforest land

91-92 Water

Forest Land - Land at least 16.7 percent stocked (or 10 percent crown closure) by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use. Includes chaparral areas in the west and afforested areas. The minimum area for classification of forest land or subclasses of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width at least 120 feet wide to qualify as forest land. (Crown width is defined as distance from one crown edge to another and differs for stringers and openings.)

Unimproved roads^{1/} and intermittent water (fluctuating stock dams and reservoirs) trails, streams, and clearings in forest areas must be classed as forest if less than 120 feet in width of 1 acre in size.

^{1/} Improved roads are those maintained for continuing use and with at least a 30 foot right-of-way. Also, includes entire right-of-way of operating railroads—classed nonforest.

Forest land is divided into productive and nonproductive strata.

Productive Forest Land (PFL) (Code 20 and 30 series) Forest land (1 acre in size or greater) which is producing, or is capable of producing, crops of industrial wood. This includes areas suitable for management to grow crops of industrial wood, generally of a site quality capable of producing in excess of 20 cubic feet/acre of annual growth or in excess of 3000 board feet (scribner net) volume/acre. This includes volume from saw logs and pulpwood (but excludes fuelwood) and also includes both accessible and inaccessible areas and both operable and currently inoperable stands. Generalization - any stand over 40 feet height is occupying PFL. Data obtained from photo measurements of height, crown diameter, crown density, and/or volume will be the primary means of subdividing productive forest lands into sampling strata. Nonproductive cover type occupying productive forest land takes the acre PFL strata and climax forest type.

Nonproductive Forest Land (NPFL) (Code 40 series) Forest land incapable of yielding 20 cubic feet per acre per year or 2000 cubic feet in 100 years because of adverse site conditions, or land unsuitable for management because of steepness and rockiness, or because of adverse location or critical watershed aspects of the site. This includes: sterile or poorly drained forest land which produces stunted and deformed trees; subalpine forests at the upper limits of tree growth; steep rocky areas with cliffs, ledges, and talus slopes and forest land capable of producing only noncommercial tree species.

Nonforest (N.F.) (Code 60 series) This is land that has never supported forests and lands formerly forested where forest use is precluded by development for "nonforest" uses, such as crops, improved pasture, residential areas, and city peaks. This also includes improved roads adjoining right-of-ways, powerline clearings, and certain areas of water classified by the Bureau of Census as Land. Unimproved roads, streams canals, and nonforest strips in forest areas must be more than 120 feet wide (crown width) and clearings in forest areas, beaver dams, and stock ponds must be more than 1 acre in size to qualify as nonforest land. Areas of water less than 40 acres in size or less than 1/8 mile in width must also be classified as nonforest. Areas of water larger than these are excluded from the gross area of the inventory unit (code 90 series). The area surrounding and including each point must be studied to determine which land-use class it best fits. If the point falls into a nonforest or nonproductive type i.e., an acre in size or greater, it must be classed as that type. If the point falls in an area smaller than 1 acre in size, it must be classed as the type immediately surrounding the point. To classify as productive, the type within which the plot falls must be at least 1 acre in size. Use the examples below to determine which class the point falls in.

Items 26, 27, 28.

1. If photo land-use (Item 25) is coded as barren, then enter the type of barren under the vegetation type and subtype 26A. Leave 26B-D, 27, and 28 blank.
2. If photo land-use (Item 25) is coded as forest land, then Item 26 must be completely filled out. If the forest crown density is less than 85 percent, then entries may be made in Items 27 and/or 28 if these types of vegetation are present.^u
3. If photo land-use (Item 25) is coded as shrubs, record all of Item 25. There may be entries under Trees if areas with less than 10 percent crown density are important or if grasses and forbs are present in sufficient quantity to be recorded.^u
4. If photo land-use (Item 25) is coded as grasslands, cryptogams or forbs, then Items 26 (Trees) and 27 (Shrubs) may be left blank if trees or shrubs are not present in sufficient quantity.^u

^u The quantity of vegetation needed for a required entry must be listed during the pre-planning analysis.

Item 26. Trees

- A. **Vegetation Type and Subtype (2706)** - If photo land-use is Forest Land (20, 30, or 40 series), then a vegetation type and subtype must be entered from the five or six thousand series (Forest Type).

If photo land-use is in the 30-39 group, then Density (B), Average Crown Diameter (C) and Average Height (D) must be recorded on the part of the two-story stand to be featured when the stand is put under intensive management. Recognition of the principle story requires considerable field experience and the interpreter will have to use his own judgment and experience to interpret multi-storied stand. In general, the overstory should be recognized as the dominant feature if it contains 40 percent or more crown density regardless of the density of the understory. (Understory trees are generally destroyed during harvesting operations when the overstory is medium-stocked or better.) Feature the understory in two-storied stands which have a very poorly stocked (5 to 20 percent) overstory.

- B. **Crown Density (6510)** - Record the percent of crown cover on the plot, stand, or SWA. This may be recorded in 1 percent increments. If the area is in nonstocked forest land, record 00. In the case of two-story stands, record the density of the stand to be managed.
- C. **Average Crown Diameter (6009)** - Record the average crown diameter to nearest foot. In two-story or all-age stands, record the crown diameter of the stand to be featured when the stand is put under intensive management.
- D. **Average Height (5799)** - Record the average height of the dominant trees in whole feet of the stand to be featured in management.

Item 27. Shrubs

- A. **Vegetation Type and Subtype (2706)** - Record the dominant shrub type and subtype. If the species group is not listed in the data element dictionary, record the code for other shrubs. If the species cannot be identified, record 4000. If photo land-use is entered as brushland, then there must be an entry on this item.
- B. **Crown Density (6510)** - Record the crown cover of the shrubs. The density may be recorded in 1 increment.

- C. **Average Crown Diameter (3522)** - Record the average crown diameter of subtype listed under "A" to the nearest foot.
- D. **Average Height (5799)** - Record the average height of the dominant shrubs.

Item 28. Grass and Forbs

- A. **Vegetation Type and Subtype (2706)** - Record the predominant type or subtype from the perennial forbs, grass, annual forbs, annual grasses, grasslike, or cryptogams. If photo land-use is recorded as grassland, there must be an entry.
- B. **Crown Density (6510)** - Record the percent of crown cover in the plot, stand, or site write-up area. This may be recorded in 1 percent increments.
- C. **Average Crown Diameter (3522)** - The crown diameter of bunch grasses can be recorded. Many other species have no crown visible. In this case leave the field blank.
- D. **Average Height (3504)** - Record the average height of the predominant vegetative type and subtype recorded in "A" above. This may be recorded in tenths of feet. The tallest may be 9.9 feet.

Item 29. Landform (5132) - This is a description of a physical feature on the earth's surface which would best describe the location of the stand or site write-up area. (See Form 4412-30a)

Item 30. Aspect - Azimuth (3515) - Record the azimuth to the nearest degree. On a stand or site write-up area, the aspect is along a line through the stand center on the longest axis of the slope.

Item 31. Slope Percentage (3874) - The slope estimation is based upon a line through the stand or site write-up area center on the longest axis of the SLOPE.

If the stand is located at a slope break, an average slope estimation is determined for the two slopes.

Slope percentages are obtained from computing the distance and elevational rise as indicated in large scale topographic maps, or by the use of a parallax wedge on aerial photos.

Item 32. Physiographic Class (5747) - This is the position on the landscape which the majority of stand or site write-up area occupies.

Item 33. Elevation (0431) - Record the average elevation of the stand or point from the contour lines on USGS topographic maps. Use a three-digit code indicating elevation to the nearest 100 feet. Example: Stand falls on 5340 contour - Record 053. Enter for all stands.

Item 34. Past Treatment (5834) - Record the most recent event on the stand or sample point. This data may be recorded from photos, timber or range atlas, or fire maps.

Item 35. Restrictions (6106 and 6107) - Record for all land classes. Land-use restrictions must be compiled from two sources by the Districts: (1) administrative restrictions currently in effect and, (2) multiple use restrictions as determined by following the processes described in BLM Manual Section 1605, Unit Resource Analysis, and 1608, Management Framework Plans. Cutoff date for restrictions is December 31 of the year immediately preceding the commencement of the photo interpretation phase of the inventory.

Land-use restrictions are coded as a two-digit code, the first digit representing the type of restriction (6106), and the second digit the amount of restriction (6107). If there are no restrictions, leave columns blank.

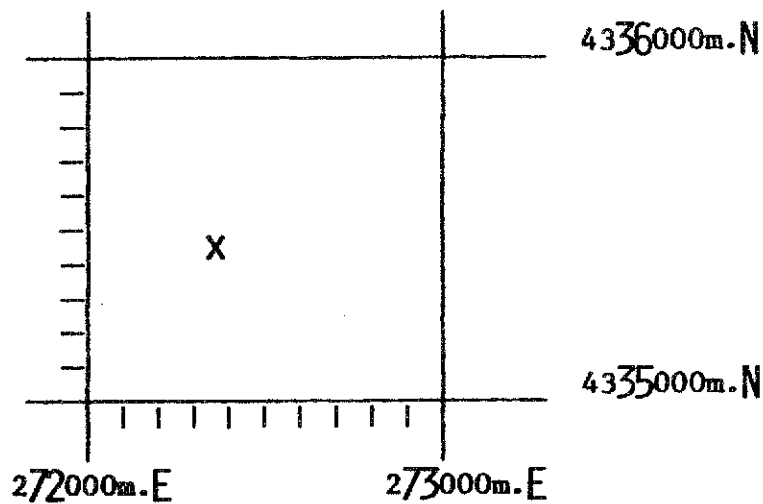
Item 36. (Reserved)

Item 37. Soil Unit (4683) - Record the four-digit code representing the soil series (see BLM Manual Section 7312.13E on how to develop codes). All codes must be cleared through the Service Center Director (D-460).

Item 38. SWA or Stand Acres (6520) - Record the acreage of all stands to the nearest acre. Stands or site write-up area as small as a 1 acre may be recorded.

Item 39. Universal Transverse Mercator (UTM) Coordinate (7515) - Record the point location or center of the stand or site write-up area to the nearest 10 meters. The designation of a point always follow the rule, read **RIGHT** and **UP**.

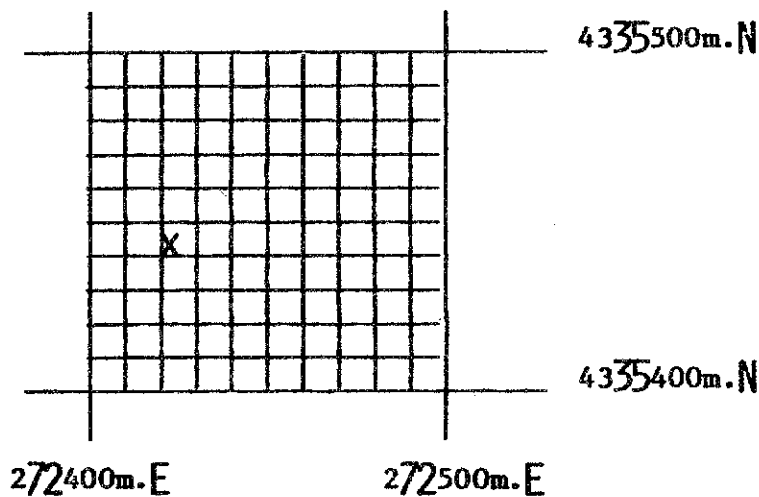
Example:



Point X is located in the grid square 272,400m.E. and 4,335,500m.N. Location is to the nearest 100 meters.

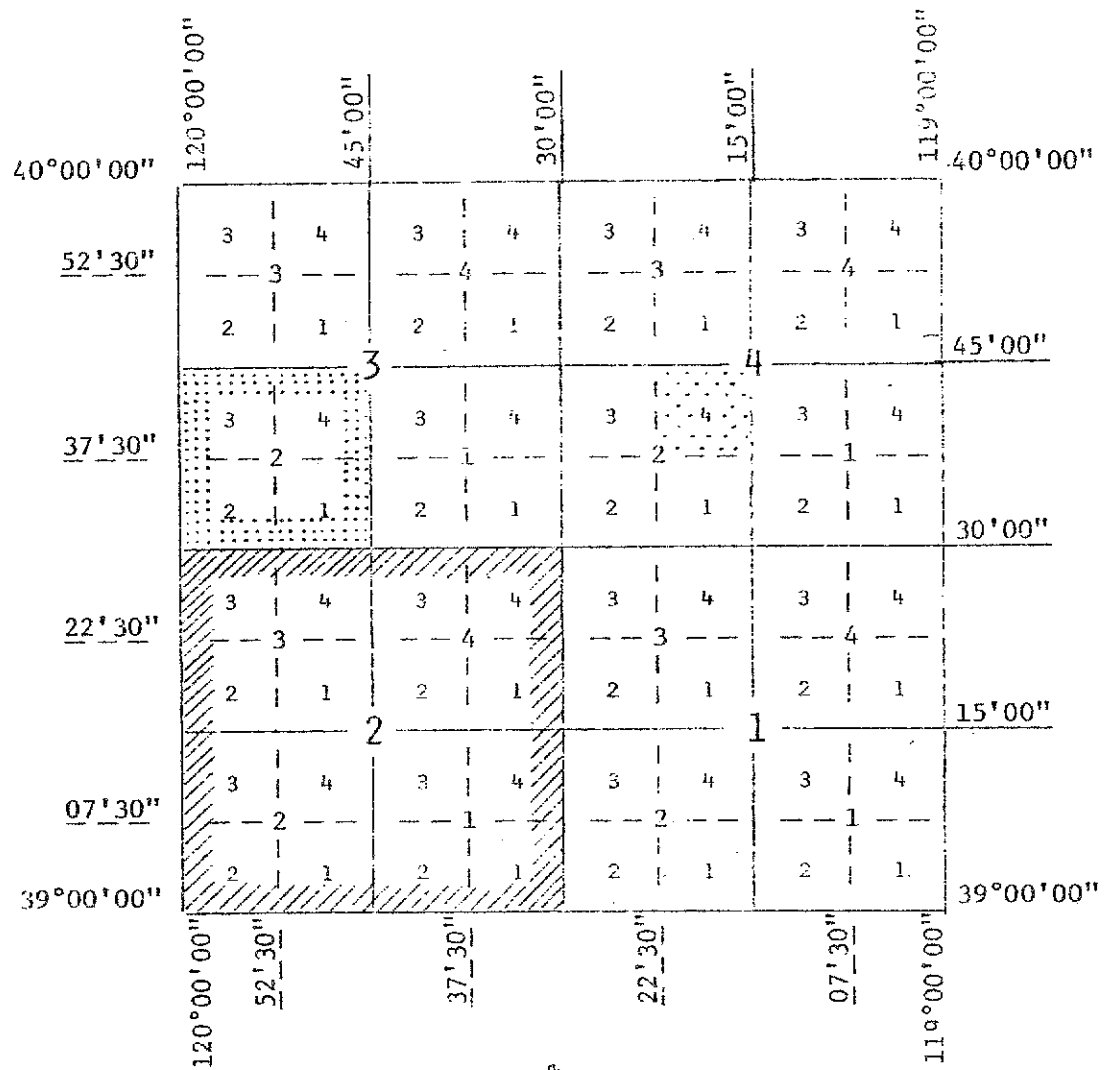
To get to the nearest 10 meters, the 10-meter square is further subdivided and point X is located 272,430m.E. and 433,554m.M. This would be recorded on the form as 272,430 under Item 39A Easterly and 4,335,540 unit item 39B Northerly.

Enlargement of 100-meter grid square:



Item 40. **Map Quad Code (5718)** - The modified Texas Code Index Number is assigned by utilizing the whole degree designation of first the latitude and then the longitude of the southeast corner of the 1-degree area in which any map may lie. The 1-degree quadrangle is then sectioned into four 30-minute quadrangles that are numbered in a clockwise fashion, from 1 to 4, beginning with the southeast quadrant. The 30-minute quadrangles are then quartered to form four 15-minutes which are likewise numbered in a clockwise fashion, beginning in the southeast quadrant. Lastly, the 15-minute quadrangles are then divided into 7-1/2-minute quadrangles, designated in the same clockwise fashion beginning with number 1 for the southeast quadrangle. A 1-degree quadrangle is thus subdivided into 64 parts which are easily and quickly identified by assigning the numbers as described 40A. Thus, for the 1-degree quadrangle whose southeast corner lies at latitude 39°00'00" and longitude 119°00'00", the first five digits of the Code Number (A) would be 39119. After recording the latitude and longitude coordinates as the first five digits of a Code Index Number, the number designating the 30-minute, 15-minute, and 7-1/2-minute quadrangle in which a particular map is located is then shown. For maps covering a 15-minute quadrangle, a 0 (zero) is assigned to the last digit (representing the 7-1/2-minute quadrangle designation). Likewise, if a map covers a 30-minute quadrangle, two 0's (zeros) are assigned (one each for the 15-minute and 7-1/2-minute quadrangles thereby identified).

Referring to Figure 1 and carefully reading this explanation will enable the reader to understand and use the Modified Texas Code Index Number for any standard topographic map.



1-degree quadrangle
39119-000

30-minute quadrangle
39119-200

15-minute quadrangle
39119-320

7 1/2-minute quadrangle
39119-424

All quadrant designations include the latitude and longitude coordinates of the southeast corner of the 1-degree quadrangle.

Map Type (5721) - Enter a one character code for the type of map.

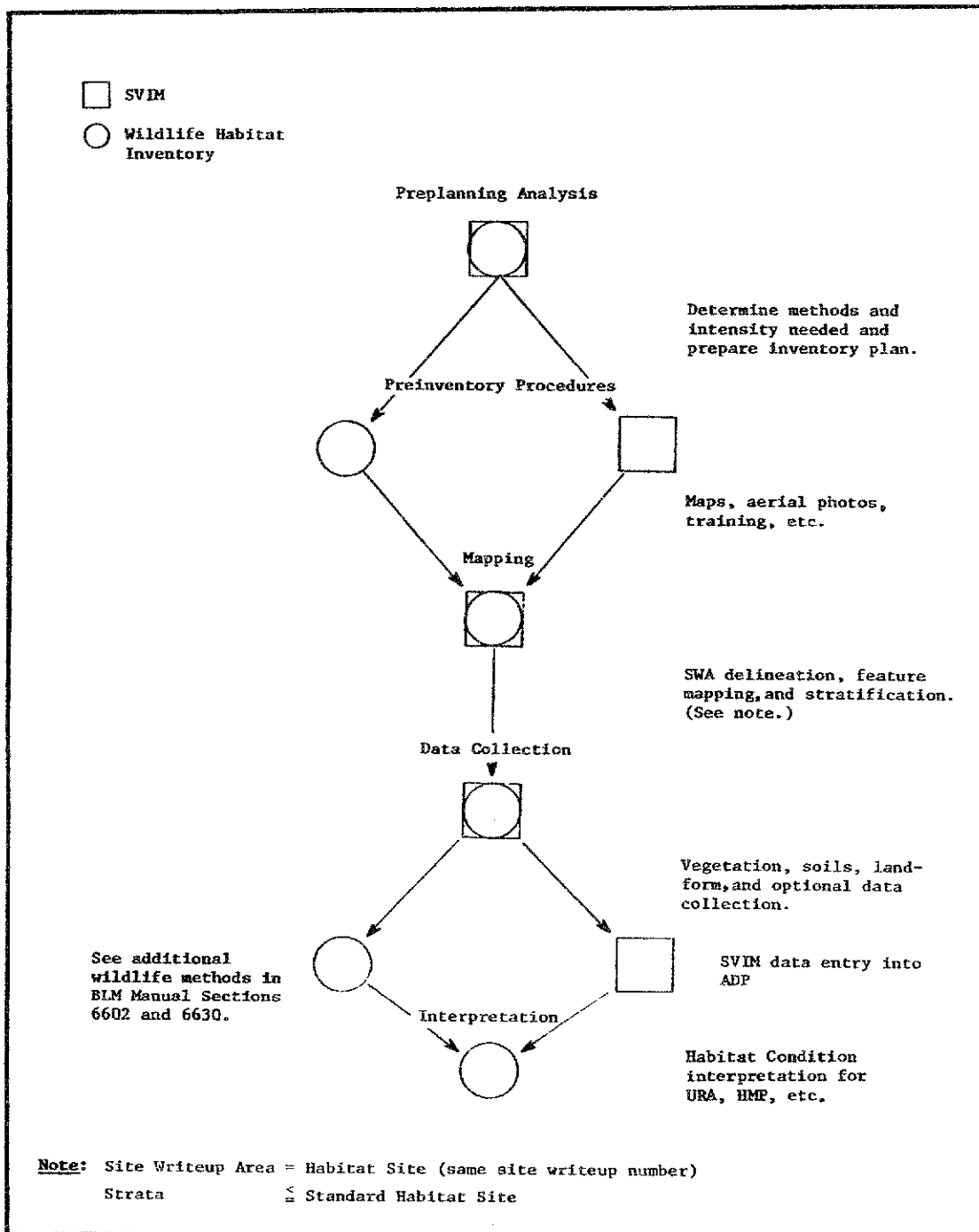
CODE

- O ORTHOPHOTO MAP** is a corrected areal photograph which may have physical or topographic features drafted on.
- P PLANIMETRIC MAP** is a map that presents the horizontal positions only for the natural or cultural features represented. (American Geological Institute.)
- Q ORTHOPHOTO QUAD** is a photo map without contours or other features drafted on the map.
- T TOPOGRAPHIC MAP** is a representation on paper that is designed to portray certain selected features of a section of the earth's surface plotted on some form of projection and to a certain scale, that primarily depicts the relief of the county mapped but shows also its drainage and cultural features, and that delineates all features in true latitude and longitude and then fixes all parts in a rigidly correct relative position (Beaman).

Item 41. Owner Code (5895) - Enter the three-digit code for the owner of the land.

Item 42. (Reserved)

Relationship Between Soil-Vegetation Inventory
Method and Wildlife Habitat Inventory



Wildlife-Recreation Observation Report

FORM 4412-39
(July 1979)

WILDLIFE-RECREATION OBSERVATION REPORT

ALLOTMENT NO. 4011
SWA NUMBER A-010
DATE 79-06-12
TIME 10:00 AMRECORDER JFK
AERIAL PHOTO NO. ARS-1-97
VEGETATION SUB-TYPE 0441

WILDLIFE OBSERVATION

SPECIES	USE	COMMENTS
MULE DEER COYOTE	FEEDING STALKING DEER	OBSERVED 13 HEAD

RECREATION OBSERVATION

TYPE	USE	COMMENTS
ORV HUNTING	MOTORCYCLE TRAILS SMALL GAME	CONCENTRATED USE ON TWO HILLS SOME RESOURCE DAMAGE TWO RABBIT HUNTERS WITH DOG

CULTURAL OBSERVATION

TYPE	USE	COMMENTS
INDIAN RUINS	ONE DWELLING ONE FIRE PIT	REMAINS OF ROCK DWELLING. ONE WALL ALMOST INTACT. FIRE PIT VERY DISTINCT BLACKENED SOIL

Animal Species Occurrence

Form 5502-1
(January 1952)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTANIMAL SPECIES OCCURRENCE
(Integrated Habitat Inventory and Classification System)

Page 1 of 1

(1) Record Type	W	1
(2) Format Code (1, 2, or 3)	1	
(3) BLM Admin Unit (ST/DI/RA/PII)	N	M 0 3 7 8 0 5
(4) Standard Habitat Site Code	N	M 0 0 4
(5) SWA Number	J	0 2 1
(6) Action Code (A, C, or I)	A	

Recorded by **JOHN DOE** Date **79/03/01**

Site Name **MIXED SHRUB MOUNTAIN**

SECTION I. HABITAT SITE (SWA) DATA		HABITAT CLASSIFICATION/ CROSS REFERENCES	
(7) Year Inventory	Began 19 77 Completed 19 78	(11) Structural Height M8	(12) Acres 2577
(8) Dominant Bpp	QUIL2	(13) Slope 50	(14) Aspect W
(9) Sub-Dominant Bpp	SEMD2	(15) Elevation 60	(16) Special Habitat Features In Habitat Site (SWA) (5 Maximum)
(10) Landform	MIN	(17) Physiographic Region 07	(18) Subphysiographic Region 023
		(19) Assoc. 023	(20) Biome 0
		(21) USFS Ecoregion 3211	(22) Standard Hab Type ---

SECTION II. ANIMAL OCCURRENCE DATA										COMMENTS (Limit 40 characters) (31)	
ANIMAL SPECIES		USE		CRUCIAL		METHOD		OCCURRENCE			
CODING NAME	CODE (23)	GEN. (26)	SPECIFIC (27)	WT	BP	SU	FA	WT	BP	SU	FA
DESERT SHREW	M8R	M	YLEA	YLEA							
HOARY BAT	LACI	M	SSMA	SSRO							
TX ANT. GRN. SQ	AMIN	M	SSBR	SSDE							
			FAMA	FAMA							
			WIMA	WIMI							
MULE DEER	DBNE	M	YLEA	YLEA	C						
GOULDED WINGED GRB	H		YLEA	YLEA							
E. FENCE LIZARD	SCUN	H	YLEA	YLEA							
TURKEY VULTURE	CRAN	B	SSBR	SSNE							
			PANF	PASM							
COOPER'S HAWK	ACCP	R	YLEA	YLEA							

(Instructions on reverse)

ANIMAL SPECIES OCCURRENCE
(Integrated Habitat Inventory and Classification System)

Page <u>1</u> of <u>1</u>		Date <u>79/03/01</u>
(1) Record Type	W	1
(2) Format Code (1, 2, or 3)	2	
(3) BLM Admin Unit (ST/DI/RA/PU)	N	M 0 3 7 8 0 5
(4) Standard Habitat Site Code	N	M 0 0 4
(5) SWA Number	J	0 2 4
(6) Action Code (A, C, or I)	A	
Recorded by	JOHN DOE	

SIS Name	Recorded by	SECTION I. HABITAT SITE (SWA) DATA		HABITAT CLASSIFICATION/ CROSS REFERENCES		
		HABITAT SITE IDENTIFICATION	SWA CHARACTERISTICS			
MIXED SHRUB MOUNTAIN	JOHN DOE	(7) Year Inventory	Begin 19 <u>78</u> Completed 19 <u>79</u>	(11) Structural Height <u>M 8</u>	(12) Acres <u>5517</u>	(17) Physiographic region <u>07</u>
		HABITAT SITE NAME		(13) Slope <u>30</u>	(14) Aspect <u>W</u>	(18) Subphysiographic Region
		(8) Dominant Spp <u>QUIT2</u>		(15) Elevation <u>60</u>		(19) Assoc. <u>023</u> (20) Biome <u>D</u>
		(9) Sub-Dominant Spp <u>CEM02</u>		(16) Spectral Habitat Features In Habitat Site (SWA) (5 Maximum)		(21) USFS Ecoregion <u>32LL</u>
				<u>835 A13</u>		(22) Standard Hab Type

[illegible]

INSTRUCTIONS ON REVERSE

Special Habitat Feature

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SPECIAL HABITAT FEATURE

(1) Record site	W	2
(2) State	C	O
(3) District	O	4
(4) Planning unit	O	1
(5) Site writeup number	B	127

SECTION I - GENERAL

(6) Date 7-7-64 (7) Habitat site name P.F.P.O. - D.O.G.R.R. - B.T.T. (8) Acreage 0.015
(9) Special habitat feature code A.0.5 (10) Location: T.8.4.W. R.1.3.5 - 0.3.2.4.N.E. 1/4 (11) Relationship to other habitat sites N
(12) Other habitat sites involved B.2.1.6.R.2.1.5 B.2.1.8
(13) Map inventory reference 1.0.1.9.3.F.1.6.0.3 1.0.4.1.2.7.4
(14) General description of feature B.U.T.T.1.5.0.4.5.0.0.F.T.9.0.F.I.H.L.S.H.C.1.M.E.S.I.O.N

SECTION II - ANIMAL SPECIES BENEFITED

SPECIES
(a)

USE ENCOURAGED BY FEATURE
GENERAL

SPECIFIC

(b)

(c)

(d)

(e)

(f)

(g)

(h)

(i)

(j)

(k)

(l)

(m)

(n)

(o)

(p)

(q)

(r)

(s)

(t)

(u)

(v)

(w)

(x)

(y)

(z)

(aa)

(ab)

(ac)

(ad)

(ae)

(af)

(ag)

(ah)

(ai)

(aj)

(ak)

(al)

(am)

(an)

(ao)

(ap)

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(bv)

(bw)

(bx)

(by)

(bz)

(ca)

(cb)

(cc)

(cd)

(ce)

(cf)

(cg)

(ch)

(ci)

Special Habitat Feature

GENERAL INSTRUCTIONS

1. Wildlife biologist completes *all* entries while in the field.
2. Consolidate all completed forms (6602-1, 1a, and 2) and file in appropriate District Office along with other related information or completed formats.

SPECIFIC INSTRUCTIONS
(Items not listed are self-explanatory.)

- Items**
(2), (3), (4) Enter standard two-digit codes from BLM Manual Section 1265.
- (5) *Site Writeup Number* - Enter first letter of the last name of recorder and three numbers indicating, consecutively, the number of habitat sites in the planning unit.
- (6) *Date* - Enter date inventory is conducted; record as year, month, day.
- (7) *Habitat Site Name* - Enter code for habitat site affected by special feature, consisting of abbreviation for dominant and subdominant plant species (*six spaces each*), and three-letter land form code. Refer to BLM Manual Section 4411 for plant symbols and BLM Manual Section 6602 for land form codes.
- (9) *Special Habitat Feature Code* - Enter code from the following list:
- A. Natural Special Features**
- A01 - Avalanche-Slide Area
 - A02 - Cave
 - A03 - Cave, Ice
 - A04 - Cave, Lava
 - A05 - Cliff
 - A06 - Cone, Volcanic
 - A07 - Dike, Volcanic
 - A08 - Dune, Sand
 - A09 - Insect Mounds
 - A10 - Overhang
 - A11 - Salting Area
 - A12 - Seep
 - A13 - Cold Springs
 - A14 - Sink Hole
 - A15 - Snag or Group of Snags
 - A16 - Talus, Slope
 - A17 - Talus, Field
 - A18 - Willow, Elk
 - A19 - Waterfall
 - A20 - Waste Land
 - A21 - Island (*too small for habitat type*)
 - A22 - Log Jam
 - A23 - Down Timber
 - A24 - Bluff
 - A25 - Beaver Dam
 - A26 - Minkrat House
 - A27 - Cataracts (*stream*)
 - A28 - Barren Lands
 - A29 - Hot Springs
 - A30 - Blowouts
 - A31 - Mudflow
 - A32 - Temporary Pond
 - A33 - Small Natural Ponds
 - A34 - A99 (*Reserved*)
- B. Man-Made Special Features**
- B01 - Bridge
 - B02 - Fence
 - B03 - Underpass
 - B04 - Salting Area
 - B05 - Goose Nesting Platforms
 - B06 - Artificial Nesting Boxes
 - B07 - Small Seedings
 - B08 - Buffer Strip
 - B09 - Building
 - B10 - Bird Ramp
 - B11 - Berm
 - B12 - Culvert
 - B13 - Dock
 - B14 - Dredged Area
 - B15 - Enclosure, Study Area

- Items**
- B16 - Fish Migration Barrier (*Man-Caused*)
 - B17 - Gauging Station, Water
 - B18 - Mining Activity
 - B19 - Poles (*Electrical and Telephone*)
 - B20 - Perches
 - B21 - Road
 - B22 - Trail
 - B23 - Stream Improvement Structure
 - B24 - Railroad
 - B25 - Stream Crossing
 - B26 - Shelter (*Overnight*)
 - B27 - Recreation Area
 - B28 - Feeding Station
 - B29 - Fire Break
 - B30 - Seismographic Trail
 - B31 - Oil Sump Pit
 - B32 - Windmill
 - B33 - Irrigation Diversion and Ditch
 - B34 - Water Gap
 - B35 - Stock Water Tanks and Ponds
 - B36 - Corral and Loading Chute
 - B37 - Artificial Wildlife Waters
 - B38 - B99 (*Reserved*)

(10)-(14) (See BLM Manual Section 6602.)

Columns(a), (d), (g) *Species* - Enter code, consisting of first two letters of generic and species names.

(b), (c), (e), (f) Use the following two-letter season-of-use codes to precede the codes for general and specific use:

SP Spring	SF Summer/Fall
SU Summer	FW Fall/Winter
FA Fall	WS Winter/Spring
WI Winter	YL Year-Long
SS Spring/Summer	

(b), (c) *General Use* - Enter four-letter codes, recording the first two letters for season of use, then the last two from the following:

BD Breeding (*mainly courtship, e.g., booming, strutting, rutting, etc.*)

BY Bearing Young (*nesting, egg laying, and hatching; denning, lawning, and calving, etc.*)

RY Rearing Young (*post-fledging care, postnatal care, etc.*)

BR Breeding and Bearing Young

BR Bearing and Rearing Young

BA Breeding, Bearing Young, and Rearing Young

MI Migration

WM Winter Maintenance

EC Entire Annual Cycle

(c), (f) *Specific Use* - Enter four-letter codes, recording the first two letters for season of use, then the last two from the following:

FE Feeding Area	NE Nest Site (<i>known</i>)
WA Watering Area	AN Active Nest
EC Escape Cove	SA Salting Area
RE Resting Area	RO Roost Area
ST Staking Area for Migration	
BC Basking or Strutting Ground (<i>Traditional</i>)	
ME Migration Route (<i>Traditional</i>)	
CA Calving or Fawning Area (<i>Traditional</i>)	

(h) *Effect* - For endangered or threatened plants *only*. Enter "E" if plant species is encouraged, and "D" if discouraged.

Site Writeup Area Acres
(By Legal Description)

Form 4412-23
(June 1979)

Page _____ of _____

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SOIL-VEGETATION INVENTORY METHOD

RECORD TYPE	(1)	V A
FORMAT CODE	(2)	B
BLM ADMIN UNIT (SI/DI/RA/PO)	(3)	<u>U</u> : <u>7</u> : <u>0</u> : <u>2</u> : <u>4</u> : <u>8</u> : <u>0</u> : <u>2</u> :
ALLOTMENT	(4)	<u>4</u> : <u>0</u> : <u>1</u> : <u>1</u> :
PASTURE	(5)	<u>0</u> : <u>1</u> :
DATE (YYMMDD)	(6)	<u>7</u> : <u>9</u> : <u>0</u> : <u>4</u> : <u>1</u> : <u>5</u> :
ACTION CODE (A,B)	(7)	<u>A</u> :

SITE WRITEUP AREA ACRES
(By Legal Description)

(8)	(9)
MAP SOURCE	MERIDIAN
OR	26

[illegible]

ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890

Site Writeup Area Acres
(By Legal Description)

GENERAL INSTRUCTIONS FOR VA

- (1) DE 3529 RECORD TYPE - Preprinted on form.
 (2) DE 3579 FORMAT CODE - Preprinted on form.
 (3) DE 0003 BLN ADMINISTRATIVE UNIT - Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.
 (4) DE 6618 DATE - Enter date of data collection (Yr, Mo, Day).
 (5) DE 7350 ACTION CODE - Enter "A" to add new data; "D" to delete existing data.
 (6) DE 3540 MAP SOURCE - Enter the map type used for computing acreage figures as follows:
 MTP - MTP Plats
 SP - Survey Plats
 GS - USGS Quad Sheet
 PM - Planimetric Map
 OR - Ortho Photo Quad
 MISC - Other map type (Specify on front of form)
 (7) DE 1703 MERIDIAN - Enter principle meridian code as follows:
 14 - Gila-Salt River ----- Arizona
 22 - Navajo
 15 - Humboldt ----- California
 21 - Mt. Diablo
 27 - San Bernardino
 06 - 6th Principle ----- Colorado
 23 - New Mexico PM
 31 - Ute
 08 - Boise ----- Idaho
 20 - Montana PM ----- Montana
 21 - Mt. Diablo ----- Nevada
 23 - New Mexico PM ----- New Mexico
 33 - Willamette ----- Oregon/Washington
 26 - Salt Lake ----- Utah
 30 - Uintah
 06 - 6th Principle ----- Wyoming
 34 - Wind River
 NOTE: For other states see DE Dictionary.
 (8) DE 1695 TOWNSHIP - Enter township description (NOM, FD) where
 NNN = town number
 F = fraction (1 - 1/4, 2 - 1/2, 3 - 3/4)
 D = direction (N - north, S - south)
 (9) DE 1699 RANGE - Enter range description (NOM, FD) as above except
 D = direction (E - east, W - west)
 (10) DE 2506 SECTION - Enter section number.
 (11) DE 3507 SITE WRITEUP AREA - Enter SMA number.
 (12) DE 2504 ALIQUOT PART - Place an "X" under all nominal 40-acre aliquot parts in which the SMA is located. A single 40-acre subdivision of a section may contain parts of more than one SMA.

- (13) DE 6520 ACRES - Enter ownership acres for this line item entry.
 (14) DE 2531 SURFACE OWNER - Enter ownership code as follows:
 FA - Federal-Acquired
 FP - Federal-Public
 NC - Non-Federal County
 NP - Non-Federal Private
 NQ - Non-Federal Quasi-Government
 NS - Non-Federal State
 NT - Non-Federal Towns
 P___ - Non-Federal Private, assign by planning unit where "___" is a sequential no. assigned to an individual.
 (15) DE 2572 JURISDICTION -
 (16) DE 2570 ADMINISTRATION - Enter Jurisdiction and Administration codes as follows:
 AF - U.S. Air Force
 ARMY - U.S. Army
 BIA - Bureau of Indian Affairs
 BLM - Bureau of Land Management
 BOM - Bureau of Mines
 BPA - Bonneville Power Administration
 BSPM - Bureau of Sports Fish & Wildlife
 COE - Corps of Engineers
 DOD - Dept of Defense
 DOE - Dept of Energy
 FS - Forest Service
 FWS - Fish & Wildlife Service
 GS - Geological Survey
 MC - Marine Corps
 NAVY - U.S. Navy
 NPS - National Park Service
 NOTE: For other agency codes, refer to DE 2576 in dictionary.
 (17) DE 3801 TYPE LAND - Enter one of the following codes:
 PL3 - Public Lands-Section 3
 PL5 - Public Lands-Section 15
 PL3R - Public Lands-Section 3, reserved
 PL5R - Public Lands-Section 15, reserved
 LU3 - Land Utilization-Section 3
 LU5 - Land Utilization-Section 15
 O&C - Oregon and California Grant Lands
 CBMR - Coos Bay Wagon Roads
 PA - Pierce Act
 MISC - Miscellaneous Lands

Forage Requirement Data

Form 4412-31
(June 1979)U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SOIL-VEGETATION INVENTORY METHODRECORD TYPE (1) V F
FORMAT CODE (2) D
BLM ADMINISTRATIVE STATE . . (3) 41
BLM DISTRICT (4) 22
DATE (YYMMDD) (5) 790615
ACTION CODE (A,D) (6) A

FORAGE REQUIREMENT DATA

(7) ANIMAL SPECIES		(8) MONTHLY FORAGE REQUIREMENT (lbs)	(9) HEIGHT CLASS AVAILABLE TO ANIMAL (Circle one)			
NAME	CODE		0'-3'	3'-4.5'	4.5'-7'	7' PLUS
Antelope	AN	<u>160</u>	1	<u>2</u>	3	4
Bison, American	BA	_____	1	2	3	4
Burros	BU	_____	1	2	3	4
Cattle	CA	<u>850</u>	1	<u>2</u>	3	4
Caribou	CR	_____	1	2	3	4
Deer, Black-tailed	DB	_____	1	2	3	4
Deer, Mule	DM	<u>200</u>	1	<u>2</u>	3	4
Deer, Whitetail	DW	<u>160</u>	1	<u>2</u>	3	4
Deer, Sitka	DS	_____	1	2	3	4
Elk, Rocky Mt.	ER	<u>668</u>	1	<u>2</u>	3	4
Elk, Roosevelt	EO	_____	1	2	3	4
Elk, Tule	ET	_____	1	2	3	4
Goats	GO	_____	1	2	3	4
Goats, Mountain	GM	_____	1	2	3	4
Horses	HO	<u>1000</u>	1	<u>2</u>	3	4
Ibex	IB	_____	1	2	3	4
Javelina	JA	_____	1	2	3	4
Moose	MO	_____	1	2	3	4
Sheep	SH	<u>150</u>	<u>1</u>	2	3	4
Sheep, Barbary	SB	_____	1	2	3	4
Sheep, California Bighorn	SC	_____	1	2	3	4
Sheep, Dall	SD	_____	1	2	3	4
Sheep, Desert Bighorn	SE	_____	1	2	3	4
Sheep, Peninsula Bighorn	SP	_____	1	2	3	4
Sheep, Rocky Mt. Bighorn	SR	_____	1	2	3	4
_____	_____	_____	1	2	3	4

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0

Forage Requirement Data

I N S T R U C T I O N S F O R R E C O R D T Y P E V F

DATA ITEM ELEMENT	INSTRUCTIONS
(1) DE 3529	RECORD TYPE: Preprinted on form.
(2) DE 3579	FORMAT CODE: Preprinted on form.
(3) DE 0003	BLM ADMINISTRATIVE STATE: Enter Administrative State Code (alpha).
(4) DE 0003	BLM DISTRICT: Enter BLM District code.
(5) DE 6618	DATE: Enter date of data collection (Yr,Mo,Day).
(6) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.
(7) DE 3929	ANIMAL SPECIES: The code for each animal is preprinted on form. No entry is required.
(8) DE 3551	MONTHLY FORAGE REQUIREMENT: Enter the monthly forage requirement in pounds dry matter for an average month for each animal occurring on the District.
(9) DE 3548	HEIGHT CLASS AVAILABLE TO ANIMAL: Circle the height code representing the highest forage available to the grazing animal.

Livestock Use Data

[illegible]

Livestock Use Data

INSTRUCTIONS FOR RECORD TYPE VL	
DATA ITEM ELEMENT	INSTRUCTIONS
(1) DE 3529	RECORD TYPE: Preprinted on form.
(2) DE 3579	FORMAT CODE: Preprinted on form.
(3) DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.
(4) DE 6618	DATE: Enter date of data collection (Yr,Mo,Day).
(5) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.
(6) DE 0968	ALLOTMENT: Enter designated RMAS four-character number.
(7) DE 3905	PASTURE: Enter pasture number; blank if none. (Must be unique within allotment.)
(8) DE 3929	ANIMAL SPECIES: Enter code for each authorized animal which occurs on the allotment. Code as follows: BA - Bison, American BU - Burros CA - Cattle GO - Goats HO - Horses SH - Sheep
(9) DE 3926	AUTHORIZED NUMBER OF LIVESTOCK: Enter authorized numbers of livestock for all species entered in Item (8).
(10) DE 3845	PERIOD OF USE: Enter periods of use (month and day) for livestock entered in Item (8). If more than one use period occurs during the year, make additional line entries.

Phenology Adjustment Data

[illegible]

Phenology Adjustment Data

INSTRUCTIONS FOR RECORD TYPE VP

DATA ITEM ELEMENT	INSTRUCTIONS
(1) DE 3529	RECORD TYPE: Preprinted on form.
(2) DE 3579	FORMAT CODE: Preprinted on form.
(3) DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.
(4) DE 6618	DATE: Enter date of data collection (Yr,Mo,Day).
(5) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.
(6) DE 2646	PLANT SYMBOL: Enter SCS standard plant symbol.
(7) DE 3545	PHENOLOGY ADJUSTMENT FACTOR: For each species recorded in the planning unit, enter air-dry weight adjustment factors by phenology stage as a percent of maximum production. If no adjustment factor data were collected for certain species, assign factors from species with similar phenological characteristics.

Ecological Site Description

[illegible]

Ecological Site Description

INSTRUCTIONS FOR RECORD TYPE VR		
DATA ITEM ELEMENT	INSTRUCTIONS	
(1) DE 3529	RECORD TYPE: Preprinted on form.	
(2) DE 3579	FORMAT CODE: Preprinted on form.	
(3) DE 0004	BLM ADMINISTRATIVE STATE: Enter Administrative State Code (alpha).	
(4) DE 6618	DATE: Enter date of data collection (Yr,Mo,Day).	
(5) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.	
(6) DE 3528	ECOLOGICAL SITE NUMBER: Enter range or woodland site number according to the following example: D 3 4 A 0 0 1 A N U C where D = Major Land Resource Region 34 = Major Land Resource Area A = Subarea (If no subarea enter "X") 001 = Consecutive Site Number and ANUC = States in which range site is correlated, e.g. Arizona, New Mexico, Utah, and Colorado.	
(7) DE 3914	ECOLOGICAL (Range) SITE NAME: Enter first eight digits of site name.	
(8) DE 3909	PRECIPITATION ZONE: Enter average annual precipitation low and high for the site.	
(9) DE 4818	SOIL SURFACE FACTOR: Enter SSF for the site. This should be future SSF with management.	
(10) DE 3930	POUNDS OF PRODUCTION PER ACRE: Enter potential production in pounds per acre for the average, favorable, and unfavorable years.	
(11) DE 2646	PLANT SYMBOL: Enter SCS standard plant symbol.	
(12) DE 3535	PERCENT COMPOSITION: Enter percent composition by species as shown on the SCS description or otherwise derived. Enter percents in whole numbers. When a range in percent is specified always enter the higher number (i.e. 20 to 25 %, enter 25 %).	
(13) DE 4649	PHASES OF SOIL SERIES: Enter the phases of soil series from the State Soil Inventory legend.	
(14) DE 4648	SOIL NAME: Enter soil name for the associated phase of soil series. No more than 24 positions may be entered.	

Diet and Use Factors by Animal and Season

Form 4412-35
(June 1979)U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SOIL-VEGETATION INVENTORY METHOD

Page ____ of ____

RECORD TYPE (1) V U
FORMAT CODE (2) D
BLM ADMIN UNIT (ST/DI/RA/PU), (3) 4.T.O.2.4.8.0.2
DATE (YYMMDD) (4) 7.9.06.1.5
ACTION CODE (A,B) (5) ADIET AND USE FACTORS
BY ANIMAL AND SEASON

(6)	(7) ALLOWABLE USE FACTOR (PERCENT OF PLANT UTILIZED)					(8)	(9) (P) PROPER USE FACTOR (10) D DIETARY PREFERENCE VALUE	(circle one)				
PLANT SYMBOL	SPRING	SUMMER	FALL	WINTER	YEARLONG	ANIMAL SPECIES	SPRING	SUMMER	FALL	WINTER	YEARLONG	
ABFRZ	30	50	50	60		CA	0	0	0	0		
AMUT	40	50	50	50		CA	30	20	20	20		
{ ↓						AN	40	40	25	05		
						SH	40	40	25	10		
						Hd	20	15	15	10		
						DM	40	50	30	10		
ALCR	40	50	50	50		CA	50	50	30	10		
{ ↓						AN	5	5	10	10		
						SH	50	50	30	10		
						Hd	50	50	30	10		
						DM	10	5	5	5		

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0

Diet and Use Factors by Animal and Season

INSTRUCTIONS FOR RECORD TYPE VU	
DATA ITEM ELEMENT	INSTRUCTIONS
(1) DE 3529	RECORD TYPE: Preprinted on form.
(2) DE 3579	FORMAT CODE: Preprinted on form.
(3) DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.
(4) DE 6618	DATE: Enter Date of data collection (Yr, Mo, Day).
(5) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.
(6) DE 2646	PLANT SYMBOL: Enter SCS standard plant symbol.
(7) DE 3928	ALLOWABLE USE FACTOR: Enter percent of annual production which can be utilized by season* and still allow the plant to maintain itself.
(8) DE 3929	WILDLIFE ANIMAL SPECIES: Enter the code for the common name of each animal species occurring in the allotment. Code as follows: AN - Antelope BA - Bison, American BU - Burros CA - Cattle CR - Caribou DB - Deer, Black-tailed DM - Deer, Mule DW - Deer, Whitetailed DS - Deer, Sitka ER - Elk, Rocky mt. EO - Elk, Roosevelt ET - Elk, Tule GO - Goats GM - Goats, Mountain HO - Horses IB - Ibex JA - Javelina MO - Moose SH - Sheep SB - Sheep, Barbary SC - Sheep, California Bishorn SD - Sheep, Dall SE - Sheep, Desert Bishorn SP - Sheep, Peninsula Bishorn SR - Sheep, Rocky Mt. Bishorn
(9) DE 3511	PROPER USE FACTOR: Circle "P" if proper use factors are being entered. Enter PUF'S by season* for each animal and plant species.
(10) DE 4114	DIETARY PREFERENCE VALUE: Circle "D" if dietary preference values are being entered. Enter dietary percent by season* for each animal and plant species.
* Standard Seasons of Use Dates (based on North American Solstice Dates): Spring 3/21 - 6/20 Summer 6/21 - 9/20 Fall 9/21 - 12/20 Winter 12/21 - 3/20 Yearlong 3/21 - 3/20	

Wildlife Use Data

Form 4412-36
(June 1979)

Page ____ of ____

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SOIL-VEGETATION INVENTORY METHOD

```
RECORD TYPE . . . . . (1)  V W
FORMAT CODE . . . . . (2)  D
BLM ADMIN UNIT (ST/DT/RA/PU). (3)  U:T:0:2:4:8:0:2
DATE (YYMMDD) . . . . . (4)  79:06:15
ACTION CODE (A/D) . . . . . (5)  A
```

WILDLIFE USE DATA

[illegible]

ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890

Wildlife Use Data

INSTRUCTIONS FOR RECORD TYPE VW		
ITEM	DATA ELEMENT	INSTRUCTIONS
(1)	DE 3529	RECORD TYPE: Preprinted on form.
(2)	DE 3579	FORMAT CODE: Preprinted on form.
(3)	DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.
(4)	DE 6618	DATE: Enter date of data collection (Yr,Mo,Day).
(5)	DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.
(6)	DE 6598	HERD UNIT: Enter herd unit number for each wildlife species.
(7)	DE 0968	ALLOTMENT: Enter designated RMAS four-character number.
(8)	DE 3927	PERCENT OF HERD: Enter percent of total herd that uses the allotment.
(9)	DE 3929	WILDLIFE ANIMAL SPECIES: Enter the code for the common name of each animal species occurring in the allotment. Code as follows: AN - Antelope BA - Bison, American BU - Burros (wild) CR - Caribou DB - Deer, Black-tailed DM - Deer, Mule DW - Deer, Whitetailed DS - Deer, Sitka ER - Elk, Rocky mt. EO - Elk, Roosevelt ET - Elk, Tule GM - Goats, Mountain HO - Horses (wild) IB - Ibex JA - Javelina MO - Moose SB - Sheep, Barbary SC - Sheep, California Bighorn SD - Sheep, Dall SE - Sheep, Desert Bighorn SP - Sheep, Peninsula Bighorn SR - Sheep, Rocky Mt. Bighorn
(10)	DE 3926	ESTIMATED NUMBER OF ANIMALS: Enter estimated number of animals that graze within allotment boundaries.
(11)	DE 3845	PERIOD OF USE: Enter periods of use (month and day) for wildlife entered. If more than one period during year, make additional line entries.
(12)	DE 3507	LISTING OF SWA'S USED BY WILDLIFE SPECIES: Enter SWA numbers for all SWA'S the wildlife species uses on the allotment. Enter "9999" if all SWA'S within the allotment are used by the animal.

Suitability For Livestock Grazing

[illegible]

Suitability For Livestock Grazing

INSTRUCTIONS FOR RECORD TYPE VI

DATA ITEM ELEMENT	INSTRUCTIONS
(1) DE 3529	RECORD TYPE: Preprinted on form.
(2) DE 3579	FORMAT CODE: Preprinted on form.
(3) DE 0003	BLM ADMINISTRATIVE UNIT: Enter Administrative State Code (alpha) and the District, Resource Area, and Planning Unit numbers.
(4) DE 0968	ALLOTMENT: Enter designated RMAS four-character number.
(5) DE 3905	PASTURE: Enter pasture numbers; blank if none. (Must be unique within allotment.)
(6) DE 6618	DATE: Enter date of data collection (Yr,Mo,Day).
(7) DE 7350	ACTION CODE: Enter "A" to add new data; "D" to delete existing data.
(8) DE 3507	SITE WRITEUP AREA: Enter SWA number.
(9) DE 3925	PERCENT OF SWA BY SUITABILITY CLASS: Enter percent of SWA by suitability class in one or more of the four classes. The sum must equal 100 %. Definitions are as follows: <p>SUITABLE - entirely suitable for livestock grazing.</p> <p>POTENTIALLY SUITABLE - would be suitable if production is increased, watershed conditions improved, or water developed.</p> <p>LIMITED SUITABILITY - livestock grazing due to seasonal water availability or ephemeral range.</p> <p>UNSUITABLE - totally unsuitable for livestock grazing due to excessive slopes, poor watershed conditions, or low production.</p>