Chapter 2  Guidelines for Grazing Land On-Site Data Collection

2.1 Data Quality

Quality assurance is an integral part of the NRI process. Quality is the first responsibility of each state resource inventory coordinator, state grassland/range management specialist, and data gatherer. State NRI leaders and state grassland/range management specialists must develop and implement a plan for on-site data collection to track progress and provide support to data gatherers.

All personnel involved with the NRI Grazing Land On-Site Data Collection are responsible for promoting the scientific integrity and ensuring the quality of grazing land on-site data. All data gatherers must thoroughly and consistently follow protocols established for data collection. These protocols are established and described in this NRI Handbook of Instructions for Grazing Land On-Site Data Collection.

Key components of the quality assurance process include:

- Workload planning
- Training and Calibration
- Using the Computer Assisted Survey Instrument (CASI) data gathering software
- Assuring that all data gatherers have data collection instructions and know how to get assistance when needed with interpretation of instructions
- Maintaining an open communication network between leaders and data gatherers and the NRI support structure including the NRI Help Desk
- Spot checking data gatherer’s work throughout data collection

2.2 Confidentiality

The National Resources Inventory program is based upon scientific and rigorous sample survey protocols. These protocols include maintaining and protecting the integrity and confidentiality of the data gathering sites. USDA and NRCS policy states that: The geographic locations of data gathering sites used for USDA’s National Resources Inventory are not public information and are to be used only for purposes of official NRI data gathering activities or for such purposes approved by the Secretary.

All NRI leaders, range leaders, and data gatherers (NRCS and contract) are required to sign a Confidentiality Statement prior to starting data collection. NRI data that identify owners, operators, data collection sites, or unreleased data are not to be released to the public.

2.3 Access to Private Lands to Gather Grazing Land Data

NRCS policy and a part of our agreement with Conservation Districts require obtaining landowner/operator permission before going on private property. Access to private lands is an issue in many areas. State NRI and range leaders are to work with local on-site office personnel to obtain ownership information for sample sites and to establish procedures for obtaining permission to visit sample sites to collect grazing land data. The documents in Appendix C were developed to aid in obtaining and documenting landowner permission for data collection. The
following documents are available from the NRI Help Desk and may be modified to address local conditions and customs:

- Landowner Contact Guide
- NRI Grazing Land On-Site Data Collection Access Record
- Sample letter to Landowner/Operator/Land User and FAQs

While collecting grazing land data on private lands, data gatherers are to:

- Work with local on-site office personnel to assure permission is granted before going on private land to collect data.
- Show proper conduct regarding access to private property.
- Take special care to not disrupt soils, vegetation, and animals.
- Minimize activities that could lead to special treatment of a site resulting from owners/operators knowing that the site is part of an inventory.

2.4 Training

Every grazing lands onsite data collection must be conducted by an authorized technical leader, accompanied by one or more crew members. Each of the collectors must be authorized annually before collecting data. Authorization is based on the combination of training and experience as indicated.

2.4.1 Crew Members

A crew member for a grazing lands onsite collection must attend one of the following the same year as the collection:

- Grazing lands onsite training conducted by the National Employee Development Center (NEDC)
- Grazing lands onsite training conducted locally by a national grazing lands trainer
- Grazing lands onsite training conducted by an authorized technical leader

The current year training may be waived if the crew member was also a crew member the previous year and conducted data collections at five or more points.

2.4.2 Technical Leader

The technical leader for any grazing lands onsite collection must:

- Have been previously qualified as a crew member and acted as a crew member for data collections at five or more points, led by an authorized technical leader.
- Have attended the NEDC grazing lands onsite training for the year conducting collection as a technical leader.

The current year training may be waived if the technical leader was also a technical leader the previous year and acted as technical leader for data collections at five or more points.

2.4.3 Training Records

The State resource inventory coordinator or equivalent leader of the State onsite collections must maintain training and collection experience records for all NRI grazing lands onsite collection
personnel. Those training records will be audited periodically by the NRI Program onsite collection national leader and also used annually to plan for the NEDC national training.

2.5 Grazing land On-Site Data Collection Materials

Data collection will be done by teams of at least two gatherers who will go onsite to observe, measure, and record information about the sample point and the surrounding area. The following tools, equipment, and references are required for each data gathering team to collect NRI grazing land data:

**Tools and equipment:**

Field PC with current version of the NRI Grazing Land survey software installed (See NRI Grazing Land website for more information on field PCs and the NRI Grazing Land survey software: [https://grazingland.cssm.iastate.edu](https://grazingland.cssm.iastate.edu)).

- Pen, pencil, and clipboard for a writing surface
- Camera for macro plot shots
- Dry-erase board or blackboard & markers or chalk to use to identify macroplot in photos
- Steel pins, two 150-foot tapes with 0.1-foot gradations, and a compass to mark and orient the two transects, NW-SE and NE-SW.
- Clinometer (or Abney level) for slope reading
- Compass for slope aspect orientation
- Soil auger or sharp shooter shovel for confirming the soil map unit component at macroplot point.
- Wire flag for doing the point intercept method
- Pasture stick, survey rod, or clinometer for height measurements
- Quadrat frames (1.92, 4.8 or 9.6 sq ft) for clipping forage yield samples and doing the dry-weight-rank (DWR) method of estimating species composition
- Grass shears, clippers, and loppers
- Paper sacks or cotton bags for species composition by weight and standing biomass protocols
- Penetrometer or steel rod for soil compaction detection (pasture condition)
- 50- and 300-gram field scales with pinch clip (to grasp forage sample) graduated in gram increments
- 10X magnifying lens for plant identification
- Vegetative grass key, and weed key.
- 5 to 6 survey stakes to temporarily secure tapes onsite
- Soil stability test kit (see Chapter 11)
- Deionized water (any noncarbonated bottled water except mineral water (1 quart per test)
- Stopwatch or chronograph watch (CASI also provides timer)
- Small spray bottle (atomizer or equivalent with very fine mist)
- Data recording instrument
- Computer Assisted Survey Instrument (CASI) or electronic questionnaire (see appendix A)
- 2 stretch tapes (25 ft) or 11.75 foot length of string for woody plots
- Small bottle of 1N or 1M HCl for testing effervescence class (see Chapter 7)
- Metal diameter tape (metric) with millimeter graduations
Other suggested items for emergencies:

- Extra batteries
- Cell phone

References and documents:

- NRI Handbook of Instructions for Grazing Land On-Site Data Collection
- Maps of segment sample site
- Plant guides and appropriate florals
- Information about the segment sample site including:
  - Segment and point site map on aerial imagery background
  - County highway map with plotted sample locations
  - Quadrangle compilation map
  - Soil survey atlas sheet, on-site sheet, or equivalent soil survey map information
  - Ecological site description

2.6 Technical Assistance and Help

Technical assistance and help are available to data gatherers from instructions, Web sites, e-mail, telephone, and voice mail. Selection of the appropriate avenue depends upon the kind and urgency of assistance required.

The first point of help is written instructions for grazing land data collection. NRI leaders are to provide all data gatherers with the complete *NRI Handbook of Instructions for Grazing Land On-Site Data Collection*. Instructions are posted at:

https://grazingland.cssm.iastate.edu

If the question is not resolved, contact the state grazing land/range management specialist or state resource inventory coordinator. This procedure is meant to ensure that State NRI and grazing land/range leaders are the first source of information for data gatherer questions. Leaders will resolve the problem or contact the NRI Help Desk to get assistance.

The NRI Help Desk will consult with appropriate technical staff to obtain answers to questions and provide responses to state specialists and data gatherers. If the data gatherer needs immediate assistance and their leader cannot be reached, they may contact:

NRI Grazing Land Help Desk: (nri-graze-help@iastate.edu) for protocol/CASI issues and questions.

2.7 State Leaders and Data Gatherers Responsibilities

State NRI and grazing land management specialists are responsible for:

- Ensuring that all data gatherers are trained and understand all concepts and instructions in this handbook and those data gatherers can demonstrate proper application of these instructions when collecting grazing land data.
- Providing each data gatherer with instructions, ancillary materials, and references needed to locate segment sample sites and collect data.
• Providing data gatherers equipment to collect or measure grazing land resource conditions.
• Using the materials and services available from the NRI Help Desk to support training and data collection needs.

Individual data gatherers are responsible for mastering and using skills required to collect grazing land data. Each data gatherer must possess the following skills, knowledge, and abilities to collect data:

• Understanding and applying the NRI survey protocols and instructions.
• Using aerial photography, maps, segment ancillary materials to locate sample sites.
• Operating the field computer with CASI to record and communicate grazing land data.
• Using the tools listed above to measure and obtain grazing land data according to survey protocols.
• Communicating with state leaders to provide information and ask questions when needed.