600.1102-NE Developing conservation plans

NRCS assists clients who own or control the land for which conservation plans are being prepared. Conservation planning is productive when clients understand their ecosystem to the degree that their daily decision making is impacted and they reflect this with decisions in the conservation plan.

It is important that clients fully participate in all phases of planning. Much of the understanding they acquire about the nature of their resources, on which they may base many of their decisions, comes during the inventory stage. Clients should know the kinds of plants on their land, how they grow, how they compete with each other, and how they respond to the intensity, frequency, and duration of harvest. Clients should also know how they could manage plants to achieve their objectives. It is essential to work on the land with the decision-maker that is empowered to make the necessary resource management decisions.

600.1103-NE Conservation planning process

(a) Preplanning

1. Gather materials and information needed for the conservation planning process, such as:
   - Maps (aerial, topographic)
   - Soils information (maps and interpretations)
   - Rangeland ecological site descriptions, forest ecological site descriptions, pasture and hayland suitability group descriptions
   - Wildlife habitat evaluation procedures
   - Grazing lands job sheets (similarity index, range trend, range health, pasture health, grazed forest and naturalized pasture health, forage and livestock inventory, grazing management plan, plan narrative)
   - Equipment, such as forage clipping equipment, sharpshooter spade, knife
2. Prepare yourself for the planning effort:
   - Be knowledgeable about the basic ecological principles of pastureland, hayland, rangeland, grazable forest, and naturalized pasture in your work area and be prepared to discuss them in a manner that land managers can understand.
   - Be able to interpret maps; determine range similarity index, range trend, range health, pasture health, grazed forest health, forage value ratings, wildlife habitat evaluations, forage and animal inventories; and prepare grazing management plans and conservation plan narrative.
   - Understand all the grazing land conservation practices applicable to your work area.
   - Understand the husbandry for the livestock enterprises in the area.
3. *Determine as much as possible about clients. This allows you to understand their desires, objectives, and level of knowledge of ecological principles on grazing lands. Secure this information from notes in current conservation plans and visiting with field office personnel who may have worked with the individuals on prior occasions*.
4. Ensure that clients understand the basic knowledge and ecological principles for rangeland, grazed forestland, naturalized pasture, pastureland, hayland, and grazed and hayed cropland. Important items to know and understand are:

- Identification of plants
- How plants grow
- Plant vigor
- Effects of kind, time, and degree of grazing use, lack of fire, and other management decisions on the plant community or the pastureland plant community
- How plants compete with each other in native plant, pastureland, or hayland plant communities
- Ecological site concept (explain the soil, plant relationship)
- Pasture and hayland suitability groups
- Range similarity index
- Range trend
- Range health
- Forest understory reactions to canopy manipulation and grazing management
- Forage value ratings
- Forage production and habitat values of the different range conditions or plant communities that can exist on a range site
- Multiple use opportunities on grazing lands
- How grazing lands are managed with livestock to protect or improve water quality and water yield
- Principles of water use by plants and how grazing management impacts it

(b) Identify the problem

The NRCS objective is to help land managers recognize real problems, not just symptoms. When poor grazing management is a problem, the NRCS conservationist should not tell managers the problem is poor grazing management; instead, the conservationist must lead them to recognize that grazing management is the problem. This can be accomplished by helping them understand their grazing land ecosystems as described in preplanning.

Questionnaire NE-ECS-63[1]

(c) Determine the objectives

Questionnaire NE-ECS-63[1]

(d) Inventory the resources

NRCS employees assist clients in inventorying their grazing lands ecosystems and facilitating practices currently in place, current grazing management schemes, current husbandry practices, livestock performance, wildlife habitat and numbers, etc., to gain complete knowledge of current ecological and performance status.

- Develop forage inventory.
- Develop livestock and wildlife inventory.
- Develop forage and animal needs balance sheet.
- Determine husbandry practices and livestock performance.

To assist with the inventory process, the following forms can be used (or other forms that gather the same type of information):

General:
- *Grazing Lands Assistance Questionnaire (NE-ECS-63)* [1]
- *Steps to Convert Clippings to Pounds per Acre (Technical Note No. 11)*

Forage Inventory (Rangeland):
- *Range Inventory Worksheet (NP-ECS-1* [1]
- *Range Inventory and Similarity Index Summary (NE-CPA-17)* [1]
- *Forage Inventory Based on Current Stocking Rate, Trend, Health and Utilization (NE-ECS-17a)* [1]
- *Worksheet for Determining Similarity Index (NE-ECS-65)* [1]
- *Worksheet for Determining Similarity Index and Stocking Rate (NE-ECS-65a)* [1]
- *Proper Grazing Use (NRCS-RANGE-414)* [1]
- *Forage Inventory (NE-ECS-60) – current*[1]
- *Rangeland Health (NE-ECS-67)* [1]
- *Rangeland Trend (NE-ECS-66)* [1]

Forage Inventory (Pastureland):
- *Pasture Inventory Worksheet (NE ECS-40)* [1]
- *Forage Inventory (NE-ECS-60) – current*[1]

Wildlife Issues:
- *Browse Inventory (NRCS-RANGE-416)* [1]
- *Population survey – contact Nebraska Game and Parks or NRCS Biologist*

Livestock Inventory:
- *Grazing Schedule Worksheet (NE-ECS-64)* [1]
- *Livestock Inventory and Forage Balance Worksheet (NE-ECS-61) – current*[1]

(e) Analyze resource data, formulate alternative solutions, and evaluate alternative solutions

NRCS assists client in analyzing the inventory data so they may recognize resource problems as well as new opportunities. On grazing lands, the alternative solutions must include a forage inventory and a grazing management plan. These should be prepared for the first year of the plan. A future forage inventory and grazing management plan representing predicted responses and future grazing management plans should also be prepared.

To assist with formulating and evaluating the alternatives, the following forms can be used (or other forms that gather the same type of information):

- Livestock Inventory and Forage Balance Worksheet (NE-ECS-61) [1] – current and for each alternative
- Prescribed Grazing Schedule (NE-ECS-62) [1] – current and for each alternative
- Maps identifying the facilitating and accelerating practices – current and for each alternative

(f) Make decisions

After the alternative is selected, it is recorded in a manner that will assist the land manager in application.

Application of the selected alternative is usually a logical sequence and should be reflected in the schedule of application in the plan narrative. The following logic provides ideas for scheduling application.

If livestock are on the operating unit, then prescribed grazing should be scheduled and applied from the beginning. If fencing and water development must be installed before applying the prescribed grazing plan, then they should normally be installed next.

Water developments generally are installed before fences because the specific locations of planned ponds, wells, and pipelines may need to be moved to a new location, which may affect the location of the planned fence. Once the water developments are applied, then the fencing can be installed without worry of whether the pond can be built or the planned well will yield a sufficient water supply.

After the fences and water distribution are installed, the prescribed grazing plan can be initiated. Accelerating practices, such as brush management, range planting, prescribed burning, and critical area treatment, can now be performed as fencing and water development will allow the needed grazing management to be applied. Each operating unit will have its unique set of circumstances that dictate the schedule of application. A major point to remember is that grazing management is the key to the success of all accelerating practices.

Conservation plan prepared

NRCS assists the client in preparing the conservation plan. Client's copy should contain:

- Conservation plan maps, which should delineate as scale of map permits:
  - Operating unit boundary
  - Planned field boundaries, number, and acres
  - Land use of each field
  - Location of present and planned enduring practices
  - Range ecological site delineation
  - Range similarity index
  - Range trend
  - Pasture and hayland species
  - Pasture and hayland suitability groups
  - Forest ecological site delineation
  - Forage value ratings on grazed forest land and naturalized pasture
  - Other pertinent information, such as roads and livestock handling facilities
- Soils map and legend
- All inventory data
- Forage inventory, livestock inventory, and grazing management plan
- Record of treatment alternatives selected and schedule of application

- Fact sheets and/or job sheets

NRCS case file contains
- All information placed in the client's copy
- Directions for location of the land unit(s)
- List of job sheets furnished to the client
- Technical assistance notes
- Record of accomplishments

To assist with formulating and evaluating the alternatives, the following forms can be used (or other forms that gather the same type of information):

- *Forage Inventory (NE-ECS-60)* [1] *– planned*
- *Livestock Inventory and Forage Balance Worksheet (NE-ECS-61)*[1] *– planned*
- *Prescribed Grazing Schedule (NE-ECS-62)* [1] *– planned*
- *Completed map (outlining all planned items)*
- *Documented conservation plan*
- *Required job sheets (all practices planned in conservation plan)*
- *Nutrient and Past Management sheets (Pastureland fields)*
- *Wildlife Assessments*
- *Drought Plan*

(g) Implement plan

NRCS does not establish grazing capacities. Neither does it require an agreed-on stocking rate in conservation plans. NRCS assists land users in making their own decisions concerning the number and kinds of animals that can be safely and profitably grazed.

1. Forage inventory

A forage inventory must be developed that reflects an estimate of forage supply in each management unit (pasture or field) of the operating unit. See chapter 4 of this handbook for guidance in preparing a forage inventory.

2. Animal inventory

An inventory of the domestic animals occupying or planned to occupy the operating unit must be developed. This animal inventory should be separated into the necessary herds to allow the desired husbandry to be practiced. This is generally by kind, breed, class, and age. If a management unit is critical to a particular herd, it should be noted. The number of livestock is shown in each management unit to be grazed by the day, week, month, or season, and a total is used to plan the forage demand in relation to forage production. Management unit and their forage requirements expressed in the same manner as the livestock should also determine herbivorous wildlife numbers. If they are migratory, such as elk, the time they are expected to be in the management unit must be determined. See chapter 4 for guidance on developing a forage inventory.

3. Scheduling grazing

After the forage and animal inventory is completed and other factors affecting the prescribed grazing schedule is determined, the prescribed grazing schedule can be developed. This is accomplished by the client scheduling the livestock movement through the pastures in a manner that will:

- Balance forage requirement with forage supply.
- Meet the growth needs of the plants.
- Meet the forage quality needs of the animals.
- Meet health and husbandry needs of the livestock.
- Meet the needs of the wildlife of concern.
- Meet the needs of all other activities in the management and operating units.
- Meet the client's objectives.

Supplemental feed requirements needed to meet the desired nutritional level for the kind and class of livestock and browsing and grazing wildlife of concern will be specified. See Chapter 6 for guidance on animal nutrition.

The prescribed grazing plan includes a contingency plan that details potential problem; i.e., drought, and a guide for adjusting the grazing prescription to ensure resource management and economic feasibility. The plan should include how the client will recognize the potential problem in the early phases (drought) and a plan of action that will be taken to offset and minimize the deterioration of the resources, livestock, and wildlife and the economics of the operation. See Chapter 5 for guidance in design of the Prescribed Grazing practice.

Facilitating and accelerating practices—Facilitating and accelerating practices all require technical design or specific application instructions. NRCS personnel are responsible for providing this information to the client, and the necessary on-site technical assistance during application to ensure technical adequacy and success.

Documentation of completed practices utilizing job sheets, forms (NE-ECS-60[1], NE-ECS-61[1], NRCS-RANGE-414[1], NE-ECS-62[1], NE-ECS-64[1], etc.), and within the conservation plan.

(h) Evaluation of results

After clients initiate the application of their grazing land management plans, NRCS should provide follow-up assistance. As previously stated, grazing management is an ongoing process. The client may need assistance of NRCS personnel to evaluate results of the applied Prescribed Grazing Schedule. It is a continuous learning process for the client and NRCS personnel who are gaining experience. Grazing management can often is fine-tuned through adaptive management to more efficiently and effectively accomplish objectives. Many times, clients increase their knowledge in grazing management and desire to change to more intensive grazing management schemes. This often requires a plan revision to include more fences, water development, or both, as well as a completely revised Prescribed Grazing Schedule.

The client's objectives often change, or new technology arrives that the client should consider. New resource problems are often recognized as the technical and management knowledge and skills of the client increases.

The initial planning process is just the beginning of the learning and understanding of grazing management for many clients. Experience has shown that most clients will not and cannot successfully apply their plan without follow-up evaluation assistance from trained NRCS personnel. For these reasons, periodic contact needs to be made with the client to ensure the continued success of the conservation plan and to collect response data for future assistance to clients.

Follow-up assistance is critical. Utilize NRCS-RANGE-414[1], NE-ECS-64[1] and NE-ECS-62[1] to evaluate and to make adjustments.

[1] All forms and examples are located in the National Planning Procedure Handbook (NPPH).