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ACES	Agriculture Conservation Experienced Services program for retirees
ARS	USDA-Agricultural Research Service
CEAP	Conservation Effects Assessment Project
CNTSC	NRCS-Central National Technical Support Center, Fort Worth, TX
ENTSC	NRCS-East National Technical Support Center, Greensboro, NC
GEO	USDA Farm Production and Conservation, Geospatial Enterprise Operations Branch (GEO)
NGLT	NRCS-National Grazing Lands Team, Fort Worth, TX
NHQ	NRCS-National Headquarters Staff, Washington, DC
NPDT	National Plant Data Team
NRCS	USDA Natural Resources Conservation Service
SPSD	NRCS-Soil and Plant Science Division
USFS	US Forest Service
WNTSC	NRCS-West National Technical Support Center, Portland, OR

Previous version of the handbook

While many specialists worked on this revision, the former authors listed below are thanked for the foundation they built, the expertise and leadership they shared, and their continued involvement of moving the grazing discipline forward.

This National Range and Pasture Handbook was originally produced by the Natural Resources Conservation Service's Grazing Lands Technology Institute (GLTI), Fort Worth, Texas, Rhett H. Johnson, director. Larry D. Butler, Ph.D., rangeland management specialist, was the primary technical editor and day-to-day project coordinator.

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645.0002 Preface

A. The National Range and Pasture Handbook (NRPH) provides the Natural Resources Conservation Service (NRCS) with technical information, methodologies, and procedures for assisting land managers, farmers, ranchers, organizations, governmental units, and soil and water conservation districts in planning and applying conservation on non-Federal grazing lands across the United States. This handbook was prepared primarily for NRCS, but other users will find the information informative.

B. The NRPH was developed by NRCS grazing lands specialists using their experience, “thunder books,” libraries, literature reviews, land grant university publications, interagency technical notes, current analyses of resource data, partnering agencies’ manuals, and many other scientific publications as a source for technical information. Collaboration among partners include the USDA-Agriculture Research Service, USDI-Bureau of Land Management, U.S. Forest Service, Xerces Society for Invertebrate Conservation, land grant universities, State agencies, consultants, researchers, and many others who help provide the advancement of technology on grazing lands and the grazing discipline. A list of the authors, contributors, and reviewers of this handbook are in section 645.001. The previous authors are thanked for the foundation they built, the expertise and leadership they shared, and their continued involvement in moving the grazing discipline forward. The authors would also like to thank Jerry Bernard, editor, ACES – National Experience Workforce Solutions, for all his work, expertise, and professionalism in editing and formatting this version of this handbook.

C. The purpose of this NRPH is to provide technical updates to concepts, terminology, practices and procedures, ecological principles, and conservation management applications. It replaces the previous NRPH editions (2003, 1997, 1987, 1976, 1942, 1938), which were written predominantly to be applicable only on rangelands and other native grazing lands. In addition to providing guidance for rangelands, this handbook includes more information and guidance on pasturelands, haylands, grazed forests, grazed croplands, and naturalized pastures.

D. Changes to this revision include using scientific citations in the text. A list of references is provided at the end of each subpart, showing the cited literature. This improves transparency on sources of information, credits, and attributes original authors and creators. The references also increase accessibility of finding additional information, document the advancement of research, and build integrity and trust in the information provided in this handbook as a national document for NRCS staff working on grazing lands. This document is available as a free download from the NRCS’s eDirectives Electronic Directives System. Updates to the individual subparts:

- (1) Combine authority, mission, and policy in this Preface.
- (2) Greatly expand and revise many sections, including new subparts on Resource Concerns and Trends on non-Federal Grazing Lands: National Resource Inventory (NRI) Analyses and Implications for Conservation Planning (Subpart C); Prescribed Burning (Subpart J); An Ecosystem View of Range and Pasture Soil Health (Subpart K); and Pollinator Habitat Considerations for Range and Pasturelands (Subpart M).

- (3) Include information on Ecological Sites, Ecological Site Descriptions: Ecological Classification as a Concept and Use in Conservation Planning and Resource Monitoring (Subpart B)
- (4) The concept of forage suitability groups has been replaced with pasture states with specific pasture interpretations as depicted in the ecological site state-and-transition model.
- (5) Add new tools to Grazing Land Economics (Subpart L)
- (6) Add new protocols and methodologies to the Inventory, Assessment, and Monitoring of Grazing Lands (Subpart E)
- (7) Expand the Inventory section in the Wildlife Management on Grazing Lands (Subpart I) to include Wildlife Habitat Evaluation Guide information.

E. This handbook contains information to assist the NRCS conservationist in providing technical assistance to cooperators in all phases of the conservation planning process. Other sources of information and guidance include the National Range and Pasture Manual, the National Planning Procedures Handbook, General Manual, National Instructions, Technical Notes, and other appropriate NRCS technical and policy guidance documents and handbooks.

F. Specifically, this handbook covers the study, inventory, analysis, treatment, and management of grazing lands resources, while the 2021 National Range and Pasture Manual sets forth the NRCS policy for conservation planning on grazing lands at <https://directives.sc.egov.usda.gov/viewerFS.aspx?hid=46772>. The purpose of this new NRPH handbook is to provide guidance to NRCS planners when assisting clients with development of grazing management plans on grazing lands including pasture, rangeland, grazed forest, hayland, and grazed cropland.

G. The appendices in this handbook are to be considered an official part of the handbook. This handbook is found on eDirectives Electronic Directives System in Handbooks, Title 190 – Ecological Sciences at <https://directives.sc.egov.usda.gov>.

645.0003 Authority

A. The Soil Conservation Act, passed by Congress, and signed into law in 1935 by President Franklin D. Roosevelt, declared that “the wastage of soil and moisture resources on farm, grazing, and forest lands...is a menace to the national welfare,” and directed the Secretary of Agriculture to establish the Soil Conservation Service (which became the Natural Resources Conservation Service in 1994) as a permanent agency to extend conservation assistance and technology to landowners.

B. The authority to assist in applying sound conservation on private lands is provided through the authorities charged to the Secretary of Agriculture and delegated to the Under Secretary for Farm Productions and Conservation (as defined in 7 CFR Section 2.16), who in turn, has provided that authority to the NRCS Chief through 7 CFR Section 2.43.

C. The Conservation Technical Assistance Program (CTAP) is the foundation of the Nation’s Federal conservation efforts on private lands, which is implemented in cooperation with NRCS’s partners. CTAP is delivered to decision makers, Tribes, units of governments, and nongovernmental organizations in all 50 States, the District of Columbia, Puerto Rico, U.S. Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, the Republic of Palau, and the Marshall Islands. NRCS, through CTAP, provides conservation technical assistance to individuals, communities, and units of government to improve the long-term sustainability of the natural resource base on cropland, forestland, grazing lands, coastal lands, and developed or developing lands. Conservation technical assistance on Federal lands involving a significant amount of NRCS resources can be provided only through formal agreements (Title 440, Conservation Programs Manual, Part 525, Subpart A, Section 525.1E).

D. The specific authority to provide grazing lands conservation assistance is found in 7 CFR Section 2.16a3 (xiii)(I). Conservation of Private Grazing Lands is authorized by section 1240M of the Food Security Act (16U.S.C. 3839bb). That specific code states: “It is the purpose of this section to authorize the Secretary to provide a coordinated technical, educational, and related assistance program to conserve and enhance private grazing land resources and provide related benefits to all citizens of the United States by–

- (1) establishing a coordinated and cooperative Federal, State, and local grazing conservation program for management of private grazing lands;
- (2) strengthening technical, educational, and related assistance programs that provide assistance to owners and managers of private grazing lands;
- (3) conserving and improving wildlife habitat on private grazing lands;
- (4) conserving and improving fish habitat and aquatic systems through grazing land conservation treatment;
- (5) protecting and improving water quality;
- (6) improving the dependability and consistency of water supplies;
- (7) identifying and managing weed, noxious weed, and brush encroachment problems on private grazing lands; and
- (8) integrating conservation planning and management decisions by owners and managers of private grazing lands on a voluntary basis.”

645.0004 Mission

The mission of NRCS is to improve the health of the Nation’s natural resources, while sustaining and enhancing the productivity of American agriculture. NRCS achieves this by providing voluntary assistance through strong partnerships with private landowners, managers, and communities to conserve, protect, restore, and enhance the lands and waters upon which people and the environment depend. NRCS has specific responsibility to assist owners and operators of grazing lands in planning and applying conservation programs on the privately controlled land in their operating units (Amendment 4, Title 9, Administrative Regulations, May 17, 1954; and Comptroller General’s Opinion B-115665 of October 1, 1953, 33CG:133) (Title 190, National Range and Pasture Handbook, 190-NRPH).

645.0005 Goal

A. There are approximately 600 million acres of non-Federal (privately owned, State and local publicly owned, and tribally owned) grazing lands in the United States. Non-Federal grazing lands occur in every State. These rangelands, pasturelands, haylands, grazed forest lands, grazed croplands, and naturalized pastures constitute about half of the total lands on which the NRCS provides technical assistance.

B. The goal of NRCS grazing lands activities is to provide the management, enhancement, and, where necessary, restoration of privately owned grazing lands throughout the United States through a voluntary technical assistance program that results in multiple environmental, social, and economic benefits. The broad public benefits that will result from well managed grazing lands include:

- (1) Conservation of grazing lands ecosystems
- (2) Prevention of soil erosion
- (3) Maintenance or enhancement of soil health
- (4) Sustained forage and livestock production
- (5) Improved water yield and quality
- (6) Maintaining diverse wildlife habitat

- (7) Maintaining and enhancing species diversity
- (8) Aesthetics and open space
- (9) Quality recreational opportunities

645.0006 Policies

NRCS policy is to maintain high standards of technical quality in all activities related to grazing lands. The National Range and Pasture Manual provides guidance to NRCS planners when assisting clients with developing grazing management plans on grazing lands, including pastureland, rangeland, grazed forestland, hayland, and grazed cropland. The manual describes the policy for technical assistance on grazing lands while this supporting handbook provides the technical information, methodologies, and procedures for conservation planners to carry out policy on grazing lands. See Subpart D, Conservation Planning on Grazing Lands, for additional information. The manual can be downloaded at <https://directives.sc.gov.usda.gov/viewerFS.aspx?hid=46772>.

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