

United States Department of Agriculture

Agricultural Research Service

National Agricultural Library

Special Reference Brief 2006-02

# Environmental Effects of Conservation Practices on Grazing Lands

A Conservation Effects Assessment Project (CEAP) Bibliography



## Environmental Effects of Conservation Practices on Grazing Lands

## A Conservation Effects Assessment Project (CEAP) Bibliography

Special Reference Briefs Series no. SRB 2006-02

Compiled by Rachel A. Maderik Stuart R. Gagnon Joseph R. Makuch

#### Water Quality Information Center National Agricultural Library Agricultural Research Service U.S. Department of Agriculture

1303 citations



#### National Agricultural Library Cataloging Record:

Maderik, Rachel.

Environmental effects of conservation practices on grazing lands : a Conservation Effects Assessment Project (CEAP) bibliography.

(Special reference briefs; NAL-SRB. 2006-02)

1. Pastures--Management--Bibliography. 2. Pasture ecology--Bibliography.

3. Range management--Bibliography. 4. Range ecology--Bibliography.

5. Agriculture--Research--United States--Bibliography.

I. Gagnon, Stuart R. II. Makuch, Joseph R. III. Water Quality Information Center (U.S.) IV. Title.

aZ5071.N3 no. 2006-02

#### Abstract

Environmental Effects of Conservation Practices on Grazing Lands, Special Reference Briefs 2006-02. U.S. Department of Agriculture, National Agricultural Library.

This bibliography is one in a multi-volume set developed by the Water Quality Information Center at the National Agricultural Library in support of the U.S. Department of Agriculture's Conservation Effects Assessment Project (CEAP). This bibliography is a guide to recent scientific literature covering environmental effects of conservation practices on grazing lands. This information is useful in designing both policies and on-the-land conservation systems that foster practical and environmentally sound grazing practices.

Keywords: grazing, conservation practices, environmental management, pastures, rangelands, pasture plants, soil quality, land use, fish, wildlife, biodiversity, plant ecology

Mention of trade names or commercial products in this report is solely for the purpose of providing specific information and does not imply recommendation or endorsement by the U.S. Department of Agriculture. To ensure timely distribution, this report has been reproduced essentially as supplied by the authors. It has received minimal publication editing and design. The authors' views are their own and do not necessarily reflect those of the U.S. Department of Agriculture.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

September 2006

## TABLE OF CONTENTS

Preface	1
Acknowledgments	2
About This Bibliography	3
Pastureland Conservation Practices Soil and Water Effects Fish and Wildlife Effects Plant Ecology, Biodiversity, and Other Environmental Effects	5 47 70
Rangeland Conservation Practices Soil and Water Effects Fish and Wildlife Effects Plant Ecology, Biodiversity, and Other Environmental Effects	133 157 209
Other Relevant Studies Soil and Water Effects Fish and Wildlife Effects Plant Ecology, Biodiversity, and Other Environmental Effects	319 321 329
Subject Index	341
Author Index	375

## Preface

This is one in a series of bibliographies developed by the Water Quality Information Center at the National Agricultural Library in support of the U.S. Department of Agriculture's Conservation Effects Assessment Project (CEAP).

The purpose of CEAP is to study the environmental effects of conservation practices implemented through various U.S. Department of Agriculture conservation programs. A national assessment covers cropland, wetlands, wildlife and grazing lands. Conservation practices that will be assessed include conservation buffers; erosion control; wetlands conservation and restoration; establishment of wildlife habitat; and management of nutrients, irrigation, tillage, pests, and grazing on rangeland and pastureland. More information about this and other components of CEAP is available at www.nrcs.usda.gov/technical/nri/ceap/.

The current titles in this series are

- Environmental Effects of U.S. Department of Agriculture Conservation Programs Special Reference Briefs 2004-01
- Implementing Agricultural Conservation Practices: Barriers and Incentives Special Reference Briefs 2004-02
- Data and Modeling for Environmental Credit Trading Special Reference Briefs 2004-03
- Agricultural Conservation Practices and Related Issues: Reviews of the State of the Art and Research Needs
  Special Reference Briefs 2004-04
- Wetlands in Agricultural Landscapes Special Reference Briefs 2006-01
- Environmental Effects of Conservation Practices on Grazing Lands Special Reference Briefs 2006-02

Each of the documents, as well as bibliographies on similar topics, is accessible online from the Water Quality Information Center at www.nal.usda.gov/wqic/.

#### Acknowledgments

The center gratefully acknowledges these organizations who granted permission to use their citations and abstracts.

- CAB International/CABI Publishing www.cabi-publishing.org
- CSA
- www.csa.com
- Elsevier/Scopus www.scopus.com

- National Information Services Corporation (NISC) www.nisc.com
- Thomson Corporation/Thomson Scientific scientific.thomson.com

The following databases were used to develop this bibliography:

- **AGRICOLA** (National Agricultural Library)
- Aquatic Science and Fisheries Abstracts (CSA)
- **BIOSIS Previews** (Thomson Scientific)
- CAB Abstracts (CABI Publishing)
- Fish and Fisheries Worldwide (NISC)
- Scopus (Elsevier)
- Treesearch (USDA Forest Service)
- Water Resources Abstracts (CSA)
- Wildlife and Ecology Studies Worldwide (NISC)
- Zoological Record (Thomson Scientific)

In addition, support from the Natural Resources Conservation Service (NRCS) for the development of these bibliographies is greatly appreciated. Special thanks to Leonard Jolley, NRCS, for his valuable assistance with this volume. Helpful guidance was also provided by Jim Dobrowolski, Lisa Duriancik, Bruce Menzel, Matt Sanderson, and Mark Weltz.

### About This Bibliography

This bibliography is a guide to recent scientific literature covering environmental effects of conservation practices on grazing lands. This information is useful in designing both policies and on-the-land conservation systems that foster practical and environmentally sound grazing practices.

Most citations are categorized as relating to either pastureland or rangeland. However, due to the limited information available and the difficulty of distinguishing documents covering pastureland from those covering rangeland, assignment to either group is not precise. A third category, "Other Relevant Studies," contains citations that cover both pastureland and rangeland issues or other related topics.

The Society for Range Management<sup>1</sup> defines pastureland as "grazing lands, planted primarily to introduced or domesticated native forage species, which receive periodic renovation and/or cultural treatments such as tillage, fertilization, mowing, weed control and irrigation." Rangeland is "land on which the indigenous vegetation (climax or natural potential) is predominantly grasses, grass-like plants, forbs, or shrubs and is managed as a natural ecosystem. If plants are introduced, they are managed similarly. Rangeland include natural grasslands, savannas, shrublands, many deserts, tundras, alpine communities, marshes and meadows."

Citations are further categorized by effects on soil and water, fish and wildlife, and plant ecology and biodiversity. This last grouping also includes a few citations covering other environmental effects, such as carbon sequestration, and documents addressing multiple effects.

There are 1,303 citations with abstracts (when available) in this bibliography. Citations were found through literature searches of the AGRICOLA database, produced by the National Agricultural Library, and several commercial bibliographic databases. In addition, Water Quality Information Center staff created citations for documents that were located by other means. Documents cited were published from 1980 through early 2006. URLs are provided for online documents that are freely available. The inclusion or omission of a particular citation does not imply endorsement or disapproval.

Within sections, citations are arranged alphabetically by title. To locate information on a specific topic, for example, "fencing," use the subject index beginning on page 341. To ensure that you see all the relevant citations for a particular topic, be sure to also look up related terms in the subject index, such as "exclosure experiments, fences, exclosure," etc., from the example above. An author index is also available beginning on page 375.

To obtain a specific document, please contact your local library. Information on how to obtain documents from the National Agricultural Library can be found at www.nal.usda.gov/services/request.shtml.

<sup>&</sup>lt;sup>1</sup> Bedell, T.E. (Chairman). 1998. *Glossary of Terms Used in Range Management: A Definition of Terms Commonly Used in Range Management.* 4th Edition. Glossary Update Task Group, Society for Range Management. Denver, Colorado: The Society.

Pastureland: Plant Ecology, Biodiversity, and Other Environmental Effects