BEST MANAGEMENT PRACTICES FOR GRAZING

Courtesy NRCS
INTRODUCTION

The purpose of the brochure is to give the reader some basic range management practices useful for reducing impacts to surface and ground water due to grazing. This document has been derived wholly from "Grazing Best Management Practices, Wyoming Nonpoint Source Management Plan, Final, March 1997" but is not all inclusive.

The following best management practices (BMPs) are guidelines to reduce nonpoint source pollution due to grazing from livestock, wildlife, and wild horses. Some of these BMPs address grazing directly while others address associated activities including range improvements and/or land use.

Because these BMPs are guidelines, additional technical assistance is encouraged and land managers should consult the appropriate agency. The application of all BMPs should be monitored frequently to allow for flexibility and adjustment.
PROPER GRAZING FOR DOMESTIC ANIMALS

WHAT? Manage livestock for harvest of rangeland forage so that the desired stable plant communities are achieved and maintained.

WHY? Harvesting forage at a sustainable level increases plant health, nutritional value and maintains ground cover. This stabilizes soil, slows erosion, and decreases sediment in our streams.

WHERE? Wherever livestock graze on rangeland.

WHEN? Some form of grazing management plan should be implemented at all times.

HOW? By developing and using a grazing system that best meets your forage resource and economic needs. Many grazing systems exist. There is no single system for all vegetation types. The proper system or combination of systems must be selected to fit any given site. You should be flexible and willing to change methods when conditions dictate. Things to consider are: 1) range type and condition, 2) range site potential and soil type, 3) plant growth rates, 4) seasons of use, 5) precipitation, 6) stocking rates, 7) type and class of livestock.

CONCERNS: Any grazing system must be monitored and evaluated continually and adjusted as required. You must take care to maintain a long term perspective for watershed protection and production.

TECHNICAL SUPPORT: Wyoming Association of Conservation Districts (WACD), National Resources Conservation Service (NRCS), Wyoming Department of Agriculture (WDA), Wyoming Game and Fish Department Habitat Branch (WGFD), University of Wyoming (UW) Department of Renewable Resources, and UW Cooperative Extension Service (CES).
PROPER GRAZING FOR WILDLIFE

WHAT? To provide adequate forage for proper wildlife and livestock needs while maintaining the desired stable plant communities.

WHY? If wildlife forage consumption is ignored, then a combination of livestock and wildlife may remove more forage than the plant community can sustain.

WHERE/WHEN? Wherever game animals graze on rangeland shared by livestock.

HOW? If your livestock range and pastures occur within natural wildlife feeding grounds you must consider how much forage wildlife consume. By estimating wildlife use, you can adjust livestock forage utilization at a level the plant community can withstand without detrimental impact. The establishment of watering sites, cover, and salt locations may encourage better distribution of game animals. Brush and weed management, prescribed burning and range seeding may alter the species or distribution of game animals that use certain types of rangeland.

The proper harvest of wildlife is encouraged to maintain appropriate population and forage balances.

CONCERNS: All rangeland/wildlife habitats must be monitored and evaluated continually. Grazing adjustments should be planned and should be flexible to maintain the proper plant cover (including residues) so sediments and pollutants are trapped. Methods to make grazing adjustments include, but are not limited to, harvesting of animals, use of feed supplements, hazing and depredation hunts. Wildlife are the property of the State of Wyoming and are managed by the WGFD. Many wildlife management activities are restricted by law and require either permits or approval from the WGFD. You should consult the WGFD before any wildlife management projects are undertaken.

TECHNICAL SUPPORT: NRCS, WGFD, BLM, USFWS, USFS, UW, CES.
PROPER GRAZING FOR WILD HORSES

WHAT? To provide adequate forage for wild horse, wildlife and livestock while maintaining the desired stable plant communities.

WHY? If wild horse forage consumption is ignored, a combination of livestock, wildlife, and wild horses may remove more forage than the plant community can sustain.

WHERE/WHEN? Any federal land area or other area where mandate or agreement authorizes wild horses to exist.

HOW? Knowing herd size, areas grazed, seasons of use, forage requirements, and other resource requirements. From this information you can better plan your livestock grazing activities.

CONCERNS: The concern is that wild horses would be allowed to increase unchecked to the detriment of all other uses and resources, including soil, vegetation and water resources. Wild horses are the property of the federal government and are managed by the BLM. Wild horse management activities are restricted by law and are limited to implementation by the BLM. Any person considering wild horse management activities should consult the BLM before actions are undertaken.

TECHNICAL SUPPORT: BLM, UW, CES.

Courtesy Division of Tourism
PROPER GRAZING FOR WETLAND AND RIPARIAN AREAS

WHAT? Protect wetlands and riparian areas from grazing impacts due to livestock, wildlife, and wild horse use.

WHY? Wetlands and riparian areas are important to water quality. They filter nutrients, chemicals and sediment from runoff waters. Wetlands also provide habitat for wildlife and waterfowl.

WHERE/WHEN? Wherever riparian or wetland areas occur on rangelands.

HOW? Manage grazing and forage removal to reduce disturbances to riparian and wetland areas. Proper management also aids in the reduction of animal wastes, nutrients, chemicals, and sedimentation entering surface and subsurface waters. Some management options include but are not limited to:

- Fencing to restrict grazing
- Controlling grazing frequency (including complete rest)
- Controlling livestock, wild horse or wildlife stocking rates
- Controlling livestock, wild horse or wildlife distribution
- Consider season of use to reduce plant stress and soil compaction
- Controlling timing and duration of each rest and grazing period
- Controlling livestock kind and class
- Providing alternate water supplies
- Providing salt and supplemental feeding facilities
- Conducting rehabilitation measures
For any riparian and wetland grazing management system to work, the system must be tailored to fit the needs of the riparian and wetland vegetation, terrain, soils, climate, kind and class of livestock, wildlife and/or wild horses.

CONCERNS: Any grazing system must be monitored and evaluated continually. There are many ways to protect wetland and riparian areas: vegetated buffers, seasonal grazing, maintaining adequate plant cover (including residue), and vegetation treatment systems are some methods. Salt facilities and alternate watering sites should be far enough from riparian and wetland areas to help promote proper animal distribution and to prevent salt contamination.

Modifications to wetland or riparian areas may require a permit from WDEQ, EPA and/or the U.S. Army Corps of Engineers.

TECHNICAL SUPPORT: WDEQ, EPA, UW CES, WDA, WGFD, BLM, USFWS, USFS, The Nature Conservancy, National Audubon Society, WACD
FENCING

WHAT? Maintain or improve water quality and the associated soil and vegetation resources by using fences (permanent or temporary) as management tools for controlling livestock, wildlife, wild horses and human/vehicular activity.

WHY? Fencing is a direct means of regulating seasons, numbers, kinds, and distribution of grazing animals. This type of management tool can have a direct effect on water quality.

WHERE/WHEN? Anywhere that you want to use fencing as a tool for management of plant communities. Management should be directed at providing a sustained yield of vegetation cover consistent with maintaining/improving soil and water quality.

HOW? Depending on the site and/or circumstance, this practice consists of permanent or temporary fencing to manage or restrict activity that may be causing a particular nonpoint source water pollution problem. Examples of situations requiring fencing may include, but are not limited to: seeding protection; development of grazing systems; improved management of riparian areas; stream bank stabilization; research exclosures; water source protection (springs, reservoirs, streams); hay/cropland protection; and protection of chemically, biologically, and mechanically treated areas.

CONCERNS: Improperly located, designed or constructed fences may result in accelerated erosion from steep slopes and bare areas. Animals trailing along fences can cut deep paths which then become water channels and add to the sediment deposited in streams.

TECHNICAL SUPPORT: NRCS, WDA, BLM, USFS, WACD, WGFD, UW CES, and Wyoming Department of Transportation.
LIVESTOCK HERDING

WHAT? Maintain or improve water quality and the associated soil/vegetation resources by using herding as a management tool for controlling livestock.

WHY? Herding of animals is the most direct method of controlling their location and actions. When other options are not available (such as fencing), herding is an effective management tool.

WHERE? Any grazing area used by livestock that may require herding for management purposes. Management should be directed at providing a sustainable yield of vegetation cover consistent with maintaining/improving soil and water quality.

WHEN? When intensive management of livestock is necessary to control animal distribution.
**HOW?** Depending on the site and/or circumstance, this practice consists of herding to manage grazing activity that may be causing a particular nonpoint source water pollution problem. Examples of situations requiring herding may include, but are not limited to: seeding protection; grazing systems; improved management of riparian and wetland areas; stream bank stabilization; water source protection (springs, reservoirs, streams); hay/cropland protection; and protection of chemically, biologically and mechanically treated areas.

**CONCERNS:** If planned and carried out properly, there should be no detrimental effects resulting from herding livestock.

**TECHNICAL SUPPORT:** WACD, NRCS, WDA
ACCESS ROADS

WHAT?  Provide access to grazing lands while minimizing erosion and sedimentation by properly siting, building and maintaining access roads.

WHY?  Improper road construction in fragile areas can lead to increased erosion. Roads provide an unprotected surface for water to runoff creating channels and increasing sedimentation.

WHERE?  Wherever vehicle access to grazing lands is needed for livestock, wildlife or wild horse management.

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HOW?  Proper siting, construction and maintenance of access roads should, where practical, follow recommended surveying and siting procedures as developed by authorized road building agencies. Specifications and standards for construction of access roads will depend on the site topography and other factors such as soils.

CONCERNS: Water quality may be impacted due to erosion from roads and road shoulders. Access roads should be kept to a minimum and be used only when necessary. Roads that are not needed should be closed and reclaimed.

TECHNICAL SUPPORT: Applicable NRCS, FS, and BLM standards for road design and construction should be followed. WYDOT and the U.S. Department of Transportation, Federal Highway Administration may also provide technical support for construction of access roads.
**WATER DEVELOPMENT**

**WHAT?** Developing alternative watering sites.

**WHY?** To improve livestock, wildlife and wild horse distribution and reduce water quality impairment.

**WHERE/WHEN?** Wherever livestock, wild horses or wildlife access to water is limited or where watering is creating a water quality problem.

**HOW?** There are many methods available for developing watering sources. Development of off stream water sources may minimize impacts to wetlands and riparian areas. Water developments should be properly designed and constructed to meet the site requirements. Technical assistance may be necessary. Some instream excavation projects may be accomplished more efficiently using dragline or backhoe type equipment rather than dozers or scrapers. During construction topsoil should be removed, stockpiled separately, and then laid back on top and reseeded as soon as practicable to minimize erosion. Areas around watering sites should be reseeded after season end each year. Distance animals will travel to water and spacing of watering sites, as related to species of animal, topography and season of use, should be considered.

**CONCERNS:** Improper design and construction of water development facilities may increase nonpoint source pollution. Groundwater resources should be considered during planning and construction of water developments. Water development projects may require a permit from the U.S. Army Corps of Engineers (404 permit), EPA, WDEQ (401 Certification) or the Wyoming State Engineer’s Office.

**TECHNICAL SUPPORT:** NRCS, WACD, BLM, USFS, UW CES, WDA, WGFD, U.S. Army Corps of Engineers, WDEQ, EPA.
**Biological Land Treatment**

**WHAT?** The use of living organisms to assist in achieving a desired stable plant community.

**WHY?** Biological control can provide a safe and natural alternative to chemical control.

**WHERE/WHEN?** Wherever conditions are appropriate for the desired organism to exist and be properly managed.

**HOW?** This practice requires the use of organisms to manipulate rangeland. Some examples are the use of beaver to stabilize stream banks, and the use of insects and grazing animals to control undesirable vegetation species.

**CONCERNS:** That water quality not be adversely impacted by improper or untimely management of biological treatment.

**Technical Support:** WGFD, NRCS, WACD, County Weed and Pest Districts.
MECHANICAL LAND TREATMENT

WHAT? The practice of mechanically treating rangeland to improve water retention and infiltration or provide additional plant community cover and production.

WHY? To increase rangeland plant cover and productivity by conserving water and reducing erosion.

WHERE? On rangeland of suitable slope and soil type.

WHEN? When other alternatives are not satisfactory.

HOW? Some examples of this practice are contour furrowing, chiseling, terracing, pitting, ripping, seeding, brush clearing, prescribed burning, and aerating.

CONCERNS: These practices should be limited to soils and slopes where surface disturbance will not result in unacceptable levels of erosion. Consideration should be given to total watershed function when planning mechanical treatments.

TECHNICAL SUPPORT: NRCS, WACD, BLM, USDA, UW CES.
WEED AND PEST MANAGEMENT

WHAT? To minimize water quality impairment while controlling weeds and pests.

WHY? To remove unwanted or noxious plants and detrimental insects from range and pastures.

WHERE? Wherever measures are being used to control weeds and pests.

WHEN? When unwanted or noxious plants and detrimental insects are present on range and pastures.

HOW? Chemical methods - Read and follow label directions; observe safety precautions such as use of rubber gloves and other safety equipment.

Mechanical methods - Should be performed when soil conditions are optimum (saves fuel and wear and tear on equipment). Use the proper equipment for the job.

Biological methods - Consider insects and animals to control noxious weeds.

CONCERNS: Failure to follow label instructions could result in excessive levels of chemicals in the soil and water. Improper storage, handling, or application could result in surface or ground water quality impairment. Improper equipment could result in unnecessary displacement of topsoil, thus causing loss of cover and increased runoff and erosion. Certain pesticides are restricted in use by the public and should only be applied by a licensed applicator.

TECHNICAL SUPPORT: County Weed and Pest Districts, WDA
**WINDBREAKS**

**WHAT?** A barrier either planted with trees and/or shrubs or constructed of other materials.

**WHY?** To reduce wind erosion, conserve energy or moisture, control snow deposition, provide shelter for livestock or wildlife, or increase natural beauty of an area.

**WHERE/WHEN?** Wherever additional protection is needed to prevent erosion from wind. Windbreaks may also be placed in areas to help congregate animals away from sensitive riparian areas and provide protection for animals.

**HOW?** The practice of properly planning, planting, and/or constructing windbreaks to reduce wind erosion and sedimentation and improve habitats. One purpose for planting or constructing windbreaks may be to reduce nonpoint source pollution, by using windbreaks as a filter.

**CONCERNS:** Groundwater quality should not be impacted unless the windbreak creates concentrations of livestock or livestock waste. Windbreaks should also be located so that snow melt runoff does not result in excessive erosion or gully formation.

**TECHNICAL SUPPORT:** All standards and specifications are available through Conservation District Boards and State Forestry offices.
AGENCY CONTACTS

Bureau of Land Management
5353 Yellowstone Road
Cheyenne, WY 82009
(307) 775-6256

Natural Resources Conservation Services
100 East B Street
Casper, WY 82601
(307) 261-6453

University of Wyoming
Department of Renewable Resources
P.O. Box 3354
Laramie, WY 82701
(307) 766-2263

University of Wyoming
Cooperative Extension Service
P.O. Box 3354
Laramie, WY 82701
(307) 766-5124

U.S. Army Corps of Engineers
Wyoming Regulatory Office
2232 Dell Range Blvd., Suite 210
Cheyenne, WY 82009
(307) 772-2300

U.S. Fish and Wildlife Service
4000 Airport Parkway
Cheyenne, WY 82001
(307) 772-2374

Wyoming Department of Agriculture
2219 Carey Ave.
Cheyenne, WY 82002
(307) 777-7321

Wyoming Association of Conservation Districts
2304 East 13th Street
Cheyenne, WY 82001
(307) 632-5716

Wyoming Department of Environmental Quality
Herschler Bldg. 4-W
122 West 25th Street
Cheyenne, WY 82002
(307) 777-7781

Wyoming Department of Transportation
5300 Bishop Blvd.
Cheyenne, WY 82006
(307) 777-4437

Wyoming Game and Fish Department
5400 Bishop Blvd.
Cheyenne, WY 82006
(307) 777-4600

Wyoming State Engineer’s Office
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