Regional Standards for Rangeland Health and Guidelines for Livestock Grazing Management ... A Progress Report

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The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation, rangelands, timber, minerals, watershed, fish and wildlife, wilderness, air, and scenic, scientific, and cultural values.
Regional Standards for Rangeland Health and Guidelines for Livestock Grazing Management — A Progress Report —

INTRODUCTION

In August 1995, new BLM regulations for rangeland administration went into effect. The new regulations require BLM to establish regional standards for rangeland health and guidelines for grazing management. This publication is a report on the alternatives being considered for the Montana/Dakotas Rangeland Health Standards and Guidelines process.

Standards will provide geographically appropriate, measurable criteria to address rangeland health.

Guidelines will provide consistent, ecologically-based practices for managing livestock to improve rangeland health. Standards and guidelines will be incorporated into grazing-related plans and will help determine the terms and conditions of grazing permits and leases.

The new regulations also require existing resource management plans and management framework plans to be modified, if needed, to assure consistency between plans, standards, and guidelines.

PROJECT STATUS

A Notice of Intent to prepare an EIS for most of Montana/Dakotas was published in the Federal Register November 30, 1995. A scoping letter was mailed to over 5,500 individuals and organizations on January 22, 1996. Comments received were provided to BLM field offices and Resource Advisory Councils (RACs) for use in developing proposed Standards and Guidelines (S&Gs). RACs in all four Districts have worked with BLM to draft proposed S&Gs. These will now be carried forward through a single plan amendment and environmental analysis process.

EIS SCHEDULE

Draft EIS complete ............................................................. September, 1996
Public Comment Period ......................................................... Late September - December, 1996
Final EIS complete ............................................................ Late May, 1997
Issue Record of Decision and begin implementation .......... Late August, 1997

FOR FURTHER INFORMATION

If you have any comments or questions, please contact Dan Lechefsky, Team Leader, at 406-255-2919 or feel free to contact your local BLM office.

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111 Garryowen Road
Miles City, MT 59301

Lewistown District Office
P.O. Box 1160
Lewistown, MT 59457

Butte District Office
P.O. Box 3388
Butte, MT 59702-3388

Dakotas District Office
2933 Third Avenue West
Dickinson, ND 58601-2619

ALTERNATIVES

The EIS will analyze three alternatives: current management, fallbacks and proposed standards and guidelines.

Current Management
The Current Management alternative is a continuation of current management as outlined in completed Resource Management Plans and Management Framework plans. Affected plans include: Big Dry, Billings, Dillon, Headwaters, Judith, North Dakota, Phillips, Powder River, South Dakota, Valley, and West HiLine. Copies of these plans are available at local BLM offices in Montana and the Dakotas.

Fallbacks
The new BLM regulations for rangeland administration include "fallback" S&Gs to be implemented where state or regional S&Gs cannot be developed by February 12, 1997. The fallback S&Gs are intended to provide direction should the development of the state or regional standards take longer than anticipated, and will remain in effect until state or regional S&Gs are developed and implemented. Because the S&G analysis will not be complete until August, 1997, the fallbacks will take effect on February 12, 1997 in Montana/Dakotas and remain in effect until the analysis is complete.

Fallback Standards
- Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform.
- Riparian-wetland areas are in properly functioning condition.
- Stream channel morphology (including but not limited to gradient, width/depth ratio, channel roughness and sinuosity) and functions are appropriate for the climate and landform.
- Healthy, productive and diverse populations of native species exist and are maintained.

Fallback Guidelines
- Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture storage, and stabilize soils;
- Management practices maintain or promote soil conditions that support permeability rates that are appropriate to climate and soils;
- Management practices maintain or promote...
Proposed Standards and Guidelines

Resource Advisory Councils in Montana and the Dakotas were instrumental in developing the proposed Standards and Guidelines. A S&G "discussion paper" was prepared by BLM staff and used by RAC members as a starting point for their deliberations. BLM has been working with RAC members since December 1995 to develop the proposed S&Gs outlined on the following pages. Comments received from the general public during scoping were considered during development of these proposed S&Gs.

The proposed S&Gs will be applied on a BLM District basis.

PREAMBLE

The Butte Resource Advisory Council (BRAC) has developed Standards for Rangeland Health and Guidelines for Grazing Management for use on the Butte District of the Bureau of Land Management (BLM). The purpose of the Standards and Guidelines are to facilitate the achievement and maintenance of healthy, properly functioning ecosystems within the historic and natural range of variability for long-term sustainable use.

BRAC determined that the following considerations were very important in the adoption of these Standards and Guidelines:

1. The background information for Standard, provided by the BLM and modified by BRAC, is an integral part of the Standard.

2. For implementation, the BLM should emphasize a watershed approach that incorporates both Upland and Riparian Standards and Guidelines.

3. The Standards are applicable to rangeland health, regardless of use.

4. The social and cultural heritage of the region and the viability of the local economy, are part of the ecosystem.

5. Wildlife is integral to the proper function of rangeland ecosystems.

STANDARDS

STANDARD #1: UPLANDS ARE IN OR ARE MAKING SIGNIFICANT PROGRESS TOWARDS PROPER FUNCTIONING CONDITION.

As indicated by:

- Physical Environment

STANDARD #2: RIPARIAN - WETLAND AREAS IN OR ARE MAKING SIGNIFICANT PROGRESS TOWARDS PROPER FUNCTIONING CONDITION.

As indicated by:

- Hydrologic
  - Floodplain inundated in relatively frequent events (1-3 years)
  - Amount of Altered Streambanks
  - Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region.)
- Riparian zone widening
- Upland watershed not contributing to riparian degradation

- Erosion Deposition
  - Floodplain and channel characteristics; i.e., rocks, coarse and/or woody debris adequate to dissipate energy
Point bars are vegetating
- Lateral stream movement is associated with natural sinuosity
- System is vertically stable
- Stream is in balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)
- Bare ground

- Vegetation
  - Reproduction and diverse age structure of vegetation
  - Diverse composition of vegetation
  - Species present indicate maintenance of riparian soil moisture characteristics
  - Streambank vegetation is comprised of those plants or plant communities that have deep binding root masses capable of withstanding high streamflow events
  - Utilization of Trees and Shrubs
  - Riparian plants exhibit high vigor
  - Adequate vegetative cover present to protect banks and dissipate energy during high flows
  - Plant communities in the riparian area are an adequate source of large woody debris

**STANDARD #3: WATER QUALITY MEETS OR IS MAKING SIGNIFICANT PROGRESS TOWARDS STATE STANDARDS.**

As indicated by:

- Dissolved oxygen concentration
- pH
- Turbidity
- Temperature
- Fecal Coliform
- Sediment
- Color
- Toxins
- Others: Ammonia, Barium, Boron, Chlorides, Chromium, Cyanide, Endosulfan, Lindane, Nitrates, Phenols, Phosphorous, Sodium, Sulfates, etc.

See Standards of Water Quality for Montana.

**STANDARD #4: AIR QUALITY MEETS OR IS MAKING SIGNIFICANT PROGRESS TOWARD: $5$ $TIE$ $STANDARDS.$

As indicated by:

- Section 176(c) Clean Air Act which states that activities of all federal agencies must conform to the intent of the appropriate State Air Quality Implementation Plan and not:
  - cause or contribute to any violations of ambient air quality standards
  - increase the frequency of any existing violations
  - impede a state’s progress in meeting their air quality goals

See Air quality Standards for Montana.

**STANDARD #5: PROVIDE HABITAT AS NECESSARY, TO MAINTAIN A VAILABLE AND DIVERSE POPULATION OF NATIVE PLANT AND ANIMAL SPECIES, INCLUDING SPECIAL STATUS SPECIES.**

As indicated by:

- Plants and Animals are diverse, vigorous and reproducing satisfactorily; noxious weeds are absent or insignificant in the overall plant community
- Spatial distribution of species is suitable to ensure reproductive capability and recovery
- A variety of age classes are present
- Connectivity of habitat or presence of corridors prevents habitat fragmentation
- Diversity of Species (including plants, animals, insects and microbes) are represented
- Plant communities in a variety of successional stages are represented across the landscape

**GRAZING MANAGEMENT GUIDELINES**

1. Manage grazing to maintain or improve watershed vegetation, biodiversity, and floodplain function. Maintain or improve riparian vegetative cover and structure to trap and hold sediments during run-off events to rebuild streambanks, restore/recharge aquifers, and dissipate flood energy. Promote deep-rooted herbaceous vegetation to enhance streambank stability. Where potential for woody shrub species (willows, dogwood, etc.) exists, promote their growth or expansion to aid in controlling access to streambanks, and to provide wildlife cover.

2. Pastures and allotments will be periodically inventoried to determine their relative suitability for livestock grazing. Topography, slope, distance from water, or vegetation habitat types, wildlife, channel types, soil types, and other resource values must be considered when determining grazing potential. Specific areas could be excluded from grazing, fenced into separate management pastures, or managed more intensively.

3. Management strategies for livestock grazing should produce sustainable hydrological, vegetative, and soil conditions. Thresholds for acceptable streambank alteration and vegetation utilization can be site-specific, and they should be the basis for establishing terms and conditions for allotments. These thresholds should be consistent with standards and result from application of scientifically acceptable hydrological and biological principles. Each allotment must have a monitoring plan, and monitoring results should be critical input to grazing system design. Long term analysis of trend shall be the primary monitoring tool, and will be augmented by short term monitoring information. Monitoring plans should address rangeland standards including hydrologic, vegetative, and soil conditions. Long term and short term monitoring attributes may include:

**HYDROLOGIC:**
- stream morphology
- streambank alteration

**Vegetative:**
- species composition
- plant density
- demographics
- stubble height
- utilization

**Soils:**
- percent bare ground
- compaction
- pedestalng

Self-monitoring by permittee should be encouraged, but with these sideboards:

* permittee’s data and BLM’s data should be comparable
* BLM must perform some level of compliance monitoring for each self monitored allotment to ensure the permittee’s monitoring is being done and it is valid.
* there should be regular reporting of self-monitoring data
* when appropriate, monitoring should include the use of reference sites (such as exclosures)

Permittees and interested members of the public should be able to participate in the development of monitoring plans.

4. Compatible seasons and duration of use, rest periods, stocking rates, structural facilities, and management activities, should be designed and implemented to ensure that standards are achieved.

5. The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.
6. Locate facilities (e.g., corrals, water developments) away from riparian-wetland areas when possible.

7. Supplemental salt and minerals should not be placed adjacent to watering locations or in riparian-wetland areas so as not to adversely impact streambank stability, riparian vegetation, water quality, or other sensitive areas. Placement of salt in upland sites should consider critical winter wildlife habitat.

8. Noxious weed control is essential and should include: cooperative agreements, public education, and integrated pest management (mechanical, biological, chemical). Butte RAC has addressed weeds in a Resolution dated May 8, 1996 (Enclosed).

9. Native species are preferred. Non-native species, where contributing to proper ecosystem function, are acceptable.

The following RAC members participated in the development of the Butte District proposed standards and guidelines:
- Ted Dale, Energy/Minerals
- Fred Stewart, Permittee
- Nancy Johnson, Timber
- Mel Montgomery, Developed Recreation
- Blake Huntley, Permittee
- Steve Antonioli, Dispersed Recreation
- Doug Rand, Conservation
- Bob Zimmerman, Environmental
- Cedon Jones, Environmental
- Bruce Farling, Environmental
- Mike Frisina, State Employee
- Dan Lucas, State Employee
- Spence Hegstad, Elected Official
- Meg Smith, Public-at-Large
- Henry Goetz, State Employee

STANDARDS

LEWISTOWN DISTRICT

STANDARD #1: UPLANDS ARE IN, OR ARE MAKING SIGNIFICANT PROGRESS TOWARDS, PROPER FUNCTIONING CONDITION

As indicated by:
- Physical Environment
  - Erosional flow patterns
  - Surface Litter
  - Soil Movement by Water and Wind
  - Soil Crusting and Surface Sealing
  - Compaction Layer
  - Rills
  - Gulies
  - Cover Amount
  - Cover Distribution

- Biotic Environment
  - Community Diversity
  - Community Structure
  - Exotic Plants
  - Photosynthesis Activity
  - Plant Status
  - Seed Production
  - Recruitment
  - Nutrient Cycle

STANDARD #2: RIPARIAN-WETLAND AREAS ARE IN, OR ARE MAKING SIGNIFICANT PROGRESS TOWARDS, PROPER FUNCTIONING CONDITION

As indicated by:
- Hydrologic
  - Floodplain inundated in relatively frequent events (1-3 years)
STANDARD #3: WATER QUALITY MEETS OR IS MAKING SIGNIFICANT PROGRESS TOWARDS STATE STANDARDS

As indicated by:
- Dissolved oxygen concentration
- pH
- Turbidity
- Temperature
- Fecal Coliform
- Sediment
- Color
- Toxins
- Others: Ammonia, Barium, Boron, Chlorides, Chromium, Cyanide, Endosulfan, Lindane, Nitrates, Phenols, Phosphorus, Sodium, Sulfates, etc.

See Standards of Water Quality for Montana.

STANDARD #4: AIR QUALITY MEETS OR IS MAKING SIGNIFICANT PROGRESS TOWARDS STATE STANDARDS

As indicated by:
- Air quality goals
- Confonn to the intent of the appropriate State Section
- Increase or impede that activities of all federal agencies must
- be adhered to, including and maintaining proper functioning conditions. The application of these guidelines is dependent on individual management objectives. Desired future conditions in plant communities and streambank characteristics will be determined on a case-by-case basis.

Grazing Management Guidelines

Guidelines for grazing management are preferred or advisable approaches to grazing management practices determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard(s).

Lewistown District Grazing Management Guidelines

Guidelines are provided to maintain or improve resource conditions in upland and riparian habitats available to livestock grazing. In both riparian and upland habitats, these guidelines focus on establishing and maintaining proper functioning conditions. The application of these guidelines is dependent on individual management objectives. Desired future conditions in plant communities and streambank characteristics will be determined on a case-by-case basis.

Guidelines for Lewistown District

- Grazing will be managed in a manner that will maintain the proper balance between soils, water, and vegetation over time. This balance varies with location and management objectives, historic use, and natural disasters, but acceptable levels of use can be developed that are compatible with resource objectives.
- Manage grazing to maintain watershed vegetation, biodiversity, and floodplain function. Maintain riparian vegetative cover and structure to trap and hold sediments, during run-off events to rebuild streambanks, restore/recharge aquifers, and dissipate flood energy. Promote deep-rooted herbaceous vegetation to enhance streambank stability. Where potential for palatable woody shrub species (willows, dogwood, etc.) exists, promote their growth and expansion to aid in controlling animal access to streambanks and to provide wildlife cover.
- Pastures and allotments will be managed based on their sensitivity and suitability for livestock grazing. Where suitability determinations have not been previously documented, topography, slope, distance from water, vegetation habitat types, channel types, and soil types must be considered when determining grazing suitability. Unsuitable areas should be excluded from grazing. Potentially suitable areas could be fenced into separate management pastures and/or managed more intensively.
- Management strategies for livestock grazing will ensure that long-term resource capabilities can be sustained. Natural and management induced streambank alteration, end of season stubble heights, and utilization of herbaceous and woody vegetation are critical factors which must be evaluated in any grazing strategy. These considerations are essential to achieving long-term vegetation or stream channel objectives. Acceptable levels of streambank alteration and herbaceous/woody utilization should be identified on a site-specific basis and used as terms and conditions. Suitable seasons and duration of use, rest periods, stocking rates, structural facilities, and management activities can then be designed to ensure that standards are achieved.
- Grazing will be managed to promote desired plants and plant communities of various age structures, based on the rate and physiological conditions of plant growth. Management approaches may include deferment of grazing of key plant species or alternating growth season use to allow for regeneration of woody species. These approaches will be identified on a site-specific basis and implemented through terms and conditions. Stages of plant growth, length of grazing period, target utilization levels, and frequency of grazing should be used to determine when livestock are ready to be moved to another grazing unit, instead of calendar dates. Caution should be used to avoid early spring grazing use when soils and streambanks are wet and susceptible to compaction and physical damage that occurs with animal trampling. Likewise, late summer and fall treatments in woody shrub communities can result in excessive utilization.
- The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of these sites.
- Locate facilities (e.g., corrals, water developments) away from riparian-wetland areas.

See Air quality Standards for Montana.
LEWISTOWN DISTRICT STANDARDS

- When provided, supplemental salt and minerals should not be placed adjacent to watering locations or in riparian-wetland areas so as not to adversely impact streambank stability, riparian vegetation, water quality, or other sensitive areas (i.e., key wildlife wintering areas). At a minimum, salt and minerals should be placed in upland sites to draw livestock away from watering areas or other sensitive areas and to contribute to more uniform grazing distribution.

- Noxious weed control is essential and should include: cooperative agreements, public education, and integrated pest management (mechanical, biological, chemical).

The following RAC members participated in the development of the Lewistown District proposed standards and guidelines:

- Kimberly A. Lacey, Permitee
- Kenneth Blunt, Permitee
- Jack Billingsley, Commercial Recreation
- Rolin P. Erickson, Energy/Minerals
- William R. Hedglin, Energy/Minerals
- Stanley E. Meyer, National/Regional Environmental
- Charles Barnard, Archaeology/Historical
- George N. Engler, National/Regional Conservation
- Hugo J. Tureck, National/Regional Environmental
- Mary H. Sexton, National/Regional Conservation
- James E. Brady, Elected Official
- Craig Roberts, State Employee
- Darryl Seeley, Public-at-Large
- Michael W. Aderhold, State Employee
- George Heavy Runner, Indian Tribes

MILES CITY DISTRICT STANDARDS

PREFACE

Rangeland health can be defined as the degree to which the integrity of the physical and ecological processes of the rangeland ecosystems are sustained.

The capacity of rangelands to produce commodities and satisfy values on a sustained basis depends upon the internal, self-sustaining ecological processes such as soil development, nutrient cycling, energy flow, and the structure and dynamics of plant and animal communities.

Rangeland health is the minimum ecological standard, independent of the rangeland's use and how it is managed. If rangeland health is protected, a variety of uses could be appropriate for any particular rangeland.

Standards apply to rangeland health and not to the important bi-products of healthy rangelands such as more fish, higher livestock weaning weights, regional social and cultural values, increased timber production, economic viability of livestock operations or higher numbers of game animals. It is sustainability of the processes, of Rangeland Health, that produce these social values and commodities.

The Bureau of Land Management is committed to grazing as an appropriate use of public rangelands and to maintaining healthy and productive rangelands that support stable western communities. This is a commitment that began with the Taylor Grazing Act, which reversed the decline in the health of the range, is reiterated in the Federal Land Policy Management Act that ensures public lands are managed for multiple use and guarantees grazing as an activity on the public lands.

Standards for Rangeland Health and Guidelines for Grazing Management are intended to maintain healthy and productive public rangelands that are essential to support long-term grazing and stable communities that rely on the land.

Standards apply to the Health of the Land. All uses of public rangeland need to be conducted in such a manner that Standards are achieved. Standards are measurable levels of resource quality, condition, or function upon which management decisions are based. It is BLM's policy to achieve rangeland health standards through management of existing uses when feasible.

Standards provide the technical and scientific basis for measuring progress towards healthy productive rangelands.

Disturbance regimes such as fire, climatic events, geology, the natural and historic range of variability and the potential of the area are considered when assessing rangeland health.

Standards are not expected to recreate theoretical “pristine” rangeland conditions that may have existed before livestock grazing began. It is assumed that most areas will be grazed unless there is no way to graze them and still achieve standards or the area is dedicated to other uses such as campgrounds, mining, and cultural or historical sites, like Pompey’s Pillar.

At a minimum State or regional standards must address:

1. Watershed function
2. Nutrient cycling and energy flow
3. Water quality
4. Habitat for endangered, threatened, proposed, Candidate 1 or 2 or special; status species; and
5. Habitat quality for native plant and animal populations and communities.

Guidelines for grazing management are the types of grazing management methods and practices determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting standards.

Guidelines are best management practices (BMPs), treatments, and techniques and implementation of range improvements that will help achieve
rangeland health standards. Guidelines are flexible and are applied on site specific situations.

Field managers must determine if standards are being met, consider what factors are causing standards not to be met, and take appropriate action to deal with those factors. If livestock grazing is preventing achievement of standards, then guidelines would be applied through terms and conditions. If an area is not meeting standards due to conditions that are not related to livestock grazing then the grazing management may not need to be adjusted.

Guidelines may be adapted or changed when monitoring or other information indicates the guidelines are not effective or a better means of meeting applicable standards exist.

The new grazing regulations under 4180.2(e) require that minimum, state or regional guidelines developed must address a list of attributes:

a. Maintain or promote adequate amounts of vegetative ground cover
b. Maintain or promote subsurface soil conditions
c. Maintain, improve or restore riparian-wetland functions
d. Maintain or promote stream channel morphology
e. Maintain or promote appropriate kinds and amounts of soil organisms, plants and animals
f. Promote the opportunity for seedling establishment
g. Maintain, restore, enhance water quality
h. Restore, maintain or enhance T & E habitat
i. Restore, Maintain, enhance T&E candidate and special status species habitat
j. Maintain or promote native populations and their communities
k. Emphasize native species in the support of ecological function
l. Only incorporate the use of non-native plant species when native species are not available or are incapable of achieving proper functioning condition

Terms and Conditions of permits and leases are specific actions in the permit or lease that implement the spirit and intent of the standards and guidelines.

Terms and conditions are site specific. They are determined by an interdisciplinary team in consultation with permittees and interested parties for each individual allotment. Terms and conditions are a tool to achieve resource conditions in the standard. They are meant to be modified if monitoring data shows those terms and conditions currently being applied are not achieving desired results.

STANDARDS

Standards are statements of physical and biological condition or degree of function required for healthy sustainable rangelands. Achieving or making significant progress towards these functions and conditions is required of all uses of public rangelands. Historical data, when available, should be utilized when assessing Standards.

STANDARD #1: UPLANDS ARE IN PROPER FUNCTIONING CONDITION

Meaning that: Soils are stable and provide for the capture, storag, and safe release of water appropriate to soil type, climate and landform. The amount and distribution of ground cover (ground cover is the percentage of material, litter, live and standing dead vegetation, microbial crusts, and rocks/gravel), other than bare ground, covering the soil surface for identified ecological site(s) or soil plant associations is appropriate for soil stability. Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface sealing and compaction layers below the soil surface is minimal. Ecological processes including hydrologic cycle, nutrient cycle and energy flow are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential and there is a diversity of species characteristic of and appropriate to the site.

As indicated by:

- Physical Environment
  - Erosional flow patterns
  - Soil Movement by Water and Wind
  - Infiltration
  - Soil Crusting and Surface Sealing
  - Compaction Layer
  - Rills
  - Gullies
  - Cover Amount
  - Cover Distribution
- Biotic Environment
  - Community Diversity
  - Community Structure
  - Exotic Plants
  - Photosynthesis Activity
  - Plant Status
  - Seed Production
  - Recruitment
  - Nutrient Cycle

STANDARD #2: RIPARIAN-WETLAND AREAS ARE IN PROPER FUNCTIONING CONDITION

Meaning that: The functioning condition of riparian-wetland areas is a result of the interaction among geology, soil, water, and vegetation. Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity.

The riparian/wetland vegetation is controlling erosion, stabilizing streambanks, shading water to reduce stream temperature in the summer and provide thermal protection in the winter, stabilizing shorelines, filtering sediment, aiding floodplain development, dissipating energy, delaying flood water, and increasing recharge of ground-water where appropriate to landform. The stream channels and floodplains dissipate the energy of high water flows and transport sediment appropriate for the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity), climate, and landform. Soils support appropriate riparian-wetland vegetation, allowing water movement, filtering sediment, and storing water for later release. Stream channels are not entrenched and water levels maintain appropriate riparian/wetland species.

Riparian Areas are defined as: an area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and streambanks are typical riparian areas. Excluded are such sites a ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil.

Proper Functioning Condition of Riparian Areas are Indicated by:

- Hydrologic
  - Floodplain inundated in relatively frequent events
  - Amount of Altered Streambanks
  - Sinuosity, width/depth ratio, and gradient are in-balance with the landscape setting (i.e., landform, geology, and bioclimatic region.)
  - Riparian zone width
  - Upland watershed not contributing to riparian degradation
**STANDARDS #3: WATER QUALITY MEETS MONTANA STATE STANDARDS**

Meaning that: Surface and ground water on public lands fully support designated beneficial uses described in the Montana Water Quality Standards.

BLM management actions or use authorizations do not contribute to pollution that violates the quantitative or narrative Montana Water Quality Standards. Approved Best Management Practices are utilized to protect water quality or restore water quality to water bodies not fully supporting designated beneficial uses, e.g., water quality limited streams.

As indicated by:

- Dissolved oxygen concentration
- pH
- Turbidity
- Temperature
- Fecal Coliform
- Sediment
- Color
- Toxins
- Others: Ammonia, Barium, Boron, Chlorides, Chromium, Cyanide, Endosulfan, Lindane, Nitrates, Phenols, Phosphorus, Sodium, Sulfates, etc.

See Standards of Water Quality for Montana

**STANDARDS #4: AIR QUALITY MEETS MONTANA STATE STANDARDS**

Meaning that: Air Quality on public lands helps meet the goals set out in the State of Montana Air Quality Control Implementation Plan. Efforts will be made to limit unnecessary emissions from existing and new point or non-point sources.

BLM management actions or use authorizations do not contribute to air pollution that violates the quantitative or narrative Montana Air Quality Standards or contributes to deterioration of air quality in selected class areas.

As indicated by:

- Section 176(c) Clean Air Act which states that activities of all federal agencies must conform to the intent of the appropriate State Air Quality Implementation Plan and not:
  - cause or contribute to any violations of ambient air quality standards
  - increase the frequency of any existing violations
  - impede a state’s progress in meeting their air quality goals

See Air Quality Standards for Montana.

**STANDARDS #5: HABITATS ARE PROVIDED FOR HEALTHY, PRODUCTIVE AND DIVERSE NATIVE PLANT AND ANIMAL POPULATIONS AND COMMUNITIES. HABITATS ARE IMPROVED OR MAINTAINED FOR SPECIAL STATUS SPECIES (FEDERALLY THREATENED, ENDANGERED, PROPOSED, CANDIDATE 1 OR 2 OR MONTANA SPECIES OF SPECIAL CONCERN**

Meaning that: Native plant communities will be maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant lifeforms. Where native communities exist, the conversion to exotic communities after disturbance will be minimized. Management for native vegetation is a management priority. Ecological processes including hydrologic cycle and energy flow are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential and there is a diversity of species characteristic of and appropriate to the site. The environment contains all the necessary components to support viable populations of a sensitive/threatened species or species relative to site potential. Viable populations are wildlife or plant populations that contain an adequate number of reproductive individuals distributed on the landscape to ensure the long-term existence of the species.

As indicated by:

- Plants and Animals are diverse, vigorous and reproducing satisfactorily; noxious weeds are absent or insignificant in the overall plant community
- An effective weed management program is in place.
- Spatial distribution of species is suitable to ensure reproductive capability and recovery
- A variety of age classes are present (at least two age classes)

See Native Plant Communities Standards for Montana.
* Manage grazing to maintain watershed vegetation, biodiversity, and floodplain function. Maintain riparian vegetative cover and structure to trap and hold sediments during run-off events to rebuild streambanks, restore/recharge aquifers, and dissipate flood energy. Promote rooted herbaceous vegetation to enhance streambank stability. Where potential for woody shrub species (willows, dogwood, etc.) exists, promote their growth and expansion to aid in controlling animal access to streambanks, and to provide wildlife cover.

* Pastures and allotments will be identified based on their sensitivity and suitability for livestock grazing. Unsuitable or potentially unsuitable areas may be fenced into separate management areas, or managed more intensively. Based on long term monitoring, management strategies for livestock grazing will ensure that long-term resource capabilities can be sustained over time. Natural and management induced streambank alteration, end of season stubble heights, and utilization of herbaceous and woody vegetation are critical factors which must be evaluated in any grazing strategy. These considerations are essential to achieving long-term vegetation or stream channel objectives. Where appropriate, acceptable levels of streambank alteration and herbaceous/woody utilization should be identified on a site-specific basis, and used as terms and conditions. Compatible seasons and duration of use, rest periods, stocking rates, structural facilities, and management activities can then be designed to ensure that standards are achieved.

* Frequency of grazing and extent of defoliations will be managed to promote desired plants and plant communities, based on the rate and physiological conditions of plant growth. To meet these plant growth considerations the following could be applied: No grazing unit should be grazed for more than half the growing season of key plant species. Periods of use throughout the growing season (early, mid, late) should be alternated from year to year. Defers each field from grazing until seeds set at least once every 3 years. The season of use should be alternated from year to year to allow for regeneration of woody and herbaceous species. Stages of plant growth, length of grazing period, target utilization levels, and frequency of grazing should be used to determine when livestock are ready to be moved to another grazing unit, instead of calendar dates. Caution should be used with early spring grazing use when soils and streambanks are wet and susceptible to compaction and physical damage that occurs with animal trampling. Likewise, late summer and fall treatments in woody shrub communities can result in excessive utilization.

* Monitoring is essential to determine if management guidelines and terms and conditions are meeting standards or making significant progress towards achieving standards. Monitoring data over time shall be used to make adjustments to grazing management as needed. In monitoring standards, BLM will consider the impacts of all multiple uses on public rangelands.

* The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.

* Locate new facilities (e.g., corrals, water developments) away from riparian-wetland areas.

* When provided, supplemental salt and minerals should not be placed adjacent to watering locations or in riparian-wetland areas so not to adversely impact streambank stability, riparian vegetation, water quality, or other sensitive areas. Generally, salt and minerals should be placed in upland sites to draw livestock away from watering areas or other sensitive areas and to contribute to more uniform grazing distribution.

For guidelines for noxious weed management refer to "Guidelines for Coordinated Management of Noxious Weeds in the Greater Yellowstone Area." These guidelines provide a unified effort in developing a public awareness program; a prevention program; and a common inventory, mapping, monitoring, and reporting procedure. An overall Management Plan and specific action plans can be developed for logical units of land called Weed Management Areas.

The following RAC members participated in the development of the Miles City District proposed standards and guidelines:

Dave Harris, Permitee
Robert Piipps, Permitee
Larry Pilster, Permitee
William Schwarzhopf, Energy/Minerals
Charles Heringer, Energy/Minerals
Bernard Lea, Sportmen
Charles Tieman, Environmental
Don Allen, Environmental
Franklin K. Deaver, Cultural/Historical
Beth R. Riggs, Dispersed Recreation
Ernie Robinson, Indian Tribes
Dwayne Andrews, State Employee
Bill Milton, Public-at-Large
Nancy H. Espy, Elected Official
James W. Van Andale, Public-at-Large
DAKOTAS DISTRICT STANDARDS

STANDARDS

STANDARD #1: UPLANDS ARE IN PROPER FUNCTIONING CONDITION FOR SITE SPECIFIC CONDITIONS OF CLIMATE, SOILS AND PARENT MATERIAL.

As indicated by the presence or absence of:

- Physical Environment
  - Soil Type
  - Erosional Flow Patterns
  - Surface Litter
  - Soil Movement by Wind and Water
  - Infiltration
  - Soil Crusting and Surface Sealing
  - Rills
  - Gullies
  - Cover Amount
  - Cover Distribution

- Biotic Environment
  - Community Diversity
  - Community Structure
  - Exotic Plants
  - Photosynthesis Activity
  - Plant Status
  - Seed Production
  - Recruitment
  - Nutrient Cycle

Background Information

No single factor or characteristic of an upland site can provide a complete picture of either that site's condition or the direction of its successional change. Things considered “negative” in traditional evaluations of ecological sites may not be such for upland sites. For example, the percent of exposed soil surface, which often reflects overgrazing or erosion on upland sites, may be a result of normal riparian activity, sediment deposition resulting after spring runoff, or a high water event.

Broadly, “proper functioning condition” may be defined as the ability of a stream to perform its riparian functions. These functions include sediment filtering, bank building, water storage, aquifer recharge, and hydrologic energy dissipation.

Hydrology/Streambanks

The hydrology of a riparian area is perhaps its most important characteristic. Changes in hydrology may result in short and long term vegetative changes. In some situations, construction (riprap, roads, railroads, etc.) has influenced the streambanks and stability has been increased over the natural levels. These streambanks may eventually lose their stability, and become altered. This generally occurs if the problems which caused the weak streambanks have not been remedied. Also, constructed streambanks (especially those with riprap) will often disrupt the normal energy movement across streambanks downstream.

- Lateral Cutting

Lateral cutting is indicated by new stream-caused bank disruption along the outside of stream curves, and much less common, along the straight portions of a stream. A high degree of active lateral cutting can indicate a degraded watershed.

- Altered Streambanks

In many instances, land uses have degraded streambanks, accelerating stream movement across functional, nutrient cycles and energy flows, and available recovery mechanisms.

Indicators to assess soil stability and watershed function relate to two fundamental processes of watershed degradation: (1) Soil erosion by wind and water and (2) Infiltration of precipitation and/or runoff. Indicators such as: rills, gullies, flow patterns, pedestaling, compaction, and soil type may be used to assess watershed condition.

Indicators that can be used to evaluate nutrient cycles and energy flows relate to soil type, distribution of plants, litter, roots, and photosynthetic period.

Recovery mechanisms or plant demographic indicators may include increasing vegetative cover, plant vigor, kind and number of seedlings, and changes in plant age distribution.

- Physical features of a proper functioning watershed are indicated by:
  - soil type
  - little evidence of soil erosion by wind and/or water as indicated by the significant absence of rills, gullies, and pedestals.
  - surface sealing and soil crusting is not evident.
  - plant (ground) cover and litter accumulation is adequate to protect site.

- Biotic features of a proper functioning watershed are indicated by:
  - a sufficient variety and number of plant life forms (grass, forb, shrub, tree) occur on the site.
  - plants exhibit optimal size, height, distribution, and age/size.
  - introduced or exotic plants (weeds) are absent or sparse on site.
  - plants are alive, productive with well-developed root systems.
  - plant reproduction is adequate for stand maintenance of all life-forms.
  - litter distribution is uniform across site.

- nutrient/energy cycle mechanisms are adequate for plant maintenance.

STANDARD #2: RIPARIAN-WETLAND AREAS ARE IN PROPER FUNCTIONING CONDITION FOR SITE SPECIFIC CONDITIONS OF CLIMATE, SOILS AND PARENT MATERIAL.

As indicated by the presence or absence of:

- Hydrologic
  - Floodplain inundated in relatively frequent events
  - Altered Streambanks
  - Upland watershed not contributing to riparian degradation
  - Stream channel morphology (including but not limited to gradient, width/depth ratio, channel roughness and sinuosity) and functions are appropriate for the climate and landform.

- Erosion Deposit
  - Floodplain and channel characteristics; i.e., rocks, coarse and/or woody debris adequate to dissipate energy
  - Lateral stream movement is associated with natural sinuosity
  - System is vertically stable
  - Stream is in balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)
  - Bare ground

- Vegetation
  - Healthy, productive and diverse populations of native species are being maintained.
  - Condition of trees and shrubs
  - Riparian plants exhibit high vigor
  - Adequate vegetative cover present to protect banks and dissipate energy during high flows

Background Information

No single factor or characteristic of a riparian site can provide a complete picture of either that site’s condition or the direction of its successional change. Things considered “negative” in traditional evaluations of ecological sites may not be such for riparian sites. For example, the percent of exposed soil surface, which often reflects overgrazing or erosion on upland sites, may be a result of normal riparian activity, sediment deposition resulting after spring runoff, or a high water event.

Broadly, “proper functioning condition” may be defined as the ability of a stream to perform its riparian functions. These functions include sediment filtering, bank building, water storage, aquifer recharge, and hydrologic energy dissipation.

Hydrology/Streambanks

The hydrology of a riparian area is perhaps its most important characteristic. Changes in hydrology may result in short and long term vegetative changes. In some situations, construction (riprap, roads, railroads, etc.) has influenced the streambanks and stability has been increased over the natural levels. These streambanks may eventually lose their stability, and become altered. This generally occurs if the problems which caused the weak streambanks have not been remedied. Also, constructed streambanks (especially those with riprap) will often disrupt the normal energy dissipation of the stream and eventually the meandering of a stream can result in the erosion of streambanks downstream.

- Lateral Cutting

Lateral cutting is indicated by new stream-caused bank disruption along the outside of stream curves, and much less common, along the straight portions of a stream. A high degree of active lateral cutting can indicate a degraded watershed.

- Altered Streambanks

In many instances, land uses have degraded streambanks, accelerating stream movement across
the floodplain. We define altered streambanks as those having impaired structural integrity (strength or stability) due to activities which expose soil surfaces as a result from hiking, ATV, livestock and wildlife trails, roads, logging skid trails, mining activities, etc.

- Deep Binding Root Mass

Properly functioning streambanks are protected by both vegetation and bank rock materials (e.g., boulders and cobbles). There have been few studies documenting the depth and extent of root systems of various plant species. Among riparian herbaceous species, the first rule is that annual plants do not have deep, binding root masses. Perennial species, including trees and shrubs, offer a wide range of root mass qualities and may indicate long term streambank stability.

- Downcutting

Active downcutting of a stream is often hard to recognize. Perched wetland vegetation and streambank features, plus the lack of a separate layer of channel bottom materials (i.e., the stream flows directly on the substrate materials), can be clues to downcutting.

**Soils/Geology**

The soils and geology (landform and parent material) of a riparian site influence how the site reacts to disturbances and changes over time. Changes in physical characteristics are often more difficult to remedy through management actions than are vegetative changes. The depth and texture of soil of a riparian site influences the capacity of that site to hold water and act as a sponge for prolonged late season flows and support of desired vegetation.

- Bare ground

Exposed soil surface is important in evaluating the health of riparian areas for several reasons: 1) vulnerability to erosion; 2) it may contribute to, as well as reflect, streambank deterioration; 3) less vegetation is available for soil protection and sediment entrapment; and 4) exposed soil provides opportunity for introduction of native plant species as well as invasion by noxious weeds and undesirable species.

**Vegetation**

Because they are more visible than soil or hydrological characteristics, plants may provide early indications of riparian health.

- Reproduction of Trees and Shrubs

One of the clearest indicators of ecological stability, and subsequent health, is the presence of all age classes (seedling, sapling, pole, mature, decendent, and dead) of tree and shrub species where the potential exists.

- Dead and Decendent Trees and Shrubs

The amount of dead and decendent material in trees and shrubs can be an indicator of the overall “health” of riparian areas. Decendent and dead woody material can indicate severe stress from natural or artificial causes and may be caused by severe winter temperatures, spring freezes, disease, over utilization, or insect infestations.

- Utilization of Trees and Shrubs

Heavy utilization by livestock and/or wildlife can prevent the regeneration or establishment of woody species. Excessive use of woody species may cause their elimination from the site and their replacement by disturbance-induced species or undesirable invaders.

- Plant Composition

The presence of disturbance-induced herbaceous plants (either native or introduced) may indicate that the health of the site could be improved or that it is not performing optimal riparian functions. Most of these species provide less soil holding and sediment trapping capability, and less desirable forage for livestock and wildlife.

Dakotas District Standards

**STANDARDS:**

**#3: WATER QUALITY MEETS OR IS MAKING SIGNIFICANT PROGRESS TOWARDS ASSIGNED STATE WATER QUALITY CRITERIA**

As indicated by:

- Dissolved oxygen concentration
- pH
- Turbidity
- Temperature
- Fecal Coliform
- Sediment
- Color
- Toxins
- Others: Ammonia, Barium, Boron, Chlorides, Chromium, Cyanide, Endosulfan, Lindane, Nitrates, Phenols, Phosphorus, Sodium, Sulfates, etc.

See Standards of Water Quality for North and South Dakota

**Background Information**

Natural processes influence the chemical, physical, and biological characteristics of water. When discussing rangeland health, water quality is a relative term which must be associated with water use to become meaningful. Water quality varies from place to place, with the seasons, the climate, and the kind of rock and soil through which water moves. After reaching the earth, water dissolves minerals from the earth’s crust, percolates through organic materials such as roots and leaves, and reacts with living things such as microscopic organisms like plankton and algae. Water quality is changed by stream sediments and is modified by temperature, soil bacteria, and evaporation.

Water quality criteria specifies concentrations of water constituents which, if not exceeded, are expected to support an aquatic ecosystem suitable for higher uses of water. Water quality criteria are intended to protect the direct uses of water, essential and significant life in water, and life that is dependent on life in water for its existence.

Some of the common indicators of water quality are:

- Dissolved oxygen concentration (DO) - is a function of temperature of the water, altitude and barometric pressure. The ability of water to hold oxygen decreases with use increases in temperature, altitude and dissolved solids (TDS).
- pH (hydrogen-ion concentration) - is an indicator of acidity and/or alkalinity and an index of hydrogen-ion activity. Lower values indicate acid; higher values indicate alkaline. Fresh water organisms function properly if the pH ranges from 6.0 to 9.0 units. pH concentrations below the recommended level are toxic to fish and other aquatic organisms.
- Turbidity - is the disturbance of water due to the presence of suspended matter such as clays, silt, organic matter, and various effluents. It is the expression of the optical property of water. Excess turbidity reduces light penetration.
- Temperature - is an important function which affects aquatic productivity. Temperature changes may result from natural climatic conditions or man’s manipulation of the riparian environment. Temperature is a function of location, season, time, duration of flow, depth, and many other variables, which may or may not be affected by human activities.
- Coliform groups - include bacteria organisms in their natural habitat and sources; i.e., feces, soil, water, vegetation, etc. Coliform organisms may be the result of plant and soil runoff water.
- Sediment - is a measure of suspended sand, silt, colloids and organic matter which will settle in time to the stream bottom. Sediment originates from sources such as natural erosion, mine waste, plowed fields, construction projects, or vegetative manipulation.
**Color** - is attributed to substances in solution after the suspenoid have been removed. It may be organic or inorganic substances that affect photosynthesis activity in the water. Organic substances include humic materials, peat, aquatic plants, etc. Inorganic sources include iron and manganese compounds, chemicals, industrial waste, etc.

**Toxins** - are those compounds or substances which are found in by-products or waste of various industries or activities that make their way into water sources.

Acceptable water quality is indicated by:

- Dissolved oxygen concentrations - DO concentrations are being maintained at or near saturation levels.
- pH - pH concentrations are at or near recommended State levels.
- Turbidity - Turbidity readings do not exceed Jackson Turbidity readings for the water source.
- Temperature - Water temperature readings meet State standards preferred for good growth and productivity.
- Coliform - Organisms of the coliform group do not exceed State average for the site.
- Sediment - Water normally contains suspended solids that do not exceed State standard.
- Color - Water color does not limit or significantly restrict photosynthesis processes.
- Toxins - Toxin levels are in conformance with State standard.

**TOWARDS STATE AIR QUALITY STANDARDS**

**STANDARD # 4: AIR QUALITY MEETS OR IS MAKING SIGNIFICANT PROGRESS TOWARDS STATE AIR QUALITY STANDARDS**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Standard</th>
<th>Montana and the Dakotas standards are similar.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-10</td>
<td>18 µg/m³</td>
<td>25 µg/m³ annual av.</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>0.05 ppm annual av.</td>
<td>0.10 ppm annual av.</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>23 ppm hourly av.</td>
<td>23 ppm hourly av.</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>0.05 ppm annual av.</td>
<td>0.05 ppm annual av.</td>
</tr>
<tr>
<td>Ozone</td>
<td>1.0 ppm</td>
<td>1.0 ppm hourly av.</td>
</tr>
<tr>
<td>Lead</td>
<td>1.5 µg/m³</td>
<td>1.5 µg/m³ 30-day avg.</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>0.05 ppm</td>
<td>0.05 ppm hourly av.</td>
</tr>
<tr>
<td>Visibility</td>
<td>35 units</td>
<td>35 units</td>
</tr>
</tbody>
</table>

* Not to be exceeded more than once per year.
** Not to be exceeded more than 18 times per year.
*** Applies to PSD mandatory Class I areas.

The Clean Air Act established the Prevention of Significant Deterioration (PSD) regulations which set limits for increases in ambient pollution levels and established a system for preconstruction review of new major air pollution sources. Three PSD classes have been established: Class I, Class II, and Class III. Class I areas consist of all national parks, national forests greater than 5,000 acres, national wilderness areas greater than 5,000 acres, and national wildlife refuges which existed on August 7, 1977, when the amendment was signed into law.

Protection of air quality is provided to Class I areas by severely limiting the amount of additional human-caused air pollution which can be added. All other areas, except non-attainment areas, are classified as Class II in which a greater amount of additional human-caused pollution may be added.

**STANDARD # 5: HABITATS ARE MAINTAINED AND/OR RESTORED, WHERE APPROPRIATE, FOR HEALTHY, PRODUCTIVE AND DIVERSE POPULATIONS OF NATIVE PLANT AND ANIMAL SPECIES**

As indicated by the presence or absence of:

- Plants and animals are diverse, vigorous and reproducing satisfactorily: noxious weeds are absent or insignificant in the overall plant community.
- Spatial distribution of species is suitable to ensure reproductive capability. These species may include special status species (Federally threatened, endangered, proposed Candidate 1 or 2 or Montana/North Dakota/South Dakota species of special concern).
- Species diversity (including plants, animals, insects and microbes) is present.
- Livestock grazing systems are designed to maintain rangeland health and to ensure a variety of plant communities are present.

**Background Information**

No single factor or characteristic of a site can provide a complete picture of whether that site's condition or the direction of its successional change.

BLM is charged with managing and developing habitat for a large variety of fish, wildlife and special status species of plants. Basic habitat considerations can be categorized as including food, water, cover, and space. Specific habitat requirements often vary depending on what geographic area is being considered, species which are present, and the nature and extent of other uses which may be competing. A review of components of the above listed standards (Proper Functioning Riparian-Wetland areas, Uplands and Water Quality) will provide many of the requirements needed to achieve fish, wildlife, and special status plant habitat.

**Grazing Management Guidelines**

Guidelines for grazing management are preferred or advisable approaches to grazing management practices determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard(s).

**Dakotas District Grazing Management Guidelines**

Guidelines are provided to maintain or improve resource conditions in upland and riparian habitats available for livestock grazing. In both riparian and upland habitats, these guidelines focus on establishment and maintenance of proper functioning conditions. The application of these guidelines is dependent on individual management objectives. Desired future conditions in plant communities and streambank characteristics will be determined on a site specific basis.

**Guidelines for Dakotas**

- Grazing will be managed in a manner that will maintain the proper balance between soils, water, and vegetation over time. This balance varies with location and management objectives, but acceptable levels of use can be developed that are compatible with resource objectives.
- Grazing will maintain or improve watershed vegetation, biodiversity, and floodplain function. Maintain or improve riparian vegetative cover and structure to trap and hold sediments during runoff events to rebuild streambanks, restore/recharge aquifers, and dissipate flood energy. Utilize...
management practices that promote deep-rooted herbaceous vegetation to enhance streambank stability, and the growth and expansion of woody species to provide wildlife habitat.

- Pastures and allotments will be evaluated for sensitivity and suitability for livestock grazing. Unsuitability or potentially unsuitable areas may be excluded from grazing, and/or managed more intensively.

- Management strategies for livestock grazing will ensure that long-term resource capabilities can be sustained. Natural and management-induced streambank alteration, and utilization of herbaceous and woody vegetation are critical factors which must be evaluated in any grazing management plan. Acceptable levels of streambank alteration and herbaceous/woody utilization shall be identified on a site specific basis, and used in terms and conditions. Compatible seasons and duration of use, rest periods, stocking rates, structural facilities, and management activities can then be designed to ensure that standards are achieved.

- Frequency of grazing and extent of defoliations will be managed to promote desired plants and plant communities, based on the rate and physiological conditions of plant growth. To meet these plant growth considerations the following may be applied: no grazing unit should be grazed for more than half the growing season of key plant species; periods of use throughout the growing season (early, mid, late) should be alternated from year to year; and pastures should be deferred from grazing at least once every 3 years or until seeds set. The season of use should be alternated from year to year to allow for regeneration of woody and herbaceous species. Rather than using calendar dates, stages of plant growth, length of grazing period, and target utilization levels, should be used to determine when livestock should be moved to another grazing unit. Caution should be used to avoid early spring grazing use when soils and streambanks are wet and susceptible to compaction and physical damage that occurs with animal trampling.

- The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.

- Locate permanent facilities (e.g., corrals, water developments) away from riparian-wetland areas.

- Supplemental salt and minerals should not be placed adjacent to watering locations or in riparian-wetland areas. These should be placed in upland sites to draw livestock away from watering areas, or other sensitive areas, and to contribute to more uniform grazing distribution.

- For the guidelines of noxious weed management refer to “Guidelines for Coordinated Management of Noxious Weeds in the Greater Yellowstone Area”. These guidelines provide a unified effort in developing a public awareness program; a prevention program; and a common inventory, mapping, monitoring, and reporting procedure. An overall Management Plan and specific action plans can be developed for logical units of land called Weed Management Areas. Guidelines for noxious weed control management must meet or exceed state laws.

The following RAC members participated in the development of the Dakotas District proposed standards and guidelines:

Phil Barnes, Energy/Minerals
Marc Trimmer, Energy/Minerals
Tex Hall, Agriculture
Larry Nelson, Permittee
Richard D. Rasmussen, Conservationist
Steve Blomeke, Conservationist
Bill Jensen, Conservationist
Bob Gartner, Conservationist
Curt Johnson, Elected Official
Bill Keiry, State
Annet M. Steffan, County Extension Agent
Rod Landblom, County Planning