Release 4-107

Date 1/19/01

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Subject

H-4180-1 - RANGELAND HEALTH STANDARDS

1. Explanation of Material Transmitted: This release transmits a new Handbook describing the authorities, objectives, and policies that guide the implementation of the Healthy Rangeland Initiative. Implementation will provide for the assessment of public land health, and for taking appropriate action to achieve, or make progress toward achieving, specified rangeland health standards.

2. Reports Required: None.

3. Material Superseded: None.

4. Filing Instructions: File as directed below, immediately following the Manual Section.

REMOVE:	INSERT:
None	H-4180-1
	(Total: 24 Sheets)

/s/ Sylvia V. Baca
Acting Director,
Bureau of Land Management

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CHAPTER I - INTRODUCTION

The mission of the Bureau of Land Management is to sustain the health, diversity, and productivity of our public lands for the use and enjoyment of present and future generations.

The goal of the Bureau's Healthy Rangelands Initiative is to make a difference on the land by working with permit holders, lessees, tribes, and the public to achieve Rangeland Health Standards.

The purpose of the standards and guidelines at Title 43 Code of Federal Regulations (CFR) § 4180 is to provide a measure (Standard) to determine land health, and methods (guidelines) to improve the health of the public rangelands. Success will be measured in concrete outcomes on the lands we manage. Our job is to maintain the health of the land or make appropriate changes on the ground where land health standards are not being achieved. The standards are intended to help the Bureau, public land users and others focus on a common understanding of acceptable resource conditions and the guidelines provide a basis for working together to achieve that vision. The standards are used to communicate current and desired resource conditions amongst the various groups, and guidelines are used to describe or communicate techniques for managing activities to achieve those desired conditions.

Four fundamentals of rangeland health are listed in Title 43 CFR § 4180.1. They combine the basic precepts of physical function and biological health with elements of law relating to water quality and plant and animal populations and communities. The fundamentals provide the basis for the development and implementation of the standards for land health.

A. Purpose. This handbook section gives specific direction for implementing the policies listed in the 4180 Manual Section in accordance with the authorities listed in the same Manual. Direction for implementing the Bureau's Healthy Rangelands Initiative are provided.

B. Objectives. The Bureau's objectives are to carry out the intent of the Taylor Grazing Act of 1934, as amended and supplemented, the Federal Land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978. This is: 1) to periodically and systematically inventory public lands and their resources and their present and future use projected through land use planning processes; 2) to manage public lands on the basis of multiple use and sustained yield; 3) to manage public lands in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; 4) where appropriate, to preserve and protect certain public

lands in their natural condition; 5) to provide food and habitat for fish and wildlife and domestic animals; 6) to provide for outdoor recreation and human occupancyand use; and 7) to manage, maintain and improve the condition of the public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process.

The objective of the Healthy Rangelands Initiative is to implement the intent of the legislative authorities to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public lands to properly functioning conditions; and to provide for the sustainability of the variety of uses and the communities that are dependent upon productive, healthy public lands.

C. Definitions

Allotment: An area of land designated and managed for livestock grazing (43 CFR § 4100.0-5).

Assessment: The estimation or judgement of the status of ecosystem structures, functions, or processes, within a specified geographic area (preferably a watershed or a group of contiguous watersheds) at a specific time. An assessment is conducted by gathering, synthesizing, and interpreting information, from observations or data from inventories and monitoring. An assessment characterizes the status of resource conditions so that the status can be evaluated (see definition of evaluation) relative to land health standards. An assessment sets the stage for an evaluation. An assessment is not a decision.

Appropriate Action: (1) Action taken pursuant to Title 43 CFR § 4110, 4120, 4130, and 4160 that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with the guidelines. 43 CFR § 4180.2(c). (2) Implementing and issuing a final decision pursuant to 43 CFR § 4110, 4120, 4130, and 4160 upon determining that existing grazing management needs to be modified to ensure that the Fundamentals of Rangeland Health exist (43 CFR § 4180.1).

Biological Assessment: Document prepared by an agency for the purpose of identifying any endangered species or threatened species which is likely to be affected by action proposed to be authorized, funded, or carried out by such agency (Endangered Species Act § 7(c)2, 16 U.S.C. § 1536(c)(1)).

Capability: The highest ecological status a site can attain given certain social or economic constraints, which are often referred to as limiting factors. These constraints are established for public lands through the land use planning process, which provides management direction for resource uses on public land. For example, constraints might include riparian areas permanently occupied by a highway or railroad bed that prevent the stream's full access to its original flood plain. If such constraints are removed, the site might move toward its potential.

Determination: Document recording the authorized officer's finding that existing grazing management practices or levels of grazing use on public lands grazing either are or are not significant factors in failing to achieve the standards and conform with the guidelines within a specified geographic area (preferably watershed or a group of contiguous watersheds).

Ecological Reference Area: A landscape unit in which ecological processes are functioning within a normal range of variability (see definition for normal range of variability) and the plant community has adequate resistance to and resiliency from most disturbances. These areas do not need to be pristine, historically unused lands (e.g. climax plant communities or relict areas) (Pellant et al. 2000). Ecological reference areas are lands that best represent the potential of a specific ecological site in both physical function and biological health. In many instances potential ecological reference areas are identified in Ecological Site Descriptions and are referred to as "type locations". In the absence of suitable ecological reference areas, the establishment of a "baseline" for site evaluations should be made by an interdisciplinary team of experienced, trained professionals.

Evaluation: An evaluation is conducted to arrive at 2 outcomes. Firstly, an evaluation conducts an analysis and interpretation of the findings resulting from the assessment, relative to land health standards, to evaluate the degree of achievement of land health standards. Secondly, an evaluation conducts an analysis and interpretation of information--be it observations or data from inventories and monitoring--on the causal factors for not achieving a land health standard. An evaluation of the causal factors provides the foundation for a determination (see definition for determination).

An evaluation goes further than an assessment because an evaluation takes what the assessment provides–which is the status of resource conditions characterized by the appropriate indicators–and evaluates them according to land health standards. Then, this leads to a prognosis of: land health standard achieved; making significant progress toward achieving a land health standard; or land health standard not achieved. If the land health standard is not achieved, the evaluation of the causal factors allows a determination to be made. In summary, an evaluation builds on the assessment, and the evaluation sets the stage for a determination.

Functioning at Risk: (1) Condition in which vegetation and soil are susceptible to losing their ability to sustain naturally functioning biotic communities. Human activities, past or present, may increase the risks. Rangeland Reform Final Environmental Impact Statement (FEIS) at 26. (2) Uplands or riparian-wetland areas that are properly functioning, but a soil, water, or vegetation attribute makes them susceptible to degradation and lessens their ability to sustain natural biotic communities. Uplands are particularly at risk if their soils are susceptible to degradation. Human activities, past or present, may increase the risks (Rangeland Reform Draft Environmental Impact Statement (DEIS) Glossary). SEE ALSO Properly Functioning Condition and Nonfunctioning Condition.

Fundamentals of Rangeland Health: Overarching principles of rangeland health, listed at 43 CFR § 4180.1, which establish the Department's policy of managing for healthy rangelands (60 Federal Register (FR) at 9954). State or regional standards and guidelines must provide for conformance with the Fundamentals of Rangeland Health (43 CFR § 4180.2(b)).

Guideline: A practice, method or technique determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers and permittees achieve standards. Guidelines may be adapted or modified when monitoring or other information indicates the guideline is not effective, or a better means of achieving the applicable standard becomes appropriate.

Indicators: Components of a system whose characteristics (presence or absence, quantity, distribution) are used as an index of an attribute (e.g., rangeland health attribute) that are too difficult, inconvenient, or expensive to measure (Interagency Technical Reference 1734-8, 2000).

Interdisciplinary Team: Staff specialists representing identified skill and knowledge needs working together to resolve issues and provide recommendations to an authorized officer.

Interested Public: An individual, group or organization that has submitted a written request to the authorized officer to be provided an opportunity to be involved in the decision making process for the management of livestock grazing on specific allotments or has submitted written comments to the authorized officer regarding the management of livestock grazing on a specific allotment (43 CFR § 4100.0-5).

Inventory: Gathering of baseline information (including quantitative data, cultural knowledge, and qualitative observations) about condition of resources. Examples of inventory are Ecological Site Inventory, and Population Counts of Threatened or Endangered Species.

Land Health: Degree to which the integrity of the soil and the ecological processes of ecosystems are sustained.

Land Use Plan: A resource management plan, developed under the provisions of 43 CFR § 1600, or a management framework plan. These plans are developed through public participation in accordance with the provisions of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) and establish management direction for resource uses of public lands (43 CFR § 4100.0-5).

Monitoring: Regular collection of data to evaluate: 1) whether objectives or land health standards are being achieved; 2) effectiveness of management actions.

Native plant and animal populations and communities: Populations and communities of all species of plants and animals naturally occurring, other than as a result of an introduction, either presently or historically in an ecosystem. For further reference, see BLM Manual Section 1745 - Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife and Plants.

Nonfunctioning Condition: (1) Condition in which vegetation and ground cover are not maintaining soil conditions that can sustain natural biotic communities. FEIS at 25. (2) Riparian-wetland areas are considered to be in nonfunctioning condition when they don't provide adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows and thus are not reducing erosion, improving water quality, or other normal characteristics of riparian areas. The absence of a floodplain may be an indicator of nonfunctioning condition (DEIS Glossary). SEE ALSO Properly Functioning Condition and Functioning at Risk.

Normal Range of Variability: The deviation of characteristics of biotic communities and their environment that can be expected given natural variability in climate and disturbance regimes (Pellant et al. 2000).

Objective: A description of a desired future resource condition to be achieved in a specified time frame to meet land use plan goals.

Permitted Use: The forage allocated by, or under the guidance of, an applicable land use plan for livestock grazing in an allotment under a permit or lease, and is expressed in Animal Unit Months (AUMs) (43 CFR § 4100.0-5).

Potential: The highest ecological status a site can attain given no social or economic constraints.

Potential Natural Community (PNC): The stable biotic community that would become established on an ecological site if all successional stages were completed without human interference under present environmental conditions (DEIS Glossary).

Properly Functioning Condition: (1) An element of the Fundamental of Rangeland Health for watersheds, and therefore a required element of State or regional standard and guidelines under 43 CFR § 4180.2(b). (2) Condition in which vegetation and ground cover maintain soil conditions that can sustain natural biotic communities. For riparian areas, the process of determining function is described in the BLM Technical Reference TR 1737-9. FEIS at 26, 72. (3) Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve floodwater retention and groundwater 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 functioning condition of riparian-wetland areas is influenced by geomorphic features, soil, water, and vegetation (DEIS Glossary). (4) Uplands function properly when the existing vegetation and ground cover maintain soil conditions capable of sustaining natural biotic communities. The functioning condition of uplands is influenced by geomorphic features, soil, water, and vegetation (DEIS Glossary). SEE ALSO Nonfunctioning Condition and Functioning at Risk.

Range Improvement: An authorized physical modification or treatment which is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; restore, protect and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes, but is not limited to structures, treatment projects and use of mechanical devices or modifications achieved through mechanical means (43 CFR § 4100.0-5).

Rangeland: A kind of land on which the native vegetation, climax or natural potential consists predominantly of grasses, grasslike plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide a non-crop plant cover that is managed like native vegetation. Rangeland may consist of natural grasslands, savannahs, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows.

Rangeland Health: The degree to which the integrity of the soil and ecological processes of rangeland ecosystems are sustained. Rangeland health exists when ecological processes are functioning properly to maintain the structure, organization and activity of the system over time (FEIS at 72).

Reference Condition: In the context of an ecological site, reference condition is the condition which meets, or comes close to meeting, all relevant land health standards. In addition, the reference condition provides a set of indicators (and their appropriate range of values) to be used for the assessment of an equivalent ecological site (which will not necessarily be in reference condition). Reference conditions are provided in published Ecological Site Descriptions or in the records of Ecological Site Inventories and Soil Surveys.

In a more general multi-scale context, a reference condition will reflect and lie within the historic range of variability for environmental conditions, processes and functions, generally considered to have operated during the 1,000 year period immediately preceding Euro-American settlement. These environmental conditions, processes, and functions can be operative at different scales, from the fine-scale (e.g. organic matter content at the site-specific scale) to the large-scale (e.g. plant community composition at the watershed or subbasin scale).

Significant Factor: Principal causal factor in the failure to achieve the land health standard(s) and conform with the guidelines. A significant factor would typically be a use that, if modified, would enable an area to achieve or make significant progress toward achieving the land health standard(s). To be a significant factor, a use may be one of several causal factors contributing to less-than-healthy conditions; it need not be the sole causal factor inhibiting progress towards the standards.

Significant Progress: Movement toward meeting standards and conforming to guidelines that is acceptable in terms of rate and magnitude. Acceptable levels of rate and magnitude must be realistic in terms of the capability of the resource, but must also be as expeditious and effective as practical.

Special Status Species: includes:

proposed species - species that have been officially proposed for listing as threatened or endangered by the Secretary of the Interior. A proposed rule has been published in the Federal Register.

listed species - species officially listed as threatened or endangered by the Secretary of the Interior under the provisions of the Endangered Species Act (ESA). A final rule for the listing has been published in the Federal Register.

endangered species - any species which is in danger of extinction throughout all or a significant portion of its range.

threatened species - any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

candidate species - species designated as candidates for listing as threatened or endangered by the Fish and Wildlife Service (FWS), and/or National Marine Fisheries Service (NMFS).

state listed species - species listed by a State in a category implying but not limited to potential endangerment or extinction. Listing is either by legislation or regulation.

sensitive species - those designated by a State Director, usually in cooperation with the State agency responsible for managing the species and State Natural Heritage programs, as sensitive. They are those species that: (1) could easily become endangered or extinct in a State, (2) are under status review by the FWS and or NMFS, (3) are undergoing significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution, (4) are undergoing significant current or predicted downward trends in population or density such that Federal listed, proposed, or candidate status may become necessary, (5) typically have small and widely dispersed populations, (6) inhabit ecological refugia or other specialized or unique habitats, (7) are State listed but which may be better conserved through application of BLM sensitive species status.

Standard: Standards of land health are expressions of levels of physical and biological condition or degree of function required for healthy lands and sustainable uses, and define minimum resource conditions that must be achieved and maintained.

Terms and Conditions: Mandatory and optional provisions of a grazing permit or lease specified by an authorized officer pursuant to 43 CFR § 4130.

Watershed: The 5th level of the hydrologic unit delineation system. A watershed is coded with 10 numerical digits, and watersheds range in size from 40,000 to 250,000 acres (Subcommittee on Spatial Water Data, 2000).

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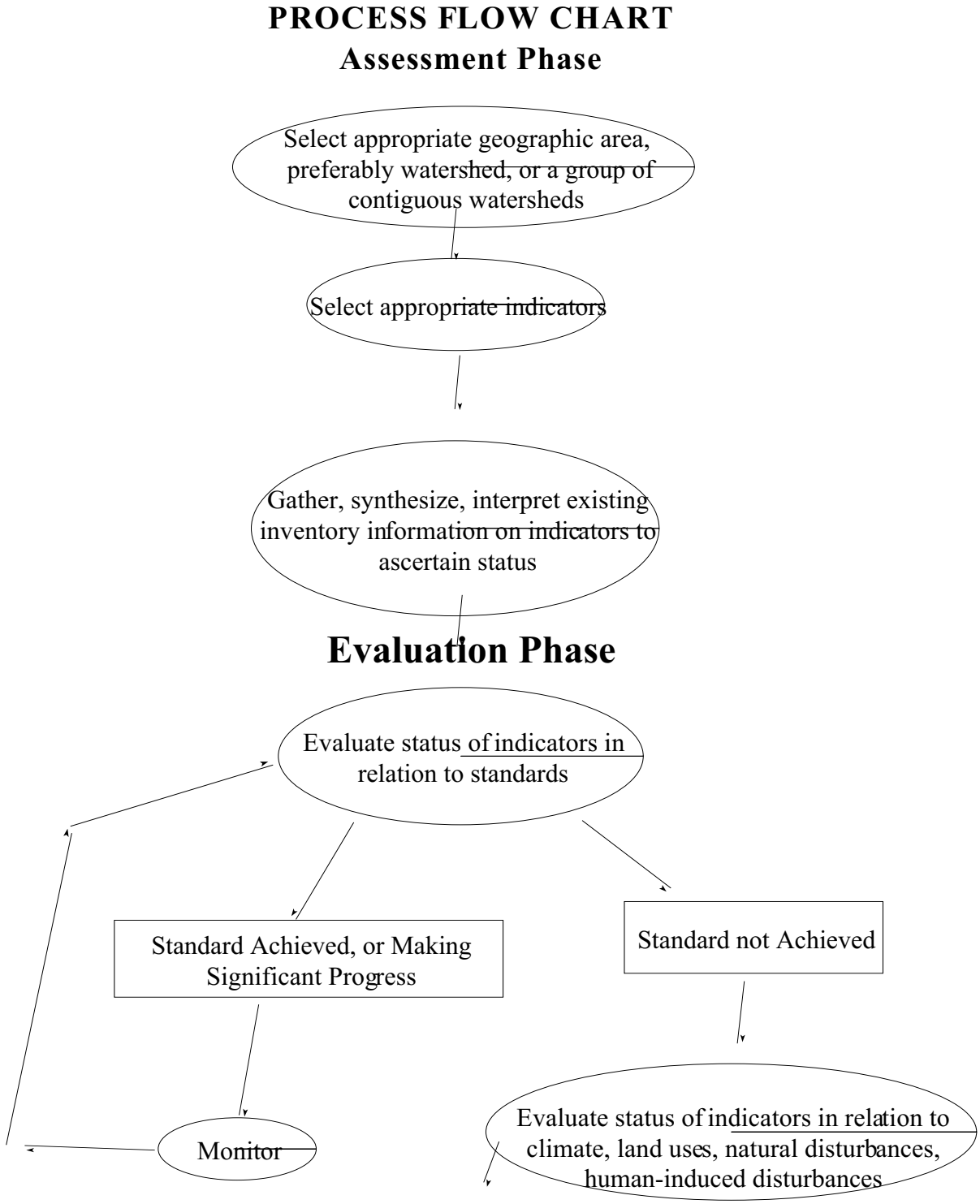
D. Process Flow Chart



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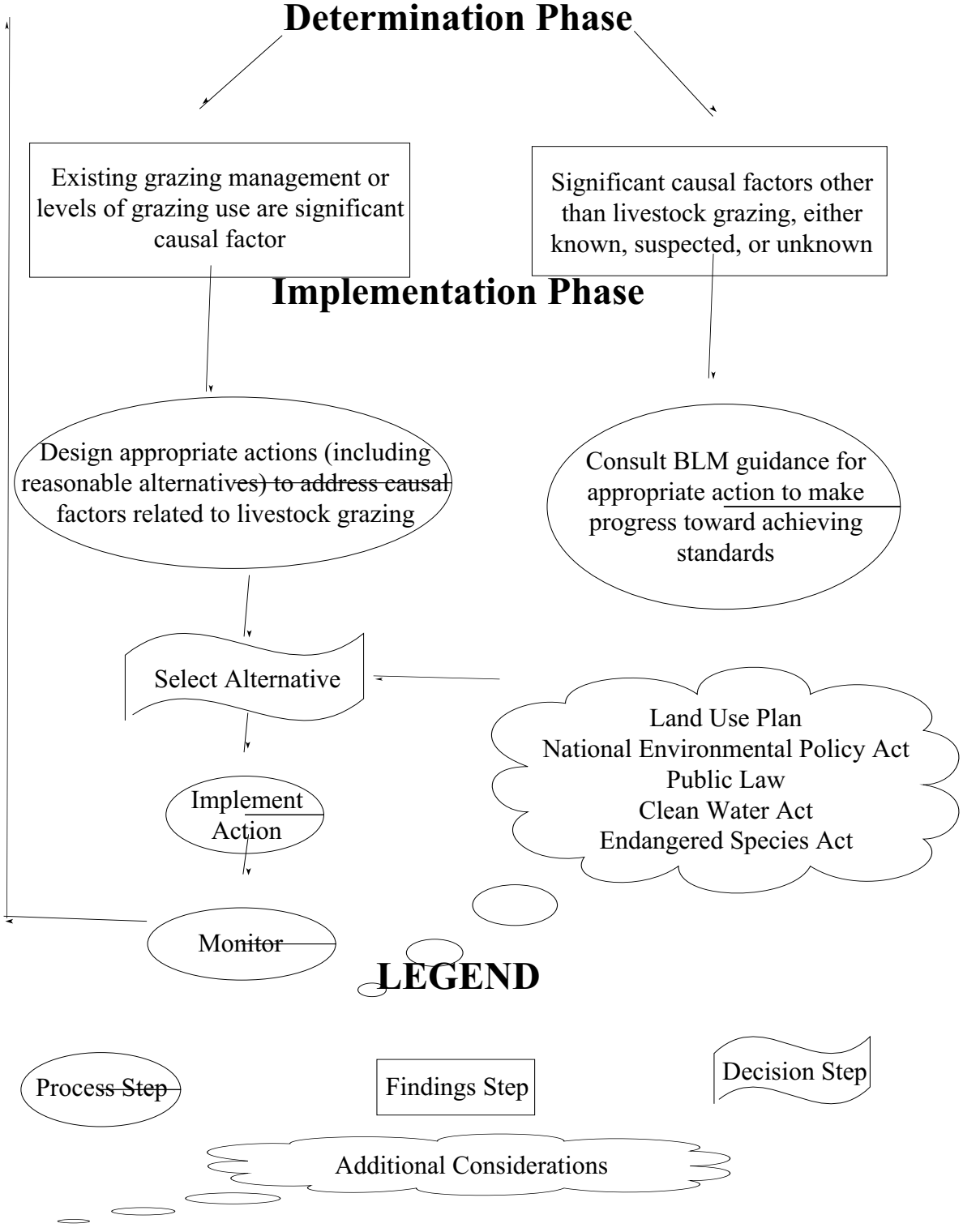
Determination Phase
Existing grazing management or levels of grazing use are significant causal factor
Significant causal factors other than livestock grazing, either known, suspected, or unknown
Implementation Phase
Design appropriate actions (including reasonable alternatives) to address causal factors related to livestock grazing
Consult BLM guidance for appropriate action to make progress toward achieving standards
Select Alternative
Land Use Plan
National Environmental Policy Act
Public Law
Clean Water Act
Endangered Species Act
Implement Action
Monitor
LEGEND
Process Step
Findings Step
Decision Step
Additional Considerations

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CHAPTER II - DEVELOPING AND AMENDING STANDARDS AND GUIDELINES

A. Developing Standards: State Directors are responsible for developing State or regional rangeland health standards (Title 43 CFR § 4180.2) in consultation with affected Resource Advisory Councils (RACs). An interdisciplinary team with vegetation, soils, water quality, riparian, wildlife, ecology, fire management, and hydrology skills and knowledge develops Standards that conform to the four fundamentals listed in Section 4180.1, and at a minimum, address (1) watershed function, (2) nutrient cycling and energy flow, (3) water quality, (4) habitat for endangered, threatened, proposed, candidate, or special status species, and (5) habitat quality for native plant and animal populations and communities (43 CFR § 4180.2(d)). For example, the team might include any combination of the following staff: Range Management Specialist, Soil Scientist, Wildlife Biologist, Hydrologist, Fisheries Biologist, Botanist, Fire Ecologist, Geologist, or Cultural Resource Specialist as long as the needed skills and knowledge are represented. The team consults and coordinates with appropriate Tribes, State and Federal agencies with land and resource management responsibilities in the geographic area, and with the public. Standards must be developed to assure that the fundamentals of land health are met, or are making significant progress toward meeting the conditions described in 43 CFR § 4180.1.

Standards for other ecosystems (eg, forests, aquatic) are to be developed using the same processes used to develop rangeland health standards, and are to be implemented through the land use planning process.

A list of indicators for measuring achievement of each Standard is to be developed by the team in consultation with the above listed groups. Consultation and coordination with academic institutions and with other agencies is encouraged.

When the State Director has developed Land Health Standards, the Standards will be submitted to the Secretary of the Department of the Interior for approval. Once approved by the Secretary, Land Health Standards are implemented on the geographic area for which they were developed.

If State or regional land health standards are not developed and in effect by August 12, 1997, then fallback standards listed in 43 CFR § 4180.2 (f)(1) shall be implemented until State or regional standards are developed and approved by the Secretary.

B. Amending Standards: State or regionally developed Standards may be amended if and when they are found to be inadequately defined to determine conformance with the four fundamentals. The same process used to develop the Standard should be used to develop the amended Standard. An appropriate list of indicators will need to be developed, but may include previously listed indicators if they are applicable to the amended Standard. Fallback Standards may be modified by the State Director, with approval of the Secretary, to address local ecosystems and management practices.

When Standards are amended or new Standards developed, review land use plans that cover the area affected by the Standard to ensure that existing land use plan decisions do not impair achievement of the Standard. If proposed new or amended Standards are significantly different from existing Standards or existing land use plan decisions impair achievement of the Standard, then the land use plan should be amended. In order to prevent duplication of effort, review existing Standards when a land use plan amendment or revision is planned. The two processes could then be undertaken concurrently. New, revised or amended Standards need to be approved by the Secretary before being implemented.

C. Developing Activity Guidelines: State Directors are responsible for developing State or regional Livestock Grazing Management Guidelines (Title 43 CFR § 4180.2) in consultation with appropriate Resource Advisory Councils. Management guidelines for other activities shall be developed as needed to assure that Land Health Standards are achieved. Development and implementation of activity guidelines should be addressed in the Land Use Plan, and are to be designed to achieve Land Use Plan objectives. An interdisciplinary team with vegetation, soils, water quality, riparian, wildlife, ecology, fire management, and hydrology skills and knowledge develops the guidelines in consultation with appropriate Tribes, State and Federal agencies with land and resource management responsibilities in the geographic area, and with the public. In many cases, Best Management Practices, Surface Operating Standards, or other regulations may provide a basis for developing guidelines for activities other than livestock grazing. At a minimum, activity guidelines must address the 12 principles listed in 43 CFR § 4180.2(e).

When the State Director has developed activity Guidelines, the Guidelines will be submitted to the Secretary of the Department of the Interior for approval. Once approved by the Secretary, Guidelines are implemented on the geographic area for which they were developed.

If State or regional livestock grazing guidelines are not developed and in effect by August 12, 1997, then fallback guidelines listed in 43 CFR § 4180.2 (f)(2) shall be implemented until State or regional guidelines for livestock grazing are developed and approved by the Secretary.

D. Amending Activity Guidelines: Guidelines may be amended if and when they are found to be inadequate to achieve the Standards or Fundamentals of Rangeland Health. The same process used to develop the original activity guidelines should be used to develop the amended guidelines. Revised or amended Guidelines need to be approved by the Secretary before being implemented. Fallback guidelines may be modified by the State Director, with approval of the Secretary, to address local ecosystems and management practices.

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CHAPTER III - ASSESSING RESOURCE CONDITIONS & EVALUATING RANGELAND HEALTH STANDARDS

An evaluation is not a decision document but a stand alone report that clearly records all aspects of the evaluation and analysis and interpretation of available information, including inventory and monitoring data. Each evaluation report should be officially filed and readily available to help guide management and should include the following:

- Documentation of the thought process and logic track used to determine the evaluation process, including the procedural steps, and all conclusions that are reached. The document needs to include:
  Selection of the area to be evaluated
  Selection of Indicators
  collection of inventory, monitoring data
  analysis of the data and interpreting the indicators

- Identification of types and general locations of land health problems

- Description of the existing conditions. This information will be used later if National Environmental Policy Act (NEPA) analysis of proposed action and alternatives is needed. The description needs to be adequate to develop a reasonable range of alternatives to be analyzed through the NEPA process.

- Status of each unit evaluated, reported by appropriate unit (watershed, acreage, allotment) with respect to each of the applicable land health standards.

- Reference to information collected through each assessment. This information should be entered into a shared data base that is compatible with a Geographic Information System (GIS) and accessible to all office resource specialists. Minimum content should include location identifier of the data collection site, date assessed, and a column for each health standard to indicate whether or not the location is achieving applicable standards.

A. Prepare for an Assessment and Evaluation

1. Assemble Interdisciplinary (ID) Team

   The assessment team should consist of resource specialists who can provide professional interpretations of the status of resource conditions--as indicated by the

appropriate indicators--with a defensible logic trail. The evaluation team should consist of resource specialists who can provide professional interpretations of the degree of departure of these resource conditions and indicators from the land health standards. Using resource specialists this way allows you to "leverage" the professional knowledge and capture years of experience on the District or Field Office. Skills represented on the ID Team may include soils/geology, vegetation/ecology, wildlife/fisheries, hydrology/watershed, riparian, water quality and fire management. During the evaluation phase (see Process Flow Chart), staff with knowledge of impacts of various activities, including mining, recreation, livestock grazing will be needed to help identify significant causal factors if Land Health Standards are not achieved.

2. Criteria for Selecting Assessment and Evaluation Areas

Use watershed (Fifth level, ten digit Hydrologic Unit Code (HUC)) boundaries; (Subcommittee on Spatial Water Data, 2000) when conducting assessments of status of resource conditions, and when conducting evaluations of land health standards, except when compelling issues dictate that an administrative or other ecosystem-based boundary take precedence. The Unified Federal Policy for a Watershed Approach to Federal Land and Resource Management calls for the use of watershed, not administrative, boundaries when conducting local assessments. Give a brief statement of the rationale for not using a watershed boundary as part of the assessment and the evaluation. For example, if a portion of an allotment extends outside of a watershed boundary, that portion can be included in the assessment area and the evaluation area. An evaluation of a watershed for Land Health Standards may not include all the processes in BLM Technical Note 405 (McCammon et al. 1998), but if a watershed assessment is completed, it can, and should, meet all of the requirements for evaluating Land Health Standards within that watershed. Because an assessment of the status of resource conditions feeds into an evaluation of Land Health Standards (see definitions for assessment and evaluation, and Process Flow Chart), it is recommended that the assessment and evaluation be conducted on the same geographic area.

a. Apportion all BLM lands managed by a Field Office into Assessment and Evaluation Areas considering:

(1). **Size**. All assessments and evaluations must be completed in a reasonable time frame. An assessment area and evaluation area may include several watersheds or other management units in order to complete assessments and evaluations in a

reasonable time frame. Generally, each Authorized Officer should ensure that an average of ten percent of the public lands under their jurisdiction are assessed and evaluated each year until the initial round of assessments and evaluations are complete. All high priority watersheds must be assessed and evaluated within the ten year time frame. Consider assessing and evaluating larger units (such as multiple watersheds or subbasins) where watersheds are small and have similar issues.

(2). **Compatibility**. Are other required assessments and evaluations being conducted whose purpose and information needs are significantly similar to the proposed assessment and evaluation for land health standards? For example, areas encompassed by the Northwest Forest Plan and the Interior Columbia Basin Ecosystem Management Project (ICBEMP) have additional analysis requirements at the watershed scale (Regional Interagency Executive Committee and Intergovernmental Advisory Committee 1995) and review requirements at the subbasin scale (USDA and USDI 1999). Are Total Maximum Daily Load (TMDL) assessments planned? Are Biological Assessments planned? With limited time, funding, and personnel, it is important that any assessment or evaluation produce the most useful information for meeting all of these needs in the most efficient manner possible.

(3) **Continuity of area**. Can adjoining areas with similar issues be assessed together and evaluated together? Consider making effective use of labor and material resources by assessing and evaluating more than one watershed where there are similar issues. This will also provide assessments and evaluations over a larger landscape.

(4) **Appropriate Scale**. Is the area large enough to address the issues and to generate an appropriate assessment of resource conditions and evaluation of land health standards? While the watershed is the preferred geographic area, there may be compelling reasons to consider other geographic areas (smaller or larger). Consider appropriate geographic boundaries–the geographic area selected should have common resource characteristics at a scale appropriate to the complexity of the issues (e.g. a subwatershed or a mountain range would be preferred to widely separated allotments linked only by an expiring grazing permit).

3. Prioritize Assessment and Evaluation Areas

Authorized Officers are responsible for determining the priority for conducting assessments and evaluations. The process for prioritizing areas must reflect the full range of physical and biological factors addressed by the land health standards. While watersheds are the primary geographic area for assessments and evaluations, previous allotment selective management categorization (Maintain, Improve, Custodial) may be useful in developing priorities. In most cases, however, the allotment categorization process did not fully consider indicators of health and ecosystem function, and did not consider adjoining areas. The reasons for assigning an allotment to a selective management category will be more useful in setting watershed priorities than just knowing the categories of the allotments in that watershed.

Authorized officers are also responsible for ensuring that assessments and evaluations are conducted in a reasonable period of time. Set a schedule listing the areas to be assessed and evaluated and proposed dates for assessment and evaluation. Review the schedule at least every other year to assure that changing issues are considered in the assessment and evaluation schedule.

Strive to involve affected permittees and lessees, other landowners in the assessment and evaluation area, holders of liens, interested publics, RACs, other federal, local and state agencies, and Tribal governments throughout the assessment and evaluation process, including activities associated with prioritizing areas.

a. In setting priorities for land health assessments and evaluations, areas with land health issues take precedence. Use authorizations should not be considered the driving factor for setting priorities. Assign high priority to areas believed to be at risk--in degraded condition or downward trend and in danger of losing capability. As an example, the following criteria should be considered when prioritizing areas to complete early in the assessment and evaluation schedule:
   1. Terrestrial Habitats (including riparian) that have declined substantially from historical geographic extent, (these areas may be associated with special status species as defined above);
   2. Impaired streams listed on the State 303(d) list, (considering the schedule for TMDL development) or streams that have been dropped from the 303(d) list for lack of sufficient and credible data, Unified Watershed Assessment category I watersheds, or areas with known water quality issues;

3. Areas with special designation (e.g. Wilderness, Wilderness Study Areas, Areas of Critical Environmental Concern, Monuments, Wild and Scenic Rivers, National Conservation Areas); Large contiguous holdings of BLM administered lands within the specified geographic area, rather than small or "scattered" pattern of BLM administered lands. For example in the ICBEMP plan area, subbasins that had less than 5% BLM/FS administered lands were excluded from the subbasin review (USDA and USDI 1999) requirement;
4. All areas with habitat for known threatened, endangered, or other special status species;
5. Areas with pending application(s) for high disturbance activities.
6. Areas with highly conflicting uses.

b. The renewal or transfer of a permit or lease for any activity may be an opportune time to conduct an assessment of resource conditions and an evaluation of Land Health Standards and make any needed changes in the terms and conditions, but should not be the sole factor of consideration for assessing and evaluating an area.

c. Determine if regional scale assessment and evaluation areas are needed to evaluate some of the Standards. Regional or subbasin scale assessments, consisting of several to many watersheds, using watershed level indicators is probably more appropriate to evaluate whether or not some Standards are being achieved. For example, the wildlife habitat standard, as written by most States, lends itself well to performing a landscape-scale assessment and evaluation.

B. Conduct Assessments and Evaluations

1. Subdivide the Assessment and Evaluation Area

If needed to effectively collect information for the assessment of resource conditions, and the evaluation for achievement of land health standards, subdivide the area to be assessed and evaluated into reasonably representative homogeneous units based on the complexity of the landscape. Consider the following factors:

a. Variability of vegetation, soils, geology, ecological sites.
b. Special Status species home range, and habitat for Threatened and Endangered plant and animal species.
c. Feasibility–can the number of subdivisions be realistically assessed and evaluated in a reasonable amount of time?

d. Can the information (existing or newly collected) from points in the subdivided unit be reasonably extrapolated to the whole unit?

e. Multiple management units within the assessment and evaluation area (e.g., allotments) may be subdivided from one another.

2. Select Indicators

During the assessment phase, select from the indicators developed with each Standard (see Process Flow Chart). Criteria for selecting appropriate indicators and methods of measurement and observation include, but are not limited to: 1) the relationship between the attribute(s) being measured or observed and the land use plan or activity plan objectives; and 2) funds and workforce available to conduct the measurements or observations. Select a number of indicators that will adequately document or explain any findings. Try to use dissimilar indicators for each standard rather than similar indicators that are looking at the same thing.

The condition or degree of function of an identified area in relation to the Standards and the trend toward or away from any Standard is evaluated through the use of reliable and scientifically sound indicators. These indicators can be associated with the fine-scale and be site specific (such as percent plant cover) or be broad-scale and applicable to the watershed or larger geographic area (such as rangeland and forest cover type within a large geographic area). Indicators can be measured to show 1) change in rangeland and forest cover type composition over time within a large geographic area; 2) change in fire regime (frequency & severity) within a large geographic area; 3) change in invasive species (including legally designated noxious weeds) presence and composition (percent contribution of each exotic undesirable plant to the total amount of undesirable exotic plants) within a large geographic area; etc.. The consistent application of such indicators can provide an objective view of the condition and trend of the identified area when used by trained observers.

For example, the amount and distribution of ground cover can be used as one indicator to indicate that infiltration at the soil surface can take place as described in the Standard relating to upland watershed function. In applying this indicator, the specific levels of plant cover necessary to support infiltration in a particular soil would be identified using: 1) currently available information from ecological reference areas, if they exist; 2) technical sources like soil survey reports, Ecological Site Inventories, and Ecological Site Descriptions; or 3) from other existing reference materials.

The characteristics of good indicators are:

a. Relevant: an indicator is a means to an end and must clearly identify the "end"
   1. Pertinent to Standard(s); adequately addresses questions posed by one or more standards.
   2. Responsive to management actions; changes in indicator due to management practices are detectable over a reasonable time period. Shorter time frames may be appropriate for site specific scales, and longer time frames for regional scale.

b. Affordable: must be able to sustain monitoring and evaluation activities through normal budgetary cycles

c. Contributes to a minimum suite of indicators that can answer evaluation questions

d. Incorporates technology sensibly: do not use technology just because it is new or even available, but because it helps answer relevant questions more accurately/faster/economical.

e. Takes advantage of all sources of existing information from both within BLM and from other agencies and organizations.

f. Credible: must be acceptable and supportable by a diverse audience

g. Has a generally accepted measurement method(s), sufficiently standardized to yield results that can be consistently repeated across administrative boundaries.

h. Has accepted thresholds or criteria to distinguish between reportable classes (e.g. meets vs doesn't meet) OR it is reasonable to assume that such thresholds or criteria can be developed with existing knowledge.

i. Inherent spatial and temporal variability can be managed through affordable means (such as a stratification (subdividing) process, selection of "representative areas"(key sites), application of climatic adjustment factors, repeating measurements during same seasonal period)

j. Matches skills required with skills available; if technical skills and/or professional judgement is called for, it is reasonable to expect that experienced field crews are available and will be used.

k. Understandable to a diverse audience; can be explained without highly technical terminology, bureaucratic jargon, and confusing acronyms.

3. Select Assessment and Evaluation Methods

Select the appropriate methods, factoring in the proper intensity of assessment and density of observation points needed to adequately represent average conditions within each unit. The following are points that should be considered when selecting methods:

a. Determine what data and information are readily available. Inventories, monitoring data, planning documents, the Interior Columbia Basin Ecosystem Management Project (ICBEMP) database and science documents, completed assessments of adjacent watersheds, subbasin or regional assessments, and maps are all sources of information that can be used to identify useful indicators to supplement those already developed. Consider other sources of information that may be available locally. Document the sources of data and information used.

b. Monitoring data collected in the recent past will often be an important source of information in conducting an assessment of resource conditions and an evaluation of Land Health Standards, but years of monitoring data are not necessarily required to complete an evaluation.

c. Review adequacy of the existing data/information considering:
   1. age of the data;
   2. scale of the data relative to scale of the Standard(s)' comprehensiveness; and
   3. appropriateness for addressing the indicators.
   4. existing or potential resource issues and conflicts

d. Determine what assessment methods have been used previously:
   1. Riparian PFC, BLM TR 1737-9. (Barrett et al. 1995)
   2. Interpreting Indicators of Rangeland Health, BLM TR 1734-8 (Pellant et al. 2000)

3. Framework for Analyzing Hydrologic Condition, BLM TN 405 (McCammon et al. 1998).
4. Ecosystem Analysis at the Watershed Scale, Version 2.2 (Regional Interagency Executive Committee and Intergovernmental Advisory Committee 1995).
5. Other

e. Use scientifically accepted methods if at all possible. Use methods outlined in BLM Technical References at a minimum.

4. Compile and Organize Information

Compile and organize information to develop an organized overview of the watershed's current physical and biological conditions and processes and the reference conditions. Assessments characterize the status of current resource conditions, which then allows the evaluation of the status in relation to land health standards. Evaluations will provide much of the information necessary to conduct NEPA analysis and identify resource restoration and monitoring needs.

a. Assess current conditions: Methods used may range from a new examination of existing information to collection of new data in the field. Assessments should be conducted by interdisciplinary teams of journey-level specialists that adequately represent the resources involved.

b. Assess reference conditions: Reference conditions help you understand the rate, direction, or magnitude of change occurring within a watershed. The known, or inferred, history of the landscape should be described in sufficient detail to determine what existed in the past and what changes have occurred that may affect current capabilities. These historic processes and elements provide a basis for identifying cause-effect relationships in the evaluation phase, and to understand the ability of the system to adjust to or recover from disturbances or adverse change. Significant changes in vegetation communities may indicate that a threshold has been exceeded, and that what was considered the Potential Natural Community for a particular ecological site is no longer achievable.

Because physical and biological systems are highly variable, reference conditions are best thought of in terms of ranges rather than absolute values. A common premise is that systems that are operating within the historic range of variability will have a high probability of being sustainable. However, care should be taken to avoid using an extreme of a variable's

distribution as a benchmark for reference conditions. For example, while fire may have once burned 90 percent of a watershed, using 90 percent as a reference level is not reasonable even though this value is within the historic range of variability.

A description of reference conditions can be derived from many sources including literature, historic photos, verbal history, inferred data (e.g., fire scars, sediments), best professional judgement, extrapolation from surrogate watersheds, or a combination of all of these. Surrogate watersheds are watersheds with comparable geoclimatic features, and are either in near-pristine condition or have a documented disturbance history that is also comparable. Whatever your sources, they should all be clearly documented to allow the reader to further investigate or research details of interest. The reliability of the different sources varies considerably and must be clearly documented.

c. Inevitably, you will not have all the data you need for every resource, but summarize what you do know and what you do not. Data may be available from existing non-BLM databases, such as: area of watershed, density of roads, and acres of disturbance (from events such as timber harvest, grazing, fire). Include professional judgement conclusions from individual team members in your analysis and write-up.

5. Evaluate Data Evaluate all the data for each subdivided unit to identify cause-effect relationships and draw conclusions about whether or not each standard is being met for the evaluation area as a whole. Use information from the assessment that may include quantitative data from monitoring and inventories, qualitative information, professional knowledge, and knowledge provided by State agencies, public land users and others. Include any information that identifies landscape risks, such as potential for surface erosion, mass wasting, or poor revegetation potential. Characterize the outcome of risks by describing the expected outcome in terms of magnitude, duration and intensity. Regardless of how you determine cause-effect relationships, logic tracking and documentation are critical. This information and data should be evaluated to identify the degree of achievement of each Land Health Standard. In many cases, due to the lack of quantifiable information, a great deal of professional judgement will need to be exercised to evaluate standards across multiple scales. Therefore, a critical step in the evaluation process is the use and documentation of sound professional judgement.
   a. Consider the scale of assessment information that will be used in the evaluation. Assessments done at broad scales can provide the context for policy and the formulation of laws. Fine scale assessments provide the

context for projects and can be used to evaluate site-specific impacts or effects. Mid-scale assessments provide the description and understanding of the evaluation unit (eg. watershed, allotment grouping, individual allotments) conditions and capabilities and provide the context for management. There is no single scale that works in all cases.

b. No single indicator fully describes a Standard. There may be apparent contradictory results due to variability within a unit or because the problems may be limited either in nature or spatially. Therefore, use convergent lines of evidence or a preponderance of evidence approach to draw conclusions and extrapolate from data collection points to the entire subdivided unit.

c. Significance of individual site conditions: Indicators of poor health in a small area (e.g., salting sites, water troughs, camping area) will not necessarily mean the entire subdivided unit area being evaluated is failing to meet the Standard(s). Exceptions to this conclusion would apply if the isolated area is of significant ecological importance (e.g., riparian/wetland areas, critical habitat for T&E species).

d. Where possible, aggregate site level data to the landscape scale, or use landscape scale data to determine if problems exist at the landscape scale. Use this information to help draw conclusions about which subdivided units meet/don't meet the Standard(s).

e. Set up a consistent, defensible approach to drawing conclusions; an approach that is logical and provides a pathway between data, indicator, Standard and conclusion.

f. Identify the types of problems encountered for each subdivided unit that does not meet a Standard.

g. Adequacy of data for drawing conclusions: If the ID team concludes that inadequate information is available to evaluate whether areas are meeting Standards and conforming to guidelines or making significant progress toward meeting Standards and conforming to guidelines, and cannot come to a conclusion using professional judgement, the manager should, without delay, initiate action necessary to gather the minimum information needed to complete the evaluation. If reliable indicators of land health demonstrate that evaluation areas are not meeting or not making significant progress toward meeting Standards, the authorized officer must take appropriate action as soon as practicable.

h. Professional judgement may be used to draw conclusions where quantitative data does not lead to a hard conclusion. The reasoning for conclusions based on professional judgement need to be clearly documented, and may be used as an opportunity to communicate with all interested publics. Quantitative monitoring data are not always required to complete an evaluation nor to implement actions to improve management. It is inconsistent with regulations and policy to manage the public lands in a manner that allows an allotment or watershed to deteriorate while prolonged monitoring studies are conducted.

C. Identify Causal Factors

When one or more Standards is not achieved nor making significant progress toward achievement, or there is lack of conformance with guidelines, the causes for the deviation need to be identified.

1. For each subdivided unit that does not meet a Standard:

   a. List Standard(s) not achieved, reasons for not meeting, and indicator(s) used;
   b. Review ancillary data (grazing records, project records, local history, etc);
   c. List suspected significant causes for each subdivided unit; and
   d. Review possible landscape scale as well as site level causes.

2. A site-scale assessment can provide detailed information of the site, which can be useful in helping identify whether Standards are being achieved or not. However, if a Standard is not being achieved on a site, sole reliance on site-specific information may not result in a proper determination of the causal agents. There are instances where the driving causal agent(s) of the conditions observed at the site scale, operates at the landscape (watershed) scale instead (e.g., erosion occurring on lands not managed by BLM may affect siltation and water quality in stream segments flowing on public land; increases in invasive species due to landscape level disturbances). In this case, a landscape scale evaluation may illuminate the relationships between conditions and causes at the site-specific scale.

   This landscape level analysis allows for the recognition that certain site-specific actions, authorized by an existing statute or land use plan, may not meet Land Health Standards at the site level. In this case, mitigation actions should be analyzed and used appropriately to reduce impacts. In some cases, not meeting the Standard may be a temporary condition that will be remedied when the activity

ceases. Remedies should be addressed in restoration plans that accompany the permitting of the activity.

3. Consider whether "natural" disturbances are the cause and whether the area is likely to recover on its own under existing management. Natural disturbance is common in most ecosystems, and not all points on the landscape were "undisturbed" by invaders, or physical processes (fire, flood, etc.), even before European settlement.

D. Make a Determination

Once the evaluation is complete, the determination that existing activity management is a significant causal factor for not achieving Standards (where they are not) must be documented. Because the Standards are developed to assure the conditions described in 43 CFR § 4180.1 exist, achievement of Standards would mean that the four fundamentals of rangeland health are "in or making significant progress toward" being met.

The determination document must include at a minimum:

1. Statement of achievement or non-achievement for each Standard
2. List of causal factors for not achieving Standards
3. Statement of conformance or non-conformance with guidelines
4. Date determination is made, and signature of authorized officer

Documentation of causal factors should clearly identify the evidence used to reach conclusions regarding whether a Standard is or is not being met, and which activities are causal factors for not achieving the Standard.

To determine which activity(ies) is/are significant factors resulting in failure to meet the Standards, use the best data and resource information available. This may include watershed assessments, quantitative data from monitoring and inventories, qualitative information, professional knowledge, and information provided by State agencies, public land users and others.

The grazing related questions your team must answer as part of the determination process are listed below.

1 Is it more likely than not that existing grazing management practices or levels of grazing use are significant factors in failing to achieve the Standards or conform with the guidelines? (YES/NO)

2 Is it more likely than not that existing grazing management needs to be modified to ensure that the Fundamentals of rangeland health are met, or making significant progress toward being met? (YES/NO)

The authorized officer is responsible for making the determination based on the evaluation provided by the ID team, and information gathered from other sources. The determination document needs to be completed as soon as the evaluation is complete and any additional information is reviewed, normally no more than four months from completion of the evaluation.

If existing livestock grazing management or level of use is determined to be a significant causal factor for not achieving Standards or not making significant progress toward achieving a fundamental of rangeland health, the authorized officer must take appropriate action as soon as practicable but no later than the beginning of the next grazing year to bring grazing activities into conformance with grazing guidelines or to modify them so that significant progress can be made toward achieving Land Health Standards.

E. Develop a Plan

1. The plan should address all Standards which were not achieved or conditions where fundamentals of rangeland health are not met or making significant progress toward being met. The team should use the results of the assessments and evaluation to prepare recommendations for modifications to existing use authorizations, restoration actions, and monitoring. Recommendations should have an overall goal in mind, such as to restore ecosystem processes that are impaired and to maintain those that are functioning satisfactorily. However, they may also be made to meet other types of goals, particularly land use plan objectives, or stepping down recommendations from a broader-scale analysis. Clearly state the goals for each recommendation. Recommendations should provide clear logic and rationale pointing to appropriate types of management actions needed to achieve objectives given the existing and reference conditions of key resources.
2. If existing livestock grazing is determined to be a significant factor for not meeting

one or more of the Land Health Standards in the watershed, work with the permittee(s)/leasees and other stakeholders to determine appropriate actions. Coordination should include proposals to modify the terms and conditions in the permit/lease and implementing restoration projects and range improvements. If changes are to be made in the terms and conditions in the permit, they must be in place before the start of the next grazing season. Any proposals to implement restoration and range improvement projects must take into consideration the ability to budget these projects and implement appropriate actions before the beginning of the next grazing season. If other necessary actions cannot be implemented right away, then interim adjustments will be made prior to the next grazing season, and a schedule for "final" changes must be developed and documented. Make sure that grazing terms and conditions are consistent with other adjustments that might be needed for other causal factors.

3. If the Land Health Standards are not being achieved because of a causal factor other than current livestock grazing management, you must consult other program guidance for the appropriate steps to be taken to ensure that progress toward meeting Standards is made.

4. Conflicts between existing objectives and the watershed's capability to meet these objectives may be identified through the evaluation process. If this occurs, it should be documented in the evaluation, in addition to any current regulatory or policy constraints that are in effect at the time of the evaluation.

5. Develop a monitoring plan that includes studies or monitoring that will be needed to measure progress towards achieving the Standards. Identify the monitoring activities needed to address the issues in the evaluation. In particular, the monitoring strategy should link back to the indicators used in the evaluation and the causal factors for change and/or not meeting a Land Health Standard. **Monitor only what is pertinent. Do not use qualitative assessments as a trend monitoring method.**

F. Implement the Plan

Develop alternative actions for NEPA analysis which incorporate the information and recommendations developed in the evaluation. Reasonable alternatives to analyze must consider achievement of the Land Health Standards at the watershed scale. Use an appropriate level of NEPA analysis to select management actions designed to enhance or restore function and achieve the Standards. Implement actions or appropriate interim measures as soon as practicable, but, in the case of livestock

grazing, no later than the beginning of the next grazing season. Evaluations will provide much of the information necessary to conduct NEPA analysis and identify resource restoration and monitoring needs.

1. Compare alternatives and discuss expected outcomes in the environmental analysis document.
2. Document desired future condition objectives both for monitoring, and for triggering management change (adaptive management).

G. Monitor Progress

Collect and evaluate inventory and monitoring data on a regular basis as needed to determine achievement of Land Health Standards, or progress toward achieving those Standards.

Redesign existing monitoring programs to capture the data needed to complete future evaluations to determine achievement of or progress toward achieving standards.

New monitoring needs to be sensitive enough and established at the appropriate location to detect deteriorating "achieving" areas, and improving "non-achieving" areas.

Schedule data collection and evaluation to allow changes in the indicators to reflect changes in management of activities.

H. Report Results

Findings of the evaluation process will be reported electronically and posted to state websites for public access using the format shown in Illustration 2 (Reserved). Hard copies of all data collected and used for the evaluation and determination are to be kept in the appropriate Allotment Files as part of the Evaluation document.

CHAPTER IV - GUIDELINES FOR REPORTING

A. Purpose

Reporting will allow the Bureau to communicate the following items to the public and to other offices:

findings from the evaluation,
areas where Standards are achieved
areas where Standards are not achieved, and the causal factors
date the determination is signed
the action taken to achieve Standards
progress toward meeting Standards

The format for reporting allotment information is found in Illustration 2 (Reserved). This information will be filed electronically, and will be provided at state websites for access to the public.

B. Documents

Two documents will result from each evaluation: The Evaluation, and The Determination. Where Land Health Standards are not achieved, and there is no significant progress toward achieving them, there will be additional documentation: A NEPA analysis of alternative actions which will lead to making significant progress toward achieving the Standards, and the Decision document.

1. Evaluation

The evaluation will include identification of the area evaluated, a reference to data and information sources used in the evaluation, the list of Standards and/or objectives evaluated, the indicators used to evaluate the status of the Standards, and conclusions drawn by the ID team.

2. Determination

The Determination documents the findings based on the evaluation, whether or not each standard is achieved, and the causal factors if not achieved. The determination document must include at a minimum:

Statement of achievement or non-achievement for each Standard
List of causal factors for not achieving Standards
Statement of conformance or non-conformance with guidelines

Date determination is made, and signature of authorized officer

3. NEPA Analysis (if needed)

   NEPA analysis is needed only if proposing an action and alternatives. For permitted activities, the proposal is either the application for the permitted use, or the proposal to change current management because of the findings in the Determination.

4. Decision document (if needed)

   Decisions to adjust grazing management will be issued in accordance with Title 43 CFR § 4160. Decisions to adjust other activities will be made through the appropriate process or through a Decision Record subsequent to the NEPA analysis. Decisions requiring substantial change may require a Land Use Plan Revision or Amendment.

C. Storing/Accessing the Data

Hard copies of all data collected and used for the evaluation and determination are to be kept in the appropriate Allotment Files as part of the Evaluation document. Because most evaluations will be done on a watershed basis, a copy of each of the relevant watershed evaluations will be stored in the Allotment Files in the Evaluations section. A brief summary of the findings for the individual allotment is appropriate.

CHAPTER V - COMPLIANCE WITH RELATED LAWS

A. National Environmental Policy Act

National Environmental Policy Act of 1969, as amended (42 U.S.C. § 4321 *et seq*), requires the consideration and public availability of information regarding the environmental impacts of major Federal actions. This includes the consideration of alternatives and mitigation of impacts.

Further instructions and guidance for complying with NEPA is available in BLM Manual H-1790-1, the National Environmental Policy Act Handbook, dated 10/25/88.

B. Clean Water Act

The Federal Water Pollution Control Act (33 U.S.C. § 1251-1387), requires the Federal land manager to comply with all Federal, Interstate, State and local requirements, administrative authority, process, and sanctions regarding the control and abatement of water pollution.

C. Endangered Species Act

The Endangered Species Act of 1973 as amended (16 U.S.C. § 1531 *et seq*), requires all Federal agencies to:

1. Provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved and to provide a program for the conservation of such endangered and threatened species (Sec. 3 (b) Purposes).
2. Seek to conserve endangered and threatened species and utilize applicable authorities in furtherance of the purposes of the Endangered Species Act (ESA) (Sec. 2 (b) Purposes).
3. Avoid jeopardizing the continued existence of any species that is listed or proposed for listing as threatened or endangered or destroying or adversely modifying its designated or proposed critical habitat.
4. Consult (or confer) with the Secretary, through U.S. Fish and Wildlife Service or National Marine Fisheries Service, to insure that any Federal action or activity does not jeopardize the continued existence of any species listed or proposed to be listed under the provisions of the ESA, or result in the destruction or adverse modification of designated or proposed critical habitat.

Further instruction and guidance on compliance with ESA may be found in BLM Manual Section 6840.

D. National Historic Preservation Act

Sections 106 and 110 of the National Historic Preservation Act ("NHPA";16 U.S.C. 470 *et seq.*) require agency officials to take into account the effect of a proposed Federal undertaking on any historic property eligible for or listed in the National Register of Historic Places. Section 110(d)(6) specifies that this may include properties of traditional religious and cultural importance to Indian tribes. The BLM's national Programmatic Agreement and individual State protocols amend and streamline the detailed consultation procedures set forth in government-wide regulations at 36 CFR § 800. Further direction and guidance on compliance with NHPA may be found in BLM Manual Section 8120.

E. Wild and Scenic Rivers Act:

The Wild and Scenic Rivers Act provides for designation and management of free flowing rivers and their immediate environment to protect for the benefit and enjoyment of present and future generations their "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values.

These rivers and their immediate environment are to be managed for protection of their outstanding values. As a result, the purpose of conducting assessments and evaluations of these areas may be to determine if they are meeting management plan objectives in addition to achieving Land Health Standards.

F. Land Use Plans

The Federal Land Policy and Management Act of 1976 (43 U.S.C. § 1701 *et seq*) Section 202 (a) states: "the Secretary shall with public involvement . . . develop, maintain, and, when appropriate, revise land use plans which provide tracts or areas for the use of the public lands".

The responsible BLM official shall follow the established land use planning procedures in 43 CFR Part 1600 and BLM Manual H-1601-1 Land Use Planning Handbook, dated 11/22/00, for fulfilling the planning requirements prescribed in the statute.

CHAPTER VI - PUBLIC INVOLVEMENT

The fundamental goal of public involvement in this process is to achieve a greater understanding of land health issues and promote communication about them. This requires knowledge about fundamental ecosystem properties and processes, and resource management activities. Successful public involvement will be indicated by strong stakeholder support or consensus for identifying areas that may be at risk of degradation and possible modification(s) of grazing permit terms and conditions or other revision(s) in management over the long term. The local manager determines what strategy and level of public involvement is most suitable and appropriate.

Preparation of a Communications Plan is strongly recommended. The communications strategy should contain a list of appropriate agencies, governments, groups, and individuals to be involved in the process. Consideration should be given to including not only external (non-BLM) stakeholders at the local and regional levels, but parties within the BLM as well. Principal stakeholders may include, but are not limited to, the BLM Resource Advisory Councils, state fish and wildlife management agencies, state air quality agencies, Tribal governments, County governments, user group associations, private land owners, US Fish and Wildlife Service, and County sheriffs. The communications strategy need not be lengthy, however it should concisely describe the specific intent of the public involvement effort, the approach to be used, the key messages, who will implement the strategy, and when the public involvement activities are planned to occur.

The most meaningful public involvement approach may include inviting non-BLM representatives to be significant and active members in the assessment and the evaluation processes. Alternatively, stakeholder involvement could consist of touching base with the interested/affected agencies, governments, interest groups, and individuals after proposed modification(s) of permitted activities have been formulated. Preparation and implementation of the communications strategy should be considered essential, whether the public involvement element of this process is viewed separate from, or as part of, the National Environmental Policy Act (NEPA) or land use plan amendment processes by the local manager. In any case, the local manager must make a strong effort to show stakeholders how, when, and where they can work with BLM and its management of the public lands to meet the provisions of 43 CFR § 4180, and seek stakeholder input with the possible modification(s) of grazing permit terms and conditions or other revision(s) in management that may be developed.

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TR-1730-1	Measuring and Monitoring Plant Populations, 1998
TR-1734-3	Utilization Studies and Residual Movements, 1996 (Supercedes TR-4400-3, 1984)
TR-1734-4	Sampling Vegetation Attributes, 1996 (Supercedes TR-4400-4, 1985)
TR-1734-8	Interpreting Indicators of Rangeland Health, 2000
TR-1737-3	Inventory and Monitoring Riparian Areas: Riparian Area Management, 1989
TR-1737-5	Riparian and Wetland Classification Review, 1992
TR-1737-7	Procedures for Ecological Site Inventory with Special Reference to Riparian-Wetland Sites: Riparian Area Management, 1992
TR-1737-8	Greenline Riparian-Wetland Monitoring: Riparian Area Management, 1993
TR-1737-9	Process for Assessing Proper Functioning Condition: Riparian Area Management, 1987
TR-1737-10	The Use of Aerial Photography to Manage Riparian-Wetland Areas: Riparian Area Management, 1994
TR-1737-11	Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas (Supplements 1737-9), 1994
TR-1737-12	Using Aerial Photographs to Assess Proper Functioning Condition of Riparian-Wetland Areas, 1996
TR-1737-13	Observing Physical and Biological Change Through Historical Photographs, 1996
TR-1737-15	A User Guide to Assess Proper Functioning Condition and Support Science for Lotic Areas, 1998
TR-1737-16	A Guide to Assissing Proper Functioning Condition and the Supporting Science for Lentic Areas, 1999
TR-4400-2	Rangeland Monitoring: Actual Use Studies, 1984
TR-4400-5	Rangeland Inventory and Monitoring: Supplemental Studies, 1985
TR-4400-7	Rangeland Monitoring: Analysis, Interpretation, and Evaluation, 1984
TR-4400-8	Statistical Considerations in Rangeland Monitoring, 1992
TR-4400-9	Rangeland Inventory and Monitoring: Selected Bibliography of Remote Sensing Applications, 1986
TN-349	Terrestrial Wildlife Inventories: Some Methods and Concepts, 1981
TN-395	Evaluating Bighorn Habitat: a Landscape Approach, 1996
TN-405	A Framework for Analyzing the Hydrologic Condition of Watersheds, 1989

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H-4180-1 - RANGELAND HEALTH STANDARDS
Illustration 1 - Evaluation Adequacy Checklist

Evaluation Adequacy Checklist

This checklist provides a framework for documenting the process and insuring minimum levels of quality and consistency are met while allowing the field offices to have a maximum flexibility in the process.

Answers to all questions should be yes.

1. Is your assessment and evaluation area based on an issue or natural boundary (e.g. special designation, 303d listed stream, Special Status Species habitat, etc; watershed, mountain range, other contiguous landscape unit)? If other than a watershed, did you document why you chose another geographic unit for assessment and evaluation?

2. Is your assessment and evaluation area the appropriate size to effectively characterize the factors that influence health issues?

3. Have you considered all issues site specific and beyond, both big and small picture, upstream and downstream, etc, and planned to address both if needed? (e.g. migratory bird habitat vs. erosion at site specific levels)

4. Have you subdivided assessment and evaluation areas into relatively "like" (homogeneous) units that are under similar management?

5. Have you selected enough indicators to address each Standard?

6. Is your indicator measurement methodology repeatable–are you using a BLM approved method? (e.g. one of the methods described in the technical references listed in the Appendix)

7. If you are using existing data, does it adequately address your indicators?

8. Does your method adequately address the questions posed by the Standards?

9. Do you have enough observation/data points to represent the prevalent conditions in each of the subdivided units?

10. Do the data/observations you have reviewed support your conclusions?

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Reporting Format

(RESERVED)

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H-4180-1 - RANGELAND HEALTH STANDARDS
References

Barrett, H., J. Cagney, R. Clark, J. Fogg, K. Gebhardt, P.L. Hansen, B. Mitchell, D. Prichard, and D. Tippy. 1995. Riparian area management: Process for assessing proper functioning condition. BLM Technical Reference 1737-9, BLM/SC/ST-93/003 + 1737 + REV95, U.S. Department of the Interior, Bureau of Land Management–Service Center, Denver, Colorado.

McCammon, B., J. Rector, and K. Gebhardt. 1998. A framework for analyzing the hydrologic condition of watersheds. U.S. Department of Agriculture, Forest Service, and U.S. Department of the Interior, Bureau of Land Management. BLM Technical Note 405, BLM/RS/ST-98/004 + 7210.

Pellant, M., P. Shaver, D.A. Pyke, and J.E. Herrick. 2000. Interpreting indicators of rangeland health, version 3. Interagency Technical Reference TR-1734-6, BLM/WO/ST-00/001 + 1734. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO.

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U.S. Department of Agriculture, Forest Service, and U.S. Department of the Interior, Bureau of Land Management. 1999. Ecosystem review at the subbasin scale (subbasin review): A guide for mid-scale ecosystem inquiry. Version 1.0. Interior Columbia Basin Ecosystem Management Project, Boise, Idaho and Walla Walla, Washington.