RANGELAND PLANNING

PURPOSE

Rangeland planning shall prescribe management providing sustainable, natural ecosystems for a variety of values and uses. All planning efforts shall:

- Develop clear, concise objectives that portray desired conditions of rangeland resources for the area involved.
- Develop livestock management strategies that achieve objectives, moving rangeland resources towards desired conditions.
- Develop monitoring standards that enable managers to determine what resource changes are occurring and to make proper management adjustments.
- Develop permittee involvement, understanding, and commitment for management objectives.

LEGAL REQUIREMENTS

Numerous federal laws, regulations, and policies provide guidance for rangeland planning.

THE RECISSION ACT OF 1995

The Forest Service is required by the Recission Act of 19951 to develop and successfully implement schedules for the completion of National Environmental Policy Act (NEPA) analysis and documentation on all allotments. Completing NEPA requirements and the resultant allotment management plans is a high priority within our agency and is the focus of this chapter.

[1] P.L. 104-19, Section 504

FEDERAL LAND POLICY MANAGEMENT ACT AND PUBLIC RANGELAND IMPROVEMENT ACT

The Federal Land Policy Management Act of 1976 (FLPMA),2 as amended by the Public Rangelands Improvement Act of 1978 (PRIA),3 allows for inclusion of allotment management plans (AMP) in grazing permits at the discretion of the Secretary of Agriculture.4 The Secretary exercised this discretion and delegated his authority to issue regulations in this area to the Chief of the Forest Service.5

An allotment management plan is defined in FLPMA and PRIA as a document prepared in consultation with permittees applying for livestock operations on the public lands prescribing:6

- the manner in and extent to which livestock operations will be conducted in order to meet multiple use, sustained-yield, economic, and other needs and objectives;
- range improvements to be installed and maintained; and
- containing such other provisions relating to livestock grazing and other objectives found by the Secretary to be consistent with the provisions of the FLPMA.

NATIONAL FOREST MANAGEMENT ACT

The National Forest Management Act of 1976 (NFMA) directed preparation of Forest Land and Resource Management Plans on every National Forest. Forest Land and Resource Management Plans, commonly referred to as Forest Plans, provide broad direction for all resource planning and activities. Rangeland project planning implements this direction through site-specific analysis of the rangeland resource.

NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act of 1969 (NEPA), and subsequent Council on Environmental Quality (CEQ) regulations, direct all federal agencies to implement a standardized process for analysis and documentation of environmental effects of a proposed action and alternatives to the proposed action. The Act requires scoping of issues, interdisciplinary team involvement in analysis and alternative development, and documentation of the analysis in an Environmental Impact Statement (EIS) or Environmental Assessment (EA). The Council on Environmental Policy Regulations7 and the Environmental Policy and Procedures Handbook8 contain requirements for implementing NEPA.

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2 P.L. 94-579, 90 Stat. 2743, as amended

3 P.L. 95-514, 92 Stat. 1806

4 43 U.S.C.(1752(d)), as amended by 92 Stat. 1803 (1978)

5 36 CFR (222.1 et. seq.)

6 43 USC (1702(k)), 36 CFR (222.1 (b) (2)), and FSM 1023

7 40 CFR Parts 1500-1508

8 FSH 1909.15

THE ENDANGERED SPECIES ACT

The Forest Service is bound by Endangered Species Act (ESA) requirements. Figure 2-1 illustrates the integration of ESA and NEPA. Section 7 of ESA9 states:

> "Each federal agency shall, in consultation with and with the assistance of the Secretary [Interior] insure that any action authorized, funded or carried out by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in adverse modification of their critical habitat."

Section 7 applies to any discretionary action including granting easements, licenses, permits, and rights-of-way.

In order to fulfill its obligations under ESA, the Forest Service must consult with the U.S. Fish and Wildlife Service (FWS) and provide all pertinent project and species data necessary for them to evaluate the proposed action and its potential to jeopardize federally listed species and or critical habitat designated by the FWS. In order to comply with the ESA, agency personnel must:

1. Obtain a list of threatened, endangered, and proposed species. Contact the FWS to obtain a list of federally listed and proposed species in the action area or that the action potentially affects.

2. Prepare a biological assessment (BA). If Federally listed species or designated critical habitats are present in the affected area, prepare a biological assessment of the effect of the proposed action on Federal land and also the effects that might occur on private land.10 The Act requires that a determination be made in the biological assessment whether the action has:

   - no effect on, or
   - may affect

   the listed species and/or designated critical habitat. Biological assessments must be approved by journey level (GS-11 and above) biologists and botanists.

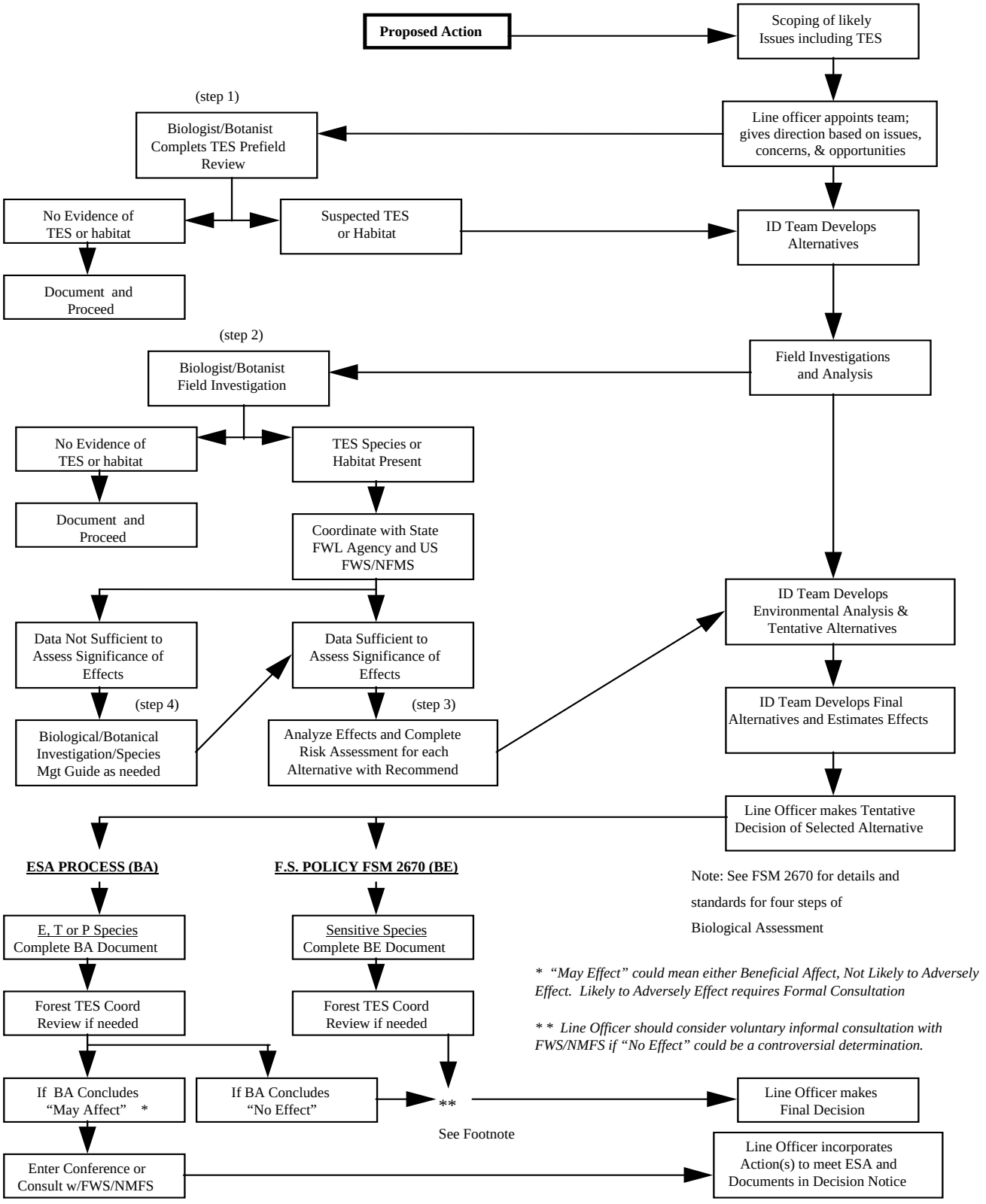
3. If a "no effect" conclusion is reached and the action does not involve a major construction project nor an EIS, consultation with the FWS is not required under the law and the action may proceed.11 A "may affect, not likely to adversely affect" requires informal consultation and subsequent written concurrence from FWS. FWS does not have any specific time frame in which to conclude the informal consultation process unless the action requires an EIS, which then requires a 30-day response from FWS.

9 16 U.S.C. 1536(a)(2)

10 50 CFR 402.02

11 50 CFR 402.11L

Figure 2-1. INTEGRATING ESA and NEPA



4. A "may affect, likely to adversely affect" requires formal consultation. Formal consultation, which must be initiated by the Regional Forester, requires the FWS to prepare a biological opinion. It must be delivered to the agency within 45 days of the conclusion of a 90-day consultation period, except where both agencies mutually agree to an extension. While informal or formal consultation is in progress, the agency must not make an irreversible commitment of resources that would foreclose implementation of alternate measures designed to avoid jeopardy.

The taking of a threatened or endangered species is prohibited by provisions of the ESA. However, the ESA does allow an "incidental take" provision that may be issued as part of the biological opinion allowing for takings that are incidental to the action and only under the terms and conditions provided in the biological opinion.

If the biological opinion states that the action is not likely to jeopardize the continued existence of the species or to result in the destruction or adverse modification of its critical habitat, proceed with the proposal. If appropriate, incorporate the FWS conservation recommendations into the proposal. The preparing unit must notify FWS in writing of the acceptance or rejection of conservation recommendations and must document the results of the formal consultation in the appropriate NEPA document. If FWS plans to render a jeopardy opinion, the FWS will contact the Regional Forester to discuss any reasonable and prudent alternatives.

Forest Service directives[12] provide additional direction on requirements for compliance with ESA. Proposed species require *conferencing* as opposed to *consultation* under Section 7 of ESA. FSM 2670 should be reviewed to ensure compliance of proposed species that are also protected under the Act.

[12] FSM 2670

Sensitive species are designated by the Regional Forester. Requirements for protection and management are not addressed in the ESA but are provided by Forest Service policy.[13] Key requirements for sensitive species are:

1. A biological evaluation (BE) must be prepared to review proposed Forest Service actions to determine their potential effect on sensitive species.
2. Biologists or botanists must make a determination of:
   - ♦ no impact,
   - ♦ beneficial impact,
   - ♦ may impact individuals but not likely to cause a trend toward Federal listing or loss of viability, or
   - ♦ likely to result in a trend toward Federal listing or loss of viability.
3. Forest Supervisors are required to ensure compliance with procedural and biological requirements for sensitive species and to develop quantifiable objectives for managing populations and/or habitat for sensitive species. A key responsibility is developing and implementing management practices to ensure those species do not become threatened or endangered because of Forest Service actions.

Refer to Standards for Biological Evaluations[14] and Procedures for Conducting Biological Evaluations[15] for more information.

Although many requirements of the Endangered Species Act (and Sensitive Species policy) are completed by biologists and botanists, the rangeland manager must be actively involved to coordinate this effort within the scope and time frames of the overall planning process. Range personnel should be involved where necessary to conduct inventories, delineate livestock use patterns, or supply any other rangeland information to be used in biological evaluations and assessments.

Programmatic Biological Assessments and Evaluations (for all threatened or endangered species and many sensitive species) were completed for livestock grazing in 1995. When initiating a new rangeland management activity, a qualified biologist or botanist must first determine if the existing BA or BE is adequate for the site specific activities being proposed. If the programmatic BA or BE is adequate this should be documented in the NEPA document and no further documentation or analysis is needed. If the programmatic document is not considered adequate then a new or modified BA or BE is needed in order to comply with ESA.

NATIONAL HISTORIC

Under the statutory definitions of the 1992 amendments to the Act, grazing permits and livestock management activities are subject to the

[13] FSM 2672.42

[14] FSM 2672.42

[15] FSM 2672.43

PRESERVATION ACT

requirements of Section 106 of the Act.[16] The implementing regulations that apply to livestock grazing activities are found at 36 CFR Part 800. A National Programmatic Agreement (PA) on grazing between the Advisory Council on Historic Preservation and the Forest Service establishes options for meeting the requirements of Section 106 of the Act. PA text can be found in Forest Service directives.[17] Pursuant to Stipulation 2.c. of the PA, State Historic Preservation Officers within the Rocky Mountain Region have signed a Memorandum of Understanding (MOU) with the Regional Forester documenting the specific requirements necessary in rangeland planning. Refer to this MOU[18] for specific requirements related to grazing permit issuance, allotment management plans, and rangeland improvements.

CLEAN WATER ACT

Primary responsibility for protecting water quality rests with the States.[19] Section 313 of the Act[20] requires Federal agencies to comply with all substantive and procedural State water quality requirements to the same extent as any non governmental entity. Refer to interim directives[21] for a listing of specific rangeland management requirements related to the Clean Water Act.

COORDINATION, COOPERATION, AND CONSULTATION

Proper rangeland planning requires close cooperation and consultation with a variety of National Forest and National Grassland users and interested publics. Planning must emphasize the diverse values of Americans who rely on public rangelands for recreation and for economical stability. While federal laws are clear in their requirements for consultation, it remains the sole responsibility of the Forest Service line officer to make range management decisions, including how much grazing will be allowed on National Forest System administered lands.

INTERDISCIPLINARY TEAM INVOLVEMENT

Secure the assistance of the District or Forest interdisciplinary team (IDT) in all steps of the rangeland planning process. Involvement of the IDT will ensure that all resources are considered and that resource conflicts are minimized. Composition of the IDT should reflect the various issues and coordination aspects to be resolved. For example, an aquatic biologist and/or a hydrologist should be a member of the team when riparian or fisheries values are of importance. In some cases, IDT members may accomplish (or help accomplish) some of the evaluation studies. Current planning direction prohibits non Forest Service

16 As amended 16 U.S.C. 470

17 FSM 1539.61

18 See Appendix K

19 As amended 33 U.S.C. 1251 et seq.

20 33 U.S.C. 1323

21 Interim Directive 2209.13-96-1

participants from serving as formal ID team members.[22]

COOPERATION WITH PERMITTEES

The grazing permittee is integral to any successful rangeland management program. The permittee has a great deal of information as to what is practicable and workable concerning handling of livestock, practicality of grazing systems, and proper location and type of range improvements. The success or failure of the management program will largely be determined by the permittee's willingness to carry out the plan. Consequently, the use of National Forest System rangeland in relation to the rancher's total operation is a fundamental necessity.

Permittee cooperation is essential and their involvement in the planning process is provided for in the Federal Land Policy and Management Act. Permittees should be brought into all phases of the planning process. They should be particularly involved in setting objectives, formulating and selecting alternatives, and preparation of the allotment management plan.

COORDINATION WITH OTHERS

Perhaps the most essential aspect of planning is to recognize the multitude of values and uses on rangelands, and to strive to develop management actions that correspond to the needs and desires of a diverse society. Rangelands are used by hunters, fishermen, hikers, photographers, off-road vehicle enthusiasts, sightseers, and others. Americans have a keen interest in how public lands are managed. For these reasons, local individuals, user groups, and other agencies must be offered the opportunity to be involved in rangeland planning. Identify interested publics before initiating planning and involve them throughout the process. Public land users bring invaluable suggestions and boundless energy to the planning process.

COORDINATED RESOURCE MANAGEMENT

Coordinated Resource Management (CRM), sometimes called Coordinated Resource Management Planning (CRMP), is a formal process designed to bring all interested parties into a joint planning effort. CRM efforts are particularly appropriate when dealing with opportunities or potential effects across multiple ownerships and jurisdictions. CRM is most affective when initiated early in the planning process. Utilize CRM to identify and understand existing and desired conditions, to determine opportunities, and to identify possible management practices for consideration. Handbooks describing the CRM process and its potential uses are available from the Society of Range Management and the State of Wyoming. These handbooks can also be obtained at most Supervisor's Offices or the Regional Office.

Document all CRM projects in an Interagency Agreement or Memorandum of Understanding (MOU) so that goals, objectives, and procedures are clear. The CRM group must be aware of how their work will be used by the decision-maker.

[22] Federal Advisory Communication Act of 1972; 5 U.S.C. 86 Stat. 770; USDA Dept. Reg. 1041-1, 111389

The Rocky Mountain Region has formal Coordinated Resource Management MOUs with the states of Wyoming and South Dakota. The regional MOU is general in nature and is not a substitute for a project level MOU. The Region and South Dakota have also enacted an MOU describing the allotment planning process.

SECTION 8 AGREEMENTS

Section 8 of the Public Rangelands Improvement Act of 197823 states:

> "If the Secretary ..... develop(s) an allotment management plan for a given area, he shall do so in careful and considered consultation, cooperation, and coordination with the ..... permittees, landowners involved, ... and any State or States having lands within the area to be covered by such allotment management plan. Allotment management plans shall be tailored to the specific range condition of the area to be covered by such a plan, and shall be reviewed on a periodic basis to determine whether they have been effective in improving the range condition of the lands involved..... . The Secretary concerned may revise or terminate such plans or develop new plans from time to time after such review and careful and considered consultation, cooperation, and coordination with the parties involved."

The Rocky Mountain Region has a "Section 8" MOU in the state of Colorado involving the Colorado Cattlemen's Association, Colorado Woolgrowers, and the Colorado Commissioner of Agriculture. Other states within the Region have not entered into a Section 8 MOU, but will use the CRM process instead. Activities covered by the Colorado MOU are coordinated by the State Department of Agriculture.24

23 P.L. 95-514, 92 Stat. 1806

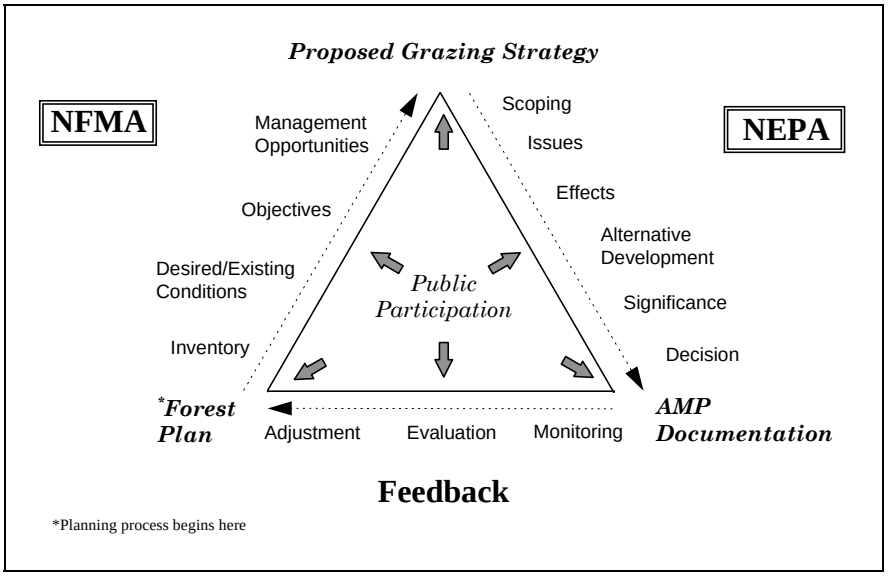
24 Appendix A contains details and operating procedures for the Colorado Memorandum

RANGELAND PLANNING PROCESS

The rangeland planning process outlined below describes project level planning and decisions. This process includes the site specific analysis necessary to comply with legislation and to implement management strategies to achieve the intent of programmatic direction in Forest Plans. This process can best be described in three steps (Figure 2-2):

1. Compliance with the National Forest Management Act (NFMA).
2. Compliance with the National Environmental Policy Act (NEPA).
3. Preparation of an Allotment Management Plan (AMP).

Figure 2-2. RANGELAND PLANNING PROCESS



STEP 1: NFMA COMPLIANCE

Compliance with the National Forest Management Act consists of defining site specific management objectives and actions that will implement the broad direction of Forest Plans. The end result is a proposed action that adds clear, specific ingredients to the intent of Forest Plans and provides the planning team with a comprehensive strategy upon which to conduct an environmental analysis and documentation. This step includes, but is not limited to, the following tasks. Each is described below in more detail.

- Identify the planning area.
- Determine desired and existing conditions.
- Develop objectives.
- Identify possible management opportunities.
- Formulate a Proposed Action.

IDENTIFY THE PLANNING AREA

Rangeland planning should identify livestock management activities that complement and encourage progress towards the desired condition(s) of an entire landscape. It is important that planning not be a mechanical process, but rather be flexible and fit the local situation.

Considering the issues and local situation, there may be several scales for planning. Two distinct scales are readily apparent: allotment planning and landscape planning. These are obvious planning scales, however, numerous other combinations might be used to address specific situations. It is essential that management determine the scope of the planning effort and prepare a project work plan that obligates both funding and specialists' time to complete the job.

ALLOTMENT PLANNING

In this case, as in the past, allotment boundaries describe the confines of the planning area. The area might include one or more allotments. At a minimum, planning for the allotment must recognize the biological complexity of the entire watershed. Rangeland inventory and analysis emphasize obtaining the information necessary to design allotment management consistent with the Forest Plan.

The level of input and participation by other resource specialists must be sufficient to develop a livestock management strategy aimed at achieving the objectives for desired rangeland conditions. Inventory and analysis at this scale might not contain the necessary information and specialist involvement to support other project proposals.

LANDSCAPE PLANNING

There is an increasing need to inventory and conduct assessments of land areas using integrated teams of resource specialists.

Areas to be assessed may be based upon watersheds or other logical landscapes. The area is not necessarily tied to allotment boundaries but can cover several allotments in whole or in part. Analysis includes all ecosystems, including forested, rangeland, and riparian types. Landscape scale inventory and analysis are an intensive approach to collecting the necessary information from which all resource project proposals can be developed.

Considering resources and issues relevant to the landscape, a team of resource specialists works jointly to analyze potential and existing resource conditions, and to propose projects to help achieve the desired conditions. Project proposals might include wildlife habitat manipulation, timber management practices, watershed rehabilitation, recreation improvements, allotment management, and others. The overall intent of this type of planning is to take a true integrated approach to managing National Forest System resources. Landscape scale planning is becoming the rule, not the exception.

DETERMINE DESIRED AND EXISTING CONDITIONS

Forest Plans reveal broad direction for resource management. Review the Forest Plan to identify management emphasis areas on the allotment (management prescriptions) and the associated standards and guidelines. Management prescriptions describe the resources that should be emphasized on certain locations within the area. Forest Plans are not intended to provide all the necessary information for rangeland project decisions. The rangeland planning process will refine the broad desired condition(s) described in the Forest Plan.

Forest Plans do not prescribe site-specific ecosystem characteristics. Specific characteristics, existing and desired, of soil, vegetation, and water can only be identified through integrated resource inventory and evaluation. Involve a diverse group of resource specialists, permittees, and interested publics to accomplish the inventory and evaluation of resource conditions.

Existing conditions are determined from inventories, trend data, historical files, and professional judgment of the planning team. Permittees provide invaluable information on past allotment history and how that history applies to current conditions. Much of this guide deals with accepted methods used to collect current resource information. While current information is important, it should be recognized that collecting existing resource data is only a portion of the overall attempt to develop a strategy to achieve the desired condition.

The quantity and quality of existing resource information needed will vary between planning areas, based upon apparent rangeland conditions, management complexity, conflicting interests, and controversy. Inventory data collected through the validation phase of Integrated Resource Inventory (IRI) may suffice on some areas. Other areas may require rigorous evaluation of vegetative, soil, and watershed parameters through combined methods. Inventory intensities are discussed in more detail in the Inventory Chapter (page 3-3). At a minimum, existing plant communities should be verified and an assessment made of rangeland conditions.

Desired conditions are determined by identifying management emphasis areas and then selecting the appropriate mix of plant communities needed to maximize conditions for the resource emphasized. For example, a mix of several shrub plant communities, with varying size and age classes, may be recommended for a wildlife winter range emphasis area. Selected desired plant communities must be able to occupy the site under realistic management practices. The planning team must be able to:

- define ecological types and the various plant communities that could exist there, using an approved ecological classification,
- recommend desired plant communities that occur on similar sites in the vicinity of the planning area, or
- describe desired vegetation and ground cover characteristics to be accomplished through the allotment management plan.

Instructions for determining existing and desired plant communities are described in more detail later (page 3-7).

DEVELOP OBJECTIVES

Developing objectives is the most important portion of NFMA compliance. The toughest part of setting objectives is describing the result -- not the action to be taken. An objective is a clear, concise statement of measurable results to be achieved within a stated time period. Objectives should describe the specific resource characteristics that are desired, such as desired plant communities, water quality standards, and soil conditions. Developing objectives at this early stage in the process is paramount to a successful planning effort.

After writing an objective, read it and ask the question "Why?". If there is an answer that better describes the purpose of the proposed action, then the objective is not adequately described yet. For example:

Original Objective: Reduce sagebrush densities. Why?

To reduce competition with herbaceous vegetation. Why?

To achieve greater ground cover in Pine Creek drainage. Why?

To improve water quality in Pine Creek.

This is close to an objective. After describing the water quality parameters desired and how soon they are to be achieved, the objective will be complete. For example, the final objective may be to convert 50 percent of the sagebrush community (ARTR2-POPR) in Pine Creek drainage to a grassland community (FEID-STLE4) by the year 2005. Reasonable management opportunities can then be identified for accomplishing the objective. Identifying the opportunities becomes much easier when specific objectives are known.

IDENTIFY POSSIBLE MANAGEMENT OPPORTUNITIES

Management opportunities that promote progress towards objectives should be identified. Opportunities might include grazing systems, improvements, vegetation manipulation, or management practices (such as riding, salting, and kind and class of livestock). Inclusion of resource specialists, permittees, and other interested publics is critical at this stage. The diverse composition of the planning team will encourage a broad range of management opportunities.

Evaluate all opportunities to measure their potential effectiveness in helping to achieve objectives. Good management opportunities are those with potential to move the existing plant community towards the desired plant community. Management opportunities must consider the entire area, and not be confined by artificial or jurisdictional boundaries. Identifying management opportunities should be a brainstorming endeavor that produces a wide range of innovative opportunities to be formulated into a proposed action.

FORMULATE A PROPOSED ACTION

In the ideal situation, a landscape-scale inventory and analysis (page 2-11) will provide a foundation of information that can be used for multiple resource proposals and projects. These proposals, implemented either together or individually, will accomplish the desired condition objectives that were agreed upon for the area.

At this stage in the process, land managers should decide upon the scope of the proposed action within the National Environmental Policy Act context. In many cases the proposed action may be strictly a livestock management strategy. In other situations the livestock management strategy may be combined with other resource activities such as wildlife habitat improvement, timber sales, recreation development, and others, to be more efficient.

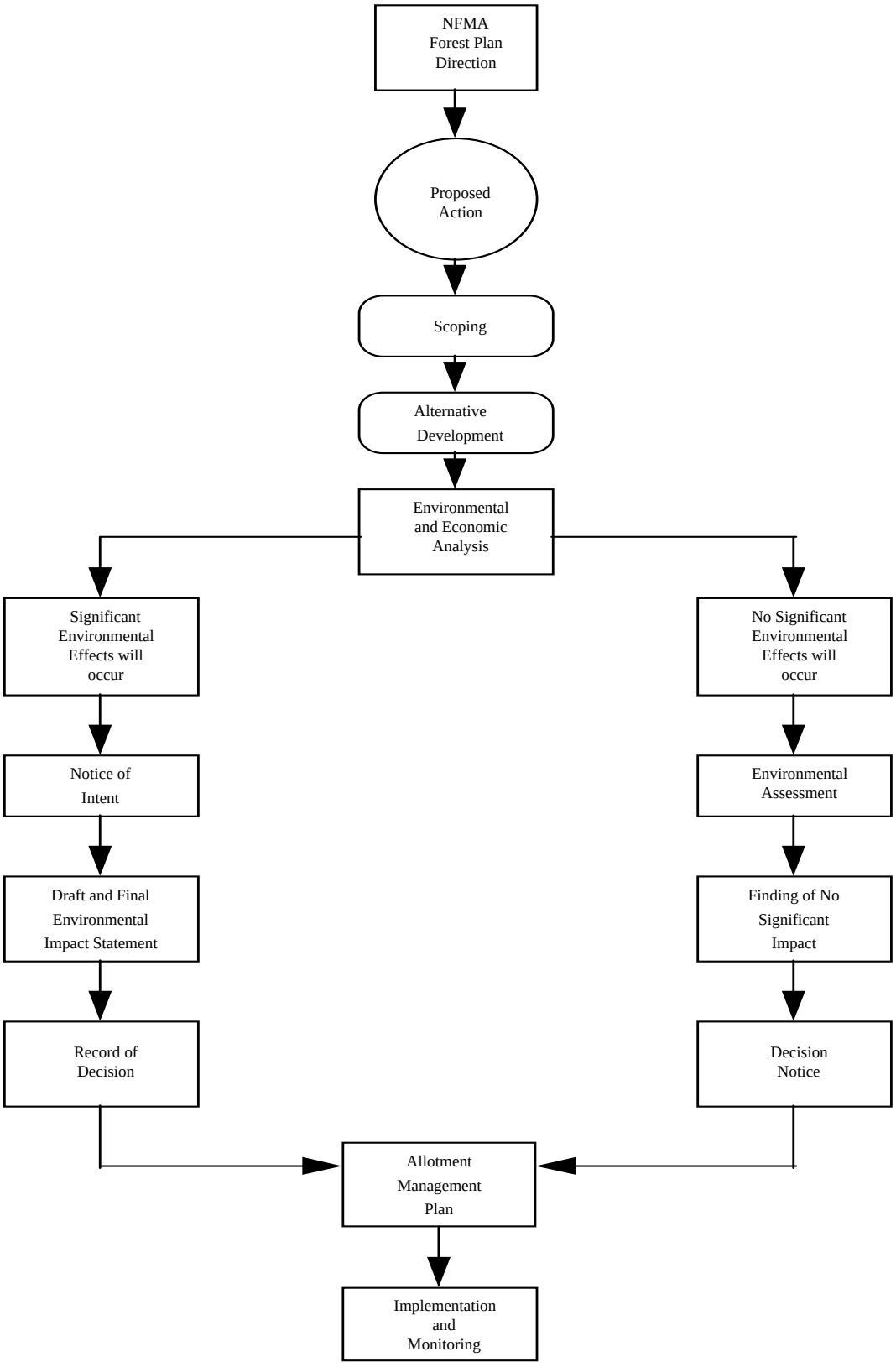
At a minimum, the proposed action should be feasible for the Forest Service and permittee to implement. Specific details must be documented so that the action will address all known issues. Identification of the proposed action will initiate the National Environmental Policy Act compliance.

STEP 2: NEPA COMPLIANCE

Compliance with NEPA requires an environmental analysis and documentation (Figure 2-3) of the analysis in an Environmental Assessment (EA) or Environmental Impact Statement (EIS). The analysis is an investigation of the proposed action and alternatives to accomplishing that action; and their direct, indirect, and cumulative environmental impacts. The analysis provides necessary information for reaching an informed decision, and also determines the type of documentation required. The NEPA process includes:

- Descriptions of the proposed action, purpose and need for that action, and the decision to be made.
- Scoping and issue identification.
- Alternative development.
- Environmental and economical effects.
- Findings based upon significance.
- Documentation in EA or EIS.

Figure 2-3. NEPA DOCUMENTATION



NEPA requires that a formal interdisciplinary team (IDT) be established. This team may involve some or all of the planning team members included in NFMA compliance. The disciplines and skills of this group must be appropriate to the scope of the action and the issues identified. The number of persons on the team should be manageable. Other resource specialists can serve as support for a core IDT.

Forest Service directives25 and Council of Environmental Quality (CEQ) regulations26 provide detailed information on compliance with NEPA. All range managers and line officers with planning responsibilities should be familiar with these documents.

PROPOSED ACTION: PURPOSE AND NEED

This phase of the NEPA process simply consists of documenting details of the proposed action and why the action is needed. Specific details of the proposed action should be thoroughly explained so that misconceptions and unfounded conclusions are kept to a minimum. The proposed action purpose and need are the foundation for the entire NEPA analysis.

SCOPING AND ISSUE IDENTIFICATION

This phase of NEPA compliance consists of outreach to the public for issues of concern. Many issues will have already surfaced through involvement of interested persons in NFMA compliance. NEPA scoping is broader based and will reach out to more of the general public, other agencies, state and local governments, and others. The intent of NEPA scoping is to identify all significant issues related to the proposed action. Issues identified through scoping will often result in modification or addition to the objectives documented in NFMA compliance.

Letters, media contacts, public meetings, open houses, and other forms of notification may be required, depending upon the complexity and controversy of the planning effort.

ALTERNATIVE DEVELOPMENT

Alternative development is crucial to a good planning process. Clearly defining the objectives, purpose and need, and issues allows the IDT to focus on development of good alternatives. All alternatives must promote progress towards achieving the objectives. With the possible exception of the required no-action alternative, alternatives that do not move resources towards the objectives are not reasonable. Permittees should be involved in alternative development. Alternatives that meet objectives, but cannot be implemented by the permittee, are probably not reasonable. A great deal of thought and creativity is required to develop a range of alternatives that are acceptable in terms of accomplishing the objectives. Formulating good alternatives allows for a true comparison of environmental and economical effects between the alternatives.

CEQ regulations for implementing NEPA require a no-action alternative be developed as benchmark from which the agency can evaluate the

25 FSH 1909.15

26 40 CFR Parts 1500-1508

proposed action. No-action in rangeland planning is interpreted as no livestock grazing. Consequently, environmental and economic effects of the various alternatives are compared with those effects projected from no grazing. In addition, an existing management (or status quo) alternative should be considered in many situations.

Alternatives should be well thought out and defined. They must contain sufficient detail to allow for determining effects and a clear basis for choice among options. Mitigation measures should also be explained. Consider reasonable alternatives that include management of lands outside Forest Service jurisdiction where appropriate.

ENVIRONMENTAL AND ECONOMIC EFFECTS

This provides the analytical basis for comparison of alternatives. The analysis should estimate direct, indirect, and cumulative environmental effects from implementing each alternative. Evaluating the effects of livestock grazing on every biotic and abiotic component of the ecosystem is virtually impossible. Your effects must address, however, those resources that were accepted as issues or those resource effects mandated by law, regulation, and policy. Estimate the effectiveness of mitigation measures for each alternative. The IDT plays a major role in insuring that effects are properly disclosed.

The analysis should also disclose social and economic effects. The Code of Federal Regulations,27 Forest Service directives,28 and NEPA each requires allotment management plans to contain cost effectiveness analysis using prescribed cost effective procedures. Projects with an estimated cost exceeding $25,000 require a benefit-cost analysis. Projects under $25,000 require a least cost analysis. Conduct cost effectiveness analysis as part of the effects determinations. Determine cost effectiveness for each alternative using the DGECON Model (U.S. Forest Service, 1989). Cost effectiveness should be a major consideration in decision-making.

In addition to cost effectiveness analysis there are several other legal and policy requirements to be addressed in the effects analysis. A biological evaluation (BE) or biological assessment (BA)29 must be prepared to determine effects on threatened, endangered, and sensitive (TES) species. Effects of each alternative upon cultural resources must also be evaluated according to Section 106 of the National Historic Preservation Act.30 Effects of the alternatives on water quality must be addressed as mandated in the Clean Water Act. Preparation of a Noxious Weed Risk Assessment is required for all ground disturbing activities,31 and ensures that the potential for spreading noxious weeds is considered in rangeland planning.

Estimating effects is really the essence of NEPA compliance. The public

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27 36 CFR 222.1 (2) (i)

28 FSM 2212.03 (8)

29 FSM 2672.43

30 P.L. 89-665

31 FSM 2080; see Appendix B

demands and deserves accurate information on the effects of proposed rangeland management. Rangeland managers, through the inter-disciplinary process, should ensure all effects are accurate and fully disclosed.

FINDINGS OF SIGNIFICANCE

Environmental analysis determines the significance of effects on the human environment. The significance of effects determines which environmental document to prepare (Figure 2-3). If no significant effects are likely to occur, then an EA is prepared. If significant effects will occur, then an EIS must be prepared. Most rangeland planning efforts will require an EA, a Finding of No Significant Impact (FONSI), and a Decision Notice that documents the action to be implemented. Rangeland planning should not be categorically excluded from documentation.

DOCUMENTATION

Preparation of environmental documents is explained in detail in Forest Service directives[32] and in the CEQ regulations.[33] Figure 2-3 illustrates the NFMA/NEPA process requirements leading to documentation of the decision. The decision document that will accompany the EA or EIS describes more thoroughly the management action(s) to be implemented on the ground.

STEP 3: AMP PREPARATION

The authority for allotment management plans (AMP) lies within FLPMA and 36 CFR 222.1 and 222.2. The AMP is the implementation plan for the actions analyzed in the NEPA process and selected in the decision document. The AMP specifies the actions needed to manage rangeland resources for livestock grazing, and must integrate resource goals and objectives for all resources with livestock grazing.

The AMP is the implementation document by which the Forest Service communicates to the permittee and others: management objectives, planned actions to accomplish those objectives, and monitoring necessary to determine if progress towards objectives is being made. A good AMP is brief and to the point.

ELEMENTS OF THE AMP

Each allotment management plan must contain sections on objectives, management actions, improvements, and monitoring and evaluation.[34]

Other sections may be added depending on the scope and complexity of allotment management. The suggested AMP outline follows.

COVER PAGE

A separate (approval) cover page will be used for the allotment

[32] FSH 1909.15

[33] 40 CFR Parts 1500-1508

[34] FSM 2212.2

management plan. It includes the allotment, Ranger District, and National Forest names, and has preparer, permittee, recommended, and approval signatures on it. The AMP implements the NEPA decision and is not a new decision, nor is it appealable. If the permittee refuses to sign, then state the reasons and proceed with the decision implementation.

PERMIT STATEMENT

A statement is needed which says: "This Allotment Management Plan is made part of your (Term/Temporary/Private Land) Grazing Permit in accordance with Section .... of that permit, approved on ..... ." This statement can be written on the cover page with the signatures.

GOALS AND OBJECTIVES

This section must contain objectives for management of rangeland resources and livestock grazing. The objectives are generally the same objectives as described throughout the planning process. These objectives describe the desired condition for rangeland vegetation and other rangeland resources.

This section also contains a brief summary from the EA or EIS on the present allotment condition and situation, to put the pathway from the present situation to the desired condition into perspective.

Objectives must be clear and specific statements of planned results to be achieved within a stated period of time. The results indicated in the statement of objectives are those which are designed to achieve the desired state. Objectives must be sufficiently specific, concise, quantifiable, and measurable to allow for monitoring; must relate to desired conditions; and must contain a projected date for planned achievement (page 2-**Error! Bookmark not defined.**). Objectives in the allotment management plan are basically a refinement of objectives developed during NFMA compliance.

MANAGEMENT ACTIONS

Document the number of permitted livestock, kind and class of livestock, season of grazing use, and grazing system to be used. The grazing system or formula must be described in words and graphic or tabular form so it is clear to all parties.

A tabular listing of range improvements, both existing and proposed, the condition of existing improvements, and a listing of maintenance responsibility is required. Include schedules for:

- rehabilitation of ranges in unsatisfactory condition, including noxious weed infestations, and
- initiating range improvements with responsibilities for costs and labor incurred and planned completion dates.

Describe the contribution each grazing treatment makes toward meeting the objectives, and how conflicts and issues will be resolved. Management actions needed to meet objectives for other resources and uses should be stated. Management and coordination needs for threatened, endangered, and sensitive species should be addressed. Incorporate applicable standards, guidelines, and management requirements from the Forest Plan.

PROPER USE CRITERIA

Proper use criteria shall be put in writing for each unit or special management situation on the allotment. Specify maximum use guidelines for key areas within the allotment, and maximum acceptable disturbance levels for stream banks and vegetation components in riparian areas. The criteria shall also specify maximum acceptable ground cover disturbance, if appropriate, to protect the soil resource. Define proper use criteria in terms of utilization levels or residue left after grazing.

MONITORING AND EVALUATION

Outline monitoring actions needed to determine compliance with objectives. From an administration perspective, evaluation and monitoring procedures should be planned within the available resources. It may be helpful to prioritize monitoring activities or specify minimum monitoring requirements. Monitoring and evaluation should address:

- Actual livestock use, season, and numbers.
- Ecological status and condition of capable rangeland (acres meeting or not meeting Forest Plan and AMP standards).
- Trend of benchmark community types and other capable rangelands toward desired condition (for example, satisfactory livestock forage resource value rating).
- Streambank alteration and stability, and vegetation trend in riparian areas.
- Compare intensity map with the proper use criteria for firming up capacities. Include time frame for mapping to coincide with completion of grazing system and what will be done if use intensity does not met objectives, such as changes in stocking or management systems.
- Increase or decline of inventoried noxious weed infestations.
- Compliance with other management requirements of the Forest Plan, AMP, and annual operating instructions.

Members of the IDT should help decide what specific monitoring information will be needed in order to determine if the goals and objectives of the management plan are being met. Long-term soil and monitoring techniques should be employed to evaluate and document

short term dynamic occurrences. Reference the Monitoring Chapter for a complete discussion of monitoring and evaluation.

ANNUAL OPERATING INSTRUCTIONS

Include annual operating instructions that the appropriate Forest Officer shall review each year and, in consultation, coordination, and cooperation with the permittee, revise as necessary. These instructions, in straight-forward language, define and describe what is expected and required by the permittee for the current year.

GRAZING SYSTEM DESIGN

Management system design is an extremely important part of the AMP for any allotment. A successful grazing system must:

- Move or maintain resources towards the desired condition.
- Provide watershed protection.
- Provide sustained production for livestock and wildlife.
- Be flexible to allow for unpredictable seasonal precipitation and forage production.
- Provide forage reserves for drought periods.
- Maintain or enhance habitat for wildlife and fishery resources.
- Be integrated as closely as possible with overall ranch plan objectives.
- Be simple, workable, and easily understood and followed.
- Be compatible with or enhance other resources and uses.
- Be tailored to the inherent characteristics of the soil, vegetation, and topography.
- Be cost-effective in terms of construction, maintenance of necessary range improvements and management, and administration time.

GRAZING SYSTEMS ON CATTLE ALLOTMENTS

Grazing systems on cattle allotments shall generally provide for a maximum amount of re-growth after grazing. Season-long grazing should be phased out, and some form of rest or deferment should be emphasized. Rest-rotation, deferred rotation, high intensity-short duration, and several other grazing systems are acceptable. Riparian areas should be a prime consideration in designing a grazing system. Grazing systems in riparian areas should emphasize short-duration use with total rest and maximum re-growth for the rest of the growing season. No system is ideal for all situations, so the grazing pattern must be tailored to the individual allotment. Systems must be flexible so that changes can be made as needs arise.

Almost all grazing systems on cattle allotments require good water distribution. Allotment management planning should address the needs

for additional water sources. Permittee salting and riding practices play a key role in the success of any management system. Salt should be placed well away from water sources and used as a means to distribute cattle throughout the unit. All grazing systems require that the permittee spend considerable time on the allotment, moving cattle out of concentration areas and sensitive riparian areas.

Perhaps the most important aspect of planning any grazing system is gaining the full support and commitment from the permittee. The rancher must be willing and able to administer the system, and the system must be realistic. A variety of grazing systems can be successful if the permittee is fully committed to the objectives and provides the necessary effort to make the system work.

GRAZING SYSTEMS ON SHEEP ALLOTMENTS

Much of the material presented in this guide is oriented toward cattle management. Generally, the conceptual approach and the procedures apply equally well to sheep management but some differences should be recognized. The following information describes some of the features of sheep management and handling that must be kept in mind during management planning for sheep allotments.

SHEEP GRAZING HABITS

Good sheep husbandry is not normally compatible with heavy use. Sheep should be allowed to seek their own level of forage utilization. They prefer different plants at different times of the year and this should be considered in designing the management prescription. Once-over grazing is highly desirable, even under rest-rotation type of management.

Sheep are finicky feeders in the morning and choose only tidbits of the choicest plant. They settle down and feed better in the evening, and are not nearly as selective in their choice of forage. The less the herder handles the herd, the better the animals thrive. However, in order to systematically graze an allotment, checks and controls must be applied by the herder.

Sheep prefer fresh feed each day. However, elapsed time will allow the feed to freshen up, particularly after a rain. Open herding results in less travel. If use is forced, the herder must tighten the spread of the herd resulting in trampling damage to the range and adverse effects on the sheep.

SHEEP MOVEMENT AND HERDING

Moderate topography is best for ease of handling. Thick brush acts as a barrier to grazing sheep even though there are trails through the brush. Heavy stands of sagebrush are also barriers to a grazing herd. On most summer allotments, sheep will graze upslope after leaving their afternoon watering and bedding site. They will then regroup and bed down for the night on a ridge top or some other high vantage point. They instinctively use these high points for protection and vantage. Sheep do not like to night bed in thick trees or in the bottom of basins, or depressions. From

the high point, they will usually begin grazing at daybreak.

It is very important the herder be with the flock to influence the direction when they begin to graze. The sheep will otherwise often graze the same direction as they did the previous day, watering at the same site and bedding down on the same bed ground. This results in poor lambs and excessive trampling along the persistent routes of travel. When sheep leave the shade-up area during warm weather, they tend to graze on the shady side of the canyon and avoid open slopes. Sheep will usually not graze downhill in the evening.

It is difficult to force sheep to shift from succulent forage, such as shifting from forbs to mature grass. Feed is generally more succulent on cooler north and east aspects. During warm weather, sheep make good use of aspen and similar range. They prefer to graze in the shade of the trees in the afternoons after leaving the shade-up area.

During cool or stormy weather, sheep have a tendency to travel. During warm summer days, sheep shade-up from mid morning to late afternoon. Under these conditions, sheep begin grazing at daylight and again from late afternoon until dark.

Water distribution and location are important to sheep. The ideal situation is to have water available in the bottom of every canyon. It is sometimes a management advantage to pipe water from hillsides to developments in the canyon bottom. It is difficult to force sheep to use the slopes below available water on hillsides. Watering sites should be close enough so excess trailing is unnecessary. Sheep should not be required to go more than a mile to water. Doubling the distance sheep travel to water increases the grazing use adjacent to the water source several times.

It is difficult to get sheep off steep slopes once they are established there. The herd will delay going to water until they are very thirsty. They will then trail (often on a run) off the slope with resulting damage to the range and slopes.

OVERGRAZING AND UNDERGRAZING PORTIONS OF THE RANGE

Both the herder and the sheep follow the path of least resistance. The most accessible and easily herded portions of the range will be grazed most heavily. Areas adjacent to water, especially if water is scarce, receive heavy grazing pressure. If shade-up areas are limited, the available shady areas will receive heavy use during warm weather. Shading up too often in one place is as damaging as repetitive use of bed grounds.

Sheep also prefer the upper half of slopes and ridge tops. These areas, particularly ridge tops, should be closely watched and evaluated. On the other hand, some portions of the range tend to be under utilized. Small isolated corners, slopes cut up or isolated by rocks or brush, the lower portions of long slopes, slopes below available water, steep, rough country, and some of the timbered areas fit into this category.

ADDITIONAL CONSIDERATIONS

Other factors to consider when designing grazing management by sheep:

1. Where possible, avoid placing allotment boundary lines (common to two allotments) on ridge tops. Sheep naturally prefer to graze the upper portions of slopes and ridge tops. When allotment lines are placed on ridge tops, the result is double use of these areas. Sheep from both sides of the ridge graze and may bed on the ridge top. Some problems can be alleviated or corrected by placing common boundaries on drainage bottoms.

   Many boundaries are more or less fixed and are difficult to change. Where this situation occurs, alleviate problems with special instructions to the permittee and the herder. These instructions normally should be placed in the annual operating instructions. The instructions may prohibit bedding the sheep on certain ridge tops and/or specify that these areas receive only light use.

2. Sometimes small non capable areas occur within large areas of capable range. These areas may have shallow soil with little vegetation. They are sometimes delineated on maps furnished to the herder and owner and shown as "closed to grazing." This creates an impossible situation for the herder due to the impracticality of keeping sheep off many of these small areas. When this situation exists, the range manager must choose to either:

   - change the grazing formula either to protect these areas or to enable them to be grazed in a manner that they would not be damaged, or
   - close a large enough area around the non capable sites so it is possible for the herder to keep the sheep off them.

3. Sheep should be managed on the basis of "once-over" grazing under rest-rotation or deferred rotation management. Cattle are placed in a pasture or grazing unit and confined there until the desired degree of use is obtained; this approach is undesirable with sheep.

   Permittees usually want their sheep with lambs on fresh feed every day to put weight on their lambs. If sheep are confined to a grazing unit until heavy utilization is attained, lambs will not do well and the permittee will be opposed to the grazing management system. Similarly, if sheep are confined to a grazing unit, soil damage from trailing and trampling by sheep is usually unacceptable.