

## INTRODUCTION

This final Blackleaf Environmental Impact Statement (EIS) was completed as an interdisciplinary and interagency effort. The Bureau of Land Management (BLM) is the lead agency, since the Bureau is responsible for permitting oil and gas exploration and development activities on federal mineral estate and because of the substantial surface acres managed by the BLM in the Blackleaf EIS area. The Forest Service (FS) and the Montana Department of Fish, Wildlife and Parks (MDFWP) are cooperating agencies because of the significant surface acres each manages within the EIS area. When this document refers to the agencies, it includes all three.

This document is organized in five chapters for the reader's convenience. Chapter 1 discusses the purpose and need for this EIS and the concerns identified through the public scoping process. Chapter 2 examines the alternative scenarios developed to address the concerns regarding oil and gas development. Chapter 3 describes the existing conditions and resources that could be affected by any of the alternatives. Chapter 4 defines the environmental consequences of each alternative and forms the basis for comparing the alternatives. It also describes the mitigation used to lessen impacts. Chapter 5 describes the public participation and coordination process.

This document adheres to the guidelines and policies established by the Federal Land Policy and Management Act, the Code of Federal Regulations, the Council on Environmental Quality, the Endangered Species Act (ESA) and the National Environmental Policy Act (NEPA).

## SETTING

The EIS area lies in northwestern Montana, approximately 25 miles northwest of Choteau, and 70 miles south-southeast of Glacier National Park (see Figure 1.1). A portion of the EIS area lies immediately east of the Bob Marshall Wilderness Area. The western portion of the EIS area is characterized by steep rock cliffs and stream canyons; the eastern portion by foothills and plains.

The Blackleaf EIS area consists of 58,503 surface acres. Of the subsurface mineral estate, 40,327 acres are federally owned and 18,176 acres are of other ownership (see Table 1.1 and Figure 1.2).



TABLE 1.1  
LAND STATUS<sup>1</sup>

Surface Status	Acres	Acres	
		Federal Mineral	Non-Federal Mineral Ownership
National Forest	17,603	17,603	0
BLM	5,808	5,808	0
Montana Dept. of State Lands	3,162	1,067	2,095
Montana Dept. Fish, Wildlife and Parks	8,158	4,237	3,921
Private	23,772	11,612	12,160
<b>Total</b>	<b>58,503</b>	<b>40,327</b>	<b>18,176</b>

<sup>1</sup>BLM, 1989.

All of the federal minerals in the EIS area have been leased (there are currently 25 leases within the EIS area). The BLM's decision to issue the oil and gas leases was based on recommendations from the BLM Butte District Manager and the Regional Forester. The Butte District Manager based his recommendations on the Oil and Gas Leasing in the Butte District Environmental Assessment (September, 1981). The Regional Forester based his recommendation on the Oil and Gas Leasing of Nonwilderness Lands on the Lewis and Clark National Forest Environmental Assessment (EA) (1981).

The EIS area also provides habitat for a variety of wildlife, including several threatened and endangered (T&E) species; contains outstanding scenic qualities; provides a vari-

Figure 1.1 Location Map of Blackleaf EIS Study Area and Birch Teton Bear Management Unit

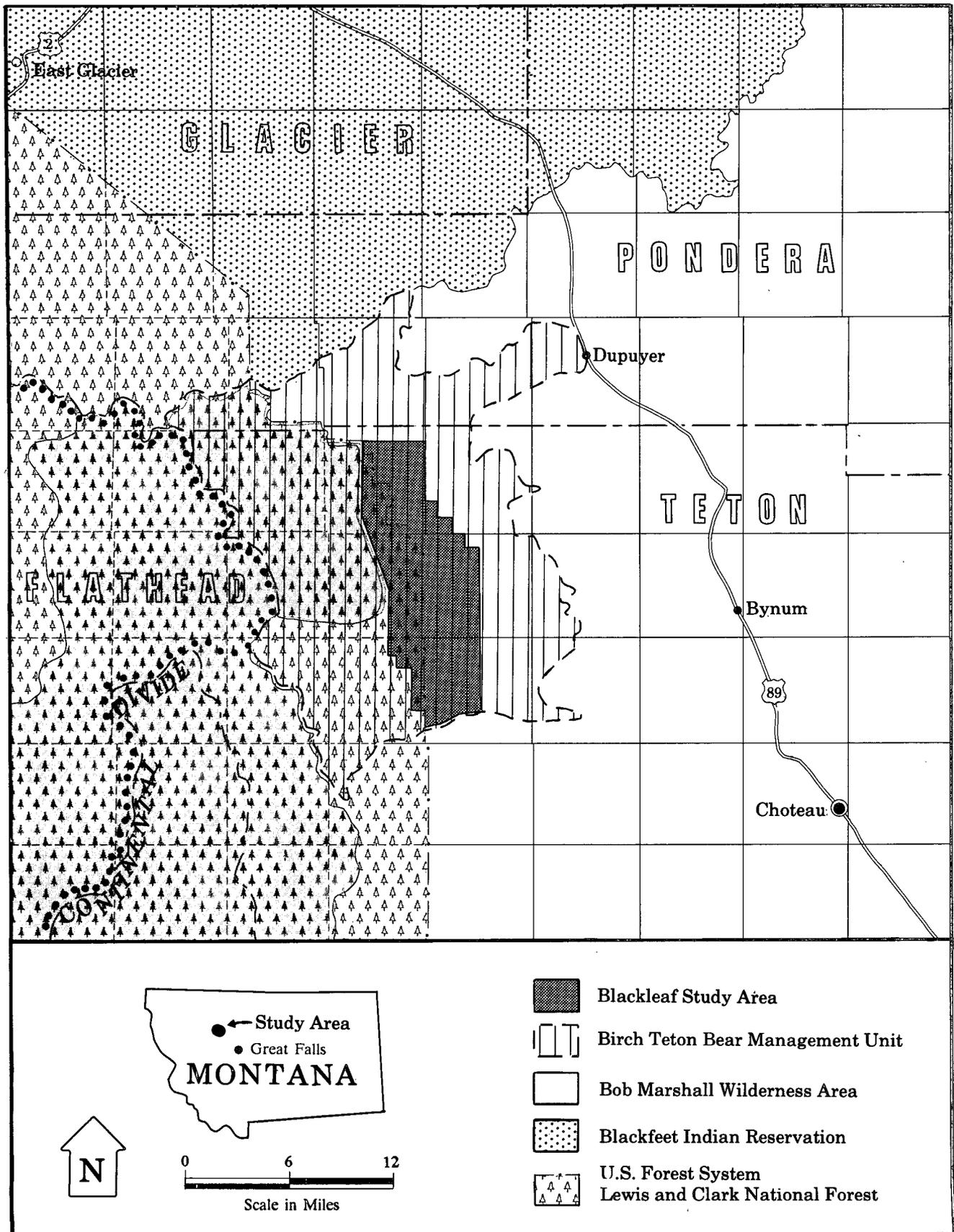
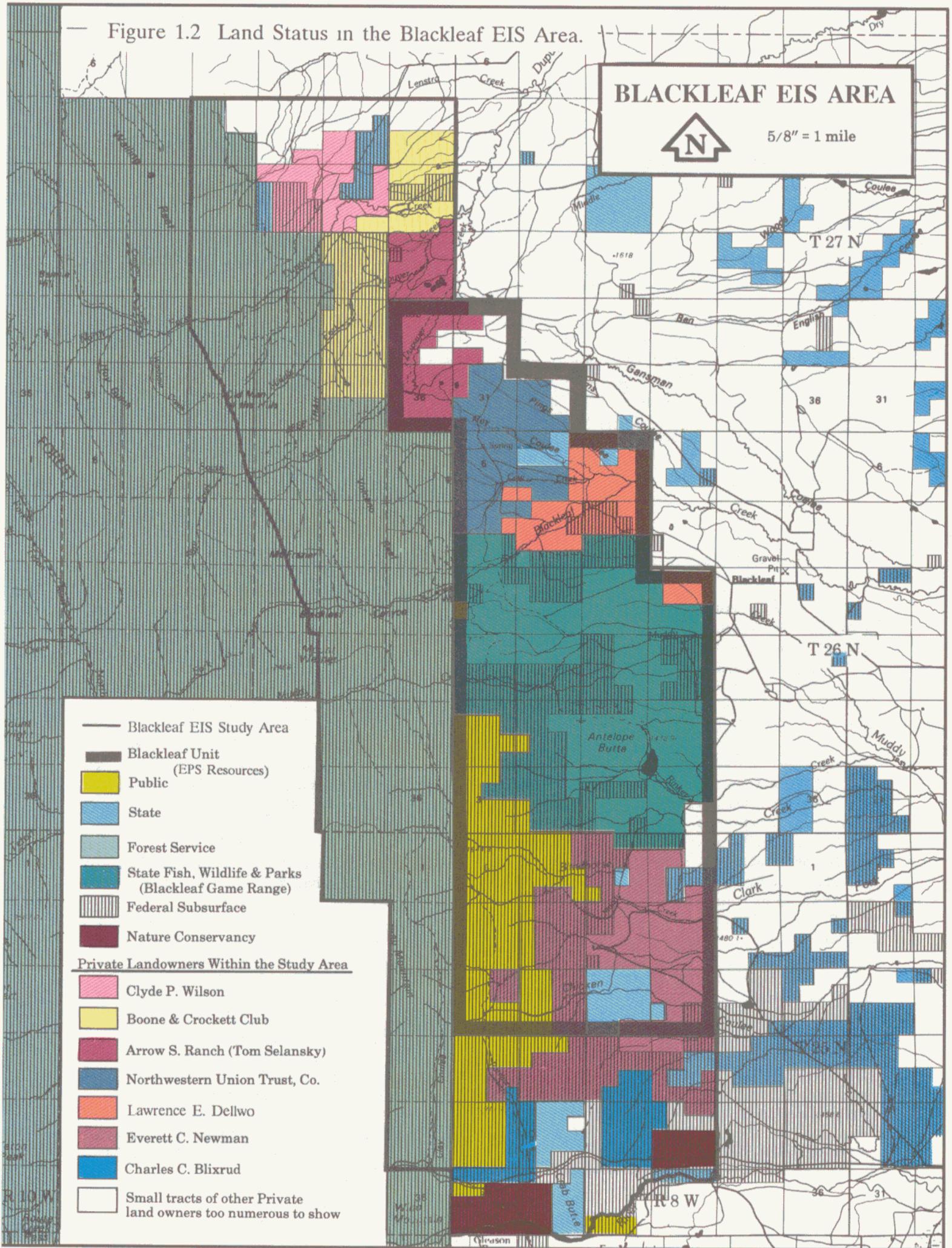


Figure 1.2 Land Status in the Blackleaf EIS Area.



ety of recreational opportunities; is important to the tourist industry; is near the Bob Marshall Wilderness; contains an area designated by BLM as an Outstanding Natural Area (ONA); and includes part of the Teton Roadless Area on the Lewis and Clark National Forest.

Because of the rights and expectations of oil and gas lease holders; the nature of oil and gas exploration and development; public concerns; the occupied T&E species habitat; the many resource values present in this region; recommendations from other agencies; BLM policy on field development; and because of the hypothetical well site locations in the Teton Roadless Area, the Lewistown BLM District Manager and Lewis and Clark National Forest Supervisor decided an EIS rather than an EA is the appropriate document for the analysis and disclosure of impacts resulting from reasonably foreseeable full field development of the Blackleaf Area.

## PROPOSED ACTION

The proposed action is to develop a scenario for full field development of the Blackleaf Unit based on predicted locations of natural gas reservoirs. Using the best geologic and engineering data available, sites where it can be reasonably expected that step-out and exploratory wells may be drilled are used to determine impacts to surface resources resulting from both drilling and production activities.

The objectives of this EIS are to examine alternatives for potential full field development of the Blackleaf EIS area and to provide a full disclosure of any environmental impacts and cumulative effects that may result from reasonably foreseeable full field development. Full field development includes all development activities including exploration, production facility development, placing transportation networks, and abandonment of wells and facilities. This EIS also explores ways to avoid, minimize or otherwise mitigate adverse impacts to the surface resources in the EIS area.

The purpose of this analysis is to identify and analyze the impacts that may result from drilling and producing operations necessary to fully develop the known natural gas reservoirs within the EIS boundaries (Appendix E). Full field development can be defined as the number of wells necessary to efficiently and effectively drain the hydrocarbon reserves from a known reservoir. The number and relative location of wells within a reservoir is based on an engineering analysis of the existing reservoir information,

well log analysis, and surface and subsurface geologic interpretations. The analysis contained within this document is based on what the agencies view as potential natural gas drilling and production operations.

Wellsite locations in the Blackleaf area were selected based on the location and probable extent of the known natural gas reservoirs and on suspected structures that may contain a natural gas reservoir (Appendix E). This EIS analyzes the impacts on surface and subsurface resources from reasonably foreseeable drilling and production activities for step-out wells necessary to fully develop the known gas reservoirs. Because of the small probability of discovering gas in these suspect structures and the fact that they are not part of the known reservoirs, the exploratory wellsites are assumed to be dry holes and only analyzed through the drilling phase.

Because the drilling locations identified and used for analysis purposes are based on current knowledge, they would be subject to revision from new geologic information if additional wells are drilled. Nevertheless, the hypothetical wellsite locations can be used to analyze the potential impacts that drilling and production may have on surface and subsurface resources. The level of analysis presented in this document helps determine which resource values are sensitive to drilling and production activities and helps determine ways to mitigate adverse impacts, if possible.

The purpose of this EIS then is to determine where drilling and related activities are most likely to occur and analyze the impacts that drilling activities will have on other surface resource values. This document does not make site specific determinations on if drilling can occur or where drilling can or will occur but rather describes the impacts that can be expected when exact locations are selected and proposed for drilling.

In addition to compliance with NEPA and BLM policy, field development analysis meets the following objectives:

1. Facilitating processing and decisions on future APDs, production facilities, access roads and other special use permits:
2. Addressing cumulative environmental effects to develop a programmatic assessment addressing specific actual field operational concerns:
3. Providing an analysis process that can be revised and updated as new information is obtained:
4. Facilitating public involvement and understanding by industry and the public of oil and gas development:

5. Addressing the effects of a reasonable full field development scenario pursuant to current Council on Environmental Quality guidelines:
6. Identifying problem areas or areas sensitive to development because of surface resource concerns and the development of mitigation packages, and:
7. Coordinating interagency responsibilities to afford streamlining of procedures to meet required timeframes.

## PURPOSE AND NEED FOR THE PROPOSED ACTION

The EIS area has a history of mineral exploration (Appendix A). Based on reservoir characteristics and estimated potential reserves of natural gas, the agencies anticipate additional drilling and production activity will occur within the EIS area in the future. Because of the anticipated interest in drilling and the potential impacts of drilling on area surface resources, this analysis is needed to determine the type and cumulative impacts that would be associated with full field development based on potential, yet hypothetical, well locations.

## SCOPE OF THE ANALYSIS

The scope of this EIS reflects a broad (programmatic) environmental analysis rather than one that is site-specific. This programmatic nature is based on three components: (1) BLM policy direction; (2) there are currently no APDs filed by any lessee for either a step-out or exploratory well in the Blackleaf area; and (3) the National Environmental Policy Act regulations (CEQ) direction for programmatic analyses (40 CFR 1502.4(b)(c)).

BLM policy direction for this analysis was explained above in Purpose and Need. Without an APD filed by a lessee, this analysis can only hypothetically estimate the number and location of wells for full field development. CEQ regulations state that “[a]gencies shall prepare statements on

broad actions so that they are relevant to policy [BLM policy in this case] and are timed to coincide with meaningful points in agency planning and decision making (40 CFR 1502.4(b)). This analysis also follows CEQ direction for analyzing broad actions by considering the Blackleaf area as a geographic area and by considering the similarities of potential timing, impacts, and methods of implementation (40 CFR 1502.4(c)).

Further, full field development analyzed in this EIS considered three types of actions (connected, similar, cumulative), three types of alternatives (no action, other reasonable courses of actions, mitigation measures), and three types of impacts (direct, indirect, cumulative) as required by CEQ direction (40 CFR 1508.25).

The three types of actions are addressed through the proposed action/purpose and need in a programmatic manner. Similar and cumulative actions are considered within the entire Blackleaf area. Similar actions recognize the common geography of any hypothetical well location within the unit. Cumulative actions consider well locations throughout the unit. Connected actions that will be considered with both step-out and exploratory wells include production and ancillary facilities. The three types of alternatives and impacts are disclosed in this EIS, Chapter’s II and IV.

Development activities on private surface over private minerals are not under federal control. However, the reasonably foreseeable development scenarios indicate this is a possibility and the analysis of cumulative effects includes development on these lands.

Exploration wells are a normal component of field development and while no APDs for any exploration well have been received, they are included in the EIS as potential future foreseeable actions associated with field development. Based on the complexity of the geology of the EIS area and because the gas traps are so small, this analysis assumes the exploration wells would be dry holes (a 90% probability based on past experience). Therefore, the analysis of these wells includes exploration through abandonment, with no production figures in any alternative scenario. Because Section 7 T&E Consultation with the USFWS has not been done for the exploratory wells, an APD for any of these wellsites will require an additional NEPA document and Section 7 Consultation in which all stages of the action (i.e. exploration through production and abandonment) will be assessed.

Also, some leases under each alternative show no development taking place. While the agencies would entertain an application to drill on any viable lease within the EIS area, full NEPA analysis, including complete ESA consultation, would be required.

This document does not address the effects of seismic exploration. The BLM's Blind Horse Outstanding Natural Area Activity Plan/Environmental Assessment and Headwaters Resource Management Plan/EIS and the Lewis and Clark Forest Plan address specific management guidance for seismic exploration. This EIS does not change that guidance.

To further clarify this section, the following discussion explains how the BLM and FS interpret what additional environmental analysis each agency official will be committing to in the future as part of this analysis.

### **BLM Administered Lands**

This analysis is required by BLM policy direction and will provide an overview scenario of full field development in the Blackleaf EIS project area. While no site-specific decisions are being made on the location of step-out or exploratory well sites, this analysis will help display the broader (i.e. bigger) environmental implications of a hypothetical full field development. Any site-specific decisions relating to well locations would require additional NEPA analysis. This site-specific analysis could tier to sections of this programmatic EIS (i.e. cumulative effects and mitigation measures).

If BLM receives an application for a step-out wellsite discussed in this EIS, site specific NEPA analysis will be required prior to surface disturbance. The analysis would be tiered to this EIS and would consider the site specific wellsite placement, cultural resource clearance, threatened and endangered species, and road placement. Locations similar to those addressed in this EIS (including the same location, habitat type, road placement) would not require additional consultation with the U.S. Fish and Wildlife Service on threatened and endangered species as that consultation has been completed.

However, should BLM receive an APD for a step-out well that is substantially different than those discussed in this document, additional NEPA analysis and formal consultation with USFWS would be conducted. Based on additional

analysis and consultation, the APD for a step-out well could be approved as submitted, approved subject to modifications or stipulations, or the APD could be denied.

### **National Forest System Land**

This analysis recognizes that a portion of the Blackleaf EIS area lies on National Forest System land. This analysis discloses the potential area-wide impacts to surface resources as a result of hypothetical full field development. This document discloses the impacts of drilling hypothetical locations and provides important information on the response of surface resources to drilling and production activities. The analysis also points to areas potentially sensitive to exploration and production activities. All APDs filed on the Forest will be subject to site-specific NEPA analysis. This EIS, the Forest Plan EIS, and environmental analyses prepared for all future APDs filed for Forest locations will guide all exploration activities within the Forest portion of the Blackleaf EIS area.

The Forest Service operates under a two-step decision level process. The first decision level consists of the Forest Plan which sets programmatic forest-wide management direction in the form of goals, objectives, standards, management area goals/prescriptions, and monitoring/evaluation. The second decision level consists of site-specific project actions which begin to achieve Forest Plan objectives. All site-specific projects must be consistent with the Forest Plan.

The analysis in this EIS will not, by itself, result in a decision under either of these two decision levels. Rather, it provides a programmatic analysis that fits between these two decision levels. This EIS provides a broad environmental analysis that is more specific than the Forest Plan (first decision level). However, it is not sufficiently detailed to make any site-specific decisions regarding the location or number of wells permitted on National Forest System land (second decision level). Because there are no site-specific decisions being made on the location or number of wells on National Forest System land, there are no irreversible or irretrievable commitments of resources being made at this time.

The benefits from this FEIS that will apply to National Forest System land include the analysis of a development scenario and mitigation measures. These mitigation measures automatically incorporate Forest Plan Forest-Wide

Management Standards. More importantly, additional mitigation measures generated as a result of this programmatic environmental analysis could be adopted in future site-specific analyses. In addition, this analysis does provide some resource information in Chapter's III and IV that could be incorporated by reference when the site-specific analysis is conducted.

Any APD filed on National Forest System land will require site-specific environmental analysis under the NEPA. This equates to the second decision level in the two-step decision process. Irreversible and/or irrevocable commitments of resources would be made through the site-specific decision level. Public input will be requested during this analysis.

Further, any APD filed on National Forest System land would require an analysis ensuring that it is consistent with Forest Plan direction.

## ISSUES

The general public, local civic leaders and personnel from the BLM, FS, MDFWP, and other government agencies were asked to help define the major concerns regarding oil and gas development in the EIS area. Public meetings were held in Choteau, Great Falls, Missoula, Browning, Cut Bank and Helena in the fall of 1985, to further solicit public comments. The BLM and FS also received 13 letters from individuals and groups commenting on issues and concerns. All of these comments were categorized in the following manner.

What would be the impacts of oil and gas development on:

1. wildlife (especially grizzly bears, elk, deer, bighorn sheep, Rocky Mountain goats and raptors);
2. the scenic quality of the EIS area;
3. the adjacent Bob Marshall wilderness area;
4. the economic foundation of the area;
5. area landowners;
6. the health and safety of area residents;
7. tourism and recreation; and
8. what would be the cumulative effects of oil and gas development?

## EXISTING MANAGEMENT DIRECTION

Two federal agencies, the Bureau of Land Management and the Forest Service, manage lands within the EIS area. The public lands administered by the BLM are managed under the guidance found in the Headwaters Resource Management Plan (RMP) (Record of Decision, 1984) and the BLM's more recent Outstanding Natural Area Activity Plan (March 1989). National Forest Service lands are managed under the direction of the Lewis and Clark National Forest Plan (Record of Decision, 1986). Valid, existing management direction from previous planning efforts was incorporated into both of these plans.

### Management Direction For Lands Administered by BLM

Through the Headwaters RMP, the majority of public land (4,927 acres) managed by the BLM in the EIS area was designated as the Blind Horse Outstanding Natural Area (ONA). The management direction in this ONA allows those multiple uses that do not degrade the natural qualities of the area and disallows those that do, or modifies them to retain the natural and scenic beauty of the area. The Blind Horse Outstanding Natural Area is presently leased for oil and gas exploration with existing rights.

The proposed action is consistent with management direction found in the Headwaters RMP, which states: "Oil and gas lease stipulations identified in the RMP apply only to leases processed after RMP approval. Existing leases will run their full term with only those stipulations attached at the time of lease issuance. Leases included in an operating unit or any future unit where production is established will remain unaffected by new stipulations as long as production continues or until leases are terminated."

The Headwaters RMP also recommended thorough interagency coordination for the Rocky Mountain Front (RMF), along with the application of all normal mitigating measures and special stipulations, when necessary, prior to lease issuance. Protective stipulations for threatened and endangered species, visual and watershed values, and cultural resources were attached to all leases. Many of the older BLM leases along the RMF, including those within the Blackleaf EIS area, were leased prior to the Headwaters

RMP of 1984, and are currently held by production. Upon expiration of the leases, the leases within the Blindhorse ONA will either not be released, or leased with no surface occupancy stipulations, as outlined in the BLM's Outstanding Natural Area Activity Plan. Based on the more detailed oil and gas data available through this EIS and the Bureau's recent guidance on the oil and gas data required in RMPs/EISs, the Headwaters RMP/EIS will be amended to provide more detailed oil and gas information.

## **Management Direction For National Forest System Lands**

The Forest Plan provides long-term management guidance for the Lewis and Clark National Forest. It describes resource management practices, levels of resource production and management and the availability and suitability of lands for resource management. This EIS is tiered to the Forest Plan and Forest Plan EIS. All permits, contracts, and other instruments for the use and occupancy of the Forest must conform with the Forest Plan. Of the 58,503 surface acres within the Blackleaf EIS area, approximately 17,603 acres are within the Forest. The federal mineral estate beneath all of this acreage is managed by the BLM. Of the 17,603 acres, 6,855 acres have no surface occupancy restrictions attached to the lease; 12,080 acres have timing restrictions; and 230 acres have limited surface use restrictions.

## **Forest Plan Consistency**

The EIS area is in the RM-2 Blackleaf-Dupuyer Geographic Unit and under the direction of Management Areas E and G. All Forest acreage is within the Teton Roadless Area.

The goal for Management Area E is to provide sustained high level of forage for livestock and big game animals. Management direction for minerals development is to allow soil disturbing activities on environmentally suitable land. Where mineral activities are not compatible with present use, mitigate the effects through special lease stipulations. Roads and drill pads will be designed, located and if necessary reclaimed in compliance with the management area's goal.

The goal for Management Area G is to maintain and protect forest resources with minimum investments. The management direction for minerals development is to allow occupancy only where surface resources can be maintained during occupancy and the surface quality can be fully

reclaimed after mineral activity. Development may be allowed, but must be mitigated to the fullest extent possible by use of the limited surface use stipulation.

Oil and gas development in the EIS area is allowable under Forest Plan management direction. Since this EIS is programmatic rather than site-specific in scope, general Forest-wide management standards were used in the analysis process. The specific standards applicable to mineral development which were identified for this programmatic document are as follows: Special Interest Areas (A-6), Cultural Resource Management (A-7), Visual Resource Management (A-7), Wildlife Coordination and Habitat Management (C-1), Threatened and Endangered Species (C-2), Fish Habitat (C-3), Wildlife Trees (C-4), Management Indicator Species (C-5), Noxious Weeds and other Pests (D-2), Rare Plants (N-2), Erosion Control (F-1), Soil, Water and Air Protection (F-3), Oil and Gas Leasing, Exploration Drilling, Field Development, and Production (G-2), and Construction of Roads, Trails and other Facilities (L-4).

In order to protect sensitive resources that may be adversely effected by development projects, special mitigating measures or operational stipulations will be made a condition of approval for all Surface Use Plans of Operation received in the future. These measures will be determined through site specific analyses conducted for proposed projects. All projects will be guided by management direction contained in the Forest Plan and a determination of consistency with the Plan will be made for each project.

## **Management Direction For Montana Department of Fish, Wildlife and Parks Lands**

One state agency, the Montana Department of Fish, Wildlife and Parks, also manages lands, the Blackleaf Wildlife Management Area (WMA), within the EIS area. Their draft Blackleaf Wildlife Management Area Management Plan (Final, 1990) outlines goals, objectives, monitoring requirements, travel plan, etc. for the 8,158 acre WMA. Oil and gas development is consistent with this management plan.

## **Management Direction For Teton County**

A Comprehensive Development Plan for Teton County, Montana was developed in 1981, by the Teton County Planning Board. The purpose of this plan is to protect and improve the present health, safety, convenience and wel-

fare of county citizens and to plan for the future development of their communities; that the needs, industry, and business be recognized in future growth; and that growth of the communities be commensurate with and promotive of the efficient and economical use of public funds. The plan also proposes to protect and maintain the agricultural

economy of the county and to protect valuable agricultural areas; to conserve energy; and to result in the development of better communities, the preservation of desirable environments and a general all around improvement in the quality of life.