Montana Fish, Wildlife & Parks

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March 25, 2004

To All Interested Parties:

Two documents are enclosed for your review and comment. The Environmental Assessment was prepared by Montana Fish, Wildlife & Parks (FWP) and describes three alternative approaches to FWP's future management of sage grouse in Montana: 1) The No Action Alternative describes a continuation of FWP's current sage grouse conservation efforts with no additional new actions; 2) the Proposed Action Alternative describes new actions identified in the state sage grouse plan entitled *Management Plan and Conservation Strategies for Sage Grouse in Montana – Final Draft* and; 3) the High-level Protection Alternative describes a more intensive approach to sage grouse conservation.

The *Management Plan and Conservation Strategies for Sage Grouse in Montana – Final Draft* (Final Draft Plan) ~~is also enclose~~d. This document describes an overall approach to conserving Montana's sage grouse and their habitats, involving a variety of agencies, non-governmental organizations, local working groups, and individuals. An earlier draft of this document was developed by the Montana Sage Grouse Work Group through a collaborative effort and was released for public comment in December 2002. This Final Draft Plan was developed based on input received by the public and through further discussions within the Sage Grouse Work Group. In addition to the plan revisions, a summary of public comments with responses is included in the Appendix.

Public comments on either of these documents will be accepted through May 14, 2004. Please address comments to: Montana Fish, Wildlife & Parks, c/o Sage Grouse Comments, P.O. Box 200701, Helena, MT 59620-0701 –or– by email at: fwpwld@state.mt.us

A Final EA will be written that incorporates public comment and will include a Record of Decision describing the alternative or modified alternative I have selected for implementation by FWP. The Record of Decision will indicate whether or not an EIS will be required based on the information received and analyzed during the MEPA process.

With regard to the Final Draft Plan, based on public comment, additional revisions may be made to the plan, leading to a "Final Plan." I will sign the Final Plan and route it for signatures by the involved agencies and organizations.

Additional information, or a copy of the EA or Final Plan, may be obtained via the Internet at www.fwp.state.mt.us, or by writing to the Wildlife Division, Montana FWP, P.O. Box 200701, Helena, MT 59620-0701.

Sincerely,

M. Jeff Hagener
Director

ENVIRONMENTAL QUALITY COUNCIL. 2003-2004

May 13, 2004 Ex. No. 15

Management Plan and Conservation Strategies for Sage Grouse in Montana

---Environmental Assessment---

Montana Environmental Policy Act

Montana Fish, Wildlife & Parks

Rev. 3/22/2004

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CHAPTER 1: OVERVIEW AND SUMMARY

Proposed Action

Montana Fish, Wildlife & Parks (FWP) proposes to initiate new conservation strategies as defined in the *Management Plan and Conservation Strategies for Sage Grouse in Montana - Final Draft* (Final Draft Plan) and as pertains to FWP's statutory authority and responsibility, with oversight by the Montana Fish, Wildlife & Parks Commission. FWP would also continue or enhance some activities that currently address sage grouse conservation in Montana.

Purpose and Need for Proposed Action

The purpose of the Proposed Action is to help assure the long-term conservation of sustainable sage grouse populations in Montana in a manner that is in balance with other high priorities of FWP.

Sage grouse have experienced population declines and reduced distribution across their range in the western United States. Montana sportsmen, resource managers, landowners, and other conservation interests have been concerned about the status of sage grouse (*Centrocercus urophasianus*) and/or sagebrush (*Artemisia* spp.)-grasslands since the 1950s. Loss of sagebrush steppe across the western states -- primarily through conversion to cropland or treatments eliminating sagebrush -- approaches or even exceeds 50 percent in some areas (Dobler 1994, Knick 1999) and is considered to be a primary reason for long term declines in sage grouse abundance across their range (Schroeder et al. 2000, Connelly and Braun 1997). In recent decades, invasion by cheatgrass has changed the intensity of fire regimes in the Great Basin region and has contributed to additional losses of sagebrush habitat in those states (Knick and Rotenberry 1997, Billings 1994). Loss of sagebrush habitat in Montana, in terms of quality or quantity, may not have been as high as in other states although significant enough in parts of the state to influence sage grouse population trends (e.g., Swenson et al. 1987).

Growing concern about the status of sagebrush steppe, declines in sage grouse numbers, and long-term survival of sage grouse populations resurfaced in the 1990s. A Memorandum of Understanding (MOU) for the conservation and management of sage grouse was signed by member states of the Western Association of Fish and Wildlife Agencies (WAFWA) and federal natural resource management agencies on 12 July 2000. The U.S. Forest Service (under the U.S. Department of Agriculture) and the Bureau of Land Management and Fish and Wildlife Service (both under the U.S. Department of Interior), agreed to work cooperatively with member states to develop conservation plans. Each state member of WAFWA agreed to convene a work group within 60 days of the effective date of the MOU. This led to the establishment in 2000 of the Montana Sage Grouse Work Group (see below) and subsequent development of the Management Plan and Conservation Strategies for Sage Grouse in Montana – Final Draft Plan.

Sage grouse have also received heightened awareness over the past 4 years due to a number of petitions submitted by individuals and organizations requesting the U.S. Fish and Wildlife Service to consider listing sage grouse as threatened or endangered under the federal Endangered Species Act.

The Final Draft Plan was developed through a collaborative effort by the Montana Sage Grouse Work Group (MSGWG), comprised of a broad range of stakeholders in sage grouse management. Work group participants include representatives of FWP, other state agencies, federal agencies, tribes, conservation organizations, agricultural organizations, and private landowners. The Plan incorporated public comment at several stages in the process and a draft version was released for comment in December 2002.

The goal of the Plan is to "Provide for the long-term conservation and enhancement of the sagebrush steppe/mixed-grass prairie complex within Montana in a manner that supports sage grouse, a healthy diversity and abundance of wildlife species, and human uses." The Plan accomplishes this by providing biological information, identifying information gaps, facilitating data collection required for future resource management decisions, and establishing a process to achieve sage grouse management objectives through local management efforts. The Plan includes management strategies that will guide future conservation efforts.

Reviewers may obtain a copy of the Plan from the FWP State Headquarters in Helena, 1420 E. 6th Avenue or by downloading a file from the FWP website (http://www.fwp.state.mt.us/) or by calling the FWP Wildlife Division Office at 406-444-2612.

Scope of Analysis

This Environmental Assessment (EA) analyzes potential impacts of sage grouse conservation activities considered for implementation by FWP and as described in 3 separate alternatives (Chapter 3). The Final Draft Plan was developed through a collaborative effort involving state and federal agencies, non-governmental organizations, and individuals. Although general commitments are made by a number of federal agencies signatory to the Plan, the scope of this EA, undertaken as a requirement of Montana Environmental Policy Act (MEPA), involves only FWP actions. As federal agencies consider implementing related sage grouse conservation activities on agency-administered lands, these agencies will prepare separate analyses as per National Environmental Policy Act (NEPA) requirements.

This EA does not analyze the contingency of closing sage grouse hunting. As with all game species, the Montana Fish, Wildlife & Parks Commission retains the authority to close a season in an area or areas where sage grouse exhibit a threatening decline in abundance. Such an action, however, would require a separate public review and a more "site-specific" environmental analysis.

Decisions to be Made

A record of decision will be made by the FWP Director and will guide future sage grouse conservation activities by FWP. The decision may adopt one of the alternatives or a modification of one or more of the alternatives and will be based on the efficacy of the proposed actions to achieve sage grouse conservation goals; the environmental impacts described in this EA; and the comments received through public review of the Plan and this EA.

Other Agencies Having Jurisdiction or Responsibility

Montana Fish, Wildlife & Parks is responsible for managing and conserving all wildlife species within the state. FWP has therefore been a leading partner in the development and facilitation of this planning process. Other resource agencies have also been involved with sage grouse planning including USDI Bureau of Land Management (BLM) and US Fish and Wildlife Service (USFWS), USDA Natural Resources Conservation Service (NRCS) and US Forest Service (USFS), and the Montana Department of Natural Resources and Conservation (DNRC).

Public Involvement Process

Development of the Final Draft Plan represents a collaborative effort involving a wide spectrum of stakeholders. Approximately 15 public meetings across the state, involving agencies, organizations, and individuals, were held to develop and review portions of the Draft Plan. The Draft Plan was released for full public review in December 2002. Seven additional public meetings were held around the state during the comment period to present the draft Plan and to receive public comments.

A total of 102 written and verbal public comments were received during the comment period. From those, 572 points were recorded and 136 representative points were included in the Plan Appendix with written responses. The Final Draft Plan was developed in response to public comments and through further changes suggested by the Montana Sage Grouse Work Group.

The Final Draft Plan and this EA will be released for an additional 30-day public review period. FWP and State Work Group Members will review public comments. The FWP Director will make a decision regarding new FWP actions identified in this environmental assessment in the form of a Record of Decision (see preceding section: Decisions To Be Made). Final revisions will be made to the Plan in response to the Record of Decision and public comments. The "Final Plan" will then be signed by the FWP Director and will be routed to other contributing partners for signature.

Issues Identified Through Public Involvement

Public Comments on the Draft Plan appeared to fully represent the spectrum of perspectives on most aspects of sage grouse conservation in Montana. Appendix E of the Final Plan lists 136 representative points organized into 28 categories. Each of these also includes a written response. Many issues raised through public comment involve responsibilities that are outside of FWP's authority and therefore outside the scope of this EA. A summary of issues involving FWP, listed by category type, follows. For a more complete review of comments and issues see the Draft Final Plan, Appendix E.

- Distribution

Public comment addressed the quantity and quality of potential habitat (27 million acres) in Montana and the consequences of converting native range to cropland on current distribution of sage grouse. Other comment questioned the objective of 'no net loss' of sagebrush habitat, the

relative extent of habitat conversion in Montana and elsewhere, and geographical distribution of subspecies of big sagebrush across Montana.

- Education

Public comment suggested a brochure be developed to attract more attention to sage grouse conservation issues.

- Endangered Species Act

Public comment requested more specific objectives should be included in the Draft Plan and suggested the PECE (Policy for Evaluation of Conservation Efforts When Making Listing Decisions) Criteria, used by the USFWS to evaluate species plans, were not fully met.

- Fire

Comments on prescribed and wild fire were primarily directed toward federal land management agencies. A comment referenced a Memorandum of Understanding between BLM and FWP requiring the agencies to meet 2-years prior to any sagebrush prescribed burning. Various Work Group members searched for such an MOU but with no success. Although FWP works closely with federal land management agencies on these issues and often provides comments to the agencies on plans for sagebrush manipulation, decisions related to fire management on federal land are outside FWP's authority.

- Funding

Public comment on funding FWP sage grouse conservation efforts was divided, with one point of view opposing the level of FWP program funding directed at conservation of sagebrush-grassland habitat and opposed to using hunting license revenue to cover the cost. The other viewpoint holds that sagebrush conservation should be funded regardless of the source.

- General Comments

Public comment questioned a need for protection of sage grouse under the federal Endangered Species Act (ESA) or expressed concern about impacts the Plan or ESA protection might have on private property. Others asked that the Plan consider economic impacts prior to adoption and implementation.

- Grazing

FWP provides funding for managed grazing systems through its habitat programs, and therefore, some grazing-related comment falls within the scope of this EA. Public comment was divided on the effects of grazing or grazing management on sagebrush, overall range condition, or sage grouse productivity. One viewpoint holds that sagebrush is an increaser and that reduced livestock grazing or improved grazing management would lead to a reduction in sagebrush and perhaps improved range condition. Other viewpoints either maintained that managing for

sagebrush would reduce range condition or questioned any stated benefits to sage grouse through grazing or development of grazing systems. Some argued that the Plan should include more information on how grazing might benefit sage grouse.

- Habitat

Public comment suggested the FWP Upland Game Bird Habitat Enhancement Program be used to preserve sagebrush habitat. Additional comment suggested the Plan include a means for mitigating or restoring habitat that is lost. Comment questioned why Montana Department of Natural Resources and Conservation did not adopt "no net loss" of sagebrush habitat in the Plan. Comment also suggested monitoring sage grouse habitat amount and quality is just as or more important than monitoring sage grouse populations.

- Hunting

A number of comments were received regarding lengthening and shortening the hunting season, adjusting season start and end dates, and increasing or decreasing the bag limit. Some argued to close the hunting season on sage grouse, especially if they are truly imperiled, whereas others had the opposite belief that hunting should be maintained as hunters play a large role in sage grouse conservation. Some expressed concern that the Draft Plan did not consider hunting a real threat to sage grouse or why research would be used to determine a "maximum" harvest rate instead of a "sustainable" harvest rate. Additional comment expressed support for adaptive harvest management.

- Monitoring

Public comment suggested more emphasis be placed on multiple counts of leks during a given year. Other comment suggested writing more about the shortcomings of lek counts and the need for a statistically reliable means of estimating changes in abundance.

- Other Species

Comment expressed a concern that FWP's planning processes use a single-species rather than an ecosystem approach, whereas others contend that managing sagebrush-grasslands for sage grouse will benefit species that rely on these habitats. Additional comment focused on potential adverse impacts that big game populations may have on sage grouse habitat that would require herd reduction, or that the presence of antelope might provide a means of determining habitat suitability for sage grouse.

- Plan Process

Public comment questioned why the Draft Plan did not include a series of alternatives for analysis and decision-making. Comment questioned why the lack of hunter involvement in the Montana Sage Grouse Work Group and expressed the feeling that anti-hunting and anti-grazing interests were over-represented. Additional comment stated that an economic analysis and an EIS would be necessary for fulfilling MEPA requirements.

- Population

Public comments questioned the validity of sage grouse being endangered or threatened whereas others suggested the highest levels of conservation should be used to protect sage grouse. Comment questioned whether managing to maintain status quo would sufficiently curtail a decline in the sage grouse populations and others stressed that population fluctuations due to weather and predation need to be factored into population changes. Comment questioned why FWP's long-term lek monitoring data only included lek counts with 10 or more consecutive years of data. Other comments questioned why lek count data doesn't show a decline whereas the Draft Plan suggests sage grouse abundance has declined as a result of habitat loss.

- Predation

Public comment emphasized that predators have increased, both in terms of numbers and diversity, and their impact on sage grouse survival is significant. Some comments suggested more extensive predator control should be included in the Plan whereas others argued that FWP should discontinue spending $100,000 each year for predator control, stressing predator control is no substitute for improving habitat. Some questioned why the Draft Plan simply considers predation "an expected component of natural mortality" or why predation may only be a concern when habitats are compromised.

- Research

Comments suggested most sage grouse research had been done out of state and may not be indicative of habitats in Montana. Comment requested a study to determine how imperiled sage grouse actually are. Additional comment suggested researching impacts of predation on sage grouse in both fragmented and intact habitats.

CHAPTER 2: AFFECTED ENVIRONMENT

The following is a general summary of information taken from the Final Draft Plan. For more detailed information please refer the Final Draft Plan.

Sage Grouse Status

Legal Classification

Sage grouse are managed under state authority including the statutory authority to regulate harvest. Legislative mandate designates sage grouse as an upland game bird (87-2-101, MCA).

Abundance and Distribution

Historical and current distribution of sage grouse in Montana is portrayed in Figure 1. Sage grouse occur across a major portion of central and eastern Montana as well as parts of southwestern Montana, roughly following current sagebrush distribution. FWP has inventoried approximately 800 active leks. Generally speaking, the extent of sage grouse habitat has declined over the past 100 years as a result of conversion of sagebrush habitat to domestic crops, hay land, and seeded pastureland, and through burning or spraying of rangeland sagebrush. Unlike many states, however, Montana still supports extensive sage grouse habitats estimated to be around 27 million acres of potentially occupied habitat, occurring in 39 counties.

Sage grouse abundance can fluctuate rather dramatically within a 10-year period primarily as a result of changing weather patterns but may also be affected by fluctuating predator and prey abundances (Figure 2). The recently arrived West Nile Virus may also affect sage grouse abundance. Hunting is another cause of direct mortality (See Recreational Values, below). Most or all of these causes of mortality have relatively short-term (<10 years) effects on population levels. Conversely, factors that contribute to the reduction of effective habitat, such as conversion or fragmentation, generally result in a long-term change in sage grouse abundance. This latter scenario has resulted in significant sage grouse declines or complete disappearance in parts of their range, including some parts of Montana.

Long-term sage grouse lek survey information in Montana suggests that for certain areas, populations have not declined in abundance even though annual numbers have fluctuated significantly (Figure 2). This trend does not, however, apply to all areas. Likewise, although not reflected in Figure 2, some leks appear and disappear over time with changes in abundance of sage grouse, making annual data comparisons difficult. Presently, there are no effective means for analyzing existing lek data sets to accurately measure statewide changes in sage grouse abundance, density, and distribution. FWP is proposing in this EA to develop a survey strategy that will produce this type of information over time.

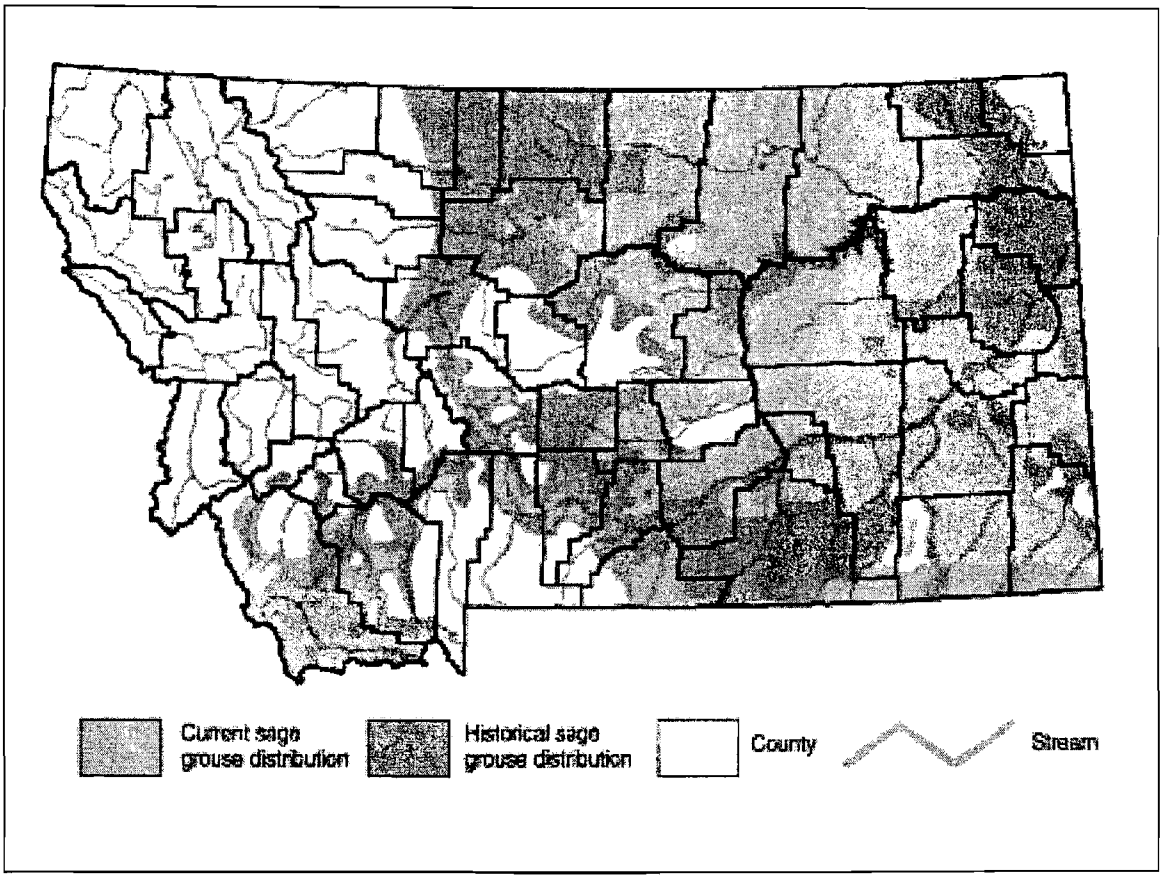

Figure 1. Current and historic distribution of sage grouse in Montana. Map provided by FWP Information Services.

Recreational Values

Hunting and viewing sage grouse are popular activities in Montana. During the spring breeding season, male sage grouse can be viewed strutting on leks or display grounds, a unique wildlife viewing opportunity. Sage grouse also have a long history in Montana as a popular game bird. Although still popular, hunter survey data suggests sage grouse harvest and the number of hunter-days in pursuit of sage grouse have both declined significantly over the past 20 years. The statewide annual sage grouse harvest averaged 6,800 birds between 1997 and 2001, compared to a long-term average since 1958 of 29,700 harvested birds. This is due primarily to a 60% decline in hunting effort, as measured in hunter-days, but likely also includes a concurrent change in harvest rates over the same time period.

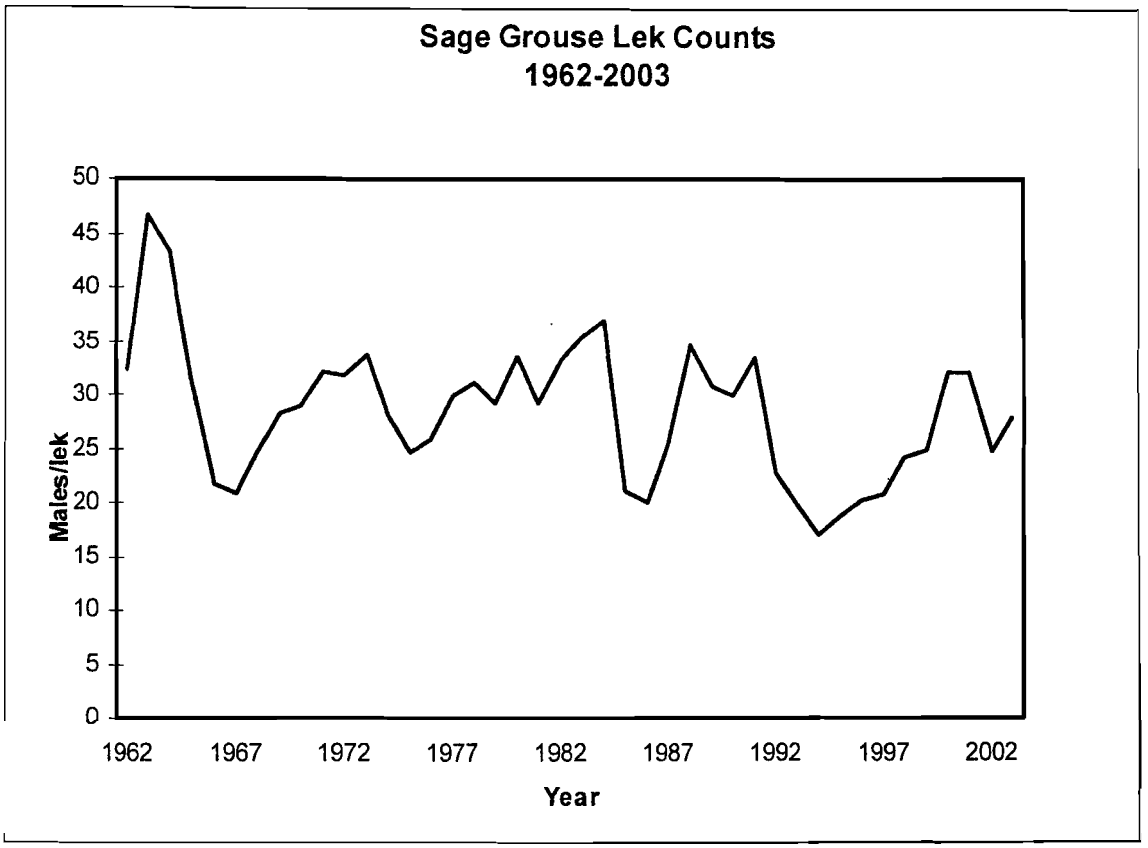

Figure 2. Long-term sage grouse lek survey results. Trend information is based on annual averages of leks with 10 or more years of consecutive survey data. Over time, new lek survey data sets (with 10+ years of data) have been added into these annual averages.

Sage Grouse Habitat

Habitat Ecology

Eleven species of grouse are native to North America, each with a specific habitat niche. Healthy sagebrush-grassland habitat defines the range of the sage grouse, a well-known sagebrush obligate. Because of its popularity and its shared niche with other sagebrush obligates, sage grouse are considered by many to be an "umbrella species" of sagebrush steppe habitats (Rich and Altman 2001, Wambolt et al. 2002). That is, by conserving effective habitat for sage grouse, many additional species utilizing sagebrush habitats will also benefit.

Sage grouse are primarily herbivores, feeding on a mix of forbs and sagebrush during the growing season and then switching to sagebrush through fall and winter. Young birds feed primarily on forbs and insects during the first months after hatching. Sage grouse select for specific habitat characteristics that vary by season and lifestage. In general, sage grouse

require large expanses of sagebrush-grassland habitat with a complement of native forbs and grasses. Habitat variations across the landscape, caused by a variety factors such as soils, slope, and moisture regimes, provide a mix of vegetation types that sage grouse require for reproduction and survival. The specific habitat needs of sage grouse are described in Section IV of the Final Draft Plan and in Connelly et al. 2000, included in the Final Draft Plan, Appendix A.

Loss of sage grouse habitat through degradation or conversion to some other cover type can result in one or more necessary habitat components being reduced or lost, with consequential effects on sage grouse abundance and distribution (Swenson et al. 1987, Schroeder et al. 2000). Habitat fragmentation has further been shown to result in lower nest success rates for upland nesting waterfowl (Greenwood et al. 1995, Sovada et al. 1995, Reynolds et al. 2001, Ball et al. 1995) due to: 1) increased nest vulnerability to predation, and 2) a change in predator compositions to species more likely to encounter and depredate nests, such as red fox. It is likely that habitat fragmentation would have similar effects on other upland nesting birds including sage grouse.

Land Management and Economics

Economic resource development and land management of sage grouse habitats in Montana are closely intertwined. The sagebrush-grasslands that support sage grouse are managed predominantly as livestock range. The livestock industry is one of the primary sources of income in rural Montana. In some areas, oil and gas developments also occur. Coal bed methane development is being considered in parts of the sage grouse's range in southeast Montana. Over time, portions of historical sage grouse habitat have been converted from native range to cropland or hay land. Much of this occurred prior to any organized sage grouse monitoring efforts in Montana and it is therefore not possible to accurately determine what impacts this has had on sage grouse abundance on a statewide scale. In some other states, sagebrush habitat conversion has been significant enough to severely reduce the sage grouse's distribution to isolated remnant populations. Fortunately, Montana still retains extensive and relatively healthy sagebrush-grassland habitats. Traditional livestock grazing on private and public lands has played a significant role in maintaining these large prairie expanses. However, interest in converting and manipulating sage grouse habitats on private and government-administered lands still remains.

Physical/Biological Environment

Sage grouse occur on the sagebrush steppe habitats in southwest Montana and across portions of central and eastern Montana (Figure 1). Topography of sage grouse habitat ranges from flat expanses to rolling hills and mountain foothills. Rough breaks topography is unsuitable habitat for sage grouse. Sagebrush is considered a climax component of sagebrush-grassland habitat types (Daubenmire 1970, Mueggler and Stewart 1980, Hansen et al. 1995). That is, sagebrush occurs in areas where soils and climate provide conditions for sagebrush to grow and reproduce as a stable vegetative community that will not be replaced by other types of vegetation (Peterson 1995). Wambolt and Frisina (2002) have described in detail the habitat characteristics of 16 woody sagebrush taxa occurring in Montana. Soils supporting individual taxa vary considerably from deep to shallow, clayey to rocky, and fresh to alkaline or saline.

In eastern Montana, Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) is the most common sagebrush occurring on upland sites with fine-textured soils. Plains silver sagebrush (*A. cana cana*) occurs on medium-textured soils along flood plains and replaces Wyoming big sagebrush as the upland species north of the Milk River along the Montana Hi-Line. Dominant understory species in eastern Montana include western wheatgrass (*A. Smithii*), prairie junegrass (*Koleria cristata*), needle-and-thread (*Stipa comata*), green needlegrass (*S. viridula*), blue grama (*Bouteloua gracilis*) and a mix of forb species.

A mix of sagebrush species, typically dominated by mountain big sagebrush (*A. t. vaseyana*) occurs in southwestern Montana. Understory is dominated by Idaho fescue (*Festuca idahoensis*) and bluebunch wheatgrass (*Agropyron spicatum*) as well as a mix of forb species.

Precipitation ranges from 14 or more inches of moisture in southwestern Montana to 10 inches or less in eastern Montana.

In addition to sage grouse, the sagebrush-grasslands of Montana support 6 wildlife species considered to be sagebrush obligates and 46 species that are associated with sagebrush habitats (J. Carlson, Natural Heritage Program, unpublished data). Of these, FWP and the Montana Natural Heritage Program list 16 as species of concern including the sagebrush lizard (*Sceloporus graciosus)*, pygmy rabbit (*Brachylagus idahoensis*), Ferruginous Hawk (*Buteo regalis*), burrowing owl (*Speotyto cunicularia*), blue-gray gnatcatcher (*Polioptila caeruleal)*, Preble's shrew (*Sorex preblei*), Dwarf shrew (*S. nanus*), Merriam's shrew (*S. merriami*), fringed myotis (*Myotis thysanodes*), spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), Great Basin pocket mouse (*Perognathus parvus*), Great Plains toad (*Bufo cognatus*), western hognose snake (*Heterodon nasicus*), and milk snake (*Lampropeltis triangulum*).

CHAPTER 3: ALTERNATIVES

The following is a description of 3 sage grouse management and conservation alternatives that FWP might implement. Unless otherwise depicted, ongoing FWP activities described in the No Action Alternative would also be continued in the Proposed and High-Level Protection Alternatives.

1. No Action Alternative

This alternative would maintain the current programs and activities FWP has undertaken for managing and conserving sage grouse in Montana. New actions described in the Final Draft Plan would not be adopted under this alternative. The following is a summary of FWP's current sage grouse management and conservation activities.

Over the past 15 years, FWP has conserved and enhanced sagebrush-grassland habitats with funding from two programs. Up to half of the Upland Game Bird Habitat Enhancement Program (UGBHEP) funding has been used for developing and implementing rest-rotation grazing systems with cooperating private landowners and agencies and, to a lesser extent, restoring habitats (i.e., reseeding sagebrush-grasslands) which serves to maintain, improve, and expand habitat for upland game birds, upland nesting birds, and other wildlife species. The Habitat Montana Program has purchased land conservation interests, primarily in the form of conservation easements but also including some fee purchases, on approximately 10,000 acres of sagebrush-grassland habitat annually. Under this alternative, sagebrush-grassland conservation would continue to be a priority within both programs, as described.

FWP is mandated to protect, preserve and propagate the fish and wildlife resources of the state (87-1-201, MCA). In addition, the agency will manage wildlife, fish, game and nongame animals in a manner that prevents the need for listing as endangered under state law (87-5-107, MCA) or under the federal Endangered Species Act, that assists in the maintenance or recovery of those species, and that balances the maintenance or recovery of a species with the social and economic impacts of species maintenance or recovery. To that end, FWP will continue to provide technical assistance to both federal and state land management agencies relative to the specific habitat needs of sage grouse and will continue to work with public and private sector partners in the refinement of appropriate conservation actions.

FWP, with help from other agencies and individuals, has been identifying and monitoring sage grouse leks since the mid-1950s. In response to concerns raised nationally about sage grouse, FWP has recently increased efforts to inventory leks in previously unsurveyed but potentially occupied habitat. In some parts of Montana, lek inventory work (i.e., identifying and documenting leks) is a large task due in part to the vast geographic areas involved and the short timeframe within which surveys can be completed. Successful lek inventories can only take place within a 2 to 2.5-month period in the spring for approximately the first 3 hours of daylight each day. FWP will continue inventorying leks, especially in areas where little inventory work has been completed.

In addition to leks, FWP has been actively identifying and mapping important sage grouse wintering areas. Winters with average to deep snow are considered necessary before observers can document with some certainty areas capable of supporting wintering sage grouse.

Past sage grouse lek surveys (i.e., counting male sage grouse on leks) have provided important information on how sage grouse abundance has changed over time relating to changing local conditions (Swenson et al. 1987, Eustace 2002) as well as an indication of breeding population levels during the survey year. In addition to surveys of individual leks, 4 trend areas in central and eastern Montana are surveyed annually to quantify male lek attendance within a predefined area.

FWP is responsible for recommending annual harvest regulations to the Fish, Wildlife & Parks Commission, which holds statutory authority to set season length and bag limits. Under the No Action Alternative, FWP would continue to support the existing sage grouse hunting season structure. Since 1996, the sage grouse hunting season has run from September 1–November 1. Daily bag limits have ranged from 2 –4 birds with a possession limit of 2-4 times the daily bag limit. Bag limits have not been set based on any kind of pre-determined survey thresholds.

Post-hunting season hunter surveys have been used since the 1960s to track harvest levels of game species, including upland game birds. FWP will continue to conduct these annual harvest surveys.

FWP annually collects a sample of wings from harvested sage grouse for determining productivity, sex ratios in the harvest, and hatching dates of juvenile birds. This will continue as a targeted effort utilizing wing-collection barrels located near popular hunting areas and/or sending out wing envelopes to sage grouse hunters.

FWP has also partnered on a number of sage grouse research studies in the past and is currently contributing to 3 separate investigations. A study in north central Montana will provide information on sage grouse vital rates and habitat use on a landscape scale. A study in south central Montana will provide information on impacts of hunting on observed trends in a local sage grouse population. A study in southeastern Montana will identify and describe potential impacts of coal bed methane activities on sage grouse demographics. As funds become available and opportunities arise, FWP will continue to support research that serves to address management issues and advance sage grouse conservation.

2. Proposed Action Alternative

The Proposed Action Alternative includes a series of 3 actions FWP has proposed implementing in the Final Draft Plan. These are intended to increase FWP's effectiveness in terms of sage grouse conservation and monitoring.

FWP proposes to continue spending approximately half of UGBHEP funding for sagebrush-grassland conservation purposes. Under this alternative, FWP would develop and implement the Montana Sagebrush Initiative. This program would use funds committed from UGBHEP and matching federal funds, totaling $2.2 million, to purchase 30-year habitat protection agreements

on approximately 183,000 acres of private land associated with sage grouse leks and wintering areas. Future funding could result in the purchase of more sagebrush habitat protection agreements. These voluntary, incentive-based agreements would protect sagebrush habitats from treatments designed to kill sagebrush such as herbicide spraying or prescribed burning, as well as protecting against conversion of sagebrush-grasslands to cropland. Priority areas for developing agreements are sagebrush-grasslands within 2 miles of leks as well as documented sage grouse wintering areas.

Past lek surveys have been used to monitor sage grouse abundance trends on a localized scale. These surveys do not provide an accurate measure as to statewide changes in sage grouse abundance. To address this need, FWP proposes to develop and implement a lek survey protocol that will provide a measure of long-term changes in statewide abundance, density, and distribution. This protocol would involve annually surveying a stratified sample of leks that may differ between years. Most or all documented leks in Montana would periodically be surveyed as a part of this new protocol.

The third new action described in the Final Draft Plan involves development of a refined sage grouse harvest regulation strategy. Under the Proposed Action, FWP would recommend an adaptive harvest management approach that would adjust prescribed sage grouse hunting regulations based on changes in male lek attendance. Specifically, during years of below-average lek counts, sage grouse daily bag limits would be 2 harvested birds per day with a 4-bird possession limit; this is known as the "conservative regulation." Alternatively, if lek counts during a particular year were above the long-term average, a "standard regulation" would be adopted that allows harvest of 4 sage grouse daily and an 8-bird possession limit. If adopted, the Fish Wildlife & Parks Commission would select from either the "standard" or "conservative" sage grouse hunting regulation package based on the current year's lek survey results. A specific package would likely remain in place for a number of years (2-4) given observed growth rates in sage grouse populations.

3. High-Level Protection Alternative

The High-Level Protection Alternative would direct additional FWP resources toward sage grouse protection and habitat conservation relative to the Proposed Action Alternative.

Montana Fish, Wildlife & Parks would direct up to 75% of Upland Game Bird Habitat Enhancement Program funding toward supporting the Montana Sagebrush Initiative. This program would operate as described in the Proposed Action Alternative but would receive an additional 25% of UGBHEP funds. As with the Proposed Action Alternative, initial expenditures would initially purchase protection on approximately 183,000 acres. Expanded enrollment would require increased UGBHEP funding and an increase in matching federal funds. Under this alternative, additional work-force resources would be redirected to enable achievement of this level of habitat conservation.

Sagebrush-grassland conservation would be the highest priority for the Habitat Montana Program. Currently, Habitat Montana focuses conservation on three habitats across the state of Montana. This increased emphasis on sagebrush-grassland habitats would result in a

corresponding reduction in conservation priority for intermountain grassland and riparian ecosystems.

Under the High-Level Protection Alternative, FWP would recommend to the Fish, Wildlife & Parks Commission that hunting regulations be restricted to 1 sage grouse per day with a 2-day possession limit. FWP would further recommend that the hunting season be reduced to a 31-day season starting October 1.

FWP contributes approximately $100,000 annually to the Department of Livestock for the purpose of helping control coyotes in areas of Montana where deer and/or antelope numbers are below management objectives. Under this alternative, FWP would redirect up to half of this funding toward control of nest predators in areas where sage grouse abundance is below management objectives. Instead of aerial gunning coyotes, this redirected funding would be targeted at controlling skunk, raccoon, and red fox, as these species are more likely to prey on sage grouse eggs.

Lek inventory and surveys, development of a statewide lek monitoring protocol, wing collection of harvested birds and post-hunt harvest surveys would be the same as described in the Proposed Action Alternative.

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental, economic, and cultural consequences of potential new actions by FWP as described in the Proposed Action Alternative and the High-level Protection Alternative, Chapter 3. The No Action Alternative, representing current FWP sage grouse management and conservation efforts, provides a basis for comparison. Potential impacts are analyzed in terms of both the Physical/Biological Environment and the Human Environment.

A. PHYSICAL/BIOLOGICAL ENVIRONMENT

1. LAND RESOURCES – Soil, Water, Air, and Vegetation

This section considers impacts to soils and geology, water quality and quantity, vegetation and air. None of the actions described in this environmental assessment will have an appreciable effect on air. New proposed habitat conservation efforts by FWP can impact other land resources to varying degrees.

No Action Alternative

Under the No Action Alternative, FWP would not take any new actions identified in the Proposed Action. FWP would not negotiate protection under the Montana Sagebrush Initiative for 183,000 acres of sagebrush-grassland on private land. As a result, this acreage could be converted to cropland or would be subject to rangeland manipulations such as herbicide applications and prescribed burning to reduce or eliminate sagebrush. Keeping these areas in native vegetation maintains soil cover, providing protection from soil erosion and in turn maintaining water quality.

Proposed Action Alternative

Under the Proposed Action Alternative, approximately half of UGBHEP funds would be used to purchase habitat protection agreements for conserving sagebrush-grassland habitats from sagebrush control measures and conversion to cropland (i.e., the Montana Sagebrush Initiative). Initially, with the addition of federal funds, approximately 183,000 acres of privately owned sagebrush-grasslands would be enrolled into habitat protection agreements. The agreements would ensure that native vegetation remained on enrolled properties for a period of 30 years. Although some of these enrolled areas might be affected by wildfire, they would be subject to legal protection from prescribed fire, herbicide treatments, and conversion to cropland. Maintaining vegetative cover protects soils from erosion and in turn maintains the current surface water quality.

High-Level Protection Alternative

This alternative represents the highest level of habitat program funding that FWP would direct toward sagebrush-grassland conservation. Up to 75% of UGBHEP would be dedicated to purchasing sagebrush habitat protection agreements on private lands through the Montana Sagebrush Initiative. Initially, with the addition of federal funds, this alternative would result in enrollment of approximately 183,000 acres into sagebrush habitat protection agreements. Federal and UGBHEP funds would continue to maximize the number of acres enrolled into habitat protection agreements within the 75% UGBHEP funding allocation. Sagebrush-grasslands would also be the highest priority for purchasing conservation easements through the Habitat Montana Program. This alternative would result in the highest acreage of sagebrush-grasslands enrolled in habitat protection agreements and conservation easements with resultant benefits to native vegetation, soils, and water quality.

2. FISH and WILDLIFE

New FWP actions intended to conserve sage grouse and their habitats are the focus of this environmental assessment. This section analyzes how each of the proposed actions could affect wildlife. FWP does not expect any actions described in this environmental analysis to adversely impact fish or aquatic habitats.

No Action Alternative

Under this alternative, FWP would not implement any of the new actions described in Chapter 3. In terms of FWP's habitat conservation programs, sagebrush-grasslands would continue to be a priority for funding conservation practices (e.g., grazing systems and conservation easements). However, the Montana Sagebrush Initiative would not be implemented. A substantial amount of privately-owned sagebrush-grassland habitat occurring around sage grouse leks and wintering areas would remain unprotected from sagebrush control measures and conversion to cropland.

A statewide lek survey protocol would not be developed under this proposal. As in the past, FWP would continue to conduct lek surveys but would not sample leks in a way that could provide accurate statewide trends in sage grouse abundance or distribution. As a result, sage grouse numbers may vary widely on a broad scale or cease to exist in some parts of Montana without detection.

The No Action Alternative would retain the current season structure and package of sage grouse hunting regulations. Results of lek surveys would not trigger a pre-determined change in season structure or harvest regulations for sage grouse. This alternative could result in additional sage grouse being harvested during years when sage grouse abundance is below the long-term average, although its effect on sage grouse populations remains unclear. Whereas hunting is a direct cause of sage grouse mortality, current information, including annual lek surveys and research on the effects of season structure and bag limits on annual harvest, suggests that Montana's current harvest regulations probably have not contributed to long-term declines in sage grouse abundance or distribution. Sage grouse harvest, however, has declined

considerably since the early 1960s. Such a decline appears in large part due to a decline in hunter effort by approximately 60% since 1975, when this statistic was first estimated. Connelly et al. 2000 recommended 10% or less of the sage grouse population should be harvested during a given year. Based on lek counts, production estimates from harvested birds (i.e., wing surveys), and hunter harvest surveys, sage grouse harvest rates have generally remained well below 10% of Montana's sage grouse population. Any impacts of harvest on sage grouse populations could be additive when populations fall below long-term averages— despite corresponding declines in harvest. Although FWP has adjusted sage grouse bag and possession limits many times since the mid 1970s, these adjustments were not based on a predetermined protocol. This alternative would retain the existing system, which does respond to population fluctuations but does not do so in an explicit and predetermined manner.

Under the no action alternative, other sagebrush obligate species would continue to receive the level of habitat protection offered by existing programs.

Proposed Action Alternative

Under this alternative, FWP proposes to utilize up to half of UGBHEP funds in combination with matching federal funds to purchase sagebrush-grassland habitat protection agreements on private lands through the Montana Sagebrush Initiative. These agreements would focus on areas within 2 miles of leks and documented wintering areas. Sage grouse require sagebrush for survival nearly yearlong, especially outside of the growing season. Sagebrush provides food and cover from weather and predators. Proposed habitat protection agreements would provide an incentive-based means of assuring that important sage grouse habitats are protected from rangeland treatment such as prescribed fire, herbicide spraying, and conversion of native range to cropland. Initially, with matching federal funds, Montana Sagebrush Initiative would result in 30 years of protection for approximately 183,000 acres of key habitat. As these initial funds are spent, additional funding may be used to continue purchasing sagebrush protection. In addition to sage grouse, many other wildlife species would also benefit from maintaining these native habitats including up to 6 species that require sagebrush and 46 species that are associated with sagebrush-grasslands.

Lek surveys (i.e., counting breeding males on leks) have been used to estimate breeding population levels during a given year and, if surveyed for a number of years, can provide a measure of trends in long-term abundance on a local scale. Currently, FWP does not have an accurate statewide measure of how sage grouse distribution and abundance may have changed over time. Although lek survey efforts have increased in recent years, they do not provide a reliable estimate of changes in density and overall distribution on a statewide scale. This alternative would result in development and implementation of a survey strategy, involving a variety of agency and private sector partners, which annually samples a subset of leks to detect changes in both annual abundance and the long-term trend in distribution and density of sage grouse. FWP and other cooperators have been actively inventorying leks in areas that have not been surveyed in the past, in an attempt to identify most or all leks in Montana. Lek inventories would be used as a foundation for implementing this statewide survey protocol.

Under this alternative, FWP would develop and propose to the Fish, Wildlife & Parks Commission a sage grouse harvest management strategy (known in the Final Draft Plan as Adaptive Harvest Management) that would be more sensitive to and respond to changes in sage grouse abundance by adjusting hunting regulations. That is, as sage grouse populations fluctuate across predetermined thresholds, hunting regulations would prescriptively adjust to a more liberal or conservative regulation package.

High-Level Protection Alternative

This alternative represents the highest level of habitat program funding that FWP would direct toward sagebrush-grassland conservation. Up to 75% of UGBHEP would be dedicated to purchasing habitat protection agreements on private land. In addition, the Habitat Montana Program would be heavily prioritized toward sagebrush-grassland conservation. Sage grouse and other sagebrush obligate and associate wildlife species would benefit from the high priority sagebrush-grasslands would receive under this alternative. This redirection of statewide program funding would reduce conservation efforts in other important wildlife habitats including riparian areas, intermountain grasslands, and upland game bird habitats outside of sagebrush-grasslands. As a result, wildlife species associated with these other priority habitats would not receive the level of conservation from FWP that has occurred in the past. Current high priority issues such as protection of big game winter range from subdivision development, riparian and wetland conservation, and funding for other upland game bird habitat enhancements would carry a lower funding priority under this alternative.

This alternative would reduce the hunting season length and bag limit and would move the opening of hunting season to October 1. Sage grouse tend to move out of moist areas by October 1, shifting to upland sagebrush habitats. Areas of occurrence become less predictable and, correspondingly, they are more difficult to hunt. Adult hens may become less vulnerable as broods disperse and separate. Sage grouse also tend not to "hold" as tightly as fall progresses (i.e., they act more "wild"), resulting in reduced sage grouse harvest. FWP would expect reduced bag limits and a later opening to also reduce hunter participation (See Aesthetics/Recreation in this Chapter). Although the current sage grouse season structure has not been shown to cause long-term negative impacts to sage grouse, this alternative would substantially reduce hunter harvest.

As with the Proposed Action Alternative, FWP would develop and implement a lek survey sampling protocol that would monitor changes in statewide sage grouse abundance and distribution. This effort would assure detection of long-term changes in sage grouse numbers, and provide more explicit information than has been available in the past.

The focus of predator control, as funded by FWP through the Department of Agriculture, would change under this alternative. Currently all funding (approx. $100,000) is used annually for aerial-gunning coyotes in areas where deer and antelope populations are below management objectives. Under this alternative FWP would redirect half of the existing funding toward control of mammalian nest predators including skunk, raccoon, and red fox. Remaining funds would continue to be directed toward coyote control. In waterfowl and pheasant studies where predator control efforts have shown positive results, the benefits were very localized and

temporary in nature (Chesness et al. 1968, Duebbert and Kantrud 1974; Sargeant et al. 1995). Given the vast habitats that sage grouse utilize, the overall benefit of predator control on increased sage grouse nest success would be limited.

B. HUMAN ENVIRONMENT

1. NOISE/ELECTRICAL EFFECTS

New FWP actions identified in this environmental assessment would not result in any noise or electrical effects in the human environment.

2. LAND USE

This section considers impacts to lands and their uses, including productivity or profitability, lands with special designations, or impacts on residences. New state actions analyzed in the environmental assessment would have little or no effect on land uses except for the voluntary-based Montana Sagebrush Initiative.

No Action Alternative

This alternative would not result in any new actions. Current FWP sage grouse conservation activities would continue.

Proposed Action Alternative

This alternative would result in development of the Montana Sagebrush Initiative Program with up to 50% of UGBHEP funds and matching federal funds being directed toward the purchase of sagebrush habitat protection agreements. Initial funding would purchase habitat protection agreements on approximately 183,000 acres, involving a one-time payment of $12/acre. After this initial accomplishment, FWP would continue to fund Montana Sagebrush Initiative with UGBHEP and leveraged federal funds. These incentive-based voluntary agreements would affect private land use by restricting sagebrush control measures and conversion of native sagebrush habitats to cropland. These agreements would likely result in maintaining properties as rangeland.

High-Level Protection Alternative

Like the Proposed Action Alternative, this alternative would result in development and implementation of the Montana Sagebrush Initiative. However, instead of using up to 50% of UGBHEP funds for these purposes, this alternative would commit up to 75% of UGBHEP funds for purchasing sagebrush habitat protection agreements. Although initial projections of 183,000 acres of habitat protected is the same, the additional UGBHEP would ultimately result in more acres of land enrolled into the program.

3. RISK/HEALTH HAZARDS

New FWP actions identified in this environmental assessment would not result in any kind of hazard or health risks.

4. COMMUNITY IMPACT

This section considers potential impacts to human distribution or population growth, social structure, employment opportunities, transportation, industrial or commercial activities or personal income. New FWP actions described in this environmental assessment that may have a limited effect on personal income is the expenditure of UGBHEP and matching federal funds on habitat protection agreements.

No Action Alternative

No habitat protection agreements would be purchased under this alternative and therefore no net change in personal incomes would result.

Proposed Action Alternative

This alternative dedicates approximately half of UGBHEP funds toward the purchase of sagebrush habitat protection agreements. These funds, in turn, would be used to leverage an equal amount of federal funding for implementing the Montana Sagebrush Initiative. This voluntary incentive-based approach to sagebrush conservation would initially result in expenditures of approximately $2.2 million over the next 2 years. As these funds are spent, additional funding would be pursued to continue this program. Owners of key sage grouse habitats across the state who are willing to commit to 30 years of sagebrush protection would be recipients of these funds.

Enrollment of sagebrush habitats in the 30-year protection agreements would preclude conversion of these rangeland properties to cropland, potentially having greater economic return. However, lands supporting critical use by sage grouse (leks, nesting, and winter range) are generally remote from population centers and services, and characterized by seasonally harsh weather, low precipitation and marginal soils. Most such sites have not been farmed or otherwise developed because they are unsuitable for sustained crop management. Thus the initial $12/acre payment for the conservation agreement, when complemented by the land's continuing use for grazing, should constitute a positive economic benefit to landowners. Moreover, properties subject to the sagebrush protection agreements may be sold or transferred, so program participants will still be able to effectively manage their operations and assets.

High-Level Protection Alternative

In comparison to the Proposed Action Alternative, this alternative would dedicate approximately 25% more UGBHEP funds toward sagebrush habitat protection agreements. The sum of these

UGBHEP funds would be used to leverage federal funds for financing the Montana Sagebrush Initiative. Initial funding of approximately $2.2 million to be spent over the next two years would remain the same as in the Proposed Action Alternative. However, when new funds become available, a higher proportion of UGBHEP would be directed toward this program compared to the Proposed Action Alternative.

5. PUBLIC SERVICES/TAXES/UTILITIES

New FWP actions identified in this environmental assessment would not result in any changes or impacts to public services, taxes, or utilities.

6. AESTHETICS/RECREATION

This section considers impacts on scenic areas, vistas, designated wilderness areas, and on recreation and tourism. FWP actions described in this environmental assessment would not have an appreciable effect on aesthetic resources. Recreation, in the form of hunting, could be affected by the proposed alternatives. Whereas the FWP Commission sets sage grouse hunting regulations, FWP may propose changes to sage grouse hunting regulations based on this analysis and public response.

No Action Alternative

This alternative would continue the current sage grouse season structure and harvest regulations. Therefore, no changes to recreational hunting would occur.

Proposed Action Alternative

Under this alternative, FWP would develop an adaptive harvest management strategy that would result in preset adjustments to sage grouse bag limits, as a "triggered" response to fluctuations in sage grouse populations determined from annual monitoring of leks, with approval by the Montana Fish, Wildlife & Parks Commission. Implementation of this alternative could reduce recreational opportunity when populations dip below a pre-determined threshold but also could increase opportunity when sage grouse populations rise above long-term averages.

High-Level Protection Alternative

Under this alternative FWP would propose a more restrictive season structure and harvest regulation (than either the No Action or Proposed Action Alternatives) to the Montana Fish, Wildlife & Parks Commission. The season opener would be moved from September 1 to October 1 and season length would be 31 days. The daily bag limit would be reduced from the current 3 birds to 1 bird and the possession limit would remain twice the daily bag limit. The combination of reduced bag limits, later season opener, and shorter season would substantially reduce hunter opportunity and participation.

7. CULTURAL/HISTORICAL RESOURCES

New potential actions by FWP identified in this environmental assessment would not result in any impacts to cultural or historical resources.

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