

RAPTOR RESEARCH REPORTS

A Publication of The Raptor Research Foundation, Inc.

RAPTOR HABITAT MANAGEMENT
UNDER THE U.S. BUREAU OF LAND MANAGEMENT
MULTIPLE-USE MANDATE

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The Raptor Research Foundation, Inc., was formed in 1966 by individuals who recognized the impact of human activities on raptors and other forms of wildlife. Information provides the key to understanding the life history and ecology of raptor species. The purpose of The Raptor Research Foundation, Inc., is "to stimulate the dissemination of information concerning raptorial birds among interested persons worldwide and to promote a better public understanding and appreciation of the value of birds of prey" (Article I, Section 2, By-Laws of the Raptor Research Foundation, Inc.).

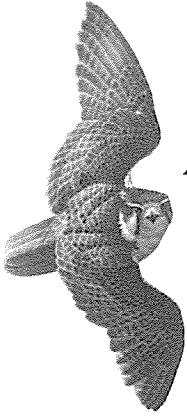
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RAPTOR RESEARCH REPORTS

A Publication of the Raptor Research Foundation, Inc.

RAPTOR HABITAT MANAGEMENT UNDER THE U.S. BUREAU OF LAND MANAGEMENT MULTIPLE-USE MANDATE

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Abstract. The U.S. Department of the Interior, Bureau of Land Management (BLM), identifies its goal for raptor habitat management for the next decade. The document includes the Bureau's strategy for implementing its raptor program; discussion of its authorities, procedures, and policies relating to raptor habitat management; details about the extent and character of 223 Key Raptor Areas on the public lands administered by BLM; a summary of the current status of raptor habitats in the western United States; discussion of the effects of land-use actions on raptors and their habitats; and an extensive list of objectives, goals, and management actions which will serve to focus the Bureau's raptor program in the future. These objectives, goals, and management actions represent a significant Bureau commitment to protect and manage raptor habitats to the best of its ability within the framework provided by the Federal Land Policy and Management Act, BLM's multiple-use mandate from the U.S. Congress.

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As the nation's principal conservation agency, the U.S. Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration. The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people.

ACKNOWLEDGEMENTS

The authors wish to express their appreciation to the dozens of BLM biologists who supplied information for this report. Peggy Cranston of the BLM California State Office, Division of Lands and Renewable Resources, assisted with computer analysis of the Key Raptor Area data base and mapped the 223 Key Raptor Areas in Appendix 1. Sharon Olendorff of the BLM California State Office, Information Processing Support Center, set the type in *Raptor Research Reports* format and produced the photo-ready copy for Allen Press. Finally, we acknowledge the work done by the Editor and Consulting Editors of this volume.

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PREFACE

Raptor habitat management on public lands administered by the U.S. Bureau of Land Management (BLM) is an integral part of the Bureau's overall multiple-use program. Significant accomplishments for raptors and recommended management actions for the future outlined in this document are exemplary of the good that can come from detailed planning, environmental assessment, and decisionmaking processes used by large land-managing agencies.

But BLM cannot "go it alone" in implementing positive programs for protection and management of raptors--or any other resource! A partnership is needed between government and the private sector at all levels and in all aspects of such programs.

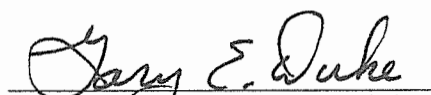
To promote this partnership BLM has developed "Fish and Wildlife 2000, a Plan for the Future." The objective of this plan is more efficient direction of BLM fish and wildlife habitat management programs between now and the year 2000. The present document is an important component of the "Fish and Wildlife 2000" initiative which calls for continuing cooperation with agencies, organizations, adjacent landowners, and other Federal land users to develop coordinated approaches for managing and improving wildlife habitats on public lands.

In this spirit of cooperation BLM and Raptor Research Foundation, Inc. (RRF), have agreed to publish this document as part of the *Raptor Research Reports* series. By doing so we wish to place valuable wildlife management tools, based on experience, into hands of individuals and institutions having the most pressing need for this type of information. The individual members of RRF and government offices to be included in the initial distribution represent most of that need.

But this document does more than fill the need for a prototypical approach to raptor and other wildlife management. It also describes 223 Key Raptor Areas on public lands representing some 23.5 million acres and analyzes current status of eight raptor habitat types in which these Key Areas occur in the western United States. This is followed by a discussion of land-use actions and their effects on raptors and a list of management objectives, goals, and actions to provide future Bureau direction. These management objectives, goals, and actions represent a significant Bureau commitment to protect and manage raptor habitats on public lands to the best of its ability within the framework provided by the Federal Land Policy and Management Act (FLPMA), BLM'S multiple-use mandate from the U.S. Congress.

In translating these objectives, goals, and actions into on-the-ground accomplishments, we who manage BLM and RRF solicit help from all individuals, groups, and agencies. Success in managing raptor habitats will depend heavily on cooperative thought and work. Initiatives and commitments provided by this document are clear, but responsibility for effective implementation is shared by all who wish to conserve raptors and who wish to develop and use resources on public lands.


Director, Bureau of Land Management


President, Raptor Research Foundation

Date: 1/26/89

Date: January 26, 1989

INTRODUCTION AND PURPOSE

Raptors (birds of prey) have elicited the interest--even worship--of man since ancient times. Today, raptors are one of the most politically sensitive groups of animals with which Federal agencies must be concerned. As organisms at the ends of food chains, raptors are both biologically important and environmentally sensitive, characteristics which have led to widespread Bureau of Land Management (BLM) and public recognition of the need to manage raptors and their habitats effectively. Additionally, the aesthetic appeal, recreational potential, and susceptibility to persecution and human disturbance magnify demands placed on some wild raptor populations. Many populations have declined; local extirpations have occurred; and some species are near extinction (Fig. 1). Declining habitat quantity and quality are major causes of such disconcerting patterns. Aggressive conservation and management programs are needed to ameliorate negative forces impacting raptors and their prey species.

This document was prepared to refine and expand on the overall goal of BLM in conserving and managing raptors and their habitats on public lands (i.e., those lands administered by BLM). In addition, the document establishes objectives and specifies management actions to be implemented during the next decade to reach the overall goal stated in the Bureau document entitled "Fish and Wildlife 2000, A Plan for the Future:"

"Provide suitable habitat conditions for birds of prey on public lands through the conservation and management of essential habitat components, including habitat for prey species, especially in areas where birds of prey concentrate during some period of the year, or important habitats where populations are suppressed."

The overall goal implies management for existence of an adequate number of healthy and vigorous populations of each raptor species. Populations must also be of sufficient size and resilience to withstand severe environmental impacts and have appropriate sex and age ratios and recruitment rates to maintain viable populations in perpetuity. Suitable habitat components include (but are not limited to): habitat for prey species; sites for breeding and rearing

offspring; habitat for winter survival; and abundant open space for normal dispersal/dispersion of young, migratory movements, and territorial behavior.

Further, this document was prepared to provide current information on opportunities to improve productivity of raptors on public lands, including efficient planning and research, cost effective implementation of plans and research recommendations, and appropriate raptor advocacy in land-use planning and decision making processes relating to other public land resources. Emphasis will be placed on both survival and recovery of threatened or endangered raptors, as well as management of sensitive or candidate raptors to minimize the need for adding species to state and Federal endangered species lists. It is also the intent of BLM to coordinate and cooperate with interested publics and constituents, State wildlife agencies, and other Federal agencies in implementing raptor habitat management projects to obtain optimal efficiency and benefits.

Thus, the themes of this document are 1) that Bureau authorities and processes already exist through which substantial protection and conservation of raptors and their habitats can be implemented in a multiple-use/sustained-yield context, and 2) though important opportunities remain, many of the authorities and processes have already been applied toward reaching the "Fish and Wildlife 2000" goal for raptor habitat management.

There are also a few things this document is not intended to accomplish. The document does not address site-specific, population-specific, or individual on-the-ground actions. These have been, are being, or will be developed in individual site-specific activity plans, such as Habitat Management Plans for wildlife, Allotment Management Plans for livestock, Area of Critical Environmental Concern Management Plans for special areas, etc. Development of proposals for budget and work effort required to meet goals and objectives of this document are ongoing through the normal annual work planning process and will be developed further in future years in response to the management actions included in this document. National Environmental Policy Act (NEPA) compliance will occur through the Bureau's environmental assessment process whenever individual actions are proposed.



Figure 1. Some raptor species, such as the California Condor, are near extinction. These three were photographed sunning themselves on Blue Ridge, Tulare County, California, during the summer of 1984. All California Condors are now in captivity. (BLM photo.)

BACKGROUND

Inherent in the Bureau's authorities is a mandate toward which the Bureau strives in its raptor programs. The Federal Land Policy and Management Act of 1976 (FLPMA) formalizes the principles of multiple use and sustained yield as Bureau missions. Wildlife is identified as one of the principal or major uses of public lands. Management and preservation of wildlife as a principal multiple use results in a goal of maintenance of habitat diversity. In fact, present habitat diversity on BLM-administered lands exceeds that on the lands of any other landowner in the Nation--governmental or private. High diversity and low human disturbance within food chains generally yield healthy raptor populations at the tops of those chains. Healthy populations offer more management options for maintenance or improvement of their well-being than do threatened or endangered species for which stringent management strategies necessary for recov-

ery diminish available options. Thus, the identification and maintenance of management options through conservation of nonlisted species is of benefit not only to the Bureau, but also to wildlife in general.

Authority.

The past decade has seen great changes in the attitudes of the public towards use of lands which BLM administers under its multiple-use mandate, FLPMA. Such changes have resulted in improved management of natural resources on public lands, including wildlife resources. Vast expanses of prairie, deserts, mountains, and forests, as well as special habitats (floodplains, islands, cliffs, and rock outcrops) provide shelter and food for both game and nongame wildlife, furnish nesting sites and nourishment for millions of birds, and fascinate those people who enjoy open space and natural settings.



Figure 2. The Bureau's Snake River Birds of Prey Area in southwestern Idaho is exemplary of the importance of biological diversity on public lands to raptors. (BLM photo.)

Indeed, some of the Nation's most important raptor habitats exist on public lands (Fig. 2), and therein lies the essence of the Bureau's responsibility as set forth in FLPMA:

"The Congress declares that it is the policy of the United States that . . . management be on the basis of multiple use and sustained yield unless otherwise specified by law; the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmosphere, water resource, and archaeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use . . ."

"The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values . . ."

In the development and revision of land use plans, the Secretary shall --

"give priority to the designation and protection of areas of critical environmental concern;"

"consider the relative scarcity of the values involved . . .;" and

"coordinate the land use inventory, planning, and management activities of or for such lands with the land use planning and management programs of other Federal departments and agencies and of States and local governments within which the lands are located . . ."

The principal management responsibility of BLM in relation to wildlife concerns habitat. State wildlife agencies and the U.S. Fish and Wildlife Service (FWS) have responsibility for species management, though the two responsibilities cannot--and need not!--be separated

completely, particularly in light of the Endangered Species Act of 1973 and recent U.S. Supreme Court decisions regarding the authority of the Federal Government over wildlife on Federal lands.

BLM Procedures and Policies Relating to Raptor Habitat.

A. Inventory. Bureau policy instructs that wildlife inventories be conducted to provide information needed for management of BLM-administered lands. Inventories are done in response to Bureau planning or as part of environmental work (NEPA compliance) associated with specific projects. Through these means, and through monitoring and research, the Bureau has amassed considerable information on raptors and their habitats--and will continue to do so.

B. Planning. Raptor habitat and its management are primarily considered through the Bureau's Planning System. Land-use plans, prepared under the provisions of FLPMA, are based in part on the continuing inventory mandated by that law. Means of protecting and managing wildlife habitat and other resources are identified in planning processes. Management alternatives are developed, analyzed, and published as a plan and/or associated environmental documents for review and comment. The plans, called Resource Management Plans, are subsequently made final and approved. Older Management Framework Plans are being replaced by newer Resource Management Plans.

Bureau planning policy includes application of the principle of multiple use/sustained yield; use of a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, social, and environmental aspects of public land management; giving priority to identification, designation, protection, and management of Areas of Critical Environmental Concern; considering the relative scarcity of the values involved; weighing long-term vs. short-term benefits and detriments; and extensive coordination with other Federal departments and agencies, State and local governments, and Indian tribes.

Site-specific activity plans, such as Habitat Management Plans for wildlife (Fig. 3), Allotment Management Plans for grazing prescrip-

tions, and Timber Management Plans for forestry programs, are prepared to implement Resource Management Plans (land-use plans) in a particular area. In many cases wildlife (raptor) needs are considered and met as components of such activity plans. Examples include prescribed burning to improve deer range which might also increase vulnerability of raptor prey; cattle exclosures to preserve riparian areas which could provide nest sites for raptors; and design of timber sale areas which might protect spotted owl nesting territories or create open canopy areas to facilitate hunting by Northern Goshawks. (Note: Scientific names of all raptor species mentioned in this text are included in Appendix 2.)

C. Environmental Review. Planning documents require maintenance and amendment to remain current. Updating is accomplished at least in part through implementation of Bureau policy to ensure that Bureau planning and NEPA compliance efforts are integrated. These processes provide a clear and logical progression from planning through accomplishment, thereby avoiding duplication of effort to the extent possible. Through the development of NEPA documents and implementation of resulting decisions, project-by-project efforts to manage and protect wildlife and wildlife habitats on public lands are accomplished (Fig. 4).

In the absence of complete planning system data and documents, the Bureau often has an immediate need for better information with which to make project-specific recommendations. Raptor habitat management objectives are usually developed during the preparation of environmental compliance documents (environmental assessments, impact statements, impact reports, etc.) required by NEPA and associated regulations (40 CFR 1500-1508). Gathering data for environmental documents does not, however, yield all necessary information, such as trend data.

D. Monitoring. Bureau policy is to implement monitoring activities that reflect a long-term commitment to management of renewable resources and that will assist in evaluation of cumulative impacts of implementing land-use plans and records of decision.

BLM monitoring for the benefit of wildlife occurs in five forms:



Figure 3a. This forest in the BLM Susanville District, California, was manicured by prison workers to reduce the fuel load of downed timber and brush, thereby protecting a Bald Eagle territory and nest tree from wildfires. (Photo by S. Hawks.)



Figure 3b. Here the brush has been piled for subsequent burning or removal. This is one of several recommendations in a Habitat Management Plan written especially for this eagle territory. (Photo by S. Hawks.)

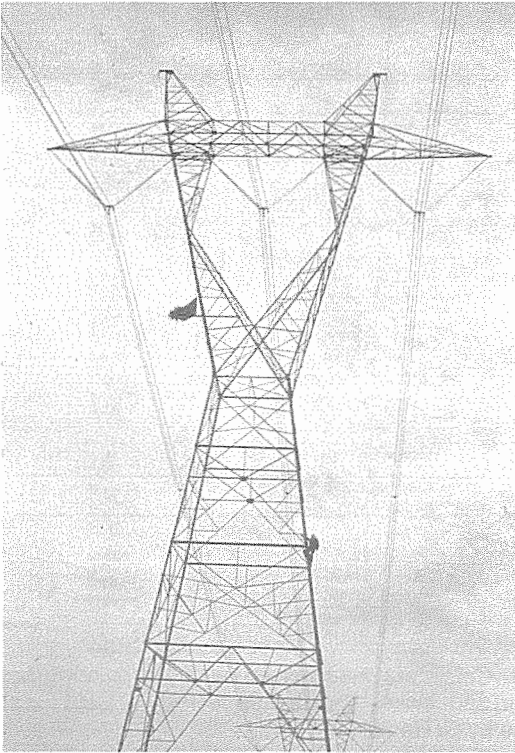


Figure 4. This artificial nest structure was one of several required in a BLM decision document to mitigate the effects of a new power transmission line through southern Idaho and Oregon. (BLM photo.)

- 1) monitoring to determine population trends (e.g., Golden Eagles and Prairie Falcons in Idaho, Spotted Owls in Oregon, Peregrine Falcons in California, Ferruginous Hawks in Oregon and Wyoming, the nationwide mid-winter Bald Eagle census, etc. (Fig. 5));
- 2) monitoring to determine habitat trends;
- 3) monitoring of actions called for in Habitat Management Plans and other activity plans (e.g., Snake River Birds of Prey Area in Idaho, Mt. Dome Bald Eagle Roost in California, Burro Creek and Aravaipa Canyon in Arizona, Colville River in Alaska, etc.);
- 4) monitoring compliance with stipulations contained in Bureau decision documents; and

- 5) monitoring to determine if mitigation measures are effective.

While a broader BLM raptor habitat monitoring program is needed, great strides have been made in recent years. Also, as technology is developed for evaluating general effects of surface-disturbing activities, raptors may be useful as indicators of the vigor of ecosystems and thus would take on a greater significance in the Bureau's efforts to monitor habitat quality.

Interagency Coordination and Cooperation.

Coordination and cooperation are very important attributes of the Bureau's program to manage and conserve raptors and their habitats. Such coordination and cooperation is accomplished primarily through compliance with the FLPMA (see above); the Endangered Species Act of 1973, as amended; the Sikes Act; national level interagency memoranda of agreement; BLM/state intergovernmental memoranda of understanding; cooperative planning efforts; various other Federal environmental and wildlife laws; where enacted, similar state legislation; etc.

A. Management of Candidate, Threatened, and Endangered Species. Bureau policy is to conserve federally listed and state-listed endangered or threatened species and to utilize its authorities to further the purposes of the Endangered Species Act. Some of the most extensive cooperation and coordination between BLM and FWS involves project-by-project consultation on all Bureau actions which may affect threatened or endangered species or modify or adversely affect their critical habitats. Hundreds of Bureau actions receive scrutiny each year pursuant to Section 7 of the Endangered Species Act.

Considerable protection is provided to habitat of officially listed species, such as the Bald Eagle, Peregrine Falcon, and California Condor (Fig. 6), as well as to that of species which are candidates for listing: Swainson's Hawk, Ferruginous Hawk, and Northern Spotted Owl. Protection is given through development (in cooperation with the FWS) and implementation of reasonable and prudent alternatives, advisory recommendations, and statements of incidental

Figure 5. Monitoring to determine population trends for Spotted Owls (5a), Golden Eagles (5b), Peregrine Falcons (5c), Ferruginous Hawks (5d), and other species is an important Bureau program. (Photos by BLM, R. Olendorff, J. Keller, and M. Hilliard, respectively.)



Figure 5a.



Figure 5b.



Figure 5c.



Figure 5d.

Figure 6. Candidate, threatened, or endangered species which occur (or have occurred) extensively on public lands include the Bald Eagle (6a), Peregrine Falcon (6b), California Condor (6c), and the state-listed (in California) Swainson's Hawk (6d). (Photos by S. Hawks, S. Ambrose, D. Carrier, and R. Olendorff, respectively.)



Figure 6a.

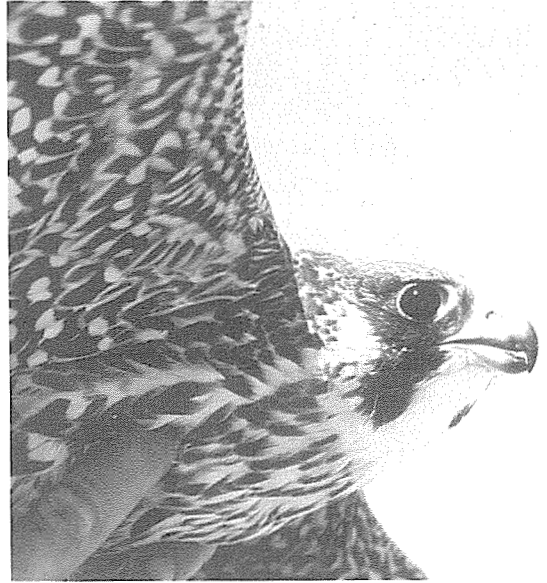


Figure 6b.



Figure 6c.



Figure 6d.

take which form the substance of Section 7 biological opinions and FWS responses to requests for informal consultations and technical assistance.

Many BLM State Directors consider candidate species to also be BLM sensitive species. Bureau policy ensures that crucial habitats of sensitive species will be managed and/or conserved to minimize the need for future listing by either Federal or state governments.

Cooperation and coordination are also fostered through BLM participation on recovery teams and through BLM implementation of recovery plan recommendations. Most raptor recovery teams in the western United States have BLM representatives. In addition, numerous interagency working teams, task forces, and other advisory groups have been formed to direct implementation of recovery plans or to develop and implement other plans that benefit raptors. BLM representation on these groups is very active and productive.

B. Management of Other Special Status Species. Other Special Status Species include BLM sensitive species and state-listed species. According to policy, the Bureau must ensure that actions authorized, funded, or carried out do not contribute to the need to federally list any species as threatened or endangered. Evaluation of Bureau actions includes requests for technical assistance from FWS and state wildlife agencies, cooperatively funded surveys and monitoring efforts, sharing of data and expertise, etc.

C. Implementation of the Sikes Act. Most of the Bureau's Habitat Management Plans are developed under the Sikes Act, Title 2--Conservation Programs on Certain Public Land. Strong BLM/state wildlife agency cooperation is mandatory for all Sikes Act Habitat Management Plans:

"The Secretary of the Interior... shall, in cooperation with the State agencies..., plan, develop, maintain, and coordinate programs for the conservation and rehabilitation of wildlife, fish, and game...."

"Each State may enter into a cooperative agreement with... the Secretary of the Interior with respect to those conservation and rehabilitation programs to be implemented

under this title within the State on public land which is under his jurisdiction...."

"Each cooperative agreement entered into under this subsection shall... provide for fish and wildlife habitat improvements or modifications, or both; provide for range rehabilitation where necessary for support of wildlife; provide adequate protection for fish and wildlife officially classified as threatened or endangered...; (and) require the control of off-road vehicle traffic...."

These statements from the Sikes Act have been incorporated as Bureau policy. All Habitat Management Plans are to be prepared under Sikes Act authority unless state wildlife agencies choose not to participate.

Research, Development, Studies, and Information Transfer.

The Bureau has been a leader in raptor habitat management research, development, and information transfer for nearly two decades. Several wildlife biologists at various organizational levels (Washington, Denver Service Center, State, District, and Resource Area Offices) are raptor specialists. Expertise coupled with the multiple-use/sustained-yield mission of the Bureau led naturally to habitat considerations to benefit raptors. BLM has conducted hundreds of raptor research projects, studies, and inventories spanning everything from intensive research necessary to establish and maintain the Snake River Birds of Prey Area in Idaho (Fig. 7), to very specialized studies of Peregrine Falcon foraging habits in California, to both extensive and intensive raptor censuses throughout the West and Alaska.

A. Research and Development. BLM research and development policy states that projects shall be applied and necessary to provide management direction. Research needs of the Bureau are identified in Statements of Need prepared by field office staffs, primarily Resource Area and District Offices and the Denver Service Center. Statements are reviewed at higher levels, and authorizations to develop Project Prospectuses (proposals) are given, as appropriate. Approved research and development projects are conducted and evaluated, data are analyzed, and reports are written and distributed according to a formal process with two- to three-year lead times and



Figure 7. The Bureau's Snake River Birds of Prey Area research project is known worldwide for its contributions to raptor biology in general and raptor management in particular. (Photo by L. Offedahl.)

very close scrutiny by management at all levels. Major raptor research by the Bureau includes the Snake River Birds of Prey Area Project, Spotted Owl studies associated with a large, multi-agency old growth research program in the Pacific states, and the Cache Creek Bald Eagle study in California.

B. Studies. While not generally considered research by the Bureau, studies account for much of the Bureau's information gathering to benefit raptors and their habitats. Studies are distinguished from research projects as being short-termed, small in scope, site specific, and directly applicable to immediate management needs.

C. Information Transfer. BLM policy is to include technology transfer plans in all project prospectuses and to transfer sensitive raptor information (e.g. nest locations) only on a need-to-know basis. In addition to project-driven in-

formation transfer obligations, several Bureau initiatives are also important. Literature-based information systems in the Boise District Office and California State Office of BLM are the largest such computerized systems specializing in raptors. Information is received from all over the world and is compiled, computer listed, and made available to anyone interested at standard U.S. Government fees. Existing technology transfer programs handle hundreds of inquiries each year from specialists, consultants, academicians, and managers. BLM specialists are also active in attending professional conferences to share their expertise.

Special Raptor Projects Conducted by BLM.

As results of BLM's overall raptor program founded in the Bureau Planning System, environmental assessment process, and decision-making process, several projects are particularly

noteworthy for their beneficial effects on raptors and raptor habitats. These include projects that protect raptors directly, recovery programs for endangered species, and information transfer mechanisms.

A. Special Areas With Extremely High Raptor Habitat Values. Additional information about areas described below can be found in Appendix 1 or by contacting the responsible BLM Office (telephone numbers also listed in Appendix 1 for each area).

1. Snake River Birds of Prey Area. The Snake River Birds of Prey Area (SRBPA) is in the BLM Boise District of Idaho and contains 601,000 acres along 80 miles of the Snake River, of which 482,640 acres are public land. The Snake River Canyon is the principal geologic and habitat feature of the area. Occasional buttes on benchlands above the canyon also provide nest sites. Other special habitat features include small wooded groves, a riparian zone, and burns. Abundant prey resources occur on the benchlands above the canyon. Man-made features include utility lines, artificial nesting structures, and vegetation manipulations. Major potential conflicts are wildfires, off-road vehicle use, recreational use, grazing, farming, military activity, utility lines, aircraft, roads, and pipelines.

The SRBPA contains the highest density of non-colonial nesting raptors along any linear feature in North America. More than 700 pairs of 15 raptor species nest in the canyon, and another 10 species winter in or migrate through the area. An estimated 4% of Prairie Falcons in North America nest in the SRBPA. Other major nesting raptor species include the Golden Eagle, Red-tailed Hawk, Ferruginous Hawk, Northern Harrier, Common Barn-Owl, Long-eared Owl, and Burrowing Owl. Bald Eagles and Rough-legged Hawks are primary winter visitors.

The area is managed through a Management Framework Plan and the Birds of Prey Management Plan. According to these plans, multiple use in the SRBPA includes only uses which are compatible with raptors. Management actions taken in the SRBPA involve access restriction, buffer zones, easements, land exchanges, land withdrawals, land purchases, law enforcement, nest site protection, power line modification, stipulations on projects, visitor use management, vegetation rehabilitation to enhance prey, and

provision of artificial nest sites. The area has been (and still is) a site for long-term studies and monitoring. A research, studies, and monitoring management plan has also been developed.

The SRBPA is one of the world's premiere Key Raptor Areas and is internationally significant as an example of sound raptor habitat management and protection. Knowledge that has resulted from SRBPA research over the past 15 years is now broadly accepted as an important contribution to basic predation theory and to our knowledge of raptor population dynamics, as well as to applied raptor management and conservation.

2. Colville River Special Area. The Colville River Special Area occupies over two million acres in a corridor along the Colville River in northwestern Alaska (Fig. 8). Excepting the last few miles, where the river passes through the Arctic Coastal Plain approaching outfall in the Arctic Ocean, the Colville River flows over 190 miles through the foothills of the Brooks Range. Numerous river bluffs and cliffs have been cut along hills and ridges. Riparian willow (*Salix* spp.) communities occupy lowlands, gravel bars, and some of larger, more stable islands. Typical arctic tundra communities occur inland and on bluffs and raised areas along the river.

The corridor along the Colville was established as a special area because of its recognized raptor habitat and high density of several cliff-nesting raptors. Peregrine Falcons, Gyrfalcons, and Rough-legged Hawks are common nesters; Short-eared Owls and Northern Harriers may occasionally nest on adjacent wetlands. Golden Eagles, nesting in mountains to the south, occasionally forage along the river corridor.

Nesting Peregrines along the Colville declined dramatically beginning in the late 1960s and 1970s because of pesticide contamination of their non-breeding ground food chain in Latin America. By the mid-1980s the number of pairs and their reproductive output had recovered equal to or above known precontamination levels.

Current management practices consist of annual monitoring of large numbers of breeding pairs. Restrictions are in force to prevent aircraft from flying below certain altitudes and disturbing raptors while nesting. Potential conflicts



Figure 8. The Colville River Special Area north of the Brooks Range in Alaska has high densities of Peregrine Falcons, Gyrfalcons, and Rough-legged Hawks (shown here). These raptor populations are given special management attention throughout this two-million-acre area. (Photo by J. Haugh.)

include oil and gas exploration and development activities, including possible pipeline construction should economical oil and gas reserves be discovered. Little, if any, oil and gas activity is presently occurring in the area. Recreational activities, especially floating, are potentially a greater conflict than mineral exploration.

3. Los Medanos Raptor Area. The Los Medanos Raptor Area in southeastern New Mexico occupies 89,360 acres of southwestern desert habitat. The area is characterized by rolling sandy terrain covered by mesquite-oak (*Prosopis* sp.-*Quercus* sp.) shrub. Activities in the area which may potentially conflict with raptor nesting include oil and gas development, mining activities (including seismic tests and drilling), pipelines and utility lines, grazing, and off-road vehicles.

Los Medanos is significant for both diversity and density of raptors present. More than 20 raptor species are known to use the area, and the number of nests, nearly 2 nests/sq mi, is one of the highest densities of breeding raptors described anywhere. Species nesting in greatest numbers include the Harris' Hawk, Swainson's Hawk, and Great Horned Owl (Fig. 9).

Current management activities include nest site protection and enhancement. Oil and gas activities are limited by requiring that surface disturbances, such as seismic tests and drilling, within 1/2 mile of occupied nests be delayed until after young are fledged. Disturbed areas must be reclaimed following completion of extraction projects. Tree planting and related activities are designed to enhance prey habitat and provide perches and additional nesting opportuni-



Figure 9. Species nesting in greatest numbers on the Los Medanos Raptor Area in southeastern New Mexico include the Harris' Hawk (nest and young shown here), Swainson's Hawk, and Great Horned Owl. (Photo by J. Juen.)

ties. Present management and research activities are expected to continue.

4. San Pedro River Riparian Area. The San Pedro River Riparian Area contains 43,000 acres of public land along a 34-mile stretch of the San Pedro River in BLM's Safford District near Sierra Vista, Arizona (Fig. 10). This unique riparian area was acquired by BLM through a land exchange in 1986. The area is dominated by a mature cottonwood (*Populus* sp.) riparian zone which is surrounded by desert scrub and farmland. Principal habitat features include tree groves, mature gallery forests, washes, old fields, ponds, and abandoned homesites. Utility lines, urbanization, wildfire, and aircraft are potential conflicts. The Gray Hawk, Cooper's Hawk, Great Horned Owl, and Western Screech-Owl are the main nesting species of the area. Northern

Harriers and Ferruginous Hawks occur in the area during the non-breeding season.

The San Pedro River Riparian Area contains a major portion of the nesting Gray Hawk population in the United States. Before acquisition of the area no known Gray Hawk nests occurred on public lands. The San Pedro area is an example of how implementation of BLM's riparian policy can benefit raptors, and an example of an aggressive land acquisition program for improvement of wildlife resources.

A Resource Management Plan is being developed for the San Pedro area to be completed early in 1989. The area is currently under an interim management plan which partially closes it to public access and calls for intensive inventories and completion of a long-term monitoring



Figure 10. The Bureau's San Pedro River Riparian Area, near Sierra Vista, Arizona, contains a major portion of the nesting Gray Hawk population in the United States; few, if any, of these hawks existed in public ownership before its acquisition. Currently, much of the area is closed to public access and is undergoing intensive inventory and plan development. (Photo by M. Cordano.)

plan. Major management actions include land exchanges, law enforcement, nest site protection, off-road vehicle control, and riparian management. Resource Management Plan will be completed late in 1988. Raptor inventories of the area are nearly complete.

5. Carrizo Plains Natural Heritage Preserve. The Carrizo Plains Natural Heritage Preserve is a 180,000-acre block of undeveloped land 50 miles west of Bakersfield, California, slated for large-scale land acquisition to preserve the last remnant of San Joaquin Valley floor wildlands (Fig. 11). The preserve will be managed by BLM in cooperation with numerous Federal, state, local, and private entities. Included in the area are shrubsteppe, grassland, and wetland habitats, as well as many special habitat features,

such as rock outcrops, dry washes, rodent colonies, utility lines, and alkali sinks. The predominant hydrologic feature is Soda Lake, which attracts large numbers of migrating and non-breeding birds each year. Potential conflicts with wildlife resources in the area include oil and gas development, mining, farming, grazing, urbanization, off-road vehicle use, and solar energy development.

The importance of the Carrizo Plains to raptors is as prime non-breeding habitat for Golden Eagles, Prairie Falcons, Ferruginous Hawks, Peregrine Falcons, Bald Eagles, etc. The Preserve is another example of BLM's aggressive land acquisition/consolidation program, the FWS Habitat Conservation Planning process authorized under the Endangered Species Act of 1973, and



Figure 11. The Carrizo Plains Natural Heritage Preserve, 50 miles west of Bakersfield, California, is a large-scale (180,000-acre) land acquisition program with heavy BLM involvement. Its primary justification is habitat protection for several endangered reptiles, mammals, and plants, but it is also prime wintering habitat for Golden Eagles, Prairie Falcons, Ferruginous Hawks, Peregrine Falcons, etc. (Photo by A. Young.)

cooperative efforts of The Nature Conservancy. The Carrizo also figures into the California Condor release program as a foraging area toward which released birds will be encouraged to disperse through provisioning. Reintroduction of large herbivores--Pronghorn (*Antilocapra americana*) and Tule Elk (*Cervus elaphus nannodes*)--into the Carrizo Plains may also encourage future condor use.

6. Goshute Raptor Migration Concentration Area. Located in the Goshute Mountains in east-central Nevada, about 5,000 feet above the Bonneville Salt Flats of Utah, is one of the best raptor migration lookouts in western North America (Fig. 12). The site itself is a small limestone outcrop surrounded by a montane forest consisting of juniper (*Juniperus* sp.), white

fir (*Abies concolor*), pinyon (*Pinus* sp.), and bristle-cone pine (*P. aristata*). Principal migrating raptors are the Sharp-shinned Hawk, Red-tailed Hawk, Cooper's Hawk, and American Kestrel, though large numbers of Golden Eagles, Turkey Vultures, Swainson's Hawks, Northern Harriers, and Northern Goshawks are also seen. In all, a total of 18 species of diurnal raptors have been observed by Goshute Raptor Migration Project observers.

BLM administers the land used for observing and trapping raptors at the principal lookout. The Bureau's Elko District Office issues special use permits to the Western Foundation for Raptor Conservation, Inc., a private nonprofit organization that oversees and operates the Goshute Raptor Migration Project. The Bureau also pro-



Figure 12. The Goshute Raptor Migration Concentration Area on BLM-administered lands in east-central Nevada is one of the best hawk migration lookouts and banding stations in western North America. Accipiters, such as this Northern Goshawk, are the most commonly seen species. (BLM photo.)

vides helicopter support, tools, water containers, communications equipment, and certain administrative support.

Cooperation between BLM and private users of public lands is an important method of gathering information about public land resources. In this case, private initiative has spawned a significant effort to learn about raptor movements and population trends in western North America. Although potential for land-use conflicts in this area is low, such information will greatly improve the quality of land management decisions which might affect important raptor habitats in the future.

7. Lower Klamath Basin. BLM administers important raptor habitats adjacent to the Klamath Basin National Wildlife Refuge in extreme north-central California and south-central Oregon. Three particularly noteworthy BLM raptor resources are 1) the Mt. Dome Bald Eagle winter roost (up to 250 birds) and nest site, 2) an upland area densely populated by Swainson's Hawks, and 3) a healthy Prairie Falcon population that is providing a means of reintroducing Peregrine Falcons to the area through cross-fostering. The especially diverse area is characterized by coniferous forest, shrubsteppe, and wetland habitats, with numerous special habitat features: cliffs, rock outcrops, snags, old growth forest, ponds, lakes, etc. Potential conflicts with raptors include mining activities, construction of power lines, farming, wildfire, and organochlorine pesticide contamination.

Maintenance of diverse habitats in the Lower Klamath Basin has required detailed planning and concerted effort to manage for the special habitat features present. The Mt. Dome Bald Eagle roost, for example, is particularly vulnerable to wildfire. The Mt. Dome Habitat Management Plan developed by the Bureau includes state-of-the-art silvicultural prescriptions to maintain Bald Eagle habitat. The Peregrine Falcon/Prairie Falcon cross-fostering effort also required detailed habitat management planning because of the interagency cooperation necessary. California Department of Fish and Game, U.S. National Park Service (NPS), FWS, U.S. Forest Service (USFS), BLM, and Santa Cruz Predatory Bird Research Group all have cooperated in the program. In fact, four governmental agencies are cosigners of the plan.

Interagency coordination and cooperation are important management tools for promoting conservation of high raptor resource values. Public lands are often adjacent to or interspersed with private lands and lands administered by other agencies. The Bureau's management effectiveness is greatly enhanced through cooperation and coordination with others.

8. Aravaipa Canyon. The 7,000-acre Aravaipa Canyon Wilderness Area in Arizona contains a perennial stream bordered by a lush riparian community within a 700-foot-deep canyon (Fig. 13). Above the canyon walls are desert grassland and Sonoran desert communities. The



Figure 13. Aravaipa Canyon, a BLM designated wilderness, is a world renowned bird watching stop in Arizona. The nesting raptor population is abundant and diverse, with Black Hawks and Zone-tailed Hawks being sought for everyone's life list. (BLM photo.)

Bureau manages 60,000 acres of a 70,000-acre block of watershed surrounding a 10-mile strip of designated wilderness. Scattered trees occur along the stream with some, especially sycamore (*Platanus* sp.) and cottonwood trees, reaching considerable size. Cliffs, bluffs, and rock outcrops occur along the sides of the canyon and are periodically interrupted by narrow side canyons. Occasional springs and seeps are found the length of the canyon.

Aravaipa Canyon is significant for the large numbers of Black Hawks and Zone-tailed Hawks nesting in a wilderness setting with spectacular visual qualities. Breeding Coopers Hawks, Golden Eagles, Peregrine Falcons, Prairie Falcons, Turkey Vultures, and other raptors also occur, along with a high diversity of non-raptorial birds and other vertebrates.

BLM manages Aravaipa Canyon as a riparian wilderness area with limited human access.

Visiting the canyon requires an access permit and payment of a daily fee; a maximum of 50 visitor permits may be issued each day. BLM has used land exchange authorities to effectively acquire additional land and to provide better protection for the area. Despite protective measures, hiking, camping below nests, and other recreational activities are still potential conflicts with nesting raptors. Upstream mining (leaching of heavy metals), agriculture (pesticides from farmland runoff), and erosion caused by poorly managed livestock operations are also potential conflicts.

B. Programs for Special Status Species.

1. California Condor. A Bureau representative has been on the California Condor Recovery Team for over 15 years. BLM's principal on-the-ground involvement is on Blue Ridge, Tulare County, an officially designated Critical Habitat Zone. The California State Office is also

compiling a computerized literature retrieval system for the 4,000+ documents concerning condors.

The Blue Ridge Habitat Management Plan completed in 1985 is designed to maintain and improve habitat conditions for California Condors. Now that all condors are in captivity for an undetermined amount of time, management of Blue Ridge for condors has temporarily become low priority. The general area is being considered as a release site for reestablishing a tree-nesting population of condors in the Sierras, but such releases are probably a decade or more away. Blue Ridge will continue to be considered condor habitat until reoccupancy is no longer considered feasible.

2. Peregrine Falcon. Of 223 Key Raptor Areas identified on public lands (see below), 56 (30.1%) include Peregrine Falcons as a principal species. BLM has strongly supported the Peregrine Falcon recovery efforts of The Peregrine Fund, Inc., since 1975, to include funding not just for releasing birds, but for captive breeding as well. Although varying from state to state, BLM commonly takes responsibility for monitoring Peregrine Falcon reproductive success and protection of Peregrine nest sites on and immediately adjacent to public lands.

The most active effort of this kind involves the Pacific Coast Peregrine Falcon population, the nucleus (over 60 pairs) of which nests within the boundaries of BLM's Ukiah (California) District. BLM has recently assumed the lead role for coordinating Peregrine Falcon monitoring in California among five principal agencies involved. The effort will lead to an evaluation of recovery in California and export of technology to other areas where recovery may be lagging.

In addition, BLM is involved with about 15 Peregrine Falcon hacking efforts in five states. In at least two states, new active nests have been established on public lands by hacked birds. In fact, funding of Peregrine Falcon hacking on public lands in most states is handled through a Washington Office level cooperative agreement with The Peregrine Fund, Inc.

3. Bald Eagle. Of 223 Key Raptor Areas identified on public lands (see below), 95 (51.1%) include the Bald Eagle as a principal

species. Dozens of pairs of Bald Eagles nest on or adjacent to public lands in the West. Thousands of Bald Eagles use public lands for foraging and roosting during nonbreeding periods. Bureau employees have provided considerable manpower for annual Bald Eagle midwinter censuses coordinated by the National Wildlife Federation.

BLM has also sponsored/cooperated on several Bald Eagle research projects including analysis of new power line routes through important Bald Eagle habitat in California, nest site characteristics in Montana, radio-telemetry studies in Utah, and recreation impacts along rivers in Alaska. The Greater Yellowstone Ecosystem Bald Eagle effort has been chaired by a BLM employee, and the Team Leader of the Pacific Bald Eagle Recovery Team is from the Bureau. Most states have Bald Eagle working teams on which BLM employees participate fully.

4. Ferruginous Hawk. Of 223 Key Raptor Areas identified on public lands (see below), 58 (26.0%) include the Ferruginous Hawk as a principal species. Nesting Ferruginous Hawks are very sensitive to human disturbance in many situations. This sensitivity was cited as a major justification for listing as a candidate species, a status certain to generate petitions every few years to list the species as threatened or endangered.

The Bureau has been managing for Ferruginous Hawk habitat and adjusting projects to benefit the species for more than a decade. Many populations are inventoried and monitored each year. Several areas have highly successful artificial nesting platform projects. Habitat conversion projects (primarily conversion of large sagebrush (*Artemisia* sp.) stands or pinyon-juniper forests to grassland) are generally planned to create mosaics of grassland and brush or forest--rather than large blocks of monoculture--which benefit Ferruginous Hawks as well as their prey species.

Of prime importance to Ferruginous Hawks in coal producing states are coal suitability criteria used to benefit the species. Criteria are founded in Federal regulations (43 CFR 3451.1(n)) and prescribe that BLM may issue a coal lease only after consultation with FWS to ensure that all or certain stipulated methods of coal mining will not adversely affect Ferruginous Hawk habitat

during periods when such habitat is used by the species. Coal suitability criteria are also commonly used to protect nesting areas of Bald Eagles, Peregrine Falcons, Golden Eagles, Ospreys, Burrowing Owls, Cooper's Hawks, Zone-tailed Hawks, Prairie Falcons, and several other raptor species.

5. Northern Spotted Owl. The Northern Spotted Owl occurs in significant numbers on public lands only in the forests of western Oregon. In northern California, BLM holdings consist largely of scattered tracts and very little old growth which provides nesting habitat for less than 20 known pairs of this candidate species. By contrast, hundreds of pairs occur on USFS lands at higher elevations in California.

Management and protection of Spotted Owl habitat in Oregon is an integral part of the old growth forest issue championed by a large coalition of conservation groups. Depending on the outcome of court challenges, BLM intends to specify standards and guidelines for Spotted Owl habitat management as part of its land management planning process. Specifications will be developed when land-use plans for the 1990s are revised on schedule. The planning system has resolved controversial issues in hundreds of cases with full public involvement. Successful resolution of the old growth/Spotted Owl/timber management issue on public lands should not be an exception.

In preparation for revising pertinent plans, Bureau wildlife biologists are annually monitoring Spotted Owl nesting activity on public lands. The same is occurring in all involved Oregon BLM Districts with first priority placed on habitat areas covered in an intergovernmental agreement between the Bureau and the Oregon Department of Fish and Wildlife. The agreement will be in effect until replaced by the Bureau's 1990 decadal plan for timber management in western Oregon. Additional monitoring is done as funding and manpower permit. BLM also is participating in several cooperative research projects and is involved on numerous special teams and advisory groups which coordinate and cooperate on Spotted Owl management issues and strategies.

In addition, BLM, FWS, USFS, and NPS recently signed a Memorandum of Understand-

ing to ensure that population status of the Spotted Owl does not decline to a level where Federal listing under the Endangered Species Act would be required. Each agency will also cooperate and share scientific data on Spotted Owls toward reaching a common goal.

C. Power Line Studies and Policy.

1. Suggested Practices for Raptor Protection on Power Lines. In 1981 Edison Electric Institute (EEI) provided funding to the BLM California State Office for production of a manual discussing raptor electrocution and recommendations to minimize the problem. The manual is properly cited as follows:

Olendorff, R.R., A.D. Miller, and R.N. Lehman. 1981. Suggested practices for raptor protection on power lines--the state of the art in 1981. Raptor Research Report No. 4. 111 pp.

The manual is available for \$20.00 U.S. funds (plus postage and handling) from:

The Raptor Research Foundation, Inc.
Office of the Treasurer
Carpenter Nature Center
12805 St. Croix Trail
Hastings, MN 55033
Telephone: (612) 437-4359.

The manual has become both the industry and government standard for power line projects across the nation, not only for new construction but also for retrofitting existing lines, where appropriate, for raptor safety. The result has been that large numbers of electrocuted Golden Eagles are reported much less often than a decade ago. Electrocutions of individual birds will never be prevented entirely, but much of the problem has been rectified. Location and elimination of occasional "hot spots" continues.

In 1982 BLM incorporated the manual into the Bureau's manual system (BLM Manual Section 2851--Prevention of Raptor Electrocution on Power Lines). Both modifications of existing lines and proposed tower designs on public lands must comply with standards identified in "Suggested Practices."

2. Raptor Collisions with Power Lines. In 1985 Pacific Gas and Electric Company provided funding to BLM for a worldwide search for reasonably certain instances of raptor collisions with power lines. The resulting publication is properly cited as follows:

Olendorff, R.R., and R.N. Lehman. 1986. Raptor collisions with utility lines: an analysis using subjective field observations. Pacific Gas and Electric Company, 3400 Crow Canyon Road, San Ramon, California 94583. 73 pp.

On the basis of data collected (N=88), collisions with utility lines do not result in a discernable effect on population dynamics of raptors, except in cases involving critically endangered species. Collision with utility lines apparently is a random, low-level, and inconsequential mortality factor of raptor populations. Any other conclusion is counter to available data.

3. Mitigations for New Transmission Lines. In 1980 Pacific Power and Light Company (PPL) built a 500-kV transmission line from south-central Idaho to central Oregon, a distance of 370 miles. Stipulations for construction of the line included erection of artificial nesting platforms for raptors on 37 new transmission towers (Fig. 4). Since 1983 SRBPA researchers with PPL funding have monitored raptor use of platforms and transmission towers without platforms. Preliminary results indicate that raptors (Golden Eagles, Red-tailed Hawks, and Ferruginous Hawks) will commonly use nesting platforms and that platforms enhance nesting success for Golden Eagles and Ferruginous Hawks. The project is precedent setting, being the first implemented and adequately monitored mitigation of its type.

D. Information Transfer Mechanisms.

1. Raptor Management Information System. The Raptor Management Information System (RMIS) is a user supported information retrieval system dealing with raptor management, human impacts on raptors, and mitigation of those impacts. The scope includes all raptors worldwide. RMIS has been generated in the BLM California State Office (address below) in response to land-use planning and environmental assessment needs of the Bureau and as an off-

shoot of related projects funded by EEI and the Electric Power Research Institute (EPRI).

RMIS currently (1/89) consists of 1) over 6,800 original papers, 2) about 20,000 notecards with key paragraphs from each paper sorted into 178 keyword categories, and 3) a computer program to retrieve keyworded bibliographies by species (on all 6,800 papers), keywords (on 1,800 of the 6,800 papers), or both. Computer printouts retrieved by geographic location for all 6,800 papers are also available.

RMIS has one special attribute that makes it different from -- and more helpful than -- most other information systems. Nearly all papers listed in RMIS computerized reports are on file at the California State Office of BLM. Photocopies generally can be obtained through the RMIS, though some papers containing sensitive data and information must be obtained from the authors. All user requests for RMIS reports should be directed to Richard R. Olendorff, Division of Lands & Renewable Resources, Bureau of Land Management, 2800 Cottage Way, Sacramento, California 95825 U.S.A. (or call Commercial (916) 978-4725; FTS 460-4725). Standard government fees are charged for photocopies and computer printouts requested by non-BLM personnel.

2. Snake River Birds of Prey Project Literature File. This file includes nearly 6,000 papers concerning raptors and raptor habitat management. Unlike RMIS, the file also includes papers on all aspects of biology and ecology of the SRBPA, such as papers without raptor management implications and papers solely about the biology of prey species, vegetation communities, and ecological theory in general. Limited access to papers can be obtained by contacting Michael N. Kochert of the BLM Boise District Office, 3948 Development Avenue, Boise, Idaho 83705 U.S.A. (or call Commercial (208) 334-9279; FTS 554-9279). Computer printouts by author, species, subject, or "searchstring" in titles or citations can be obtained by contacting Richard R. Olendorff, BLM California State Office, 2800 Cottage Way, Sacramento, California U.S.A. 95825 (or call Commercial (916) 978-4725; FTS 460-4725).

3. BLM Technical Note Series. Between 1972 and 1975, BLM published a "Habitat

Table 1. Complete list of BLM raptor Technical Notes. (Note: A complete list of nearly 300 BLM-related publications, administrative reports, and other printed matter relating to raptors can be obtained through RMIS at no charge.)

T/N No.	Title	Author, Date, Pages
T/N-167	American Peregrine Falcon and Arctic Peregrine Falcon	C. Snow. 1972. 35 pp.
T/N-171	Southern Bald Eagle and Northern Bald Eagle	C. Snow. 1973. 58 pp.
T/N-239	Golden Eagle	C. Snow. 1973. 52 pp.
T/N-240	Prairie Falcon	C. Snow. 1974. 18 pp.
T/N-241	Gyr Falcon	C. Snow. 1974. 14 pp.
T/N-242	Spotted Owl	M. Zam. 1974. 22 pp.
T/N-250	Burrowing Owl	M. Zam. 1974. 25 pp.
T/N-254	Osprey	M. Zam. 1974. 41 pp.
T/N-255	Ferruginous Hawk	C. Snow. 1974. 23 pp.
T/N-270	Rough-legged Hawk	M. Zam. 1975. 23 pp.
T/N-271	Merlin	S.A. Trimble. 1975. 41 pp.
T/N-281	Golden Eagles in Elko County, Nevada	D.J. Seibert et al. 1976. 17 pp.
T/N-316	Nesting Habitats and Surveying Techniques for Common Western Raptors	M.W. Call. 1978. 115 pp.
T/N-329	Black Hawk	J.H. Schnell. 1979. 25 pp.
T/N-335	Accipiters	S. Jones. 1979. 51 pp.
T/N-338	Habitat Management Guides for Birds of Prey	M.W. Call. 1979. 70 pp.
T/N-345	Raptor Management--the State of the Art in 1980	R.R. Olendorff et al. 1980. 56 pp.
T/N-355	Distributional Status of Falconiformes in Westcentral Arizona	B.A. Millsap. 1981. 102 pp.

Management Series for Unique and Endangered Species" within the existing Technical Note (T/N) series. Many of these publications deal with raptors, and several other raptor T/Ns have been published since. Table 1 is a complete list of BLM raptor Technical Notes. Nearly all are now out of print. Copies may be obtained from RMIS for standard copy fees, though most of the earlier ones dealing with single species are largely out of date.

Key Raptor Areas Administered by BLM.

During preparation of this document, all BLM offices were asked to identify Key Raptor Areas within their District or Resource Area boundaries. For the most part, areas were identified by staff. Key Area designation does not imply any legal or management status to areas. Rather, the intent is to illustrate the extent and diversity of BLM raptor habitats and to provide some in-

dication of where future planning and management efforts should be focused. All Key Areas identified are listed in Appendix 1. Inconsistencies in application of the Key Area concept will be resolved in future refinements of the data base. Time constraints for preparation of this document required inclusion of all areas submitted.

Key Areas have been defined as follows:

A. Biological Characteristics

1. Areas where unusually high nesting populations occur resulting from clustering within or near special habitat features, high prey populations, and/or low levels of human disturbance;

2. Important raptor migration points resulting from a) topographic "leading lines" for migration or b) concentrations of raptors in areas where many other migratory birds (prey species) stop to forage; or

3. Areas where nonbreeding (wintering) raptors congregate to take advantage of special roosting and foraging situations, including both communal roosts and areas with high populations of raptor prey.

B. Administrative Characteristics

1. Areas where consideration of raptors and raptor habitats is a key activity plan issue (e.g., Habitat Management Plans); and

2. Areas where raptor populations and habitats require special consideration in environmental and decision documents to avoid undue loss of commodity production (oil and gas, coal, gravel, etc.) or unjustifiable loss of raptor values.

A total of 223 Key Raptor Areas were identified in the 11 major BLM states (Table 2). The areas include some 24 million acres, of which about 13.5 million acres are public lands. These lands occur in a diversity of habitats (Table 3). Diversity of public lands (Fig. 14) is also indicated by presence of many special habitat features which benefit raptors (Table 4).

Table 5 shows not only the diversity of diurnal raptor species in BLM Key Raptor Areas, but also the number of Key Areas in which each species is recognized as an important resource. Generally, more abundant species appear near the top of the list (occur in many Key Areas), except that an emphasis on the endangered Bald Eagle (Fig. 15) and Peregrine Falcon is evident by their positions near the top. Coniferous forest species (Northern Goshawk, Sharp-shinned Hawk), peripheral species (Common Black Hawk, Zone-tailed Hawk, Gray Hawk), and critically endangered species (California Condor, Aplomado Falcon) are important in very few Key Areas.

Nocturnal raptors--owls--were reported from far fewer Key Areas than were most diurnal raptors, probably due to the difficulty of observing owls. Most owls were reported as occurring in 2 to 10 Key Areas with the following exceptions: Screech-Owl (12 Key Areas), Burrowing Owl (14 Key Areas), Spotted Owl (14 Key Areas), and Great Horned Owl (38 Key Areas). In general, owl species are poorly known on the public lands, with the exception of the Spotted Owl.

Species such as the Whiskered Screech-Owl, Flammulated Owl, Northern Pygmy-Owl, and Ferruginous Pygmy-Owl need special inventory and monitoring attention.

Table 2. Distribution of BLM Key Raptor Areas by state (N=223).

State	No. of Key Areas	% of Total No. of Key Areas
Alaska	7	3.1
Arizona	27	12.1
California (Nevada)	24	10.8
Colorado	13	5.8
Idaho	16	7.2
Montana (North Dakota)	19	8.5
New Mexico (Oklahoma)	12	5.4
Nevada	5	2.2
Oregon (Washington)	40	17.9
Utah	36	16.1
Wyoming	24	10.8

Table 3. Distribution of BLM Key Raptor Areas by habitat type. Numbers represent the number of Key Areas in which each particular habitat occurs and percentage of the total (N=223) where each habitat occurs. Each Key Area could be characterized by up to four habitats.)

Habitat	No. of Key Areas	% of Total No. of Key Areas
Riparian	84	37.9
Shrubsteppe	78	35.0
Coniferous Forest	52	23.3
Southwestern Desert	27	12.1
Grassland	25	11.2
Wetland	19	8.5
Lacustrine/Reservoirs	15	7.2
Deciduous Forest	5	2.2
Tundra	4	1.8
Coastal	3	1.4
Taiga	2	0.9



Figure 14. Biological diversity, which is prevalent in riparian habitat and areas with cliffs or bluffs, is common on public lands. This portion of the Jarbridge River Key Raptor Area illustrates this diversity. (Photo by W. Meyer.)



Figure 15. Golden Eagles and Bald Eagles (shown here near Wolf Lodge Bay, Lake Coeur D'Alene, Idaho) are each identified as important species in over half of the Bureau's Key Raptor Areas. (BLM photo.)

Table 4. Occurrence of Special Habitat Features in BLM Key Raptor Areas. The number of Key Areas which contain each type of feature and percentage of the total (N=223) each number represents are displayed. Some Key Areas include as many as ten types of special habitat features.

Special Habitat Features	No. of Key Areas	% of Total No. of Key Areas
Cliffs/Bluffs	149	66.8
Streams/Creeks/Rivers	133	59.6
Rock Outcrops	129	57.8
Small Groups of Trees	117	52.5
Snags	80	35.9
Rodent Colonies	64	28.7
Winter Roosts	57	25.6
Dry Washes	53	23.8
Talus Fields	43	19.3
Old Growth Forest	38	17.0
Utility Lines	38	17.0
Reservoirs	37	16.6
Ponds	34	15.2
Meadows	28	12.6
Lakes	25	11.2
Cold Springs	24	10.8
Vegetative Manipulations	23	10.3
Burns	23	10.3
Abandoned Homesites	16	7.2
Dams	15	6.7
Gallery Forest	14	6.3
Islands	13	5.8

Of 223 Key Raptor Areas, 161 (72.2%) have some sort of on-the-ground management prescription which directly benefits one or more species of raptors and/or their habitats (Fig. 16). The most common management types reported are listed in Table 6.

Most prescriptions are formalized in BLM planning documents of various types. One hundred four (46.6%) of 223 Key Raptor Areas are covered by Management Framework Plans. Another 45 (20.2%) are included in completed Resource Management Plans. Thus, a total of 149 (66.8%) have the benefit of broad scope, long-term planning efforts. Another 29 Key Areas are parts of Resource Management Plans which are under development. When these are completed, 178 of 223 (79.8%) Key Raptor Areas will be covered by Management Framework or Resource Management Plans.

Site-specific plans, such as Habitat Management Plans for wildlife and Area of Critical Environmental Concern Management Plans, are

also important. Eighty-six (38.6%) of 223 Key Raptor Areas have completed Habitat Management Plans with another 11 (4.9%) being covered in Habitat Management Plans under development. About 9% of the Key Areas have Area of Critical Environmental Concern Management Plans either completed or under development.

The number of Key Raptor Areas potentially affected by each type of land-use action is one measure of the extensive planning and environmental assessment required to manage and protect raptor habitat values throughout the public lands. Table 7 itemizes the types of land-use actions and the number of Key Raptor Areas each type of use may affect.

Analysis of Key Raptor Areas has yielded two main conclusions. First, Key Raptor Areas (i.e., raptor habitats) are widely distributed on public lands in 11 major BLM states. Habitat diversity on public lands is high owing not only to vegetation, hydrologic, and climatic factors, but also to the presence of numerous special habitat features important to raptors. Protective management for these special habitat features during

Table 5. Occurrence of raptor species in BLM Key Raptor Areas (N=223).

Species	No. of Key Areas	% of Total No. of Key Areas
Golden Eagle	124	55.6
Bald Eagle	115	51.6
Prairie Falcon	99	44.4
Red-tailed Hawk	92	41.3
Peregrine Falcon	67	30.0
Ferruginous Hawk	58	26.0
Swainson's Hawk	36	16.1
American Kestrel	36	16.1
Northern Harrier	31	13.9
Rough-legged Hawk	28	12.6
Osprey	27	12.1
Cooper's Hawk	25	11.2
Northern Goshawk	14	6.3
Turkey Vulture	12	5.4
Common Black Hawk	10	4.5
Zone-tailed Hawk	10	4.5
Sharp-shinned Hawk	9	4.0
Harris' Hawk	8	3.6
Gyr Falcon	6	2.7
Merlin	5	2.2
Gray Hawk	4	1.8
Aplomado Falcon	2	0.9
Mississippi Kite	2	0.9
California Condor	1	0.5



Figure 16. Artificial nesting structures, such as this Osprey platform near Eagle Lake, California, have been erected for raptors in at least 28 Key Raptor Areas. (Photo by S. Hawks.)

planning and implementation of land-use actions will be vital to maintaining viable populations in perpetuity of the 45 species of raptors which occur in the western United States.

Second, planning, environmental assessment, and on-the-ground management tools available to BLM allow substantial implementation of an effective raptor management program. Management tools have been used extensively to apply management prescriptions in many raptor habitats (in Key Raptor Areas in particular). There are, however, many remaining opportunities for more thorough inventory, planning, on-the-ground management, and monitoring. An emphasis on site-specific planning and greater consid-

eration of raptors in environmental assessment and decision making processes are examples of such opportunities.

Table 6. Management prescriptions used in BLM Key Raptor Areas (N=223) to benefit raptors.

Management Type	No. of Key Areas	% of Total No. of Key Areas
Stipulations on Developments	56	25.1
Nest Site Protection	45	20.2
Buffer Zones--Temporal	43	19.3
Riparian Management	41	18.4
Buffer Zones--Spatial	35	15.7
Access Restrictions	28	12.6
Artif. Nesting Structures	28	12.6
ORV Control	22	9.9
Grazing Restrictions	16	7.2
Power Line Modification	16	7.2
Land Exchange	15	6.7
Snag Management	15	6.7
Tree Planting	16	7.2
Prey Habitat Enhancement	16	7.2
Perch Management	14	6.3
Wilderness Protection	12	5.4
Signing	14	6.3
Law Enforcement	12	5.4

Table 7. Land-use types which occur or could occur on BLM Key Raptor Areas (N=223).

Land-use Type	No. of Key Areas	% of Total No. of Key Areas
Grazing	101	45.3
Off-road Vehicle Use	79	35.4
Mining	70	31.4
Utility Lines	67	30.0
Roads and Railroads	65	29.2
Fire	62	27.8
Oil and Gas	60	26.9
Hiking, Fishing, Camping, Etc.	49	22.0
Public Observation	40	17.9
Logging	38	17.0
Blasting (Mining, Seismic, Milit.)	38	17.0
Harvest (Legal and Illegal)	38	17.0
Farming	36	16.1
Sonic Booms/Engine Noise	34	15.2
Pipelines/Buried Cables	32	14.4
Urbanization	32	14.4
Rodent Control of Agents/Pesticides	28	12.6
Dams and Reservoirs	26	11.7
Rock Climbing	17	7.6
Heavy Metals	11	4.9
Organochlorines (e.g., DDT/DDE)	9	4.0
Geothermal	9	4.0
Wind Energy	2	0.9

CURRENT RAPTOR HABITAT STATUS

Tundra/Taiga.

A. Description. Tundra and taiga are cold climate landscapes characterized by short growing seasons and cool summers. BLM manages approximately 160 million acres of tundra and taiga. Tundra vegetation consists of lichens and mosses, short-stem perennial herbaceous plants, and stunted shrubs and is generally devoid of trees. Tundra habitats occur at high latitudes (arctic tundra) and high elevations (alpine tundra) in montane regions.

Arctic tundra occurs on public lands in northern Alaska. Daylight is almost continuous during the summer months, and darkness is continuous during mid-winter. Arctic tundra is usually underlain just below the surface by permafrost (permanently frozen ground), and above the permafrost is a zone of seasonal freeze and thaw. Permafrost retards moisture drainage and usually results in characteristically wet or moist conditions.

Alpine tundra generally lacks permafrost, is drier and better drained, lies altitudinally above treeline, and is found in all 11 contiguous western states and Alaska. Areas of alpine tundra managed by BLM are mainly in interior Alaska.

Boreal forest is transcontinental across northern North America. It is characterized by conifer trees, primarily black and white spruce (*Picea mariana* and *P. glauca*). "Taiga" is sometimes considered to be synonymous with "boreal forest," but in this section taiga is considered as the broad transitional area, or ecotone, between the closed southern part of the boreal forest and tundra. Taiga is characterized by open parkland forest where spruce trees, often stunted and widely spaced, occur interspersed with open areas of marsh or muskeg. Taiga habitat managed by BLM is found in interior Alaska.

B. Condition and Trend. Alpine tundra, arctic tundra, and taiga are sparsely populated by people and will probably remain so for the foreseeable future due to harsh climatic conditions. Furthermore, most alpine tundra in western states lies in designated wilderness or wilderness study areas. Although tundra and taiga areas appear relatively stable, each habitat type is actually

fragile and quite sensitive to human disturbance (e.g., oil development in the arctic). Overall these areas have experienced little change.

C. Raptor Habitat Relationships. Tundra and taiga do not support the raptor diversity found in other habitats. Only 16 of 45 raptor species that nest or commonly winter in the West use tundra and taiga, and only 14 (31%) usually nest or winter in such habitats (Table 8). Most falconiforms which occur in tundra are associated with cliffs and bluffs along rivers and with occasional rock outcroppings (Fig. 17). Snowy Owls and Short-eared Owls nest and forage in open meadow habitats. In taiga, raptors use both trees and cliffs for nesting. Only Golden Eagles, Gyrfalcons, and Merlins nest in alpine tundra, although six other diurnal species forage in or travel through such areas (Table 8).

Coniferous Forest.

A. Description. Coniferous forest is one of the most extensive habitat types in the West and is found in all 11 contiguous western states and Alaska (Fig. 18), encompassing a wide range of plant communities. For this document coniferous forest includes pinyon-juniper (*Pinus edulis* or *P. monophylla-Juniperus* spp.), mixed conifer-hardwood, ponderosa pine (*Pinus ponderosa*), mixed conifer, redwood (*Sequoia sempervirens*), spruce-fir (*Picea* spp.-*Abies* spp.), lodgepole pine (*Pinus contorta*), and boreal forests (Kuchler 1964, Garrison et al. 1977, Brown 1982) (Table 9). Mixed conifer forests in this document include Douglas-fir (*Pseudotsuga menziesii*), western white pine (*Pinus monticola*), hemlock-sitka spruce (*Tsuga heterophylla-Picea sitchensis*), and larch (*Larix* spp.) ecosystems. Mixed conifer-hardwood includes oak (*Quercus* spp.)-juniper and oak-pine woodlands. BLM administers extensive acreages of all coniferous forest types, particularly in western Oregon.

B. Condition and Trend. In the 11 contiguous western states about 70% of coniferous forest types are classed as available timberland. Presently, about 12% of conifer stands are in seedling or sapling stage, 13% are in pole size (early to mid-successional stands), and about 73% are saw timber size (Ohman 1989). Over the last few decades there have been gradual losses of forests on private land to urbanization and agriculture, while timber harvesting has altered the compo-

Table 8. Habitat relationships of raptors in the Tundra and Taiga ecosystems (T = Transient; F = Foraging; N = Nesting; W = Wintering).

	Habitat Group			Habitat Component										Habitat Features						
SPECIES	Alpine Tundra	Arctic Tundra	Taiga	River/Lake	Wetland	Wet Meadow	Moist Meadow	Riparian	Dry Meadow	Tussock	Shrub	Woodland	Live Trees	Snags	Cavities	Bluff	Cliff/Rimrock	Talus	Ground	
Turkey Vulture	T					F	F	F	F											
Northern Harrier	T	N	N		NF	NF	NF	NF		F									N	
Sharp-shinned Hawk		N	N					NF				NF	N							
Northern Goshawk		N	N					NF				NF	N							
Red-tailed Hawk	T		N		F	NF	NF	NF	NF	NF	F	NF	N			N	N	NF		
Rough-legged Hawk		N	N		F	F	F	F	F	F	F	NF	N			N	N	NF	N	
Golden Eagle	N	N	N		F	F	F	F	F	F	F	N	N			N	N	NF	N	
American Kestrel			N		F	F	F	F	F			NF	N	N	N		N			
Merlin	N		N		F	F	F	NF	F	F	F	NF	N	N			N		N	
Peregrine Falcon	T	N	N	F	F	F	F	F	F	F	F	F			N	N	N	N		
Gyr Falcon	N	NW	NW			F	F		F	F	F	NF	N		N	N	N			
Prairie Falcon	T							F	F									F		
Great Horned Owl	T		N		F	F	F	F	F		F	NF	N	N	N	N	N	F		
Snowy Owl		NW			F	F	NF		NF	F									N	
Northern Hawk Owl			NW								F	NF	N	N	N					
Short-eared Owl		N			NF	NF	NF		NF										N	

sition of most coniferous forests in the western United States. About 30% of timberland in the Douglas-fir region contains mature timber. In the last decade, the proportion of saw timber has not changed appreciably; however, the amount of old-growth has declined. At current harvest rates all old-growth forests not associated with some kind of reserve will be eliminated within 40 years (Ohman 1989). Virtually all old-growth stands on private lands have been eliminated, and most mature stands at lower elevations are gone. Reduction of average stand size and fragmentation of old-growth habitat are as important as the amount lost.

While some boreal forest is logged, trees are lightly harvested compared to aforementioned western coniferous forests. Significant changes in boreal forest habitat are not anticipated in the foreseeable future.

About 43 million acres of pinyon-juniper forest occur in the West, and indications are that pinyon-juniper habitat is expanding in some areas. Little pinyon-juniper forest is harvested, and the greatest potential for change comes from range management practices, such as burning and chaining--activities which affect a small proportion of the total pinyon-juniper habitat.

C. Raptor Habitat Relationships. The diversity and vastness of coniferous forest habitat is reflected in its impressive diversity of raptor species. Of 45 western raptor species, 31 (72%) either nest or winter in coniferous forest habitats (Table 9). Eight of these species nest solely in forests.

Distribution of raptor species is influenced by certain habitat characteristics. Few species nest in the pole-sapling stage of forest succession,



Figure 17. Where tundra is broken by streams and bluffs, such as along the Colville River, Alaska, sufficient habitat diversity exists to support an abundance of raptors. (Photo by J. Haugh.)



Figure 18. Seventy-seven percent of the raptor species occurring in western North America nest or winter in coniferous forest habitats. (Photo by R. Lehman.)

simply because few trees are large enough. Mature and old growth forests are essential habitat for the Spotted Owl, Northern Goshawk, Flammulated Owl, and Boreal Owl. Fifteen species are tree cavity nesters, and six (Flammulated, Whiskered Screech, Northern Pygmy, Elf, Northern Saw-whet, and Boreal Owls) are obligate secondary cavity nesters which rely on other species to excavate a tree cavity. Various other raptors also depend on snags and old-aged trees for nesting sites.

Wetlands and Deep Water Habitats.

A. Description. Deep water habitats refer to lake, reservoir, riverine, and marine habitats. Wetlands are defined as lands transitional between terrestrial and aquatic systems where water tables are near the surface or land is covered by shallow water (Peters 1989). Included are playas, wet meadows, marshes, bogs, swamps, and estuaries. Riparian and wet tundra habitats are excluded here and discussed in other sections of this document.

Basically, there are two types of wetlands: vegetated and nonvegetated. Nonvegetated wetlands include ocean shoreline, estuarine mud and sand flats, alkaline flats, and shallow ponds. Vegetated wetlands include aquatic beds (plants grow below the surface), emergent wetlands (rooted plants above the surface), forest and scrub wetlands (woody vegetation), and moss-lichen wetlands.

B. Condition and Trend. Wetlands occur in all states with large amounts of lands administered by BLM; however, wetlands form less than 5% of the land area of the western United States (Peters 1989). Wetlands have experienced significant losses and changes. Of wetlands that occurred in the coterminous United States around 1700, approximately 46% still remained in the mid-1970s. Between the mid-1950s and the mid-1970s annual loss of wetlands was estimated at 500,000 acres/year. Drainage and filling for agricultural and urban development were major causes of losses. Along the Pacific Coast, wetland losses range between 30 and 85%, and in Nevada about a 50% loss of wetlands has occurred near Pyramid Lake, Winnemucca Lake, Carson Lake, Stillwater Area, and Humboldt Sink. The Central Valley in California has lost 90% of its wetlands.

C. Raptor Habitat Relationships. Although 24 species forage in wetlands, only Northern Harriers and Short-eared Owls regularly nest there (Tables 8-10). Osprey, Bald Eagles, Peregrine Falcons, and Black Hawks utilize deep water habitat. Wet meadows, bogs, and marshes provide important foraging habitat for Peregrine Falcons, Northern Harriers, Short-eared Owls, American Kestrels, and nonbreeding Merlins and Rough-legged Hawks. Peregrine Falcons, Northern Harriers, and Short-eared Owls are species likely to be most affected by changes in wetland habitats.

Deciduous Forest.

A. Description. Mesquite (*Prosopis glandulosa*), aspen (*Populus tremuloides*), and oak woodlands are discussed here. Deciduous riparian habitats are discussed in the riparian section. Mesquite woodlands consist of open to dense forests of low trees dominated by mesquite and occur extensively on public lands in Arizona.

Aspen stands occur at higher elevations (3,000-9,000 feet). About 7.7 million acres of aspen woodlands are scattered throughout the West, mostly in Colorado, Utah, Wyoming, New Mexico, Idaho, Montana, Nevada, and Arizona (Mueggler 1989). Most of this acreage is USFS or private, though BLM aspen holdings are significant. Aspen functions as a successional species in a climax coniferous forest or as a climax species in a stable woodland.

Oak woodlands consist of Oregon and California oakwoods and pure oak woodlands in Arizona. Oregon oaklands occur in Oregon and southern Washington and are broadleaf forests of medium height dominated by Oregon white oak (*Quercus garryana*). California oak woodlands consist of low to tall trees dominated by oaks (especially *Quercus douglasii*), often mixed with digger pine (*Pinus sabiniana*), and occur in the coastal range from southern Oregon to southern California (including Sierra Nevada foothills).

B. Condition and Trend. Data from forest surveys do not show an actual loss of aspen woodlands, but evidence indicates successional losses to conifer dominance. In some areas regeneration of aspen has been suppressed by excessive overgrazing by domestic and wild ungulates. Data are lacking on the status of oak

Table 9. Habitat relationships of raptors in the deciduous and coniferous forests ecosystems (N = Nesting; W = Wintering; F = Foraging).

SPECIES	Habitat Groups												Habitat Components						Habitat Features										Coniferous Forest Stage					
	Deciduous Forests		Coniferous Forests																															
	Chaparral	Mesquite Woodland	Oak Woodland	Aspen Woodland	Pinyon-juniper	Oak-juniper	Oak-pine	Ponderosa Pine	Mixed Conifer	Redwood	Spruce-fir	Lodgepole Pine	Boreal	Forest Interior	Edge	Shrub	Wetland	Grass	Riparian	River/Lake/Reservoir	Live Trees	Snags	Logs	Cavities (Cliffs or Trees)	Cliffs/Rimrock	Talus	Caves	Ground	Powerlines & Art. Structures	Pole-sapling (under 39 yr.)	Young (40-79 yr.)	Mature (80-159 yr.)	Old Growth (over 160 yr.)	
Black Vulture		NW												N	F	F	F	F	F			N	N	N	N	N	F		N	N				NF
Turkey Vulture	NW	N	NW	N	N	N	N	N	N	N	N	N		NF	NF	F	F	F	NF		N	N	N	N	N	F	N	N	N					
California Condor	NW							NW		NW							F				N	N		N	N	N		N						N
Osprey			NW					N	N	N	N	N	N	N	N				N	F	N	N	N		N			N	N			N	N	
Bald Eagle					W			NW	NW			NW	N	N	N	F	F	F	NF	F	N	N			N				N				N	N
Northern Harrier	NW		N		N	N									NF	NF	NF	NF	NF									N						
Northern Goshawk	W	W	W	NW	W	W	NW	NW	NW	N	N	N	NW	NF	F	F		F	F		N											F	NF	NF
Cooper's Hawk	NW	NW	NW	N	NW	NW	NW	NW	N	N	N	N		NF					NF	N											F	NF	NF	F
Sharp-shinned Hawk	NW	W	NW	N	W	NW	NW	N	N	N	N	N	N	NF					NF	N											NF	NF	NF	F
Harris' Hawk		NW												NF		NF			NF	N									N					
Red-shouldered Hawk			NW												NF	F	F	F	NF	N														
Swainson's Hawk					N										N	NF		F			N								N					
Zone-tailed Hawk			N				N	N	N						NF	F			N		N				N								N	N
Red-tailed Hawk	NW	NW	NW	N	NW	NW	NW	NW	NW	NW	N	NW	N	N	NF	F	F	F	NF	N					N	F			N	F	NF	NF	NF	NF
Ferruginous Hawk							NW								NF	F		F	N		N				N	F		N	N					
Golden Eagle	NW	NW	NW	N	NW	NW	NW	NW	N	N	N	N	N		NF	F	F	F	NF	N				N	F			N	N	F	F	NF	NF	
American Kestrel	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	N	N	N		NF	F	NF	NF	NF	N	N			N	N	F		N	N	F	NF	NF	NF	NF
Merlin			N	N	NW		NW	NW	N				N	N	NF	F	F	F	NF	N	N							N			F	F	NF	NF
Peregrine Falcon					NW	?		N	N	N	N	N	N		F	F	F		F	F				N	N			N						
Prairie Falcon	NW				NW											F	F	F						N	N	F		N						
Common Barn-Owl	NW	W	NW		W	W	NW	N	N	N				W	NF	F	F	F	NF		N	N		N	N	F		N				NF	NF	
Flammulated Owl							N	N	N						NF						N	N		N				N					NF	NF
Western Screech-Owl	NW	NW	NW	NW	NW	NW	NW	NW	NW	N					NF	F	F	F	NF		N	N		N	N	F		N	F	NF	NF	NF	NF	
Whiskered Screech-Owl			N				N	N							NF				NF	N	N			N				N						
Great Horned Owl	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	W	NF	F	F	F	NF		N	N		N	N	F		N	F	NF	NF	NF	NF	
Northern Hawk Owl												NW			NF	F	F	F	F		N	N		N										
Northern Pygmy Owl				NW	NW			NW	NW						NF	F	F	F	NF		N	N		N						F	NF	NF	NF	
Ferruginous Pygmy Owl		N													F	F			N		N	N		N										
Elf Owl		N					N								NF	F			N		N	N		N				N						
Spotted Owl					NW		NW	NW	NW						NF	F			NF		N	N		N									NF	NF
Barred Owl								NW	NW					NW	NF	NF	F	F	F	NF		N	N		N					F	F	NF	NF	
Great Gray Owl									NW		NW	NW	NW			NF		F	F			N	N					N			NF	F	F	
Long-eared Owl	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	N	N			NF	F	F	F	NF		N									NF	NF	F	F	
Boreal Owl											NW		NW	NW	F	F	F	F			N	N		N					N			NF	NF	NF
Northern Saw-whet Owl							NW	NW	NW		N	N	NW	NF	NF				NF		N	N		N				N		N	NF	NF	NF	NF

Table 10. Habitat relationships of raptors in the southwestern desert, shrubsteppe, and grassland ecosystems (T = Transient; F = Foraging; N = Nesting; W = Wintering).

SPECIES	Habitat Groups										Habitat Components										Habitat Features									
	Southwest Deserts			Shrub-Steppe		Grasslands					Habitat Components										Habitat Features									
	Creosotebush-Joshua Tree	Creosotebush Types	Palo Verde-Saguaro	Southwestern Shrubsteppe	Sagebrush	Salt Brush	Desert Grasslands	California Steppe	Plains/Prairie Grasslands	Mountain Grasslands	Mountain Meadows	River/Lake/Reservoir	Riparian	Wetland	Grass	Shrub	Woodland	Edge	Agriculture	Live Trees	Snags	Cactus	Shrub	Ground	Talus	Cliff/Rimrock	Cavities	Caves	Powerlines & Art. Structures	
Black Vulture		NW	NW	NW			NW						F	F	F	NF	NF	F	F	N	N			N	F	N	N	N	N	
Turkey Vulture	N	NW	N	N	N	N	N		N	N	T		NF	F	NF	NF	NF	F	F	N	N			N	F	N	N	N	N	
Osprey	N	N	N	NW								NF	N		F	F		N	F	NF	N	N		N		N			N	
Black-shouldered Kite				NW			N	NW	N				N	F	F		N	F	NF	N										
Mississippi Kite			N	N			N		N				NF				NF	F	NF	N										
Bald Eagle	W	NW	NW	W	W	W	W		NW			NF	N	F	F	F		N		N	N					N			N	
Northern Harrier	W	NW	W	NW	NW	NW	NW	NW	NW	N	T		NF	NF	NF	NF		NF	NF					N						
Sharp-shinned Hawk	W	W	W		T	T							F				F	F	F											
Cooper's Hawk	NW	NW	NW	NW	W	W	NW		NW				NF				NF	F	WF	N										
Northern Goshawk	W	T	T	T	T	T	T		T	T	T		F				F	F												
Common Black Hawk	N	N	N	N			N					NF	NF							N										
Harris' Hawk	NW	NW	NW	NW									NF			NF	NF		WF	N		N	N						N	
Gray Hawk		N											NF			F	F													
Red-shouldered Hawk								NW					NF	F	F	F	NF	NF	NF	N										
Swainson's Hawk				N	N	N	N	N	N	N			N		F	NF	N	NF	NF	N			N						N	
Zone-tailed Hawk			N										N			F				N						N				
Red-tailed Hawk	NW	NW	NW	NW	NW	NW	NW	NW	NW	N	N		NF	F	F	F	NF	F	NF	N	N	N			F	N			N	
Ferruginous Hawk	W	W		W	N	N	NW	W	N				N		F	F	N	NF	F	N				N	F	N			N	
Rough-legged Hawk	W	W	W	W	W	W	W	W	W				F	F	F	F		F	F											
Golden Eagle	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	N		NF	F	F	F	NF	NF	F	N				N	F	N			N	
Crested Caracara	W	W	NW	W			W						F		F	NF		F					N	N						
American Kestrel	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	T		NF	F	NF	NF	NF	NF	NF	N	N	N		F		N	N	N	N	
Merlin					T	T	W						F	F	F	F	F	F	F											
Peregrine Falcon	NW	NW	NW	NW								F	F	F			F									N	N		N	
Gyr Falcon					W	W			W				F	F	F	F		F												
Prairie Falcon	NW	NW	NW	NW	NW	NW	NW	NW	NW	N	T				F	F		F	F							N	N		N	
Common Barn-Owl	NW	NW	NW	NW	NW	NW	NW	NW	NW	N	T		NF	F	F	F	NF	F	NF	N	N				F	N	N		N	
Western Screech-Owl	NW	NW	NW	NW	NW	NW	NW	NW	NW				NF	F	F	F	NF	F	F	N	N	N				N	N		N	
Great Horned Owl	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	N		NF	F	F	F	NF	F	NF	N	N				F	N	N		N	
Ferruginous Pygmy Owl			N										NF				NF			N		N					N		N	
Elf Owl	N		N										NF			F	NF	F		N		N					N		N	
Burrowing Owl		N		N	N	N	N		N						NF	NF			NF					N					N	
Long-eared Owl	NW	NW	NW	NW	NW	NW	NW		NW	NW			NF	F	F	F	NF	NF	NF	NF			N							
Short-eared Owl	W	W	W	W	NW	NW	W		NW	N			F	NF	NF	NF		F	NF					N						
Northern Saw-whet Owl	W	W	W	W	NW	NW							NF	NF			NF		F	N	N								N	

woodlands. However, these woodlands do not appear to be extensively harvested, and their overall status has probably not changed much in recent years. Mesquite stands in lowland areas experienced significant declines in the last 100 years. Presently, lowland areas consist primarily of small second growth trees which are being harvested at a high rate. Some upland grasslands have been invaded by mesquite; however, this probably does not offset losses in lowlands.

C. Raptor Habitat Relationships. Twenty-one (46%) of 45 western raptor species use deciduous forests (Table 9), but no species appears to be obligate to this habitat. Oak woodland is important nesting habitat for Cooper's Hawks in the Southwest and west of the Sierras in California and prime habitat for Whiskered Screech-Owls in Arizona.

Southwestern Deserts.

A. Description. BLM administers tens of millions of acres of warm-temperate (Mojave and Chihuahuan) and tropical-subtropical (Sonoran) deserts. Typified by hot and dry summers (less than 5 inches annual precipitation), the Mojave desert lies in southeastern California, southern Nevada, and northwestern Arizona (Jones 1986). Dominated by creosotebush (*Larrea tridentata*), blackbrush (*Coleogyne ramosissima*), and Joshua trees (*Yucca brevifolia*), the Mojave desert lies floristically, faunally, and geographically between the Great Basin and Sonoran deserts. Wetter than the Mojave desert (4-12 inches annual precipitation, mostly during summer), the Chihuahuan desert occurs in southeastern Arizona and south and central New Mexico. Dominated by mesquite and creosotebush, with acacias (*Acacia* spp.), ocotillo (*Fouquieria splendens*), yucca (*Yucca* spp.), agave (*Agave* spp.), and cactus, the Chihuahuan desert is floristically and structurally quite variable.

Sonoran desert is perhaps the most structurally and floristically diverse desert in the world. The Lower Colorado subdivision occurs in southwestern Arizona and southeastern California. This subdivision is mostly frost-free with less than 7 inches annual precipitation and is dominated by creosotebush and bursage (*Ambrosia dumosa*), with iron wood (*Olneya tesota*), palo-verde (*Cercidium floridum*), and mesquite. The

Arizona Uplands subdivision occurs in southern Arizona at higher elevations and is like the Lower Colorado subdivision except that it is wetter and receives biannual rainfall (summer and winter). It is dominated by paloverde, saguaro cactus (*Cereus giganteus*), and mesquite with an understory of cactus, bursage, buckwheat (*Eriogonum* spp.), brittlebush (*Encelia farinosa*), and jojoba (*Simmondsia chinensis*) (Fig. 19). Southwestern shrubsteppe is characterized by scattered shrubs and grasses. Mesquite is abundant in many areas, and creosote and tarbush (*Flourensia cernua*) are dominant shrubs. Black grama (*Bouteloua eriopoda*), three awns (*Aristida* spp.), and tobosa (*Hilaria mutica*) dominate the grasses.

B. Condition and Trend. Although Chihuahuan desert has expanded in the last 200 years at the expense of semidesert grasslands, in general southwestern deserts have declined in total area and habitat quality. Urbanization, agriculture, and other developments have severely reduced natural desert habitats, especially in southern California. Just as important as the amount of habitat loss is loss of quality. Land uses, such as off-road vehicle use, livestock grazing, and mineral development, have reduced habitat quality, and fire suppression and stream channelization have reduced natural characteristics. In many areas there has been a reduction or elimination of perennial grasses and a replacement by exotic annual grasses and forbs.

Adverse effects of land use on desert habitats are generally longer-lived than for any other ecosystem, primarily because low or erratic precipitation slows recovery. With increases in human population occurring in the southwest, accompanied by increased demands for human uses of public lands, the trend of degradation, especially near large population centers, can be expected to continue.

C. Raptor Habitat Relationships. Of 45 western raptor species, 32 (71%) occur in southwestern deserts (Table 10), with the Harris' Hawk being found primarily in this habitat. The Zone-tailed Hawk, Ferruginous Pygmy-Owl, and Elf Owl are closely affiliated with this ecosystem although occurring in other habitats as well. The Crested Caracara is a rare nester of saguaro-paloverde habitat. The Sharp-shinned Hawk,



Figure 19. Southwestern deserts provide habitat for 32 of 45 western raptor species. (Photo by G. Dahlem.)

Rough-legged Hawk, Short-eared Owl, Saw-whet Owl, and Ferruginous Hawk are winter visitors to southwestern deserts.

Riparian.

A. Description. Riparian habitat is referred to as plant communities along permanent or intermittent streams characterized by plant species and life forms different from those of immediately surrounding uplands. BLM administers about 7.5 million acres of riparian habitat dominated by trees and shrubs but also containing a preponderance of grasses, sedges, and rushes. Riparian areas are found in all states with significant amounts of public land. Riparian areas occur within tundra/taiga, coniferous forest, deciduous forest, shrubsteppe, southwestern desert, and grassland habitats, but comprise less than 1% of the total land area. Riparian zones contain a rich wildlife resource (Ohmart and

Anderson 1986). More than 60% of vertebrates in the southwest are obligate to riparian systems. If such systems were lost, 60-80% of native wildlife in the western states would also be lost.

B. Condition and Trend. There have been significant losses of riparian habitat in the West, and much has been impacted and fragmented in some manner (Lee et al. 1989). Approximately 70% of the total riparian area has been lost during the past century. Regional losses are estimated between 95-98% for Central California, Arizona, the Rocky Mountains/Great Plains, and Missouri River drainage. Average rates of forested riparian habitat loss in the Rocky Mountain states continues at about 1% of the original forested acreage per year; in some areas losses are even greater.

About 80% of the riparian habitat on public lands may be in unsatisfactory condition

(Ohmart and Anderson 1986) resulting from a complex land-use history and vulnerability of riparian habitat to the effects of livestock grazing, silvicultural practices, mining, agricultural conversion, urban development, and water projects. The riparian issue is important because of the inherent scarcity of riparian systems throughout the West, current high rates of loss, and degraded condition of remaining riparian areas.

C. Raptor Habitat Relationships. Riparian habitats contain the greatest raptor diversity; 82% of 45 western raptor species use riparian habitats (Tables 8-10). Common Black Hawks and Gray Hawks are obligate riparian nesters, and the Common Black Hawk forages almost entirely in riparian zones. Red-shouldered Hawks and Mississippi Kites depend greatly on riparian habitats, but do occasionally nest in uplands. Zone-tailed Hawks nest mainly in riparian zones, although they forage in uplands and occasionally nest on cliffs. Riparian areas are important nesting habitats for the Bald Eagle, Merlin, Northern Harrier, Short-eared Owl, Elf Owl, Ferruginous Pygmy-Owl, and Western Screech-Owl. Riparian zones are of particular importance in shrublands, grasslands, and other areas devoid of trees. For example, the riparian zone is prime nesting habitat for Cooper's Hawks in the Great Plains and Southwest and for Long-eared Owls in shrublands.

Shrubsteppe.

A. Description. Shrubsteppe is a sagebrush (*Artemisia* spp.) dominated cold temperature desert (Fig. 20) occurring primarily in the Great Basin, including eastern Washington and Oregon, southern Idaho, western and central Wyoming, Nevada, Utah, and northern Arizona and New Mexico. BLM administers most shrubsteppe habitat in the United States that is not private. Shrubsteppe is structurally and floristically simple and is typified by low annual precipitation (4-12 inches, mostly in winter) and cold winters. Sagebrush and saltbush (*Atriplex* spp.) associations form shrubsteppe. Sagebrush associations are comprised of Great Basin sagebrush (dominated by big sagebrush (*Artemisia tridentata*)) and blackbrush (dominated by blackbrush with big sagebrush and ephedra (*Ephedra* spp.)) associations. The saltbush-greasewood association is dominated by shadscale (*Atriplex confertifolia*) and black greasewood (*Sarcobatus*

vermiculatus) with bud sagebrush (*Artemisia spinescens*), winterfat (*Ceratoides lanata*), and spiny hopsage (*Grayia spinosa*).

B. Condition and Trend. Agricultural and urban development in many areas and large-scale seedings of crested wheatgrass in other areas (e.g., Nevada and eastern Oregon) have eliminated large areas of shrubsteppe. Also, off-road vehicle use and mineral development have decreased habitat quality in shrubsteppe. However, livestock grazing and fire have had greater influence on the quality of shrubsteppe than any other factors (Young 1989). Historic overgrazing, reduction or elimination of perennial grasses, invasion of exotic annual grasses and forbs, and increased fire frequency induced by the flammable nature of annuals have reduced the amount of shrubland and increased the amount of range dominated by annual forbs and grasses in many areas. Cheatgrass is presently expanding despite improved range conditions over the last 20 years. Also, medusahead (*Taeniatherum caput-medusae*), which began invading shrubsteppe in the 1950s and 1960s, has spread in many areas.

C. Raptor Habitat Relationships. Shrubsteppe is primarily used by open-country, soaring raptors, and 22 (49%) of 45 raptor species found in the West occupy the habitat. No single species is endemic to shrubsteppe. Main species are Golden Eagles and Prairie Falcons; the largest populations of Golden Eagles are found here. Shrubsteppe is also important habitat for the Red-tailed Hawk, Ferruginous Hawk, Swainson's Hawk, Northern Harrier, Barn-Owl, Great Horned Owl, and Long-eared Owl. As in tundra and grasslands, nest sites in shrubsteppe are clustered or restricted to canyons, rock outcroppings, and bluffs, or in riparian zones and tree groves. Although shrubs in this habitat provide occasional nesting substrate for Swainson's Hawks and Ferruginous Hawks (Table 10), shrubsteppe habitat mostly provides foraging habitat for raptors.

Grasslands.

A. Description. Grasslands are essentially treeless areas dominated by grasses and comprise about 330 million total acres in all 11 western states (Fig. 21). BLM administers extensive areas of grassland, especially in eastern Montana,



Figure 20. Shrubsteppe is the most common habitat on BLM-administered lands outside of Alaska. (Photo by G. Sitter.)



Figure 21. Grassland habitats support about the same raptor fauna as shrubsteppe. Combined, these two habitat types represent a tremendous public land reservoir of habitat for raptor nesting and wintering. (Photo by R. Olendorff.)

eastern Wyoming, eastern New Mexico, and southeastern Arizona. Grasslands are classed in four main groups: mountain meadows, mountain grasslands, desert grasslands, and plains and prairie grasslands. Mountain meadows are wet to intermittently wet sites dominated by grasses and sedges, and occur at high elevations in the 11 western states. Mountain grasslands consist of fescue (*Festuca* spp.), oatgrass (*Danthonia* spp.), wheatgrass (*Agropyron* spp.), and prairie foothill groups. Grama-galleta (*Bouteloua* spp.-*Hilaria* spp.) steppe and gramma-tubosa shrubsteppe associations in Arizona and New Mexico form desert grasslands. Plains and prairie grasslands are comprised of fescue-wheatgrass-bluegrass (*Poa* spp.) associations in Washington, Oregon, and Northern Idaho, and gramma, wheatgrass, needlegrass (*Stipa* spp.), and buffalograss (*Buchloe dactyloides*) associations in Montana, Wyoming, and eastern Colorado.

B. Condition and Trend. Condition and trend of grasslands are difficult to assess, because BLM evaluations of "rangelands" include shrubsteppe and pinyon-juniper habitats in addition to grasslands. In 1985 BLM rated 59% of their rangelands in fair to poor condition (51-100% depletion from climax or virgin conditions). The more mesic grasslands in the Great Plains may be in better condition. In Montana, where nearly all range consists of grassland associations, 64% of the range was rated good or better. Xeric grasslands may not be in as good condition. In Arizona and New Mexico desert grasslands were considered overall to be in less than good condition.

Grasslands have been affected by historic overgrazing. However, grasslands have not been subjected to the same level of invasion of exotic annual plants or the same degree of degradation from fire as has been experienced in shrubsteppe.

C. Raptor Habitat Relationships. Grassland habitat is very similar to shrubsteppe in terms of raptor habitat relationships; 26 (58%) of 45 western raptor species use grasslands (Table 10). Like tundra and shrubsteppe, grasslands are used primarily by open country, soaring raptors. Nesting habitat in grasslands is clustered and restricted to special habitat features. For cliff-nesting species, nesting is restricted to bluffs and canyons along drainages and to occasional buttes and rimrock areas. Tree nesters are re-

stricted to riparian corridors and occasional tree groves and shelter belts scattered throughout the grasslands. Availability of nest sites in grasslands is often a limiting factor to raptor nesting density, and many raptors readily use man-created situations and man-made structures as nest substrates.

LAND-USE ACTIONS AND THEIR EFFECTS

Many types of land-use actions affect raptors and raptor habitats similarly (Table 11). Some effects are beneficial; most, however, are not. Immediate or proximate impacts, such as individual mortality (electrocution, shooting, nest failure in a given year, etc.), are short-term setbacks which generally can be compensated for through normal population dynamics of the species (Fig. 22). Ultimate impacts (e.g., diminished habitat diversity/stability, habitat destruction, pesticide contamination, and continual human disturbance) include land-use actions that commonly preclude reproduction or traditional use of habitat for long periods of time or permanently.

Integrated, multi-disciplinary approaches to raptor habitat protection and management require that both proximate and ultimate impacts be minimized, particularly in Key Raptor Areas. The cumulative effects of high levels of individual mortalities may preclude reproduction over a long period of time.

Beneficial Effects.

Eight (32%) of 25 types of land-use actions are potentially beneficial (Table 11). Selective logging (as opposed to clear cutting) may benefit certain forest raptors by opening canopies, reducing competition within timber stands, and in general by increasing forest productivity. Utility lines provide resting sites, hunting perches, and (for some species) nest sites. Land conversions, while destructive of habitats for some species, may create or improve habitats for others. For example, farming and grazing have increased habitats for certain raptors which live in open country. Construction of dams and reservoirs has resulted in increased nesting and foraging by Bald Eagles and Ospreys, and wildfires and prescribed burns benefit raptors that live in fire-evolved ecosystems. Even some recreational activities may have beneficial, if indirect, effects.

Table 11. Potential land-use actions: their beneficial effects and detrimental (both proximate and ultimate) impacts on raptors and raptor habitats. (Note that an action that has a detrimental impact on one species may actually benefit another, and severity of effects may vary from area to area.) Numbers in parentheses represent the number of Key Raptor Areas out of N=223 where each land-use action is or may become a potential problem.

Potential Action	Effect Following the Action*			
Resource Extraction				
Logging (38)	B1	P2	U1	U2
Oil and Gas (60)		P2	U1	U2
Mining (70)		P2	U1	U2
Geothermal (9)		P2	U1	U2
Wind Energy (2)	P1	P2	U1	U2
Resource Transportation				
Roads/Railroads (65)		P1	P2	U1
Pipelines/Buried Cables (32)			U1	U2
Utility Lines (67)	B1	P1	P2#	
Habitat Type Conversions				
Dams and Reservoirs (26)	B1		U1	U2
Farming (36)	B1		U1	U2
Grazing (101)	B1		U1	U2
Urbanization (32)		P2		U2
Fire (62)	B1	P1	P2	U1
Mechanical/Chemical	B1	P1	P2	U1
Recreation				
Harvest (Legal and Illegal) (38)		P1	P2	
Hiking, Fishing, Camping, Etc. (49)			P2	
Off Road Vehicle Use (79)			P2	U1
Public Observation (40)	B1		P2	U2
Rock Climbing (17)			P2	
Noise/Earth Vibration				
Sonic Booms/Engine Noise (34)			P2	
Blasting (Mining, Seismic, Military) (38)			P2	U2
Construction			P2	U2
Environmental Contamination				
Organochlorines (e.g., DDT/DDE) (9)			P2	U3
Heavy Metals (11)		P1	P2#	
Rodent Control Agents and Predicides (28)		P1	P2#	

B1--Beneficial Effects. Proximate detrimental impacts include: P1--Individual Mortality; and P2--Nest Failure and Other Temporary Habitat Problems. Ultimate detrimental impacts are: U1--Diminished Habitat Diversity; U2--Habitat Modification that Precludes Prior Types of Raptor Use; and U3--Diminished Physiological Capability of Raptors to Reproduce.

* Construction effects are not included here. Generally, construction effects per se cause only nest failure (P2). Individual mortality of nestlings is considered nest failure.

In these cases nest failure would result only if the individual mortality was a nesting adult.



Figure 22. Electric distribution and transmission lines have both beneficial effects (hunting perches, nesting substrates) and negative impacts (electrocutions, collisions) on raptors. The latter are proximate effects which generally can be compensated for through population dynamics of the species. (Photo by J.W. Stoddart, Jr.)

Public observation of raptors, though often a local source of disturbance, also increases general awareness and support for raptor habitat management programs.

Individual Raptor Mortalities.

Eight (32%) of 25 types of land-use actions frequently cause individual raptor mortalities (Table 11). Many such proximate impacts can be minimized on public lands by careful planning and by including appropriate stipulations in BLM decision documents. Mitigable impacts include those of wind energy developments, roads and railroads, electric and communication lines, and military maneuvers. Land managing agencies generally do not control incidental raptor mortality caused by Indian use, harvesting for recreational or scientific purposes, hunting, environmental contamination of the types now affecting raptors, and illegal persecution.

Thus, efforts of BLM to minimize mortality of individual raptors should continue to focus on bird movements near proposed wind sites, the potential for raptor collisions with overhead wires, and practices to minimize the number of electrocutions of raptors on power lines. The latter has been a long-standing concerted effort by the Bureau in coordination with the EEI and power companies throughout the West.

Nest Failure and Other Temporary Habitat Problems.

Twenty-one (84%) of 25 types of land-use actions potentially cause raptor nesting failure or other temporary habitat problems (Table 11), such as disruption of winter foraging or roosting habitat. This is the highest percentage for any proximate or ultimate impact, and an area where small efforts result in significant progress toward minimizing proximate detrimental impacts of

resource development and use on raptors and their habitats.

In fact, preventing temporary problems is the objective of most "grass roots" raptor habitat management done by state and Federal agencies and private entities. Management techniques, such as access closures, buffer zones, firearms restrictions, law enforcement, establishment of natural areas and preserves, nest site enhancement and surveillance, all are directed at minimizing habitat problems at critical times of year. Management of this type is commonly incorporated into Bureau planning documents as alternatives in environmental assessments and as stipulations to right-of-way grants, special land-use permits, leases, and other decision documents.

Diminished Habitat Diversity.

Thirteen (52%) of 25 types of land-use actions diminish the likelihood that habitats can support raptor populations at levels that existed before impacts occurred (Table 11). Gradual, but permanent, habitat deterioration commonly leads to the first, often undetected, stage of raptor population decline: diminished reproduction. Such declines, in synergism with other detrimental effects, ultimately can lead to local extirpations.

A recent report, "Technologies to Maintain Biological Diversity" (U.S. Congress, Office of Technology Assessment, 1987), clearly explains the serious consequences to civilization of reduced diversity. The report also outlines a program of legislation, research and development, biological monitoring, and agency participation to counter a global rate of loss of diversity greater than the rate at which new species evolve or, as is implied, greater than the rate at which diversity of modified habitats can be restored to original levels.

While certain BLM programs are known to diminish biological diversity, there are many positive efforts which promote or maintain diversity. The Bureau's active endangered species program is important in this regard, as are efforts to set aside or manage lands in special categories, such as areas of critical environmental concern, research natural areas, other natural areas, wildlife management areas, national cooperative wildlife lands, sanctuaries, preserves, wilderness, wild and scenic rivers, etc. Also, as

is little recognized, royalties from Bureau programs (oil and gas, geothermal, coal, and others) have provided tens of millions of dollars for purchase of conservation system lands through the Land and Water Conservation Fund.

Important also is that, provided species extinctions are not involved, reversing the effects of land-use actions that diminish biological diversity is sometimes possible. Often, reversal can be accomplished merely by removing or regulating the land use, as in the case of grazing, off-road vehicles, and military maneuvers. In these and other cases habitat rehabilitation can restore biological diversity. Examples include fire rehabilitation, replanting of logged areas, seeding of disturbed habitats with natural seed mixtures, mined land reclamation, etc.

Habitat Destruction.

Habitat destruction that precludes prior types of raptor use is characteristic of 15 (60%) of 25 types of land-use actions listed in Table 11. Generally, effects of these impacts are very difficult to reverse, or generally are not reversed until decades after initial disturbance. Impacts of oil and gas development, mining, farming, urbanization, and dams and reservoirs are frequently of this nature.

BLM can mitigate many types of permanent habitat destruction on public lands through the Bureau Planning System, environmental assessment process, and by attaching stipulations to decision documents. Preventing and mitigating permanent destruction of key raptor habitats represent the greatest potentials for land managing agencies to ensure that additional raptor species and populations are not listed pursuant to the Endangered Species Act of 1973. However, in light of the 1872 Mining Law, the Bureau does not have complete discretion to preclude all permanent habitat destruction.

Diminished Physiological Capability of Raptors to Reproduce

Only one (4%) of 25 types of land-use actions renders raptors physiologically incapable of reproducing: pesticides (Table 11). On public lands use of pesticides is closely controlled through the issuance of pesticide use permits which must be backed up with detailed envi-

ronmental assessments. In general, the Bureau does not allow use on the public lands of organochlorines which affect raptors so severely. Application of pesticides to private lands is beyond the control of Federal land managing agencies. Thus, little can be done by BLM to further reduce the use of pesticides.

MANAGEMENT OBJECTIVES, GOALS, AND ACTIONS

Thus far this document has addressed 1) the overall Fish and Wildlife 2000 goal for raptor habitat management on BLM-administered lands; 2) the Bureau's strategy in implementing its raptor program; 3) the Bureau's authorities, procedures, and policies relating to raptor habitat management; 4) the extent and character of Key Raptor Areas on BLM-administered lands; 5) the current status of raptor habitats in the West; and 6) the effects of land-use actions on raptors and their habitats. The information represents "where we are" with raptor management on public lands. The following list of Fish and Wildlife 2000 raptor objectives, goals, and management actions represents "where we need to go" during the coming decade to meet the Bureau's overall Fish and Wildlife 2000 goal for raptor habitat management. The overall goal is:

"Provide suitable habitat conditions for birds of prey on public lands through the conservation and management of essential habitat components, including habitat of prey species, especially in areas where birds of prey concentrate during some period of the year, or in important habitats where populations are suppressed."

Sub-goals and management actions are grouped under five broad objectives as stated in "Fish and Wildlife 2000, a Plan for the Future" (Page 16):

- Objective 1. Inventory and Monitoring;
- Objective 2. Identification and Management of Key Raptor Areas;
- Objective 3. Management of Raptor Habitat in General;
- Objective 4. Special Status Species; and
- Objective 5. Increased Awareness.

Immediate and complete implementation of all 33 management actions listed below is be-

yond the financial means of the Bureau. Nonetheless, the list establishes a management philosophy toward which the Bureau's efforts can be focused through the year 2000. While this focusing must be implemented by BLM line managers, the effectiveness of the Bureau's Wildlife Biologists will determine how closely the overall Fish and Wildlife 2000 goal for raptor habitat management is met. All BLM Biologists are encouraged to assume a proper and professional advocacy role in this endeavor based on the following management actions.

Intentions are that management actions under each objective and goal will be addressed as planning guidance and used as appropriate in the Bureau's land-use planning, environmental review, and decision-making processes, resulting in effective on-the-ground management of raptor habitat. (Note: The term "mitigate" as used in this document includes the concept of off-site compensation of impacts pursuant to Council on Environmental Quality guidelines (40 CFR Part 1508.20).) Each management action relates directly to the goal and objective above it. Ultimately, each management action, goal, and objective relates directly to the overall Fish and Wildlife 2000 goal for raptor habitat management stated above. Keeping these relationships in mind will allow use of the following statements in their full, correct contexts. Note that many of the management actions are already Bureau "standard operating procedure," but are included here for the sake of completeness. Technical assistance can be obtained from several key BLM employees listed in Appendix 3.

FISH AND WILDLIFE 2000 RAPTOR OBJECTIVE NO. 1

IDENTIFY KEY NESTING, MIGRATION, AND CONCENTRATION AREAS FOR BIRDS OF PREY ON PUBLIC LANDS.

Goal 1-1. Complete and maintain on a continuing basis an inventory and monitoring program for raptor populations and habitats to assist in making management decisions on public lands (Fig. 23).

Management Action 1-1A. Maintain a current inventory of raptor habitats and populations occurring on public lands, and monitor their status at least every five years.



Figure 23. Inventory and monitoring provide a foundation for the Bureau's effort to manage and protect raptor habitats. (Photo by M. Kirven.)

(1) Maintain the Key Raptor Area Data Base (Appendix 1), and update it at least every five years.

(2) Inventory all types of habitats and species, including habitats and populations of species not considered rare, threatened, or endangered.

(3) Where appropriate, emphasize inventory in areas that do not already have special management and protection strategies for raptor values.

(4) Following identification of key nesting, migration, and wintering (non-breeding) areas for birds of prey on public lands, consider their designation as special areas (e.g., as areas of critical environmental concern) a high priority in the Bureau Wildlife Program.

Management Action 1-1B. Ensure that all types of monitoring involving raptors and their habitats are conducted.

(1) Monitor raptor populations whenever needed information is not otherwise available and is not likely to be obtained by others.

(2) Monitor raptor habitats on a continuing basis to establish condition and trend and to identify new management opportunities.

(3) Monitor pertinent management decisions involving raptors and their habitats, including relevant stipulations in agency records of decisions and the effectiveness of mitigations and other protective measures.

Management Action 1-1C. Coordinate raptor habitat and population inventory and monitoring as needed between all entities gathering such information in order to avoid duplication of effort, promote standardized data collection, and avoid undue disturbance.

(1) Share BLM raptor data with individuals, agencies, and other interested parties



Figure 24. Management consistent with the principles of multiple use and sustained yield is the Bureau's mandate. This seasonal road closure to protect a Bald Eagle wintering area in the Bureau's Farmington Resource Area (New Mexico) allows vehicular travel seven months of the year. (Photo by C. White.)

by annually providing data to Natural Heritage Data Centers now existing in most states.

(2) Standardize raptor population and habitat monitoring techniques and terminology (to the extent possible) to give reliable information for input into the Bureau's land-use planning and environmental assessment processes. This should be facilitated through a research/development project by the Snake River Birds of Prey Project by the end of FY 1991.

(3) Provide training to BLM biologists and other interested parties on available inventory and monitoring techniques for raptor populations and habitats. This should be accomplished by those people listed in Appendix 3 as part of Phoenix Training Center courses or by invitation from BLM field offices or other agencies and groups.

FISH AND WILDLIFE 2000 RAPTOR OBJECTIVE NO. 2

IMPLEMENT MANAGEMENT PROGRAMS ON KEY HABITATS HAVING HIGHLY SIGNIFICANT RAPTOR POPULATIONS.

Goal 2-1. Manage, on a continuing basis, all public lands to protect the scientific, ecological, and environmental quality of raptor habitats thereon, consistent with multiple-use/sustained-yield practices (Fig. 24).

Management Action 2-1A. Manage habitats using an ecosystem management approach for raptors and other wildlife species, unless specifically mandated to implement habitat management for a single raptor species. Emphasize maintenance and restoration of natural biological diversity.



Figure 25. Land acquisition and exchange to consolidate Bureau holdings is an important program. In many cases benevolent ownership provided by Federal ownership (compared to most private ownership) benefits raptors directly, such as in the San Pedro River Riparian Area in Arizona (shown here), the Carrizo Plains Natural Heritage Preserve in California, and the Snake River Birds of Prey Area in Idaho. (Photo by M. Cordano.)

Management Action 2-1B. Intensify management on those Key Raptor Areas identified through inventory (see also Appendix 1) and close coordination with implementation of formal land-use plans (see Objective 3).

Management Action 2-1C. Initiate a proactive raptor habitat management program in addition to reacting to non-Bureau initiatives.

- (1) In each case, evaluate the *potential* capability of habitats to support raptor

populations, not just those areas currently occupied by raptors or that meet definitions of raptor habitat based on *existing* conditions.

- (2) Take initiative in identifying land management objectives for raptors. The biologist's role in land-use planning should not be limited to describing effects and mitigation measures.

- (3) Where information is adequate and supportive, design habitat manipulations so as to increase raptor prey populations. Work closely with range managers and silviculturists to develop prescriptions to accomplish specific goals on a case-by-case basis.

Management Action 2-1D. Manage issuance of rights-of-way in a manner that will minimize effects on raptor populations and habitats.

Management Action 2-1E. Prepare a cost/benefit analysis of an aggressive prescribed burning program versus full suppression of wildfires, where appropriate. Intentions would be to show whether prescribed burning is a cost-effective method of preventing catastrophic wildfire losses. Spin-off benefits of prescribed burning programs to raptors and other wildlife are documented.

Goal 2-2. Whenever possible through the BLM realty program (and when the need is identified through the Bureau Planning System), acquire and/or consolidate, under Bureau administration, management units with high raptor habitat values (Fig. 25).

Management Action 2-2A. Use the Bureau's land exchange authorities as opportunities arise to consolidate raptor habitats on public lands, with emphasis on Key Raptor Areas identified in Appendix 1 of this document.

Management Action 2-2B. Purchase key raptor habitats, as appropriate, within the scope and intent of Bureau planning documents.

Management Action 2-2C. Encourage private donations of land, funds, and services to facilitate acquisition of land with high raptor habitat values.

FISH AND WILDLIFE 2000 RAPTOR OBJECTIVE NO. 3

MANAGE, ON A CONTINUING BASIS, RAPTOR HABITATS ON PUBLIC LAND BY INCORPORATING HABITAT AND PREY MANAGEMENT CONSIDERATIONS IN LAND USE AND ACTIVITY PLANS . . . AND THROUGH PROTECTIVE PROVISIONS IN LEASES, LICENSES, OR PERMITS ISSUED BY BLM FOR AREAS WHERE RAPTOR PRESENCE AND USE HAVE BEEN IDENTIFIED DURING THE BUREAU PLANNING PROCESS, OR BASED ON OTHER RELEVANT DATA, AS BEING OF SUCH NATURE THAT IT REQUIRES SPECIAL CONSIDERATION.

Goal 3-1. Take full advantage of the established Bureau Planning System to promote and set goals for raptor habitat management and maintenance and enhancement of biological diversity on all public lands.

Management Action 3-1A. Incorporate the objectives, goals, and management actions of this document in new Resource Management Plans as they are developed. Where appropriate, update completed land-use plans through the amendment process to include the objectives, goals, and management actions of this document.

Management Action 3-1B. Identify specific and accomplishable raptor management objectives within each planning area. This can be accomplished by the biologists involved in raptor habitat planning and management on a case-by-case basis as follows:

- (1) Begin habitat planning efforts with a knowledge of existing conditions of vegetation and raptor populations throughout the land area.
- (2) Evaluate the potential of the land area to respond to management. Explore the range of habitat conditions for which it may be possible to manage. Relate these potential conditions to the habitat requirements of raptor species.
- (3) Select the raptor species to be featured in the planning area. Specify the habitat

composition and structure desired in the future to meet the habitat requirements of selected species.

(4) Communicate desired raptor population and habitat conditions in specific and quantitative terms. Reach a decision on a specific management prescription for the area.

(5) Implement the management prescription in the field.

Management Action 3-1C. Secure adequate funding for raptor habitat management on public lands.

(1) Ensure that the Bureau's Wildlife Program maintains adequate funding each fiscal year to meet raptor habitat management objectives as set forth in this document.

(2) Seek matching funding from industry, state agencies, private individuals, etc., for raptor studies, research, monitoring, and management projects, particularly where there is a common information need or goal to be reached by both entities.

(3) Identify for BLM biologists and managers various avenues to acquire and use non-Bureau funds for raptor management projects. This should be incorporated into Phoenix Training Center courses and Washington Office instruction memoranda.

(4) Ensure that other Bureau programs are meeting funding responsibilities commensurate with impacts on raptors and their habitats. This should be part of the annual work planning process.

Goal 3-2. Use the Bureau's environmental assessment process to ensure that negative impacts on raptor habitats of on-the-ground Bureau actions are properly mitigated.

Management Action 3-2A. Include specific and accomplishable alternatives, mitigation measures, etc., in all NEPA and other environmental assessment documents concerning Bureau actions which adversely affect raptor populations and habitats. This can be accom-

plished by the biologists involved in developing or reviewing these documents on a project-by-project basis as follows:

(1) Begin consideration of the environmental consequences of each proposed project with knowledge of the project location and scope, as well as the conditions existing at the project site.

(2) Develop an understanding of the direct and indirect effects of proposed actions on raptors and their habitats.

(3) Evaluate the potential of the action area to support raptor populations following full development of the proposed project. Explore the range of habitat conditions for which it may be possible to manage using project alternatives that still allow the original intent of the project to be reached. Relate these potential conditions to habitat requirements of raptor species.

(4) If possible, specify the habitat composition and structure desired to allow both implementation of the proposed project and substantial raptor habitat conservation.

(5) Document as part of the project description and/or as stipulations in the decision document specific mitigation measures required. If unavoidable adverse impacts will result, include appropriate mitigation measures to minimize the net adverse effect of the project on raptors and their habitats.

(6) Follow up by monitoring compliance with and effectiveness of required mitigation measures.

Management Action 3-2B. Develop consistent guidelines and stipulations for raptor habitat management for inclusion in environmental assessments/statements and Bureau decision documents. This should be done through the Bureau manual process at the rate of three species per year beginning in FY 1990 coordinated by the Washington Office.

Goal 3-3. Develop and maintain effective coordination and cooperation with outside agencies and Bureau constituents concerning land-use

plans, environmental documents, and other Bureau activities that involve raptors and raptor habitat (Fig. 26).

Management Action 3-3A. Provide BLM assistance (logistical, financial, volunteer manpower, etc., as appropriate) to those conducting non-Bureau studies and research involving raptors and their habitats on public lands. Assisted projects must contribute to reaching the Bureau's raptor management objectives, goals, and management actions.

Management Action 3-3B. Pursuant to Title 2 of the Sikes Act, coordinate the Bureau's raptor habitat inventory, planning, management, and monitoring activities with similar activities and programs of other Federal departments and agencies and/or appropriate state and local governments.

Management Action 3-3C. Coordinate and ensure consistency of all general land-use plans, site-specific management plans, and environmental documents that involve raptors with county and other local planning and zoning restrictions to the extent allowed by Federal laws and regulations.

Management Action 3-3D. Participate fully on special working teams, task forces, and other advisory groups that deal with raptor habitat issues and management opportunities.

Management Action 3-3E. Establish cooperative raptor habitat management programs encompassing both public and affected private lands.

FISH AND WILDLIFE 2000 RAPTOR OBJECTIVE NO. 4

FOR RAPTOR SPECIES DETERMINED TO BE IN NEED OF RECOVERY AND SPECIAL MANAGEMENT (SPECIAL STATUS SPECIES) COLLABORATE WITH THE FWS, STATE AGENCIES, OTHER CONCERNED ORGANIZATIONS, AND LANDOWNERS IN MANAGEMENT ACTIVITIES THAT CONTRIBUTE TO THE RECOVERY OF SUCH SPECIES.

Goal 4-1. Comply fully with the Endangered Species Act of 1973, as amended, as it relates to



Figure 26. Raptor habitat management requires extensive interagency and intergovernmental cooperation. For example, the Mt. Dome Habitat Management Plan to protect a Bald Eagle nest and winter roost in the Bureau's Susanville District (California) required signatures of responsible officials from two Federal and two state agencies. (Photo by R. Lehman.)

raptor habitat management on public lands, but maintain a balance which gives appropriate attention to habitats of candidate, sensitive, and other unlisted species.

Management Action 4-1A. Take an active role in endangered species recovery processes by participating on Recovery Teams and by implementing specific Recovery Plan recommendations involving raptor habitats, including (if still appropriate) those recommendations scheduled but not implemented in prior fiscal years.

Management Action 4-1B. Comply with Section 2 of the Endangered Species Act which concerns management of habitats of unlisted species in a manner to ensure that Federal listing never becomes necessary.

Management Action 4-1C. Conduct conferences, informal consultations, and formal consultations, as appropriate, pursuant to Sec-

tion 7 of the Endangered Species Act to ensure that no Bureau action will jeopardize the continued existence of a listed species or destroy or adversely modify formally determined Critical Habitat.

FISH AND WILDLIFE 2000 RAPTOR OBJECTIVE NO. 5

MAINTAIN AN AWARENESS OF THE CONDITION AND TREND OF RAPTOR RESOURCES ON PUBLIC LANDS BY PARTICIPATING IN MONITORING ACTIVITIES WITH OTHER AGENCIES AND ORGANIZATIONS.

Goal 5-1. Develop increased general awareness of raptor resources on public lands.

Management Action 5-1A. Document in administrative reports and published papers results of all raptor management research and

individual raptor management projects to facilitate information transfer and to minimize duplication of research efforts. This should be done through annual progress reports and final reports within one year of completion of each project.

Management Action 5-1B. Share raptor management expertise among offices throughout the Bureau by holding workshops, developing short-term assignments for key personnel, conducting training, and providing formal information storage and transfer through the Bureau's Land Information System and other means. These tasks should be accomplished routinely or on an as-needed basis.

Management Action 5-1C. Develop an awareness in other Bureau disciplines of raptors and their habitats, and capitalize on increased awareness through a strong day-to-day advocacy for raptor habitat protection and management, particularly in the BLM budget process.

Management Action 5-1D. Develop an inter-agency, intergovernmental, and public awareness of Bureau raptor habitat management projects and related accomplishments through an active information and education program, a timely technical information transfer process, and other means.

Management Action 5-1E. Distribute this document concerning raptor habitat management on public lands (as soon as possible following completion) to other raptor habitat managers/landowners, and encourage adoption of similar objectives, goals, and management actions for lands they administer.

Goal 5-2. Maintain research and development programs sufficient to develop and document the knowledge and techniques needed to ensure that awareness of raptor habitat condition and trend is possible and effective.

Management Action 5-2A. Conduct long-term studies and monitoring efforts to learn more about raptor populations, their prey, and associated habitat changes. This should begin in several Key Raptor Areas as soon as possible, with emphasis on continuing work in the Snake River Birds of Prey Area.

Management Action 5-2B. Conduct studies of the short- and long-term impacts of surface-disturbing activities on raptor habitat quality and raptor nesting success, specifically assessing habitat alterations, such as wildfires, grazing, rangeland seedings, and military activities. Specifically, initiate research in the Snake River Birds of Prey Area concerning these activities to be completed by the end of FY 1995.

Management Action 5-2C. Analyze all available monitoring data 1) to evaluate the concept of using raptors as indicators of the levels of impacts of various surface-disturbing activities; and then 2) to evaluate use of raptors as an integral part of the Bureau's effort to monitor the environmental effects of its plans and decisions. This will be an analytical extension of research and monitoring recommended in 5-2B and should be completed within the same timeframe.

Management Action 5-2D. Conduct studies to evaluate processes contributing to recovery of regional populations of threatened and endangered raptors so that available information can be applied in other areas where recovery is proceeding at an unacceptable rate. Complete the pilot project on California Peregrines by the end of FY 1993.

SUMMARY

Raptors (birds of prey) have elicited the interest -- even worship -- of man since ancient times. Today, raptors are one of the most politically sensitive groups of animals with which Federal agencies must be concerned. As organisms at ends of food chains, raptors are both biologically important and environmentally sensitive, which has led to widespread Bureau of Land Management (BLM) and public recognition of the need to manage raptors and their habitats effectively.

This document was prepared to refine and expand on the overall goal of BLM in conserving and managing raptors and their habitats on public lands. In addition, the document establishes objectives to be met and specifies management actions to be implemented during the next decade to reach the overall goal stated in the Bureau document entitled "Fish and Wildlife

2000, A Plan for the Future." Further, this document was prepared to provide current information on opportunities to improve productivity of raptors on public lands.

The past decade has seen great changes in attitudes of the public towards use of lands which BLM administers under the Federal Land Policy and Management Act of 1976 (FLPMA), other legislation, and related regulations. Sufficient Bureau authorities and processes do exist through which substantial protection and conservation of raptors and their habitats can be implemented in a multiple-use context. Many of these authorities and processes have already been applied toward reaching the "Fish and Wildlife 2000" goal, though important opportunities remain. Bureau actions, potentially important to raptor conservation, include land-use planning; environmental assessment; inventory, studies, research, and monitoring; management of special status species; on-the-ground management of key raptor habitat areas; etc.

Bureau Wildlife Specialists have identified 223 Key Raptor Areas throughout the western United States where habitat is particularly suitable for raptor nesting, migration, and wintering. Some 24 million acres, of which 13.5 million are administered by BLM, represent more habitat diversity than is controlled by any other landowner in the Nation, public or private. The most important habitat types represented are riparian, shrubsteppe, and coniferous forest. Habitat features most commonly used by raptors include cliffs and bluffs; areas near streams, creeks, and rivers; rock outcrops; and small groups of trees in otherwise treeless habitat. Species most often featured are Golden Eagles, Bald Eagles, Prairie Falcons, Red-tailed Hawks, Peregrine Falcons, and Ferruginous Hawks. Of 223 Key Raptor Areas, 178 (79.8%) are (or soon will be) within major BLM land-use planning areas. Nearly half of the areas also have site-specific land-use plans which benefit raptors directly.

Many types of land-use actions affect raptors and raptor habitats similarly. Some are beneficial; most, however, are not and must be avoided, mitigated, or otherwise minimized. Immediate or proximate effects, such as individual mortality (electrocution, shooting, nest failure in a given year, etc.), are short-term set-

backs which generally can be compensated for through normal population dynamics of species. Ultimate effects (e.g., diminished habitat diversity/stability, habitat destruction, pesticide contamination, and continual human disturbance) include land-use actions that commonly preclude reproduction or traditional use of habitat for long periods of time or permanently.

Integrated, multi-disciplinary approaches to raptor habitat protection and management require that negative proximate and ultimate effects of land-use actions be minimized, particularly in Key Raptor Areas. To satisfy the need for integrated approaches, this document recommends that the following objectives and goals for raptor management be attained by the year 2000 or earlier.

Objective 1. Identify key nesting, migration, and concentration areas for birds of prey on public lands.

Goal 1-1. Complete and maintain on a continuing basis an inventory and monitoring program for raptor populations and habitats to assist in making management decisions on public lands.

Objective 2. Implement management programs on key habitats having highly significant raptor populations.

Goal 2-1. Manage, on a continuing basis, all public lands to protect scientific, ecological, and environmental quality of raptor habitats thereon, consistent with multiple-use/sustained-yield practices.

Goal 2-2. Whenever possible through the BLM realty program, acquire and/or consolidate, under Bureau administration, management units with high raptor habitat values.

Objective 3. Manage, on a continuing basis, raptor habitats on public land by incorporating habitat and prey management considerations in land-use and activity plans . . . and through protective provisions in leases, licenses, or permits issued by BLM.

Goal 3-1. Take full advantage of the established Bureau Planning System to promote

and set goals for raptor habitat management and for maintenance and enhancement of biological diversity on all public lands.

Goal 3-2. Use the Bureau's environmental assessment process to ensure that negative impacts on raptor habitats of on-the-ground Bureau actions are properly mitigated.

Goal 3-3. Develop and maintain effective coordination and cooperation with outside agencies and Bureau constituents concerning land-use plans, environmental documents, and other Bureau activities that involve raptors and raptor habitat.

Objective 4. For species determined to be in need of recovery and special management (special status species) collaborate with U.S. Fish and Wildlife Service, other Federal and state agencies, concerned organizations, and land-owners in management activities that contribute to recovery of such species.

Goal 4-1. Comply fully with the Endangered Species Act of 1973, as amended, as it relates to raptor habitat management on public lands, but maintain a balance which gives appropriate attention to habitats of candidate, sensitive, and other unlisted species.

Objective 5. Maintain an awareness of conditions and trends of raptor resources on public lands by participating in monitoring activities with other agencies and organizations.

Goal 5-1. Develop increased general awareness of raptor resources on public lands.

Goal 5-2. Maintain research and development programs sufficient to develop and document the knowledge and techniques needed to ensure that awareness of raptor habitat conditions and trends is possible and effective.

Meeting these objectives and reaching these goals, particularly through protective management of special habitat features in Key Raptor Areas, will be vital to maintaining in perpetuity viable populations of 45 species of raptors which occur in the western states. Optimism is justifiable in that planning, environmental assessment, and on-the-ground management tools available to BLM allow substantial implementation of

projects toward effective on-the-ground raptor habitat management. These tools have been used extensively to apply management prescriptions in many raptor habitats. There are, however, many remaining opportunities for more thorough planning and increased use of on-the-ground management. An emphasis on site-specific planning and greater consideration of raptors in environmental assessment and decision making processes are examples of such opportunities.

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APPENDIX 1

List of Key Raptor Areas on the Public Lands

The following codes for habitats, potential/ongoing land-use actions, cooperators, special habitat features, and species are used in the list of Key Raptor Area summaries:

Habitats

COA	Coastal	SHR	Shrubsteppe
CON	Coniferous Forest	SOU	Southwestern Desert
DEC	Deciduous Forest	TAI	Taiga
GRA	Grassland	TUN	Tundra
LAC	Lacustrine/Reservoirs	WET	Wetland
RIP	Riparian/Riverine		

Potential/Ongoing Land-use Actions

BLA	Blasting/Seismic Exploration	O&G	Oil and Gas
BOO	Sonic Booms/Aircraft	ORV	Off-Road Vehicle
DAM	Dams/Reservoirs	PES	Organochlorine Pesticides
FAR	Farming	PHO	Phosphate Poisons
FIR	Wildfire	PIP	Pipelines
GEO	Geothermal	PRE	Predicides
GRA	Grazing	PUB	Public Observation
HAR	Harvest (Legal/Illegal)	ROA	Roads/Railroads
HER	Herbicides	ROC	Rock Climbing
HIK	Hiking, Fishing, Hunting, etc.	ROD	Rodenticides
LOG	Logging	SHO	Shooting
MET	Heavy Metals	SOL	Solar Energy
MIL	Military Activities	URB	Urbanization
MIN	Mining	UTI	Utility Lines
NON	None	WIN	Wind Energy

Cooperators

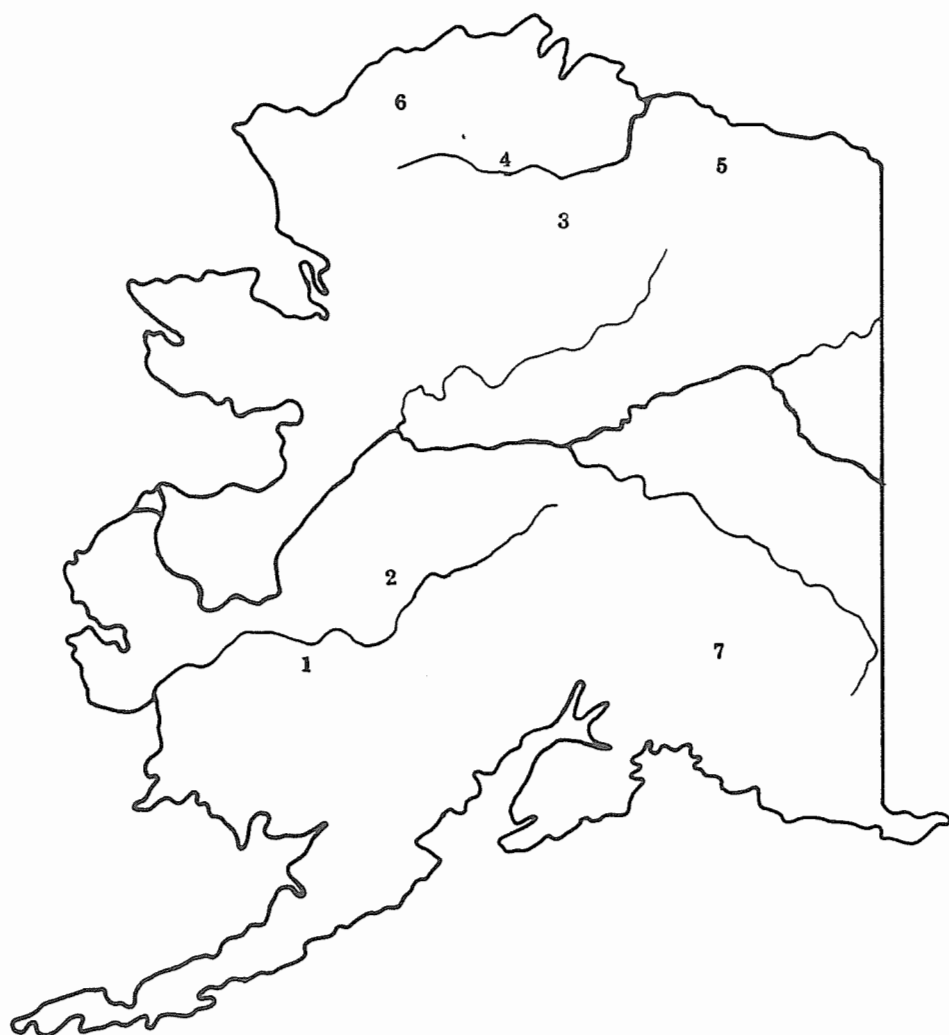
ACE	U.S. Army Corps of Engineers	ITR	Indian Tribes
BIA	U.S. Bureau of Indian Affairs	NPS	U.S. National Park Service
CON	Conservation Organizations	PRI	Private Landowners
COU	County or Local Governments	SCS	U.S. Soil Conservation Service
DOD	U.S. Department of Defense	SER	Local Service Groups
DOE	U.S. Department of Energy	STA	State Wildlife Agencies
FWS	U.S. Fish and Wildlife Service	UBR	U.S. Bureau of Reclamation
IND	Industry	UFS	U.S. Forest Service

Special Habitat Features

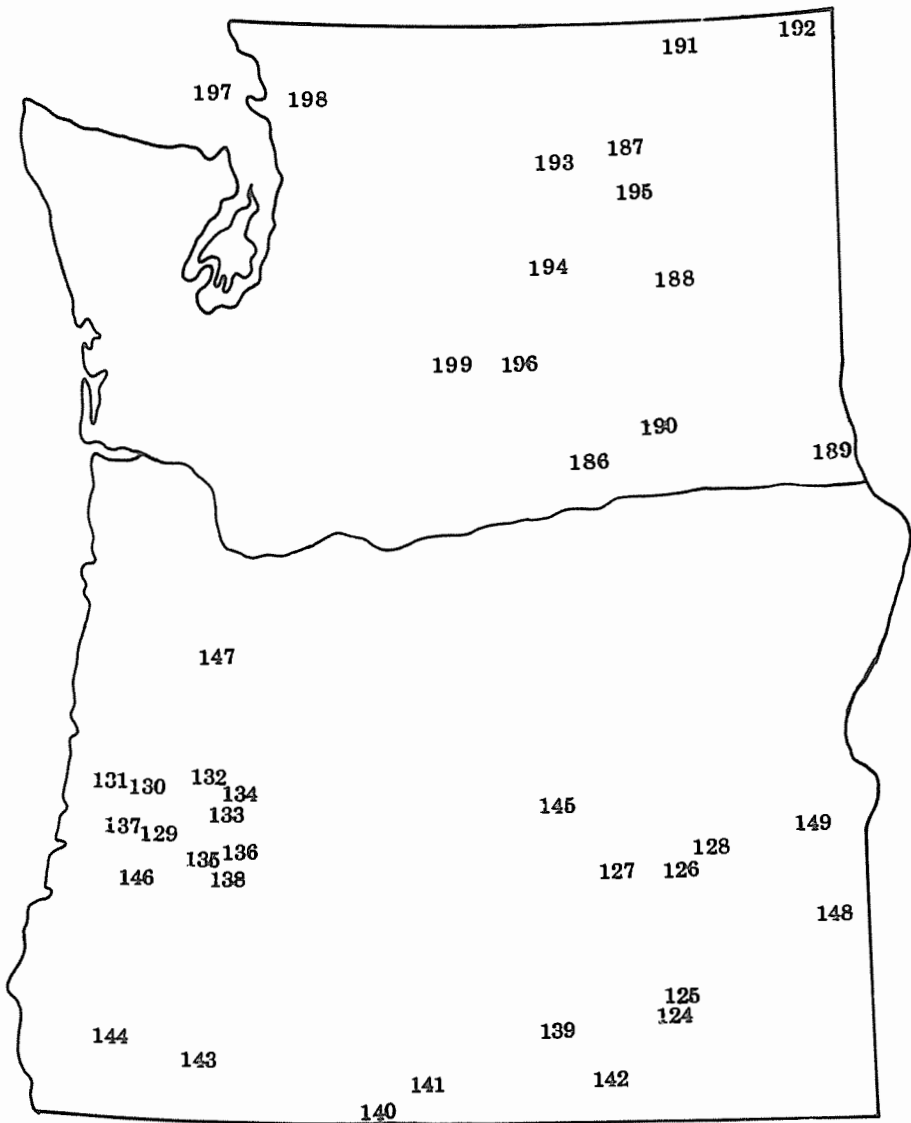
BOX	Nest Boxes	RES	Reservoirs
BUR	Burn	ROC	Rock Outcrops
CLI	Cliffs/Bluffs	ROD	Rodent Colonies
DAM	Dams	ROO	Winter Roost
GAL	Gallery Forest	SIN	Alkali Sinks
HOM	Abandoned Homesites	SNA	Snag/Group of Snags
ISL	Islands	SPR	Cold Springs
LAK	Lakes	STR	Streams/Creeks/Rivers
MAN	Vegetation Manipulation	TAL	Talus Fields
MAR	Marsh	TRE	Small Groups of Trees
MEA	Meadows	UTI	Utility Lines
OLD	Old Growth Forest	WAS	Dry Washes
PON	Ponds		

Species

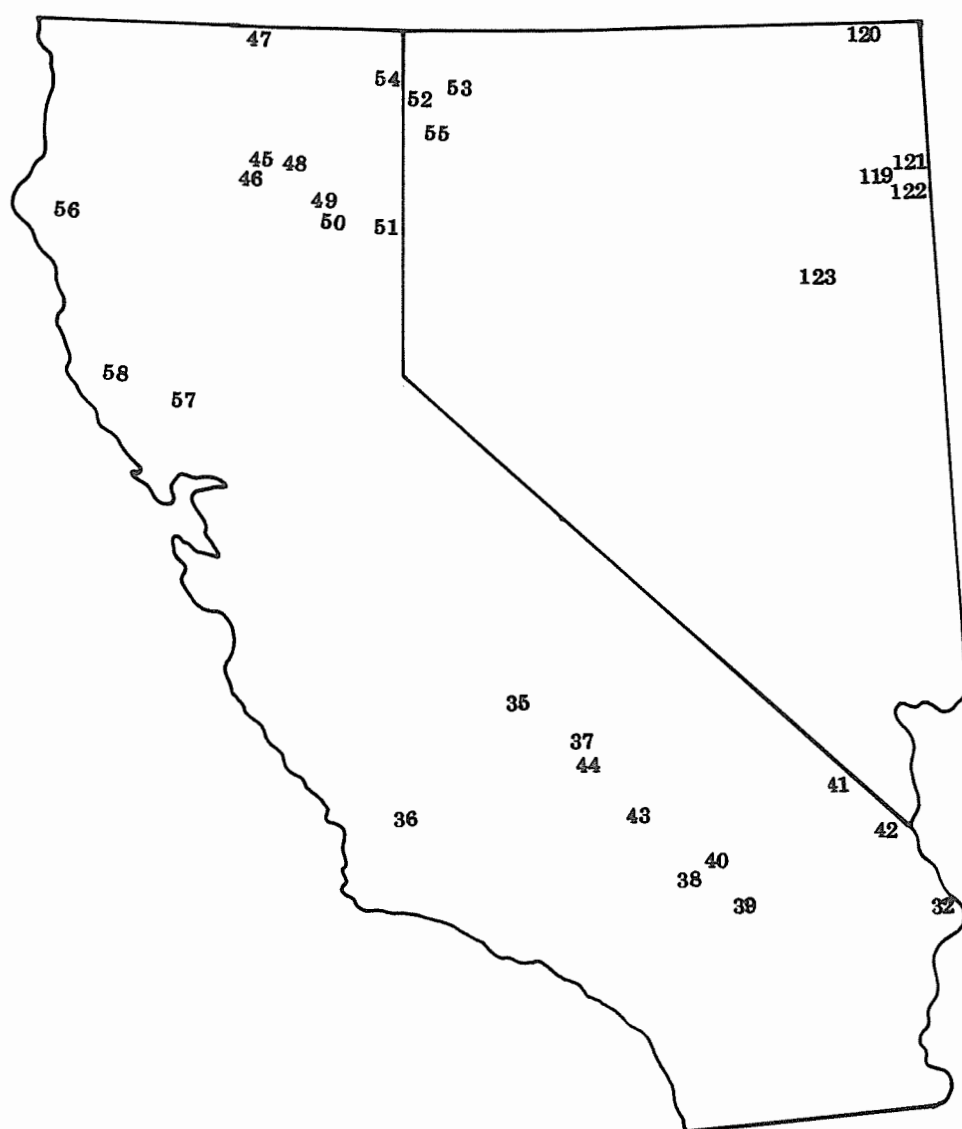
ACCOO	Cooper's Hawk	<i>Accipiter cooperii</i>
ACGEN	Goshawk	<i>Accipiter gentilis</i>
ACSTR	Sharp-shinned Hawk	<i>Accipiter striatus</i>
AEACA	Saw-whet Owl	<i>Aegolius acadicus</i>
AEFUN	Boreal Owl	<i>Aegolius funereus</i>
AQCHR	Golden Eagle	<i>Aquila chrysaetos</i>
ASFLA	Short-eared Owl	<i>Asio flammeus</i>
ASOTU	Long-eared Owl	<i>Asio otus</i>
ATCUN	Burrowing Owl	<i>Athene cunicularia</i>
BUALB	Zone-tailed Hawk	<i>Buteo albonotatus</i>
BUANT	Common Black Hawk	<i>Buteo anthracinus</i>
BUJAM	Red-tailed Hawk	<i>Buteo jamaicensis</i>
BULAG	Rough-legged Hawk	<i>Buteo lagopus</i>
BUNIT	Gray Hawk	<i>Buteo nitidus</i>
BUREG	Ferruginous Hawk	<i>Buteo regalis</i>
BUSWA	Swainson's Hawk	<i>Buteo swainsonii</i>
BUVIR	Great Horned Owl	<i>Bubo virginianus</i>
CAAUR	Turkey Vulture	<i>Cathartes aura</i>
CICYA	Northern Harrier	<i>Circus cyaneus</i>
FACOL	Merlin	<i>Falco columbarius</i>
FAFEM	Aplomado Falcon	<i>Falco femoralis</i>
FAMEX	Prairie Falcon	<i>Falco mexicanus</i>
FAPER	Peregrine Falcon	<i>Falco peregrinus</i>
FARUS	Gyr Falcon	<i>Falco rusticolus</i>
FASPA	American Kestrel	<i>Falco sparverius</i>
GYCAL	California Condor	<i>Gymnogyps californicus</i>
HALEU	Bald Eagle	<i>Haliaeetus leucocephalus</i>
ICMIS	Mississippi Kite	<i>Ictinia mississippiensis</i>
MIWHI	Elf Owl	<i>Micrathene whitneyi</i>
OTASI	Screech-Owl	<i>Otus asio</i>
PAHAL	Osprey	<i>Pandion haliaetus</i>
PAUNI	Harris' Hawk	<i>Parabuteo unicinctus</i>
STNEB	Great Grey Owl	<i>Strix nebulosa</i>
STOCC	Spotted Owl	<i>Strix occidentalis</i>
SUULU	Hawk-Owl	<i>Surnia ulula</i>
TYALB	Barn-Owl	<i>Tyto alba</i>



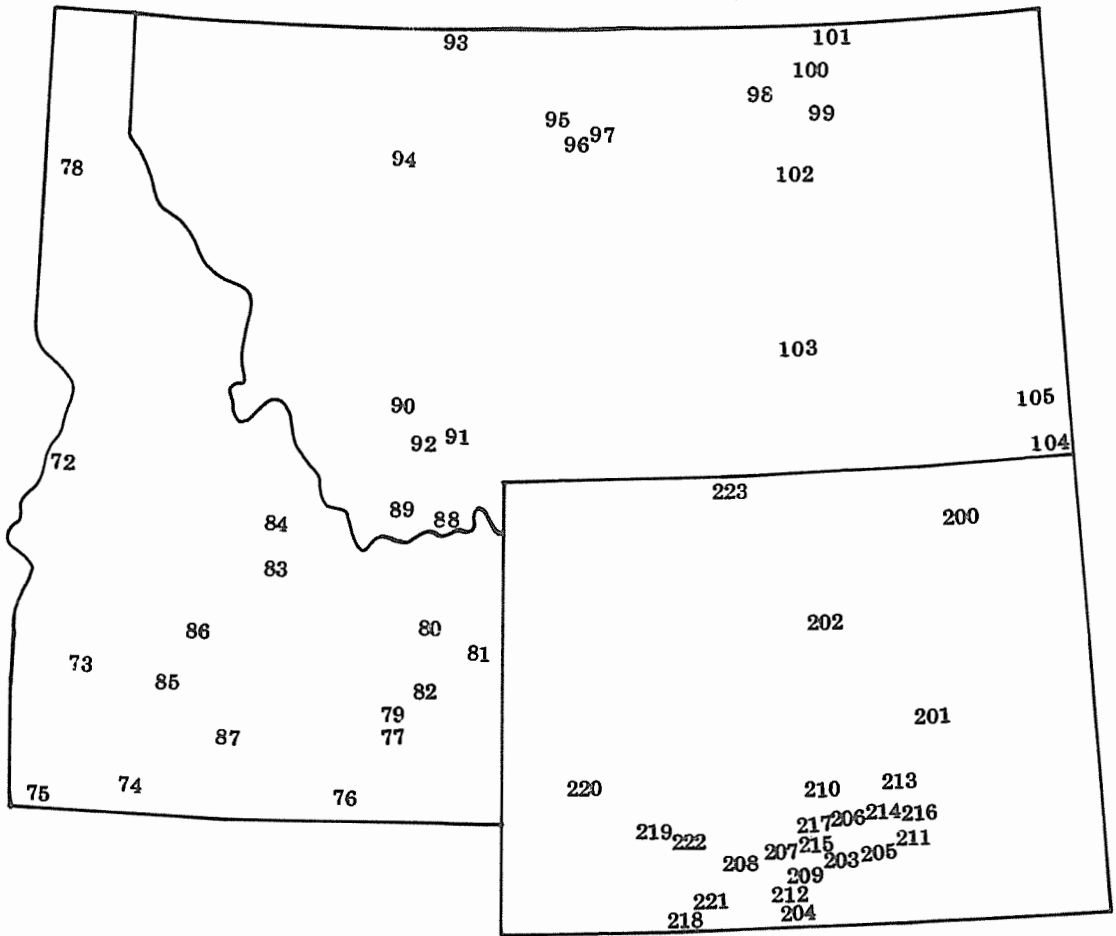
Map 1. Key Raptor Areas in the State of Alaska. Numbers correspond to the Key Raptor Area descriptions which follow Map 5.



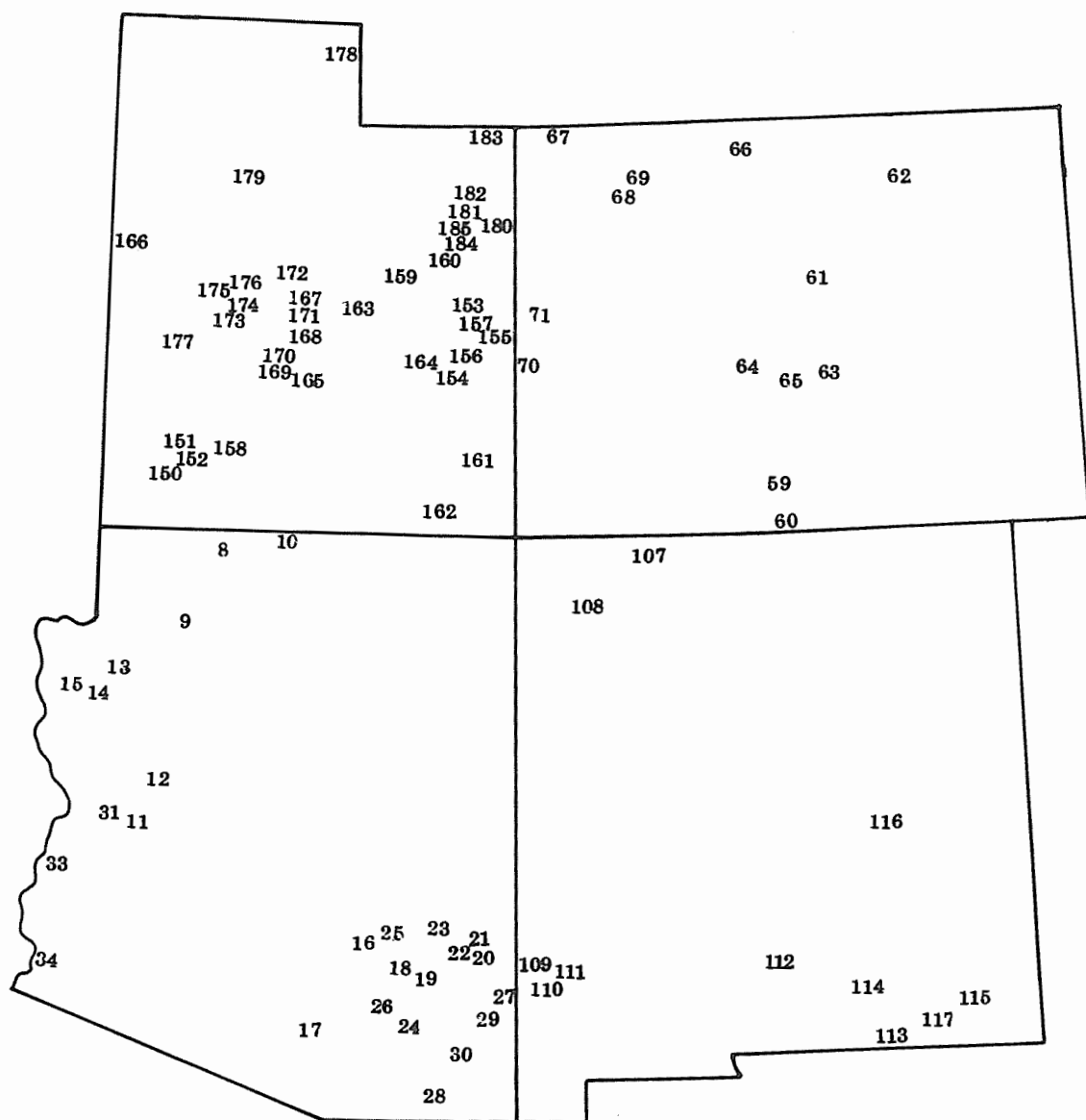
Map 2. Key Raptor Areas in the States of Oregon and Washington. Numbers correspond to the Key Raptor Area descriptions which follow Map 5.



Map 3. Key Raptor Areas in the States of California and Nevada. Numbers correspond to the Key Raptor Area descriptions which follow Map 5.



Map 4. Key Raptor Areas in the States of Idaho, Montana, and Wyoming. Numbers correspond to the Key Raptor Area descriptions which follow Map 5.



Map 5. Key Raptor Areas in the States of Utah, Colorado, Arizona, and New Mexico. Numbers correspond to the Key Raptor Area descriptions which follow Map 5.

Each of the 223 Key Raptor Areas is listed below sorted by state, BLM District, and BLM Resource Area. Phone numbers are listed for those who wish to seek more information about particular Key Areas. In general, when contacting BLM offices for that purpose, ask for the Wildlife Biologist. Other information listed for each Key Area includes: Key Area name, the general habitat type, total acres, acres controlled by BLM, potential conflicts in the area, cooperators in managing the area, the special habitat features available to raptors, and the species involved. (SHF = Special Habitat Features.)

1. State: AK District: ANCHORAGE
Phone No.: 907-267-1226
Key Area Name: KUSKOKWIN RIVER
Habitats: TAI
Total Acres: 960000 Acres BLM: 480000
Land-Use Actions: MIN HAR
Cooperators: FWS
SHF: CLI SNA OLD BUR MEA PON LAK ISL STR
Species: FAPER BULAG BUJAM HALEU PAHAL
AEFUN SUULU BUVIR FARUS STNEB

2. State: AK District: ANCHORAGE
Phone No.: 907-267-1226
Key Area Name: LIME HILLS
Habitats: TAI
Total Acres: 350000 Acres BLM: 300000
Land-Use Actions: NON
Cooperators: FWS
SHF: CLI TAL TRE BUR LAK RES STR
Species: FAPER BULAG FARUS AQCHR BUJAM
PAHAL HALEU AEFUN SUULU BUVIR

3. State: AK District: ARCTIC
Phone No.: 907-356-5130
Key Area Name: BROOKS RANGE FOOTHILLS AREA
Habitats: TUN RIP WET
Total Acres: 1000000 Acres BLM: 1000000
Land-Use Actions: O&G MIN PIP BLA
Cooperators: FWS STA COU IND
SHF: CLI ROC MEA PON LAK STR
Species: FAPER FARUS BULAG AQCHR

4. State: AK District: ARCTIC
Phone No.: 907-356-3150
Key Area Name: COLVILLE RIVER
Habitats: TUN RIP WET
Total Acres: 500000 Acres BLM: 400000
Land-Use Actions: O&G PIP BLA HIK
Cooperators: FWS PRI STA COU IND
SHF: CLI ROC MEA PON STR
Species: FAPER FARUS BULAG

5. State: AK District: ARCTIC
Phone No.: 907-356-5130
Key Area Name: SAGWON BLUFFS
Habitats: TUN RIP
Total Acres: 207360 Acres BLM: 207360
Land-Use Actions: O&G PIP HAR HIK PUB
Cooperators: FWS STA
SHF: CLI ROC STR
Species: FAPER FARUS BULAG

6. State: AK District: ARCTIC
Phone No.: 907-356-5130
Key Area Name: UTUKOK UPLANDS
Habitats: TUN RIP WET
Total Acres: 1000000 Acres BLM: 1000000
Land-Use Actions: O&G PIP BLA
Cooperators: FWS STA COU
SHF: CLI ROC MEA PON LAK STR
Species: FAPER FARUS BULAG AQCHR

7. State: AK District: GLENALLEN
Phone No.: 907-822-3218
Key Area Name: GULKANA RIVER BASIN
Habitats: RIP WET
Total Acres: 300000 Acres BLM: 300000
Land-use Actions: HIK
Cooperators: FWS
SHF: TRE OLD PON LAK
Species: HALEU PAHAL BUJAM

8. State: AZ District: ARIZONA STRIP
Resource Area: VERMILLION
Phone No.: 801-628-4491
Key Area Name: KANAB CREEK
Habitats: RIP
Total Acres: 80000 Acres BLM: 40000
Land-use Actions: MIN UTI GRA FIR HAR HIK ORV
PUB ROC BOO
Cooperators: FWS UFS NPS STA
SHF: CLI ROC TAL STR
Species: FAPER AQCHR

9. State: AZ District: ARIZONA STRIP
Resource Area: VERMILLION
Phone No.: 801-628-4491
Key Area Name: MT. TRUMBULL/MT. LOGAN
Habitats: CON
Total Acres: 50000 Acres BLM: 45000
Land-use Actions: LOG MIN DAM FAR GRA FIR
HIK ORV ROC BOO
Cooperators: STA
SHF: CLI ROC TRE SNA BUR MAN MEA WAS
PON BOX
Species: FAPER AQCHR ACGEN ACCOO BUJAM
FASPA

10. State: AZ District: ARIZONA STRIP
Resource Area: VERMILLION
Phone No.: 801-628-4491
Key Area Name: PARIA CANYON/VERMILLION CLIFF
Habitats: RIP
Total Acres: 95000 Acres BLM: 95000
Land-use Actions: ROA GRA FIR HAR HIK ORV
PUB ROC BOO BLA
Cooperators: FWS NPS STA
SHF: CLI ROC TAL TRE WAS SPR STR ROO
Species: FAPER HALEU AQCHR FAMEX BUJAM
FASPA

11. State: AZ District: PHOENIX
Resource Area: KINGMAN
Phone No.: 602-757-3161
Key Area Name: ALAMO LAKE
Habitats: RIP WET SOU LAC
Total Acres: 21670 Acres BLM: 15232
Land-use Actions: MIN ROA DAM GRA FIR HIK
ORV PUB BOO MET
Cooperators: FWS STA COU ACE
SHF: ROC SNA RES DAM STR
Species: HALEU FAPER

12. State: AZ District: PHOENIX
 Resource Area: KINGMAN
 Phone No.: 602-757-3161
 Key Area Name: BURRO CREEK, FRANCIS CREEK
 Habitats: RIP WET SOU
 Total Acres: 56290 Acres BLM: 37150
 Land-use Actions: O&G MIN GEO ROA PIP UTI
 GRA ORV BLA MET
 Cooperators: FWS PRI STA CON
 SHF: CLI ROC TRE SNA GAL OLD MAN STR
 Species: HALEU BUANT BUALB ACCOO

13. State: AZ District: PHOENIX
 Resource Area: KINGMAN
 Phone No.: 602-757-3161
 Key Area Name: GRAND WASH CLIFFS
 Habitats: SOU
 Total Acres: 7680 Acres BLM: 5760
 Land-use Actions: O&G MIN FIR
 SHF: CLI ROC
 Species: AQCHR FAPER FAMEX

14. State: AZ District: PHOENIX
 Resource Area: KINGMAN
 Phone No.: 602-757-3161
 Key Area Name: HUALAPAI VALLEY
 Habitats: SOU
 Total Acres: 92160 Acres BLM: 36864
 Land-use Actions: O&G MIN ROA UTI GRA ORV
 Cooperators: STA
 SHF: TRE WAS
 Species: BUSWA BUREG

15. State: AZ District: PHOENIX
 Resource Area: KINGMAN
 Phone No.: 602-757-3161
 Key Area Name: PINNACLES
 Habitats: SOU
 Total Acres: 2560 Acres BLM: 1690
 Land-use Actions: O&G MIN PIP UTI GRA URB
 ORV BLA
 SHF: CLI ROC
 Species: FAMEX

16. State: AZ District: PHOENIX
 Resource Area: PHOENIX
 Phone No.: 602-863-4464
 Key Area Name: MIDDLE GILA PLANNING UNIT
 Habitats: RIP SOU
 Total Acres: 463000 Acres BLM: 192000
 Land-use Actions: MIN ROA PIP UTI DAM GRA
 URB ORV PES MET
 Cooperators: STA
 SHF: CLI STR TRE
 Species: FAPER PAUNI ICMIS ACCOO BUALB

17. State: AZ District: PHOENIX
 Resource Area: PHOENIX
 Phone No.: 602-863-4464
 Key Area Name: SILVERBELL PLANNING UNIT
 Habitats: SOU
 Total Acres: 1637000 Acres BLM: 266000
 Land-use Actions: O&G MIN UTI GRA URB ORV
 Cooperators: STA CON
 SHF: CLI ROC TRE
 Species: PAUNI BUJAM FAMEX BUVIR

18. State: AZ District: SAFFORD
 Resource Area: GILA
 Phone No.: 602-428-4040
 Key Area Name: ARAVAIPA CANYON
 Habitats: RIP
 Total Acres: 70000 Acres BLM: 60000
 Land-use Actions: MIN ROA FAR GRA HIK ORV
 PUB MET
 Cooperators: PRI STA CON
 SHF: CLI ROC TRE SNA WAS SPR PON STR
 Species: FAPER BUANT BUALB ACCOO AQCHR
 FAMEX

19. State: AZ District: SAFFORD
 Resource Area: GILA
 Phone No.: 602-428-4040
 Key Area Name: BLACK ROCK
 Habitats: SOU
 Total Acres: 1000 Acres BLM: 700
 Land-use Actions: GRA
 Cooperators: STA
 SHF: CLI ROC TRE PON STR
 Species: FAPER AQCHR BUJAM

20. State: AZ District: SAFFORD
 Resource Area: GILA
 Phone No.: 602-428-4040
 Key Area Name: BONITA CREEK
 Habitats: RIP
 Total Acres: 10000 Acres BLM: 9000
 Land-use Actions: MIN LOG ROA GRA ORV
 Cooperators: STA COU SER
 SHF: CLI ROC TRE GAL WAS STR ROO
 Species: HALEU BUANT BUALB FAMEX ACCOO

21. State: AZ District: SAFFORD
 Resource Area: GILA/SAN SIMON
 Phone No.: 602-428-4040
 Key Area Name: EAGLE CREEK
 Habitats: RIP
 Total Acres: 12000 Acres BLM: 5000
 Land-use Actions: O&G MIN GEO ROA PIP UTI
 GRA ORV BLA MET
 Cooperators: FWS PRI STA CON
 SHF: CLI ROC TRE SNA GAL OLD MAN STR
 Species: HALEU BUANT BUALB ACCOO

22. State: AZ District: SAFFORD
 Resource Area: GILA/SAN SIMON
 Phone No.: 602-428-4040
 Key Area Name: GILA BOX
 Habitats: RIP
 Total Acres: 30000 Acres BLM: 20000
 Land-use Actions: MIN GEO DAM GRA ORV PUB
 MET
 Cooperators: PRI STA SER
 SHF: CLI ROC TAL TRE WAS SPR STR ROO
 Species: FAPER HALEU BUANT BUALB AQCHR

23. State: AZ District: SAFFORD
 Resource Area: GILA
 Phone No.: 602-428-4040
 Key Area Name: MARKHAM CREEK
 Habitats: RIP
 Total Acres: 5000 Acres BLM: 5000
 Land-use Actions: ROA GRA
 SHF: CLI ROC TRE SNA WAS SPR STR
 Species: BUANT BUALB ACCOO HALEU

24. State: AZ District: SAFFORD
 Resource Area: GILA
 Phone No.: 602-428-4040
 Key Area Name: MULESHOE
 Habitats: RIP
 Total Acres: 30000 Acres BLM: 24000
 Land-use Actions: GRA HIK
 Cooperators: PRI STA CON
 SHF: CLI ROC TRE GAL WAS SPR STR
 Species: FAPER BUNIT BUANT BUALB ACCOO AQCHR

25. State: AZ District: SAFFORD
 Resource Area: GILA
 Phone No.: 602-428-4040
 Key Area Name: NEEDLES EYE
 Habitats: RIP
 Total Acres: 10000 Acres BLM: 5000
 Land-use Actions: UTI DAM GRA PRE
 Cooperators: FWS STA
 SHF: CLI ROC TRE SPR STR ROO
 Species: HALEU BUANT BUALB

26. State: AZ District: SAFFORD
 Resource Area: GILA
 Phone No.: 602-428-4040
 Key Area Name: SAN MANUEL RIPARIAN
 Habitats: RIP
 Total Acres: 4000 Acres BLM: 160
 Land-use Actions: GRA LOG
 Cooperators: STA
 SHF: TRE GAL STR
 Species: ICMIS BUNIT BUANT PAUNI ACCOO

27. State: AZ District: SAFFORD
 Resource Area: SAN SIMON
 Phone No.: 602-428-4040
 Key Area Name: PELONCILLO MOUNTAINS
 Habitats: SHR GRA SOU
 Total Acres: 65000 Acres BLM: 43000
 Land-use Actions: O&G MIN UTI FAR GRA PUB ROC BOO
 Cooperators: DOD PRI STA CON
 SHF: CLI ROC TAL BUR MAN ROD PON UTI ROO HOM
 Species: AQCHR FAMEX FASPA BUJAM BUSWA

28. State: AZ District: SAFFORD
 Resource Area: SAN SIMON
 Phone No.: 602-428-4040
 Key Area Name: SAN PEDRO RIVER
 Habitats: RIP GRA WET SOU
 Total Acres: 80000 Acres BLM: 43000
 Land-use Actions: UTI URB FIR ORV BOO
 Cooperators: FWS PRI STA COU CON
 SHF: TRE GAL MEA WAS PON HOM
 Species: BUNIT FAFEM PAUNI BUSWA

29. State: AZ District: SAFFORD
 Resource Area: SAN SIMON
 Phone No.: 602-428-4040
 Key Area Name: SAN SIMON VALLEY
 Habitats: SHR GRA SOU
 Total Acres: 640000 Acres BLM: 448000

Land-use Actions: O&G MIN WIN UTI FAR GRA URB ORV BOO BLA
 Cooperators: DOD PRI STA
 SHF: BUR MAN WAS ROD SPR PON UTI ROO HOM
 Species: CICYA BUSWA FAMEX AQCHR FASPA BUJAM

30. State: AZ District: SAFFORD
 Resource Area: SAN SIMON
 Phone No.: 602-428-4040
 Key Area Name: SULPHUR SPRINGS VALLEY
 Habitats: RIP SHU GRA SOU
 Total Acres: 1175000 Acres BLM: 69000
 Land-use Actions: O&G MIN WIN PIP UTI FAR GRA URB ORV ROC
 Cooperators: FWS PRI STA COU CON
 SHF: SNA MAN WAS ROD BUR PON STR UTI ROO HOM
 Species: BUSWA FAMEX AQCHR BUJAM CICYA

31. State: AZ District: YUMA
 Resource Area: HAVASU
 Phone No.: 602-726-6300
 Key Area Name: BILL WILLIAMS RIVER
 Habitats: RIP SOU
 Total Acres: 13000 Acres BLM: 5500
 Land-use Actions: O&G PIP FAR GRA ORV BOO
 Cooperators: ACE STA
 SHF: CLI ROC TRE GAL WAS STR ROO
 Species: HALEU CAUR ACCOO BUJAM BUSWA PAUNI FASPA

32. State: AZ District: YUMA
 Resource Area: HAVASU
 Phone No.: 602-855-8017
 Key Area Name: WHIPPLE MOUNTAINS
 Habitats: SOU
 Total Acres: 125000 Acres BLM: 110000
 Land-use Actions: MIN ORV
 Cooperators: UBR STA
 SHF: CLI ROC TAL WAS RES STR UTI
 Species: FAPER HALEU

33. State: AZ District: YUMA
 Resource Area: YUMA
 Phone No.: 602-726-6300
 Key Area Name: COLORADO RIVER CORRIDOR
 Habitats: RIP SOU LAC
 Total Acres: 150000 Acres BLM: 23100
 Cooperators: FWS UBR PRI STA
 SHF: WAS LAK RES ISL STR UTI
 Species: HALEU PAUNI FAMEX BUSWA BUREG ACSTR BULAG CICYA AQCHR FAPER

34. State: AZ District: YUMA
 Resource Area: YUMA
 Phone No.: 602-726-6300
 Key Area Name: MITTRY LAKE WILDLIFE AREA
 Habitats: WET LAC
 Total Acres: 12800 Acres BLM: 12000
 Land-use Actions: PUB MET
 Cooperators: FWS UBR STA
 SHF: TRE SNA MAN LAK RES DAM STR
 Species: HALEU PAUNI ALL

35. State: CA District: BAKERSFIELD
 Resource Area: CALIENTE
 Phone No.: 805-861-4236
 Key Area Name: BLUE RIDGE
 Habitats: CON SHR
 Total Acres: 5102 Acres BLM: 3268
 Land-use Actions: HAR PUB BOO
 Cooperators: FWS UFS STA CON PRI
 SHF: CLI TRE SNA BUR
 Species: GYCAL

36. State: CA District: BAKERSFIELD
 Resource Area: CALIENTE
 Phone No.: 805-861-4236
 Key Area Name: CARRIZO/ELKHORN PLAIN
 Habitats: SHR GRA WET
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: O&G MIN UTI GAR GRA URB
 HAR ORV BLA SOL
 Cooperators: FWS STA
 SHF: ROC WAS ROD UTI ROO SIN LAK
 Species: AQCHR FAPER FAMEX HALEU BUSWA
 BUREG ACCOO ACSTR BUJAM ATCUN

37. State: CA District: BAKERSFIELD
 Resource Area: CALIENTE
 Phone No.: 805-861-4236
 Key Area Name: SPANISH NEEDLES
 Habitats: SHR
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: HIK ROC BOO
 Cooperators: PRI STA CON
 SHF: CLI ROC
 Species: FAPER

38. State: CA District: DESERT
 Resource Area: BARSTOW
 Phone No.: 714-351-6402
 Key Area Name: HARPER DRY LAKE
 Habitats: SHR WET
 Total Acres: 14000 Acres BLM: 4000
 Land-use Actions: PES PHO
 SHF: TRE MAR
 Species: CICYA ASFLA BUREG ASOTU

39. State: CA District: DESERT
 Resource Area: BARSTOW
 Phone No.: 714-351-6402
 Key Area Name: NEWBERRY/GRANITE MOUNTAINS
 Habitats: SOU SHR
 Total Acres: 250000 Acres BLM: 160000
 Land-use Actions: MIN GRA URB ORV BOO
 Cooperators: STA
 SHF: CLI ROC TAL WAS
 Species: AQCHR FAMEX

40. State: CA District: DESERT
 Resource Area: BARSTOW
 Phone No.: 714-351-6402
 Key Area Name: SUPERIOR VALLEY
 Habitats: SHR
 Total Acres: 50000 Acres BLM: 25000
 Land-use Actions: URB ORV BOO
 Cooperators: STA
 SHF: ROC WAS ROD TRE
 Species: BUJAM BUVIR

41. State: CA District: DESERT
 Resource Area: NEEDLES
 Phone No.: 714-351-6403
 Key Area Name: CIMA DOME
 Habitats: SHR
 Total Acres: 54000 Acres BLM: 52000
 Land-use Actions: GRA FIR
 Cooperators: STA
 SHF: ROC TRE
 Species: BUJAM

42. State: CA District: DESERT
 Resource Area: NEEDLES
 Phone No.: 619-326-3896
 Key Area Name: PIUTE CREEK
 Habitats: RIP SOU
 Total Acres: 320 Acres BLM: 280
 Land-use Actions: GRA FIR ORV PUB BOO
 Cooperators: STA CON
 SHF: CLI ROC TRE SNA MAN STR
 Species: MIWHI BUJAM AQCHR FAMEX ALL

43. State: CA District: DESERT
 Resource Area: RIDGECREST
 Phone No.: 714-351-6402
 Key Area Name: RED MOUNTAIN/EL PASO
 MOUNTAINS
 Habitats: SOU SHR
 Total Acres: 300000 Acres BLM: 280000
 Land-use Actions: MIN GRA URB ORV BOO
 Cooperators: STA
 SHF: CLI ROC TAL WAS ROD
 Species: AQCHR FAMEX

44. State: CA District: DESERT
 Resource Area: RIDGECREST
 Phone No.: 714-351-6402
 Key Area Name: ROBBER'S ROOST
 Habitats: SHR
 Total Acres: 4000 Acres BLM: 4000
 Land-use Actions: ROC
 SHF: CLI ROC WAS
 Species: FAMEX

45. State: CA District: SUSANVILLE
 Resource Area: ALTURAS
 Phone No.: 916-233-4666
 Key Area Name: FALL RIVER MILLS BALD EAGLE
 NEST AREA
 Habitats: CON RIP
 Total Acres: 2500 Acres BLM: 1130
 Land-use Actions: URB FIR HAR HIK ORV
 Cooperators: UFS PRI STA
 SHF: TRE SNA STR
 Species: HALEU

46. State: CA District: SUSANVILLE
 Resource Area: ALTURAS
 Phone No.: 916-233-4666
 Key Area Name: HAT CREEK BALD EAGLE NEST AREA
 Habitats: CON RIP
 Total Acres: 2320 Acres BLM: 920
 Land-use Actions: UTI GRA FIR HIK
 Cooperators: STA
 SHF: TRE SNA LAK
 Species: HALEU

47. State: CA District: SUSANVILLE
 Resource Area: ALTURAS
 Phone No.: 916-233-4666
 Key Area Name: LOWER KLAMATH BASIN
 Habitats: CON SHR WET
 Total Acres: 198400 Acres BLM: 11760
 Land-use Actions: MIN UTI FAR FIR PES
 Cooperators: FWS UFS NPS STA
 SHF: CLI ROC TRE SNA OLD ROD LAK ROO
 Species: HALEU BUSWA AQCHR FAMEX BUJAM
 FAPER ASOTU BUVIR CICYA ASFLA

48. State: CA District: SUSANVILLE
 Resource Area: ALTURAS
 Phone No.: 916-233-4666
 Key Area Name: PIT RIVER CANYON
 Habitats: RIP SHR
 Total Acres: 7440 Acres BLM: 6640
 Land-use Actions: NON
 Cooperators: PRI STA
 SHF: CLI ROC TAL
 Species: FAMEX AQCHR BUJAM BUVIR FAPER
 HALEU PAHAL TYALB FASPA

49. State: CA District: SUSANVILLE
 Resource Area: EAGLE LAKE
 Phone No.: 916-257-5381
 Key Area Name: EAGLE LAKE COMPLEX
 Habitats: CON LAC
 Total Acres: 36000 Acres BLM: 13000
 Land-use Actions: LOG ROA UTI URB FIR HIK ORV
 Cooperators: UFS PRI STA CON
 SHF: TRE SNA OLD LAK ROO
 Species: HALEU PAHAL

50. State: CA District: SUSANVILLE
 Resource Area: EAGLE LAKE
 Phone No.: 916-257-5381
 Key Area Name: ROUND VALLEY BALD EAGLE
 NESTING TERRITORY
 Habitats: CON LAC
 Total Acres: 2720 Acres BLM: 280
 Land-use Actions: LOG URB FIR
 Cooperators: PRI STA
 SHF: RES
 Species: HALEU

51. State: CA District: SUSANVILLE
 Resource Area: EAGLE LAKE
 Phone No.: 916-257-5381
 Key Area Name: SKEDADDLE/AMADEE COMPLEX
 Habitats: SHR GRA
 Total Acres: 16000 Acres BLM: 15000
 Land-use Actions: NON
 Cooperators: STA
 SHF: CLI ROC
 Species: AQCHR FAMEX FASPA BUJAM CAAUR
 BUVIR TYALB ATCUN ASOTU

52. State: CA District: SUSANVILLE
 Resource Area: SURPRISE
 Phone No.: 916-279-6101
 Key Area Name: HAYES CANYON
 Habitats: SHR
 Total Acres: 10000 Acres BLM: 9750
 Land-use Actions: GRA
 Cooperators: STA
 SHF: CLI ROC TAL TRE WAS STR
 Species: AQCHR FAMEX

53. State: CA District: SUSANVILLE
 Resource Area: SURPRISE
 Phone No.: 916-279-6101
 Key Area Name: HIGH ROCK CANYON
 Habitats: SHR
 Total Acres: 78000 Acres BLM: 77000
 Land-use Actions: GRA ORV PUB BOO
 Cooperators: STA
 SHF: CLI ROC TAL MEA WAS STR
 Species: AQCHR FAMEX FAPER

54. State: CA District: SUSANVILLE
 Resource Area: SURPRISE
 Phone No.: 916-279-6101
 Key Area Name: SURPRISE VALLEY
 Habitats: SHR
 Total Acres: 200000 Acres BLM: 90000
 Land-use Actions: DAM GRA URB PRE
 Cooperators: STA
 SHF: CLI ROC TRE ROD PON LAK STR UTI ROO
 HOM
 Species: HALEU AQCHR FAMEX BUSWA

55. State: CA District: SUSANVILLE
 Resource Area: SURPRISE
 Phone No.: 916-279-6101
 Key Area Name: WALL CANYON
 Habitats: SHR
 Total Acres: 7500 Acres BLM: 7000
 Land-use Actions: GRA
 Cooperators: STA
 SHF: CLI ROC MEA STR
 Species: AQCHR FAMEX

56. State: CA District: UKIAH
 Resource Area: ARCATA
 Phone No.: 707-462-3873
 Key Area Name: BUTTE CREEK MANAGEMENT AREA
 Habitats: CON
 Total Acres: 2500 Acres BLM: 2500
 Land-use Actions: LOG ROA FIR HIK
 Cooperators: UFS
 SHF: SNA OLD
 Species: STOCC ACGEN

57. State: CA District: UKIAH
 Resource Area: CLEAR LAKE
 Phone No.: 707-462-3872
 Key Area Name: CACHE CREEK
 Habitats: RIP
 Total Acres: 24000 Acres BLM: 8000
 Land-use Actions: MIN DAM FIR HAR PUB BOO
 MET HIK
 Cooperators: FWS PRI STA CON IND
 SHF: RES DAM STR UTI ROO TRE SNA MEA CLI
 BUR
 Species: HALEU AQCHR FAMEX

58. State: CA District: UKIAH
 Resource Area: NORTHWESTERN CA
 Phone No.: 707-462-3873
 Key Area Name: PEREGRINE FALCON PROJECT
 Habitats: CON
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: ROA UTI HAR ORV PUB ROC
 PES PRE URB
 Cooperators: FWS UFS PRI STA COU
 SHF: CLI ROC GAL MEA PON LAK RES ISL STR
 Species: FAPER

59. State: CO District: CANON CITY
 Resource Area: ALAMOSA
 Phone No.: 719-589-4975
 Key Area Name: BLANCA WILDLIFE HABITAT
 AREA
 Habitats: WET
 Total Acres: 5750 Acres BLM: 5750
 Land-use Actions: HIK
 Cooperators: UBR STA
 SHF: TRE MEA PON LAK SPR
 Species: HALEU BUVIR CICYA AQCHR FAMEX
 BUJAM BUSWA BULAG FAPER FACOL

60. State: CO District: CANON CITY
 Resource Area: ALAMOSA
 Phone No.: 719-589-4975
 Key Area Name: LOWER RIO GRANDE RIVER
 Habitats: RIP GRA
 Total Acres: 5120 Acres BLM: 1440
 Land-use Actions: GRA HIK
 SHF: CLI TRE STR ROO
 Species: HALEU AQCHR BUJAM FAMEX BUVIR
 FACOL FAPER

61. State: CO District: CANON CITY
 Resource Area: NORTHEAST
 Phone No.: 303-236-4399
 Key Area Name: CATHEDRAL SPIRES
 Habitats: CON
 Total Acres: UNK Acres BLM: 240
 Land-use Actions: DAM HIK ROC
 Cooperators: STA ACE IND
 SHF: CLI ROC STR
 Species: FAPER

62. State: CO District: CANON CITY
 Resource Area: NORTHEAST
 Phone No.: 303-236-4399
 Key Area Name: SOUTH PLATTE RESERVOIRS
 Habitats: LAC
 Total Acres: 16151 Acres BLM: 7100
 Land-use Actions: GRA LOG
 Cooperators: STA
 SHF: TRE PON RES STR ROO
 Species: HALEU

63. State: CO District: CANON CITY
 Resource Area: ROYAL GORGE
 Phone No.: 799-275-0631
 Key Area Name: BEAVER CREEK
 Habitats: CON
 Total Acres: 20750 Acres BLM: 20750
 Land-use Actions: HIK
 Cooperators: STA CON
 SHF: CLI ROC TAL SNA OLD MEA SPR STR
 Species: FAPER FAMEX AQCHR ACCOO BUJAM
 PAHAL ACGEN CAAUR FASPA

64. State: CO District: CANON CITY
 Resource Area: ROYAL GORGE
 Phone No.: 799-275-0631
 Key Area Name: BROWNS CANYON
 Habitats: CON
 Total Acres: 6614 Acres BLM: 6614
 Land-use Actions: ROA HIK
 Cooperators: STA
 SHF: CLI ROC TAL TRE SNA OLD MEA WAS
 SPR STR
 Species: FAMEX AQCHR ACCOO BUJAM CAAUR

65. State: CO District: CANON CITY
 Resource Area: ROYAL GORGE
 Phone No.: 799-275-0631
 Key Area Name: TABLE MOUNTAIN
 Habitats: SHR
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: MIN GRA HIK
 Cooperators: STA CON
 SHF: CLI ROC TAL SNA GAL BUR MEN ROD
 SPR STR
 Species: FAPER AQCHR FAMEX BUJAM CAAUR

66. State: CO District: CRAIG
 Resource Area: KREMMLING
 Phone No.: 303-724-3437
 Key Area Name: SHEEP MOUNTAIN
 Habitats: SHR
 Total Acres: 1600 Acres BLM: 1020
 Land-use Actions: NON
 Cooperators: STA
 SHF: CLI ROC TAL TRE STR
 Species: AQCHR FAMEX

67. State: CO District: CRAIG
 Resource Area: LITTLE SNAKE
 Phone No.: 303-824-4441
 Key Area Name: HIAWATHA-POWDER WASH-
 VERMILLION CREEK
 Habitats: SHR
 Total Acres: 187175 Acres BLM: 176735
 Land-use Actions: O&G PIP ORV BLA
 Cooperators: FWS STA
 SHF: CLI ROC WAS ROD
 Species: BUREG AQCHR BUJAM FAMEX ALL

68. State: CO District: CRAIG
 Resource Area: LITTLE SNAKE
 Phone No.: 303-824-4441
 Key Area Name: ILES-DUFFY-WILLIAMS FORK MTNS.
 Habitats: SHR
 Total Acres: 111665 Acres BLM: 59126
 Land-use Actions: O&G MIN DAM BLA
 Cooperators: FWS STA
 SHF: CLI ROC TRE STR
 Species: AQCHR ALL

69. State: CO District: CRAIG
 Resource Area: LITTLE SNAKE
 Phone No.: 303-824-4441
 Key Area Name: YAMPA, WILLIAMS FORK, LITTLE
 SNAKE RIVER
 Habitats: RIP
 Total Acres: 57000 Acres BLM: 13000
 Land-use Actions: O&G MIN DAM GRA BLA
 Cooperators: FWS STA
 SHF: CLI TRE STR ROO
 Species: HALEU

70. State: CO District: GRAND JUNCTION
 Resource Area: GRAND JUNCTION
 Phone No.: 303-243-6561
 Key Area Name: DOLORES RIVER
 Habitats: RIP
 Total Acres: 26465 Acres BLM: 24985
 Land-use Actions: MIN ROA UTI GRA FIR HAR HIK
 ORV ROC BLA
 Cooperators: FWS STA
 SHF: CLI TRE STR
 Species: FAPER HALEU AQCHR FAMEX

71. State: CO District: GRAND JUNCTION
 Resource Area: GRAND JUNCTION
 Phone No.: 303-243-6561
 Key Area Name: RUBY-HORSETHIEF CANYON
 Habitats: RIP
 Total Acres: 25550 Acres BLM: 24272
 Land-use Actions: MIN ROA UTI DAM GRA FIR
 HIK ORV ROC PRE
 Cooperators: FWS UBR PRI STA
 SHF: CLI TRE SNA STR
 Species: FAPER HALEU

72. State: ID District: BOISE/VALE, OR
 Resource Area: CASCADE/BAKER
 Phone No.: 208-334-1582
 Key Area Name: BROWNLEE/OXBOW RESERVOIRS
 Habitats: LAC
 Total Acres: 83000 Acres BLM: 40000
 Land-use Actions: DAM
 Cooperators: STA
 SHF: ROC TAL RES ROO
 Species: HALEU

73. State: ID District: BOISE
 Resource Area: BRUNEAU
 Phone No.: 208-334-1582
 Key Area Name: SNAKE RIVER BIRDS OF PREY
 AREA
 Habitats: SHR GRA
 Total Acres: 601000 Acres BLM: 482640
 Land-use Actions: GEO ROA UTI DAM FAR GRA
 FIR MIL ORV HIK
 Cooperators: FWS DOD SWA CON SER
 SHF: CLI ROC TAL TRE BUR MAN ROD RES
 STR UTI
 Species: FAMEX AQCHR BUJAM BUREG CICYA
 TYALB ASOTU OTASI ATCUN HALEU

74. State: ID District: BOISE
 Resource Area: JARBIDGE
 Phone No.: 208-334-9241
 Key Area Name: JARBIDGE RIVER
 Habitats: COA
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: GRA FIR HIK ORV BOO
 Cooperators: STA
 SHF: CLI ROC TAL BUR STR
 Species: AQCHR BUJAM FAMEX FASPA BUREG
 BUVIR OTASI ATCUN CAAUR

75. State: ID District: BOISE
 Resource Area: OWYHEE/BRUNO
 Phone No.: 208-334-9241
 Key Area Name: OWYHEE RIVER
 Habitats: SHR
 Total Acres: 180000 Acres BLM: 180000
 Land-use Actions: GRA FIR HIK ORV BOO
 Cooperators: STA
 SHF: CLI ROC TAL STR UTI
 Species: HALEU AQCHR BUJAM FAMEX FASPA
 CICYA BUVIR OTASI ATCUN CAAUR

76. State: ID District: BURLEY
 Resource Area: DEEP CREEK
 Phone No.: 208-766-4766
 Key Area Name: BLACK PINE VALLEY
 Habitats: LAC
 Total Acres: 218070 Acres BLM: 161140
 Land-use Actions: PIP UTI GRA FIR

SHF: CLI BUR MAN MEA WAS SPR PON RES
 UTI HOM
 Species: BUREG BUSWA AQCHR BUJAM BULAG

77. State: ID District: BURLEY
 Resource Area: DEEP CREEK
 Phone No.: 208-766-4766
 Key Area Name: BOWEN CANYON
 Habitats: CON
 Total Acres: 13830 Acres BLM: 10959
 Land-use Actions: LOG MIN FIR ORV PUB
 Cooperators: PRI
 SHF: SNA
 Species: HALEU

78. State: ID District: COEUR D'ALENE
 Resource Area: EMERALD EMPIRE
 Phone No.: 208-765-1551
 Key Area Name: WOLF LODGE BAY
 Habitats: CON
 Total Acres: 2000 Acres BLM: 332
 Land-use Actions: PUB
 Cooperators: STA
 SHF: SNA OLD LAK ROO
 Species: HALEU

79. State: ID District: IDAHO FALLS
 Resource Area: BIG BUTTE
 Phone No.: 208-529-1020
 Key Area Name: AMERICAN FALLS RES. ROOST
 Habitats: RIP
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: DAM HIK
 Cooperators: STA
 SHF: OLD STR
 Species: HALEU

80. State: ID District: IDAHO FALLS
 Resource Area: MEDICINE LODGE
 Phone No.: 208-529-1020
 Key Area Name: DEER PARK ROOST
 Habitats: RIP
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: LOG FIR
 Cooperators: STA
 SHF: OLD STR
 Species: HALEU

81. State: ID District: IDAHO FALLS
 Resource Area: MEDICINE LODGE
 Phone No.: 208-529-1020
 Key Area Name: SOUTH FORK SNAKE RIVER
 Habitats: RIP
 Total Acres: UNK Acres BLM: 15352
 Land-use Actions: LOG UTI DAM GRA URB
 Cooperators: FWS UFS UBR STA CON
 SHF: CLI ROC DAM STR
 Species: HALEU

82. State: ID District: IDAHO FALLS
 Resource Area: POCATELLO
 Phone No.: 208-236-6869
 Key Area Name: LOWER BLACKFOOT RIVER
 Habitats: SHR
 Total Acres: 10691 Acres BLM: 6468
 Land-use Actions: UTI DAM FAR GRA HIK ORV
 SHF: CLI ROC TAL TRE ROD STR UTI ROO
 Species: BUJAM BUSWA AQCHR FAMEX FASPA
 CICYA BUVIR ASOTU ASFLA HALEU

83. State: ID District: SALMON
 Resource Area: CHALLIS
 Phone No.: 208-756-5428
 Key Area Name: THOUSAND SPRINGS WETLAND
 Habitats: WET
 Total Acres: 7000 Acres BLM: 3300
 Land-use Actions: FAR GRA
 Cooperators: FWS STA CON
 SHF: CLI MEA SPR PON STR
 Species: FAPER AQCHR CICYA ASFLA FAMEX

84. State: ID District: SALMON
 Resource Area: CHALLIS/LEMHI
 Phone No.: 208-756-5400
 Key Area Name: UPPER SALMON RIVER CORRIDOR
 Habitats: RIP
 Total Acres: 42165 Acres BLM: 18860
 Land-use Actions: LOG MIN ROA GRA URB FIR
 HAR HIK
 Cooperators: STA
 SHF: CLI ROC TAL TRE SNA GAL WAS STR
 ROO
 Species: PAHAL HALEU FAPER FAMEX AQCHR

85. State: ID District: SHOSHONE
 Resource Area: BENNETT HILLS
 Phone No.: 208-886-2206
 Key Area Name: BENNETT HILLS/WENDELL
 PLANNING UNIT
 Habitats: SHR
 Total Acres: 700000 Acres BLM: 500000
 Land-use Actions: ROA FAR GRA HAR ORV
 PRE
 Cooperators: STA
 SHF: ROC BUR MAN ROD
 Species: ATCUN

86. State: ID District: SHOSHONE
 Resource Area: BENNETT HILLS
 Phone No.: 208-886-2206
 Key Area Name: CAMAS PRAIRIE
 Habitats: WET
 Total Acres: 285120 Acres BLM: 85000
 Land-use Actions: UTI FAR GRA HAR PRE
 Cooperators: STA UNI
 SHF: TRE MAN MEA WAS ROD RES STR
 UTI
 Species: BUREG BUSWA FAMEX BUJAM ATCUN
 BULAG FASPA

87. State: ID District: SHOSHONE
 Resource Area: BENNETT HILLS
 Phone No.: 208-886-2206
 Key Area Name: SNAKE RIVER CANYON
 Habitats: RIP
 Total Acres: 1880 Acres BLM: 225
 Land-use Actions: MIN UTI DAM FAR HAR
 Cooperators: FWS STA
 SHF: CLI ROC TAL TRE SNA ROD RES DAM
 STR UTI
 Species: HALEU AQCHR FAMEX BUREG BUJAM
 BUVIR PAHAL FASPA

88. State: MT District: BUTTE
 Resource Area: DILLON
 Phone No.: 406-683-2337
 Key Area Name: CENTENNIAL VALLEY

Habitats: WET
 Total Acres: 290000 Acres BLM: 85000
 Land-use Actions: LOG O&G ROA URB BLA
 Cooperators: FWS STA CON
 SHF: CLI OLD PON LAK RES STR
 Species: FAPER HALEU BUREG BUSWA STNEB
 ACGEN CICYA ASFLA BUJAM

89. State: MT District: BUTTE
 Resource Area: DILLON
 Phone No.: 406-683-2337
 Key Area Name: LIMA FOOTHILLS
 Habitats: GRA
 Total Acres: 220000 Acres BLM: 140000
 Land-use Actions: O&G FAR GRA HAR
 SHF: ROC ROD
 Species: BUREG BUSWA HALEU FAMEX AQCHR
 FAPER CICYA BUJAM FASPA
 BULAG

90. State: MT District: BUTTE
 Resource Area: DILLON
 Phone No.: 406-683-2337
 Key Area Name: LOWER BEAVERHEAD-BIGHOLE
 RIVER
 Habitats: WET
 Total Acres: 35000 Acres BLM: 5000
 Land-use Actions: LOG GRA HIK
 Cooperators: STA CON
 SHF: TRE STR
 Species: HALEU FAPER PAHAL BUJAM

91. State: MT District: BUTTE
 Resource Area: DILLON
 Phone No.: 406-683-2337
 Key Area Name: MADISON RIVER
 Habitats: RIP
 Total Acres: 32000 Acres BLM: 5100
 Land-use Actions: LOG O&G UTI GRA URB HAR
 HIK
 Cooperators: FWS STA CON
 SHF: TRE SNA RES STR
 Species: HALEU FAPER PAHAL FAMEX BUREG
 BUSWA ACGEN CICYA

92. State: MT District: BUTTE
 Resource Area: DILLON
 Phone No.: 406-683-2337
 Key Area Name: SWEETWATER BREAKS
 Habitats: GRA
 Total Acres: 131000 Acres BLM: 33000
 Land-use Actions: O&G FAR GRA HAR
 Cooperators: STA
 SHF: CLI ROC ROD
 Species: BUREG BUSWA FAMEX AQCHR
 BUJAM

93. State: MT District: LEWISTOWN
 Resource Area: GREAT FALLS
 Phone No.: 406-727-0503
 Key Area Name: KEVIN RIM (SPECIAL MANAGEMENT
 AREA)

Habitats: GRA
 Total Acres: UNK Acres BLM: 4657
 Land-use Actions: O&G PIP
 SHF: CLI ROC
 Species: FAMEX AQCHR BULAG

94. State: MT District: LEWISTOWN
 Resource Area: GREAT FALLS
 Phone No.: 406-727-0503
 Key Area Name: ROCKY MOUNTAIN EAST FRONT
 Habitats: CON
 Total Acres: UNK Acres BLM: 19518
 Land-use Actions: O&G PIP BOO BLA
 Cooperators: FWS UFS STA CON IND
 SHF: CLI ROC TAL STR
 Species: AQCHR CICYA BUJAM BUSWA BUREG
 FAMEX BUVIR AEACA

95. State: MT District: LEWISTOWN
 Resource Area: HAVRE, GREAT FALLS
 Phone No.: 406-265-5891
 Key Area Name: MARIAS RIVER
 Habitats: RIP
 Total Acres: 4140 Acres BLM: 1120
 Land-use Actions: O&G PIP DAM FAR GRA
 Cooperators: UBR PRI STA
 SHF: CLI ISL STR
 Species: HALEU FAMEX FAPER AQCHR

96. State: MT District: LEWISTOWN
 Resource Area: HAVRE & JUDITH
 Phone No.: 406-265-5891
 Key Area Name: UPPER MISSOURI RIVER
 Habitats: RIP
 Total Acres: 5380 Acres BLM: 1880
 Land-use Actions: PIP UTI FAR GRA PUB
 Cooperators: NPS PRI STA COU
 SHF: CLI TRE ISL STR
 Species: HALEU FAMEX FAPER AQCHR

97. State: MT District: LEWISTOWN
 Resource Area: JUDITH
 Phone No.: 406-538-7461
 Key Area Name: MISSOURI RIVER WILD & SCENIC
 RIVER
 Habitats: RIP
 Total Acres: UNK Acres BLM: 1500
 Land-use Actions: O&G FAR GRA PES MET PRE
 Cooperators: UBR PRI STA
 SHF: CLI ROC TRE SNA GAL ROD ISL STR ROO
 HOM
 Species: HALEU FAMEX

98. State: MT District: LEWISTOWN
 Resource Area: PHILLIPS
 Phone No.: 406-654-1240
 Key Area Name: BIG BEND OF THE MILK RIVER
 Habitats: RIP
 Total Acres: 38000 Acres BLM: 4000
 Land-use Actions: LOG
 SHF: SNA STR
 Species: HALEU

99. State: MT District: LEWISTOWN
 Resource Area: VALLEY
 Phone No.: 406-228-4316
 Key Area Name: MILK RIVER
 Habitats: RIP
 Total Acres: 35200 Acres BLM: 1400
 Land-use Actions: ROA UTI DAM FAR GRA URB
 HIK PUB
 Cooperators: FWS UBR PRI
 SHF: TRE SNA DAM STR UTI ROO HOM
 Species: HALEU AQCHR BUJAM FASPA

100. State: MT District: LEWISTOWN
 Resource Area: VALLEY
 Phone No.: 406-228-4316
 Key Area Name: ROCK CREEK CANYON
 Habitats: RIP
 Total Acres: 9600 Acres BLM: 3960
 Land-use Actions: GRA
 Cooperators: PRI
 SHF: CLI ROC TRE STR
 Species: FAMEX FASPA FACOL AQCHR
 FAPER

101. State: MT District: LEWISTOWN
 Resource Area: VALLEY
 Phone No.: 406-228-4316
 Key Area Name: ROCK CREEK-THOENY AREA
 Habitats: RIP
 Total Acres: 8960 Acres BLM: 5840
 Land-use Actions: ROA UTI FAR GRA
 Cooperators: PRI
 SHF: TRE SNA ROD STR UTI HOM
 Species: BUSWA BUREG CICYA

102. State: MT District: LEWISTOWN
 Resource Area: VALLEY
 Phone No.: 406-228-4316
 Key Area Name: TIMBER CREEK
 Habitats: RIP
 Total Acres: 11520 Acres BLM: 9560
 Land-use Actions: GRA
 Cooperators: FWS PRI
 SHF: CLI ROC TRE SNA BUR WAS RES STR
 HOM
 Species: FAMEX FASPA PAHAL AQCHR FAPER

103. State: MT District: MILES CITY
 Resource Area: POWDER RIVER
 Phone No.: 406-232-4331
 Key Area Name: HOWREYS ISLAND
 Habitats: RIP
 Total Acres: 631 Acres BLM: 631
 Land-use Actions: BOO
 Cooperators: FWS PRI STA
 SHF: SNA OLD ISL STR ROO
 Species: HALEU

104. State: MT District: MILES CITY
 Resource Area: POWDER RIVER
 Phone No.: 406-232-4331
 Key Area Name: LITTLE MISSOURI RIVER WINTER
 ROOST
 Habitats: RIP
 Total Acres: 1490 Acres BLM: 20
 Land-use Actions: NON
 Cooperators: FWS PRI STA
 SHF: SNA STR ROO
 Species: HALEU

105. State: MT District: MILES CITY
 Resource Area: POWDER RIVER
 Phone No.: 406-232-4331
 Key Area Name: LONE TREE MANAGEMENT AREA
 Habitats: CON
 Total Acres: 80773 Acres BLM: 70393
 Land-use Actions: GRA ORV
 Cooperators: FWS STA
 SHF: ROC TRE SNA MAN WAS ROD RES UTI
 Species: BUREG

106. State: ND District: DICKINSON
 Phone No.: 701-225-9148
 Key Area Name: TOBACCO GARDEN/WILLISTON
 Habitats: GRA
 Total Acres: 262600 Acres BLM: 900
 Land-use Actions: O&G PIP FAR GRA BLA PES PRE
 Cooperators: FWS UBR STA
 SHF: CLI ROC TRE WAS ROD RES STR HOM
 Species: AQCHR BUREG FAMEX BUSWA BUJAM

107. State: NM District: ALBUQUERQUE
 Resource Area: FARMINGTON
 Phone No.: 505-325-3581
 Key Area Name: BALD EAGLE ACEC
 Habitats: LAC
 Total Acres: 3600 Acres BLM: 3300
 Land-use Actions: O&G HIK ORV
 Cooperators: FWS UFS UBR
 SHF: TRE SNA MAN RES DAM STR ROO
 Species: HALEU BUVIR FAPER

108. State: NM District: ALBUQUERQUE
 Resource Area: FARMINGTON
 Phone No.: 505-325-3581
 Key Area Name: CHACO COAL AREA
 Habitats: SOU
 Total Acres: 400000 Acres BLM: 80000
 Land-use Actions: O&G MIN PIP HAR PUB BLA
 Cooperators: FWS BIA IND
 SHF: CLI ROC ROD
 Species: BUREG AQCHR FAMEX

109. State: NM District: LAS CRUCES
 Resource Area: LAS CRUCES/LORDSBURG
 Phone No.: 505-525-8228
 Key Area Name: APACHE BOX
 Habitats: RIP SHR GRA
 Total Acres: 400 Acres BLM: 400
 Land-use Actions: PUB ROC
 Cooperators: FWS PRI STA
 SHF: CLI ROC TRE STR
 Species: FAPER FASPA BUJAM

110. State: NM District: LAS CRUCES
 Resource Area: LAS CRUCES/LORDSBURG
 Phone No.: 505-525-8228
 Key Area Name: GILA RIVER LOWER BOX
 Habitats: RIP
 Total Acres: 2631 Acres BLM: 2631
 Land-use Actions: DAM GRA HAR HIK ORV
 SHF: CLI GAL STR ROO
 Species: BUALB HALEU BUANT FAPER FAMEX
 MIWHI AQCHR BUJAM TYALB BUNIT

111. State: NM District: LAS CRUCES
 Resource Area: LAS CRUCES/LORDSBURG
 Phone No.: 505-525-8228
 Key Area Name: GILA RIVER MIDDLE BOX
 Habitats: RIP
 Total Acres: 720 Acres BLM: 720
 Land-use Actions: MIN DAM HIK
 Cooperators: FWS
 SHF: CLI STR
 Species: FAPER FAMEX BUJAM CAAUR

112. State: NM District: LAS CRUCES
 Resource Area: WHITE SANDS
 Phone No.: 505-525-8228

Key Area Name: LAKE HOLLOMAN
 Habitats: SOU LAC
 Total Acres: 1695 Acres BLM: 1055
 Land-use Actions: UTI DAM HAR ORV PUB BOO
 PES MET PHO
 Cooperators: FWS DOD STA CON
 SHF: TRE PON RES STR UTI
 Species: FAPER BUSWA CICYA CAAUR FASPA
 ACCOO AQCHR FAMEX

113. State: NM District: ROSWELL
 Resource Area: CARLSBAD
 Phone No.: 505-887-6544
 Key Area Name: BIG CANYON
 Habitats: CON RIP DEC
 Total Acres: 3840 Acres BLM: 700
 Land-use Actions: NON
 Cooperators: FWS UFS PRI STA
 SHF: CLI ROC SNA GAL WAS SPR
 Species: STOC FAFEM FAPER

114. State: NM District: ROSWELL
 Resource Area: CARLSBAD
 Phone No.: 505-887-6544
 Key Area Name: EAST GUADALUPE FOOTHILLS
 Habitats: RIP SHR GRA SOU
 Total Acres: 1000000 Acres BLM: 500000
 Land-use Actions: O&G MIN ROA PIP UTI GRA
 FIR HAR ORV BLA
 Cooperators: UFS NPS PRI STA
 SHF: CLI ROC TRE BUR WAS PON STR UTI
 HOM
 Species: BUJAM FASPA BUVIR BUSWA AQCHR
 CICYA ASFLA FAMEX BUREG HALEU

115. State: NM District: ROSWELL
 Resource Area: CARLSBAD
 Phone No.: 505-887-6544
 Key Area Name: LOS MEDANOS RAPTOR AREA
 Habitats: SOU
 Total Acres: 89000 Acres BLM: 80000
 Land-use Actions: O&G MIN ROA PIP UTI GRA
 HAR ORV BLA HER
 Cooperators: FWS PRI STA CON
 SHF: TRE MAN ROD PON UTI HOM
 Species: PAUNI BUSWA BUVIR TYALB CICYA
 BUJAM FASPA BUREG ACCOO FAMEX

116. State: NM District: ROSWELL
 Resource Area: ROSWELL
 Phone No.: 505-624-1790
 Key Area Name: MACHO WILDLIFE HABITAT AREA
 Habitats: GRA
 Total Acres: 1750000 Acres BLM: 634700
 Land-use Actions: GRA
 SHF: ROC WAS
 Species: HALEU AQCHR

117. State: NM District: ROSWELL
 Resource Area: CARLSBAD
 Phone No.: 505-887-6544
 Key Area Name: SOUTHERN GYPSUM AREA
 Habitats: RIP GRA SOU
 Total Acres: 80000 Acres BLM: 75000
 Land-use Actions: O&G MIN GRA ORV
 Cooperators: PRI STA
 SHF: CLI TRE BUR SPR STR UTI PON
 Species: BUSWA BUJAM BUVIR ACSTR ACCOO

118. State: NM District: TULSA
 Resource Area: OKLAHOMA
 Phone No.: 405-231-5491
 Key Area Name: RED RIVER PUBLIC LANDS
 Habitats: RIP
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: O&G MIN FAR GRA ORV
 Cooperators: STA
 SHF: CLI TRE STR

119. State: NV District: ELKO
 Resource Area: WELLS
 Phone No.: 702-738-9711
 Key Area Name: GOSHUTE MOUNTAIN MIGRATION AREA
 Habitats: CON
 Total Acres: UNK Acres BLM: UNK
 Land-use Actions: MIN UTI GRA BOO
 Cooperators: FWS CON
 SHF: CLI ROC
 Species: ALL

120. State: NV District: ELKO
 Resource Area: WELLS
 Phone No.: 702-738-4071
 Key Area Name: JACKPOT YEARLONG USE AREA
 Habitats: SHR
 Total Acres: 1000 Acres BLM: 1000
 Land-use Actions: SHO HIK PUB
 Cooperators: FWS STA
 SHF: CLI ROC DAM STR UTI ROO
 Species: HALEU

121. State: NV District: ELKO
 Resource Area: WELLS
 Phone No.: 702-738-4071
 Key Area Name: SALT LAKE ACEC
 Habitats: SHR
 Total Acres: 6037 Acres BLM: 6037
 Land-use Actions: SHO HIK ORV PUB BOO
 PRE
 Cooperators: FWS DOD STA CON
 SHF: CLI ROC MEA SPR PON LAK
 Species: FAPER

122. State: NV District: ELKO
 Resource Area: WELLS
 Phone No.: 702-738-9711
 Key Area Name: SOUTH GOSHUTE ROOST SITE
 Habitats: CON
 Total Acres: 5 Acres BLM: 5
 Land-use Actions: MIN FIR BOO PRE
 SHF: CLI ROC SNA OLD WIN
 Species: HALEU AQCHR

123. State: NV District: ELY
 Resource Area: EGAN
 Phone No: 702-289-4865
 Key Area Name: DRY MOUNTAIN, NEWARK VALLEY
 Habitats: SHR
 Total Acres: 380000 Acres BLM: 380000
 Land-use Actions: O&G MIN GEO GRA BLA HAR
 Cooperators: PRI STA
 SHF: TRE ROD
 Species: BUREG FAMEX

124. State: OR District: BURNS
 Resource Area: ANDREWS
 Phone No.: 503-573-5241
 Key Area Name: CATLOW RIM
 Habitats: SHR
 Total Acres: 6460 Acres BLM: 5310
 Land-use Actions: HAR
 SHF: CLI ROC STR
 Species: AQCHR FAMEX FASPA BUJAM BUVIR
 CAAUR

125. State: OR District: BURNS
 Resource Area: ANDREWS
 Phone No.: 503-573-5241
 Key Area Name: PICKETT RIM
 Habitats: SHR
 Total Acres: 4000 Acres BLM: 4000
 Land-use Actions: HAR
 SHF: CLI ROC
 Species: AQCHR FAMEX FASPA

126. State: OR District: BURNS
 Resource Area: THREE-RIVERS
 Phone No.: 503-573-5241
 Key Area Name: RATTLESNAKE/COFFEETOP/MILL CREEK BALD EAGLE ROOSTS
 Habitats: CON
 Total Acres: 120 Acres BLM: 60
 Land-use Actions: FIR
 Cooperators: FWS UFS STA
 SHF: ROO
 Species: HALEU

127. State: OR District: BURNS
 Resource Area: THREE-RIVERS
 Phone No.: 503-573-5241
 Key Area Name: SILVER CREEK
 Habitats: CON
 Total Acres: 14 Acres BLM: 14
 Land-use Actions: ROA
 Cooperators: FWS UFS STA
 SHF: SNA ROO
 Species: HALEU

128. State: OR District: BURNS
 Resource Area: THREE-RIVERS
 Phone No.: 503-573-5241
 Key Area Name: STINKING WATER MOUNTAINS
 Habitats: SHR
 Total Acres: 1 Acres BLM: 1
 Land-use Actions: NON
 Cooperators: FWS STA
 SHF: SNA
 Species: HALEU

129. State: OR District: EUGENE
 Resource Area: COAST RANGE
 Phone No: 503-683-6600
 Key Area Name: SIUSLAW RIVER (COAST RANGE)
 Habitats: CON RIP
 Total Acres: 70000 Acres BLM: 31000
 Land-use Actions: LOG ROA FIR
 Cooperators: FWS STA UNI UFS
 SHF: TRE SNA OLD STR
 Species: HALEU PAHAL STOCC BUJAM OTASI
 GLGNO AEACA ACCOO ACSTR

130. State: OR District: EUGENE
 Resource Area: COAST RANGE
 Phone No: 503-683-6600
 Key Area Name: TRIANGLE LAKE
 Habitats: CON
 Total Acres: 22000 Acres BLM: 8000
 Land-use Actions: LOG ROA URB FIR ORV
 Cooperators: FWS STA UNI
 SHF: TRE SNA OLD STR LAK
 Species: HALEU PAHAL STOCC BUJAM
 BUVIR OTASI GLGNO AEACA
 FASPA ACCOO

131. State: OR District: EUGENE
 Resource Area: COAST RANGE
 Phone No: 503-683-6600
 Key Area Name: WINDY PEAK
 Habitats: CON RIP
 Total Acres: 6000 Acres BLM: 6000
 Land-use Actions: LOG ROA FIR
 Cooperators: UFS FWS STA UNI
 SHF: TRE SNA STR
 Species: STOCC BUJAM BUVIR OTASI GLGNO
 AEACA ACCOO ACSTR

132. State: OR District: EUGENE
 Resource Area: MCKENZIE
 Phone No: 503-683-6600
 Key Area Name: COBURG HILLS
 Habitats: CON
 Total Acres: 30000 Acres BLM: 7000
 Land-use Actions: LOG ROA URB FIR PUB ORV
 SHO POI
 Cooperators: FWS PRI STA UNI
 SHF: CLI ROC TRE SNA OLD PON STR
 ROO PAS
 Species: HALEU AQCHR BUJAM BUVIR
 OTASI GLGNO AEACA FASPA
 ACCIP

133. State: OR District: EUGENE
 Resource Area: MCKENZIE
 Phone No: 503-683-6600
 Key Area Name: FALL CREEK LAKE
 Habitats: CON RIP
 Total Acres: 42000 Acres BLM: 9000
 Land-use Actions: LOG ROA URB FIR ORV
 Cooperators: FWS STA UNI
 SHF: TRE SNA OLD RES STR
 Species: HALEU PAHAL STOCC BUJAM BUVIR
 OTASI GLGNO AEACA FASPA ACCIP

134. State: OR District: EUGENE
 Resource Area: MCKENZIE
 Phone No: 503-683-6600
 Key Area Name: MCKENZIE RIVER
 Habitats: CON RIP
 Total Acres: 66000 Acres BLM: 17000
 Land-use Actions: LOG ROA URB FIR ORV PUB
 Cooperators: FWS STA UNI
 SHF: TRE SNA OLD STR
 Species: HALEU PAHAL STOCC BUJAM BUVIR
 OTASI AEACA FASPA ACCIP

135. State: OR District: EUGENE
 Resource Area: SOUTH VALLEY
 Phone No: 503-683-6600
 Key Area Name: COTTAGE GROVE LAKE

Habitats: CON RIP
 Total Acres: 20000 Acres BLM: 5000
 Land-use Actions: LOG ROA URB FIR ORV
 Cooperators: FWS UFS UNI ACE
 SHF: CLI ROC TRE SNA OLD RES STR
 Species: HALEU PAHAL STOCC BUJAM
 AQCHR BUVIR OTASI GLGLO
 AEACA FASPA

136. State: OR District: EUGENE
 Resource Area: SOUTH VALLEY
 Phone No: 503-683-6600
 Key Area Name: DORENA LAKE
 Habitats: CON RIP
 Total Acres: 23000 Acres BLM: 6000
 Land-use Actions: LOG ROA FIR ORV
 Cooperators: FWS STA UNI ACE
 SHF: CLI ROC TRE SNA OLD RES
 Species: HALEU PAHAL STOCC

137. State: OR District: EUGENE
 Resource Area: SOUTH VALLEY
 Phone No: 503-683-6600
 Key Area Name: SIUSLAW RIVER (SOUTH
 VALLEY)
 Habitats: CON RIP
 Total Acres: 59000 Acres BLM: 29000
 Land-use Actions: LOG ROA FIR
 Cooperators: FWS STA UNI
 SHF: TRE SNA OLD STR
 Species: STOCC BUJAM BUVIR OTASI GLGNO
 AEACA ACCOO ACSTR

138. State: OR District: EUGENE
 Resource Area: SOUTH VALLEY
 Phone No: 503-683-6600
 Key Area Name: SOUTH VALLEY
 Habitats: CON RIP
 Total Acres: 55000 Acres BLM: 28000
 Land-use Actions: LOG ROA FIR
 Cooperators: FWS STA UNI UFS
 SHF: CLI ROC TRE SNA OLD STR
 Species: STOCC AQCHR BUJAM ACGEN
 BUVIR OTASI GLGNO AEACA
 FASPA ACCOO

139. State: OR District: LAKEVIEW
 Resource Area: HIGH DESERT
 Phone No.: 503-947-2177
 Key Area Name: ABERT RIM/CHEWAUCAN MARSH
 Habitats: COA
 Total Acres: 45000 Acres BLM: 30000
 Land-use Actions: MIN
 SHF: CLI ROC TAL MAN MEA ROD LAK STR
 UTI
 Species: AQCHR FAMEX BUSWA BUJAM BULAG
 HALEU

140. State: OR District: LAKEVIEW
 Resource Area: KLAMATH
 Phone No.: 503-947-2177
 Key Area Name: BRYANT MOUNTAIN
 Habitats: CON
 Total Acres: 2500 Acres BLM: 1700
 Land-use Actions: LOG ROA UTI FIR
 Cooperators: FWS STA
 SHF: SNA OLD LAK RES ROO
 Species: HALEU

141. State: OR District: LAKEVIEW

Resource Area: KLAMATH

Phone No.: 503-947-2977

Key Area Name: GERBER RESERVOIR

Habitats: CON

Total Acres: 8000 Acres BLM: 7000

Land-use Actions: LOG ROA FIR HIK PUB

Cooperators: FWS UBR STA

SHF: SNA OLD

Species: HALEU PAHAL ACGEN

142. State: OR District: LAKEVIEW

Resource Area: WARNER LAKES

Phone No.: 503-947-2177

Key Area Name: FISH CREEK RIM/WARNER VALLEY

Total Acres: 75000 Acres BLM: 12000

Land-use Actions: GEO URB PES PRE

SHF: CLI TRE MEA PON LAK STR

Species: FAPER HALEU AQCHR FAMEX BUVIR

143. State: OR District: MEDFORD

Resource Area: ALL 5 RESOURCE AREAS

Phone No.: 503-776-3758

Key Area Name: SPOTTED OWL MANAGEMENT AREAS

Habitats: CON

Total Acres: 20387 Acres BLM: 20387

Land-use Actions: LOG MIN ROA UTI FIR SHO

Cooperators: STA COU CON ACE

SHF: SNA OLD STR

Species: STOCC BUVIR ACGEN BUJAM PAHAL

144. State: OR District: MEDFORD

Resource Area: GRANTS PASS

Phone No.: 503-776-3758

Key Area Name: HELLGATE RECREATION SECTION, ROGUE RIVER

Habitats: RIP

Total Acres: 7780 Acres BLM: 5300

Land-use Actions: MIN URB FIR HIK PUB

Cooperators: FWS UFS PRI STA COU

SHF: CLI ROC TAL TRE SNA OLD MEA WAS STR

Species: PAHAL HALEU

145. State: OR District: PRINEVILLE

Resource Area: CENTRAL OREGON

Phone No.: 503-447-4115

Key Area Name: UPPER CROOKED RIVER/BEAVER CREEK

Habitats: GRA RIP SHR

Total Acres: 30000 Acres BLM: 30000

Land-use Actions: LOG FAR GRA

Cooperators: UFS PRI STA

SHF: CLI TRE SNA MEA ROD RES ROO

Species: HALEU AQCHR BUREG BUSWA BUJAM FAMEX

146. State: OR District: ROSEBURG

Resource Area: DRAIN

Phone No.: 503-672-4491

Key Area Name: UMPQUA RIVER CORRIDOR

Habitats: CON RIP

Total Acres: UNK Acres BLM: 3662

Land-use Actions: LOG ROA FIR PUB SHO

Cooperators: STA

SHF: SNA OLD STR

Species: HALEU PAHAL STOCC

147. State: OR District: SALEM

Resource Area: ALL 5 RESOURCE AREAS

Phone No.: 503-399-5662

Key Area Name: SPOTTED OWL HABITAT SITES

Habitats: CON

Total Acres: 100000 Acres BLM: 40000

Land-use Actions: LOG

Cooperators: STA

SHF: OLD

Species: STOCC ACGEN

148. State: OR District: VALE

Resource Area: NORTH & SOUTH

Phone No.: 503-473-3144

Key Area Name: OWYHEE RIVER CANYON

Habitats: SHR GRA RIP

Total Acres: 38400 Acres BLM: 33720

Land-use Actions: FIR HIK

Cooperators: STA

SHF: CLI ROC TAL TRE BUR MAN WAS ROD

SPR STR

Species: HALEU AQCHR BUREG BUSWA FASPA CICYA BUJAM PAHAL

149. State: OR District: VALE

Resource Area: NORTH MALHEUR

Phone No.: 503-473-3144

Key Area Name: CHALK BUTTE RAPTOR AREA

Habitats: SHR GRA

Total Acres: 50690 Acres BLM: 47490

Land-use Actions: MIN GEO ROA ORV SHO

Cooperators: FWS STA

SHF: ROC MAN ROD

Species: BUREG AQCHR FAMEX BUJAM ATCUN

150. State: UT District: CEDAR CITY

Resource Area: BEAVER RIVER

Phone No.: 801-586-2458

Key Area Name: KENARRA CANYON

Total Acres: 3000 Acres BLM: 2500

Land-use Actions: NON

Cooperators: FWS NPS

SHF: ROC CLI

Species: FAPER

151. State: UT District: CEDAR CITY

Resource Area: BEAVER RIVER

Phone No.: 801-586-2458

Key Area Name: RUSH LAKE

Habitats: CON

Total Acres: 50 Acres BLM: 10

Land-use Actions: NON

Cooperators: FWS

SHF: ROO ROC TRE

Species: AQCHR HALEU

152. State: UT District: CEDAR CITY

Resource Area: BEAVER RIVER

Phone No.: 801-586-2458

Key Area Name: SUMMIT CANYON ROOST SITE

Habitats: RIP

Total Acres: 150 Acres BLM: 150

Land-use Actions: NON

Cooperators: FWS STA

SHF: ROO TRE STR

Species: HALEU

153. State: UT District: MOAB

Resource Area: GRAND

Phone No.: 801-259-8193

Key Area Name: CISCO DESERT

Habitats: SOU

Total Acres: 242560 Acres BLM: 203750

Land-use Actions: O&G PIP BLA

Cooperators: FWS STA CON

SHF: CLI ROC TRE ROD

Species: AQCHR BUREG BUSWA HALEU BUJAM
BULAG FAMEX

154. State: UT District: MOAB

Resource Area: GRAND

Phone No.: 801-259-8193

Key Area Name: COLORADO RIVER-PORTAL/DEAD
HORSE POINT

Habitats: DEC

Total Acres: 100000 Acres BLM: 9500

Land-use Actions: O&G HAR PUB

Cooperators: FWS

SHF: CLI STR

Species: FAPER

155. State: UT District: MOAB

Resource Area: GRAND

Phone No.: 801-259-8193

Key Area Name: DOLORES TRIANGLE

Habitats: DEC

Total Acres: 100000 Acres BLM: 100000

Land-use Actions: MIN BLA

Cooperators: FWS STA

SHF: CLI STR

Species: FAPER BUJAM

156. State: UT District: MOAB

Resource Area: GRAND

Phone No.: 801-259-8193

Key Area Name: PROFESSOR VALLEY/MCGRAW
BOTTOM

Habitats: RIP

Total Acres: 5000 Acres BLM: 4500

Land-use Actions: MIN GRA LOG

Cooperators: FWS STA

SHF: TRE

Species: HALEU

157. State: UT District: MOAB

Resource Area: GRAND

Phone No.: 801-259-5006

Key Area Name: WESTWATER CANYON/FISH FORD

Habitats: SOU

Total Acres: 10000 Acres BLM: 9500

Land-use Actions: MIN

Cooperators: FWS STA CON

SHF: CLI TRE STR ROO

Species: HALEU FAPER AQCHR

158. State: UT District: CEDAR CITY

Resource Area: KANAB

Phone No.: 801-644-2672

Key Area Name: PANGUITCH

Habitats: RIP SHR

Total Acres: 50000 Acres BLM: 18000

Land-use Actions: UTI GRA HAR PRE

Cooperators: PRI SER

SHF: TRE MEA WAS ROD PON STR UTI ROO
HOM

Species: HALEU AQCHR BULAG FAMEX BUJAM
BUREG ATCUN

159. State: UT District: MOAB

Resource Area: PRICE RIVER

Phone No.: 801-637-4584

Key Area Name: BOOKCLIFF RAPTOR NESTING
AREA

Habitats: SHR

Total Acres: 31000 Acres BLM: 80

Land-use Actions: MIN ROA BLA

Cooperators: FWS STA

SHF: CLI ROC MAN

Species: AQCHR FAMEX BUJAM

160. State: UT District: MOAB

Resource Area: PRICE RIVER

Phone No.: 801-637-4584

Key Area Name: DESOLATION CANYON

Habitats: RIP

Total Acres: 4000 Acres BLM: 2000

Land-use Actions: NON

Cooperators: STA

SHF: CLI ROC TRE GAL ISL STR ROO

Species: HALEU FAPER

161. State: UT District: MOAB

Resource Area: SAN JUAN

Phone No.: 801-587-2141

Key Area Name: SAN JUAN RESOURCE AREA
EXCLUDING RIVER

Habitats: RIP SHR GRA SOU

Total Acres: UNK Acres BLM: 1800000

Land-use Actions: O&G MIN ROA UTI DAM FAR

ORV ROC BOO BLA

Cooperators: FWS UFS NPS STA

SHF: CLI SNA BUR MAN ROD RES DAM STR
UTI ROO

Species: FAPER FAMEX HALEU BUJAM
CICYA FASPA ACCOO BULAG
BUREG AQCHR

162. State: UT District: MOAB

Resource Area: SAN JUAN

Phone No.: 801-587-2141

Key Area Name: SAN JUAN RIVER

Habitats: RIP

Total Acres: 7200 Acres BLM: 5400

Land-use Actions: O&G UTI FAR FIR BLA

Cooperators: FWS STA ITR

SHF: CLI TRE SNA MAN ROD ISL STR
UTI

Species: HALEU BUJAM BUVIR FAPER

163. State: UT District: MOAB

Resource Area: SAN RAFAEL

Phone No.: 801-637-4584

Key Area Name: CASTLE GATE CLIFFS

Habitats: CON

Total Acres: 103680 Acres BLM: 69120

Land-use Actions: GEO ORV MIN

Cooperators: UFS

SHF: CLI TAL

Species: AQCHR FAMEX BUJAM

164. State: UT District: MOAB
 Resource Area: SAN RAFAEL
 Phone No.: 801-637-4584
 Key Area Name: GREEN RIVER/LABYRINTH CANYON
 Habitats: RIP
 Total Acres: 43520 Acres BLM: 37760
 Land-use Actions: HIK
 Cooperators: STA
 SHF: CLI ROC TAL STR
 Species: HALEU BUJAM FAPER

165. State: UT District: RICHFIELD
 Resource Area: HENRY MOUNTAIN
 Phone No.: 801-542-3461
 Key Area Name: BIG HOLLOW RAPTOR AREA
 Habitats: SOU
 Total Acres: 9185 Acres BLM: 8718
 Land-use Actions: O&G HAR ORV PUB
 Cooperators: PRI STA COU CON
 SHF: CLI ROC TAL TRE SNA WAS ROD STR ROO
 Species: HALEU AQCHR FAPER

166. State: UT District: RICHFIELD
 Resource Area: HOUSE RANGE
 Phone No.: 801-743-6811
 Key Area Name: DEEP CREEK MOUNTAINS
 Habitats: CON GRA
 Total Acres: 210490 Acres BLM: 176131
 Land-use Actions: FIR BOO
 Cooperators: FWS PRI STA
 SHF: CLI ROO TAL TRE SNA MEA WAS ROD
 SPR STR
 Species: HALEU AQCHR ACCOO BUJAM BUREG
 ACGEN PAHAL FACOL FAPER CICYA

167. State: UT District: RICHFIELD
 Resource Area: SEVIER RIVER
 Phone No.: 801-896-8221
 Key Area Name: FOUNTAIN GREEN
 Habitats: CON
 Total Acres: 15828 Acres BLM: 7482
 Land-use Actions: UTI FIR HAR ORV BLA
 Cooperators: STA
 SHF: ROC SNA ROD STR UTI
 Species: HALEU AQCHR BUJAM BULAG

168. State: UT District: RICHFIELD
 Resource Area: SEVIER RIVER
 Phone No.: 801-896-8221
 Key Area Name: LOST CREEK
 Habitats: RIP
 Total Acres: 13579 Acres BLM: 6164
 Land-use Actions: FIR HAR HIK BLA
 Cooperators: STA
 SHF: CLI ROC TRE SNA MAN SPR PON STR
 Species: HALEU AQCHR

169. State: UT District: RICHFIELD
 Resource Area: SEVIER RIVER
 Phone No.: 801-896-8221
 Key Area Name: OTTER CREEK RESERVOIR
 Habitats: SHR LAC
 Total Acres: 16640 Acres BLM: 14080
 Land-use Actions: UTI FIR HAR HIK ORV PUB BLA
 Cooperators: STA IND
 SHF: CLI ROC ROO SNA ROD SPR RES DAM
 STR UTI
 Species: HALEU AQCHR PAHAL

170. State: UT District: RICHFIELD
 Resource Area: SEVIER RIVER
 Phone No.: 801-896-8221
 Key Area Name: PIUTE RESERVOIR
 Habitats: LAC
 Total Acres: 10240 Acres BLM: 3200
 Land-use Actions: UTI FIR HAR HIK ORV BLA
 Cooperators: STA
 SHF: TRE SNA ROD RES DAM STR UTI
 ROO
 Species: HALEU

171. State: UT District: RICHFIELD
 Resource Area: SEVIER RIVER
 Phone No.: 801-896-8221
 Key Area Name: WILLOW CREEK
 Habitats: CON
 Total Acres: 15135 Acres BLM: 9860
 Land-use Actions: FIR HAR ORV BLA
 Cooperators: STA
 SHF: CLI ROC TRE SNA MAN ROD RES DAM
 STR ROO
 Species: HALEU AQCHR

172. State: UT District: RICHFIELD
 Resource Area: SEVIER RIVER
 Phone No.: 801-896-8221
 Key Area Name: YUBA RESERVOIR
 Habitats: LAC
 Total Acres: 13000 Acres BLM: 9000
 Land-use Actions: UTI FIR HAR HIK ORV BLA
 Cooperators: STA
 SHF: ROC SNA ROD RES DAM STR UTI
 Species: HALEU AQCHR BULAG BUJAM

173. State: UT District: RICHFIELD
 Resource Area: WARM SPRINGS
 Phone No.: 801-743-6811
 Key Area Name: CRICKETT
 Habitats: SHR GRA
 Total Acres: 45800 Acres BLM: 38760
 Land-use Actions: MIN GEO GRA ORV
 Cooperators: FWS STA
 SHF: CLI ROC WAS ROD UTI BOX
 Species: BUREG AQCHR FAMEX BUJAM BULAG
 CICYA ACSTR

174. State: UT District: RICHFIELD
 Resource Area: WARM SPRINGS
 Phone No.: 801-743-6811
 Key Area Name: DEADMAN'S WASH
 Habitats: SHR CON
 Total Acres: 6200 Acres BLM: 5100
 Land-use Actions: MIN GRA BOO
 Cooperators: FWS STA
 SHF: CLI ROC TAL TRE WAS ROD
 Species: AQCHR FAMEX

175. State: UT District: RICHFIELD
 Resource Area: WARM SPRINGS
 Phone No.: 801-743-6811
 Key Area Name: LEDGER CANYON
 Habitats: SHR CON
 Total Acres: 2700 Acres BLM: 2060
 Land-use Actions: MIN GRA BOO
 Cooperators: FWS STA
 SHF: CLI ROC TAL TRE WAS ROD
 Species: AQCHR FAMEX BUJAM

176. State: UT District: RICHFIELD
 Resource Area: WARM SPRINGS
 Phone No: 801-743-6811
 Key Area Name: PAVANT BUTTE
 Habitats: SHR CON
 Total Acres: 8400 Acres BLM: 7400
 Land-use Actions: GRA ORV PES MET
 Cooperators: FWS STA CON
 SHF: CLI ROC TAL TRE WAS ROD UTI PON
 Species: FAPER BUJAM BUREG AQCHR FAMEX
 ASOTU ATCUN BULAG CICYA

177. State: UT District: RICHFIELD
 Resource Area: WARM SPRINGS
 Phone No: 801-743-6811
 Key Area Name: SEVIER LAKE
 Habitats: SHR
 Total Acres: 15400 Acres BLM: 13480
 Land-use Actions: GRA ORV
 Cooperators: FWS STA
 SHF: WAS ROD UTI BOX
 Species: BUREG BULAG CICYA AQCHR

178. State: UT District: SALT LAKE
 Resource Area: BEAR RIVER
 Phone No.: 801-524-4453
 Key Area Name: CRAWFORD MOUNTAINS
 Habitats: SHR
 Total Acres: 41988 Acres BLM: 23768
 Land-use Actions: O&G MIN GRA BLA
 Cooperators: STA
 SHF: CLI ROC TRE OLD ROD STR ROO
 Species: HALEU AQCHR BUSWA BUJAM
 FAMEX FAPER BUREG CAAUR
 FASPA BULAG

179. State: UT District: SALT LAKE
 Resource Area: PONY EXPRESS
 Phone No.: 801-524-4453
 Key Area Name: RUSH VALLEY/CEDAR VALLEY/
 SKULL VALLEY
 Habitats: SHR
 Total Acres: 70720 Acres BLM: UNK
 Land-use Actions: MIN ROA PIP UTI FAR GRA FIR
 ORV PRE MIL
 Cooperators: FWS UFS PRI STA CON
 SHF: ROO CLI TRE
 Species: HALEU BUREG

180. State: UT District: VERNAL
 Resource Area: BOOK CLIFFS
 Phone No.: 801-789-1362
 Key Area Name: BONANZA FERRUGINOUS HAWK
 AREA

Habitats: SHR
 Total Acres: 33000 Acres BLM: 22000
 Land-use Actions: O&G ROA UTI ORV BLA
 Cooperators: FWS STA IND
 SHF: CLI TRE ROD
 Species: BUREG BUSWA AQCHR BUJAM ATCUN
 HALEU BULAG CICYA FASPA

181. State: UT District: VERNAL
 Resource Area: BOOK CLIFFS
 Phone No.: 801-789-1362
 Key Area Name: GREEN RIVER BALD EAGLE AREA

Habitats: RIP
 Total Acres: 5400 Acres BLM: 2000
 Land-use Actions: O&G MIN PIP UTI URB FIR HAR
 Cooperators: FWS NPS STA
 SHF: TRE SNA STR ROO
 Species: HALEU AQCHR

182. State: UT District: VERNAL
 Resource Area: DIAMOND MTN.
 Phone No.: 801-789-1362
 Key Area Name: DRY FORK CANYON
 Habitats: SHR
 Total Acres: 3000 Acres BLM: 2500
 Land-use Actions: FAR ROC
 Cooperators: FWS STA CON
 SHF: CLI ROC TRE SNA MEA STR
 Species: FAPER ACCOO ACSTR BUJAM

183. State: UT District: VERNAL
 Resource Area: DIAMOND MTN.
 Phone No.: 801-789-1362
 Key Area Name: GREEN RIVER/BROWN'S PARK
 Habitats: RIP
 Total Acres: 2600 Acres BLM: 1600
 Land-use Actions: ROA PUB
 Cooperators: FWS UFS UBR STA
 SHF: CLI ROC TRE STR ROO
 Species: HALEU FAPER BUJAM

184. State: UT District: VERNAL
 Resource Area: DIAMOND MTN.
 Phone No.: 801-789-1362
 Key Area Name: PARIETTE WETLAND
 DEVELOPMENT AREA

Habitats: WET
 Total Acres: 9000 Acres BLM: 7077
 Land-use Actions: O&G ORV PUB
 Cooperators: FWS UBR STA
 SHF: CLI ROC TRE SNA MEA PON STR
 ROO
 Species: AQCHR HALEU FAMEX FAPER
 BULAG CICYA FASPA BUJAM
 ATCUN BUVIR

185. State: UT District: VERNAL
 Resource Area: DIAMOND MOUNTAIN
 Phone No.: 801-789-1362
 Key Area Name: PELICAN LAKE
 Habitats: LAC
 Total Acres: 400 Acres BLM: 400
 Land-use Actions: FAR PUB HIK LOG
 Cooperators: STA CON
 SHF: TRE SNA LAK ROO
 Species: HALEU

186. State: WA District: SPOKANE
 Resource Area: BORDER
 Phone No.: 509-456-2570
 Key Area Name: BADGER SLOPE
 Habitats: SHR
 Total Acres: 1500 Acres BLM: 600
 Land-use Actions: ROA UTI FAR GRA URB FIR
 ORV
 Cooperators: STA
 SHF: CLI ROC BUR STR
 Species: FAMEX BUREG ATCUN

187. State: WA District: SPOKANE
 Resource Area: BORDER/WENATCHEE
 Phone No.: 509-456-2570
 Key Area Name: COLUMBIA RIVER BREAKS
 Habitats: LAC
 Total Acres: UNK Acres BLM: 500
 Land-use Actions: UTI DAM FAR FIR ORV ROC BOO
 Cooperators: NPS UBR STA
 SHF: CLI ROC TRE SNA ROD LAK RES DAM STR
 Species: AQCHR FAMEX BUREG

188. State: WA District: SPOKANE
 Resource Area: BORDER/WENATCHEE
 Phone No.: 509-456-2570
 Key Area Name: CHANNLED SCABLANDS
 Habitats: RIP SHR GRA WET
 Total Acres: 100000 Acres BLM: 3000
 Land-use Actions: MIN ROA UTI FAR GRA URB FIR
 BOO BLA
 Cooperators: NPS UBR PRI STA COU
 SHF: CLI ROC TAL TRE MEA WAS ROD LAK
 STR UTI
 Species: BUJAM BUREG FAMEX FAPER AQCHR
 BUSWA BULAG NYSCA CICYA HALEU

189. State: WA District: SPOKANE
 Resource Area: BORDER
 Phone No.: 509-456-2570
 Key Area Name: GRANDE RONDE/SNAKE RIVER
 Habitats: SHR
 Total Acres: UNK Acres BLM: 1000
 Land-use Actions: ROA FAR GRA URB ROC
 Cooperators: FWS PRI STA
 SHF: CLI ROC TAL STR
 Species: FAPER FAMEX BUJAM AQCHR

190. State: WA District: SPOKANE
 Resource Area: BORDER
 Key Area Name: JUNIPER FOREST
 Phone No.: 509-456-2570
 Habitats: CON SHR GRA
 Total Acres: 14000 Acres BLM: 11000
 Land-use Actions: O&G ROA UTI FAR GRA FIR ORV
 Cooperators: STA
 SHF: TRE BUR ROD BOX
 Species: BUREG BUSWA BULAG BUJAM BUVIR

191. State: WA District: SPOKANE
 Phone No.: 509-456-2570
 Resource Area: BORDER
 Key Area Name: KETTLE RIVER
 Habitats: RIP
 Total Acres: UNK Acres BLM: 400
 Land-use Actions: LOG ROA FAR GRA PUB
 Cooperators: UFS STA
 SHF: TRE SNA STR
 Species: PAHAL HALEU AQCHR

192. State: WA District: SPOKANE
 Resource Area: BORDER
 Phone No.: 509-456-2570
 Key Area Name: PEND ORIELLE CANYON
 Habitats: CON RIP DEC WET LAC
 Total Acres: 5000 Acres BLM: 1500
 Land-use Actions: LOG MIN ROA UTI DAM ORV
 BOO
 Cooperators: STA
 SHF: CLI SNA OLD SPR PON RES ISL STR UTI
 Species: HALEU PAHAL ACGEN STNEB

193. State: WA District: SPOKANE
 Resource Area: WENATCHEE
 Phone No.: 509-662-4223
 Key Area Name: BREWSTER BALD EAGLE ROOST
 Habitats: CON
 Total Acres: 650 Acres BLM: 200
 Land-use Actions: LOG ROA UTI FAR FIR PUB
 BOO
 Cooperators: STA
 SHF: CLI TAL TRE SNA RES UTI ROO
 Species: HALEU

194. State: WA District: SPOKANE
 Resource Area: WENATCHEE
 Phone No.: 509-662-4223
 Key Area Name: MOSES COULEE
 Habitats: RIP SHR
 Total Acres: 10000 Acres BLM: 2000
 Land-use Actions: O&G MIN ROA UTI FAR GRA
 FIR ORV BOO BLA
 Cooperators: STA
 SHF: CLI ROC TAL MEA WAS SPR PON STR
 Species: AQCHR BUJAM BUREG HALEU FAMEX
 FAPER BUSWA BULAG CICYA

195. State: WA District: SPOKANE
 Resource Area: WENATCHEE
 Phone No.: 509-662-4223
 Key Area Name: NORTHRUP CANYON
 Habitats: CON
 Total Acres: 800 Acres BLM: 160
 Land-use Actions: HIK PUB BOO
 Cooperators: STA
 SHF: CLI ROC TAL TRE SNA PON ROO HOM
 Species: HALEU

196. State: WA District: SPOKANE
 Resource Area: WENATCHEE
 Phone No.: 509-662-4223
 Key Area Name: SADDLE MOUNTAIN
 Habitats: SHR
 Total Acres: 20000 Acres BLM: 6000
 Land-use Actions: ROA UTI GRA
 Cooperators: FWS STA
 SHF: CLI ROC BUR STR
 Species: FAMEX BUREG AQCHR BUJAM

197. State: WA District: SPOKANE
 Phone No.: 509-662-4223
 Resource Area: WENATCHEE
 Key Area Name: SAN JUAN ISLANDS
 Habitats: COA
 Total Acres: UNK Acres BLM: 300
 Land-use Actions: URB PUB
 Cooperators: PRI STA COU CON
 SHF: CLI SNA OLD LAK ISL
 Species: HALEU

198. State: WA District: SPOKANE
 Resource Area: WENATCHEE
 Phone No.: 509-662-4223
 Key Area Name: SKAGIT RIVER BALD EAGLE
 RESERVE
 Habitats: CON RIP
 Total Acres: 400 Acres BLM: 40
 Land-use Actions: UTI FIR HIK PUB
 Cooperators: FWS CON
 SHF: SNA OLD STR
 Species: HALEU PAHAL

199. State: WA District: SPOKANE
 Resource Area: WENATCHEE
 Phone No.: 509-662-4223
 Key Area Name: YAKIMA CANYON
 Habitats: SHR RIP
 Total Acres: 32000 Acres BLM: 4000
 Land-use Actions: O&G ROA UTI GRA FIR LOG
 Cooperators: STA
 SHF: CLI ROC TAL SNA BUR WAS ISL DAM
 STR UTI
 Species: FAMEX AQCHR HALEU BUJAM
 FASPA BULAG BUVIR ASFLA
 CICYA

200. State: WY District: CASPER
 Resource Area: BUFFALO
 Phone No.: 307-684-5586
 Key Area Name: GILLETTE/POWDER RIVER BASIN
 Habitats: SHR
 Total Acres: 3043840 Acres BLM: 236067
 Land-use Actions: O&G MIN ROA UTI BLA
 Cooperators: FWS STA IND
 SHF: CLI ROC TRE ROO
 Species: AQCHR BUREG FAMEX HALEU

201. State: WY District: CASPER
 Resource Area: PLATTE RIVER
 Phone No.: 307-261-5861
 Key Area Name: JACKSON CANYON ACEC
 Habitats: CON
 Total Acres: 13760 Acres BLM: 3660
 Land-use Actions: O&G FIR ORV PUB
 Cooperators: STA
 SHF: OLD ROO
 Species: HALEU AQCHR

202. State: WY District: CASPER
 Resource Area: PLATTE RIVER
 Phone No.: 307-261-5861
 Key Area Name: RED WALL
 Habitats: SHR
 Total Acres: 25360 Acres BLM: 16280
 Land-use Actions: ORV
 SHF: CLI TRE SNA OLD
 Species: AQCHR BUJAM BUVIR FAMEX

203. State: WY District: RAWLINS
 Resource Area: GREAT DIVIDE
 Phone No.: 307-324-4841
 Key Area Name: ATLANTIC RIM
 Habitats: DEC SHR
 Total Acres: 23920 Acres BLM: 11960
 Land-use Actions: MIN ROA PIP UTI GRA
 ROD
 Cooperators: FWS PRI STA
 SHF: TRE BUR RES STR
 Species: ALL ACGEN ACCOO BUSWA
 AQCHR BUJAM ASOTU

204. State: WY District: RAWLINS
 Resource Area: GREAT DIVIDE
 Phone No.: 307-324-4841
 Key Area Name: BLUE GAP
 Habitats: SHR
 Total Acres: 6360 Acres BLM: 5760
 Land-use Actions: O&G ROA PIP UTI GRA
 Cooperators: STA

SHF: CLI ROC WAS ROD
 Species: BUREG AQCHR

205. State: WY District: RAWLINS
 Resource Area: GREAT DIVIDE
 Phone No.: 307-324-4841
 Key Area Name: BOLTEN RIM
 Habitats: SHR
 Total Acres: 16000 Acres BLM: 8000
 Land-use Actions: O&G GRA ROD
 Cooperators: PRI STA
 SHF: CLI ROC WAS ROD
 Species: FAMEX AQCHR BUREG

206. State: WY District: RAWLINS
 Resource Area: GREAT DIVIDE
 Phone No.: 307-324-4841
 Key Area Name: BROWN CANYON RIM
 Habitats: SHR
 Total Acres: 12800 Acres BLM: 6400
 Land-use Actions: PIP UTI GRA ORV ROD
 Cooperators: PRI STA
 Species: BUREG AQCHR FAMEX

207. State: WY District: RAWLINS
 Resource Area: GREAT DIVIDE
 Phone No.: 307-324-4841
 Key Area Name: CHEROKEE
 Habitats: SHR
 Total Acres: 16640 Acres BLM: 8320
 Land-use Actions: O&G ROA PIP UTI GRA ROD
 Cooperators: PRI STA
 SHF: CLI ROC ROD
 Species: BUREG AQCHR

208. State: WY District: RAWLINS
 Resource Area: GREAT DIVIDE
 Phone No.: 307-324-4841
 Key Area Name: DELANEY RIM
 Habitats: SHR
 Total Acres: 17920 Acres BLM: 8960
 Land-use Actions: O&G BLA
 Cooperators: PRI STA
 SHF: CLI ROC ROD
 Species: AQCHR FAMEX BUREG

209. State: WY District: RAWLINS
 Resource Area: GREAT DIVIDE
 Phone No.: 307-324-4841
 Key Area Name: DOTY MOUNTAIN
 Habitats: SHR
 Total Acres: 7680 Acres BLM: 3840
 Land-use Actions: O&G GRA ROD
 Cooperators: PRI STA
 SHF: CLI ROC TRE ROD
 Species: BUREG AQCHR

210. State: WY District: RAWLINS
 Resource Area: GREAT DIVIDE
 Phone No.: 307-324-4841
 Key Area Name: FERRIS
 Habitats: CON SHR
 Total Acres: 9520 Acres BLM: 7840
 Land-use Actions: UTI ROD
 Cooperators: STA
 SHF: CLI SNA OLD ROD
 Species: FAMEX AQCHR BUJAM ACGEN

211. State: WY District: RAWLINS

Resource Area: GREAT DIVIDE

Phone No.: 307-324-4841

Key Area Name: HANNA

Habitats: SHR

Total Acres: 10880 Acres BLM: 5440

Land-use Actions: MIN ROA PIP UTI PRE ROD

Cooperators: PRI STA

SHF: ROC CLI ROD STR

Species: BUREG AQCHR FAMEX

212. State: WY District: RAWLINS

Resource Area: GREAT DIVIDE

Phone No.: 307-324-4841

Key Area Name: MUDDY CREEK

Habitats: SHR

Total Acres: 14400 Acres BLM: 11520

Land-use Actions: O&G ROA PIP UTI GRA ROD

Cooperators: PRI STA

SHF: CLI ROC TRE ROD

Species: BUREG AQCHR FAMEX

213. State: WY District: RAWLINS

Resource Area: GREAT DIVIDE

Phone No.: 307-324-4841

Key Area Name: PEDRO MOUNTAINS BALD EAGLE
ROOST

Habitats: CON

Total Acres: 2560 Acres BLM: 2560

Land-use Actions: GRA

Cooperators: STA

SHF: SNA OLD ROO

Species: HALEU

214. State: WY District: RAWLINS

Resource Area: GREAT DIVIDE

Phone No.: 307-324-4841

Key Area Name: PLATTE DIVIDE

Habitats: SHR

Total Acres: 11200 Acres BLM: 5600

Land-use Actions: MIN ROA

Cooperators: PRI STA

SHF: CLI ROC ROD STR

Species: AQCHR FAMEX BUREG

215. State: WY District: RAWLINS

Resource Area: GREAT DIVIDE

Phone No.: 307-324-4841

Key Area Name: RED RIM

Habitats: SHR

Total Acres: 12800 Acres BLM: 6400

Land-use Actions: O&G MIN GRA BLA ROD

Cooperators: PRI STA

SHF: CLI ROC ROD RES

Species: AQCHR FAMEX BUREG

216. State: WY District: RAWLINS

Resource Area: GREAT DIVIDE

Phone No.: 307-324-4841

Key Area Name: SEMINOE

Habitats: SHR

Total Acres: 20480 Acres BLM: 10240

Land-use Actions: O&G MIN ROA PIP UTI DAM
GRA ORV BLA ROD

Cooperators: PRI STA

SHF: ROC CLI ROD RES

Species: AQCHR BUREG FAMEX

217. State: WY District: RAWLINS

Resource Area: GREAT DIVIDE

Phone No.: 307-324-4841

Key Area Name: SHAMROCK HILLS

Habitats: SHR

Total Acres: 35700 Acres BLM: 18330

Land-use Actions: O&G ROA PIP UTI GRA MIN
HAR ROD

Cooperators: FWS PRI STA IND

SHF: CLI ROC WAS ROD BOX

Species: BUREG AQCHR FAMEX

218. State: WY District: ROCK SPRINGS

Resource Area: GREEN RIVER

Phone No.: 307-362-6422

Key Area Name: CANYON CREEK

Habitats: SHR

Total Acres: 3800 Acres BLM: 3640

Land-use Actions: O&G GRA

Cooperators: PRI STA

SHF: CLI ROC MEA WAS SPR STR

Species: FAMEX AQCHR BUREG BUJAM CICYA
ACSTR BUVIR

219. State: WY District: ROCK SPRINGS

Resource Area: GREEN RIVER

Phone No.: 307-382-5350

Key Area Name: CEDAR CANYON

Habitats: SHR

Total Acres: 8900 Acres BLM: 4300

Land-use Actions: O&G MIN ORV

Cooperators: PRI CON

SHF: CLI ROC TAL WAS ROD

Species: FAMEX AQCHR BUREG BUJAM BUVIR
FASPA

220. State: WY District: ROCK SPRINGS

Resource Area: GREEN RIVER

Phone No.: 307-382-5350

Key Area Name: GREEN RIVER RIPARIAN

Habitats: RIP

Total Acres: 2100 Acres BLM: 340

Land-use Actions: O&G MIN PIP UTI GRA HAR HIK

Cooperators: FWS UBR PRI STA CON

SHF: CLI ROC TRE SNA MEA ROD ISL STR ROO
HOMSpecies: HALEU AQCHR FAPER FACOL BUSWA
BUJAM CICYA FAMEX BUVIR FASPA

221. State: WY District: ROCK SPRINGS

Resource Area: GREEN RIVER

Phone No.: 307-362-6422

Key Area Name: PINE BUTTE/KINNEY RIM

Habitats: SHR

Total Acres: 3200 Acres BLM: 1400

Land-use Actions: ORV UTI

Cooperators: PRI STA

SHF: CLI ROC TAL TRE GAL WAS

Species: FAPER FAMEX ACGEN AQCHR BUJAM
BUREG

222. State: WY District: ROCK SPRINGS
Resource Area: GREEN RIVER
Phone No: 307-362-6422
Key Area Name: ROCK SPRINGS UPLIFT
Habitats: SHR
Total Acres: 223000 Acres BLM: 107000
Land-use Actions: O&G MIN ROA PIP UTI GRA
HAR ORV
Cooperators: PRI STA COU CON FWS
SHF: CLI ROC TAL TRE MAN WAS ROD PON
RES UTI
Species: FAMEX AQCHR BUREG ATCUN BUJAM
BUVIR CAAUR

223. State: WY District: WORLAND
Resource Area: CODY
Phone No.: 307-587-2216
Key Area Name: BALD EAGLE RECOVERY AREA
Habitats: RIP
Total Acres: 230 Acres BLM: 230
Land-use Actions: LOG ORV
Cooperators: STA
SHF: OLD STR
Species: HALEU AQCHR

APPENDIX 2
Tables of Species Occurrence by State
RAPTOR OCCURRENCE IN THE WESTERN UNITED STATES

Vultures, Kites, Hawks, Eagles, and Falcons

<u>Species</u>	<u>AK</u>	<u>AZ</u>	<u>CA</u>	<u>CO</u>	<u>ID</u>	<u>MT</u>	<u>NV</u>	<u>NM</u>	<u>OR</u>	<u>UT</u>	<u>WA</u>	<u>WY</u>
Black Vulture <i>Carogyps atratus</i>		N-U W-U										
Turkey Vulture <i>Cathartes aura</i>	A	N-C W-R	N-C W-C	N-C	N-C	N-C	N-C	N-C W-A	N-C	N-C	N-U	N-C
California Condor <i>Gymnogyps californianus</i>			*									
Mississippi Kite <i>Ictinia mississippiensis</i>		N-U W-A		N-U				N-U				A
Black-shouldered Kite <i>Elanus caeruleus</i>		N-C W-C	N-C W-C					A	N-U W-R		N-R W-U	A
Bald Eagle <i>Haliaeetus leucocephalus</i>	N-C W-C	N-U W-C	N-U W-C	N-R W-C	N-U W-C	N-U W-C	N-R W-U		N-U W-C	N-R W-C	N-U W-C	N-U W-C
Osprey <i>Pandion haliaetus</i>	N-U	N-U	N-C W-U	N-U	N-C	N-C	N-R		N-C W-R	N-U	N-C	N-C
Northern Harrier <i>Circus cyaneus</i>	N-U	N-R W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-U W-C	N-U W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-U
Sharp-shinned Hawk <i>Accipiter striatus</i>	N-C	N-U W-R	N-C W-C	N-C W-C	N-C W-U	N-C W-U	N-C W-U	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-U
Cooper's Hawk <i>A. cooperii</i>		N-C W-C	N-C W-C	N-C W-C	N-C W-U	N-C W-U	N-C W-U	N-U W-U	N-C W-C	N-C W-U	N-C W-C	N-U W-U
Northern Goshawk <i>A. gentilis</i>	N-C W-U	N-U W-R	N-U W-U	N-C W-C	N-U W-U	N-C W-C	N-C W-U	N-U W-U	N-C W-C	N-C W-U	N-U W-U	N-C W-U
Common Black Hawk <i>Buteogallus anthracinus</i>		N-U						N-U		N-R		
Harris' Hawk <i>Parabuteo unicinctus</i>		N-U W-U	N-R W-R				A	N-U W-U		A		
Gray Hawk <i>Buteo nitidus</i>		N-U						A				
Zone-tailed Hawk <i>Buteo albonotatus</i>		N-U	N-R					N-U W-A		A		
Red-shouldered Hawk <i>B. lineatus</i>			N-C W-C	A	A		R	A	N-R W-R	R		
Broad-winged Hawk <i>B. platypterus</i>				R	A	R	A	A			R	

Species	AK	AZ	CA	CO	ID	MT	NV	NM	OR	UT	WA	WY
Swainson's Hawk <i>B. swainsoni</i>	N-R	N-U	N-U	N-C	N-C	N-C	N-U	N-C W-A	N-C	N-C	N-C	N-C
Red-tailed Hawk <i>B. jamaicensis</i>	N-U	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-U
Ferruginous Hawk <i>B. regalis</i>		N-R W-U	N-R W-C	N-C W-U	N-C	N-C	N-C W-U	N-U W-U	N-U	N-C W-U	N-U W-R	N-C W-A
Rough-legged Hawk <i>B. lagopus</i>	N-C	W-R	W-C	W-C	W-C	W-C	W-C	W-U	W-C	W-C	W-C	W-C
Golden Eagle <i>Aquila chrysaetos</i>	N-U W-U	N-U W-U	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C
Crested Caracara <i>Polyborus plancus</i>		N-R W-R						A				
American Kestrel <i>Falco sparverius</i>	N-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-U
Merlin <i>F. columbarius</i>	N-U	W-U	W-U		N-R W-R	N-U	W-R	W-R	N-R	W-U	N-U	N-U
Aplomado Falcon <i>F. femoralis</i>		A						A				
Peregrine Falcon <i>F. peregrinus</i>	N-U W-U	N-U W-U	N-U W-U	N-U	N-R	N-R	N-R	N-U W-U	N-R W-R	N-U W-R	N-R W-U	N-R W-R
Gyr Falcon <i>F. rusticolus</i>	N-U W-U		W-R	W-R	W-R	W-R	W-R		W-R	W-R	W-R	W-R
Prairie Falcon <i>F. mexicanus</i>		N-C W-C	N-C W-C	N-C W-C	N-C W-U	N-C W-U	N-C W-C	N-C W-C	N-C W-U	N-C W-C	N-C W-R	N-C W-U

Owls

Common Barn-Owl <i>Tyto alba</i>		N-U W-U	N-C W-C	N-C W-U	N-C W-R	R	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-U W-U	N-R W-R
Flammulated Owl <i>Otus flammeolus</i>	N-C	N-U	N-U	N-U	N-U	?	N-U	N-U	N-U	N-U	N-U	A
Western Screech-Owl <i>O. kennicottii</i>	N-R W-R	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-U W-U	N-C W-C	N-C W-C	N-C W-C	N-U W-U
Whiskered Screech-Owl <i>O. trichopsis</i>		N-U						N-R				
Great-horned Owl <i>Bubo virginianus</i>	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-R W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C	N-C W-C
Snowy Owl <i>Nyctea scandiaca</i>	N-U W-U		W-A	W-R	W-R	W-R			W-A	W-R	W-R	W-R

Species	AK	AZ	CA	CO	ID	MT	NV	NM	OR	UT	WA	WY
Northern Hawk-Owl <i>Surnia ulula</i>	N-U W-U											
Northern Pygmy-Owl <i>Glaucidium gnoma</i>	N-R W-R	N-U W-U	N-U W-U	N-U W-U	N-U W-C	N-U W-U	N-U W-U	N-U W-U	N-U W-U	N-U W-U	N-U W-U	N-U W-U
Ferruginous Pygmy-Owl <i>G. brasilianum</i>		N-R W-R										
Elf Owl <i>Micrathene whitneyi</i>		N-C	N-U					N-U				
Burrowing Owl <i>Athene cunicularia</i>		N-U W-U	N-C W-C	N-C	N-C	N-C	N-C	N-C W-U	N-C	N-C	N-U	N-C
Spotted Owl <i>Strix occidentalis</i>		N-U W-U	N-U W-U	N-A W-A				N-U W-U	N-U W-U	N-U W-U	N-U W-U	
Barred Owl <i>S. varia</i>	R		N-R W-U		N-U W-U	N-U W-U		N-U W-U		N-U W-U	A	
Great Gray Owl <i>S. nebulosa</i>	N-U W-U		N-U W-U		N-U W-U	N-U W-U		N-U W-U		N-R W-R	N-U W-U	
Long-eared Owl <i>Asio otus</i>		N-U W-U	N-U W-U	N-C W-C	N-C W-C	N-R W-R	N-C W-C	N-U W-U	N-C W-C	N-C W-C	N-C W-C	N-C W-C
Short-eared Owl <i>A. flammeus</i>		N-C W-U	N-R W-R	N-C W-C	N-C W-C	N-C W-C	N-C W-C		N-C W-U	N-C W-C	N-C W-C	N-C W-C
Boreal Owl <i>Aegolius funereus</i>	N-U W-U			N-R W-R	N-R W-R	N-R W-R		N-R W-R			N-R W-R	N-R W-R
Northern Saw-whet Owl <i>A. acadicus</i>	N-R W-R	N-U W-U	N-U W-U	N-C W-U	N-C W-C	N-U W-U	N-U W-U	N-U W-U	N-U W-U	N-C W-U	N-U W-U	N-U W-U

N = Nesting C = Common: Commonly occurs throughout most of the state or within its habitat
W = Wintering U = Uncommon: Occurs at low densities and/or is sparsely distributed throughout the state
R = Rare: Few individuals occur in the state
A = Accidental: Recorded a few times for the state

* All taken from the wild by 1987. Only a captive population.

This table was reviewed by R.G. Anthony, P.H. Bloom, J.C. Bednarz, G.R. Craig, C. Groves, G.B. Herron, K.R. McAllister, B.A. Millsap, R.J. Oakleaf, and D. Sherry.

APPENDIX 3

Key BLM Personnel with Raptor Expertise

The following full-time permanent employees of BLM have extensive raptor expertise and are available under certain circumstances for consultation and field project review outside their normal areas of responsibility-- within and outside the Bureau. Generally, this requires payment of any travel expenses (per diem and lodging) by the BLM office requesting assistance, and salary considerations outside the Bureau. All are willing to help over the telephone, however. Olendorff, Kochert, and Steenhof are usually more available, because technical assistance and information transfer are important aspects of their official duties.

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Education: B.S. University of Washington 1967
Ph.D. Colorado State University 1971
Post-doctoral Work, American Museum of Natural History 1971-73

Specialties: Endangered Raptors
Grassland Raptors
Raptor Management Literature
Raptor Management

John R. Haugh
Biological Scientist
U.S. Bureau of Land Management
Resource Sciences Staff
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Education: B.S. Westminster College (Pennsylvania) 1962
M.S. Syracuse University 1964
Ph.D. Cornell University 1970

Specialties: Raptor Migration
Research Administration
Arctic Raptors

Michael N. Kochert
Supervisory Raptor Research Biologist
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Education: B.S. Purdue University 1969
M.S. University of Idaho 1972

Specialties: Shrubsteppe Raptors
Golden Eagles
Raptor Management
Raptor Inventory and Monitoring

Karen Steenhof
Analytical Wildlife Research Biologist
U.S. Bureau of Land Management
Boise District Office
3948 Development Avenue
Boise, ID 83705
(208) 334-9277 FTS 554-9277

Education: B.S. Colorado State University 1974
M.S. University of Missouri 1976

Specialties: Shrubsteppe Raptors
Data Management and Analysis
Bald Eagles
Raptor Management
Raptor Inventory and Monitoring

William A. Nitro
Wildlife Biologist
U.S. Bureau of Land Management
Oregon State Office
825 NE Multnomah Street
Portland, OR 97208
(503) 231-6865 FTS 429-6865
Education: B.S. San Jose State University 1959
Specialties: Spotted Owls
Coniferous Forest Raptors

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U.S. Bureau of Land Management
Folsom Resource Area
63 Natoma Street
Folsom, CA 95630
(916) 985-4474 FTS 460-4177
Education: B.S. Humboldt State University 1979
Specialties: Bald Eagles
Habitat Management Planning
Raptor Management

Stephen J. Hawks
Wildlife Biologist
U.S. Bureau of Land Management
Susanville District Office
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Education: B.S. Humboldt State University 1967
Specialties: Habitat Management Planning
Bald Eagle Habitat Management
Raptor Inventory and Monitoring

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- No. 3 Population Status of Raptors. Proceedings of the Conference on Raptor Conservation Techniques, Fort Collins, Colorado, 22-24 March 1973 (Part 6). Joseph R. Murphy, Clayton M. White and Byron E. Harrell, Eds. 1975. Out of Print.*
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\$12.50 US (10.00) US
- No. 7 The Raptor Research Foundation Bibliographic Index (1967 - 1986). Richard R. Olendorff. 1989.
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- No. 8 Raptor Habitat Management Under the U. S. Bureau of Land Management Multiple-Use Mandate. Richard R. Olendorff, D. Dean Bibles, M. Thomas Dean, John R. Haugh and Michael N. Kochert. 1989.

* Available only as a photocopy please contact the Treasurer, Jim Fitzpatrick, for prices.

Contact Jim Fitzpatrick, Treasurer, The Raptor Research Foundation, Inc., 12805 St. Croix Trail, Hastings, MN 55033 USA. Please add \$2.50 per unit to cover postage (First Class) and handling. Make checks payable to The Raptor Research Foundation, Inc. Prices in parentheses are for current Raptor Research Foundation members only.

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