Appropriation: Administrative Provisions

APPROPRIATION LANGUAGE SHEET

Appropriations for the Bureau of Land Management shall be available for purchase, erection, and dismantlement of temporary structures, and alteration and maintenance of necessary buildings and appurtenant facilities to which the United States has title; up to $100,000 for payments, at the discretion of the Secretary, for information or evidence concerning violations of laws administered by the Bureau; miscellaneous and emergency expenses of enforcement activities authorized or approved by the Secretary and to be accounted for solely on her certificate, not to exceed $10,000: Provided, That notwithstanding 44 U.S.C. 501, the Bureau may, under cooperative cost-sharing and partnership arrangements authorized by law, procure printing services from cooperators in connection with jointly produced publications for which the cooperators share the cost of printing either in cash or in services, and the Bureau determines the cooperator is capable of meeting accepted quality standards; Provided further, That section 28f(a) of title 30, United States Code, is amended: (1) in section 28f(a), by striking "for years 2002 through 2003" and inserting in lieu thereof "for years 2004 through 2008"; and (2) in section 28g, by striking "and before September 30, 2003" and inserting in lieu thereof "and before September 30, 2008".

EMPLOYEE COUNT BY GRADE
(TOTAL EMPLOYEMENT)

	2002 Actual	2003 Request	2004 Estimate
Executive Level V	1	1	1
Subtotal	**1**	**1**	**1**
ES - 5	3	3	3
ES - 4	2	2	2
ES - 3	4	4	4
ES - 2	1	1	1
ES - 1	8	8	8
Subtotal	**19**	**19**	**19**
GS/GM/GG/WB/WG/WL/WS - 15	105	103	104
GS/GM/GG/WB/WG/WL/WS - 14	312	307	308
GS/GM/GG/WB/WG/WL/WS - 13	892	878	882
GS/GM/GG/WB/WG/WL/WS - 12	1,753	1,725	1,734
GS/GM/GG/WB/WG/WL/WS - 11	2,546	2,505	2,518
GS/GM/GG/WB/WG/WL/WS - 10	299	294	296
GS/GM/GG/WB/WG/WL/WS - 9	1,374	1,352	1,360
GS/GM/GG/WB/WG/WL/WS - 8	411	404	407
GS/GM/GG/WB/WG/WL/WS - 7	1,265	1,245	1,254
GS/GM/GG/WB/WG/WL/WS - 6	707	696	699
GS/GM/GG/WB/WG/WL/WS - 5	771	759	765
GS/GM/GG/WB/WG/WL/WS - 4	408	401	405
GS/GM/GG/WB/WG/WL/WS - 3	184	181	183
GS/GM/GG/WB/WG/WL/WS - 2	60	59	61
GS/GM/GG/WB/WG/WL/WS - 1	30	30	31
Subtotal	**11,136**	**10,957**	**11,006**
Other Pay Schedule Systems (Ungraded)	17	17	17
Total employment (actual/projected) at end of fiscal year	**11,153**	**10,973**	**11,023**

BLM Research and Development

2004 RESEARCH AND DEVELOPMENT ACTIVITIES ($000)

Conduct of R&D by Activity	2002		2003		2004	
	B.A.	Outlay	B.A.	Outlay	B.A.	Outlay
Basic Research	0	0	0	0	0	0
Applied Research	12,010	12,010	10,738	10,738	9,145	9,145
Development	351	351	206	206	267	267
R&D Facilities	34	34	34	34	34	34
Conduct of R&D performed by Colleges and Universities*	[5,038]	[5,038]	[3,792]	[3,792]	[3,657]	[3,657]
Indirect Costs Related to R&D Performed by Colleges and Universities*	[1,000]	[1,000]	[750]	[750]	[750]	[750]
Merit Reviewed Scientific Research*	[0]	[0]	[0]	[0]	[0]	[0]
Total	12,395	12,395	10,978	10,978	9,446	9,446

**Numbers inclusive in Applied Research totals listed above are estimated distribution (by percentage) of funding by R&D performers: In-house Activity (BLM, Federal and State agency partners) - 60%, private industry - 0%, colleges-university - 40%, other non-profit - 0%*

The U. S. Geological Survey serves as the primary research-science Bureau for the Department, addressing the scientific questions and research needs of the land-management bureaus. Although the BLM works with other Federal agencies, State agencies, and other organizations to meet its overall science needs, the BLM relies on the science capabilities within the USGS as its largest single source of scientific research support.

The majority of BLM's science needs relate to managing biological resources, which are addressed principally by the USGS's Biological Resources Division. The USGS Geologic, Water Resources, and National Mapping Divisions, as well as the BRD, support BLM's mineral assessment, mining-related hydrologic studies, and abandoned mine land efforts.

The BLM has developed a formal Science Strategy that includes a process for identifying high-priority science needs and then meeting these needs either internally or in collaboration with science partners such as the USGS, other agency science providers, and universities. The strategy also includes the identification and cataloging of scientific opportunities on the public lands, such as those found within Research Natural Areas, National Conservation Areas, and National Monuments. The BLM is currently preparing management plans for several NCAs and

National Monuments, which will include the identification of science opportunities and research needs.

The BLM is a founding partner in the network of Cooperative Ecosystem Studies Units that have recently been established at several of the Nation's leading universities by a number of Federal agencies. The BLM is increasingly making use of these CESU partnerships to meet its science needs and involve U.S. universities and colleges to a greater extent in providing sound science for managing the public lands and resources.

The BLM's Research and Development program supports improvements in organizational effectiveness and further the long-term goal of working with partners to identify scientific information needs and then communicating these needs to research agencies, universities, and other non-governmental organizations. The ultimate objective of the BLM Research and Development program is to make better use of new data, information, and knowledge to improve the management of the Nation's lands and resources.

2004 PROGRAM OVERVIEW

In 2004, the BLM expects many of its ongoing projects to continue. Establishing baselines for resources in BLM's National Monuments and NCAs, understanding and evaluating the effects of energy development in the Rocky Mountain and Alaskan regions, improving management of western forests, control of exotic species and weeds, and restoration of shrub-steppe and arid desert habitats will continue to be a priority. These studies are important for laying the foundation for future management actions to protect these valuable areas. In California, long-term studies of endangered species in the San Joaquin Valley will continue. Due to variation in the annual precipitation and resulting vegetation, complications resulting from an extensive wildfire in the study area, and the need to collect data through a cycle of "wet" and "dry" years, the cooperating agencies plan to continue data collection in the San Joaquin Valley through the next several years. In addition, the BLM plans to study, compile, and distribute information about methods of controlling invasive or noxious species, such as medusa-head, yellow star-thistle, and knapweed.

A native plant materials development program will continue in Utah and Nevada, where collaborative studies will identify and develop methodologies for native-origin seed collection, propagation, production and storage. Seeds from native vegetation are important for use in rehabilitating habitats damaged or destroyed by fire and invasive species. Similar efforts are planned for elsewhere in the West, where projects are planned, in coordination with the U.S.D.A. National Resource Conservation Service and private seed growers, to furnish native seed, especially seed from native shrubs, forbs and some grasses, for restoration and reclamation efforts. Attention will continue to be focused on the Great Basin, where invasive species and wildfire have severely disrupted native ecosystems and additional research is urgently needed to provide information useful in restoring damaged habitats. The newly established Great Basin CESU is expected to help the BLM meet many of its science needs in this area.

The Cooperative Forest Ecosystem Research project will continue in the Pacific Northwest, where the emphasis will be on understanding and promoting forest diversity and protecting riparian and aquatic resources. Most of the research related to the Northwest Forest Plan is long-term in scope and is expected to continue for several years. In the California sequoia forests, emphasis will be placed on conducting research and monitoring the effects of prescribed fire on this ecological system, while additional studies will gather data on important vertebrate species within the same forest areas.

New research, studies and assessments will be initiated or continued in 2004 to provide information related to development of energy and mineral resources and how best to protect valuable hydrological resources, as well as aquatic, riparian, and terrestrial habitats, in areas of energy and mineral development. Wyoming, Colorado, Alaska and New Mexico are likely to be areas of focus for many of these efforts.

2002 PROGRAM ACCOMPLISHMENTS

Although the BLM's need for more data and information continues to increase, substantial progress was made in obtaining data and information in 2002 by the BLM, USGS, and other science partners. Highlights include:

- Continued development of GIS techniques and databases for monitoring and understanding changing resource conditions and management situations of BLM-administered lands.
- Continued development of new techniques and plant cultivars for restoring habitat damaged by exotic invading weeds and wildfire.
- Continuation of efforts to collect new data and information on the resources of the BLM's NCAs and National Monuments to facilitate better management and provide information needed for development of land use plans. Efforts focused on paleontology, cultural resources, plant and animals inventories, and human use.
- Continued progress in the development of a cost-effective, reversible wild horse contraception vaccine, and continuation of efforts to understand the change in herd dynamics with vaccine use.
- Continuation of progress in studies on sage grouse and restoration of sage grouse habitat in shrub-steppe ecosystems to gain a better understanding ways to restore populations of this species and its habitats in this degraded ecological system.
- Continued assessments of energy and mineral resources, and research into techniques to minimize negative effects on other natural resources during exploration and development.
- Development of a prototype strategy for obtaining existing information on regional resource conditions, integrating data from various agencies and sources, evaluating data quality and converting regional information into a format useful to managers on the Colorado Plateau.
- Continued ecological studies directed at better implementation of forest ecosystem based management in the Oregon Coast Range and the forested areas covered by the Northwest Forest Plan.

The Department of Energy's Pacific Northwest National Laboratory provided a final report on its effort to develop a remote sensing platform to help the BLM determine and evaluate the impacts of land use on land health. The USGS made substantial progress in a number of projects

focused on providing new scientific information to help the BLM to manage the pubic lands and resources more effectively. Examples include: understanding the geology of coalbed natural gas extraction and the environmental impacts to water, wetlands and other resources during gas development; successfully completing the assessment of undiscovered technically recoverable oil and natural gas resources in five priority U.S. basins to satisfy the requirement of the Energy Policy and Conservation Act of 2000; assessment of land use and water-quality issues from naturally occurring toxicants such as selenium and salinity in Mancos shale landscapes of western Colorado; identifying and evaluating data availability in central Colorado for planning and land use decision making; continuing integrated studies of climate variability, soil and geomorphic processes, and ecosystem structure and function on the Colorado Plateau; continuing geophysical work and mineral assessments in Alaska and completing the cataloging of the minerals-related library collection at the DOI research library facility in Alaska; continuing a multi-disciplinary study of mercury contamination of water, sediment and biota on the western slope of the Sierra Nevada of California resulting from gold recovery operations during the late 19th and early 20th centuries; and investigating the persistence and toxicity of millions of liters of fire retardant chemicals applied to wildfires each year in the U.S.

The BLM is especially concerned about the environment of two arid western ecosystems where it has major management responsibilities: the Sagebrush Steppe ecosystem in the Intermountain West and the desert ecosystems in the desert Southwest. More than 350 species of plants and animals depend upon the sagebrush ecosystem for all or part of their existence, including the seriously declining sage grouse. In 2002, the USGS and BLM continued ecological investigations of sage grouse and other important species in this ecosystem to help the BLM understand and address problems resulting from conversion of lands to agriculture, the introduction of non-native invasive species, livestock grazing, fire and habitat fragmentation. In the Mojave Desert, the USGS Recoverability and Vulnerability of Desert Ecosystems Project continued to provide land managers with the scientific understanding needed to conserve and restore threatened desert landscapes. Full recovery of the most sensitive species in the Mojave has been estimated to possibly take as long as two thousand years, so it is critical that BLM conserve and protect existing fragile resources.

Other examples of research accomplishments in 2002 include continued progress in work related to the Northwest Forest Plan research and monitoring effort, as well as continued development of the Cooperative Forest Ecosystem Research program and development of a Coastal Landscape Analysis and Modeling System to research issues relevant to implementing forest ecosystem based management specifically in the Oregon Coast Range.

2003 PROGRAM PERFORMANCE ESTIMATES

In 2003, the BLM will focus its research and development efforts towards:

- Research will continue on many of the projects that were ongoing in 2002, including Northwest forest research, studies of noxious weeds, vegetation diversity restoration, relationships of cattle grazing and vegetation and soils, desert tortoise biology, wild horse biology, and numerous other projects.

- The USGS is continuing studies on native grasslands and managed rangelands to quantify ecosystem condition, determine rare plant patterns, appraise species richness, and identify areas of native plant diversity. Studies will continue on understanding decreased nutritional content of plants, reduced diversity and productivity of native species, decreased water availability, diminished soil microbial populations, and accelerated rates of soil-surface erosion in desert and arid ecosystems. The National Gap Analysis program continues to update land cover data, animal distribution models, and all other related data in the southwestern U.S. Fire ecology research continues and is focused on understanding the effects of wildland fire on wildlife habitat and ecosystem structure, function, sustainability and restoration. Also continuing is an ongoing multi-scale, integrative program for mapping infestations and accurately monitoring the spread of noxious or invasive plants (i.e., weeds) on rangelands, improving methods for predicting areas most vulnerable to invasions, and assessing the effects of management practices and natural disturbances on invasions. The USGS is assessing the effects of weed invasions on ecosystems and native species, and providing improved methods for reducing the adverse impacts of invasive weeds and for restoring public range lands affected by weed invasions. The U.S.D.A. Agricultural Research Service is also working in coordination with the BLM on invasive plants problems, with emphasis on developing and using biological controls on noxious and invasive weeds.

- Other areas where the USGS is continuing to assist the BLM in 2003 include mapping and assessment of oil, gas, coal and geothermal resources. These efforts will assist the BLM in its efforts to continue development of these energy resources with minimal effects on the environment and other natural resources. The USGS continues cooperation with the BLM to monitor and evaluate landslide hazards at sites in California, Colorado and Washington. The USGS also is continuing research efforts on wild horses, working to refine multiple year contraception vaccines, focus on population modeling, and determine behavioral aspects of contraception on herd dynamics.

- In Alaska, the U. S. Army Cold Regions Research and Engineering Laboratory continues working with the BLM to monitor and study the long-term (20+ years) effects of wildfire on tundra soils and vegetation. These studies will be used to support Federal fire management decisions and policy-making on Federal lands. A major program, beginning in 2003, will assess the status and evaluate possible effects of oil and gas development on sensitive species in the National Petroleum Reserve - Alaska on Alaska's North Slope. Among the species of particular interest are caribou, polar bears, birds of prey, yellow-billed loons, swans, geese and other waterfowl, and fish. The effects of development on Native subsistence activities will also be evaluated.

- Studies of the effects of human-caused disturbance on marbled murrelets in California's Headwaters Forest and the effects of livestock grazing on a community of species at-risk of extinction in the San Joaquin Valley are being continued. Studies also continue to assess the feasibility of control of medusa-head, a weed species causing rapid deterioration of vast areas of land managed by the BLM in California and elsewhere. Also in California, the BLM is cooperating with the U.S. Forest Service to study the ecology of sequoia groves and to gather data for use in developing strategies to apply prescribed fire as a means to maintain giant sequoia grove health while reducing fuel hazards.

- Work on the juniper invasion of shrub-steppe ecosystems is progressing in the northern Great Basin and Pacific Northwest. Past management treatments of pinyon-juniper woodlands on the Colorado Plateau are being inventoried and evaluated. In addition, a four-year study of symbiotic relationships between soil mycorrhizae and vegetative communities and the importance of this relationship to the success of ecosystem restoration and rehabilitation efforts is beginning in 2003 in Utah.

- The U.S. Forest Service continues to work with the BLM on a number of programs related to the BLM's forest management responsibilities. In California, the Case Mountain Giant Sequoia Study includes an integrated resources inventory to determine stand density, under-story, vegetation composition, dead trees and downed material, fuel loading, and hydrological parameters in the study area. Data will be used to develop strategies to apply prescribed fire as a means to maintain giant sequoia grove health while reducing fuel hazards. In the Pacific Northwest, work continues on the Cooperative Forest Ecosystem Research program; the emphasis is on conifer and hardwood tree improvement and on forest diseases (e.g., Swiss needle cast, sudden oak disease, etc.).

- A significant research program continues in the Grand Staircase Escalante National Monument in southern Utah. Many of the GSENM studies are being done in cooperation with other Federal agencies such as the USGS and the U.S.D.A. Natural Resources Conservation Service, with Utah agencies, and with universities and colleges. Studies are focusing on developing sustainable grazing and livestock management techniques compatible with the area's arid environment; characterization of the area's hydrology; monitoring changes in terrestrial and aquatic insects and invertebrates related to cessation of grazing in the Escalante River corridor; studies of endemic bees; inventories of archaeological sites, flora, fauna, and invertebrates; and baseline paleontology evaluations.