

1999 ANNUAL REPORT

BUREAU OF LAND MANAGEMENT
OFFICE OF FIRE AND AVIATION





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March 1, 2000

Dear Reader:

The last year of the 1900s will be remembered by many people for many different reasons. For those who manage or fight fire on public lands, 1999 will stand out as an unusual one in which hundreds of fires, ignited by dozens of dry thunderstorms, burned millions of acres of land. Firefighters may share visions of huge flames and thick, dry fuels, and tell stories of erratic, shifting winds. Bureau of Land Management (BLM) resource specialists in Nevada may describe their state's fire season as the worst in the last half of the century.

However, several fire and resource managers characterize 1999 as more than just an unusually busy fire season. For them, 1999 was a harbinger of change; a year in which fundamental values and beliefs about safety in firefighting were demonstrated through accountability.

Accountability. The word, to some, may represent the difference between confidence in a leader or compromise to safety. Accountability means knowing the job, doing it properly, and accepting responsibility for the work. Accountability means following rules and understanding roles and responsibilities. And accountability means the difference between a place of work and a professional organization.

In BLM's professional firefighting organization, managers and firefighters are expected to take responsibility for their actions. By doing so, they ensure safe and efficient fire management. Though 1999 was an unusually busy fire year, our safety record was good and reflected an increasing awareness of our responsibility to safeguard firefighters and do our job well.

This report addresses accountability, and other issues as well, that BLM wildland fire and aviation managers have faced this past year. It also describes fire and aviation program accomplishments, interagency and international initiatives, and partnerships.

Wildland fire and aviation management is a challenging, and often dangerous, business. I want to recognize and express my appreciation to our firefighters and managers for their commitment and dedication. Their contribution to the wildland fire and aviation program is commendable, and the BLM is proud to have them as members of its professional organization.

Lester K. Rosenkrance
Director, Office of Fire and Aviation



IF THE 1998 WILDLAND FIRE SEASON was unusually slow, the 1999 season made up for it in a big way. Of the 5.1 million acres of land burned across the nation by the end of November, nearly half were on lands cared for by the Bureau of Land Management (BLM). And of the 2.5 million acres of scorched BLM-managed land, two million were located in the Great Basin, which encompasses most of Nevada, the western half of Utah, the southeast corner of Oregon, the lower third of Idaho and a small slice of California.

INDEED, THE GREAT BASIN TELLS the story of wildland fires in 1999. When a low-pressure weather system camped off the shore of northern California in early August, it spun enough moisture inland to create perfect conditions for thunderstorms. As the storms moved into the Great Basin, they were joined by high, gusty winds and lightning with little or no moisture. The result was dramatic. In less than 48 hours, at least 150 fires were tearing through the thick sagebrush characteristic of Great Basin rangelands. Within five days, more than 1.4 million acres had been burned. By the end of October, total acres burned in the Great Basin alone topped two million. At one time,



nearly 75 percent of the nation's firefighting resources were in Nevada working to stop the fires' spread.

ALTHOUGH THE GREAT BASIN FIRES dominated suppression efforts for more than a month, plenty of firefighting action also took place in Florida, Alaska and California. Firefighters in Florida fought fires that eventually burned 341,000 acres. In Alaska, from mid-June to the end of July, the number of acres burned jumped from 50,000 to more than one million. In a normal fire year, fires in Alaska burn only about 250,000 acres.

CALIFORNIA SHARES A SIMILAR TALE. Just as firefighters were gaining the upper hand on fires in Nevada, thunderstorms touched off several fires in northern California and Oregon in dry, dense vegetation on remote and rough terrain. By the end of August, more than 15 major fires were burning in northern and southern California alone. During the last week of August, eight C-130 military aircraft were activated and converted to airtankers to assist with retardant drops. Perpetuated by strong winds and little moisture during the late summer and fall, wildland fires in California burned well into October.

THE ERRATIC FIRE SEASON CAN BE blamed on primarily one factor: La Niña, a pool of cool water in the tropical seas of the Pacific. Because La Niña usually brings dry winters and springs to the southern tier of states, fire season was busy from Florida to Southern California. In the Northwest and Rocky Mountain states, La Niña generally brings dry falls and wet winters. Well-timed rain in September and little dry lightning helped keep the lid on fires in the Northwest and Northern Rockies. However, Nevada, California and other parts of the West experienced windy springs, hot and dry summers, and dry lightning in August and September, topped off by a warm and dry fall. This combination of factors led to the extreme fire season in the Great Basin and California.

PRESCRIBED FIRE

FOLLOWING NEW AUTHORITIES

granted by Congress in 1998 that targeted funding for hazardous fuels management, the BLM has implemented hundreds of prescribed fire and hazardous fuels reduction projects, treating nearly 450,000 acres of public land. These projects may require prescribed fire, mechanical procedures such as chaining or thinning with chain saws, chemical applications, grazing or commercial timber sale, or a combination of these methods to accomplish resource goals.

PRESCRIBED FIRE IMPROVES OR

enhances wildlife habitat where pinyon/juniper encroachment or invading noxious weeds and exotic annual grasses have damaged or threatened native plant communities. Hazardous fuels reduction treatments reduce overgrown vegetation that could lead to large or disastrous wildland fires, or contribute to unhealthy wildlife habitat.

THE PRESCRIBED FIRE AND

hazardous fuels programs are quickly gaining momentum. At least 12 fuels specialists have been hired across the BLM to help plan and implement projects. In 1999, two prescribed fire projects, in particular, stood out. The first, a 17,000-acre undertaking called the Bridger Basin prescribed fire, was completed near Kemmerer, Wyoming. The area was burned to improve crucial winter and

transition range for deer, elk and antelope. The Kemmerer field office was recognized for this project with BLM's "1999 Excellence in Ecosystem Management Award."

A SECOND PROJECT WAS IMPLEMENTED

in the boreal forest north of Fairbanks in Alaska. Dubbed the Frostfire, this 900-acre burn mimicked naturally occurring wildland fire by consuming mostly black spruce, but leaving the hardwoods. Several partners, including the Forest Service (FS), BLM, University of Alaska Fairbanks, the FS Pacific Northwest Region's Fire and Environmental Research and Applications (FERA) Team, National Center for Atmospheric Research, and U.S. Geological Survey (USGS) worked with 54 research teams from the United States, Canada and Japan to study fire management and global climate change on the Frostfire. Researchers, scientists and land managers hope to use the information they collected to model global climate change, improve fire danger indices, plan prescribed burns and study the effect of fire on the boreal forest. This prescribed burn experiment differs from previous experimental fires in the boreal forest because it's located in terrain dominated by permafrost, focuses on the large-scale ecological consequences of fire, and takes place on a site that enables long-term, experimentally controlled research.

GREAT BASIN RESTORATION INITIATIVE

WISPS OF SMOKE WERE STILL CURLING into the air when resource specialists began assessing the damage from Great Basin fires the summer of 1999. But blackened rangeland was not all they saw: they espied an opportunity.

THE GREAT BASIN HAD BEEN IN trouble for a long time. For decades noxious weeds and exotic annual grasses had crept persistently across Great Basin rangelands historically characterized by shrubs, bunchgrasses and plants. Where the encroaching species gained a foothold, a wildland fire/annual grass cycle was begun that only accelerated the spread of non-native annual grasses such as cheatgrass.

THIS LOSS OF NATIVE SHRUB habitat, and the devastating 1999 fires, meant many things: dwindling wildlife diversity and numbers; unstable watersheds and degraded water quality; less forage for wild horses; reduced livestock grazing; fewer recreation opportunities; and more dangerous and costly wildland firefighting.

BUT EVEN BEFORE THE GREAT BASIN fires of 1999 were extinguished, public land managers began pursuing a vision: restoration. Not the

short-term soil-stabilizing type of rehabilitation they were accustomed to doing, but long-term, persistent, habitat-enhancing work that would help return some Great Basin rangeland to its native character.

A TEAM WAS FORMED TO DEVELOP the plan. Early in the fall of 1999, the team's report "Out of Ashes, An Opportunity," was released and the process to gain support and funding for the initiative was begun. The team recognized restoration work would depend heavily on established sources of funding such as emergency fire rehabilitation, weed control programs and hazardous fuels funding. Team members also understood long-term funding for restoration would be critical.

THE NEXT PHASE OF IMPLEMENTING restoration in the Great Basin will be to develop a strategy to help field staff and managers plan for and implement restoration. The team expects to release goals and recommendations early in 2000. By the year 2002, restoration projects are expected to be underway.

INTERAGENCY INITIATIVES

SAFETY AWARENESS FIRE ENVIRONMENT INITIATIVE (SAFE)

SAFE IS THE IMPLEMENTATION phase of the "Wildland Firefighter Safety Awareness Study," which was conducted following the deaths of 34 wildland firefighters in 1994. The study focused on the five federal wildland firefighting agencies—Bureau of Indian Affairs (BIA), BLM, U.S. Fish and Wildlife Service (FWS), National Park Service (NPS) and FS and included interviews and surveys of more than 1,000 wildland firefighters and managers. From analysis of the interviews, the study recommended 227 implementation strategies to achieve 86 goals to help federal agencies improve safety in wildland firefighting.

WHILE THE MAJORITY OF implementation strategies are items a field unit can accomplish, some of the strategies require a national emphasis. The SAFE program focuses on national needs and has several ongoing projects. For example, the SAFE Initiative database web site has been established so individuals and agency administrators may coordinate and follow project efforts, or review work that has been completed. Other projects

include testing SAFENET, a national reporting system for safety concerns; establishing a position to begin a "Center for Lessons Learned;" a study of the decline in firefighter numbers by the Brookings Institution; and a contract to develop decision skills in emergency situations.

JOINT FIRE SCIENCE PROGRAM

NORMALLY THE EXPRESSION "HIT the ground running," is just a figure of speech. In the case of the Joint Fire Science Program (JFSP), it's a reality. In business less than two years, the JFSP has funded 46 projects, several of which are already completed.

THE JFSP, A SIX-AGENCY PARTNERSHIP focused on wildland fuels issues, is dedicated to acquiring information and tools that will help fire and resource managers develop sound, scientifically based land use and activity plans. Each year the program's governing board solicits proposals for science projects designed to answer questions or solve problems related to wildland fuels issues.

ONE OF THE COMPLETED PROJECTS is a symposium that was held in June 1999 to develop national, rough-scale maps that identify areas across the

United States at risk from catastrophic wildland fire. Other projects included investigating ecologic and economic effects of the 1998 Florida wildfires, and attitudes of Florida residents concerning fire and fuels management. Also, a series of five fire effects publications (effects of fire on air, soil and water, flora and fuels, fauna, and archaeological resources) should be done early in 2000.

THE JFSP WAS AUTHORIZED IN 1998 and receives \$8 million per year to fund research. A 10-person governing board represents its partners, which include the BLM, BIA, NPS, FWS, USGS, and the FS.

SAFENET '99

FIREFIGHTERS STATIONED IN THE Pacific Northwest in 1999 packed a new tool with them that could prove critical to their safety and help ensure efficient operations. Under the pilot program called "SAFENET '99," safety concerns can be immediately reported and resolved through a system that begins with a form firefighters carry with them. Once completed, the form can be submitted to the individual's immediate supervisor, the fireline safety officer, incident commander or even the agency administrator. SAFENET, or

the "fire operations safety and health network," can be used anonymously, or individuals may include their name so they can be informed of corrective actions. SAFENET also allows safety managers to gather data so they can focus on the most reported issues, whether they're work/rest, chainsaw use, driving or something else.

ALL FIVE FEDERAL WILDLAND FIRE agencies (BLM, FS, FWS, BIA, NPS) participated in the pilot program, in addition to the Oregon Department of Forestry and Washington Department of Natural Resources.

NATIONAL INTERAGENCY FIRE CENTER (NIFC) WEB SITE (WWW.NIFC.GOV)

AS PART OF AN INTERAGENCY EFFORT to provide timely and valuable information to the public and media, the BLM's Office of Fire and Aviation redesigned NIFC's internet home page. The site, which is updated daily during busy fire periods, provides information on, and links to, wildland fires, firefighter safety, fire prevention and education, fire science and technology, and includes a virtual tour of NIFC. This site draws visitors every day from around the world, and

at the peak of activity during the summer of 1999, reported nearly two million hits in one month.

FIREWISE HOMEPAGE
(WWW.FIREWISE.ORG)

THIS INTERNET SITE, SPONSORED BY the National Wildland/Urban Interface Fire Protection Program, of which BLM is a partner, provides information to the public that can help people protect their homes from wildland fire. The site includes solutions for both local fire departments and homeowners relating to wildland/urban interface issues.

FEEL THE HEAT

DISCOVERY PICTURES PREMIERED ITS large screen format movie called "Wildfire: Feel the Heat" at the Smithsonian Institution in Washington D.C. in March 1999. The BLM and other wildland firefighting agencies worked with Discovery to portray and tell the story of wildland firefighting. The movie was filmed in the northwestern United States and Australia, and features firefighters and smokejumpers from McCall, Idaho.

PARTNERSHIPS

WILDLANDS TODAY ATTRACT MORE than visitors looking for solitude, wildlife or recreation. Increasingly, wildlands are drawing people who want to build homes within or adjacent to them. This trend poses one of the BLM's newer challenges: managing wildland fires in areas known as the "wildland-urban interface."

WESTERN STATES, IN PARTICULAR, contain many areas where BLM land intermingles with private land. Although rural fire departments (RFDs) usually protect private land and structures from fire, when public land is threatened, the BLM responds too. In the wildland-urban interface, the BLM and RFDs often work together to protect private resources and public land. During the past several years, the BLM has developed more than 1,700 mutual aid agreements with RFDs that allow the agency to provide training and equipment to these departments. In return, RFDs may provide initial attack in the wildland-urban interface, or assist federal agencies in managing wildland fires. These partnerships help ensure safer and more efficient firefighting.

A RECENT EXAMPLE OF THESE expanding and beneficial partnerships is a new program where the BLM provides excessed wildland fire engines to RFDs. Wildland fire engines due to be replaced are refurbished and re-equipped. State offices then identify rural fire departments that have: 1) a history of cooperation with BLM districts; 2) areas where the RFD responds to fires on public land; and 3) areas where the public would benefit from the added protection capabilities.

WHEN THE RFDs ARE SELECTED, an agreement is developed that specifies how and where the engines can be used, such as on public land and the land the RFD protects, and the training and qualifications required of the staff who operate the engine. The BLM then assigns the engine to the RFD but retains ownership of the engine. The BLM works with the RFD to inspect the engine annually to make sure it meets BLM wildland fire engine standards.

IN 1999, ONE ENGINE EACH WAS assigned to the Elko and Winnemucca field offices in Nevada, Burns Field Office in Oregon, and Las Cruces Field Office in New Mexico. The engines were one ton, four-wheel drive vehicles with 200-gallon tanks.

Bill Casey, a fire operations specialist assigned to the BLM's Office of Fire and Aviation praised the initiative. "This program boosts fire protection capabilities of all departments in an area, which tremendously benefits the public and enhances interagency cooperation."

BLM FIRE AND AVIATION PROGRAM REVIEW

WILDLAND AND PRESCRIBED FIRE

MANAGING WILDLAND FIRE ON public land has been described many ways: complex, risky, challenging, critical, dangerous, demanding. Indeed, it's all of these things and much more.

FIRE IS AN IMPORTANT NATURAL process and when used to enhance the health of an ecosystem, its value cannot be overstated. Fire can reduce dense vegetation, which improves wildlife habitat and lessens the potential for large, disastrous wildfire. Fire can also be a formidable foe. Within seconds it can race up a hillside, and within hours sweep clean hundreds of acres of trees, shrubs, plants, grasses, and, yes, sometimes homes.

FIRE CAN BE PARTICULARLY devastating when it's caused by a careless human act. Every year hundreds, and perhaps thousands, of human-caused wildland fires cause millions of dollars in damage to public and private lands and natural resources. Many of these fires are caused by carelessness, and many are accidents due to a lack of understanding about fire conditions and fire causes.



NATIONAL WILDLAND FIRE PREVENTION/EDUCATION TEAMS

BECAUSE A PROACTIVE APPROACH is critical in reducing human-caused wildland fires, several states requested through severity funding in 1999 the assistance of a prevention/education team. These teams' goals are to reduce the number of human-caused fires by creating awareness of wildland fire danger, and educate the public about fire-safe practices.

"THE DIFFERENCE THIS YEAR," SAID Pat Durland, BLM's wildland fire prevention/education lead, "is that instead of using severity funding only to pre-position emergency firefighting equipment and resources, offices used the opportunity to place prevention/education teams in areas with high fire danger in advance of the fire season. In Utah, for example, one of these teams was credited with reducing the numbers of human-caused fires during a season when heavy loads of dry fuel were causing extreme fire danger."

IN 1999 REGIONAL AND NATIONAL prevention/education teams were dispatched to Minnesota, Nevada, Montana, Georgia, Texas and Florida.

FIRE PREPAREDNESS

WHETHER FIRE IS BEING USED TO improve an ecosystem or suppressed to save critical wildlife habitat, it must be managed carefully. In an average fire season on BLM-managed land, about 4,400 fires burn about 1.7 million acres of land. The 1999 season proved unusually challenging with 6,196 fires that burned more than 2.6 million acres.

PREPARING FOR SEASONS LIKE 1999 requires cooperation, coordination, training and preparation at all levels of BLM's organization.

STANDARDS FOR FIRE OPERATIONS

MANAGING FIRE SAFELY AND efficiently requires a solid understanding of many policies, principles and procedures. The BLM's national standards for fire and aviation operations are intended to help resource and fire managers and staff achieve a proficiency that ensures safe and efficient firefighting. BLM established these standards in 1996 and they are described in the "Standards for Fire Operations" or "Red Book." The Red Book is updated annually and provides guidance and clarification on wildland fire policy, safety procedures, fire use and suppression, fire

INVESTIGATIONS AND FIRE REVIEWS

preparedness and prevention, protection priorities, interagency cooperation, roles and responsibilities and wildland-urban interface issues.

PREPAREDNESS REVIEWS

NATIONAL TEAMS OF BLM FIRE and aviation experts began conducting preparedness reviews in 1997 using BLM national standards for fire operations. The reviews are designed to help fire personnel achieve a standard level of performance and knowledge. They also help identify weaknesses in BLM's firefighting workforce before mistakes are made.

PAUL HEFNER, A FIRE MANAGEMENT specialist assigned to BLM's Office of Fire and Aviation, said these inspections have greatly increased the proficiency of firefighting crews. He compared an early inspection where a crew had never drafted water into an engine to an inspection in 1999 where crews demonstrated excellent drafting skills.

FORMAL INVESTIGATIONS OF SERIOUS incidents and accidents are yet another way of collecting and sharing critical information that can help protect firefighters, the public, natural resources and private property. Investigations can also help operations improve and become more efficient, and they can help identify necessary policy or personnel changes.

IN 1999 AT LEAST TWO BLM FIRES warranted special investigation: the Lowden Ranch prescribed fire in northern California, and the Sadler Complex in northern Nevada.

LOWDEN RANCH PRESCRIBED FIRE

THE LOWDEN RANCH FIRE WAS prescribed to treat 100 acres of a noxious weed called yellow starthistle near the town of Lewiston in northern California. The fire was lit about 11 a.m. on July 2, and by 1:30 p.m., had escaped control lines. Before it was extinguished nearly a week later, 23 homes were destroyed in Lewiston and more than 2,000 acres were burned.

WITHIN HOURS OF THE ESCAPE, however, the BLM had established an emergency center, met with residents, and began processing claims for burned property.

A NATIONAL INVESTIGATION TEAM WAS also formed and a report was quickly produced that showed the BLM had not complied with standards and procedures when planning and implementing the Lowden Ranch prescription. The burn plan contained incomplete or inadequate elements, and the fire was not implemented according to plan specifications.

IN THE FALL, A BOARD OF INQUIRY met to review pertinent information, interview personnel involved and make recommendations to the State Director. Approved in 1998 by BLM's Director and the Executive Leadership Team, Boards of Inquiry are chaired by the Director of the Office of Fire and Aviation and are used to follow up on serious situations. After determining who has responsibility for an incident, Boards of Inquiry make recommendations ranging from no action to termination of employment.

They can also clear personnel of responsibility or charges of wrongdoing or neglect. In the case of the Lowden Ranch prescribed burn, several recommendations were made regarding personal accountability for decisions and actions. The Board also produced findings and recommendations regarding both the BLM's national and California's state prescribed fire programs.

SADLER FIRE

THE SADLER FIRE OCCURRED NEAR Elko, Nevada, during a time when lightning ignited hundreds of fires throughout the northern part of the state. On August 9, during a backfiring operation at the head of the fire, six firefighters from the National Park Service's Golden Gate 3 crew were entrapped. Of the six, three were hospitalized. Two of these individuals were treated for burns and all three were treated for smoke inhalation. The remaining three of the six firefighters were treated at the hospital for smoke inhalation and released.

THE SUBSEQUENT ACCIDENT

investigation determined the incident management team had failed to adequately consider the safety of the firefighters; crew leaders and division supervisors didn't adequately evaluate fire behavior or the tactics, given the weather and fire behavior; the incident action plan was incomplete and contained errors; and all of the "10 Standard Fire Orders" were violated along with 13 of the "18 Watch Out Situations."

SEVERAL RECOMMENDATIONS WERE

offered and actions taken as a result of findings from the investigation. The Type 1 Incident Management Team was disbanded. More than one recommendation focused on improving or evaluating the training, qualifications and experience levels of those involved in or managing the incident. One notable recommendation was that the vinyl packaging on the fire shelters be redesigned so the shelter can be easily removed under stressful conditions.



AVIATION

THE STAFF IN THE BLM'S NATIONAL aviation office see a future in BLM's airborne program that will set an example for efficiency and save taxpayers hundreds of thousands of dollars. Their concept is not a new one, nor is it unusual. Their goal is this: reposition and share aircraft among agencies and states to increase use of contracted aircraft and reduce contracts and costs to taxpayers.

THE BLM'S NATIONAL AVIATION program manager, Lynn Findley, says this will save the BLM about \$450,000 annually. "When the BLM uses more than 60 types of government-owned or contract airplanes and helicopters, and flies an average of 20,000 hours each year, this means tremendous gains for the agency."

BLM USES AIRCRAFT TO SUPPORT wildland fire operations, disaster response, animal census, wild horse and burro gathers, habitat management, range or cadastral survey, law enforcement, forest management, photo mapping, search and rescue, and other uses related to public land and resource management. During fiscal year 1999, BLM-owned or contracted aircraft flew 19,040 hours, which is 39 percent of the total air time of all eight Department of the Interior

(DOI) agencies. Using aircraft to meet BLM resource objectives has increased during the past three years and resource support now accounts for about 40 percent of aircraft flight time while fire makes up the other 60 percent.

IN 1997, THE BLM, LOOKING FOR additional ways to increase efficiency, discontinued use of OV-10s, which were surplus military aircraft that the BLM had acquired to use as lead planes or tactical aircraft. The BLM found that configuring OV-10s for wildland firefighting was expensive, and that obtaining parts for the OV-10s was also difficult because manufacturers quit maintaining part supplies when the military excessed the aircraft. To replace these airplanes, the BLM contracted four Beechcraft King Air 90s. Staff and pilots will evaluate the performance and use of these aircraft and others and make recommendations in 2000 for type of tactical aircraft the BLM will use.

AVIATION SAFETY

SPREADING THE WORD ABOUT safety issues throughout an agency with hundreds of employees across the United States who work different times of the year and a variety of hours was, at one time, overwhelming. A form known as a "SAFECOM" (safety communique) changed that. SAFECOMs allow personnel to report concerns or problems so they can be resolved quickly, if not immediately.

"SAFECOMs PROVIDE A WAY TO get the word out on safety issues and particularly issues that keep reoccurring. For instance this past summer there were some bad seals in a pump on a fuel truck for helicopters, which resulted in contaminated helicopter fuel. A SAFECOM allowed us to spread the word quickly," said Larry Mahaffey, an aircraft safety specialist with the BLM's Office of Fire and Aviation.

IN ALL, 219 SAFECOMs WERE submitted in fiscal year 1999, which is twice what was submitted in 1997 and 58 percent more than 1998. Specialists attribute the increase to the ability to file SAFECOMs electronically, and an increased confidence in reporting safety concerns without fear of reprisal.

OF THE SAFECOMs SUBMITTED IN 1999, 70 percent fell into two categories: 1) hazards that are deviations from manual direction, pilot actions and weather; and 2) maintenance on the aircraft requiring attention or shut down.

AERIAL SUPERVISION MODULES (ASM) PROJECT

WILDLAND FIRE MANAGERS OFTEN use a variety of aircraft to manage a blaze. For example, a single incident could have lead and air tactical planes, air tankers, helicopters, and smokejumper aircraft. When the air traffic becomes congested, it's critical that airborne support be carefully managed.

TYPICALLY TWO DIFFERENT AIRPLANES lead, supervise and manage air support. A lead plane coordinates and supervises air tankers, and identifies and marks targets. An air attack or tactical plane supervises air tactical operations, coordinates media and law enforcement aircraft, and supports ground operations.

THIS WAY OF DOING BUSINESS IS changing, however, with the advent of aerial supervision modules. These modules, composed of a government air tactical pilot and a BLM air tactical supervisor,

combine all of these duties and responsibilities in one aircraft. Sharing tasks and responsibilities reduces radio and air traffic and increases efficiency.

IN 1999, FOUR ASMs WERE established and tested in Alaska, Nevada, Utah and Idaho. The modules led air tankers through drops, coordinated suppression efforts on the ground and in the air, and facilitated air-to-ground and air-to-air communications. Preliminary reports on the use of the modules from field offices and fire managers are very positive. The BLM plans to use four modules again in 2000: one module each in Alaska, California, Nevada, and one shared between Idaho and Utah.

PROGRAM REVIEWS

AVIATION OPERATIONS AND management evaluations are routinely included in fire preparedness reviews discussed earlier in this report. However, aviation personnel conduct two additional departmental reviews of aviation operations, management, planning, preparedness and suppression programs. In 1999, they performed a technical program review of BLM's Alaska fire program, and in Nevada they supported the August fire bust with an Aviation Safety Assistance Team.

INTERNATIONAL PROGRAM

THE BLM'S INTERNATIONAL program facilitates international technical and scientific exchanges; supports international wildland fire training; and provides personnel and equipment to national and international disasters and incidents. This support helps improve BLM's operations and knowledge of its staff, assists other agencies and countries during disasters or relief efforts, and enhances the skills and abilities of its professionals.

EXCHANGES

PERSONNEL EXCHANGES WITH FOREIGN countries provide valuable insight and information on firefighting techniques and skills, help share and acquire new methods of dealing with common wildland fire problems, and expand the perspectives, knowledge and adaptability of employees.

IN 1999 UNDER THE EXCHANGE program, the BLM hosted 20 people from Canada, Mexico, Norway and Russia. These individuals traveled to NIFC, and visited BLM field and state offices in Alaska, Nevada, Montana, Utah, California, Oregon and Idaho. They reviewed BLM wildland fire programs, specifically focusing on common fire effects issues; Snake River Valley crew training; BLM's engine development; smokejumper and

helitack programs; and the Incident Command System.

THE BLM, IN TURN, SENT 13 individuals to Canada, three to Mexico, and six to Russia. In Canada, BLM staff reviewed the country's crew resource management course, use of fire retardant, fire business management system, use of prescribed fire, and evaluated Canada's Cessna Citation CE500. Staff visiting Mexico reviewed its exchange program, forest fire issues, and studied the operational relationship between SEMARNAP (the organization responsible for Mexico's environment, natural resources and fisheries programs) and the Mexican military. In Russia, BLM staff reviewed the Russian smokejumper program and studied how cheatgrass affects habitat and wildland fire in that country.

TECHNICAL SUPPORT

THE BLM ASSISTS OTHERS COUNTRIES in wildland fire training, assessment, prevention/education and mitigation programs. These activities are paid for by other agencies or countries. In 1999, the BLM evaluated Mexico's fire training program in warehousing and telecommunications; assisted with helicopter operations in Mexico; trained four Mexicans on telecommunications and one on warehouse management

systems; participated in an assessment of the Indonesian firefighting system; assisted in instructing a wildland fire training program in Russia; participated in a planning project designed to improve management and suppression response on fires in the Russian Far East; and hosted a group from Brazil and the U.S. State Department, which learned about coordinating interagency wildland fire operations on a national basis.

TECHNICAL SUPPORT FOR INTERNATIONAL DISASTERS

THROUGH A REIMBURSABLE agreement with the Forest Service's Disaster Assistance Support Program, the BLM assisted the U.S. Agency for International Development's Office of Foreign Disaster Assistance (OFDA). The BLM provided five employees to the OFDA Logistics Center in Washington, D.C. Seven employees supported OFDA international relief efforts in: 1) Costa Rica and Honduras for Hurricane Mitch; and 2) Macedonia, Pakistan, Italy and Germany for the Kosovo refugee effort. In addition, BLM specialists also built support kits for international disaster responders.

OTHER INTERNATIONAL INITIATIVES AND MEETINGS

THE UNITED STATES AND MEXICO signed an agreement in June 1999 to allow wildland fire resources to cross the border within a mutual assistance zone of ten miles to assist with suppression of wildland fires that threaten border resources. The agreement also authorizes both countries to work together on other fire management activities outside of the mutual assistance zone.

BLM PARTICIPATES IN INTERNATIONAL meetings and conferences each year to exchange information and discuss common issues. For example in March and April, 1999, Ed Shepard, the Office of Fire and Aviation's Deputy Director, traveled to Australia with 10 federal fire management specialists from the United States and Canada. The group studied the social aspects of fire management in Australia, its staffing issues and workforce distribution, and non-use of prescribed fire for hazard reduction or forest management.

BLM STAFF ALSO PARTICIPATED IN THE North American Forestry Commission's Fire Management Study Group. This group, consisting of representatives from the United States, Canada and Mexico exchanged

information on fire seasons, new cooperating issues, and discussed crew standards so that the countries can exchange firefighting personnel.

position descriptions, and makes recommendations for coverage or non-coverage. In 1999, the team processed 118 claims, and received an additional 700.

OTHER CONFERENCES THE BLM

participated in included: the World Health Organization Meeting on Forest Fire-Related Health Guidelines in Lima, Peru; international fire management conference "Major Forest Fires and Systems of Fire Suppression: Catalunya, An Evolving Model;" and the interagency and international "1999 Australia/New Zealand Study Tour."

SAFETY

DATA MANAGEMENT

IN THE PAST, DATA ON FIRE-RELATED injuries and property damage has been insufficient, yet this kind of accurate information is critical. Good data can help staff develop trend analyses and identify problem areas within fire operations.

FIRE AND LAW ENFORCEMENT RETIREMENT

IN 1997 ALL DOI FIRE AND LAW enforcement retirement claims and coverage were merged under the BLM's Office of Fire and Aviation. Prior to this move each DOI agency handled its own cases, and tracking employee history among the agencies was complex and time-consuming, resulting in huge backlogs. Since the merger the backlog has been reduced and processing streamlined.

IN 1998, THE WILDLAND FIRE community partnered with the DOI to modify the Department's Safety Management Information System (SMIS), to include information related to wildland fire injuries and property damage. The modifications were completed in 1999 and have been provided to DOI. Soon data will be input into SMIS that will allow the fire community to identify whether injuries are associated with wildland or prescribed fire; if they occur on the fireline, in camp, or in transport; the crew type; phase of the fire; and other pertinent fire-related data.

THE FIRE AND LAW ENFORCEMENT Retirement Team reviews all DOI individual claims and

EQUAL EMPLOYMENT OPPORTUNITY (EEO)

IN A MOVE THAT WILL FURTHER strengthen fire-related injury and property damage data collection and management, this year the Forest Service also adopted the DOI Safety Management Information System and associated fire-related modifications.

SERIOUS ACCIDENT INVESTIGATION FOR TEAM LEADERS

INVESTIGATING SERIOUS ACCIDENTS and fatalities is difficult and intense for those involved, especially the team leads. To help prepare managers for leading these investigations, a 16-hour training called "Serious Accident Investigation for Team Leaders" was developed and presented as a BLM course for managers in 1998. In 1999 the course was adopted by all five wildland fire agencies.

THIS TRAINING ALSO REVIEWS THE requirements of Departmental policies; what can be expected from team members; what can be expected from outside entities such as Occupational Safety and Health Administration, medical examiners, the solicitor, and the media; security of documents; health of the team; and other related issues.

THE BLM'S FIRE AND AVIATION program supports the agency's effort to achieve a workforce that reflects the nation's diversity. Of fire and aviation's on-the-ground firefighting workforce of 1,636 people, about 17 percent are white women, and 16 percent consist of minorities including Black, Hispanic, and American Indian/Alaskan Native, and Asian American/Pacific Islander men and women. In all, the percentage of minority employees in BLM fire-specific positions rose from 13 to 16 percent from July 1998 to July 1999.

IN 1999 THE BLM'S FIRE AND aviation programs standardized a recruitment system that assures similar recruitment periods and methods in each state. Vacancies were also publicized on the Fire and Aviation Home Page on the internet, and forwarded to the International Association of Black Professional Fire Fighters, the National Association of Hispanic Firefighters, the Women in Fire Service, and colleges and universities.

THE OFFICE OF FIRE AND AVIATION also sets aside funding for students to participate in the Wildland Firefighter Apprenticeship Program,

which provides training that allows the students to convert from seasonal to permanent positions upon completion of the program. In 1999, 22 students graduated from the Basic Academy.

ANOTHER OPPORTUNITY FOR advancement exists in the Technical Fire Management Training Program. This program provides advanced training in several areas of fire and fuels management and can help employees move from a technical to a professional series, which enables them to fill management positions.

TRAINING

“DEVELOP, BUILD AND PRODUCE” summarizes the mission of the National Fire and Aviation Training Support Group. In 1999 the Group’s production unit delivered 28 courses on site in Boise, plus five off-site in Nevada and Utah, in addition to assisting the National Advanced Resource Technology Center (NARTC) with three national-level courses. The courses cover intermediate level wildland fire, aviation, prescribed fire and fire management training. In 1999 about 850 personnel from the BLM, other federal wildland fire agencies, numerous state

and county agencies, rural and volunteer fire departments, the U.S. Coast Guard, and some foreign countries attended courses.

THE TRAINING SUPPORT GROUP completed two training packages for the BLM in 1999: Engine Operator and Single Engine Air Tanker (SEAT) Manager. Test courses for each were conducted in the spring of 1999. The group also completed the Aerial Supervision Management course that includes components of Crew Resource Management, and conducted a serious accident investigation training. The serious accident investigation training was also converted this year from a BLM-only course to an interagency course.

ANOTHER UNIT THAT FALLS UNDER THE Training Support Group is the National Wildfire Coordinating Group’s (NWCG) training development unit. (The NWCG is a group of representatives from state and federal wildland firefighting agencies that coordinates fire management, policy, operations and training among the agencies.) This unit develops interagency fire- and aviation-related training courses for nationwide use, and has been working on 19

projects, including 11 Unit Leader courses for incident command team positions. The unit continues to help the Incident Operation Working Team update position tasks books and the National Interagency Incident Management System's "Wildland and Prescribed Fire Qualification System Guide." This document outlines the training and experience required to advance through the Incident Management System.

WILDLAND FIREFIGHTER APPRENTICESHIP PROGRAM (WFAP)

THE BLM'S SHRINKING WILDLAND firefighting workforce is a serious problem, but the WFAP helps. This program addresses the need for continuous recruitment and training to achieve a safe, effective and diverse firefighting workforce. The WFAP provides entry-level employees with a specific training curriculum that supplements on-the-job training and provides career ladder and advancement opportunities.

THE FOREST SERVICE'S REGION 5 began the WFAP in 1990, and BLM started sending candidates in 1993, and soon began helping teach and coordinate the classes. In 1999, of the 160 attending apprentices, 27 were BLM employees; in 2000, of 80 students scheduled to begin the program, 15 are from the BLM. The academy consists of two month-long courses, basic and advanced, in two consecutive years. Students are schooled in wildland fire, and complete field work and physical training. In between the two courses, candidates gain field experience.

BLM FIRE AND AVIATION MANAGEMENT ISSUES

WILDLAND FIRE

SHRINKING WORKFORCE

MANY FACTORS AFFECT HOW A wildland fire behaves. Wind can push a blaze quickly into a tight draw; months of drought can dry fuels so much that a tiny spark in grass becomes a carpet of flame; fire can race uphill through steep terrain within seconds.

WITH SO MANY FACTORS INFLUENCING the character of wildland fire, managing a blaze becomes an extremely technical, scientific and carefully planned endeavor. To safely and efficiently suppress these fires, managers and firefighters require many years of training and experience.

HEREIN LIES THE ISSUE: THE BLM'S fire fighting and managing workforce is shrinking. Developing and maintaining skilled, qualified personnel is increasingly difficult. Several reasons for the dwindling cadre are apparent: 1) decreasing budget; 2) employees nearing retirement; 3) changing work and family values; and 4) pay equity and benefit discrepancies.



MOST EFFICIENT FUNDING LEVEL (MEL)

THE WILDLAND FIRE PREPAREDNESS budget is developed annually based on a computer model that incorporates historical data such as fire activity, and weather and suppression costs, to determine the most efficient firefighter organization and funding level for a field office. This organization and funding level minimizes fire suppression costs and the loss of natural resources on the land. For fiscal years 1996 through 1999, the BLM and Forest Service received less than 85 percent of the wildfire preparedness funds each estimated its agency would need.

WHEN THE BLM RECEIVES LESS than its estimated MEL, the agency compensates by reducing training and prevention efforts, and by adjusting the numbers and types of firefighting personnel and equipment positioned at strategic locations plus the length of time they stay at these locations. The BLM has had to remove wildland fire engines from service, adjust seasonal hiring of firefighters, shorten or eliminate helicopter and air tanker contracts, reduce the number of training courses offered, and defer prevention efforts.

MATURING WORKFORCE

BLM EMPLOYEES WHOSE PRIMARY job is firefighting are eligible to retire at the age of 50; they must retire at the age of 55. In its August 1999 report on wildfire activities, the U.S. General Accounting Office wrote that many BLM employees qualified to be commanders of either Type 1 or 2 incident management teams are within two to four years of retirement, and there is no corresponding replacement of younger qualified and skilled firefighters. Incident management teams consist of nine to 27 fire and resource management specialists who are dispatched across the nation to fires that have escaped initial control efforts or exceeded the local agency's capabilities.

CULTIVATING A CADRE OF FIRE management specialists with the knowledge and skills necessary to manage wildland fires takes years because individuals must train at least 600 hours to become a Type 2 incident commander and 700 hours to qualify for a Type 1 incident command position. Training can take from 17 to 22 years for the Type 2 level, and 20 to 25 years for the Type 1 level.

CHANGING WORK AND FAMILY VALUES

RESOURCE MANAGEMENT STAFF who do not have wildland fire-related responsibilities in their job descriptions are less and less interested in qualifying to fight fires as a collateral duty. There are several reasons for this. First, BLM employees are committed to, and place a high priority on, their primary job. They refrain from taking time out to fight fire because of increasing workloads and the knowledge that upon returning from a wildland fire assignment, their work likely will have multiplied.

SECOND, IN MANY FAMILIES BOTH parents have careers. When one leaves home on assignment, which may last weeks, it may not only inconvenience the other parent but increase family care expenses. Complicating this scenario is the fact that the additional income earned from the assignment may not offset the inconvenience nor the additional expenses. Additionally, family values have changed to the extent that many employees today are unwilling to abandon family commitments to fight fire.

PAY EQUITY DISCREPANCIES

ONE OF THE MOST SERIOUS REASONS the firefighting workforce is continuing to shrink may be based on the Fair Labor Standards Act (FLSA), which created a pay equity issue among firefighters, command and support staff. The crux of the issue is this: a truck driver on a wildland fire often makes more money than a highly trained and qualified incident commander.

UNDER FLSA, WHEN EMPLOYEES are assigned to a fire, they are classified as being in either an exempt position (such as a supervisor) or a nonexempt position (such as a truck driver). People in nonexempt positions are compensated for overtime work at 150 percent of their normal base pay. But the overtime salary of personnel in exempt positions is capped at the General Salary Level 10, step 1 rate of pay, which may well be below their base pay. This disparity discourages experienced employees from increasing their qualification level or even participating in wildland fire activities at all.

IN ADDITION TO THE PAY EQUITY discrepancies, because of their temporary status, seasonal firefighters are not entitled to life or health insurance, nor do they receive credit toward retirement.

WHEN DECREASING BUDGETS, AGING employees, changing family values, and pay and benefit inequities combine in wildland firefighting, the consequences can be grave. With fewer personnel qualified and skilled to fill critical fire management positions and fight fire, firefighter safety is affected as well as the agency's ability to effectively and efficiently manage fires.

THE INGREDIENTS FOR CATASTROPHE are in the mix; the time has arrived to begin changing the recipe for disaster by ensuring that budget needs are met, employees are trained and developed to fill critical fire management positions, and pay inequities are resolved.

AVIATION

THE BLM'S SHRINKING WORKFORCE is not contained to wildland fire ground operations alone. In the past three years, the BLM has lost an astounding 85 percent of its pilots. The results? Aircraft have remained parked on the runway instead of supporting fire operations; pilots and aircraft have been borrowed from other agencies and organizations; the remaining pilots have worked many long, hard hours; and the BLM's air fleet has been markedly underused.

LYNN FINDLEY, BLM'S NATIONAL aviation program manager, cited many reasons for the shrinking pilot workforce. Although the aging workforce issue played an important role with many pilots retiring during the past few years, it was only one of several problems. First, private industry has continued to grow, offering higher wages than pilots who work for the government typically receive; the pay doesn't compensate for the hazardous conditions in which many BLM pilots fly; pilots don't have set schedules; and they fly all over the country and are away from home for extended periods. Findley said one pilot this past summer left home in May and didn't return until November. Finally, pilots who support BLM fire and resource management operations must be highly skilled and extensively trained to perform in this specialized field, and this takes many years.

ALL OF THESE FACTORS MEAN BLM has an especially difficult time recruiting and retaining pilots. However, BLM fire and aviation managers hope future recruitment efforts will increase the agency's core of pilots.

WILDLAND FIRE MANAGEMENT: THE BLM AND ITS PARTNERS

THE NATIONAL INTERAGENCY FIRE Center, located in Boise, Idaho, is home to federal agencies involved in wildland firefighting including the Forest Service, Fish and Wildlife Service, National Park Service, Bureau of Indian Affairs, Office of Aircraft Service, National Weather Service, the Bureau of Land Management, and a representative from the State Foresters Association. These agencies, plus individual states and sometimes the military, share and coordinate firefighting resources, and technical and logistical support, across the United States, and sometimes around the world. They also develop and implement common practices, standards and training.

IN ADDITION TO ITS PARTNERSHIP commitment, the BLM owns and manages the 55-acre site upon which NIFC is situated. As the NIFC host, the BLM ensures base facilities are maintained and improved, and coordinates operations among the partnering agencies.

THE BLM'S OFFICE OF FIRE AND Aviation is also headquartered at NIFC. Fire and aviation staff develop policy and work with state and field offices to review and improve fire management and operations.



Because NIFC provides technical and logistical support to national and international wildland fire efforts and all-risk incidents, the following functions are located at the center. Several of these divisions are staffed by personnel from more than one agency.

NATIONAL INTERAGENCY COORDINATION CENTER (NICC)

NICC COORDINATES THE MOVEMENT of supplies and resources across 11 geographic areas. Based on "closest forces" and "total mobility" concepts, NICC requests the closest available qualified resource, regardless of agency affiliation.

REMOTE AUTOMATED WEATHER STATIONS (RAWS)

A LARGE NETWORK OF 1,150 STATIONS, RAWS collect meteorological data such as wind speed and direction, precipitation, temperature, relative humidity and fuel moisture. These data help fire and resource specialists in all aspects of fire management from planning to large fire management.

INFRARED TECHNOLOGY

THE FOREST SERVICE FIRST USED infrared technology in 1966 to map wildland fires and detect "hot spots," or particularly active parts of a fire. With today's advanced technology, specialists can provide infrared imagery to incidents within minutes.

BOISE BLM SMOKEJUMPERS

BASED AT NIFC, THE BOISE (BLM) Smokejumpers provide a rapid-response, aircraft-delivered team of firefighters who assist fire and resource managers with wildland fire suppression, remote area fire monitoring, prescribed fire, and hazardous fuels reduction.

GREAT BASIN CACHE

THE GREAT BASIN CACHE IS ONE of the largest of 11 federal caches, maintaining an inventory valued at nearly \$13 million. The cache also stores and distributes standardized firefighting training materials and publications both nationally and internationally.

NATIONAL INCIDENT RADIO SUPPORT CACHE (NIRSC)

NIRSC POSSESSES THE LARGEST amount of portable low-power communication equipment in one location in the entire nation. NIRSC has equipped incidents ranging from wildland fire to hurricanes and floods.

NATIONAL FIRE AND AVIATION TRAINING AND SUPPORT GROUP

THE TRAINING GROUP DEVELOPS FOR BLM and the National Wildfire Coordinating Group training courses and video programs, provides program guidance, and distributes information regarding training opportunities.

EQUIPMENT DEVELOPMENT

THE FIRE EQUIPMENT DEVELOPMENT Unit at NIFC improves, develops and constructs prototype and pilot model fire engines and equipment for the BLM. Municipalities, airports, states, other federal agencies, and branches of the Department of Defense use fire equipment and fire engine designs developed at NIFC.



