



United States
Department of
Agriculture

Forest Service

FS-885

July 2007



Fire and Aviation Management Fiscal Year 2006 in Review





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Letter From the Director

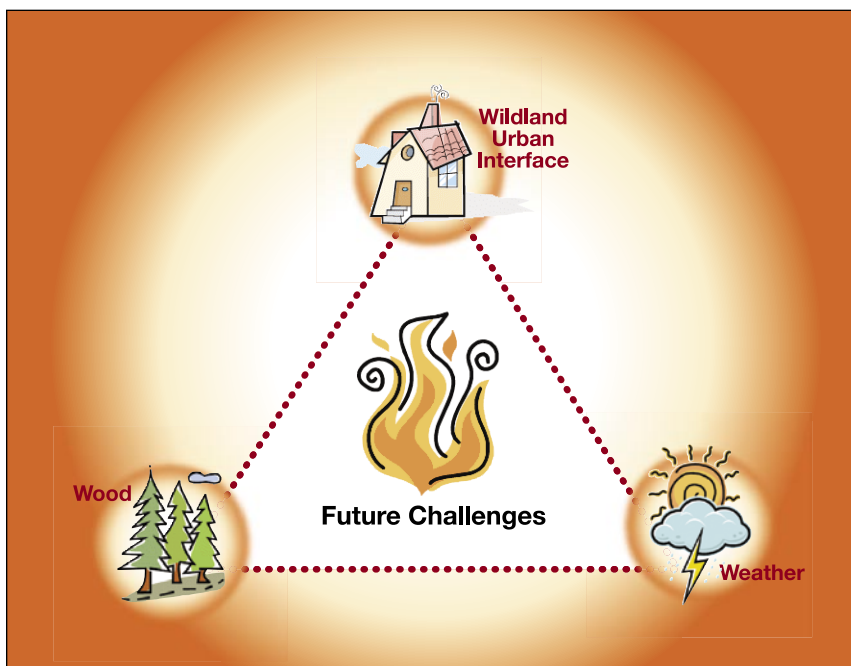


Each year brings new challenges and new accomplishments. Fire and Aviation Management (FAM) had a very busy and productive fiscal year 2006. In light of a very active wildland fire season, which set new records in both the number of reported fires and acres burned, we are proud of our many accomplishments.

FAM is adapting to the changing wildland fire situation in the United States. Recent trends indicate that wildfires in the United States have become larger and more intense, and costs to taxpayers are increasing.

More people are at risk, loss of life and property are increasing, and natural and cultural resources are more vulnerable to wildfire. In 2006, nearly 10 million acres of land were burned by wildfires, including 2 million acres on National Forest System lands. Wildfires in 2006 resulted in the highest acreage burned in recent U.S. history; it is alarming because this excess of damage has been much more typical of the average fire season experienced in the last decade than in the last century.

Significant causes of these trends can best be attributed to wildland-urban interface (WUI), weather, and wood. The WUI is expanding. In the 1990s, more than 8.4 million homes were added to the WUI, representing more than 60 percent of new homes constructed in the United States during that period. Many of these new homes are located in or adjacent to fire-prone areas, which have high wildfire potential. In addition, weather and moisture patterns are changing in many of our Nation's fire-prone areas, and woody materials (hazardous fuels) in the Nation's forests continue to accumulate despite significant progress in programs to reduce those fuels. This triad of WUI, weather, and wood creates an environment in which the number of fires continues to increase, resulting in escalating costs of wildfire suppression; in 2006, FAM spent \$1.5 billion to fight fires.



To help combat these challenging conditions, additional wildland fire analysis tools and information are coming on line. Information such as that provided by LANDFIRE, a data set of nationally consistent, geospatially referenced information with relevance to wildfire risk and values at risk, has enabled scientists to develop better predictive models so decisionmakers can better weigh various management options. These decision support tools can help clarify funding priorities and examine options for fire management strategies and tactics.

Federal wildland fire policy establishes that the protection of human life is the number one priority in wildland fire management. The second priority is the protection of property and natural/cultural resources. As we move into a risk management approach to setting suppression priorities and making operational decisions, our commitment to firefighter and public safety will remain steadfast. So that employees and our partners can fully understand our foundation for judgment, decisions, and behavior, the Forest Service is moving into a doctrinal approach for fire management and other agency activities. Those who understand the complexity of fire situations and management operations also understand the need for wide discretion to address those complexities by various programs and at different incident management levels. A regulatory approach to situational management can quickly become overwhelmed by the complexities encountered, whereas the doctrinal approach will create an organization guided by well-stated doctrinal principles, which represent the reality of the work, the environment, and the mission.

Partnerships among Federal, State, tribal, and local firefighting agencies are expanding and will help improve the efficiency and effectiveness of wildland fire management across all ownerships. All levels of government are assisting communities in the preparation and implementation of Community Wildfire Protection Plans as encouraged by the Healthy Forests Restoration Act. The Wildland Fire Leadership Council recently completed an update to the 10-Year Comprehensive Strategy Implementation Plan that identifies multijurisdictional objectives; implementation actions; and performance metrics for suppression, hazardous fuels treatment, restoration of fire-adapted ecosystems, and community assistance for the Nation. Federal and State partners are also working to resolve questions about suppression responsibility in the WUI and about suppression cost-share agreements.

Finally, the key variable we can affect is the condition of the land. As we restore ecosystems to conditions that are more “fire friendly,” we make a long-term, positive change in the asset with which we’ve been entrusted—the land.

We certainly have plenty of challenges ahead, but with our talented, dedicated employees and continued interest in and support of our programs, we will continue to make progress. I look forward to continuing to work with you to meet the challenges in the years ahead.



Tom Harbour

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Fire and Aviation Management Overview and Highlights

Overview

The Fire and Aviation Management (FAM) Staff resides within the State & Private Forestry (S&PF) deputy area. The program's primary areas of responsibility include fire operations, hazardous fuel reduction, aviation, national fire plan, partnerships, and planning and budget. In fiscal year (FY) 2006 the program leadership and their staff were responsible and accountable for an appropriated budget of approximately \$660 million for preparedness, \$690 million for suppression, \$280 million for hazardous fuels reduction, and \$54 million for community assistance programs.

FAM touches activities in many S&PF areas, as well as the National Forest System (NFS) deputy area. FAM Staff is guided by the principles of *innovation*, *execution*, and *discipline*. The following objectives are of primary importance:

- Leading the way in developing and maintaining a safe, highly trained, world class fire management organization.
- Improving effectiveness and efficiency in fire management through management efficiencies.
- Developing and implementing the Fire Suppression Foundational Doctrine as well as other doctrines.
- Ensuring that integration continues with NFS program areas and that restoration of forests and rangelands remains a high-priority focus for the agency as a whole.

Highlights of FY 2006 Accomplishments



FAM continues to work with our internal and external partners to implement the President's Healthy Forests Initiative (HFI). In FY 2006, FAM reviewed the Healthy Forests Initiative/Healthy Forests Restoration

Act (HFRA) programs and identified barriers and made recommendations for increasing the use of HFI/HFRA tools. Recommendations from the review will improve awareness and understanding of the tools among field personnel.

In FY 2006, the Forest Service, U.S. Department of Agriculture (USDA), Wildland Fire Management Program underwent an Office of Management and Budget (OMB) Program Assessment Rating Tool (PART) reassessment for the FY 2008 budget cycle. The PART rating indicates how well a program is performing and how effectively tax dollars are being spent. The rating is critical because it plays a part in OMB's budget allocation decisions. The recent reassessment noted that the program had improved its performance measures, independent evaluations, and management deficiencies. These improvements resulted in a passing rating of "Adequate." This was a significant step up from the program's 2002 rating of "Results Not Demonstrated."

During FY 2006, in partnership with the Department of the Interior (DOI), Western Governors' Association, and many other stakeholders, FAM staff continued working to update the 10-Year Comprehensive Strategy Implementation Plan, which was finalized in December 2006. The updated plan focuses on a collaborative framework essential for success and sets forth desired outcomes, performance measures, and responsibilities for tasks identified.

In partnership with NFS, FAM hosted the first integration workshop in Ocala, FL, for the Washington Office and regional directors of Forest Management; FAM; and Watershed, Fish, Wildlife, Air & Rare Plants Staffs. FAM's deputy chief and the NFS deputy chief participated in this workshop to demonstrate their commitment to and leadership of program integration across deputy areas and throughout the agency. As a result of the workshop, national program staffs and regions are looking for and finding new ways to integrate their decision and management processes, which will help leverage scarce funds for greater accomplishments.

Part I. Fire Operations

The Operations program located at the National Interagency Fire Center (NIFC) consists of the National Interagency Coordination Center (NICC), National Interagency Incident Communications Division (NIICD), and the Remote Automated Weather Stations (RAWS). Other functions that reside in the Operations program include equipment and wildland fire chemicals, the National Wildfire Coordinating Group training branch support, national incident business management, coordination of national and international agreements, national firefighting contracting, and public affairs operations. Providing focus to the regions on cost management is a top priority. Fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives. Fires are analyzed for the appropriate management response (AMR), which includes a variety of options from full suppression to wildland fire use (WFU).

FAM also provides training and experience opportunities to cooperators using the Incident Command System on Forest Service incidents. Cooperators that have received training include the New York City Fire Department, the USDA Animal and Plant Health Inspection Service, the Environmental Protection Agency, and local fire department personnel through the U.S. Fire Administration.

FAM promotes safety and effective operations by sponsoring the FAM doctrine, a philosophy of risk management. Specifically, it is the body of principles, the foundation of judgment, decisionmaking, and behaviors that guide the action of the organization, and it describes the environment in which actions are taken.

Fire Season 2006

Fire activity in 2006 was above normal by nearly every standard. Fire danger escalated early in the year in the Southern and Midwestern United States, where nearly 25 percent of the country was affected by moderate to extreme drought. Texas, Oklahoma, and Arkansas began burning actively in late 2005, and by the end of February 2006 the acres burned in these areas

totaled approximately 360 percent of the 10-year average of the number of acres burned per year. In Texas, nearly 1.5 million acres burned and 238 homes were destroyed.

The Southwest had a very active fire season in the spring due to below-normal rain and snow and abundant carryover fuels from 2005. In the Northwest, the month of June was very hot and dry, which rapidly melted the snowpack, causing fuels at higher elevations to dry more quickly and the fire danger to increase earlier than normal in the year. Dry lightning storms in July sparked an unusual number of wildfires in California and throughout the Great Basin in Nevada, Utah, and Idaho. Dry conditions in June and July also led to a large fire in the Boundary Waters Canoe Area Wilderness in northern Minnesota. Wildland fires continued to burn the drought-affected areas of California into early December, and the fires were exacerbated by extremely strong Santa Ana winds.

Some 2006 season highlights include the following:

- It was the driest winter on record for Arizona and the second driest for New Mexico. It was also the warmest summer on record for Nevada, the second warmest for Wyoming, and the third warmest for Idaho and California. Nationally, 2006 was the second warmest summer on record and had the hottest temperatures on record from January through August.

Night burnout operation, Siskiyou National Forest.



International agreements supported firefighting during the 2006 fire season.



- On July 29, NICC elevated the National Preparedness Level to 5, indicating that available firefighting resources were extremely limited with 57 active large fires in nine geographic areas.
- Agreements with Australia, New Zealand, and Canada were activated in August. About 270 firefighting personnel from Canada and 115 from Australia and New Zealand deployed to fight the fires. This international support provided primarily skilled, midlevel fire managers to supervise firefighting crews.
- On August 13, the U.S. Army's Task Force Blaze, with 500 firefighters, was assigned to the Tripod Complex Wildland Fire in eastern Washington.
- During the year, four military C-130 aircraft equipped with the Forest Service's Modular Airborne Fire Fighting System were deployed in the Southwest, the Great Basin, and the Northwest.
- The Forest Service spent nearly \$1.5 billion suppressing fires across the country. The total area burned for 2006 was a record 9.8 million acres, of which 4.8 million acres were on State and private land.

Forest Service Doctrine

In January 2006, the Forest Service publicized that it is embracing a philosophy of risk management known as doctrine. Foundational

Firefighter felling a hazard tree.



doctrine is the body of principles and the foundation of judgment, decisionmaking, and behavior that guides the action of an organization and describes the environment in which actions are taken. These principles have application at multiple levels within the Forest Service. Some principles are applicable across the agency, some are specific to FAM, and others are specific to fire suppression activities only. Current policies and practices will not be abandoned for doctrine, but revisions may occur. The proposals presented in the foundational doctrine and the transition to their implementation is evolving and will be refined and implemented over time.

Many steps are necessary to make this doctrine the Forest Service's cultural anchor. Forest Service experts in the areas of risk management, human performance, and fire safety, together with the fire operations safety council, have been assigned the task of implementing the doctrine. The doctrine will be implemented in three phases.

- Phase I educates the workforce toward a corporate understanding of the core elements.
- Phase II validates that the doctrine is anchored in the mission of the agency.
- Phase III implements the system by converting doctrinal principles into directives that translate to action.

FAM is currently reaching out to its interagency, State, and tribal partners in fire management to explain the doctrine and its meaning. The FAM Staff will begin working with these partners to develop an interagency operational doctrine designed to guide application of these principles on the fireline. More information on doctrine can be found at <http://www.fs.fed.us/fire/doctrine/index.html>.

The Risk Management program is revising the Forest Service Manual FSM 5100 in its entirety. The revision will be completed in FY 2007 by incorporating doctrinal principles and will include moving processes out of the manual and into guides and handbooks. Interagency efforts in this area have accomplished the insertion of doctrine in the “Redbook.”

Information of doctrine in the interagency Redbook can be found at: http://www.nifc.gov/red_book/2007/Chapter01.pdf and http://www.nifc.gov/red_book/2007/Chapter05.pdf.

Risk Management (Safety)

The Fire Operations Risk Management program is focused on human performance in the fire environment, whether it is prescribed fire, wildfire, or fire use. The purpose of the program is to develop critical decisionmaking and leadership skills in fire management personnel at all levels; these skills are often called upon in the dynamic worlds of wildland fire and all-hazard incident management. Coupled with this focus on human performance is the development of systems within

which emergency incident management personnel are able to perform their tasks in an independent manner, guided primarily by doctrine and their expressed leader intent.

Another element of the fire operations risk management program is the close integration of both the Federal and State fire management communities in the development and implementation of firefighter and fire operations safety programs and initiatives. These elements are focused on firefighter performance and tactical/operational issues affecting firefighter safety.

As evidenced by Forest Service activities in response to its obligations under the National Response Plan, fire operations risk management personnel are crucial in providing coordination and oversight of Incident Management Team (IMT) activities on the ground. The safety and occupational health expertise necessary to provide comprehensive attention to the hazards associated with such a disaster is held within the safety and occupational health community. In the Hurricane Katrina response, members of the Forest Service’s Office of Safety and Occupational Health community were fully integrated into the effort and were directed and coordinated by fire operations safety personnel who are trained and experienced in incident management.

Aviation safety, much like fire operations safety, is focused on the management of systems—systems associated with cockpit management and the decisionmaking skills of aviators. Aviation safety, due to the highly technical nature of the activity, is also heavily involved with the investigations of aircraft accidents and incidents, coordinating closely with the National

Investigators measure scrape marks on the helicopter’s main rotor blade, after emergency landing.



Fire managers investigate the emergency landing of a helicopter after sudden engine failure.



Transportation Safety Board and Federal Aviation Administration in the accomplishment of this task.

With regards to health and fitness and ensuring FAM employees are physically qualified and healthy for appropriate fire management activities, the Forest Service is participating in the Interagency Medical Standards program, along with its four partner agencies in the DOI. In 2006, FAM screened 6,441 Forest Service employees for arduous firefighting duty through this program. Some permanent employees were found to have medical issues requiring further review (34 percent). Regions 1, 2, 6, and 10 completed implementation of this program. Program implementation will continue each fiscal year until all regions are implemented in 2010. This program is an important step in protecting employees' health and in limiting the agency's liability if individuals with preexisting medical conditions were placed in arduous jobs in the high-risk firefighting environment.

Human Performance (Training)

The FAM Human Performance program worked with Forest Service interagency partners to continue training wildland fire personnel during FY 2006. FAM provided \$650,000 in monetary support and worked with the Fire and Aviation Diversity Committee on attracting and retaining minorities. The Washington Office sponsored a \$300,000 leadership course contract for Fireline Leadership and Incident Leadership. By delivering up to 15 courses under a single contract, the Washington Office saved \$100,000 in eliminating overlapping administrative costs.

Human performance is an important factor in prescribed fires.



FAM also worked with the USDA's Office of Inspector General (OIG) to implement firefighter-qualifications-related recommendations stemming from a recent OIG audit and assisted with qualifications reviews. FAM successfully incorporated the Interagency Aviation Training system, in cooperation with the DOI, and provided basic aviation safety training for approximately 3,500 personnel. Through the University of California–Davis extension program, FAM initiated a new program to provide university-level aviation education; 25 Forest Service personnel successfully completed the 5-week course, which culminated in the issuance of an Aviation Safety Certificate and credits in the university system.

Many other training and performance projects assist in meeting the agency's fire suppression and fuels missions. A number of these projects are essential to a safe and effective approach in meeting agency goals and supporting our State, DOI, and Department of Homeland Security (DHS) partners. A few of these projects are listed below.

- Continued to clarify and adjust the Interagency Fire Program Management (IFPM) implementation.
- Developed justification for changing senior firefighter position standards from Incident Commander Type 5 (ICT5) **and** Firefighter Type 1 (FFT1) to ICT5 **or** FFT1.
- Assisted in developing guidance on positive education qualification criteria.
- Assisted in formally defining secondary position experience prerequisites.

Scott Valley Helitack members rappel into typical terrain and vegetation on the Klamath National Forest.



- Developed long-term strategy for Forest Service IFPM crosswalks implementation.
- Disseminated information on the Incident Qualifications and Certification System to provide data that helps managers identify training and qualifications needs that were not available before.
- Assisted in updating the agency's support for requirements for all-hazard responses that were generated by the DHS and Homeland Security Presidential Declaration-5 (HSPD-5).
- Partnered with the U.S. Fire Administration on projects that will use DHS funds to develop courses and competency definitions.
- Worked with the Department of Labor to rewrite standards and operations plan for the National Interagency Joint Apprenticeship Program.
- Assisted with all-hazard training for the Department of Justice.
- Accomplished the following at the National Advanced Fire and Resource Institute (NAFRI):
 - Provided 10 fire management graduate-level courses and hosted numerous meetings.
 - Collaborated with Raytheon Corp. to update the strategic planning of Lessons Learned Center.
 - Hosted education technologies workshop on wildland fire distance learning curriculum.
 - Provided support to the Quadrennial Fire and Fuels Review and the Mega-Fire study.

Equipment and Chemicals

The Equipment and Chemicals program includes the development of equipment standards and specifications for the agency and interagency programs, the continued monitoring and oversight of the use of wildland fire chemicals, and the review and revision of the wildland fire chemical specifications to expand competition within the wildland fire chemical industry and incorporate newer environmentally safe products for use in the suppression of fires. In addition, the equipment and chemicals program oversees the fire and aviation special projects that are approved for funding and developed through the two Forest Service technology and development centers. The staff

at these two centers are also a key component to the success of the FAM program. They provide regular program support in the areas of personal protective equipment and clothing, firefighter safety, nutrition and wellness information, national helicopter rappel equipment development and manufacturing, oversight for the safety aspects of all water handling equipment utilized by firefighters in the suppression efforts, and the development and maintenance of over 50 specifications for the bulk of the equipment used by the Forest Service firefighters as well as all Federal and cooperative agencies that assist in the fire suppression efforts. The funding from FAM includes both preparedness and hazardous fuels dollars, and each year, the development centers provide project updates and accomplishment reports for completed projects.

The following two items addressed the need for a more tailored piece of equipment to improve efficiency of burning operations and provide for consistent manufacturing and procurement of this type of equipment.

- Developed all-terrain-vehicle drip torch.
- Designed and fabricated improved helitorch.

The end result of these two projects is a safer piece of equipment that is much more cost effective to use.

The following section provides a summary of the development centers' significant accomplishments for the fiscal year as directed by fire operations.

Wildland Fire Chemical Systems Accomplishments (Missoula Technology and Development Center)

- Compiled an intensive drop-test evaluation of various gel-thickening agents to enhance the rheological properties of fire retardants in cooperation with the California Department of Forestry and Fire Protection.
- Compiled an additional assessment of the air-drop performance characteristics of four different water enhancer products.

San Dimas Technology and Development Center (SDTDC) Accomplishments

- Completed drop-testing of the Evergreen Boeing 747 and the 10 Tanker Air Carrier to gather data on their effectiveness.

NIFC Equipment and Chemicals Accomplishments

- Continued working with cache strategic task groups to develop a strategic plan for the national caches for enhanced coordination geared toward better inventory and loss reduction. The final plan was submitted to leadership in February 2007. The plan was well received and adopted for implementation. The focus in FY 2007 is on developing the requirements to implement Goal 1, Incident Support for FY 2008, and gather the data to move Goal 2, focused on the cache infrastructure and most efficient organization, forward in the next 2 years.
- Established an interagency fire shelter program task group, now chartered under the National Fire and Aviation Executive Board (NFAEB), to implement the recommendations from the independent review of the new-generation fire shelter recall. The task group is implementing a life cycle plan that will facilitate fire shelter system development and replacement, as well as allow for the introduction of new technology through an established process and schedule. In addition, the task group is developing a communication strategy in order to provide the latest and necessary information concerning the fire shelter to firefighters.

Preparedness Resources and Facilities

In FY 2006, FAM reported an initial attack success rate of 98 percent for all unwanted fires contained at less than 300 acres. Initial attack is the action taken by fire suppression resources that are first to arrive at an incident. This achievement is one indication of how well FAM has managed its fire preparedness activities. These activities incorporate all components necessary to prepare for and fight wildland fires, including workforce development and training, equipment availability, and facilities maintenance. These fire preparedness activities enable Federal wildland fire management agencies to strengthen and enhance initial attack and fire suppression efforts.

The Forest Service maintained a level of firefighting capability that is comparable to levels attained in recent years. This goal was accomplished through a combination of local, regional, and national preparedness firefighting resources and by training and qualifying personnel for their assigned positions. FAM firefighting resources (personnel and equipment) continued to be highly mobile within and between geographic areas. Such mobility enabled us to be responsive to resource prepositioning and suppression needs throughout the geographic areas.

FAM successfully used the national and geographic predictive services to anticipate threats, guide the prepositioning of firefighting resources, and allocate severity funds from the fire suppression account when fire danger or activity was predicted to be above normal. These funds were used to expand local resource staffing and bring in additional personnel and equipment.

Part II. Aviation

Aviation resources in the Forest Service, which are used primarily for wildfire suppression, account for approximately 78 percent of the agency's 100,000-hour average of annual flight hours. Firefighting aircraft are used for command and control, intelligence gathering, suppression (retardant and water delivery), personnel transportation (e.g., hotshot crews), aerial ignition (e.g., burnouts, prescribed fires), and resupply. The Forest Service owns approximately 27 aircraft ranging from small, single-engine Cessna aircraft to large P-3 airtankers. The Forest Service also owns one Bell 206 helicopter. Approximately 88 percent of the aircraft are commercially contracted through exclusive-use or call-when-needed contracts.

The Forest Service recently acquired four Navy P-3 aircraft that are being converted into airtankers. These aircraft will be owned by the Government and will be piloted by contractors. Maintenance will be provided as appropriate from private aircraft maintenance sources.

Cooperative agreements with State and interagency partners include 2 exclusive-use CL215 airtankers; 17 exclusive-use, single-engine airtankers (SEATS); approximately 70 call-when-needed (CWN) SEATS; and 2 to 3 CWN CL215s. Eight Modular Airborne Firefighting System units are also available for use in military and National Guard C-130 aircraft.

P-3 airtanker.



Strategic Plan for Use of Aviation Assets in Wildland Fire Management

During FY 2006, FAM worked with the National Interagency Aviation Committee to prepare the second phase of an overarching strategic plan that addresses the interagency strategic direction for using aviation assets in fire management. The Forest Service has developed a supplement to this plan to bring the interagency direction to the agency level.

The aviation strategic plan mandated by Congress in appropriations law developed a national strategy for organizing, procuring, and managing aviation resources used in Federal wildland firefighting. The plan provides recommendations to the Secretaries of Agriculture and the Interior for the long-term strategic direction that will provide guidance for how Federal aviation resources will be procured, operated, and managed over the next 15 to 20 years. This strategy will ensure a safe, efficient, and sustainable national aviation program. The strategy addresses the findings of the Blue Ribbon Panel and will assist Federal agencies, along with assistance from their State and local partners, in successfully meeting the challenges of a rapidly changing wildland fire environment.

One of four MAFFs (modular airborne firefighting system) units refurbished in 2006.



Aviation Foundational Doctrine

Faced with a trend of increasing complexity and size in fire incidents, and undergoing increasing political and legal pressures brought on from an ever-increasing body of conflicting and competing rules, policies, and guidelines, Forest Service FAM recently began a multiyear effort to streamline and clarify its principles of operations.

FAM conducted the Rotor and Wing Conference in Stevenson, WA, in January 2006. Attendees at this event produced *Foundational Doctrine: Fire and Aviation*, a document establishing and defining foundational doctrine for the Forest Service aviation operations. The Forest Service is the largest governmental user of aircraft outside of the military. Currently under review, this document will eventually be integrated with the fire suppression doctrine discussed in the operations section above.

Competitive Sourcing-Feasibility Study

The Federal Activities Inventory Reform (FAIR) Act, Public Law 105-270, requires agencies to develop inventories each year of activities performed by their employees that are not inherently governmental, such as commercial activities. The FAIR Act further requires OMB to review the inventories, in consultation with the agencies, and publish a notice of public availability in the *Federal Register* after the consultation process is completed.

The aviation program completed an interim feasibility report of Aviation and Other Airborne Activities, and the Management Representative Team briefed the FAM director. The study assessed cost effectiveness and efficiency of the aviation program and assets, including workload and other data requirements necessary for business process reengineering or competitive sourcing.

FAM completed the feasibility study in December 2006, which was accepted by the Deputy Chief for S&PF. The deputy chief forwarded recommendations from the study to the Chief, regional foresters, station directors, and other leadership for final review. The Chief accepted the recommendations in May 2007.

Continuing To Implement the National Transportation Safety Board Recommendations

In response to several airtanker accidents in 2002, the National Transportation Safety Board (NTSB) made several recommendations to the aviation program to improve safety. Several of these recommendations have been implemented, but in FY 2006 this important work continued as follows:

- Continued implementation of an operational loads program for firefighting aircraft.
- Developed a maintenance and inspection program for firefighting for the P2V.
- Completed Federal Aviation Administration (FAA) airworthiness training for all Forest Service maintenance inspectors.
- Developed airtanker specifications and structural criteria for the future fleet.

These efforts will ensure the health and projected life cycle of our current and future fleet by understanding the rigors of the firefighting environment (operational loads), communicating a definable standard the aircraft must meet before being used, and implementing inspection programs that continually monitor the aircraft while used in the firefighting role.

Award for Enhancement of Automated Flight Following

Automated Flight Following (AFF), a partnership between the Forest Service and the Bureau of Land Management that began in 1999, is a system that automatically tracks and displays location and other associated information for aircraft on operational missions. Before AFF became operational, aircraft on official missions were required to establish positive contact under visual flight rules and report aircraft position at least once every 15 to 30 minutes, depending on the agency. Positive contact occurred through the use of voice radio reports to dispatchers tasked with flight following responsibilities, who in turn must record the aircraft position, typically by hand. The problems with this method were frequent lapses

in radio communication coverage and requiring the pilot to toggle between different radio frequencies when reporting aircraft position. As a result, position reports consumed limited radio “air time” and increased workload for both dispatchers and pilots involved in other mission activities. The Forest Service aviation program and many other agencies that use the technology have benefited from AFF through the following:

- Increased safety through timelier, more accurate locations for worst case search and rescue.
- Reduced radio traffic in high-demand workloads.
- Increased situational awareness by end users.
- Increased efficiency and effectiveness and reduced costs by having near real-time aircraft location information.
- Decreased workload in the aircraft by reducing communication requirements, frequency switching, and heads-down time.
- Decreased workload and stress levels at the dispatch centers.

In FY 2006, a partnership between the AFF system and Google Earth was launched, enabling the fire community to see 3-D interactive maps instead of the flat, 2-D maps the AFF program had used previously. The Google Earth interface improves situational awareness for aviation personnel, showing changes in ground elevation over satellite images of an area. Responders see the aircraft they are tracking in relation to the spatial data. The new system also shows temporary flight restrictions issued by the FAA, which improves safety of all concerned. On October 25, 2006, *Government Computer News*

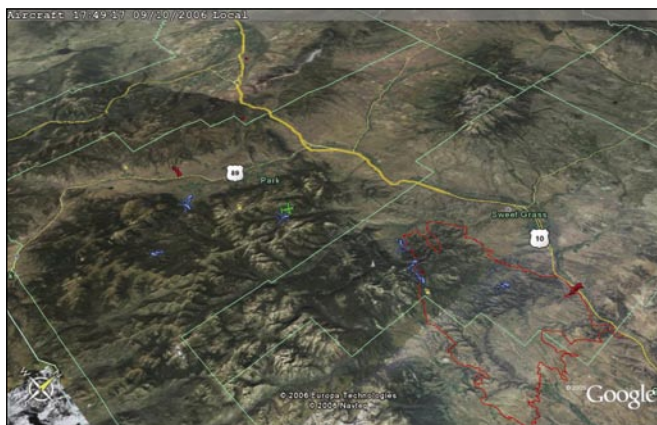
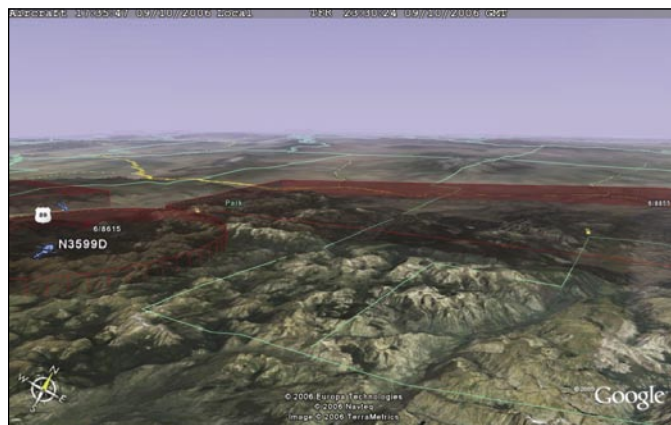
gave the Forest Service 1 of 10 agency awards for innovative IT accomplishments. Google Earth submitted the nomination.

Development of a Second Firewatch Helicopter

The Firewatch Cobra helicopter is a multifunctional platform that, because of its agility and maneuverability, is very suitable for detailed viewing of fires. The Forward Looking Infrared System and its integrated sensor package, installed on the Firewatch Cobra, are capable of displaying enhanced video images for fire intelligence gathering and better situational awareness to the flight crew and ground fire personnel. This information is disseminated through a specially equipped data recovery van that receives and transmits the video and cockpit audio to an incident base camp via a downlink system.

This technology enhances the aerial supervisory mission, provides incident staff with real-time information critical for situational awareness, and permits cost-effective decisionmaking. Live video can be sent via downlink to an incident command post for immediate interpretation by incident staff. Infrared capability allows the image of a fire perimeter to be viewed regardless of smoke. Transmission of map data can be e-mailed in flight or delivered by removable drive. Connecting these technologies in this way is unprecedented and enables the incident management team access to intelligence never before available.

Screen shot from Automated Flight Following System. Photos courtesy Google Earth.



This Firewatch Cobra's multifunctional platform provides services normally provided by two or more aircraft. The consolidated missions are Air Attack, Infrared/Remote Sensing, and Helicopter Coordinator. Intelligence gathering missions normally do not require the commitment of an aircraft for a full day, but often, full-day costs are incurred. Operational cost of the Firewatch aircraft to the incident is \$1,350 per flight hour.

Currently, two Firewatch Cobras are in service for the Forest Service; both are located in the Forest Service Pacific Southwest Region. N109Z is based in Lancaster, CA, and the N107Z is based in Redding, CA. Maintenance, pilot, fuel support, and data van operation services are primarily provided by a contract with DynCorp International, LLC.

The Firewatch Cobra helicopter is suitable for viewing fires.



Part III. Partnerships

The Partnerships program interacts and coordinates with a variety of partners, including the National Association of State Foresters (NASF), the Ad Council, the U.S. Fire Administration, the Federal Emergency Management Agency (FEMA), the National Fire Protection Association, and the International Association of Fire Chiefs, to name just a few. The Partnerships program also coordinates requests for international programs and cooperation for FAM.

The program areas consist of Cooperative Fire Protection (Volunteer Fire Assistance, State Fire Assistance, Federal Excess Personal Property [FEPP], etc.), Fire Prevention, and Firewise and Emergency Response (All-Hazards).

All-Hazards Support to the National Response Plan

The wildland fire community has a long history of supporting all-hazard incidents starting as early as Hurricane Andrew in 1992. During the period 1993 to 2003, resources were assigned to hurricanes (137 days), earthquakes (17 days), floods (60 days), terrorist attacks (140 days), animal disease incidents (83 days), and debris recovery from the Columbia Space Shuttle disaster (197 days).

In addition to anticipating increased wildfire activity, the Forest Service can expect further involvement with future all-hazard events due to increased hurricane activity, support to APHIS (Avian Influenza support and Mad Cow Disease threat), pandemic influenza threats, terrorism threats, and the need to build National Incident Management System capacity in other response agencies.

The 2005 hurricane season (Hurricanes Dennis, Katrina, Rita, and Wilma) further expanded our involvement. The Forest Service provided essential hurricane support personnel for area command teams, incident management teams (IMTs), logistic management teams, buying teams, work crews, and security details.

Interagency fire personnel assisting in hurricane response.



During the peak response on September 30, 2005, 28 IMTs and 5,600 total interagency personnel were assigned to the Gulf Coast (Florida, Alabama, Texas, Mississippi, and Louisiana). The Forest Service committed 112 team assignments (type 1, type 2, type 3, buying, and logistics), 441 crew assignments, and approximately 13,000 personnel to the hurricane efforts. Mission assignments for these units included creating and managing 21 base camps, 3 evacuation centers, 12 receiving and distribution centers, and 3 mobilization centers.

By mid-November 2005, approximately 15,000 personnel were committed to the hurricane support efforts. Forest Service personnel made up approximately 54 percent of the total hurricane relief workforce. The Forest Service's costs for these efforts totaled approximately \$194 million (between September 28, 2005, and December 31, 2005).

Forest Service costs for hurricane support efforts.

State	Forest Service funds obligated (\$)
Alabama	2,598,000
Florida	6,128,000
Louisiana	97,765,000
Mississippi	57,693,000
Texas	30,007,000

Some hurricane relief highlights include the following:

- In Louisiana and Mississippi, IMTs assisted States with debris assessment, initial attack on small fires, and development of long-term mitigation and prevention plans. In southeast Louisiana, one IMT assisted State and local fire service agencies in suppressing 220 fires on 2,796 acres.
- At Gulfport, MS, the IMT managed a base camp that supported volunteers, first responders, Red Cross, U.S. Navy Seabees, FEMA, Peace Corps, and others. The base camp was still supporting 663 personnel and serving 1,650 meals daily as late as November 15, 2006.
- At St. Gabriel, LA, the IMT managed a base camp that provided support to a 100-person Disaster Mortuary Support team operating a temporary mortuary.
- As of mid-January 2006, Federal agencies continued to assist with the staffing of 14 active mission assignments for disaster planning, trailer processing, base camp support, fire suppression, and management of evacuee centers in Alabama, Florida, Louisiana, Mississippi, and Texas.

Interagency fire personnel assisting in hurricane relief.



Fire Prevention Education Teams and Mobilization Guide

Developed as a partnership with the National Wildfire Coordinating Group Wildland Fire Education Working Team, the *Fire Prevention Education Team Mobilization Guide* provides a systematic approach for ordering teams. The guide establishes a 2-week rotation schedule for national teams and ensures that at least one team is available and prepositioned to respond to a national request at any time within their on-call timeframe. If additional teams are needed, they can be ordered by filling each team position separately through the Resource Ordering and Status System (ROSS). Although some rough spots have been encountered with this new system of ordering teams, overall, headway has been made.

The phenomenal productivity of these teams and their impact on reducing human-caused fires continue to make them in high demand. The National Interagency Coordination Center reports that 18 teams were mobilized through the national mobilization system. Several local/regional teams have been deployed as well.

Ad Council Wildfire Prevention Campaign

Working closely with the Ad Council, the NASF, and Disney, FAM has made huge strides with the Forest Service Wildfire Prevention Campaign.

Smokey Bear and Bambi get out the wildfire prevention message.



The first quarter of 2006 saw a total of \$15,783,000 donated media, an increase of 127 percent over the previous year's first quarter. Smokey Bear and Bambi-themed ads were especially popular. Highlights of the media campaign's first quarter, when compared with the same quarter a year earlier, include the following:

- A 279-percent increase in network and local cable television-donated media.
- 786,001,413 impressions and 120,064 clicks on various Web sites, including the *New York Times* and *National Geographic*.
- A domination of air play by Spanish radio activity with the public service announcement (PSA) *Ranger & Mountain Lion :30*.
- An extremely impressive 3,448-percent increase in outdoor advertising (billboards, bus stop signs, and mall stanchion signs) with unique placements of materials at the Tijuana/San Diego border and at the "Zipper" at Hollywood and Vine.

The Partnerships program partnered with the Ad Council and Radio Disney to increase the awareness of the Ad Council campaigns. The Fire Prevention Campaign (Smokey Bear) was at the top of Radio Disney's list as potential campaigns to promote. A multilayered program was developed that involved theater experiences at community events, concerts at malls, goody bag distribution, on-air PSAs, and online links. Smokey Bear was the only PSA costumed icon at the "Feelin' Groovy!" mall tours. Uniformed State or Federal forest employees escorted Smokey at these events, adding the benefit of promoting government forest agencies as well.

Firewise Program

During 2006, 82 communities earned Firewise Communities/USA recognition status, bringing the total number of recognized communities active in the program to 211. This figure represents a growth of more than 47 percent from the previous year. Currently, 33 States have recognized communities and 43 States are



formally participating. Since its inception in 2002, the Firewise Communities/USA recognition program has seen tremendous involvement at the State, tribal, and local levels and has driven more than \$13 million in community investment of time and resources in wildfire mitigation.

The new Firewise Web site, with the Firewise Learning Center, was also launched. The Web site contains some new features, including a searchable Firewise Library, Firewise Article Archive, Spanish translation for the primary areas of the Web site, Firewise Chat sessions, and a Web log or "blog" that is added to twice a month. On average, the Web site has been receiving 860,000 hits per month during 2006.

The Forest Service is also partnering with the media to help spread the Firewise message. The Firewise Communities/USA Media Toolkit was updated and sent to all State liaisons and communities. Homeowners are informed of Firewise techniques and mitigation measures they can implement to reduce fire ignitions and increase the potential of their home to survive a wildfire. In 1 week alone in June 2006, 113 fire-activity and/or Firewise-related articles appeared in papers throughout the United States. The Forest Service has partnered in the past with The Weather Channel to inform viewers of the threat of wildfires and the responsible Firewise actions they can make. FAM plans to continue this relationship and also to develop new media opportunities. In addition, local supporters and States continue to conduct workshops. During 2006, an estimated 50 workshops were held with 3,875 participants who learned about Firewise planning.

Program staff published the bimonthly *Firewise Newsletter* and *Wildfire News & Notes* in electronic format, both of which included numerous articles about Firewise community activities, current social and physical science research, wildfire response and recovery activities, and Firewise products and projects. A "How-To" newsletter was launched and published quarterly during 2006. This new product is being directed toward residents of Firewise Communities/USA areas and State and local representatives.

FY 2006 marked the first year for the Firewise Leadership Awards, modeled on the Forest Service's Smokey awards and intended to publicize regional, State, and local wildfire mitigation efforts. An interagency review team sifted through 31 nominations to choose 7 award winners, including municipal

fire departments, local community activists, individual State forestry staff members, and statewide programs.

The 2nd National Wildland-Urban Interface Fire Education Conference, "Backyards and Beyond," benefited from Forest Service sponsorship and involvement as it drew nearly 450 participants from 39 States, Canada, Australia, and South Africa. The event featured exhibits and posters; more than 75 educational sessions on wildfire planning; response and mitigation topics; and two 2-day, preconference seminars on wildfire hazard assessment and Firewise community planning.

State Fire Assistance

Forest Service funding in 2006 provided in excess of \$73 million for technical and financial assistance to the States for all fire management activities, including training, planning,

hazardous fuel treatments, and the purchase and maintenance of equipment. This State Fire Assistance funding assisted 8,102 communities in the form of risk assessments, fire prevention programs, fire management planning, and hazardous fuel mitigation projects. An emphasis in funding was placed on wildland-urban interface (WUI). The State Fire Assistance program provides key support to successful community programs such as Firewise Communities/USA and Fire Safe Councils. It will also support an expanded national public service fire prevention program. In addition, many communities and local fire departments, in collaboration with State foresters, developed community wildfire protection plans (CWPPs) to prioritize hazardous fuels treatments and reduce structural ignitability in communities that receive support from State Fire Assistance funding. State Fire Assistance grants treated approximately 82,000 acres of hazardous fuels in the WUI, helping to protect 1,232 communities at risk from catastrophic wildfire.

Aerial view of wildland-urban interface.



Community Wildfire Protection Plans

In FY 2006, FAM provided assistance for hazard assessments and funding was provided for Community Wildfire Protection Plans (CWPPs) for communities at risk (CAR). CWPPs address issues such as wildfire response, hazard mitigation, community preparedness, and structure protection. They provide communities with a tremendous opportunity to influence where and how Federal agencies implement fuels reduction plans on Federal lands and how additional Federal funds may be distributed for projects on non-Federal lands. The following chart illustrates the current status of CWPPs.

Current status of Community Wildfire Protection Plans.

NASF region	States with CAR list/map	Total CAR	Communities covered by CWPPs	Completed CWPPs	CWPPs in progress
West	17	7,034	2,415	641	230
South	13	34,007	431	321	156
Northeast	16	3,123	418	111	43
TOTAL	46	44,164	3,264	1,071	429

CAR = communities at risk.

CWPP = Community Wildfire Protection Plan.

NASF = National Association of State Foresters.

Volunteer Fire Assistance

The Volunteer Fire Assistance (VFA) program provides grants to rural and volunteer fire departments that serve communities of fewer than 10,000 people. The grants are made by the State foresters in each State and funded at a 50-50 cost share. Generally, most grants are for less than \$5,000 and average \$2,000 for a fire department. The grants are used for training, firefighting equipment, and safety equipment, including personal protective equipment. They are also used for organizing fire departments. Application for these funds is made by the fire departments to the State forester. In FY 2006, the VFA program accomplished the following:

- Increased firefighting capacity by providing technical assistance, training, supplies, and equipment to approximately 7,200 small, rural communities.
- Provided more than \$14 million for technical and financial assistance to States to enhance firefighting capacity at State and local levels.
- Supported the organization of 45 new fire departments.

Federal Excess Personal Property Program

The Federal Excess Personal Property (FEPP) program allows the loan of Forest Service-owned property, including much-needed equipment and supplies, to State foresters to assist State and rural agencies and volunteer firefighters in preparedness for suppression and presuppression missions on Federal, State, and community lands. Approximately 10 pieces of heavy equipment were loaned to State cooperators to help maintain and build fire roads. More than 500 trucks and trailers were assigned to be equipped with generators and pumps to assist firefighters on wildland and brush fires. To save States money, the FEPP program provides items from toilet paper to fire trucks, thereby allowing substantial savings to the taxpayers. For example, the State of Missouri saved more than \$40,000 in tires alone and another \$49,000 in firefighting equipment such as boots, fire hoses, and couplings. The State of Idaho saved more than \$180,000 with the acquisition of a fire truck and several pumps.

State foresters and the Forest Service have mutually participated in the FEPP program since 1956. Currently the FEPP-inventoried property value exceeds \$1 billion, with 152 operable aircraft and more than 40,000 items on Federal inventory. In FY 2006, the FEPP program acquired more than \$36 million worth of fire equipment and supplies to be used for firefighting. Inventoried items include aircraft, vehicles, trailers, generators, heavy equipment for road maintenance, forklifts, and fire boats. Common items that are durable in nature but are acquired with an original acquisition cost below \$5,000 are pumps, tanks, and small generators. Many of these items are typically acquired to be placed onto a FEPP vehicle or trailer. Consumable, low-dollar property items include vehicle and aircraft parts, blankets, boots, gloves, hoses, hand tools, office equipment, and construction materials. Currently, 49 States and 4 territories participate in the FEPP program.

An FEPP vehicle in Oklahoma, before restoration.



The FEPP vehicle after restoration, ready to respond to fires.



Department of Defense Firefighter Property Program

The Firefighter Property Program (FFP) is a new authority that allows a State to acquire title to excess military equipment and then assign that equipment to rural fire departments. The Department of Defense (DoD) authorized the Forest Service FEPP program to manage the transfer of DoD property through a Memorandum of Agreement.

The major difference between the FFP and the FEPP program is the ownership of the items acquired. All items acquired in the FEPP program are property of the Forest Service, while items acquired under the FFP belong to the recipient. The FFP property is also screened at a higher authority, therefore making a better quality and larger quantity of property available for the firefighting agencies. Another benefit to this program is the ability to acquire items for emergency services as well as firefighting. That authority includes items for search and rescue, hazardous material spills, and emergency medical service (EMS). These functions often fall within the firefighting agencies' responsibilities but are not applicable to the FEPP program.

Although not every State has signed an agreement with the Forest Service to participate under this new authority, new agreements are being made steadily, with most States expected to be signed up within the next year or two. In the first 5 months of the FFP, more than \$16 million was acquired from five States. Minnesota acquired two fire trucks, which provided a cost savings of more than \$300,000. Arkansas acquired more than 150 trucks in 5 months with an original acquisition cost of almost \$7 million. These free-issue vehicles provide an enormous savings to rural and volunteer fire departments. Vehicles are refurbished and equipped with pumps and generators to assist in rural and wildland firefighting.

Fire Management Today Publication

Founded in 1936, *Fire Management Today* (FMT) has served the wildland fire community for more than 70 years, providing

information on new techniques, technologies, and ideas. In 2006, a 108-page *Special Issue* was published, drawing from articles over the past 40 years and focusing on prescribed fire case studies, decision aids, and planning guides. Another landmark event occurred in 2006 for FMT; all available issues, beginning with December 1936 when the publication was named *Fire Control Notes*, have been placed on the FMT Web site (<http://www.fs.fed.us/fire/fmt/>). The 2006 photo contest was a huge success, with 424 submissions.

Restoring Fire Adapted Ecosystems: A Cooperative Project of the Forest Service, the Department of the Interior, and The Nature Conservancy

The Forest Service, DOI, and The Nature Conservancy have worked together for the past several years to accelerate fire restoration across the country in a partnership known as Restoring Fire Adapted Ecosystems (RFAE). The partnership is designed to advance the common goals of the sponsoring partners and focuses on collaborative outreach and education, training, and community-based conservation.

In total, 80 different landscape sites in 34 States have benefited from the RFAE partnership by participating in collaborative learning networks. These 80 projects have engaged more than 500 different agency, tribal, and private landowner partners to advance ecological restoration on more than 90 million acres. Landscape projects engaged by the network have treated more than 450,000 acres and leveraged more than \$12 million to advance on-the-ground restoration.

More than 900 training opportunities were offered in fire effects, fire ecology, and fire operations. In addition, agencies developed and began to promote a common fire education message that emphasizes the role of fire in our landscapes.

Part IV. Fuels and Fire Ecology

Hazardous Fuels Reduction and Restoration Treatments

The Hazardous Fuels program integrates fuels reduction and vegetation management activities to reduce the effects of wildland fire and enhance ecosystem health. The agency incorporates the latest science and technology, aggressively integrates relevant Forest Service programs, and allocates scarce resources wisely. In addition, the Forest Service collaborates with interagency and community partners to meet

the challenge of protecting communities and natural resources from the effects of unwanted wildfire.

The objective of the hazardous fuels reduction program, as called for in the HFI, is to reduce the undesired effects of large, destructive wildfires by reducing the volume of hazardous fuels on forest lands, woodlands, shrublands, and grasslands. The Hazardous Fuels program focuses on reducing the risk of wildland fire and long-term damage to resources and property in high-priority areas through vegetation treatment, using prescribed fire and mechanical treatment methods.

Before fuels reduction.



After fuels reduction.



Acres treated to reduce hazardous fuels and restore fire-adapted ecosystems.^a

	2001	2002	2003	2004	2005	2006
Total hazardous fuels acres	1,362,000	1,258,000	1,453,000	1,803,000	1,664,000	1,454,000
WUI	612,000	764,000	1,114,000	1,311,000	1,188,000	1,045,000
Non-WUI	750,000	494,000	339,000	492,000	476,000	409,000
Other programs						
Other restoration programs ^{b, c}				550,000	730,000	840,000
SFA mitigation grants ^c		40,000	136,000	146,000	77,000	82,000
Wildland fire use ^c	63,000	59,000	291,000	62,000	251,000	171,000
Total HFI and restoration acres	1,362,000	1,258,000	1,453,000	2,561,000	2,722,000	2,547,000

HFI = Healthy Forests Initiative.

SFA = State Fire Assistance.

WUI = wildland-urban interface.

^a Acres rounded to the nearest thousand.

^b Other restoration programs include the Forest Products, Wildlife Habitat, and Forest Health Protection programs.

^c These activities were not included in national totals before FY 2004 and are presented for information purposes only.

In FY 2006, the Forest Service treated 2,547,000 acres to reduce hazardous fuels and restore fire-adapted ecosystems. Of this amount, the reduction of hazardous fuels on 1,454,000 acres was accomplished with funds allocated to the Hazardous Fuels program; the remaining acres were treated by wildland fire use, by States who received State Fire Assistance mitigation grants, and by other programs in the Forest Service that work with us to restore fire-adapted ecosystems.

- *Negative Consequences* (values at risk)—Potential consequences associated with catastrophic fire (e.g., WUI, smoke).
- *Efficiency*—Efficiency of hazardous fuels investments (e.g., life-cycle costs, biomass opportunity).
- *Effectiveness*—Relative value of hazardous fuels treatments (e.g., impact on expected wildfire behavior).
- *Ecological Restoration*—Opportunity to integrate and align with other programs to accomplish restoration objectives (e.g., watershed condition, insect and disease outbreaks).

New Prioritization and Allocation Methodology

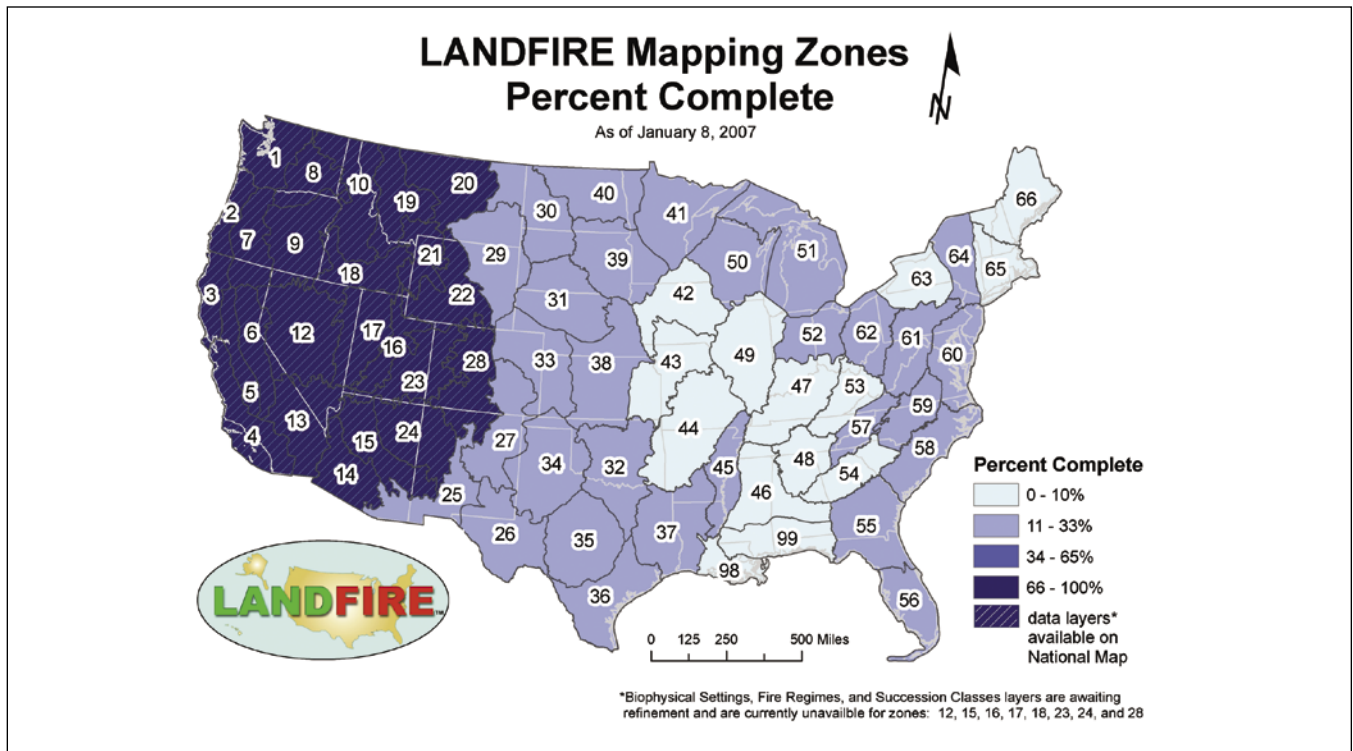
During FY 2006, FAM developed a new prioritization methodology for the future based on decision support science to ensure investments meet national high-priority needs. Results from the model informed an integrated Fuels/Forest Management budget allocation.

The model evaluates regional fuels needs and opportunities based on the following spatial criteria:

- *Wildfire Potential*—Relative comparison of fire potential across the country.

LANDFIRE

LANDFIRE (<http://www.landfire.gov>) is a multipartner wildland fire, ecosystem, and fuel mapping project that will generate nationally consistent, comprehensive, landscape-scale maps and data describing vegetation, fire, and fuels characteristics across the United States. These maps are produced at scales fine enough for prioritizing and planning specific hazardous fuels reduction and ecosystem restoration projects. The consistency



of LANDFIRE methods ensures that data will be nationally relevant, while the 30-meter grid resolution supports fire planning; however, products will vary by location and specific use.

In FY 2006, the LANDFIRE project accomplished the following:

- Completed 16 of 24 map zones for the Western United States, including the following:
 - 13 Anderson Fuels Models for Estimating Fire Behavior.
 - 40 Scott Fuel Models for Estimating Fire Behavior.
- Completed existing vegetation layer for 13 of 24 map zones in the Western United States (16 map zones include approximately 420 million acres).
- Completed five workshops (Forestry 438: Fuel Assessment Techniques Using LANDFIRE Data) and trained 160 students through the Technical Transfer. (These 160 students will now implement LANDFIRE technology within their spheres of influence and train their peers and staffs in its use. The goal of LANDFIRE's Technology Transfer is to integrate LANDFIRE data and maps into land management agency cultures and processes using computer applications such as Geographic Information Systems and models such as FlamMap and FARSITE.)
- Developed the process for mapping Fire Regimes, using plot data for the United States.

Planning for Fuels Treatments

As it was in FY 2006, project planning will continue to be an important aspect of the program of work to prepare for fuels treatments into the future. Treatments must address high-priority needs; include local, citizen-driven solutions; and be completed in a manner consistent with land-use plans and environmental goals. With an emphasis on WUI treatments, planning and consultation for fuels reduction projects involve more cooperators and a higher level of complexity than in the past.

FAM is working closely with Ecosystem Management Coordination land management planning staff to determine how to include fire considerations into land management plans, including items identified in the cost containment for fire suppression recommendations.

Woody Biomass Grants

In 2006, a Forest Service team evaluated 87 proposals for a nearly \$4.2 million woody biomass grant program. The HFRA calls for a grant program to help communities, entrepreneurs, businesses, local governments, and others to take residues from hazardous forest fuels reduction projects and turn them into marketable wood products, including liquid, gaseous, and solid fuels for energy.

Selections were based on several criteria, including those that remove and use woody biomass while helping to reduce the cost per acre for treatments on national forest lands. Woody biomass includes tree parts and woody plants—limbs, tops, needles—that are byproducts of ecological restoration and hazardous fuels reduction treatments. These byproducts can be used to generate energy and for a variety of other uses.

Grants were awarded for projects that will help remove economic and market barriers in using small-diameter trees and woody biomass. Consideration was also given to projects that will help revitalize rural communities whose forest-based economies have suffered in recent years. All recipients must match the Federal portion by at least 20 percent. Together with the non-Federal matches, more than \$13 million was spent on this effort in FY 2006, with 18 grants awarded in Alabama, Arizona, California, Colorado, Minnesota, Montana, New Mexico, Oregon, Utah, and Washington.

Removing woody biomass.



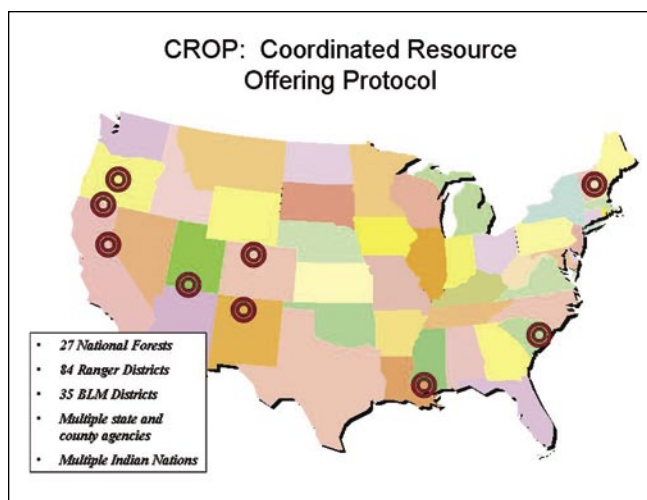
Strategic Placement of Treatments

The Forest Service is attempting to increase the use of woody biomass from hazardous fuels reduction, restoration, and other management activities on public and private lands to help offset the costs of these activities, provide economic opportunities to rural communities, and enhance environmental benefits for the American public.

To further this effort, 10 teams around the country are working on developing Interagency Coordinated Resource Offering Protocol (CROP) inventories that provide information via the Internet on the amount of biomass that will be offered by species and size class within commuting distance of a processing facility. This information will encourage economic investment in the private sector that will further healthy forest goals, including hazardous fuels reduction.

These CROP inventories can be sharpened by use of a Strategic Placement of Treatments (SPOTS) approach in those areas where problem fires threaten communities and natural resources. SPOTS uses spatial models in a collaborative way to evaluate the best possible landscape pattern of fuels and other vegetation management efforts to maximize treatment effectiveness on the large problem fires, while meeting a range of healthy forest objectives.

An early success came in January 2006, when Governor Kulongoski announced a new biomass facility would be built in Lakeview, OR. The project was supported by the southern Oregon CROP study.



Smoke Management

The Forest Service has been working closely with the Environmental Protection Agency to update and review the National Ambient Air Quality Standards for Particulate Matter, the rules that protect public health by regulating emissions from a variety of sources. When wildland fire incidents influence air quality standards, they can be considered to be exceptional events and are regulated by a separate set of rules, which are also being revised. The new, more stringent Particulate Matter Standards reflect recent scientific and medical findings that such pollution is a serious public health threat. Other air pollution rules are also being revised.

Other efforts include working with the Fire and Air Issues Coordinating Group to craft interagency strategies with partners at DOI and State forestry agencies to address upcoming State-by-State changes in rules that protect visibility in airsheds and reduce pollutants from wildland fires that contribute to regional haze.

The agency is focused on improving communication about and training for smoke management through national conference training and communication opportunities. Development of an interagency smoke management Web site is under way. Close work with agency researchers has resulted in improvements in quality and availability of the latest smoke-impact modeling tools such as BlueSkyRAINS.

Smoke from a fire on the Wenatchee National Forest.



Part V. National Fire Plan

The National Fire Plan (NFP) has completed its 6th year of working to ensure an interagency and integrated approach to the long-term effort of restoring health and productivity to the Nation's forests and grasslands. In the spring of 2006, the NFP Staff was merged into the FAM Staff as a means to ensure continued long-term success of NFP work.

Update of the 10-Year Implementation Plan

The newer goals, performance measures, and tasks in the updated plan incorporate opportunities created by the Healthy Forest Initiative and the Healthy Forest Restoration Act. Updating the tasks within the 10-Year Implementation Plan (Plan) was necessary because nearly 80 percent of the tasks listed in the original 2002 Plan have been accomplished. In addition, a summary of helpful practices for applying the Plan's collaborative framework is provided to assist stakeholders in the process of working together to expedite projects such as Community Wildfire Protection Plans. The update of this Plan was a collaborative effort among the Forest Service, the DOI, and the Western Governors' Association (represented by the diverse membership of the Forest Health Advisory Committee that includes more than 60 stakeholder groups).

Healthy Forests Review

The FAM Staff led an integrated internal review of Forest Service use of HFI/HFRA authorities during FY 2006. Representatives from Forest Management, Ecosystem Management Coordination, and Wildlife Staffs were included on the review team. The purpose of the review was to (1) gauge Forest Service employees' understanding of HF tools, (2) identify opportunities to improve the tools, and (3) determine how Forest Service leadership can better support the use of HFI authorities. The review noted significant barriers and challenges to HFI implementation and elements of successful

HF implementation. The review report makes recommendations for improving use of HFI/HFRA authorities. During the course of the review, many of the concerns and recommendations addressed were also communicated to appropriate staff and leadership in the national office. As a result, many of the recommendations are already being implemented.

Integration of Vegetation Treatment Programs

FAM provided leadership for coordinating and administering the Executive Integration Team (EIT). The EIT includes Washington Office staff directors whose programs directly affect vegetation treatment activities. The team meets twice a month to coordinate vegetation management, fuels reduction, and related activities and to provide leadership to field units to assure efficient and effective project implementation to provide multiple resource benefits.

The EIT developed a restoration framework to guide forest and grassland restoration in the field. Since adoption of the framework by the Executive Leadership Team in 2006, the EIT and the Interregional Ecosystem Management Coordinating Group (IREMCG) have been developing an implementation action plan for the restoration framework.

The EIT is assisting with an effort led by the Acquisition Management Staff to develop a new Business Model for Collaboration with Communities.

In the spring of 2006, the FAM, Forest Management, and Watershed, Wildlife and Fisheries Staffs hosted a national integration workshop for regional directors of those programs. The workshop identified key objectives of working together and barriers to integration. National program directors identified top priorities to enhance integration among programs. Substantial progress has been made on all those priorities. The FAM and Forest Management Staffs began organizing a 2007 Integration Workshop to continue the momentum to full integration among fuels, vegetation management, and related programs.

In FY 2006, the FAM Staff began developing a new integrated allocation process for hazardous fuels funding. Integration was incorporated in two key areas—using integrated, multi-resource information to inform decisionmakers and using a decision process that ensures staff directors are working with each other to develop integrated recommendations for deputy chief funding decisions.

Day-to-day integration among staffs in the WO has significantly improved. Integration meetings among staff directors, their deputies, assistant directors, and substaff are routine. Along with the regularly scheduled meetings of the EIT and their subteams, meetings are often scheduled to integrate direction and leadership on issues important to vegetation and fuels treatment programs.

FAM is being assisted by Forest Management Staff for integrated reviews of regional fire and fuels management programs.

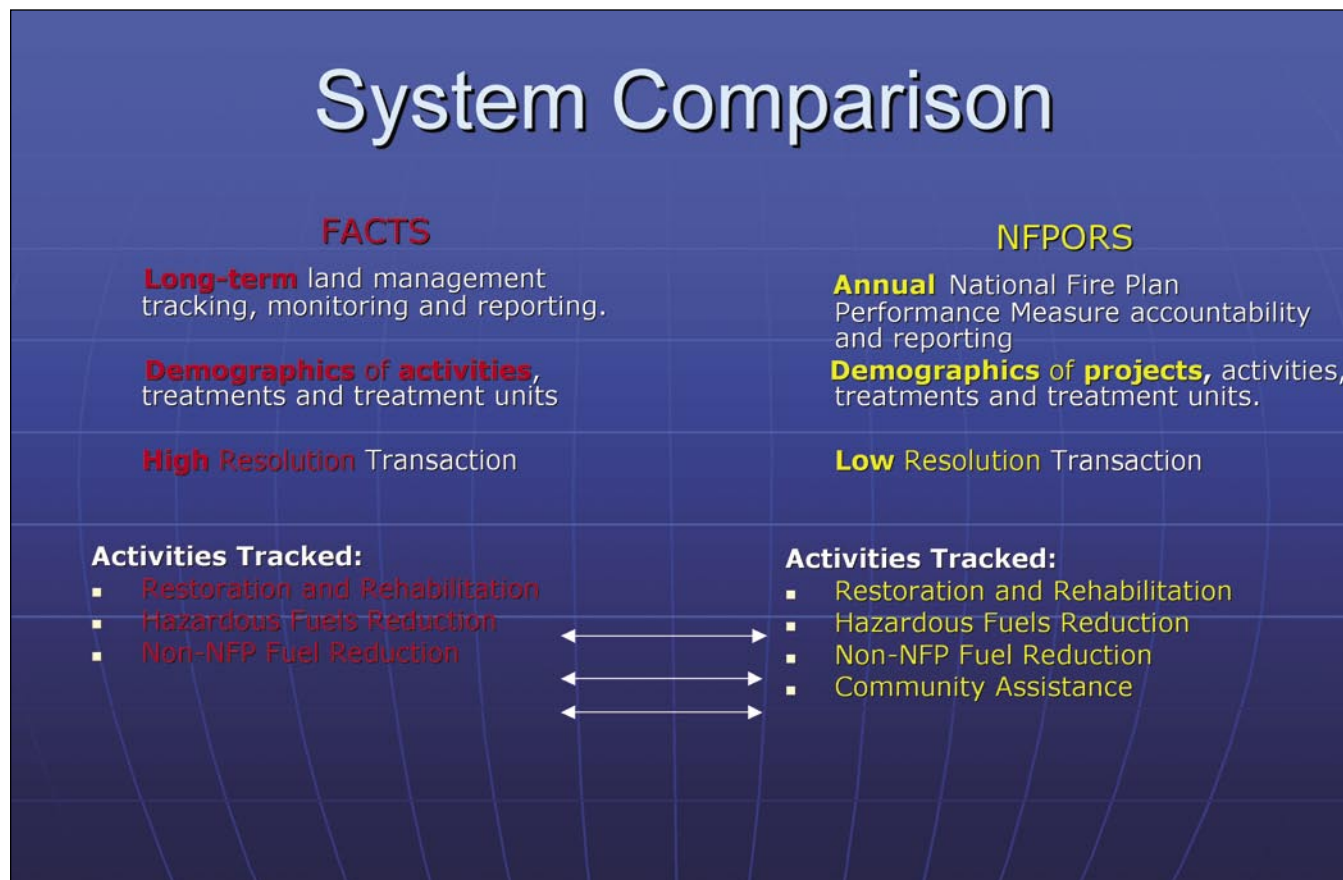
2006 FACTS Transition

Through a collaborative effort of the FAM Staff, the Forest Management FACTS (Forest Service Activity Tracking System) staff, and the NFPORS (National Fire Plan Operations and Reporting System) and FACTS database contractors, the Forest Service facilitated the transition from NFPORS to FACTS as the primary data entry environment for reporting Forest Service hazardous fuels accomplishments pursuant to the NFP and HFI/HFRA.

A 9-month effort involved the following:

- Developing new and modifying existing FACTS user interfaces for fuels managers.
- Modifying the underlying database table structures.
- Migrating out-year NFPORS data to FACTS.
- Developing a utility to move data from FACTS to the NFPORS Management Dashboard each day.
- Training fuels managers in the use of the FACTS system.

A comparison of FACTS and NFPORS data entry systems.



With the modifications on schedule, users began entering their 2007 Hazardous Fuels, Non-NFP, and Restoration and Rehabilitation accomplishments in FACTS on October 1, 2006.

The move to FACTS yielded the following advantages:

- Less duplicative data entry.
- The ability to describe treatments more precisely.
- Data related to NEPA documentation will be drawn from PALS (the Planning, Appeals, and Litigation System).
- Potential to integrate with other Forest Service information systems.
- Geographic Information System capabilities.
- Continued consistency with DOI NFPORS data.

Other NFP Accomplishments

Successes were realized on many fronts throughout 2006, including the following:

- Merged two interagency Web sites (<http://www.fireplan.gov> and [healthyforests.gov](http://www.healthyforests.gov)) into the innovative <http://forestsandrangelands.gov> site. This new site is a one-stop source of information and data for Congress, agencies, stakeholders, and the general public. It will highlight the quarterly *Healthy Forests and Rangelands Report* and provide accomplishment reporting for such activities as hazardous fuels reduction, biomass use, and stewardship contracting. Combining the sites provides better service, and maintenance will be less expensive.

The new interagency Web site.

The screenshot displays the homepage of the Healthy Forests and Rangelands website. At the top, the title "Healthy Forests and Rangelands" is prominently displayed with the subtitle "Managing Our Natural Heritage". Below the title are logos for the U.S. Forest Service, U.S. Department of Agriculture, and U.S. Department of the Interior. A navigation menu on the left includes links for Home, Overview, Reports, Success Stories, Implementation Plan, Helping Communities, News, Healthy Forests, National Fire Plan, Stewardship Contracting, Woody Biomass, Leadership Council, MOU, Members, Meetings, Accomplishments, Resources, Contacts, and Links. The main content area features a search bar and a "Go" button. The primary news article is titled "Wildland Fire Leadership Council News and Accomplishments" and includes a sub-heading "Monitoring Trends in Burn Severity". The article text describes the Wildland Fire Leadership Council (WFLC) sponsorship of the "Monitoring Trends in Burn Severity (MTBS)" project, which aims to map and assess burn severity across the continental United States, Alaska, and Hawaii. A secondary article titled "WFLC MEETING IN IDAHO - May 11, 2005" is also visible, detailing a meeting in Coeur d'Alene, Idaho, where the USDA announced Mark Rey as the new chair of the WFLC. An accompanying photograph shows a group of people gathered outdoors in a forest setting.

- Continued staff support to the Wildland Fire Leadership Council, which provides leadership and oversight to ensure policy coordination, accountability, and effective implementation of the Federal Wildland Fire Management Policy.
- Continued collaboration with Federal, State, and local partners on activities and issues revolving around reduction of hazardous fuels in critical wildland-urban interface areas, preparation of community wildfire protection plans, and integration of fuels reduction work with NFS program areas.
- Created and supplied national communication products on forest restoration and wildland fire issues to help our agency educate and inform the public at such venues as conferences, public meetings, environmental education seminars, and training sessions.
- Completed two additional programs in cooperation with The Weather Channel that focus on post-fire rehabilitation and restoration and fire research.

Forest restoration and wildland fire exhibit.



Part VI. Planning and Budget

Program Assessment Rating Tool

In FY 2002, the Wildland Fire Management program of the Forest Service was one of many Federal programs selected for the first round of OMB's assessments using the PART. The FY 2002 rating for the Wildland Fire Management was "Results Not Demonstrated," due primarily to challenges in meeting its long-term goals. Under the direction of the Wildland Fire Leadership Council (WFLC), the Forest Service took steps to improve its Wildland Fire Management program in response to the FY 2002 assessment.

In FY 2006, the Forest Service Wildland Fire Management program underwent a PART reassessment for the FY 2008 budget cycle. Three significant areas of improvement since the 2002 assessment include (1) development of meaningful long-term and annual performance measures, (2) quality independent evaluations of the program, and (3) significant steps taken to address program management deficiencies. The program improved its PART rating to an "Adequate." This achievement was important because OMB considers a program's rating in its budget deliberations. A program that cannot show that it is adequately managed and is providing a good return on taxpayers' dollars is not viewed favorably when OMB compiles the President's Budget each year.

Prescribed fire.



Fire and Aviation Performance Measures

During FY 2006, FAM improved and streamlined performance measures. FAM compiled all the performance measures either that FAM created or that were created for us by other entities, including Congress, the WFLC, the Credibility Through Accountability process, and interagency coordination efforts. After the measures were compiled, FAM discovered that there were more than 400 performance measures from these multiple sources, counting both the unique and duplicative performance measures. In February 2006, FAM convened a group to analyze the measures based on three primary areas of concentration for the program: hazardous fuels reduction, wildland fire suppression, and partnerships. The group determined that 11 significant performance measures, when looked at in total, would provide a clear picture of the most important accomplishments the program made during the year.

In addition to these 11 measures, FAM also developed measures for OMB's PART Reassessment, the new Forest Service Strategic Plan, and the updated 10-Year Implementation Strategy. FAM considered measures that were already in place, however, and tried to ensure that, where possible, overlap and duplication of measures existed among the various documents. Although not all the documents are finalized, diligence during

Wildland fire suppression.



this process resulted in FAM keeping the number to a manageable core set of approximately 30 performance measures.

Accountability and Program Oversight

Over the past several years, FAM programs have been the subject of numerous audit and study efforts, which have yielded hundreds of recommendations or suggestions for program improvement. In addition, each year Congress directs FAM on many program issues and we implement those directives. In FY 2006, Congress issued approximately 20 program directives, and FAM has completed most of these initiatives, or is currently making progress on implementing them. In FY 2006, the Government Accountability Office and the USDA OIG issued four audit reports. Several other audits were still in progress at the close of the fiscal year.

Because of the large number of audits or studies producing recommendations for program improvement, FAM hired a contractor, TriData Corporation, to review cost-containment reports or studies done from 2003 through 2005. In FY 2006, TriData analyzed more than 300 recommendations made in those reports and grouped them according to their potential to save taxpayers money. After setting aside redundant recommendations, and recommendations that could not be implemented (for example, the recommendations related to entities, such as States, that FAM has no control over or the recommendation related to safety issues that FAM will not compromise on), TriData determined that 203 unique recommendations were directed at improving wildfire suppression cost containment. Of those, FAM looked more closely at 71 recommendations that represented potentially high to extremely high cost savings if implemented. As of August 2006, the analysis showed that FAM had already taken or was in the process of taking action on approximately 57 of these recommendations. FAM determined that it had not implemented corrective actions on the remaining 14 recommendations for various reasons, such as the recommendations involving actions beyond Forest Service authority, deferral of action due to pending court decisions, and recommendations determined to be directed at isolated events.

Fire Program Analysis

The Fire Program Analysis (FPA) system is a tool that provides managers with a common interagency approach to fire management planning and budgeting. FPA will enable managers to better evaluate the effectiveness of alternative fire management strategies to meet land management goals and objectives. FPA will reflect fire objectives and performance measures for the full scope of fire management activities.

The FPA project was chartered with the objective of providing “a common interagency planning and budgeting system with a cost-effective, trade-off analysis incorporating land and resource management objectives.” In FY 2006, the project was realigned to receive oversight from the WFLC; under WFLC direction, project governance and expectations were modified.

Key points of the FPA include the following:

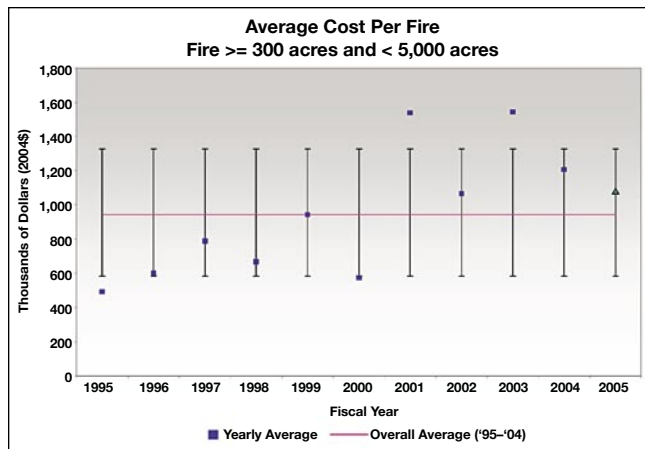
- Restructuring governance to include a Senior Executive Service Project Manager and two business leads representing the DOI and the Forest Service.
- Assembling a 12-member interagency science team to provide scientific support.
- Informing the budget process with outcomes of the system by providing information specific to the following five efficiency and performance elements:
 - Reducing the probability of occurrence of costly fires.
 - Reducing the probability of occurrence of costly fires within the wildland-urban interface.
 - Increasing the proportion of land that meets or trends towards the attainment of fire and fuels management objectives.
 - Protecting highly valued resources areas from unwanted fire.
 - Maintaining a high initial attack success rate.
- Establishing delivery expectations as follows:
 - June 2007—a prototype to confirm proof of concept.
 - June 2008—tentative field deployment of the system.

Cost Containment

FAM made significant progress in the area of better oversight and measuring our success in large, fire-suppression cost containment. Specifically, we developed more meaningful performance measures, including the Stratified Cost Index (SCI); we established a comptroller and support group to oversee large fire expenditures; and we revamped the process for reviewing large fire costs to provide more meaningful information and reduce duplication of effort. All these efforts are an important start in developing a strategy to better manage large-fire costs.

In FY 2006, we developed the SCI and adopted it as a performance measure. The SCI determines average suppression costs based on fire characteristics, such as fuel types, fire intensity, topography, region, and values at risk. In a given year, actual expenditures on each large fire (more than 300 acres) are compared to their “expected” costs as calculated by the SCI. Fires with high or low expenditures compared to the average suppression cost for fires with similar characteristics are then identified for review. We analyzed historical data to determine the average cost/acre and cost/fire for categories of similar fires and an acceptable range of costs around the average. This effort will result in a common metric to normalize large-fire-suppression costs, which can be used for reviews, evaluations, planning, and reporting.

Example of an average cost per fire graph.



The SCI is a relatively young product with refinements ongoing, including analyzing spatial data, enriching the data set, developing additional size classes, and examining other aspects. The SCI, as it matures, offers significant promise as a means for gaining insight into large fire costs and for measuring long-term management effects on large-fire-suppression costs.

In FY 2006, the Forest Service created a comptroller position to provide fiscal leadership and ensure oversight and effective use of agency suppression funds. Secondary objectives included a higher degree of communication among agency leadership, administration, and congressional officials. This enhanced communication allowed for better understanding of agency decisions and an increased ability to respond to related questions and inquiries in a timely manner.

The comptroller appointed a group to assist in reviewing overnight changes in the fire situation; deployment of resources across the Nation; and trends in specific, troublesome fires and associated spending patterns daily. The group used its collective fire operations, fire budget, and financial management experience to develop questions for the comptroller to follow up on with agency leaders. These daily reviews provided national oversight and greatly increased the ability of the agency to respond to questions from the administration and other officials with credible information concerning ongoing events. Communications with senior, field-level administrators involved in fire operations supplemented the information available on fire conditions and on finance and budget performance.

In an effort to enhance the information about and understanding of large-fire costs, the Planning and Budget staff revised its large-fire, cost-review process. The process continues to be a three-pronged approach with (1) regional reviews occurring for all fires that exceed \$5 million in Forest Service expenditures, (2) an independent panel review of fires that exceed \$10 million in Forest Service expenditures, and (3) a Washington Office review of fires that have expenditures significantly higher or lower than what is expected based on the SCI. Together, these changes will increase accountability, reduce duplication of effort, and provide a more complete understanding of the issues that are driving costs on large wildfires.

Specific changes by review type include the following.

Regional Review

- Fielding more diverse teams.
- Requiring line officers to respond to each of the recommendations made by the review team.
- Submitting one comprehensive report per region that covers all relevant fires within the region and includes a region-wide analysis of expenditures and behaviors for the entire fire season rather than the fire-by-fire snapshots that were provided previously.

Independent Panel Review

- Fielding a diverse group of panel members, including risk management specialists, military fire management experts, and foreign fire management experts.
- Ensuring there are no current or former Federal, State, or local fire experts on the panel.
- Focusing primarily on broad risk management issues and less on operational issues.

Washington Office Review

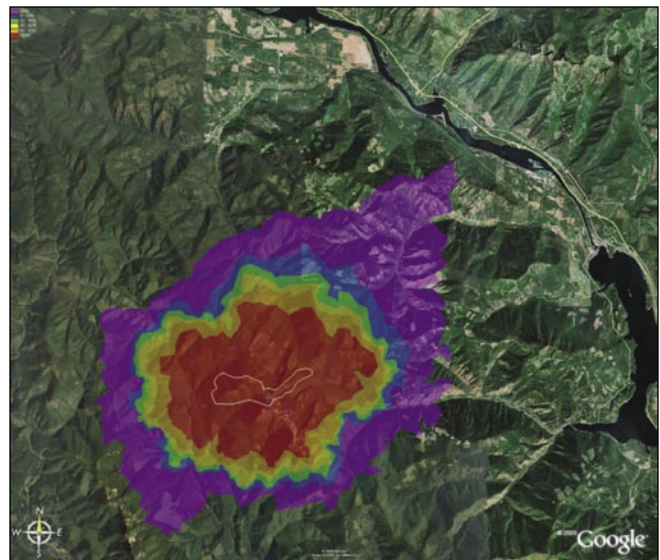
- Focusing on fires that have significantly higher or lower expenditures than the SCI indicates is acceptable.
- Ensuring there is no redundancy with regional reviews.
- Identifying principles that need to be incorporated into the agency doctrine.

Wildland Fire Decision Support System

The Wildland Fire Decision Support System (WFDSS) project, initiated in FY 2005, focuses on the goal of developing a scaleable decision tool to support line officers in their decisionmaking for ignitions that escape initial attack or that will be managed as wildland fire use events. The WFDSS project scope includes reengineering the existing Wildland Fire Situation Analysis and Wildland Fire Implementation Plan (WFIP) processes and supporting applications.

During the 2006 fire season, two promising components for WFDSS were prototyped: a new fire spread probability prediction application (FSPro—Fire Spread Probability) and an application that uses FSPro outputs to assess values at risk (RAVAR—Rapid Assessment of Values at Risk). The prototyped applications had merit and are being further developed as a component of WFDSS.

FSPro analysis, Ulm Peak wildfire (Montana–2006).



Part VII. Focus Areas for 2007

For FY 2007, the FAM Staff will focus on risk assessments done on the hazardous fuels and preparedness resources programs. The FAM deputy directors and assistant directors are working with the FAM director to create and implement a Strategic Plan for FAM. FAM will continue its integration efforts with other programs inside the Forest Service to restore fire-adapted ecosystems, and its partnerships with external partners will continue. FAM will continue to work closely with all our partners, both within our agency and outside. Many challenges lie ahead and, as always, FAM will continue to emphasize safety first.

The following paragraphs highlight FY 2007 program work.

Wildland Firefighting

FAM will maintain a 98 percent initial attack success rate in FY 2007 and implement management efficiencies to reduce preparedness and suppression costs. The proposed management efficiencies will influence suppression expenditures and the fire preparedness budget. In addition, it will clarify the intent of “Appropriate Management Response,” choosing the best suppression strategy for the resources and values at risk. We are formulating the details of the proposed management efficiencies and will begin implementation of the short-term actions during the 2007 fire season.

The Risk Management program is leading a project to accomplish program risk assessments that establish new performance measures based on mitigating action plans. Assessment is complete on the airtanker program and with the Rocky Mountain Research Station. Assessments are under way in helicopter, aerial supervision, and backcountry flight operations. Program risk assessments will be completed in FY 2007.

Aviation

During FY 2007, FAM will focus on the third phase of the Aviation Strategy (Strategic Plan for Use of Aviation Assets

in Wildland Fire Management), developing and deploying an implementation plan for the national strategy. The third phase will include details on the number of aircraft needed, annual funding requirements for the fleet, design of a coordinated acquisition plan, a coordinated pilot and aircraft inspection and certification process.

The Aviation program will also continue its competitive-sourcing-feasibility study for all aviation assets. The Aviation program will also review comments and recommendations from the report that was completed in FY 2006 and will analyze and assess cost effectiveness and efficiency of the aviation program and assets, including the workload and other data requirements necessary for business process reengineering or competitive sourcing.

Aviation strategy is an important part of effective, efficient wildland firefighting.



Partnerships

In FY 2007, the Partnerships program plans to provide technical assistance, training, supplies, and equipment to more than 6,500 small, rural communities and 3,800 volunteer fire departments. The Partnerships program will look at increasing contact with and influence on county and community ordinances for fire prevention and structure ignitability.

In addition, the Partnerships program will continue supporting the National Response Plan (NRP). The Homeland Security Act and Homeland Security Presidential Directive #5 (HSPD-5) mandated the development of the NRP predicated on the National Incident Management System (NIMS). The NRP and NIMS are intended to provide the structure that coordinates the capabilities and resources of all levels of government, the private sector, and nongovernmental organizations into a unified national approach to incident response and management. Both the NIMS and the NRP are being revised and scheduled to be released on June 1, 2007. The role of the Forest Service may be changed as new functions are proposed and new operational plans are developed to support the revised NRP. The current NRP contains 15 emergency support functions (ESFs) to provide the structure for coordinating Federal interagency support for incidents. The Forest Service is the coordinator and primary agency for Emergency Support Function #4—Firefighting—and is named as a support agency for 11 of the 15 current ESFs in the NRP.

Fuels and Fire Ecology

The Forest Service will continue to reduce hazardous fuels by treating approximately 2.9 million acres of hazardous fuels to

reduce flammability of forest lands, woodlands, shrublands, and grasslands, including 1.9 million acres in the WUI areas and 987,000 acres outside of WUI areas. FAM will use CWPPs to help guide hazardous fuels reduction and to guide the selection of landscape-scale forest restoration projects that cross ownership boundaries. FAM will continue to participate in the Federal Woody Biomass Utilization Working Group to promote and support the use of woody biomass and woody biomass products from forest and woodland treatments. LANDFIRE will continue to progress, and the basic data layers (fire behavior, fire regime, and vegetation) for the 13 Southern States will be completed. By year end, LANDFIRE data will be available for more than 50 percent of the continental United States.

Planning and Budget

In FY 2007, FAM will continue implementing the Fire Program Analysis (FPA) system and, together with the DOI, will deliver a prototype of the FPA model, which uses science-based analyses to evaluate preparedness, suppression, and fuel treatment programs across agency boundaries. The prototype is scheduled to be delivered in the summer of 2007 with system delivery expected in FY 2008.

FAM also plans to develop the initial Wildland Fire Decision Support System prototype and improve analyses of wildland fire-suppression alternatives to enhance decisionmaking and facilitate cost containment.

The Planning and Budget program will continue to refine FAM performance measures by updating the SCI and analyzing the information that we continue to obtain. We are also emphasizing our efforts in the PART improvement plan for FAM with OMB.