

# **Healthy Forests Report**

FY 2006 Final Accomplishments

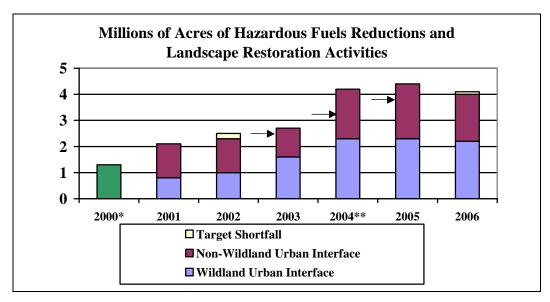
The Department of the Interior (DOI) and the USDA Forest Service implement the National Fire Plan (NFP) and Healthy Forests Initiative (HFI) in order to help save the lives of firefighters and citizens and to reduce the risk of catastrophic fire to our communities, forests, and rangelands.

#### HAZARDOUS FUELS REDUCTION & LANDSCAPE RESTORATION PROJECTS

An excessive accumulation of hazardous or unusually flammable fuels in our forests, woodlands, and grasslands is the root cause of the unprecedented fire risk facing our public lands. Land managers remove hazardous fuels via programs funded specifically for that purpose and in other programs whose principle goal is the achievement of a variety of resource management objectives that can be broadly labeled landscape restoration. Treatments occur both inside and outside the wildland urban interface (WUI).

- 1. <u>Inside the WUI treatments</u> reduce fuels around homes, communities, and resources to slow or stop wildland fires from threatening these high-value areas.
- 2. <u>Beyond the WUI</u>, treatments not only help protect communities by creating conditions that enable firefighters to more successfully suppress fires before they enter the WUI but also reduce fire severity and its impact on valued landscapes and natural resources.

From 2001 through the end of September 2006, the Federal land management agencies have treated over 19 million acres of federal lands under the Healthy Forest Initiative and the National Fire Plan through landscape restoration actions. The effectiveness of these treatments in protecting communities and resources from fire has been demonstrated numerous times.



- → Set at Fiscal Year target to display over-accomplishment
- \* FY 2000 is used as a baseline for reporting, as the NFP was implemented in FY 2001. Treatment location was not included in reporting prior to FY 2001.
- \*\* Acres treated under landscape restoration activities were not reported prior to FY 2004.

# Hazardous Fuels Reduction and Landscape Restoration Accomplishments 2001-2006

(millions of acres)

	Wildland Urban Interface		Non-Wildland Urban Interface						
	Rx Fire	Mechanical	Other	Total	Rx Fire	Mechanical	Other	Total	<b>Grand Total</b>
2001									
FS	0.5	0.1	0.0	0.6	0.7	0.1	0.0	0.8	1.4
DOI	0.1	0.1	0.0	0.2	0.4	0.1	0.0	0.6	0.7
Total	0.5	0.2	0.0	0.8	1.1	0.2	0.0	1.3	2.1
2002									
FS	0.7	0.1	0.0	0.8	0.4	0.1	0.0	0.4	1.2
DOI	0.1	0.1	0.0	0.2	0.6	0.1	0.1	0.8	1.1
Total	0.8	0.2	0.0	1.0	1.0	0.2	0.1	1.3	2.3
2003									
FS	1.0	0.1	0.0	1.1	0.3	0.1	0.0	0.3	1.5
DOI	0.2	0.2	0.1	0.5	0.6	0.1	0.1	0.8	1.3
Total	1.2	0.3	0.1	1.6	0.8	0.2	0.1	1.1	2.7
2004									
FS*	1.2	0.4	0.2	1.8	0.5	0.4	0.0	0.9	2.6
DOI	0.3	0.3	0.0	0.6	0.6	0.3	0.2	1.1	1.6
Total	1.4	0.7	0.2	2.3	1.1	0.7	0.2	1.9	4.3
2005									
FS*	1.0	0.5	0.1	1.7	0.7	0.3	0.0	1.1	2.7
DOI	0.3	0.3	0.0	0.6	0.6	0.2	0.2	1.0	1.6
Total	1.3	0.8	0.1	2.3	1.3	0.6	0.2	2.1	4.3
2006									
FS*	0.8	0.7	0.1	1.6	0.6	0.3	0.0	0.9	2.5
DOI	0.2	0.2	0.1	0.6	0.4	0.2	0.2	0.9	
Total	1.1	0.9	0.2	2.2	1.0	0.5	0.2	1.8	
FS Total	5.2	2.0	0.4	7.5	3.1	1.2	0.1	4.3	11.9
DOI Total	1.2	1.2	0.3	2.6	3.2	1.1	0.8	5.1	7.8
Grand Total	6.3	3.1	0.7	10.1	6.3	2.3	0.9	9.5	19.6
* All treatment v									

<sup>\*</sup> All treatment work that reduces hazardous fuel or improves condition class, including State Fire Assistance Hazard Mitigation Grants and Wildland Fire Use

Grand totals my not add due to rounding

Data Source: 2001-2003, National Fire Plan Annual Report; 2004-2006, FS - NFPORS Excel Extract; DOI - NFPORS Management Dashboard

Table 1: Fiscal Year 2006 HFI Hazardous Fuels Reduction & Landscape Restoration Activities

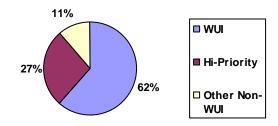
		ous Fuels oriations	Landscape Restorat		
Treatment Type	Prescribed Fire	Mechanical & Other	Prescribed Fire	Mechanical & Other	TOTAL
Forest Service	1,052,000	403,000	343,000	750,000	2,548,000
DOI	622,000	485,000	41,000	307,000	1,455,000
TOTAL	1,674,000	888,000	384,000	1,057,000	4,003,000

Note: Total includes acres treated through State Fire Assistance hazard mitigation grants and Wildland Fire Use.

## **Hazardous Fuels and Landscape Restoration Priorities**

The Forest Service and the Department of the Interior design hazardous fuels reduction and landscape restoration activities to meet one of three objectives:

- 1. Directly reduce wildfire threats within the wildland urban interface.
- 2. Treat areas outside of the wildland-urban interface (non-WUI) that are at greatest risk of catastrophic wildland fire. These *high priority non-WUI treatments* reduce the risk of unwanted fire to natural resources, achieve other natural resource management objectives, and, in some cases also serve to protect WUI areas.



3. Maintain desired landscape conditions achieved through previous treatments outside the WUI in order to retain the associated benefits.

#### **HEALTHY FORESTS AUTHORITIES**

**Table 2: Healthy Forests Activities (acres accomplished)** 

	FY 2005	FY 2006*	TOTAL
<b>HFRA Title I Authorities</b>	33,000	99,000	132,000
HFI Authorities	289,000	362,000	651,000
Other NEPA Decisions	3,322,000	2,904,000	6,226,000
Other Authorities	684,000	605,000	1,289,000
TOTAL	4,328,000	3,970,000	8,298,000

<sup>\*</sup>Approximately 19% of all FY 2006 acres treated associated with a CWPP or equivalent

## STEWARDSHIP CONTRACTS & AGREEMENTS AWARDED

Stewardship contracting includes natural resource management activities that improve land conditions. These projects shift the focus of federal forest and rangeland management towards a desired future resource condition. They are also a means for federal agencies to contribute to the development of sustainable rural communities, maintain healthy forest ecosystems, and provide a continuing source of local income and employment.

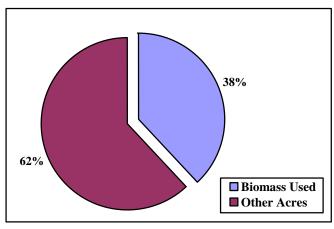
	Bureau of Land Mai	nagement	Forest Service			
2003	2 contracts	300 acres	50 contracts	14,000 acres		
2004	22 contracts	15,000 acres	64 contracts	42,000 acres		
2005	58 contracts awarded	15,000 acres	45 contracts	35,500 acres		
2006	56 contracts awarded	18,490 acres	92 contracts	57,500 acres		
Total	389 contracts / agreements for 197,790 acres*					

<sup>\*</sup>Not all projects in table above were authorized under HFRA.

## **UTILIZATION OF FOREST BYPRODUCTS**

Byproducts removed during hazardous fuels reduction and landscape restoration activities are often utilized in certain forest products (e.g., timber, engineered lumber, paper and pulp, furniture) and bio-energy and bio-based products (e.g., plastics, ethanol, and diesel). To date, the Forest Service and DOI have treated 1.9 million acres mechanically; of these, 38% have included biomass utilization.

**Biomass Utilization from Mechanically\* Treated Acres** 



<sup>\*</sup> Mechanically treated acres for all Forest Service treatments and DOI hazardous fuels reduction treatments.

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## HFRA TITLE IV: APPLIED RESEARCH

The Forest Service's applied research projects, in partnership with several universities and state forestry agencies, aim to conduct and evaluate different land management practices that reduce problems associated with the current outbreaks of insects and diseases and to translate that information for practicing professionals, landowners, and the public.

There are currently 6 Silvicultural Assessment and 6 Accelerated Information Gathering projects planned or underway. For detailed information of the Forest Service's Applied Research Projects under the Healthy Forests Restoration Act, please visit:

http://www.healthyforests.gov/applied\_research/index.html A brief update on each of the projects is listed below:

## HFRA TITLE IV PROJECTS

## Southern Pine Beetle in the West Gulf States

FS Contact: James M. Guldin, PL, Southern Research Station, SRS-4106, jguldin@fs.fed.us

- Location: trans-Mississippi loblolly pine, slash pine, longleaf pine, and shortleaf pine
- Status:
  - Study plan completed; Linked stand population dynamics model and the landscape hazard/risk model databases; Building spatially explicit, detailed life-history population models of SPB dynamics
  - Progress in FY 2006: Centered on refinement of the interrelationships among stand hazard, risk, and exposure, on development of the concept of hazard trajectory for stands of varying structural dynamics such as overstocked unthinned plantations versus understocked sawtimber stands managed using the selection method, and on ways to link stand-level models to the landscape scale.
- Scientific Output to date: 3 refereed publications; 8 conference/workshop presentations; 2 posters

## Gypsy Moth and Oak Decline

FS Contact: Callie Schweitzer, USDA Forest Service, Southern Research Station, SRS-4101, <a href="mailto:cschweitzer@fs.fed.us">cschweitzer@fs.fed.us</a>

- Location: Daniel Boone National Forest
- Status:
  - Study plan completed; Pre-treatment vegetation data collection completed in August 2005; Surveys for resident bats commenced; Conducted field trips for interested parties.
  - Progress in FY 2006: Marking guidelines were developed using the pretreatment data, and DBNF and R&D staff field-tested the guidelines in February 2006. All stands have been marked. To date, the contract received was not accepted as the bid was too low; a new contractor is being solicited. Kentucky Power has removed their interest in buying the biomass and an alternative buyer is being pursued.

## Minimizing Gypsy Moth Effects

FS Contact: Kurt Gottschalk, PL, Northeastern Research Station, NE-4557 Morgantown, WV; kgottschalk@fs.fed.us

Location: Monongahela and Wayne National Forests

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#### • Status:

- Study plans being completed; 20 young stands thinned MNF with Stand growth measurements and gypsy moth population monitoring underway; 27 stands identified – WNF -- Treatments assigned and NEPA process started
- Progress in FY 2006: Field surveys of the treated stands on the MNF shows insufficient release on the crop trees and a meeting with the NF people will be held about additional release. On the WNF, the stand summaries were insufficient to determine treatments. The stands are being reinventoried fall/winter (2006/2007) to have a decision ready by February-March 2007 to begin the NEPA process on the stands.

## Hemlock Woolly Adelgid

FS Contact: Mary Ann Fajvan, USDA Forest Service, Northeastern Research Station, NE-4557, Morgantown, WV mfajvan@fs.fed.us

- Location: Allegheny National Forest
- Status:
  - Study plan completed; study stands selected; treatment blocks marked; pre-treatment data collected;
  - Progress in FY 2006: The treatments were installed in 2006 and post-treatment measurements are underway. One additional stand was added to the study, treatments marked, and pre-treatment measurements underway during fall, 2006. Two additional stands (Massachusetts, New Hampshire) will be added to the study during winter, 2006/2007.

# Upland Oak-Hickory Forests and the Red Oak Borer

FS Contact: James M. Guldin, PL, Southern Research Station, SRS-4106, jguldin@fs.fed.us

- Location: Interior Highlands of Arkansas, Oklahoma and Missouri
- Status
  - Study plan completed; work has been presented on ant predation and the role of Armillaria root rots; Preliminary analyses have been completed
  - Progress in FY 2006: Work has focused on incorporating a high spatial domain remote sensing component in the oak hazard spatial decision support system; continued development and refinement of hazard models and ratings; and identification of study stands in Ouachita NF.
- Scientific output to date: 4 MS Theses; 1 PhD Dissertation; 5 refereed publications; 10 manuscripts in preparation/review; 52 workshop/conference presentations

#### **Pine-Feeding Insects**

FS Contact: Jim Hanula, Southern Research Station, SRS-4505, jhanula@fs.fed.us

• Location: Florida

#### • Status:

- Study plan completed; quantified tree mortality on areas burned by wildfire; compared mortality and stand factors of a variety of insects
- Study closed in November 2004 because some of the stands received prescribed burns from prescribed burn effects

## **Accelerated Information Gathering Projects**

Blacks Mountain Interdisciplinary Research Project: Cone Fire Assessment FS Contact: Martin Ritchie, Pacific Southwest Research Station, PSW-4155; mritchie@fs.fed.us

- Location: Lassen National Forest
- Status:
  - Study plan completed; data collected to assess: patterns of severity in the Cone Fire that burned into existing treatment areas, immediate and long-term post-salvage stand and fuel conditions for severely burned areas of the Cone Fire, patterns of beetle and woodpecker use in areas of varying fire severity and in salvaged areas, and patterns of soil compaction associated with varying levels of salvage harvesting.
  - Progress in FY 2006: Funding has expired and new funding is being sought. A
    manuscript integrating our findings for submission to Journal of Forestry is being
    prepared
- Scientific output to date: 2 refereed publications

# **Trapping Systems for Exotic Beetles, Ports of Entry and Origin**

FS Contact: Daniel Miller, Southern Research Station, SRS-4505, dmiller03@fs.fed.us

- Location: Southern U.S.
- Status:
  - Traps baited with ethanol and (-)-α-pinene are effective in trapping a wide array of bark and wood boring beetles (native and exotic) in the southeastern region of the United States, with findings that exotic species accounted for 68-96% of all ambrosia beetles captured in these studies in the southern U.S. Traps baited with the bark beetle pheromones, are highly effective in trapping the southern sawyer beetle, *Monochamus titillator*, a principal vector of pine wood nematode which causes pine wilt disease.
  - Progress in FY 2006: Found that baited funnel traps with dry cups using an insecticide killing strip contained 50-80% less beetles than those using a wet cup containing propylene glycol (RV antifreeze). Therefore, managers at ports-of-entry should avoid using traps with dry cups in programs that attempt to maximize the likelihood of beetle captures.
- Scientific output to date: 3 refereed publications

## Western White Pine and Blister Rust, Pacific Northwest Region

FS Contact: Mee-Sook Kim, Rocky Mountain Research Station, RMRS-4552 <a href="mkim@fs.fed.us">mkim@fs.fed.us</a>

- Location: Pacific Northwest U.S.
- Status:
  - Findings indicate that western white pine (WWP) populations from South-Central
    Cascades, Siskiyou, and South Cascade-Sierra exhibited a higher level of genetic
    diversity than interior and coastal populations, and populations from the Siskiyou area
    are unique compared to other WWP populations.
  - Progress in FY 2006: A parallel study was completed that examined genetic diversity of the white pine blister rust pathogen, *Cronartium ribicola*, associated with different hosts and environments. In this manner, we can determine the importance of local

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interacting population structure of hosts and pathogens, so that appropriate restoration strategies can be developed.

• Scientific output to date: 1 PhD Dissertation, 2 refereed publications, 1 conference presentation

## Hemlock Wooly Adelgid, Southern Appalachian Mountains

FS Contact: Jim Hanula (Obj 1), Southern Research Station, SRS-4505; <u>jhanula@fs.fed.us</u>; Jim Vose (Obj. 2 and 3), Southern Research Station, SRS-4351; <u>jvose@fs.fed.us</u>

- Location: Southern Appalachian Mountains
- Status:
  - Sampling of hemlock wooly adelgid (HWA) continued March 2004-March 2006 and the phenology was quantified. In a predation experiment, adelgid populations were reduced by 50% in sleeves with lady beetles compared to a 500% increase in control sleeves. In 2003, twenty study plots were located in areas with and without evidence of HWA infestation to establish long-term baseline measurements of nutrient, carbon, and water pools and cycling rates. In 2004, a network of monitoring plots was established to determine rates and patterns of HWA spread. These data are being combined with remote sensing data and tools to examine the predictive ability of remote sensing tools for detecting hemlock location and potential for HWA infestation.
  - Progress in FY 2006: Results suggest major changes in riparian zone water balance with the loss of hemlock. Most notably, riparian zone soils will be considerably wetter in the fall, winter, and spring. Potential impacts on carbon and nutrient cycling processes are being assessed by measuring trace gas emissions (study initiated by cooperators from EPA in FY06). Improvements in insecticide application rates based on analysis of activity and transpiration rates have been developed. A model to predict the probable location hemlock trees in the landscape was developed. Infestation patterns are being correlated with topographic, edaphic, and biological variables to determine controls on HWA infestation.
- Scientific output to date: 3 refereed publications

#### **HFRA Rapid Response Training and Technology Transfer Team**

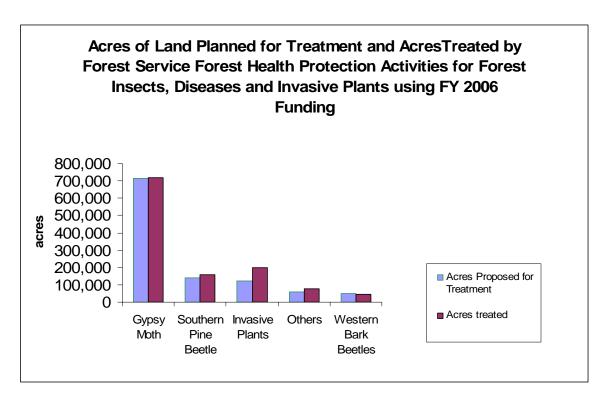
FS Contact: James M. Guldin, PL, Southern Research Station, SRS-4106, jguldin@fs.fed.us

- Location: Southeastern U.S.
- Status:
  - In February 2005, completed a Final Report for Red Oak Borer Biomonitoring in FY02-03, circulated through Forest Health Protection, State and Private Forestry. In March 2005, two papers were presented from the results of the Red Oak Borer Biomonitoring Project at the 13<sup>th</sup> Biennial Southern Silvicultural Research Conference, held in Memphis TN, 2/28-03/3/05. Also in March 2005, unit scientists cooperated in the preparation of an outdoor news article entitled, 'Managing the mighty oak—sound tactics can return health to upland forests', by Martin Blaney, published in the March-April 2005 edition of Arkansas Wildlife Magazine. (Copies available upon request).
  - This team was terminated as planned on 30 September 2005, and remaining responsibilities within it have been subsumed within the Applied Silviculture Assessment for Red Oak Borer.

• Scientific output to date: 2 refereed publications; 2 workshop/conference presentations

#### INVASIVE SPECIES AND FOREST HEALTH

In FY 2006, Forest Service Forest Health Protection activities included both prevention and suppression efforts and provided resources to restore lands impacted by native and nonnative forest pests on federal, state and private lands. Some of the nonnative pests addressed included: hemlock woolly adelgid, white pine blister rust, gypsy moth, sudden oak death, emerald ash borer, Asian long horned beetle, European wood wasp, cycad scale, wiliwili gall wasp and invasive plants. Nearly 1.2 million acres were treated as a result of Forest Health Protection efforts funded in FY 2006



All projects for southern pine beetle and most for western bark beetles improve condition class. Nearly 141,000 acres for southern pine beetle and 33,000 acres for western bark beetles were proposed for thinning, planting, sanitation or site preparation treatments on state, private, and federal lands. These treatments improve condition class. Almost 152,000 acres of these treatments were reported accomplished for southern pine beetle and almost 26,000 acres for western bark beetles.

#### FOREST SERVICE USE OF THE ESA COUNTERPART REGULATIONS

Since the training module on procedures, the Section 7 consultation standards of review, and monitoring was prepared in March, 2004, 321 Forest Service line officers, and 562 biologists have both taken the training and been certified to use the regulations. Through February, 2006,

over 100 NFP projects had used the process. The evaluation of counterpart regulation use is ongoing, and results of that will be used to make any needed improvements in the use of this important tool.

#### HEALTHY FORESTS AND COMMUNITIES

# **Working with Communities in Alaska**

Alaska recognized that the process of developing a CWPP can help a community clarify its priorities for the protection of life, property and critical infrastructure in the wildland-urban interface (WUI). This is all the more important in Alaska because the lack of road infrastructure necessitates boat and air travel. This increases the challenge of addressing remote villages that may be surrounded by flammable, black spruce forests.

In Alaska, communities have taken advantage of the guidance "*Preparing a Community Wildfire Protection Plan*," sponsored by the Society of American Foresters, the National Association of State Foresters, the Western Governors' Association and others. A Leading example in Alaska is found in the Kenai Peninsula Borough's (KPB) Spruce Barkbeetle Mitigation Program, which has assessed the level of risk between communities and geographic areas within the Borough. On the Kenai Peninsula, through an active, interagency approach, it was possible to rank Community Wildfire Protection Plan areas into 4 categories: low; medium; high; and extreme risk. Independent contractors facilitated community discussions and created protection plans based on community need. For those geographic areas categorized at *extreme* risk, all eight CWPPs were completed during the summer of 2006. This covers nearly 800,000 acres, twenty-one towns, and approximately \$1.7 billion dollars in cumulative structure value. Two additional CWPP areas assessed as *high* risk were also completed. The remaining, four, *high* risk CWPPs will be completed during 2007.

## **Statewide Summary**

By fall of 2006, 12 CWPPs have been completed State-wide, including one for the entire City of Fairbanks, population 85,000. Ten more CWPPs are currently in progress. These 22 plans equate to nearly 40 communities throughout the State, engaging community members to prioritize the protection of property and critical infrastructure in the wildland-urban interface. More information can be available from **Debora Cooper**; Interagency National Fire Plan Coordinator for the State of Alaska; DOI / USFS / State Div of Forestry; (907) 714.2439; <a href="mailto:debora\_cooper@dnr.state.ak.us">debora\_cooper@dnr.state.ak.us</a>

## **Working with Communities in Arkansas**

The State of Arkansas is a national leader in FireWise Communities USA and Community Wildfire Protection Plans (CWPP). In fact, out of 180 communities that have earned the FireWise Communities USA designation, 54 are in Arkansas and 26 communities have completed CWPPs. Although Arkansas has done a tremendous job of working with communities to help protect them from wildfire, much remains to be done.

The recently completed Southern Wildfire Risk Assessment identified 4,040 communities in Arkansas at some level of risk from wildfire. Twenty two percent of those communities were at high or very high risk, and fifty one percent were rated at moderate risk.

The Arkansas Forestry Commission has a staff of two working full time to make Arkansas' communities safer. David Samuel is the FireWise Coordinator and Christina Fowler is the FireWise Information Officer. Arkansas also has the good fortune of having a close working relationship with a tremendous individual named Tony Siciliano, a member of the Holiday Island Volunteer Fire Department. Tony feels so strongly about helping other communities reduce their wildfire risk that he volunteers to assist other communities. Tony has worked with 15–20 communities, twelve of which have completed CWPPs and gone on to be recognized as FireWise Communities USA. Tony does this work as a volunteer and receives a small stipend through the National Fire Plan to off-set some of his direct cost.

Arkansas uses a very organized approach in working with communities at risk. First the community receives a grant to conduct a detailed community risk assessment which is typically done by the local fire department. Then the community completes a CWPP. Based on the needs identified in the CWPP the community can then apply for a grant from the Arkansas Forestry Commission to implement hazardous fuels mitigation projects. The Arkansas Forestry Commission was awarded a FireWise Regional Leadership Award on November 3, 2006 by the NWCG Wildland Urban Interface Working Team. To learn more about the Arkansas Forestry Commission's efforts to make communities safer from wildfire visit www.arkansasfirewise.com

## WILDLAND FIRE SEASON IN REVIEW – January 1, 2006 to September 30, 2006

The 2006 fire season began without its usual wintertime lull. Low humidity, drought conditions, and high winds contributed to the ignition of a rash of fires in Texas, Oklahoma, Colorado, Missouri, and New Mexico during the latter part of 2005 and into the winter and spring of 2006. April and May offered a slight break before the season turned into the most active fire season in recent history. Between January 1, and September 30, 2006, an unprecedented 9.1 million acres burned which is 166 percent of the ten year average. During those same dates, there were 83,912 fire starts and 1,076 of these starts grew to 500 acres or larger.

## Season Highlights:

- ❖ July 25, 2006, showed the highest number of fire starts in a single day with 548 new fires.
- ❖ On July 20 there were 23, 511 personnel assigned to the firefighting effort.
- ❖ On July 20 there were 59 fires burning that were over 500 acres in size.
- ❖ There were 687 residences, 65 commercial buildings, and 1, 436 outbuildings destroyed.
- ❖ There were 25 fire-related fatalities. Fourteen were firefighters and eleven were civilians.

Additional firefighting support was provided by the U.S. Military, Canada, Australia, and New Zealand beginning in early August.