

# **National Interagency Coordination Center**

## **Wildland Fire Summary and Statistics Annual Report 2011**





## Table of Contents

Identifier Legend	page.....2
Preface	page.....3
Annual Fire Summary	page.....4
Significant Fires	page.....10
Wildland Fires and Acres	page .....14
Prescribed Fire Projects and Acres	page.....24
Wildland Fire Use Fires and Acres	page.....28
National Preparedness Levels	page.....29
Type 1 and 2 Incident Management Teams	page.....31
Department of Defense	page.....36
Crews	page.....36
Engines	page.....39
Overhead	page.....42
Helicopters	page.....44
Fixed Wing Aircraft (and MAFFS)	page.....48
Equipment Services (Caterers and Showers)	page.....55
Radio and Weather Equipment	page.....57
Average Worst Summary	page.....59
Benchmarks (Records)	page.....60
Acronyms and Terminology	page.....61
Wildland Fires and Acres by State and Agency	page.....62

# Identifier Legend

## Interagency Coordination Centers

**NICC** – National Interagency Coordination Center  
**AK** - Alaska  
**EA** - Eastern Area  
**EB** - Eastern Great Basin  
**NO** - Northern California  
**NR** - Northern Rockies  
**NW** - Northwest  
**RM** - Rocky Mountain  
**SA** - Southern Area  
**SO** - Southern California  
**SW** - Southwest  
**WB** - Western Great Basin  
**CIFFC** - Canadian Interagency Forest  
Fire Centre  
**NIK** - National Interagency Radio  
Support Cache

## Government Agencies

**Department of the Interior:**  
**BIA** - Bureau of Indian Affairs  
**BLM** - Bureau of Land Management  
**FWS** - Fish & Wildlife Service  
**NPS** - National Park Service  
**AMD** - Aviation Management Directorate

**Department of Agriculture:**  
**FS** - Forest Service

**Department of Defense: DOD or DDQ**

**Department of Homeland Security:**  
**FEMA** - Federal Emergency  
Management Agency  
**ESF #4** – Emergency Support Function  
4, Firefighting

**Department of Commerce:**  
**WXW** - National Weather Service

**Department of Energy: DOE**

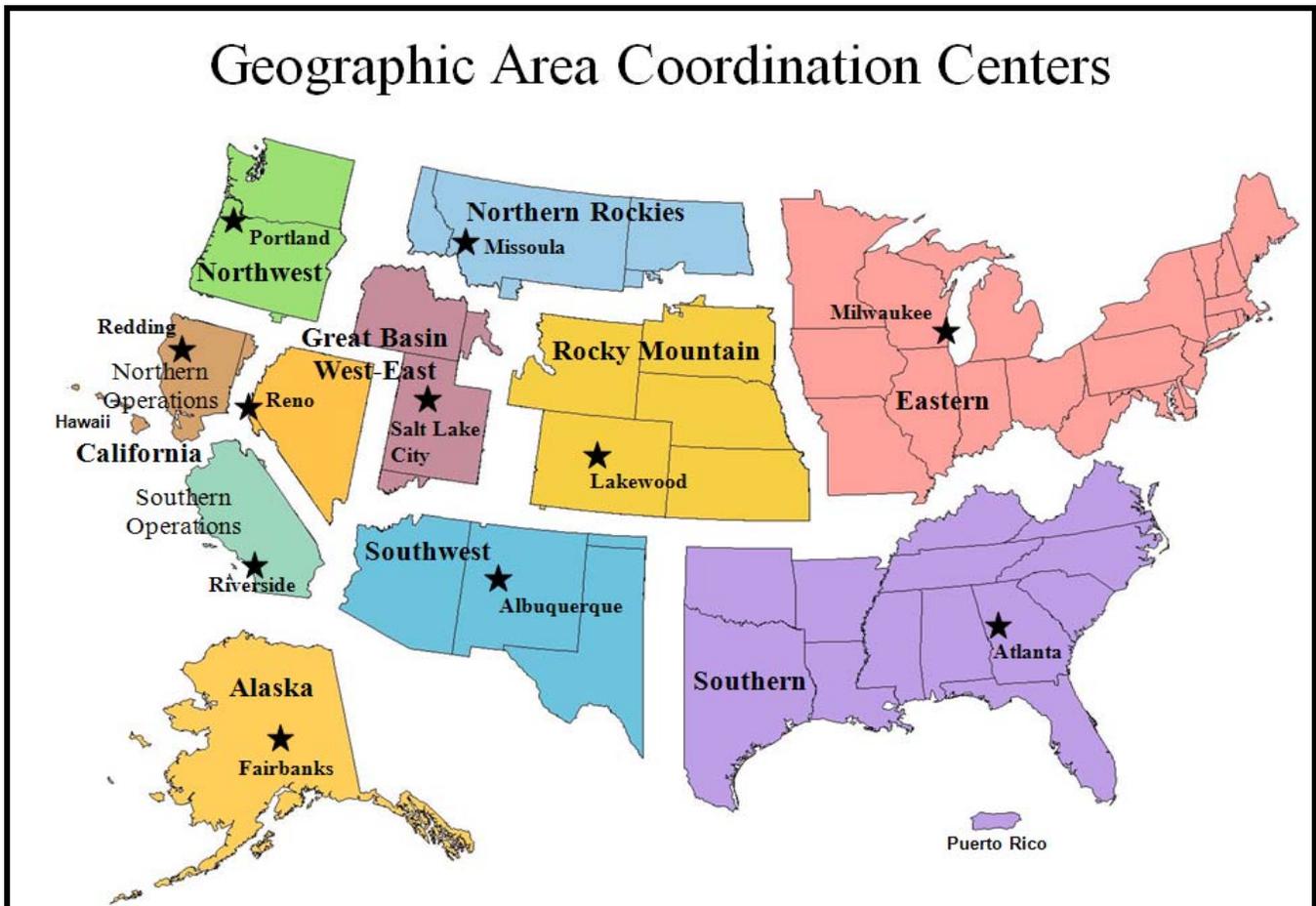
**ST** – State  
**ST/OT** – State and Other combined  
**OT** – Other  
**Other** – **PRI** – Private  
**CNTY** – County  
**CN** – Canada  
**AU** – Australia  
**NZ** – New Zealand

# Preface

Statistics used in this report were gathered from the Fire and Aviation Management Web Applications (FAMWEB) system, which includes the Situation Report and Incident Status Summary (ICS-209) programs. Previous National Interagency Coordination Center (NICC) annual reports and other sources were also used in this document. The statistics presented here are intended to provide a national perspective of annual fire activity, but may not reflect official figures for a specific agency. The statistics are delineated by agency and Geographic Areas. Pie chart figures are rounded to the nearest whole percentage point. This document is available electronically at the National Interagency Coordination Center web page: <http://www.predictiveservices.nifc.gov/intelligence/intelligence.htm>.

For agency-specific details or official data contact the individual agency.

Resource mobilization statistics used in this report were gathered from the Resource Ordering and Status System (ROSS), which tracks tactical, logistical, service and support resources mobilized by the national incident dispatch coordination system. The statistics presented in this report are the resources requested by one of the eleven Geographic Area Coordination Centers and processed through NICC. Requests by FEMA are placed to NICC through Emergency Support Function (ESF) #4, Firefighting. The resource ordering process and procedures may be found in chapter 20 of the National Mobilization Guide. The National Mobilization Guide can be found on the NICC web site ([www.nifc.gov/news/nicc.html](http://www.nifc.gov/news/nicc.html)) under reference materials.



# National Interagency Coordination Center

## 2011 Fire Season Summary

### Winter (December 2010 – February 2011)

A moderate to strong La Niña produced a season of extremes for much of the nation. The winter (December through February) of 2010-2011 was colder than normal for most of the eastern two-thirds of the country. States hardest hit by the winter chill were mainly in the Southeast with Florida and parts of Alabama, Georgia, North and South Carolina, West Virginia and Kentucky all below normal. Florida was much below normal, recording its tenth coldest winter in 116 years. Cold temperatures reaching much further south than normal resulted in accumulations of frost killed vegetation across portions of the southeastern U.S. that would impact fuel loading and availability later in the spring. The western third of the country mostly had normal temperatures with parts of California, Nevada, Oregon, Idaho, Utah, Colorado and New Mexico seeing above normal temperatures. Alaska was only slightly above normal for the period.

Most of the southeastern third of the country was drier than normal with precipitation deficits extending from the mid and lower Atlantic coast to the Front Range of the Rockies. Parts of the Great Lakes region were also below normal. Much of southern New Mexico, western Texas, Louisiana, Mississippi, northern Alabama, northern Georgia, western North and South Carolina, eastern Virginia, Maryland, Delaware, and northern Michigan were much below normal. Louisiana and Mississippi recorded their third driest winters on record; Alabama and Virginia their seventh driest; Arkansas its eighth driest; North Carolina and Oklahoma their eleventh and twelfth driest, respectively. Most of the northern Plains, the northern and central Rockies, the Great Basin, southern California, eastern Oregon and western Washington received above normal precipitation. Much of Montana, the Dakotas, Minnesota and parts of southern Nevada and Utah had much above normal precipitation, mostly from snow. Minnesota recorded its third wettest winter; South Dakota and North Dakota their fourth and sixth wettest, respectively; and Montana its ninth wettest. Alaska was wetter than normal, recording its tenth wettest February since 1918. The moisture regime described above resulted in near normal fuel crops across the southern tier of the United States and contributed to increased snow accumulations across the north that delayed the growth of fuel crops and crushed residual vegetation, especially in higher terrain.

The initial seasonal outlook reports for the Southern, Eastern, and Southwest Areas called for above normal fire potential across much of western Texas, eastern and southern New Mexico and far southeastern Arizona. Also above normal were Florida and coastal regions of Louisiana, Mississippi, Alabama, Georgia, North and South Carolina. Below normal fire potential was forecast for much of Kentucky and Tennessee and parts of northern Alabama and Mississippi and eastern Arkansas. Reports from the Seasonal Assessment workshops can be found at:

<http://www.predictiveservices.nifc.gov/outlooks/outlooks.htm>.

By May 31 a total of 28,630 fires had burned 3,119,542 acres nationally. Compared to the 10-year average this represents 92 percent of fires, but 240 percent of acres burned. Southern

and Southwest Geographic Areas claimed the majority of fires and acres burned: 23,523 fires for 2,789,626 acres.

### **Spring (March – May)**

Strong westerly flow dominated the spring pattern across the U.S., effectively splitting the country between cold to the north and west and warm to the south and east. Temperatures were generally below normal across the Great Lakes, the northern and central Plains, the northern Rockies, the Northwest and Great Basin and most of California. Most of Oregon, Washington and the northern two-thirds of California were much below normal as were parts of southern Idaho, western Wyoming, northern Montana, and the North and South Dakota border area. Above normal temperatures covered most of the region east of the Mississippi River, Texas, Louisiana and most of New Mexico and Arizona. Much above normal temperatures covered southeast New Mexico, much of Texas and parts of Louisiana and Tennessee. Texas recorded its second warmest spring in 117 years; Delaware its fifth warmest; Louisiana its seventh warmest; New Mexico its eighth warmest; New Jersey its tenth warmest; and Maryland its eleventh warmest. On the cold side, Washington experienced its third coldest spring on record, while Oregon had its fifth coldest. Regionally, it was the seventh coldest spring for the Northwest (Washington, Oregon, Idaho) and the eighth warmest spring for the South (Kansas, Oklahoma, Texas, Arkansas, Louisiana, Mississippi). High temperatures quickly transitioned fuels across the South through green-up and into a cured state.

Precipitation extremes were largely split between the northern two-thirds of the country and the southern third. To the north, most areas experienced a wetter than normal spring with much above to record high precipitation amounts reported across much of New England, the Great Lakes, the Ohio Valley, the northern Rockies, the Great Basin and the Northwest. To the south, precipitation was below normal from southern California through the Gulf and mid-Atlantic coast states. Texas and most of New Mexico, Oklahoma, Louisiana, and parts of Kansas, Arizona and Georgia received much below to record low precipitation. Texas had its driest spring on record; New Mexico its third driest; and Louisiana its sixth driest. By contrast, Arkansas, which borders both Texas and Louisiana, had its tenth wettest spring, as did Maine. Nine states experienced their wettest springs on record (Washington, Wyoming, Indiana, Ohio, Kentucky, West Virginia, Pennsylvania, New York and Vermont); three states had their second wettest (Oregon, Montana and Michigan); and two states had their fifth wettest (Idaho and Utah). Alaska had its driest spring since records began in 1918. Regionally, the Northwest had its wettest spring while the northern Rockies and Plains, the Ohio and Tennessee Valleys and New England had their second wettest springs. The South has its ninth driest spring on record. Nationally, March through May 2011 was the twelfth wettest spring on record, despite the extreme drought conditions in the South. Above normal precipitation coupled with below normal temperatures across the north kept fuels dormant through the early portion of the spring, however toward the end of the period promoted increased growth of fine fuels.

Snowpack also told a compelling story. Most of the West had much above to record snowfall, with late spring snowpack well over 150% of normal. The exception was the far southern Rockies of Arizona and New Mexico which were virtually snow-free midway through the season. For Alaska, the northern and central areas were near or above normal snowpack by late spring while the southern third of the state was below normal.

By the end of May, fire season 2011 could be described as below normal for fires across the contiguous U.S., but above normal for acres. Alaska experienced above normal fires and acres

burned by the end of May. Nationally, a total of 28,630 fires had occurred, burning 3,119,542 acres by May 31. This represents 92 percent of fires and 243 percent of acres burned compared to the 10-year national average. By that date Alaska reported 261 fires that burned 104,075 acres, which is 141 percent of its 10-year fire average, and 128 percent of its 10-year average for acres burned. The Southern Geographic Area experienced 114 percent of its 10-year average number of fires, but 253 percent of burned acres. Rocky Mountain Area experienced 115 percent of its 10-year average number of fires, and 314 percent of burned acres. The Southwest Area experienced 107 percent of its 10-year average number of fires, and 347 percent of burned acres. All other Geographic Areas were near normal for fire starts and below their 10-year averages for acres burned.

### **Summer (June – August)**

By the end of August, 53,870 fires had occurred, burning 6,956,042 acres. This represents 93 percent of the total number of fires, but 121 percent of total acres burned as a compared to the 10-year national average. Last year 10,577 fewer fires had occurred and 4,343,434 fewer acres had burned by August 31. Only three Geographic Areas experienced an above average number of fires, Alaska (101 percent), Southern California (105 percent) and Southern Area (117 percent). Southwest, Rocky Mountain and Southern Areas all experienced above average acres burned (323 percent, 195 percent and 285 percent respectively). Alaska did not contribute significantly to the national fires and acres total, reporting just 492 fires for 292,000 acres burned. Southern Area was by far the most active Geographic Area by the end of August, with 61 percent of all reported fires and 50 percent of all burned acres.

The National Seasonal Significant Wildland Fire Potential Outlook for the period June through August called for above-normal significant fire potential Arizona, New Mexico, southwest Texas, Florida, southern Georgia and Alabama, the leeward side of the Hawaiian Islands, and portions of Alaska. Below normal significant fire potential was forecast for much of the northern tier states in the West, and portions of California, Utah and Colorado. The map below depicts the Seasonal Wildland Fire Potential Outlook with significant fires that occurred from June through August.

The weather pattern for the summer was dominated by a large ridge of high pressure draped over the center of the country, baking much of the southern and eastern parts of the nation. The southern Plains were especially hard hit with Texas and Oklahoma receiving the brunt of the heat wave. Temperatures were above normal across virtually all but the western part of the country. Most of the southern and southeastern states recorded above normal temperatures. Texas, Oklahoma, New Mexico and Louisiana recorded their warmest summers on record. Fifteen other states, from the Rockies to the East Coast, had summers that ranked among their top ten warmest. Only two states, Washington and Oregon, experienced below normal temperatures. Regionally, the South had its warmest summer on record; the Southeast had its second warmest on record; and the Southwest had its fifth warmest on record. Nationally, June-August 2011 was the second warmest summer on record. Alaska was near normal. During the summer, all states across the contiguous U.S., with the exception of North Dakota and Vermont, had at least one day with maximum temperatures exceeding 100 degrees F. Eleven states had at least one weather station recording maximum temperatures of 100 degrees F or more on 40 or more days during the summer (based on preliminary data).

Precipitation deficits continued to plague the south with Texas recording its driest summer on record; New Mexico its second driest; Oklahoma its third driest; Georgia and South Carolina

their sixth driest. At summer's end, drought covered one-third of the contiguous United States, with 11 percent of the country, including 81 percent of Texas, in exceptional drought, the worst drought category assigned. Tree ring analysis of Texas dating back over 425 years showed that the summer 2011 drought in the state was equaled only by the summer of 1789. However, not every part of the U.S. was dry. Thanks to Hurricane Irene, several northeastern states experienced among their wettest summers on record. New Jersey had its wettest summer, with Vermont, Massachusetts and Connecticut ranking in their top ten wettest summers. Farther west, heavy early summer rains in the northern Plains gave North Dakota its ninth wettest summer. And on the West Coast, an unusual early summer storm helped give California its wettest summer on record. Regionally, the South had its fourth driest summer while the Northeast recorded its tenth wettest summer. Nationally, summer 2011 was the fifteenth driest summer on record. As temperatures rose and precipitation dipped across the west it became evident that fine fuel loadings were above normal, especially in the north. These fine fuel crops were both heavier and more continuous. Cool and moist weather throughout the spring and early summer had delayed fire occurrence for much of the west but as fires began to occur it was observed that even though they were later than normal they had potential to be more intense and more difficult to extinguish because of the loading and continuity of fuels that had developed.

### **Fall (September – October)**

High pressure maintained its hold on the western U.S. while a series of troughs carved out a section in the central and southeastern part of the U.S., clearly defined by an area of below normal temperatures for September stretching from the central Gulf coast states to the Great Lakes and extending westward into the central and northern Plains. Temperatures were two to four degrees below normal with a few locations in Plains as much as four to eight degrees below normal. Temperatures were two to six degrees above normal across most of the West, New England and Texas with parts of the Northwest and the northern Rockies reaching six to eight degrees above normal. Precipitation in the western two-thirds of the nation was largely below normal, with most areas receiving less than 50 percent of normal rainfall. Tropical Storm Lee proved both beneficial and destructive in the eastern third of the country. A weak, slow-moving storm, Lee brought above normal rainfall from the Louisiana-Mississippi-Alabama coasts through the Tennessee and Ohio Valleys to New England. Rainfall exceeded two to three times the normal rainfall for the month in just 10 days, causing severe flooding for most of the affected areas.

A significant change in fuel conditions occurred across much of the West in the latter part of September. Cooler temperatures and increasing humidity coupled with shorter days and burning periods caused indices and fuel moistures to dip to normal or below normal. Drought conditions persisted across a portion of the Great Lakes region causing above normal significant fire potential until the early portion of October. Drought persistence also continued across much of the southern U.S. from Texas through North Carolina. The lee side of the Hawaiian Islands will also remain in a drought.

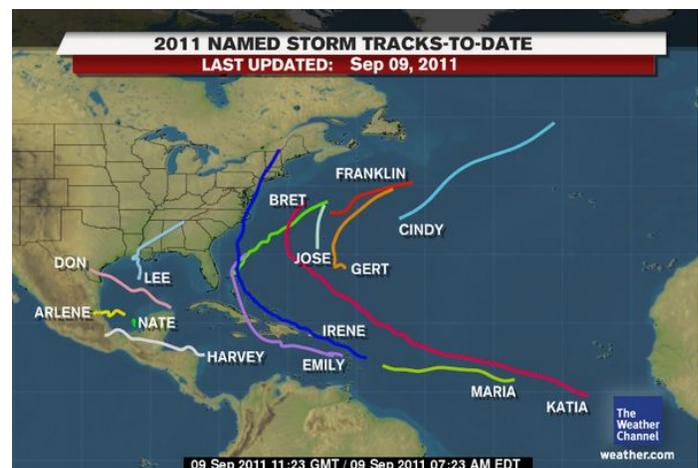
High pressure across the central U.S. in early October slowly gave way to a slow-moving trough that crossed from west to east over the course of the month. This pattern ushered in fall and brought much needed rain to the drought-stricken South but also more flooding to the Northeast. Temperatures remained warm for most of the country, generally two to six degree above normal. However, extreme warmth in the upper Midwest and far northeast early in the month drove monthly average temperatures to six to eight degrees above normal across parts

of Minnesota, Wisconsin, Maine, New Hampshire and Vermont. At the other extreme, the strong trough that settled into the eastern U.S. by mid-month dropped temperatures to much below normal over the south by as much two to four degrees with parts of Alabama and Georgia plummeting more than four degrees below normal. The western states, especially in the Northwest, had pockets of temperatures two to four degrees below normal. Precipitation was mixed; some much needed and some in already saturated areas. The extreme to exceptional drought areas from central and southeast Texas to central Oklahoma received three to six inches of rain, which is 150 to 300 percent of normal for this 30 day period in some parts. However, this did very little to mitigate the long-term drought conditions. The northern and central Rockies, the high plains of Kansas and Nebraska, and much of California received above normal precipitation, especially the high country where some of the first snows of the season occurred.

## Hurricane Support

The 2011 Atlantic hurricane season experienced above-normal tropical activity for the summer. Through September 9, there were 14 named storms (six is normal), two hurricanes (three is the norm) and two major, or Category 3, hurricanes (one is the norm). Three storms hit the mainland U.S., including Irene (August 20-28), a Category 3 storm which, after barreling through Puerto Rico, made landfall at Cape Lookout, North Carolina, on August 27, then moved over open water before making landfall a second time at Little Egg Inlet, New Jersey, and then a third landfall at New York City, both on August 28. Irene battered much of the Northeast with record rainfall and major flooding. Other storms that struck the U.S. mainland were Tropical Storm Lee (landfall at Pecan Island, Louisiana, on September 4) and Tropical Storm Don (landfall near Baffin Bay, Texas, on July 29 as a depression). The early season forecasts called for an above normal season with 12-18 named storms (11 is normal), six to ten hurricanes (six is normal) and three to six major (Category 3 or greater) storms (two is normal). Three incident management teams were mobilized to New York and Massachusetts following Hurricane Irene. Type 1 and Type 2 teams were assigned to New York from late August to September. A Minnesota Type 2 team was assigned to Massachusetts at the same time.

Map courtesy of The Weather Channel (<http://www.weather.com>).



## National Fire Activity Synopsis

The 2011 fire season was slightly below normal for number of reported wildfires (98 percent of the 10-year average). There were 74,126 wildfires reported nationally (compared to 71,971 wildfires reported in 2010). The number of acres burned in 2011 was 8,711,367, or 124 percent of the national 10-year average. Southern Geographic Area led the nation with over 1.8 million acres burned.

Based on a 10-year average, only two Geographic Areas reported above average fire occurrences in 2011: Southern and Southern California Geographic Areas. But Eastern, Rocky

Mountain, Southern, Southwest and Western Great Basin Geographic Areas all experienced above average acres burned in 2011. Forty-one fires or complexes exceeded 40,000 acres in size in 2011, compared to nine in 2010, 27 in 2009, and 24 in 2008 (see Significant Fire Activity below for a list of those fires).

A total of 5,246 structures were destroyed by wildfires in 2011, including 3,459 residences, 1,711 outbuildings and 76 commercial structures. This is well above the annual average of 1,354 residences, 1,199 outbuildings and 45 commercial structures destroyed nationally by wildfires (data from 1999 to present). Texas alone accounted for 2,725 residences, 449 outbuildings and 48 commercial structures lost to wildfires in 2011.

The 2011 fire season resulted in an average demand for firefighting resources through the National interagency Coordination Center. The demand for crews and helicopters (all types) was below both the five and ten year averages. But demand for engines and air tankers were well above average, largely due to the fire activity in Southern and Southwest Geographic Areas. In fact, air tanker mobilizations were 153 percent above the 10-year average (including MAFFS).

Type 1 teams were mobilized 37 times (up from 10 the previous year), and spent 520 days on assignments (up from 92 days the previous year). This includes one Hurricane Irene assignment to New York. All 16 teams had at least one assignment. Type 2 Teams were mobilized 114 times (up from 65 the previous year), for a total of 1,245 days assigned, up from 672 days the previous year (figures include both national and regional teams). Three of the four Area Command teams were each mobilized once in 2011. All four National Incident Management Organizations (NIMO) were mobilized 11 times in 2011. In 2010 there were no Area Command assignments, and just six NIMO assignments.

## **Military and International Resource Mobilizations**

**Military:** Four military C-130 Modular Airborne Firefighting System (MAFFS) activations occurred in 2011 in support of wildland fire suppression in Mexico, Texas, the Southwest and other parts of the West. The first mobilization to Texas occurred on April 15 to suppress fires burning in Mexico. Two MAFFS flew 37 sorties into Mexico from April 16 to April 23, and dropped 105,000 gallons of retardant.

The second activation involved MAFFS from California, North Carolina, Colorado and Wyoming. These aircraft flew 101 sorties from April 17 to May 4 in Texas, and dropped a total of 315,000 gallons of retardant.

The third MAFFS activation occurred from June 15 to July 13 and involved six MAFFS from California, North Carolina and Colorado at different times during this period. These aircraft were based in Albuquerque, New Mexico, and flew a total of 287 sorties and dropped 610,173 gallons of retardant in Arizona and New Mexico.

The fourth MAFFS activation occurred on September 8 and involved six MAFFS from Colorado, Wyoming and North Carolina (two from each state). The Wyoming MAFFS were based in Boise, Idaho, and flew 13 sorties, dropping 5,439 gallons of retardant in Idaho and Oregon. The other four MAFFS were based in Austin, Texas, and flew 92 sorties, dropping 154,250 gallons of retardant in Texas. The Wyoming MAFFS were released on September 18.

The North Carolina MAFFS were released on September 22, and the Colorado MAFFS were released on September 30.

**International:** Canada provided five Convair 580 airtankers and three aerial supervision modules (“Bird Dogs”) from Alberta, British Columbia and Saskatchewan. The first contingent of aircraft arrived in the U.S. on August 27, and the last aircraft departed on October 29. Manitoba also provided a CL-215 and CL-415 water scoopers, and a Bird Dog to the Pagami Creek fire in Minnesota. These aircraft were assigned from September 14 to September 27.

Canada also provided a contingent of 20 Smokejumpers from British Columbia to Montana on August 27. Eight were released on September 13, and the remaining jumpers were released on September 29. The Smokejumpers were based in Missoula and jumped fires in Montana and Idaho.