

Annual Fire Weather Operations Report – 2007
National Weather Service Reno, Nevada

1. Meteorologists participating in the Fire Weather Program:

Fire Weather Program Leader: Chris Jordan (IMET)
Fire Weather Program Assistants: Rhett Milne (WCM), Mark Deutschendorf, Jim Wallmann (IMET)
All operational Forecasters: 5 Senior Forecasters and 6 General Forecasters
MIC, WCM, and SOO

2. Season Duration and Pre-Season Overview

After two consecutive wet winters, the winter of 2006-2007 was very dry with much below normal snowpack in the Sierra. Snowpack ranged from 40 to 50 percent of normal on April 1, and only 20 to 40 percent of normal on May 1. In addition to the dry conditions, the late winter and early spring were warmer than normal. This combination of warm and dry conditions this year along with the dense vegetation which grew from the recent wet winters set the stage for an extreme fire season at all elevations across eastern California and western Nevada. Several small wildfires occurred during the winter season around the Reno area—with two homes destroyed in separate fires during the second half of March.

The 2007 fire season began May 3 (its earliest start on record) with Fire Weather Forecasts issued twice per day and dedicated shift coverage 7 days a week. The fire season ended on October 14. NWS Reno continues to provide Spot Forecasts 24 hours a day, 365 days a year.

3. Red Flag Verification

POD 0.84, FAR 0.24, CSI 0.67, with an average warning lead time of **14.30 hours**. Additional details are in MS Excel file **2007REDF.xls**.

The file contains:

- Sheet 1: Summary of Red Flag Warnings and Fire Weather Watches.
- Sheet 2: Summary of Spot Forecasts and IMET Dispatches.

4. Monthly Summary of Weather and Fire Activity in the Reno Forecast Area.

May: After a cool start to the month which included light snow in the Reno vicinity and the eastern Sierra through the morning of the 4th, the remainder of May was dry and very warm, with Reno reporting the third warmest May on record. Rapid drying of fuels occurred during the final week of the month, when temperatures reached the upper 80s and lower 90s in most valleys, resulting in fuel moisture values more typical for mid-summer. A Red Flag Warning was in effect for portions of western Nevada for gusty winds and low humidity on the 27th. Isolated thunderstorms produced locally heavy rainfall and small hail over portions of eastern California and far western Nevada on the last two days of the month.

Three large wildfires, none of which were associated with lightning, occurred in the second half

of May. The “Mustang” fire about 10 miles east of Reno began on the 18th and was contained two days later at 575 acres. The “Highway” fire just west of the California-Nevada border near Interstate 80 began on the 21st and was contained by the 26th at 850 acres. The “Industrial” fire briefly threatened homes near Moundhouse (east of Carson City) on the 29th but none were damaged as this fire was contained at 425 acres two days later. Smaller fires ignited by lightning occurred during the final two days of May around Reno and southeast Lassen County.

June: Warm weather with isolated to scattered thunderstorms continued into the first few days of June. A Red Flag Warning was in effect on the 4th for gusty winds and low humidity as a strong cold front moved across the region. Even stronger winds occurred on the 5th with many locations receiving gusts of 50 mph or greater. Much cooler conditions continued for the next few days, especially on the 6th when temperatures in valleys remained near or below 60 degrees. Very dry and warm weather returned for the last two thirds of the month, with temperatures reaching the 90s in the valleys on most days, resulting in the second warmest June on record in Reno. Low humidity with locally gusty winds occurred in portions of western Nevada on the 10th and 19th. Red Flag warnings were in effect for gusty winds and low humidity on the 20th and again for three consecutive days from the 22nd through the 24th as the critical breakdown of upper ridge pattern occurred ahead of a dry cold front. Another series of Red Flag warnings were in effect for gusty winds and low humidity from the 27th through 29th.

Lightning on the 1st ignited two large fires—the “Honey” fire in southeast Lassen County which was contained two days later at 225 acres, and the “Larson” fire between Walker and Coleville CA. This fire was initially contained on the 4th, but strong winds on the 5th caused the fire to jump containment lines and spread rapidly, threatening several homes, forcing evacuations and closing a section of Highway 395. Improving weather conditions during the next several days helped to limit the damage to a few outbuildings before this fire was contained on the 10th at about 1100 acres. The “Angora” fire near South Lake Tahoe which spread rapidly by gusty winds on the afternoon and evening of the 24th became one of the most devastating wildfires in the history of the Lake Tahoe basin, as it destroyed over 250 homes within a few hours. This fire, which was not associated with lightning, spread thick smoke over the southern portion of the Lake Tahoe basin and eastward across Carson City to Silver Springs and Fallon, with a second flare up on the 26th spreading smoke over portions of Reno. Additional fires not associated with lightning broke out around the Reno area and portions of northeast California during the dry and windy weekend of June 23-24, including the 300 acre “Big Pine” fire near Susanville, but these fires were contained within the next two days with damage limited to a few outbuildings and vehicles.

July: Strong high pressure building over the Great Basin led to a rapid rise in temperatures around the 4th of July holiday with much of the region reporting all time record highs on the 5th. The extreme heat triggered isolated thunderstorms on the 5th, with an increase in storms on the 6th. Numerous lightning strikes with little rainfall started many new fires across the region. Thunderstorms resumed between the 9th and 11th, with the peak of activity on the 10th when a Red Flag Warning was issued. Although the majority of these storms were wet, lightning ignited several fires during this period with strong outflow winds occurring over West Central Nevada on the 11th. Another Red Flag Warning was issued on the 14th due to a brief increase in winds. The next round of thunderstorms occurred on the 16th mainly over West Central Nevada with some of these storms producing strong outflow winds. A few dry thunderstorms which occurred

over Pershing and central Washoe Counties north of Pyramid Lake on the morning of the 17th led to several new fire starts—the biggest large fire outbreak so far this season. As a strong low pressure system approached the west coast on the 17th and 18th, Red Flag Warnings were issued for both days. Gusty winds combined with low humidity to produce rapid fire spread on many active fires. A strong cold front swept across the region on the 18th, bringing even stronger winds with gusts to 50 mph in much of western Nevada, although humidity values also increased. Portions of northeast California received wetting rains up to 0.50 inch on the 18th. Warmer weather returned for the final ten days of the month, with isolated to scattered thunderstorms between the 23rd and 26th, mainly south and east of Reno. While a Red Flag Warning was issued for the 23rd due to the threat of dry lightning, the reduced coverage of thunderstorms combined with increased moisture led to an early cancellation of that warning. The remainder of the month was warm and dry with minimal lightning activity but winds were generally light. Overall, the generally hot weather resulted in average temperatures equaling the warmest month on record in Reno.

July was a very active month for large wildfires across the region, especially during the first three weeks. The destructive “Angora” fire in South Lake Tahoe which began in June was contained on the 3rd at 3100 acres. Isolated lightning triggered the “Antelope Complex” on the 5th, and three new large fires were ignited by lightning on the 6th. The “Sleeping Elephant” fire near Topaz Lake was contained a day later at 800 acres. The “Adrian 1” fire over remote terrain in central Lyon County was contained on the 12th at about 14000 acres, and the “Tungsten” fire in northern Pershing County was contained on the 11th at almost 62000 acres, the largest fire of the season so far. Another fire not associated with lightning, the “Hungry Valley” fire began on the 7th and was contained a day later at around 500 acres. On the 10th, lightning ignited the “Balls Canyon” fire near Bordertown, which spread smoke across Reno, especially in the north valleys such as Cold Springs and Red Rock for a couple of days. This fire was contained on the 15th at nearly 4400 acres. Heavy smoke returned to Reno on the 16th as the “Hawken” fire burned near the Caughlin Ranch community in southwest Reno. This fire, which was not associated with lightning, threatened over 250 homes, but none were damaged as the fire then spread uphill and away from the homes during the next few days. The smoke thinned out by the 19th, and this fire was contained on the 23rd at 2710 acres. Several additional large lightning fires broke out in mid-July, mainly in remote areas. The “June” fire in southern Mono County began on the 10th and was contained two days later at nearly 700 acres. The “Dun Glen”, “Selenite”, and “Barrel Springs” fires all began on the 17th in Pershing County. Dun Glen was contained on the 19th at 2000 acres, Selenite was contained on the 19th at 1800 acres, and Barrel Springs was contained on the 21st at 6442 acres. A secondary fire not associated with lightning near the original Barrel Springs burn area flared up on the 22nd but was contained a day later at about 300 acres. One additional lightning fire, the “Sand Pass” fire northwest of Pyramid Lake began on the 17th and was contained on the 19th at 7000 acres. Fire activity diminished during the final ten days of the month.

August: Dry conditions prevailed nearly the entire month, except for the final five days when isolated to scattered wet thunderstorms developed over the region. Temperatures were well above normal for most days of the month, with Reno setting a record for the warmest average August temperature. Red Flag Warnings were issued for the first three weekends of the month due to very low humidity and gusty winds. For the end of the month, increased monsoon moisture advanced into the region from south to north. Portions of Mineral and Mono Counties

received locally heavy rain on the 27th and the 28th, while additional thunderstorms occurred near Truckee on the 28th. Much of the region received measurable rainfall on either the 30th or the 31st. The seventh longest dry streak (85 straight days) without measurable rain at the Reno airport ended as rain was measured on the final two days of the month.

Despite very dry conditions with several windy days, no large fires occurred during the month. While not a large fire by definition, the most significant fire of August only burned about 25 acres, but destroyed 5 homes near Tahoe City on the 18th. One other fire which burned nearly 100 acres occurred near Interstate 80 in the vicinity of Donner Lake on the 22nd. Neither of these fires was associated with lightning, and both were contained within 24 hours.

September: Very warm and dry weather resumed for the Labor Day weekend, before approaching low pressure brought increased winds on the 3rd, and stronger winds on the 4th as a cold front passed through the region. Red Flag Warnings were in effect for both days. The cold front was accompanied by scattered thunderstorms over northeast California and northwest Nevada. Cooler conditions on the 5th were followed by a quick warming trend from the 6th through the 9th. Another Red Flag warning was in effect on the 13th when a stronger cold front passage brought gusty winds and low humidity to much of the region. This front brought an end to the 90 degree heat for the year, with temperatures only reaching the 70s to lower 80s in the lower elevations for the next few days. The final Red Flag Warning of the season was in effect for the 19th as gusty winds and low humidity developed ahead of another cold front. Local wetting rains fell in the cooler air mass behind this front, with light snow in portions of the Sierra. Additional wetting rains occurred across much of the region on the 22nd and 23rd. A rare September snowfall occurred in the vicinity of Reno on the evening of the 28th, with around 1 inch reported in the foothills north of the city and lighter amounts down to the valley floor.

Only one large fire occurred during the month, but it was the largest fire of the season in number of acres burned. The “Moonlight” fire near the border of north central Plumas County and southwest Lassen County began on the 3rd and grew rapidly during the next several days, creating hazy conditions at times over portions of northeast California and western Nevada. It was contained on the 15th at almost 65,000 acres. This fire did not appear to be associated with lightning.

October: Several cold fronts passed across the region during the first half of the month, and while they were accompanied by gusty winds, the humidity values did not drop to critical values with any of these front passages. The first front passed through the region on the 4th bringing sharply colder air to the region on the 5th, along with some wetting rains in parts of eastern California and western Nevada, and light snow in parts of the Sierra. The next front passed through the region on the 10th, and brought more snow to the Sierra and the Lake Tahoe basin. The cumulative effects of these storms from late September through early October, along with the seasonal transition to cooler days with higher humidity brought significant increases to fuel moistures to the region, which led to the decision to close out fire season by the middle of the month.

No large wildfires occurred in the month of October.

5. IMET Dispatches

WFO Reno has two certified IMETs on station, Jim Wallmann and Chris Jordan. IMETs from WFO Reno were dispatched 10 times for a total of 98 days (counting travel).

IMET Dispatches for Jim Wallmann:

1. Angora (South Lake Tahoe CA), June 25-July 3.
2. Antelope Complex (near Susanville CA), July 6-14.
3. Murphy Complex (near Jarbidge NV), July 25-31.
4. Rattlesnake (Central Idaho), August 12-September 6.

IMET Dispatches for Chris Jordan:

1. Highway (near Reno NV), May 23-27.
2. Larson (near Coleville CA), June 6-10.
3. Egley Complex (near Burns OR), July 10-25.
4. WSA Complex (near Bend OR), August 4-18.
5. Rice (Fallbrook CA), October 23-30.
6. Santiago (Irvine CA), November 4-9.

IMET Dispatches within our area:

1. Chris Jordan (REV), Highway (near Reno NV), May 23-27.
2. Chris Jordan (REV), Larson (near Coleville CA), June 6-10.
3. Jim Wallmann (REV), Angora (South Lake Tahoe CA), June 25-July 3.
4. Jim Wallmann (REV), Antelope Complex (near Susanville CA), July 6-14.
5. Bob Nester (MSO), Ball's Canyon (near Bordertown NV), July 12-15.
6. Mark Stubblefield (FGX), Hawken (near Reno NV), July 18-22.
7. Joe Solomon (PDT), Moonlight (SW Lassen County), September 6-19.

6. Liaison Work and Training

Chris Jordan provides weather briefings at monthly Sierra Front Interagency Cooperators meetings. Agencies present include Humboldt-Toiyabe NF, Tahoe NF, Lake Tahoe Basin Management Unit, BLM, CDF, NDF, BIA, Reno Fire Dept, Sparks Fire Dept, Carson City Fire Dept, and numerous other local fire districts. Several FMOs from the area attend the meetings.

Chris Jordan and Rhett Milne met with the WGB GACC in January to develop a briefing webpage for the 2007 fire season.

Chris Jordan taught a fire weather refresher course at NAS Fallon in February.

Chris Jordan was on a conference call in February with the NV NWS offices, WRH, and the WGB GACC to organize the WGB AOP. He also coordinated talks back and forth between WGB and the NWS offices through March and edited the 2007 AOP.

Chris Jordan and Rhett Milne set up a booth at the National Fire Chiefs Association Conference

in March. They also hosted 100 conference attendees for a tour of the office and gave a presentation of general operations.

James Wallmann and Chris Jordan attended the 2007 IMET Workshop in Boise, ID in March.

Jane Hollingsworth (MIC) attended the CA AOP meeting in Sacramento in March with NWS offices, CA GACCs, and various fire agencies.

Rhett Milne (WCM) and Chris Jordan visited the Susanville Dispatch Center in March for outreach and to get feedback on NWS operations.

Rhett Milne and Chris Jordan gave fire weather refresher classes to Surprise Valley Volunteer Firefighters and Cedarville BLM employees in March.

Chris Jordan gave a presentation on NWS operations at a police/fire dispatcher meeting at Sierra Front Dispatch Center in April.

Jane Hollingsworth and Chris Jordan attended the Lake Tahoe Air Quality Group meeting in April. The group consisted of various fire agencies with an interest in prescribed fire, various county and planning agency members, the Northern CA GACC, and various Air Resources Board agencies.

Chris Jordan organized a Fire Weather Workshop at WFO Reno in April. WFO Reno and WFO Elko staff members attended the workshop as well as guests from the WGB GACC and a guest speaker from the North Lake Tahoe Fire Protection District.

All forecasters went through an intensive fire weather drill prior to the start of fire season.

Chris Jordan and Jane Hollingsworth attended the Great Basin Dispatch meeting in Las Vegas in April. Chris gave a presentation on NWS operations and the dispatcher-forecaster relationship to dispatchers from both WGB and EGB.

Chris Jordan taught the weather portion of an S-300 Burn Boss class at Lake Tahoe in April.

Rhett Milne and Chris Jordan visited the Inyo Dispatch Center in May to get feedback on NWS operations.

Chris Jordan attended the kickoff announcement by the NV Governor for the "Living With Fire" fire awareness week in May.

Chris Jordan gave a weather briefing and seasonal outlook to a group of NDF employees in Carson City in May.

Rhett Milne and a lead forecaster provided a briefing at WFO Reno to several members of the U.S. Forest Service and Reno Fire Department during a wildfire outbreak in the Reno area in June.

WFO staff issued numerous FTR's, high profile interviews, and special briefings to various agencies regarding the Angora Fire at Lake Tahoe in June. The MIC and WCM also went to the

fire to observe fire operations and to give extra briefings at a temporary EOC that was set up at the Tahoe Valley Airport.

Chris Jordan went to the WGB GACC for a day in July to give extra briefings, attend conference calls, do the weekly outlook product, and cover extra duties associated with the MAC group being initiated.

The WCM provided numerous weather briefings to the Washoe County Emergency Crisis Team during the Hawken Wildfire which was burning into southwest Reno in July.

Rhett Milne and Chris Jordan attended a post-season meeting with staff from the WGB GACC and the Nevada WFOs in Vegas in October.

Jane Hollingsworth attended the California fire weather post-season meeting in Irvine in November.