Appendix A: Southwest Oregon

Chetco Bar

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| Detected/Reported | July 12, 2017 |
| Cause | Lightning |
| Containment | November 2, 2017 |
| Land Ownership at Ignition Point | Kalmiopsis Wilderness/ USFS |
| Preparedness Level at Time of Ignition | National PL 4/ Regional PL 2 |
| Fire Size | 191,125 acres |
| Estimated Cost | 72,000,000 |
| Land Jurisdictions Affected | USFS, BLM, State, Private |
| Resources at Incident Peak | 1744 personnel (3 Type-1 crews; 53 Type-2 crews; 4 CRC (what is this?); 12 helicopters; 44 engines; 59 heavy equipment |
| Injuries | 5 |
| Structures Destroyed | destroyed: 20/ 8 additional damaged |
| Cooperators | US Forest Service, Oregon Department of Forestry, Coos Forest Protective Association, Oregon State Fire Marshal, Bureau of Land Management, American Red Cross, Curry County, Brookings Fire & Rescue, Harbor Rural Fire Protection District, Brookings PD, Cape Ferrelo Rural Fire Protection District, Winchuck Volunteer Fire Department, Oregon State Police, Josephine County, Illinois Valley Fire District, Josephine County Fire Department |

Interactive Progression Map: <https://usfs.maps.arcgis.com/apps/TimeAware/index.html?appid=9e8ec04918734c6a96b88ec7226d4265>

**July 12**

The Chetco Bar Fire was reported to Rogue Valley Interagency Communications Center on July 12, 2017, at 1:43 p.m. in the middle of the Kalmiopsis Wilderness, north of the Chetco River, within the footprint of the 1997 Silver Fire and 2002 Biscuit Fire. The fire was suspected to be caused by a lightning event that occurred June 24-25th, 2017. An initial response was initiated. A load of rappellers was dispatched from the Siskiyou helibase in Illinois Valley. Once on scene, the rappellers estimated the fire to be over one acre in size. Rollout of burning material was observed. The rappellers initiated construction of a helispot to allow for deployment of additional resources. Two 20-person crews and logistical support orders were placed.

The IC reported being on the ground in the fire area at 4:14 p.m. Air attack requested aerial support to provide water bucket drops to check the fire spread. Three (3) helicopters made 54 bucket drops totaling 17,280 gallons of water dropped dropped on the fire during the first 24 hours.

Meanwhile, the IC requested permission to construct a helispot at a location east of the fire and was approved shortly thereafter. At that time, the IC reported the fire to be one-half to three-quarters acres in steep terrain, creeping and smoldering in thick brush, with burning materials rolling out from the bottom of the fire. Two fellers constructed a helispot and coordinated radio traffic with Air Attack and RVICC, while another sawyer cut brush. Two 20-person hand crews and logistical support for the fire were placed on order, due to report to the helibase for shuttle at 8 a.m. on July 13.

Because of the steep, difficult terrain, tall, volatile brush and hazardous trees in the fire area, the IC also requested the closest location of an available short-haul helicopter in case of an injury. Helicopter aviation resources remained on the fire until 9:14 p.m. Air Attack reported the fire was holding at three-quarters of an acre, burning in heavy fuels. The rappellers continued work constructing the helispot until 10:30 p.m.

**July 13**

By the morning of July 13th the fire had grown to an estimated 10 acres. Due to lack of safety zones, escape routes and a low probability of success, the rappellers disengaged from the incident. A WFDSS decision was issued. An indirect suppression strategy was chosen by the Agency Administrator. The decision incorporated the Forest Service Chief’s focus items found in his 2017 Letter of Intent for Wildland Fire to “implement strategies and tactics that commit responders only to operations where and when they can be successful, and under conditions where important values at risk are protected with the least exposure necessary while maintaining relationships with the people we serve.”

The decision was to complete a long-term assessment to evaluate the threat to values at risk relative to the current fire location and projections over the next three-week period. The primary values at risk at the time were located outside the wilderness area 6-10 miles to the south and south west of the fire (Industrial timber lands/Federal timber lands, Emily Camp, Quail Prairie and Pearsoll Peak Lookouts and Packers Cabin. Considerations were also given to public safety and socio- political economic concerns in development of the strategy. The course of action included minimal use of resources to monitor fire activity, look for potential management action points and areas for contingency line construction. The decision also recognized the need to implement a communication strategy to inform the public, cooperators, and key stakeholders on fire status and planned actions. The decision was made to manage the fire with a Forest Type 3 Incident Management Team.

Between July 13th and July 19th the Type 3 IMT began implementation of constructing containment lines outside the wilderness boundary to the south and southwest of the fire in anticipation of “Chetco Effect” winds (a NE to SW flow) which could be expected to occur 2-4 times during the fire season. Resources began brushing roads and trails to be utilized in the event the fire crossed south of the Chetco River.

A new WFDSS decision was issued on July 19th, reaffirming the July 13th WFDSS decision The fire was approximately 300 acres in size, burning exclusively on National Forest System Lands. Cooperators, including Coos Forest Protective Association (CFPA), Oregon Department of Forestry (ODF), and local government entities, were updated on the current situation and decision. Fire behavior was low to moderate spreading in surface fuels (primarily brush fields).

Over this period, firefighters cleared helispots in order to land and install remote automated weather stations (RAWS) to obtain accurate weather data from near the fire site. Fire crews also constructed primary fire line and explored access points from the outer edge of the Kalmiopsis Wilderness to locate ridgelines closer to the fire’s perimeter within the wilderness that would allow safe access for the firefighters to take action.

The IMT determined that addressing the southwest portion of the indirect containment strategy was necessary. Crews were tasked with opening road systems and chipping brush with the objective of constructing contingency lines. The fire grew to about 500 acres, still well within the wilderness. The fire behavior remained low-to-moderate. The first forest area closure was implemented on July 20.

**July 21-25:** The IMT installed a remote camera to monitor the fire’s movement and activity and requested GIS support to map all of the Kalmiopsis Wilderness plus surrounding areas including any road and trail layers to help determine contingency and alternate fire lines. Operations identified and began clearing contingency lines, primarily using existing roads and trails, and improving lines used in the 2002 Biscuit Fire. Two Interagency Hotshot Crews (IHC) were ordered, but no crews were available on July 23 when the order was placed.

On July 24 a National Incident Management Organization (NIMO) team was ordered for the incident due to the anticipated long-term duration of the incident. The NIMO team assumed command of the incident on July 29 and continued to implement the strategy and course of action of the July 19 WFDSS decision. Roads and trails outside the wilderness boundary continued to be prepared for potential burnout operations should the fire cross the Chetco River.

By July 24, 80 firefighters were constructing and improving containment lines. Two IHC Crews were obtained and analyzed options for containment lines closer to the fire. The crews instead were utilized for contingency line work with the other resources in order to expedite the work.

Over this timeframe, the fire had an east wind event that increased the fire behavior to about 100 acres a day in growth, but the Chetco River was checking spread to the south and west.

Between July 29 and August 14 the fire grew from 2,180 acres to 5,438 acres with spread primarily to the north and northeast. The fire remained north of the Chetco River. On the evening of August 15 and morning of August 16 the fire experience a “Chetco Effect” wind event for the first time on the fire that resulted in the fire crossing the Chetco River to the south. The winds are created when northeast winds are pushed downslope from the surrounding mountains towards the Pacific Ocean. This movement increases the wind’s temperature up to forty degrees above the surrounding areas. The Chetco River Valley further funnels the winds in to the Brookings area.

Infrared mapping taken on August 16 estimated the size of the fire to be 6,011 acres. Fire growth between August 17 and August 21 significantly outpaced modeling predictions for a “Chetco Effect” wind.

The fire became established south of the Chetco River on August 17. Three air tankers dropped 30,823 gallons of retardant in and adjacent to the wilderness to slow the spread of the fire. The team requested resources from both the High Cascades Complex and the Shan Creek Fire. The forest law enforcement officer closed Packer’s Cabin, a local rental cabin, asking renters to evacuate to allow crews to complete structure preparation. Hand line construction was completed on the south side of the Chetco River through Wild and Scenic Corridor to the Chetco River, as well as primary contingency lines north and south of the Chetco River. The fire was estimated at 8,500 acres with 65 personnel assigned.

An infrared (IR) flight on August 18 estimated the fire to be 10,957 acres. During this timeframe, the primary contingency containment line that crews had been preparing was breached. Point-protection tactics were undertaken to protect values at risk at Tolman Ranch and Wilderness Retreat. The fire continued to gain momentum and exponentially increased in size; additional resources were ordered.

At 7:30 a.m. on August 18, the IC recommended the Curry County Sheriff evacuate roads 1909 and 1917 south along Chetco River to Alfred Loeb State Park. Curry County activated its Emergency Operations Center (EOC) in Brookings. Around 10:30 a.m., visibility was too poor for air tanker use, and Type 1 helicopters were requested for bucket work. One heavy (Type I helicopter), on loan from the Miller Complex, dropped 30,000 gallons of water on the fire.

A near miss occurred at Packer’s Cabin around noon when when an engine was cut off from its egress route by fire. Crews were preparing to burn out around the cabin to create a buffer when a spot fire crossed the road during their burn operations, became established, and compromised the engine’s egress. The three engine crewmembers maintained communications with a helicopter assigned to that division who requested more aerial resources for the potential entrapment. An order was placed for support from air attack, an air tanker and a rappel ship, and a VLAT borrowed from the Milli Fire jettisoned a load of retardant on the fire after responding to the near miss. The crew then made their way into the black and remained there until 5:30 when it cooled enough to return to the cabin. The crew stayed at Packers cabin until early the next morning when the passing flame front had cooled enough to allow for a safe egress.

A Facilitated Learning Analysis (FLA) was developed for this near miss and can be accessed in the Wildland Fire Lessons Learned Center.

The forest ordered the type 2 IMT that was finishing up on Shan Creek Fire to be reassigned to Chetco Bar to support the NIMO team.

At 3:30 p.m., a Level 2 Evacuation order was issued for Gardner Ridge and Cate Road. Three structures burned. The fire was estimated at 22,042 acres at 4 PM with 65 personnel assigned.

IR flown on August 19 showed the fire to be 48,825 acres. Red Flag conditions were in effect from the late afternoon through the following day. Unified command was initiated between NIMO/Rocky Mt. Team Black and CFPA. The Conflagration Act was invoked by Governor Brown, allowing for the deployment of Oregon State Fire Marshal resources to support the fire. The Level 2 evacuations for Gardner Ridge Road turned to a Level 3 Evacuation at 6 p.m. Firefighters began backfire operations north and west of Wilderness Retreat to protect structures. Their efforts redirected fire spread to the east and south, allowing resources to begin structure protection and firing operations around Wilderness Retreat and the Chetco River Inn. Five primary residences and 18 minor structures burned on Gardner Ridge and Cate Road. The fire was estimated at 48,825 acres at 11 PM with 280 personnel assigned. IR flown on August 19 showed the fire to be 48,825 acres.

Aug. 20: Oregon State Fire Marshal’s Office (OSFM) resources began officially supporting the incident at 6:00 a.m., and joined unified command, with NIMO/RM Team Black/CFPA. Multiple evacuation notices were issued and affected over 3000 people. OSFM had responded with 4 task forces of structure protection, which included 127 personnel on equipment in addition to 26 personnel on the Incident Management Team. Operations formalized plans for an aggressive attack to occur when the weather moderated. Under continuing Chetco Effect winds, the fire had grown to an estimated 91,551 acres at 11 p.m. with 362 personnel assigned. By the time the Chetco Effect winds began to subside on August 20 the fire had grown to 91,510 acres.

During the August 16th through 20th timeframe, the protection of Life/Safety was the priority. Unified Command was established between the USFS (two IMT’s; NIMO and an IMT2), the Oregon State Fire Marshal, and the Coos Forest Protective Association. The Curry County Emergency Operations Center (EOC) was activated to coordinate evacuation activities. Multiple evacuation notices were issued by the Curry County Sheriff’s Office that affected over 3000 residences/properties. The forest ordered a National Type 1 Incident Management Team to take command of the incident on August 26th. Multiple community meetings were held in the communities of Brookings and Gold Beach during this timeframe.

**Aug. 21:** The number of incident responders grew from 65 on August 16 to 788 on August 21. Use of aviation assets was limited due to the smoke produced by the fire. The Chetco Bar Fire experienced rapid growth during National Preparedness Level 5, which contributed to delays getting resources. This was anticipated and was overcome by using previously established lend/lease procedures with nearby incidents. The teams held an informal meeting at the Red Cross Evacuation Shelter at Riley Creek Elementary School, and a meeting at 6 p.m. at Azalea Middle School in Brookings. Approximately 1,000 people attended. The Agency Administrator ordered a National Type 1 IMT to manage the Chetco Bar Fire. National Guard resources were supporting the incident by providing 24/7 security at road closures, traffic assistance at control points, mop-up, fire rehabilitation and extraction of hose and pumps.

OSFM structure prep and triage began in the Carpenterville Road area. CFPA and private timber industry resources worked with resources assigned to the incident management team on the Chetco Bar Fire to construct direct and indirect line on the far western flank of the incident. This action was instrumental in the protection of a number of residences in the Gardner Ridge and Wilderness Retreat areas. The weather conditions finally moderated and allowed for operational resources to initiate direct and indirect line construction on the west and south sides of the fire. Between August 17 and August 21, Chetco winds had driven fire growth from around 6000 acres to almost 100,000. The fire was 97,758 acres with 788 resources assigned.

**Aug. 22:** The incident meteorologist warned of the potential for the Chetco Effect to return over the fire area on Aug. 26. The fire was 99,944 acres at 10:15 PM with 1,078 personnel assigned.

**Aug. 23:** PNW Team 3 (Type 1 IMT) was in briefed at 2 p.m. The unified command teams held a public meeting in Gold Beach at the Curry County Fairgrounds. The fire was 102,333 acres, now categorizes as a megafire, with 1,174 personnel assigned. Approximately 251 personnel and 75 pieces of equipment are assigned through OSFM.

**Aug. 24:** The ICs, Sheriff and Oregon State Police conducted a tabletop exercise to work through a potential evacuation of areas north of Brookings and Brookings proper. At 5 p.m. a Level 1 evacuation notice went into effect for Brookings. Eight LAT’s, one SEAT and one VLAT dropped a total of 46,892 gallons of retardant on the fire. The fire was 104,144 acres at 11:20 PM with 1,398 personnel assigned.

The August 24 damage assessment confirmed that five single residences and 20 other minor structures had been destroyed. As of August 24, 1,712 single residences (2,367 people), 809 nonresidential commercial properties, and 50 minor properties remained threatened. Temporary Red Cross Shelters had been established for displaced residents.

**Aug. 25:** The fire was mapped at 105,518 acres with 1,612 personnel assigned. PNW Team 3 shadowed the teams and assumed command from the NIMO and Type 2 team and joined Oregon State Fire Marshal’s Office and CFPA in unified command at 0600 on Aug. 26.

**Aug 26:** Transfer of Command to Pacific Northwest Team 3.

Sept 3: The National Weather Service issued a heat warning, and high temperatures and critically low humidity contributed to an increase in fire behavior. On the eastern flank, a significant smoke column developed to a height of 23,000 feet. Shifting winds improved visibility, allowing aircraft to support ground operations with water drops on portions of the fires. Over 500 people attended the community fire briefing in Cave Junction.

**Sept 4:** An excessive heat warning remained in effect with temperatures above 100 degrees, creating critical burning conditions including numerous spot fires. Level 1 evacuation order issued for residents of Illinois Valley. Level 3 “GO” evacuation order issued for Illinois River Road within US Forest Service boundaries, including Oak Flat. Forest Closure area expanded due to fire growth on the eastern flank.

**Sept 6:** On September 6, a non-fire employee located in fire camp went into cardiac arrest and was resuscitated by EMS on scene. After the individual collapsed, a medic responded quickly and conducted CPR for about 30 seconds until the individual regained consciousness. The patient was transported to nearest cardiac center in Medford, Oregon. A Rapid Lesson Sharing (RLS) assessment was developed for this incident and can be accessed via the Wildland Fire Lessons Learned Center website.

**Sept-Oct:** The fire experienced precipitation, with some areas reported over an inch of rain in early September. The fire experienced another warming trend before returning to cooler temperatures and increased precipitation in mid- to late- September. On 9/18 Curry County Sheriffs Office lifted all evacuation orders for Curry County. Pacific Northwest Type 1 Team 2 transferred command of the Chetco Bar Fire to a Type 3 organization on October 5. On October 18th, the Chetco Bar Fire transitioned from a Type 3 to a Type 4 organization.

A Burned Area Emergency Response (BAER) Team arrived in early October to conduct post fire hazard mitigation. Weather continued to moderate fire behavior and spots of heat decreased significantly.

November 2: Fire is 100%Contained.

Shan Creek

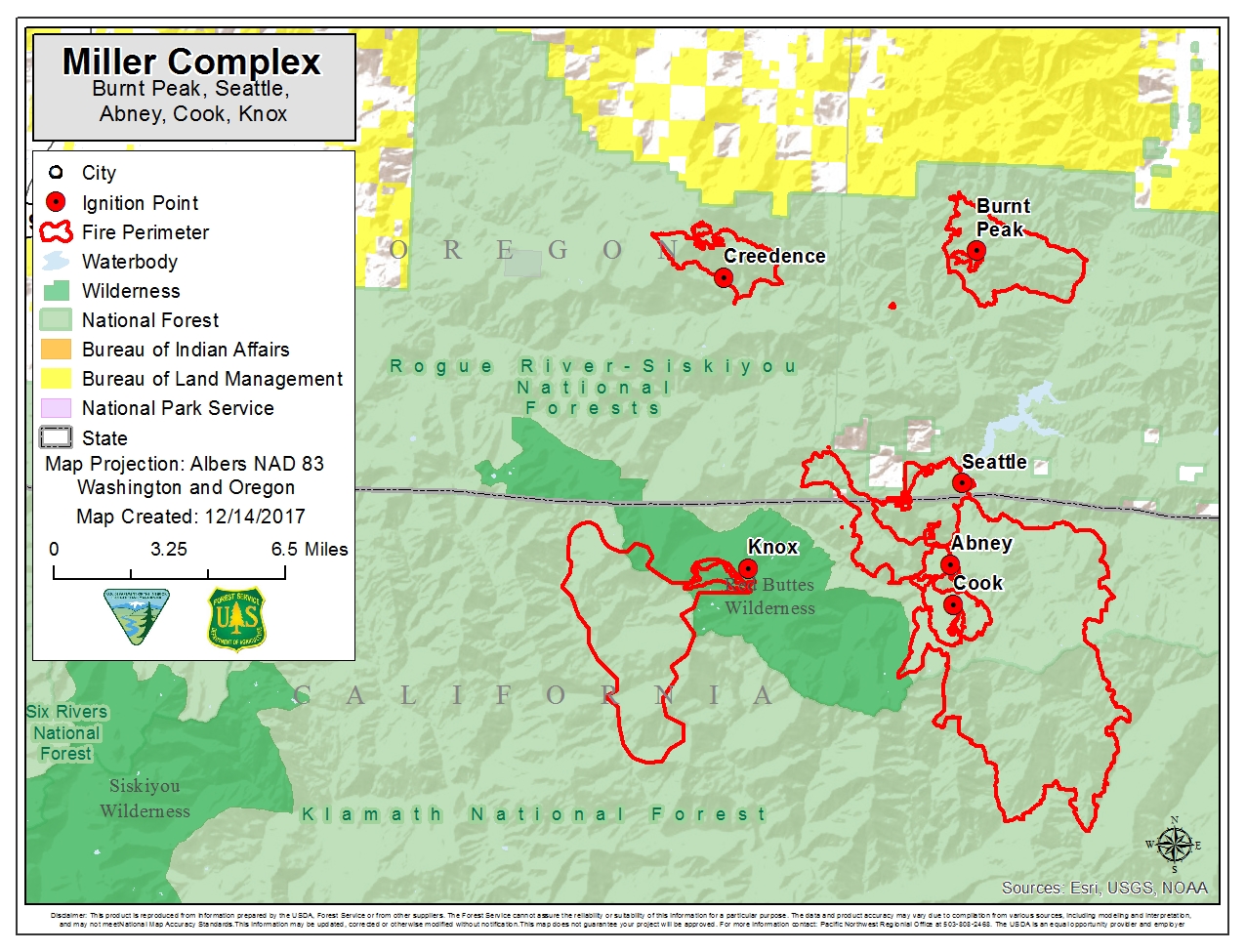
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| --- | --- |
| Date of Ignition | August 10 |
| Cause | Lightning |
| Containment | November 2 (? estimated containment on inciweb)/declared out on 11/6/17 |
| Land Ownership at Ignition Point | Rogue River Siskiyou NF; US Forest Service |
| Preparedness Level at Time of Ignition | National Preparedness Level 4  Regional Preparedness Level 4 |
| Fire Size | 156 |
| Estimated Cost | 1,700,000 |
| Land Jurisdictions Affected |  |
| Resources at Incident Peak | 262; 1 Type-1 crew; 4 Type-2 crews; 1 camp crew; 22 engines; 5 heavy equipment |
| Injuries | 1- respiratory distress 8/18 |
| Structures Destroyed | 0 |
| Cooperators |  |

Miller Complex

|  |  |
| --- | --- |
| Date of Ignition | August 14 |
| Cause | Lightning |
| Containment | November 2? |
| Land Ownership at Ignition Point |  |
| Preparedness Level at Time of Ignition | National Preparedness Level 5  Regional Preparedness Level 5 |
| Fire Size | 39,715 |
| Estimated Cost | 38,924,000 |
| Land Jurisdictions Affected |  |
| Resources at Incident Peak |  |
| Injuries | 20 |
| Structures Destroyed | 0 |
| Cooperators |  |

A series of thunder and lightning storms moved across the Rogue River-Siskyou National Forest on August 14 igniting 25 wildfires that spanned across two separate National Forests, two GACC’s, two states, and 3 counties (and 2 IMTs). The series of fires became managed as the Miller Complex. All fires within the complex were terrain and fuel drive and in the early stages fire growth was primarily a result of rollout and slope reversal. All IMTs that commanded this fire during it’s duration noted the jurisdictional complexities in managing an incident that was across state and regional boundaries.

When the fires first ignited, a local Type 3 organization was already in place managing earlier ignitions and assumed responsibility for some of the new fire starts. A Type 2 organization took command of the fire on August 16 to address the increased complexity around safety, external political factors and resource constraints. A contain and control strategy was already being utilized due to the hazards presented to firefighters by the steep terrain and numerous snags. The team took on an incident that had multi-jurisdictional boundaries with challenging collaborative missions, and had low priority status for resource allocation. On August 18th, smoke became a significant issue over the complex. Locally generated smoke was enhanced by considerable smoke from other area fires – most notably the Chetco fire. It remained hot and dry, but temperatures in the lower valleys were affected quite a bit by smoke shading. On August 19, unauthorized incursions by two non-mechanized hang gliders that grounded all aircraft over the fire.

{{On August 20 Fed team member vs. a civilian vehicle in Medford- non-fire v civilian; civilian fatality? CISM response? }}

Very heavy smoke covered the complex beginning August 20 and continued through August 23. Temperatures in the valleys during this period were relatively cool and high humidity due to the smoke trapped under the inversion. By August 24, seventeen of the original 25 fires ignited were contained and in patrol status. Smokey conditions and resource shortages persisted and as the incident progressed towards some containment, a Type 1 IMT took command of the incident. On August 25 when the Type 1 IMT took command, the fire was 46% contained.

An engine rollover resulting in a serious injury occurred on August 27. A Type 6 contract engine was assigned to conduct structure triage assessments. While driving, the driver came too close to the edge of the roadway and rolled down a steep embankment into a shallow creek. The engine driver was not wearing his seatbelt and was seriously injured. Although not ejected, the driver was partially pinned underneath the engine, and partially submersed in the creek. Seeking to understand the risk management process and cultivate a learning environment, the Regional Forester requested a Facilitated Learning Analysis (FLA) team to review the accident, which is attached at the end of this appendix.

Heat began to build again on Aug 31st, and a red flag warning for poor night time humidity recoveries and gusty east winds was issued for the night of the 31st into the morning of Sep 1st. Very hot weather returned Sep 1st and continued through Sep 5th. Another red flag warning for poor night time humidity recoveries and strong east winds was issued for the night of the 31st and this was followed by a red flag for hot, dry, and unstable weather with a Haines index of 6 on Sep 1st, prompting a mandatory evacuation for (evacuation Level 3) for 40 residences in the Applegate community.

During this hot spell, temperatures peaked at around 100 degrees on Sep 1st and humidities bottomed out at 12% over the peaks on Sep 3rd. A red flag warning for poor night time humidity recoveries and strong east winds was issued for the night of Sep 3rd into the morning of Sep 4th. Sep 4th and 5th were generally hot, dry, and smoky with less wind as a thermal trough moved right over the complex.

Red flag warnings were issued for the potential of lightning on very dry fuels for both Sep 6th and 7th. Thunderstorms did form south of the complex on Sep 6th, but weakened and collapsed as they moved over more stable air. The cause of the stability was very thick smoke which limited and in some cases almost totally blocked the sun from reaching the ground which in turn severely limited surface instability. Sep 7th was a much more active day as a very strong trough moved through. Thunderstorms were already on the radar as of day break, and these storms gradually moved over the complex through the morning. Five different lightning alerts were issued for the divisions and ICP during the thunderstorm outbreak. There was not a lot of rain, but there was a fairly widespread tenth of an inch over the complex. Far western areas of the Abney fire reportedly received more. While no observations were collected, radar estimated between a tenth and quarter of an inch fell there. The thunderstorms did knock down smoke on area fires and their winds helped clear out the smoke that was already present. As a result, smoke was much thinner over the complex on Sep 8th, and visibilities improved to several miles. On September 8, evacuations were relaxed for all communities on the Oregon side of Miller Complex. On September 11, the Type 1 team transferred command of the fire to a Type 2 team.

Generally warmer conditions were observed September 15th and 16th, but smoke returned and held surface temperatures down and humidity’s up in many locations. Conditions began to change significantly on September 17th. Clouds moved over the area as a cold front approached the coast, and a few showers were observed over the complex. Rain moved in overnight and into Sep 18th with as much as a half-inch of rain observed over the western portions of the incident and lighter amounts elsewhere. Rain became much spottier during the afternoon, then returned again the night of the 18th into Sep 19th. Another one quarter to one half inch of rain was observed, again, mostly focused over the western portions of the fire. Temperatures were much cooler and humidity’s very high through the 18th and 19th over the entire incident with highs ranging from the mid-40s over the ridges to the upper 50s in the valleys and humidity’s remaining above 60% area-wide through the two day period.

A strong warm front moved through the complex in the early morning hours of September 20th. Rain was once again sparse, but winds were strong with west-southwest winds gusting up to 41 mph for much of pre-dawn morning hours. A strong cold front is expected in the afternoon of the 20, which will bring showers and possibly a wetting rain.

On September 22, the incident was turned over to a Type 3 team. The incident was 65% contained and had 200 firefighters assigned. The fire reached 100% containment on November 2.

High Cascades

