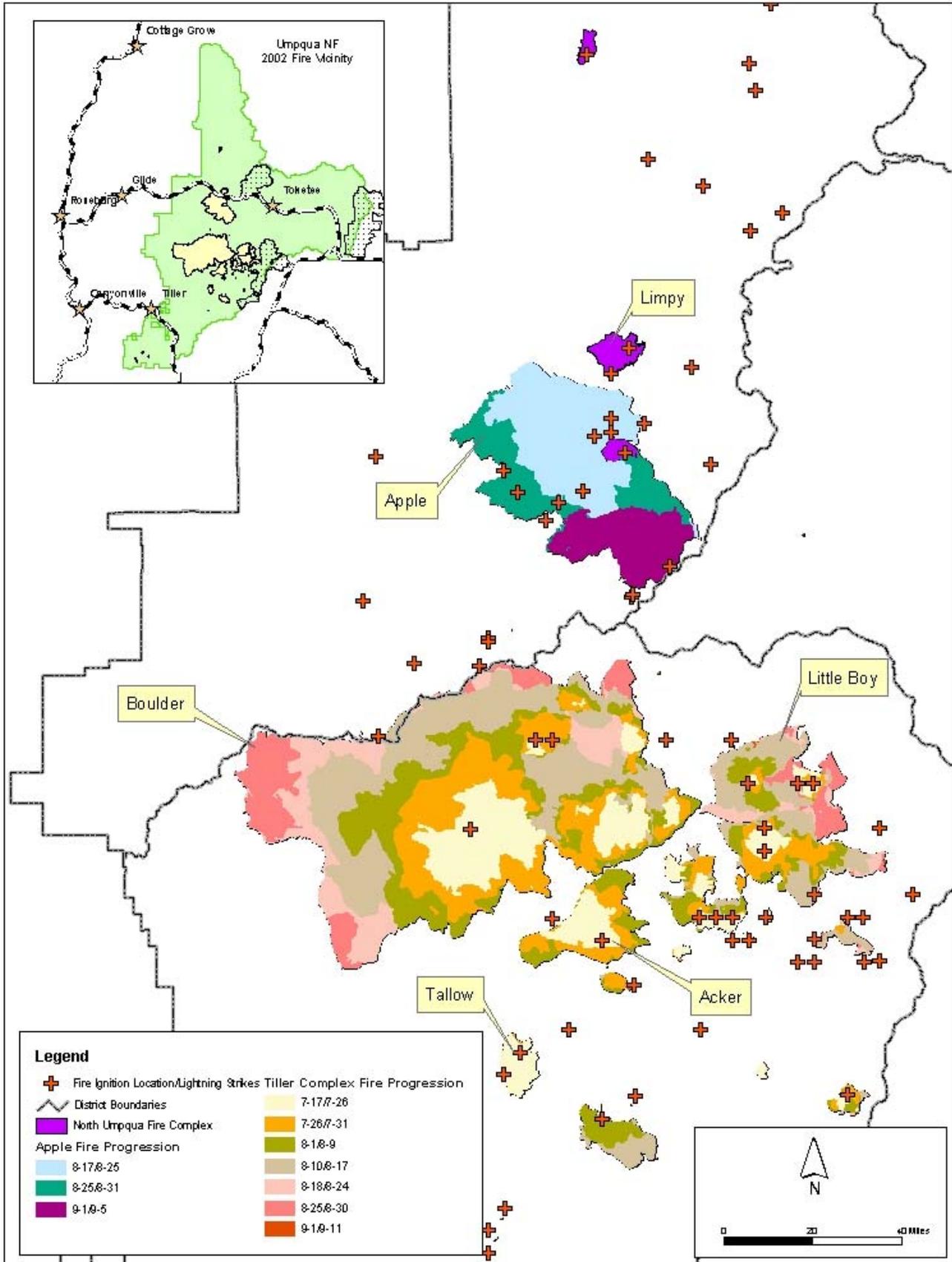


Wildfires

Fires of 2002 — The Umpqua National Forest



Summary of the Season

Nearly ten percent of the Umpqua National Forest burned in the 91 days of fire that started with hundreds of lightning strikes on the night of July 12th. From that point until early October, the Forest was under siege.

Fighting nearly 100 individual fires scattered across 556 square miles of wilderness and timberland took thousands of people, millions of dollars and incalculable determination.

Most of the fires on the Forest were put out within the first week of suppression efforts, but those that weren't, grew into the North Umpqua and Tiller Complexes. These "alpha fires" burned across the steep, sometimes vertical, landscape of the Umpqua, tormenting the firefighters trying to contain them.

The blaze raged through craggy passes and over jagged embankments leaving suppression forces often shaking their heads in frustration. In spite of its ferocity and force, there were no major fire-related injuries.

As if the difficult terrain and the fire itself weren't challenging enough, the fire teams faced a serious lack of personnel to help with suppression efforts. The shortage of air support, and qualified crews and overhead kept the suppression forces "behind the power curve" as one incident commander said.

Success would not have been possible without the dedicated professionals who worked cooperatively toward the ultimate goal. Twelve national Incident Management Teams, two Area Commands, the Douglas Forest Protective Association, Oregon Department of Forestry, Bureau of Land Management, Douglas County Sheriff's Department and Emergency Services, the Fifth Battalion U.S. Army, regional rural fire departments and firefighters from across the nation, Canada, Australia and New Zealand worked hand-in-hand with the Forest's fire professionals. Good communication and cooperative spirits made it work.

Forest Supervisor Jim Caplan led the firefighting effort on the Umpqua. He said, "this fire season has taught us that we need more experience, education and knowledge of fire if we intend to face future challenges boldly and effectively. The fires of 2002 are controlled but the aftermath will be visible on the landscape and alive in our memories for decades. "

Wildfires on the Umpqua – 2002

The Nation

The fire season of 2000 was long, hot and destructive. Seasoned firefighters thought they'd never see another like it, but the nation's 2002 fire season surpassed it.

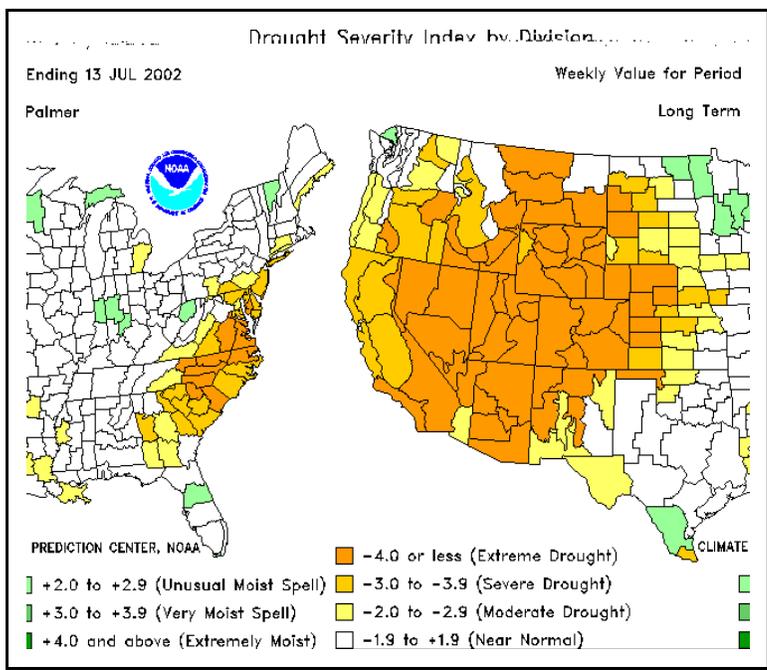
The 2002 fire season started early and strong. Florida and Southern California witnessed the first large fires of 2002 in January. Nationally, 6 million acres had burned by the end of August.¹ The nation saw the first half-million acre fire, Oregon's Biscuit Fire.

So far, this year's fires have burned more than twice the acres as the national 10-year average. Ironically, there have been over 1,000 fewer fire starts than the 10-year average. The fires are simply larger, in fact, twice as large as the average fire of 2000.² The reasons for these "alpha fires"³ have been debated but the role of an extended drought in this season's fires can't be underestimated.

The Drought

The drought the nation experienced in 2002 began during the summer of 1998. This year more than half the nation, mainly in the west, was listed in severe to extreme drought. Only the Dust Bowl of the 30's and the drought of the 50's were more extreme.⁴

In addition to lack of rain, the western states saw unusually high temperatures throughout the summer and very low humidity. The normal summer rains the western states usually experience failed to materialize. These conditions continued through the summer and into fall.



July 12 Lightning storm ignites fires in the Tiller Ranger District, Umpqua National Forest

July 12 Lightning storm ignites fires in the North Umpqua Ranger District, Umpqua National Forest

Vegetation throughout the drought stricken areas did not “green up”. In normal conditions new growth on vegetation stores moisture and can act as a buffer to fire. But in extreme, prolonged drought, those live fuels become depleted of moisture, fail to green up and therefore are more apt to burn.

Live fuel moisture across the west was extremely low. Moisture content in dead fuels, which might be too moist to burn in a normal year, was also extremely low.⁵

These conditions guaranteed that any fire start would grow quickly and burn more intensely. Combine these conditions with significant lightning activity and the stage was set for a dangerous fire season. That’s exactly what happened.

Resources

The nation was already involved in the most dynamic fire season in nearly half a century with fire-fighting forces (both human and mechanical) stretched to their limits when the fires on the Umpqua National Forest started.

Fire fighting resources were distributed all across the west and as more fires started and more resources were needed for suppression, the need outstripped the supply.

The problem with finding trained professionals to fill fire-fighting positions wasn’t a new one. The U.S. Forest Service no longer commandeers people off the streets to help with a fire suppression effort. Today’s firefighters are highly skilled, trained, experienced professionals who have extensive knowledge of safety and advanced firefighting techniques. Staffing levels and resource availability are in place for a normal fire season, but that level of readiness is not adequate when the nation experiences a prolonged and severe fire season.

The backbone of the nation’s wildfire suppression forces is the contingency of fulltime professional firefighters, hotshots, smokejumpers, engines, aircraft, and other resources who come from state or federal land management agencies. Wildland fire suppression assistance also comes from the ranks of local fire departments specially trained for wildfire suppression. Agreements with local fire departments and private contractors supplement the nation’s firefighters during a national emergency. Staffing of wildfires also comes from the men and women whose primary jobs are managing recreation, timber, wildlife, water, fisheries, and other resources. They are fully trained and qualified to fight wildland fires, and supplement the fire fighting effort during emergencies.

As a result of the 2000 fire season, the National Fire Plan called for hiring more fire professionals. Many of those hired were at the entry level. Under normal



July 14 Tiller Ranger District personnel initial attack about 100 fires. Dunton’s Type 2 team arrives.

July 14 North Umpqua Ranger District and other Forest personnel continue fighting 27 reported fires.

circumstances those hires would have had an opportunity to progress through the ranks and gain the experience they needed to meet mid-level supervisory shortages. But few people anticipated the magnitude of the 2002 fire season. In addition, the ranks of professional firefighters has decreased due to attrition caused by retirement. While national fire resources are adequate for a normal season, there are too few for a season like 2002.

When resources are in short supply they are allocated based on priority. Fires that threaten life or structures are highest priority over fires that threaten natural resources. High priority fires get resources before lower priority ones. This policy facilitates suppression efforts on larger, more threatening fires but may allow lower priority fires to grow.

Safety

The deaths of smokejumpers at Mann Gulch in 1949 and the more recent deaths on Storm King Mountain in 1994 and the Thirtymile Fire in 2001 are cruel reminders that fire is deadly. The 2002 fire season claimed 22 lives.



While putting out a fire and saving resources and property are important, the priority is to accomplish those goals without putting firefighters at risk. All fire suppression strategy is based on safety.⁶ Federal policy states, “No wildfire situation, with the possible exception of threat to human survival, requires the exposure of firefighters to life threatening situations.”⁷

The public’s impression of firefighting strategy, however, does not always take safety into consideration. That’s due partly to the legends that surround firefighting. The public often views wildland firefighters as fearless heroes who charge headlong into a fire and, with sheer determination, fight the forces of nature until they win. That’s not the case, and never has been.

“For many people, fire remains a fearsome, destructive force that can and should be controlled at all costs.”⁸ In actuality, fire is a natural phenomenon that often defies control regardless of resources and will. Concerns for human safety, fire behavior, weather conditions, terrain, and fuels all play a part in the dynamics of fire.

As life, property and communities are threatened, public pressure to contain or control fires grows exponentially. That pressure to more aggressively fight fires often compromises the concepts of safety. Often, more aggressive direct attack (putting forces near the fire) puts fire fighters in danger and causes deaths. Yet, the public often views indirect attack (techniques that can be accomplished a safe distance from the fire) on fires exhibiting extreme behavior as a less than wholehearted effort.

July 16 Tiller Complex has 97 fires (360 acres) with suppression efforts on 9 fires.
July 16 North Umpqua Complex is 142 acres. Burning in heavy timber on 60% slopes with short range spotting.

Public criticism of suppression decisions often leads to pressure to alter policy. “When fires become emergencies, public and political pressures may take precedence over suppression plans that are based on values to be protected and the best use of available firefighting resources.”⁹

The Oregon Fire Season

While the rest of the west seemed to be burning, the wildland fire situation in Oregon, in late June and early July, was reasonably tame. Only 8,000 acres had burned in the state.¹⁰

Weather predictions early in the season had indicated that Oregon’s fire danger could go either way. Oregon was in drought but with some predicted rain might pull out of the category. Without the rain, the state would drop further into drought. By July the state was reporting very high to extreme fire indices, but still few significant fires.

Firefighters, including fire professionals from Oregon, were already spread across fires in the west. Nearly 16,000 people were working the fires in Colorado, Wyoming, South Dakota, Utah, Arizona, New Mexico and California.¹¹

In early July, Oregon’s fire season started in earnest. The Pinto Horse, Overshoe Wells, Eyerly, Farewell, and Slokumm fires started and were contained.

On July 12th the forecast called for mostly sunny skies with a chance of dry lightning, high temperatures above 100 degrees in most areas and minimum humidity in the si

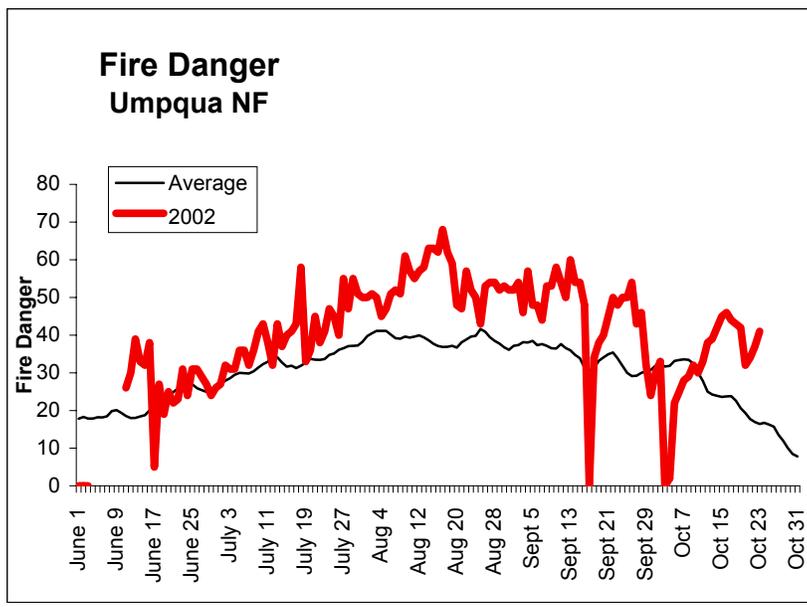
The forest had two complexes to fight at the same time. To complicate matters, many of the forest’s fire people were fighting fires in other parts of the nation. With a shortage of local fire professionals, extreme fire behavior, difficult and inaccessible terrain, and unstable weather, the Umpqua National Forest faced a dangerous situation.



By 6 am on the 13th Emily Sands, Fire Management Officer on the Tiller Ranger District, and 55 Forest Service firefighters responded to the dozens of individual blazes started by the lightning; others scouted for more reported fires in the wake of the storm. The firefighters engaged the fires as directly as they could, but the weather was hot and dry with 15 mph winds. Sands and her team knew the fires would grow since suppression efforts were hampered by terrain and fire behavior.

“We were getting new fires every 10 to 15 minutes. It was crazy ... and frustrating,” Sands said. The immediate goal was to hold the line on fires that were already staffed, get more help to

the understaffed fires before they grew too large for direct attack, and protect private property.



“We made the decision right away to protect private property in the southern portion of the district. Our strategy was to start in the south and go north getting the small fires and close the door behind us. It was a good strategy and we stuck to it,” said Willie Thompson, Assistant Forest Fire Staff Officer on the Umpqua National Forest.

“We had good success.

We had initial attack resources but the fire was way too big. It was like a shotgun blast. Every time something hit, it turned into a fire. I’ve never seen anything like it,” Thompson said. “It was chaos because of the number of fires. ”

By midmorning of that first day, Sands, Thompson and Tiller District Ranger Jill Dufour had completed a complexity analysis of the fire situation which displayed the need for an Incident Management Team (IMT). Thompson ordered an IMT to help with the suppression efforts.¹²

July 24 Tiller Complex is 6,878 acres and 15 % contained. 30 fires are unstaffed Norm Walker’s Team arrives

July 24 North Umpqua Complex is 883 acres, 35% contained

David Lockwood, Assistant Fire Management Officer on the North Umpqua Ranger District, faced the same problems. Twenty-seven fires were burning in very steep, rocky terrain where it was difficult to take fire suppression equipment or people safely.

Lockwood took the same approach as Sands; attack the fires while they were small and contain them before they grew. When reinforcements arrived they could concentrate on the larger fires.¹³

“We were getting new fires every 10 to 15 minutes. It was crazy ... ”

“They initial attacked it right away,” Thompson said. “They were thinking they could catch everything. But I was out on the landing looking at the fires with Dave Lockwood and Robert Cunningham, Fire Management Officer at Diamond Lake and I said ‘we’re not gonna get this, guys.’ They had picked up all but four of the fires but didn’t have the people to catch the rest.”¹⁴

Lockwood knew how difficult it would be to contain the North Umpqua Complex. He’d seen the same area burn in 1987. He needed more help if progress was to be made on the North Umpqua Complex.¹⁵

An incident management team was ordered for the North Umpqua Complex on July 16th.

Both complexes of fires were burning in mixed conifer forest on the western slopes of the Cascade Mountains. Elevation ranged from 1,000 to 6,500 feet. Fuels were moderate to heavy with down and dead timber and heavy ground fuels in age classes ranging from seedlings to mature old growth. The fire made fast, hot runs up steep slopes; roared through canyons; climbed into towering Douglas fir where it torched the trees and often burned from treetop to treetop in crowning runs.



The weather stayed hot and dry. “What concerned me was the fatigue factor,” said Thompson. “It was a feeling, at Tiller especially, of defeat. There were so many fires coming in we couldn’t keep up. There wasn’t any letup for the district people on the crews.”¹⁶ Little did Thompson realize the pressure of dealing with fires would continue for another three months.

The first outside help to arrive was Richard Dunton’s Type 2 Team that took over responsibility for the Tiller Complex on July 14th. Dunton’s team had to set up a fire camp for a growing throng of fire fighters. That task, alone, was daunting but they also tackled more than 49 of the reported starts scattered across 556 square miles of the

July 26 Tiller Complex is 9,608 acres with 72 individual fires. 30 fires are unstaffed

July 26 North Umpqua is 1,120 acres, Calf 2 Fire is contained.

Tiller Ranger District. Many were identified only by legal description and not by name. Those named were Merci, Play It Again Sam, Snow Lakes, Castle, Comfort, French Creek, Fish, Red Mountain West, Skim, Buck, Anderson, Cliff, Mountain and White.

Many of the fires were unstaffed and the team knew they would grow to become more dangerous but adequate resources weren't available.

"Resource availability was our biggest issue. We didn't have overhead — no strike team leaders, no crew bosses,"¹⁷ Incident Commander Dunton said.

The shortages were never remedied during his time at the complex but he managed to work within the system to ameliorate the problem. "We traded six to eight contract crews for inmate crews because they came with crew bosses,"¹⁸ he said. He used fire line qualified team members in as many ways as possible; using someone as a crew boss, then switching them to a dozer boss when necessary. When he knew specific people were available to help the effort, he made special name requests for them and had success in getting them.



Qualified people from the Cottage Grove, Diamond Lake, and North Umpqua Ranger Districts as well as the Forest Supervisor's Office filled positions as well. "If the district hadn't provided resources, we'd have been more stymied."¹⁹

Dunton also took advantage of resources available through cooperating agencies on the fire, like the Douglas Forest Protective Association and the Oregon Department of Forestry. "Our interagency cooperators were able to get some resources quicker,"²⁰ he said.

Incident Management Teams are highly trained and experienced teams who manage all aspects of a fire suppression effort. Type 1 teams are common on large fire suppression and Type 2 Teams work less complex situations.

Overhead: supervisory positions on a fire

Hotshot crew: intensively trained fire-fighting crew used primarily in hand line construction, also called a Type 1 crew.

Complex: two or more individual inci-

"We had no yurts or tents, nothing for command or the fire camp. We called the local fire department and they set us up at Milo Academy. We got an inmate kitchen when we weren't able to find a contractor,"²¹ Dunton said. "We were left to our own means with the blessing of the system. They said, 'If we can't get it done then do what you can to get what you need.'"²²

On the fire front Dunton said, "We were making steady headway on the fires we could get at, especially the ones near Cow Creek where it threatened private property. The district was also doing initial attack on a number of fires."²³

July 29 Tiller Complex is 18,655 acres; two of largest fires unstaffed

July 29 North Umpqua Complex has increased fire activity; Mine Fire burns into Limpy Fire

The number of fires continued to challenge suppression forces. “We were wrestling with about 104 reports of fire. My estimate was we were down to 50 fires by the time we left the fire,”²⁴ Dunton said. National policy limits Incident Management Teams and other fire personnel to 14-day assignments as a safety precaution.

“Every time something hit, it turned into a fire.”

Protecting private land was still the priority and Dunton agreed with that strategy but he said, “if we could have put the same effort on the north fires as we did on the south fires, we could have made a big difference.”²⁵ The issue wasn’t the priority, but the number of resources they needed to conduct an adequate suppression effort.

Dunton was also concerned about safety. “The Tiller Complex had more snag hazards than any place I’ve ever seen. You’d be out there and hear trees going down. I’d prayed to God no one got hurt. I’ve never been on a fire that had more overhead risk and we went away from the fire with no accidents.”²⁶

The weather conditions continued hot, dry and windy. The Fire Behavior Forecast made the dangerous situation clear, “Rates of spread in the lighter fuels, grass and brush on steeper south slopes will be much faster than a person can run.”²⁷ The fire was spotting a quarter mile beyond the lines and new starts were likely.

The steep, rocky landscape, temperatures in the high 90s, long arduous hours on the fire line, and dangerous snags and falling trees took their toll on firefighters. “The problem was we couldn’t find safety zones so our safety zones were basically ‘get in a vehicle and drive away,’” Dunton said. Crews were advised to assess the safety of direct attack if the temperature hit 85 degrees, the humidity was 25% or lower, and eye-level winds were 5 mph or more²⁸.

“We set up an assessment trigger. It wasn’t a disengagement trigger but we had trouble getting that message to some people. The trigger was designed to get people to stop and assess their situation in case they had to get out of an area,”²⁹ Dunton said.

There were other concerns besides human life and property. The fire threatened the watershed, the fish population, peregrine falcon and spotted owl habitat, timber resources, and archeological sites. These factors had to be considered when decisions were made on suppression tactics.



August 1 Tiller Complex is 25% contained at 29, 935 acres; many fires unstaffed

August 1 North Umpqua Complex 100% contained at 1,663 acres

There was a no-fly-zone in one area to protect the peregrine falcon, Dunton said. “That put limitations on flying. And we probably would have used dozers more if it hadn’t been for the limitations placed on cultural sites. It was helpful to know about these things, but it put limitations on us,”³⁰ Dunton said.



As if matters weren’t already serious enough, a weather change on the 17th resulted in increased high winds along with hot and dry conditions. The fires grew significantly. Still, many of the critical resource needs were not available.

The forest closed roads and trails along the South Umpqua Highway to public use on the 17th because of the fire and began discouraging use of the forest for recreation. A public meeting was held at Days Creek School to inform the community of the fire situation and its threats.

Weather moderated on the 18th with somewhat lower temperatures and higher humidity and gave firefighters some respite and an opportunity to construct line. Their hard work resulted in containment of many of the fires, but new starts were still being found and small, unstaffed fires were growing. Eight fires on the Tiller Complex were of major concern. The Tallow Fire was 1,100 acres; Boulder Creek (formerly the Play It Again Sam Fire) was 1,500 acres; Acker Rock and Buster Springs fires were 300 acres each; the Skillet Creek, with 5 fires, was 110 acres; Rendezvous was 36 acres; Falcon was 40 acres; Buckeye, with 7 individual fires, was 52 acres.³¹

The moderate weather did not last long. By the 19th fire activity had increased once again; unstaffed fires were growing and direct attack was difficult or impossible on the fires that were staffed.

John Jackson’s Incident Management Team arrived on the 19th to help the North Umpqua Complex firefighters who had been working for seven straight days.

Fire suppression sometimes does greater damage than the fire itself. The Forest took special action to minimize suppression effects to the forest and wilderness. Dozers were not used in riparian areas, meadows, steep slopes or through rocky ground. Archeologists scouted undisturbed areas for cultural sites before any dozers were allowed into the areas. To minimize noxious weeds after the fire, all equipment was washed before it went on the fireground. Cutting and bucking of logs was kept to a minimum, especially along streams. Fire retardant was prohibited within 300 feet of water, fire-fighting foam was prohibited within 30 feet of

Terrain and accessibility were problems to fire suppression but it may have worked in favor of the firefighters on the North Umpqua Complex, at least for a while.

August 2 Tiller Complex is 28,377 acres and 25% contained

August 2 North Umpqua Complex 100% contained at 1,663

“All the fires below 4,000 feet were really active, and above that elevation the fires simply laid down or went out,”³² Lockwood said. Tim Pratt, Fire Management Officer on the North Umpqua Ranger District felt the relative positions of the fires, protected from the prevailing winds, helped keep the fires from running more than they did. “That’s probably the reason they didn’t take off. They laid down and were creeping and skunking around,”³³ Pratt said.

“that fire burned like a skillet with a lid held over it”

Pratt also felt that the old growth canopy in some areas of the fire was so continuous that “sunlight barely reaches the forest floor and the understory is extremely sparse. These conditions contribute to a very moist understory with few ladder fuels available to carry the fires into the crowns.”

Ultimately, regardless of factors that may have kept some parts of the fire calmer, the fire behavior and landscape prevented safe suppression activity. “John Jackson’s Type 2 Team was awesome but the difficulty was accessibility,”³⁴ according to North Umpqua District Ranger Carol Cushing.

“We sized it up. We had a good feel for the situation and took the action we could,” Cushing said. Thompson recalled the fire behavior, “that fire burned like a skillet with a lid held over it and it went on and on every day.”³⁵

On the Tiller Complex, personnel were especially concerned about the safety of nearly 2,000 people at a tribal ceremonial pow-wow at South Umpqua Falls. They kept a close eye on fire activity that might threaten that site and monitored areas around it. There was concern about interrupting a tribal ceremony as well as the logistics of evacuating that many people should it become necessary.

More resources were becoming available for the Umpqua National Forest fires but not the helicopter managers, hotshot crews or management and support personnel that were most needed. An air tanker crash in Colorado on the 19th resulted in a nationwide stand-down of all air tankers and lead planes. The stand-down was designed to allow contractors to inspect and service their aircraft and give flight crews a day of rest. After crashes of a PB4Y-2 and a C-130, the rest of those aircraft were grounded. Of the nation’s 44 contract air tankers, only 32 would be available to work the remainder of



August 4 Joe Stutler’s Type 1 Team arrives on Tiller Complex with Fifth Battalion U.S. Army (600 soldiers)

August 4 Joe Stutler’s Type 1 Team assumes command of North Umpqua Complex

the season.³⁶

Finally, on July 20th, two helicopters arrived on the Tiller Complex, a full seven days after they were initially ordered.³⁷ The Tiller Complex was now 5,400 acres.

July 21st brought new pressures for the Forest. Red Flag Warnings were issued for the Tiller and North Umpqua Complexes due to high temperatures, low humidity, and increased winds. That meant the existing fires would spread more quickly and the chances of new ignitions from spotting were high.

“The last thing we need are additional fires.”



Assistant Fire Staff Officer Willie Thompson, for the Umpqua said, “We don’t have enough resources to safely fight the fires we have now. The last thing we need is additional fire starts.”³⁸

The 2,000 people attending the pow-wow at South Umpqua Falls and the residents of Ash Valley on the Tiller Ranger District were asked to evacuate, on the 21st, due to the increased fire danger and smoke in the area. The Douglas Forest Protective

Association, Douglas County Sheriff’s Office, Oregon Department of Forestry and other local officials helped in the evacuation.

There was a growing concern that easterly winds, high temperatures and low humidity would move the fires to the west where it might make significant runs and ultimately threaten lives and property as far away as Roseburg. If the fire moved west it would burn in slash and new growth and would be even more difficult to stop. Firefighters continued to work the western and southern edges of the fires. A structural protection strike team from Montana was set up in Ash Valley to work with the Douglas Forest Protective Association in case the fire moved closer to residences.

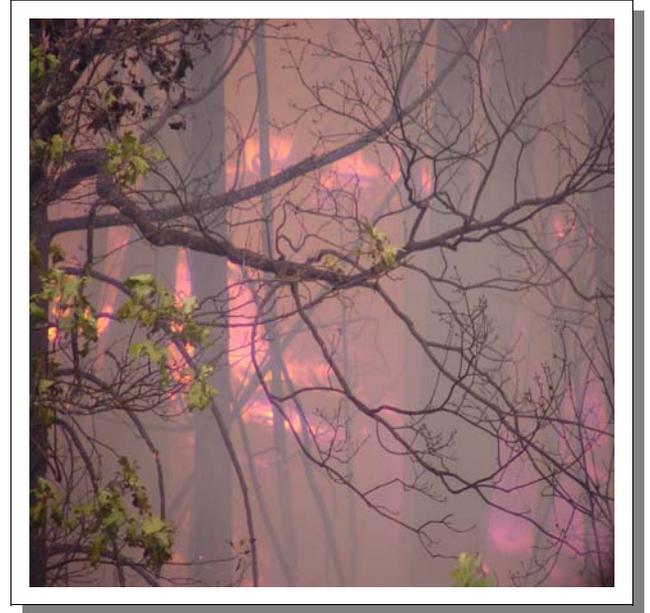
It was still early in the fire fighting effort but limited resources put more stress on firefighters on the line. Resources were scarce, neighboring suppression resources were stretched thin and engaged in numerous lightning fires...there is a high probability of cumulative fatigue.³⁹

Firefighters were making progress on some of the North Umpqua Complex fire. They were constructing contingency lines on Bradley Ridge of the Limpy Fire; making infrared flights on the Mine Fire and scouting the Johnson Fire so they could begin flanking it. The Horse Prairie Fire was still unstaffed due to safety concerns and lack of adequate resources. A spike camp was established at Illahee Flats, between Horseshoe

August 10 Tiller complex is 40,124 acres. Harts Type 1 Team takes command of complex.

Bend and Eagle Rock campground, to improve access and travel time to the fires. Johnson Spike Camp was set up six miles south of the Johnson fire near the intersection of Steamboat Creek and Reynolds Creek. Temperatures continued to increase and relative humidity dropped. Fire conditions were extreme.⁴⁰

By July 23rd high temperatures and low humidity increased the potential for higher rates of spread. Objectives for the North Umpqua Complex were clear; continue to improve the fire line on Calf 2, burnout if the weather conditions permitted, finish mop-up on the Mine Fire, hold the road on Limpy and Johnson, develop anchor points, begin building line, monitor the Horse Prairie, and make water drops. The North Umpqua Complex was now 25% contained at 737 acres; only 8 miles of fire line remained to be built before containment was achieved.⁴¹



The Tiller Complex, on the other hand, was only 6% contained at 5,400 acres and fire management personnel expected erratic fire behavior due to downdrafts associated with thunder cells moving through the area. Rolling, burning debris continued to threaten firefighter safety and fire lines.

Norm Walker's Southern California Interagency Incident Management Type 2 Team arrived on the Tiller Complex on July 24th.

Besides fire suppression, Walker's Team had to contend with firefighter fatigue, lack of adequate resources, and unqualified crews that were sent home early.

“...there is a high probability of cumulative fatigue.”

“Without the personnel and overhead we felt that we were always behind the power curve,”⁴² Walker said. As did the teams before them, Walker's had to fight many fires at once and prioritize private property and structure protection. Protecting private property first left fires elsewhere on national forest lands to grow.

Twelve of the fires in the southern portion of the Tiller Complex were in control or contained status. Crews continued to locate other fires in the area. But on the 24th, the Boulder Creek Fire ran toward the north and the Tiller Complex increased by 1,200 acres.

August 16 Tiller Complex is 52,600 acres and 2% contained; fire is torching with short crown runs.

August 16 Apple Fire starts seven miles north of Tiller Complex and grows to 2,000 acres. Type 2 Team ordered.

July 25th was a “make or break” day for limiting fire expansion on the North Umpqua Complex, Jackson said. He planned a major “water show” with significant effort placed on aerial suppression using 2 Type II and a Type I helicopter.⁴⁶

“Today has the potential to be a turning point ... with increased air resources and support personnel, retention of the Vale hotshot crew and predicted minimal fire activity, we may gain the upper hand,” said Virginia Gibbons, Information Officer for the Jackson Team. But, she said, “Fire movement on Limpy and Johnson Fires is causing



some concern.”⁴⁷ As a result an evacuation plan for the Illahee Spike Camp and Dry Creek Development was put in place. The spike camp was located between two active fires; the Dry Creek Development was in the path of the Limpy and the Calf 2 fires.

Fire personnel on the Tiller Complex were still scouting for new fires. The threat grew daily that small fires would grow together and with their combined force they would prove more difficult to control. In addition, a Fire Weather Watch was issued for the next two days for dry northeast winds.

The North Umpqua Complex would be declared 50% contained on July 28th but the fire was active during the afternoons, when temperatures were highest and humidity was lowest.

Crews were building line around the Johnson Butte and Limpy fires and doing burnouts. The rugged terrain, steep ground and heavy snags continued to cause problems. Hotshot crews were needed to corral the Limpy Fire so it wouldn't spread to Bradley Ridge where it would threaten the North Umpqua Scenic Highway Corridor and the structures in the Dry Creek community. Those crews were not available, nevertheless, the North Umpqua Complex was 80% contained within another few days.

“July 25th was a make or break day...”

The many fires on the Tiller Complex weren't as cooperative. Nine fires were of serious concern: the Tallow (1,500 acres), Acker Rock (500 acres), Falcon (40 acres), Buckeye (302 acres), Digger (902 acres), Looping (200 acres), Big Bend (135 acres), Buster Springs (300 acres) and Boulder Creek (1,500 acres).⁴⁸

Over 1,055 people were working the Tiller Complex (26 hand crews, 16 fallers, 3 helicopters, 51 engines, 208 overhead, 4 bulldozers, 20 water tenders and 4 camp crews).

August 23 The Tiller Complex is 65,900 acres
August 23 The Apple Fire is 7,900 acres and 50% contained

Firefighters faced a litany of daily problems: heavy smoke hung over the fire and limited air operations; steep slopes, rolling burning debris, hazard trees and narrow roads presented geographic challenges; shortages of critical resources plagued the effort; weather conditions exacerbated extreme fire behavior; firefighters had to deal with fatigue and difficult work conditions; and care had to be taken in an effort to protect sensitive natural resources.

The four largest fires on the Tiller Complex were each over 1,000 acres and showing moderate growth. Nine fires were being actively suppressed; five were in mop-up status; and 11 were unstaffed. Burnout operations on the smaller fires were successful, but the weather was conducive to further growth; temperatures in the low 90s and humidity at 22%.

By the end of July, fire activity on the Biscuit Complex in the Siskiyou National Forest near Cave Junction, pushed that fire to the number one priority in the nation for resource allocation. It became harder for the North Umpqua and Tiller Complexes to get air support, air operations management, hotshot crews and overhead. Those shortages would continue to plague the fires in the west for the remainder of the season.

The North Umpqua Complex was moving toward containment but the Tiller Complex had grown to nearly 20,000 acres and the forest closed more access roads to the public. Burnout operations continued to be successful and several more fires would soon be contained. Firefighters had been working the Umpqua fires for nearly four weeks and, while they faced growing fatigue, there were no lost time accidents.

Jackson's Team had worked 21 days on the North Umpqua Complex and another team was needed. Walker's Team would need to be replaced on the Tiller Complex soon as well. In addition, hotshot crews and burn bosses were essential if burnout operations were to continue, and there were 10 new fires on the Forest to staff for suppression.



Increasing late afternoon winds were causing spot fires on the Tiller Complex. These contributed to several dramatic head fire runs with sustained crown fire runs. Fire behavior analysts were concerned that, as the fires grew closer together, behavior was expected to increase due to the fires' influences on one another. As expected the gusty winds caused significant runs and increased burned acreage by about 3,000 acres overnight.

The North Umpqua Complex was declared 100% contained the afternoon of August 1. Just over 1,600 acres had been burned, well under the estimated total that had been anticipated by Jackson's Team. Cost of suppression to containment status was \$4.5 million. While dozer line and black surrounded the fire, it still burned in the interior and crews would continue to work to put out any troublesome fires. Bennett's Type 1 Team, scheduled to replace Jackson's team on the North Umpqua Complex, was diverted to the Biscuit.

August 28 Tiller Complex is 66,355 acres Aerial ignition and burnout operations continue

August 28 Fire behavior increases on Apple Fire

Joe Stutler's Team took over command of the Tiller and North Umpqua Complexes on Aug 3. Joining the new team was a military battalion with over 600 soldiers, to help with suppression, and two Black Hawk helicopters.⁴⁹

Task Force Destroyer was made up of elements from the First Battalion, 5th Field Artillery out of Fort Riley, Kansas. The fire was nearly 30,000 acres and had been burning for four weeks.



Fortunately, weather moderated for several days allowing a smooth transition for Stutler's troops and those from the military. Ironically, the higher humidity and lower temperatures, which helped moderate the fires, made burnout (burning fuel inside the containment line so fire approaching the line would be starved of fuel) operations more difficult. Protection of homes and private land remained the highest priority after firefighter safety. Forest improvements, campgrounds and other infrastructure were also threatened.

The fire grew 10,000 additional acres in the next week. "When we got there (August 3), we went after it as hard as we could in that upside down country,"⁵⁰ Stutler said.

One of the team's first tasks was to update the Wildland Fire Situation Analysis (WFSA), which included a detailed containment strategy for the Tiller Complex, now made up of about 74 fires. The strategy remained: protect private property first, and then staff smaller fires that could be readily controlled before they grew larger.

The complex was divided into three zones. In Zone 1, the Boulder, Ruby Red, Sadie, Boy Creek, Flap Jack and Digger fires would be managed as a single large fire. The goal was to put a containment line around the group of fires in the zone rather than around each individual fire. The same tactic would be used on the fires in Zone 2: Little Boy, Buster Springs, Big Bend, Buckeye and Acker. In Zone 3, the Grasshopper, Crooked and Anderson fires would be managed separately.⁵¹

As much as possible, fire crews would use existing natural breaks, such as roadways and rivers, to stop the fires' progress. Once breaks were established and reinforced then burnout operations would strengthen the lines.

While the suppression strategy made sense it also used the limited fire resources in the most efficient way. There simply were not enough people to put line around each fire. Acreage would be sacrificed to expediency.

September 2 Mike Lohrey's Type 1 Team takes over Tiller Complex
September 2 Mike Lohrey's Type 1 Team takes over Apple Fire

Ultimately firefighter safety was the primary concern. “We fought as aggressively as possible without putting our people at risk,” Stutler said. “Federal fire policy seems to get rewritten after every major event but it always boils down to ‘the highest priority is human life’,”⁵² he said.

“...we went after it as hard as we could...”

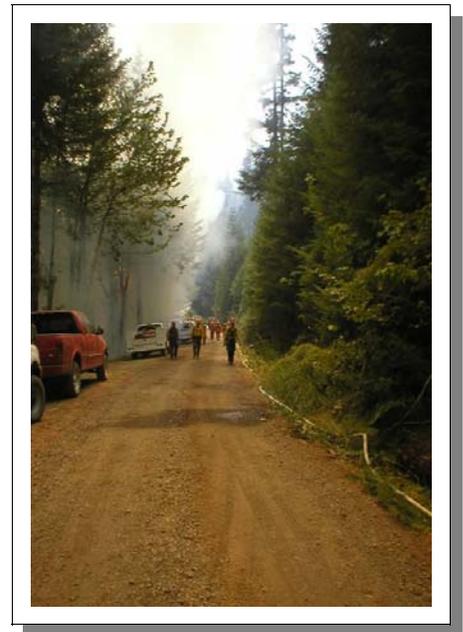
As a result most fire suppression was done during the day. Night operations were too dangerous. “We put our people out at night with smoke and trees falling all over the place. Crews and engines would have to be cutting their way out in the dark. How honest are we being to do that? In the daytime you have the option that you can see. We did night suppression but on roads you could get out on and we mitigated the other concerns with day operations,” Stutler said. “You have to live with yourself if something goes wrong.”⁵³

A complicating factor, according to Stutler, was the experience level of contract crews. “All crews aren’t created equal.” Stutler said, “the quality and experience level with contract resources are going down.”⁵⁴

Several contract crews and engines were sent home because they weren’t qualified to perform. Ultimately, that issue affected the suppression effort on every team. Contract crews could not be used in many areas because their limited experience and skill made them a liability. In some cases it meant that the fire was not fought as aggressively as it could have been.

“It’s a perennial issue, it was just magnified this year because there were so many fires,” Stutler said. It was exacerbated, he said, because there was also a shortage of mid-level supervisory people to monitor the crews. “Normally, with inexperienced resources, you want more mid-level supervision, not less. The lack of mid-level supervision was the worst I’ve ever seen it.”⁵⁵

Major fire growth during Stutler’s tenure was due to the number of fires that remained unstaffed. Since the complex consisted of so many fires, it was not surprising that no attention until adequate personnel arrived.



many received little or

By the time Steve Hart’s Type 1 Team relieved Stutler’s, on August 10th, the Tiller Complex had grown to nearly 40,000 acres.

Hart characterized the Tiller Complex as a lava flow, “slow moving with great intensity and great resistance to control.”⁵⁶

September 5 Tiller Complex is 100% contained at 68,862 acres

September 5 Apple is 90% contained at 17,600 acres; interior islands and larger fuels continue to burn

The team’s hazard assessment and risk analysis demonstrated the magnitude of the task. “Severe weather conditions, erratic fire behavior, fuel conditions, very steep terrain, poor footing, rolling rocks, sliding trees, inversions and smoke, narrow, steep mountainous roads, dehydration, lack of safety zones, poison oak, bees, rattlesnakes, wildlife on roads, downhill line construction.”⁵⁷

There also remained a shortage of hotshot crews, line supervisors, safety officers and air support staff. But Hart reported, “most critical resources were eventually mobilized and assigned.”⁵⁸

Overall, Hart’s team continued to fight the growing blaze as the teams before it had. Hart, however, began a “swing shift” to help monitor after evening burnouts. Crews would prep line and conduct limited morning burning operations, the burn groups would conduct firing operations into the night and a small night shift would patrol for spot fires and mop-up as needed.

During the day “inversions and ... dense smoke made it difficult to locate the fire perimeter in some locations, made it nearly impossible to detect spot fires until they reached a size that control was problematic and severely inhibited the ability to effectively employ air operations resources.”⁵⁹

“... a lava flow, slow moving with great intensity...”

Once again, a major consideration was firefighter safety. “The terrain and the conditions we had to fight fire in were our biggest concern. With indirect attack we didn’t put people in places where we’d have problems. There were no safety zones, but we’d pull out if there was a problem,”⁶⁰ Hart said.

The fire could have been fought more aggressively, Hart said, if he’d had more experienced and skilled contract crews. “Some of the contract crews and contract engines were not adequate. They kept us from doing things we’d normally do. It hindered where we could put line because the contract crews weren’t well trained, and didn’t know how to do things.” On a scale of one to 10, 10 being a good crew, then some of the contract crews, Hart said, were three or four.⁶¹

Firefighters did not attempt to put out all the fires. “We looked at areas where we could let the fires combine,” Hart said. They were also conservative about putting more

September 8 Mop-up continues, Interior islands and large fuel continue to burn

September 8 Apple Fire is 100% contained at 17,600 acres

fire on the landscape. “Let the fire consume fuel on its own accord. In other words, apply fire only to secure fire edges. It is easy to apply too much fire to the burnout operations and when the inversions break, holding becomes a near impossibility as intensity of fire increases.”⁶²



Hart supported the strategy to protect private property. “That’s the way it ought to be. Do all we can to keep the fire from moving to private property. If we lose acres to do that then it’s okay.”⁶³

By the morning of August 16th the Tiller Complex had burned over 53,000 acres, cost \$24.5 million, and had 2,413 people working on it. Temperature inversions kept air operations grounded until afternoon, burnout operations weren’t going very well and slop-over fires were causing problems. Fire behavior and fire growth were increasing daily.

At 10 am a fire erupted near Apple Creek and grew into another wildfire on the Umpqua National Forest. This human caused fire is still under investigation.

Within an hour Robert Cunningham, Fire Management Officer at Diamond Lake Ranger District was in command of the fire. He immediately requested air support from the Tiller Fire Complex. Three heavy helicopters and a medium helicopter responded to help fight the rapidly growing fire. The forest ordered the immediate evacuation of campgrounds in the area as well as the North Umpqua Trail and portions of the North Umpqua River.

Even with help from four helicopters the fire grew to 2,000 acres within a matter of hours. “It was a plume dominated event by that afternoon,”⁶⁴ Cunningham said. Based on a fire analysis assessment, an incident management team was ordered by 3 pm. “We ordered a Type 2 team and it was in place the next day,”⁶⁵ according to Daryl Grenz, Fuels Specialist for the Umpqua National Forest.

“We had record high indices and it went from 1,500 acres to 2,800 acres and burned hot. There was not a blade of grass or a needle on a tree.”⁶⁶ Cushing said.



Helicopters dropped water and retardant on the burgeoning fire but putting people on the ground in the vicinity of the blaze was out of the question. “Not putting those

September 11 25 acre spot fire starts on Acker Fire on Tiller Complex

September 11 Bright’s Type 2 Team arrives on the Apple Fire

September 17 An inch of rain falls on the Umpqua National Forest

September 17 An inch of rain falls on the Umpqua National Forest



The Apple was now nearly 8,000 acres. A short spell of moderate weather with lower temperatures and higher humidity had slowed the fires' growth, but as the weather began a warming trend fire activity increased. Suppression efforts were concentrating on the east and west flanks.

Overall, things were looking better on both fires. Rugged terrain, active fire, inversions, and unsafe conditions still plagued fire fighting efforts but the suppression strategy on the Tiller Complex and the Apple were inching toward containment. Once again, the moderated weather that had helped slow the fires down, now hindered burnout operations, but it didn't keep suppression forces from prepping for those operations.

For the first time since the Tiller Complex fires ignited on July 12th the daily report, on August 25th, said "The suppression strategy which combines indirect and direct attack is achieving containment and control targets."⁷²

August 26th was the turning point for the Tiller Complex. Melton's team decided to use an aerial ignition device that dispensed ping-pong balls filled with potassium permanganate. The ping-pong balls are injected with ethylene glycol as they are dispensed from a helicopter-mounted dispenser. They fall through the air and through the tree canopy to ignite the ground fuels. If done correctly they burn the ground fuels quickly without igniting ladder fuels or the trees themselves. This strategy burns the forest floor so that approaching fire has no fine fuels to burn in and fire progress is halted.

"We had to do something," Thompson said, "I'd rather take some burned timber than just watch this fire keep going."⁷³

It was a risk but Melton was confident it would work. "I think we surprised people with the aerial ignition. We use it a lot in the south. They were amazed we could burn out without destroying the trees."⁷⁴

Melton used 20,000 ping-pong balls on 2,000 acres of forest. "We just did what we normally do. It burned the fine fuels fast and not so hot."⁷⁵

The burnout success didn't mean the Tiller



September 19 24 fires on Tiller Complex controlled
September 19 Fuels begin to dry on Apple Fire and interior islands and large fuels burn

Complex was over. Changes in the weather would still cause dangerous fire runs, tree torching and crowning runs. Conditions were still extremely dangerous in the steep and rugged terrain and firefighters were suffering more from fatigue and the effects of the ever-present smoke. From this point on, however, most of the growth on the Tiller Complex was due to burnout operations.

On August 30th the last of the indirect line construction was completed on the Tiller.

On August 31st the Apple fire was 12,000 acres and 70% contained, the Tiller was 68,000 acres and 95% contained when Mike Lohrey's Type 1 Team took over responsibility for both fires.

Lohrey's Team would take over two fires formerly managed by two separate teams. Though the fires were approaching containment, there was still significant work to accomplish on each of them. In addition the two fires were more than an hour apart and that would make communications, travel and other logistics a time consuming concern.



It appeared the Tiller Complex was nearly tamed. Crews continued to suppress smoldering and creeping fire, patrolled the lines and did mop-up. A plan was approved and rehab was begun in portions of the burned areas.

On September 4th the Tiller Complex was 100% contained at 68,862 acres and a cost of \$45.3 million.

On September 6th a thunderstorm moved through the area and lightning ignited several new fires outside the containment lines. Crews began initial attack immediately and continued working those fires for several days before they were contained. It was the "last hurrah" for fires on the Umpqua National Forest for 2002.

The Apple Fire was contained on September 8th at 17,600 acres and a cost of \$16.5 million.

"I think we surprised people with the aerial ignition."

The Umpqua National Forest had been under wildfire siege for 58 days. More than 88,000 acres in the forest had burned. Firefighters from all across the nation, Canada, Australia and New Zealand joined firefighters from the Umpqua National Forest, the Bureau of Land Management, Douglas County Sheriff's Department and Emergency Services, Douglas Forest Protective Association, rural fire departments, and the Oregon Department of Forestry to fight the fires.

September 22 Don Perry's Type 2 Team assumes command of Tiller Complex

September 22 Don Perry's Type 2 Team assumes command of Apple Fire

Surprisingly, despite the dangerous erratic weather and duration of the fires, there were no serious injuries on the fire line. No structures were lost and private property was protected.

It would be another 33 days of mop-up before the Tiller Complex would be turned over to the forest. Doug Bright's Type 2 Team assumed command on September 11th in time to witness a special 9-11 memorial ceremony at the Apple and Tiller fire camps hosted by Mike Lohrey's Type 1 Team who had completed an assignment at the World Trade Center the year before.

Fire mainly stayed within the containment lines except for a 25-acre spot fire on Acker and a couple other minor spot fires. Infra-red flights highlighted hot spots inside the lines and mop-up operations worked to extinguish them.

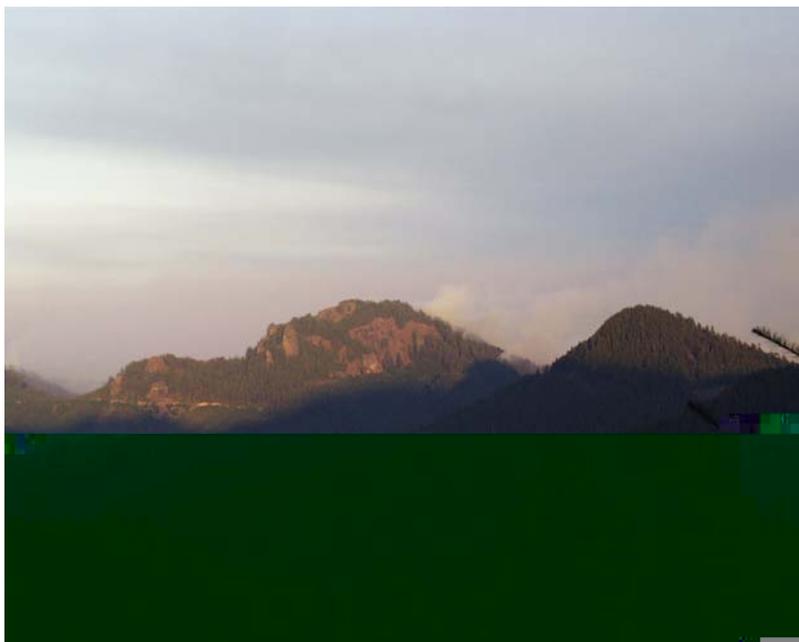
A 48-hour rain began on September 17th and soaked fuels and the soil, drowning most of the larger remaining fires. Fires in stump holes, logs and snags still smoldered and mop-up operations concentrated on putting out all fire within 300 feet of the containment lines.

fire behavior, hazardous terrain,



Don Perry's Type 2 Team replaced Bright's Team on September 23rd. It continued the grueling and dirty job of mopping up the hotspots on the fires.

John Jackson's team, that had started out in July on the North Umpqua Complex, was now under the command of deputy incident commander, Rock Gerke. They would close down the fire camp and return the Tiller Complex, and its remaining smoldering hotspots, to the Umpqua National Forest.



October 1 Mop-up, patrol and rehab on the Tiller Complex.

October 1 Apple Fire is controlled

By this time, the Apple Fire, the North Umpqua Complex, and the Tiller Complex together had expended an estimated \$9 to \$11 million dollars in the Douglas County economy for crews, equipment, food, and other goods and services.

The Jackson/Gerke Team left on October 11th. After 91 days, all remaining fires were once again under the direct management of Umpqua National Forest fire personnel. Recovery work on the forest was just beginning.

...

October 11 Tiller Complex fires are returned to the Umpqua National Forest and rehab efforts continue

October 11 Apple Fire is returned to the Umpqua National Forest and rehab efforts continue

Footnotes

- 1 Daily National Incident Situation Reports for 2001 and 2002
- 2 IBID
- 3 Mike Hupp, Land Management, Planning and Administrative Staff Officer, Umpqua National Forest
- 4 US Drought Monitor, NICC Intelligence and Predictive Services, Western US Wildland Fire Assessment
- 5 IBID
- 6 IBID
- 7 Federal Wildland Fire Policy: Memorandum, pg 5
- 8 IBID, Guiding Principles and Policies, pg 2
- 9 IBID, Role of Wildland Fire in Resource Management, pg 4
- 10 NICC Incident Management Report 7-8-02
- 11 IBID
- 12 Interview with Willie Thompson, Assistant Fire Staff Officer, Umpqua National Forest
- 13 Interview with Dave Lockwood, Assistant Fire Management Office, North Umpqua Ranger District
- 14 Interview Willie Thompson
- 15 Interview Dave Lockwood
- 16 Interview Willie Thompson
- 17 Interview with Richard Dunton, Tiller Complex Incident Commander 7/14 to 7/24/02
- 18 IBID
- 19 IBID
- 20 IBID
- 21 IBID
- 22 IBID
- 23 IBID
- 24 IBID
- 25 IBID
- 26 IBID
- 27 Fire Behavior Forecast Number 1, Tiller Complex, 7/15/02, Don Strand
- 28 Interview Richard Dunton
- 29 IBID
- 30 IBID
- 31 209, North Umpqua Complex, 7/18/02
- 32 Interview Dave Lockwood
- 33 Interview with Tim Pratt, Fire Management Officer, North Umpqua Ranger District
- 34 Interview with Carol Cushing, District Ranger, North Umpqua Ranger District
- 35 IBID
- 36 North Umpqua Fire Complex 7/21/02
- 37 209, Tiller Complex, 8/20/02
- 38 Interview Willie Thompson
- 39 Wildland Fire Situation Analysis 7/24/02
- 40 Transition Narrative, Tiller Complex, Norm Walker, IC So-Cal IIMT
- 41 209, Tiller Complex, 7/24/02
- 42 Transition Narrative, Tiller Complex, Norm Walker, IC So-Cal IIMT
- 43 209, Tiller Complex, 7/25/02
- 44 Northwest MAC Group, Documentation of Decisions, 7/25/02
- 45 Fire Information, Umpqua National Forest, 7/25/02
- 46 Virginia M. Gibbons, Central Oregon Office of Communication, 7/25/02 e-mail
- 47 209, Tiller Complex, 7/30/02
- 48 209, Tiller Complex, 7/28/02
- 49 209, Tiller Complex, 7/30/02
- 50 Interview with Joe Stutler, Tiller Complex Incident Commander, 8/3 to 8/9/0251

Footnotes

- 51 Wildland Fire Situation Analysis,
- 52 Interview Joe Stutler
- 53 Interview Joe Stutler
- 54 IBID
- 55 IBID
- 56 Interview with Steve Hart, Tiller Complex Incident Commander 8/10 to 8/21/02
- 57 IBID
- 58 IBID
- 59 IBID
- 60 IBID
- 61 IBID
- 62 Narrative Summary and Discussion, Tiller Complex, 8/10 to 8/22/02
- 63 Interview Steve Hart
- 64 Interview Dave Cunningham
- 65 Interview with Daryl Grenz, Fuels Specialist, Umpqua National Forest
- 66 Interview Carol Cushing
- 67 IBID
- 68 Interview Robert Cunningham
- 69 Interview with Mike Melton, Incident Commander Tiller Complex, 8/22 to 9/01/02
- 70 Interview with Howard Carlson, Incident Commander Apple Fire, 8/18-9/02/02
- 71 Interview Mike Melton
- 72 209, Tiller Complex, 8/25/02
- 73 Interview Willie Thompson
- 74 Interview Mike Melton
- 75 IBID

UMP—02—03

All photos USFS; Cover photo Tom Iraci, USFS

UMPQUA NATIONAL FOREST
2900 NW Stewart Parkway
Roseburg, Oregon 97470

The U. S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's Target Center at 202-720-2600 (voice and TDD). To file a complaint of discrimination, write USDS, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue SW, Washington DC 20250-9410 or call 202-720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

