



Little Bear Fire Summary Report

Sarah McCaffrey
Melanie Stidham
Hannah Brenkert-Smith

Abstract

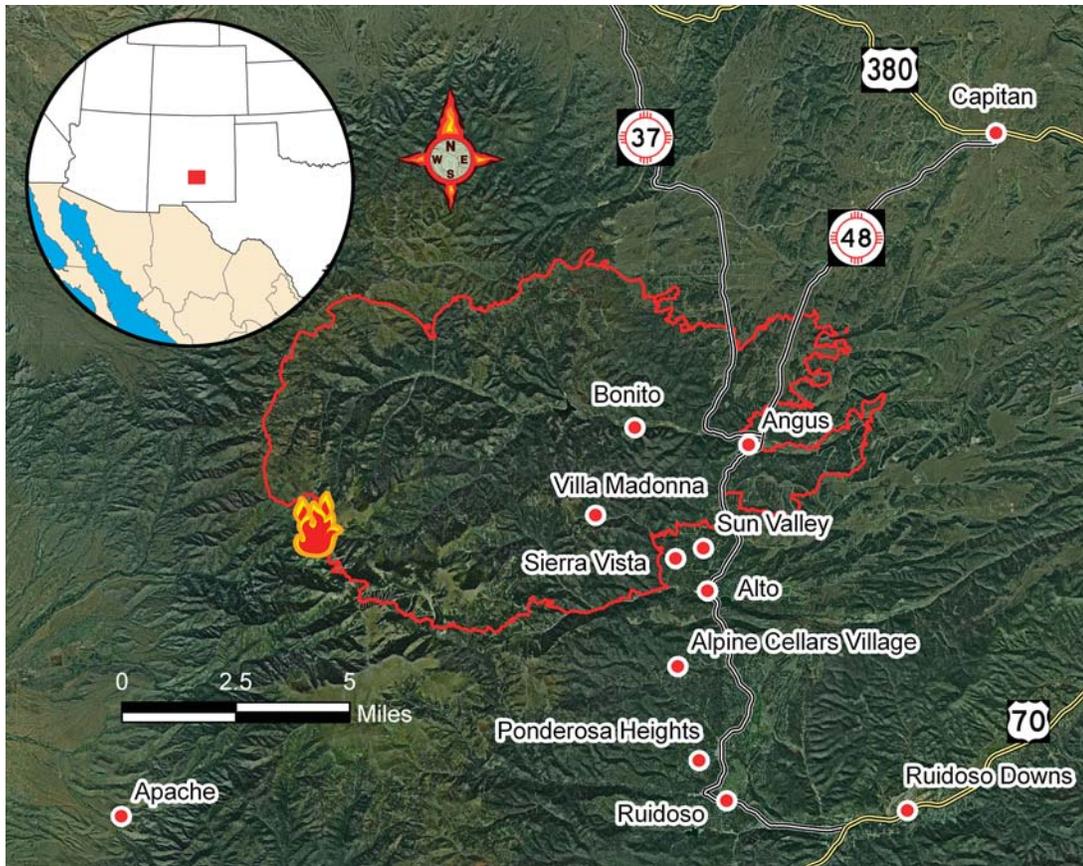
In June 2012, immediately after the Little Bear Fire burned outside Ruidoso, New Mexico, a team of researchers interviewed fire managers, local personnel, and residents to understand perceptions of the event itself, communication, evacuation, and pre-fire preparedness. The intensity of fire behavior and resulting loss of 242 homes made this a complex fire with a complex social response. While most of the people we spoke with thought the fire was managed well despite difficult biophysical circumstances, some held the perspective that the fire could have been extinguished sooner. One of the most agreed-upon successful aspects of the fire was that everyone was evacuated with no injuries and no lives lost, despite the rapid fire spread in an area with numerous houses and limited access. Notifying individuals of house loss and getting people back into their neighborhoods in a timely manner were the two issues most frequently identified as areas needing improvement. Interagency and intra-agency communication were universally highly regarded by federal fire personnel and local emergency responders. These two groups also perceived communication with the public to have been successful. However, members of the public we spoke with thought there were some significant communication issues and wanted certain information sooner and more frequently.



PROJECT DESCRIPTION

A research team of seven social scientists from North Carolina State University, the U.S. Forest Service, University of Colorado, and Ohio State University collected data from June 26 through June 30, 2012. Data were collected using structured interview protocols tailored for three stakeholder groups. Interviews were primarily conducted in person in Ruidoso and greater Lincoln County with teams of two (interviewer and note taker) and lasted from 45 minutes to 1.5 hours. The interviews were documented through extensive notes and digital recordings for later transcription; this report was generated from notes taken during the interview.

This research is part of a larger project to expand our understanding of social dynamics during and immediately after a wildfire event. The focus is on perceptions of the event itself, communication, evacuation, and wildfire preparedness among community members, local organizations, and federal agency personnel. To date, data collected after wildfire events primarily focus on physical aspects of wildfire behavior and impacts. This project seeks to develop a new framework for postfire research that will: (1) facilitate more consistent and rigorous collection of social data immediately after an event, and (2) improve the ability to aggregate lessons across wildfire events. Postfire follow-up investigations can help clarify how the complex interactions between decisions made and actions taken before and during the fire, by fire and land managers and members of the public, contribute to better or worse outcomes. This project was funded by the National Fire Plan.



OVERVIEW

The Little Bear Fire was started by a lightning strike in the White Mountain Wilderness Area in south-central New Mexico on June 4, 2012; suppression activities were instigated by the Lincoln National Forest that afternoon. A preliminary fireline had been completed around the fire perimeter by the afternoon of the 8th. However, later that day, high winds lifted fire embers beyond the fireline, leading to a fire that burned a total of 44,330 acres (35,339 on Lincoln National Forest, 357 on Mescalero Tribal land, 112 on State of New Mexico land, and 8,522 on private land), 242 houses, and 12 structures. The primary entities involved in responding to the fire were the Type 1 incident management team (IMT), the local Type 3 IMT, the U.S. Forest Service, Lincoln County Sheriff's Office, Lincoln County Office of Emergency Services, Village of Ruidoso, and the State of New Mexico (NM). The fire was very complex in terms of fire behavior and response coordination. Several contextual items are of note to facilitate understanding of this fire:

- Fire behavior was extreme, with an unexpected run that quickly covered thousands of acres and burned down hundreds of houses.
- Although the fire affected public and private land in Lincoln County, its proximity to the Village of Ruidoso (hereafter Ruidoso) led to significant concern about possible outcomes if the fire entered Ruidoso.

-
- Communication was severely disrupted during the initial period of extreme fire activity when the fire burned through major communication lines. All Internet, land lines, and Verizon cell phones within 30 miles of the fire area were shut down for several hours on the morning of June 9. This disruption was seen by many as having contributed to the proliferation of rumors on the fire, which created management and communication challenges.
 - There was strong political interest in the fire due to the number of homes lost, size of the fire, and previous tensions over pre-fire forest management.

A total of 30 interviews with 33 people were conducted from June 26 through June 30, 2012. Eleven interviews were conducted with primary responders (fire and emergency personnel working out of the incident command post [ICP]), 8 were conducted with local supporting personnel (e.g., Red Cross, Humane Society, Ruidoso employees), and 11 were conducted with households affected by the fire (divided into three sub-groups: non-evacuated, evacuated with no losses, and evacuated with losses).¹

The impressions and recollections of the primary responders were remarkably consistent. While some offered different perspectives based on their own personal experiences, the different perspectives served to offer a more comprehensive story, rather than presenting completely different versions of the same set of events. Similarly, the perspectives of the local supporting personnel and residents were also largely consistent, although there were some differences depending on individual experiences. There were some inconsistencies when perspectives were compared between groups; where applicable these inconsistencies are discussed below.

FIRE TIMELINE

The Little Bear Fire was ignited by lightning on Monday, June 4, 2012 in the White Mountain Wilderness Area on the Lincoln National Forest (outside of Ruidoso, NM). As soon as the detection was reported (afternoon of June 4), the Fire Management Officer (FMO) for the Smokey Bear Ranger District sent a helicopter to investigate. At that time the fire was 0.5 acres and the helicopter crew requested permission to land and begin suppression using chainsaws in the Wilderness area. Permission was granted from the Forest Supervisor and the crew began creating a fireline. This work continued until nightfall and the crew spent the night in a safe zone near the fireline. The next morning (Tuesday the 5th) a Hotshot crew hiked to the fire and took over suppression activities. Full suppression tactics were used; however, conditions were difficult with steep terrain, numerous standing dead trees (snags), and heavy fuels. Nevertheless, fire crews made good progress and there was little concern about explosive growth. The incident was documented in the Wildland Fire Decision Support System (WFDSS) on Wednesday (6th) to document

¹Sources for this report also included: U.S. Forest Service published timeline of the first week of the fire titled “Southwestern Region, Little Bear Wildfire, Lincoln National Forest, June 18, 2012”; and the Southwest Area Incident Management Team report titled “Little Bear Fire Executive Summary, June 10-June 23, 2012.” These documents were used to clarify and verify the timeline developed from the interviews.

and plan firefighting strategies; with existing weather conditions and continued full suppression tactics, the fire was projected to be contained within a week. On Thursday (7th), the District Ranger and FMO hiked out to the fireline to check on progress and conditions. Fire crews were still making progress and there was little reason for concern. Air resources were attempted, but the thick canopy and steep terrain limited their utility.

By early afternoon on June 8 (Friday) the fire was considered contained² as crews had completed a preliminary fireline around its perimeter. However, later that afternoon winds picked up and carried embers beyond the containment line. Air resources (tankers and retardant) were ordered but had limited effectiveness. A Type 3 IMT³ was ordered around 1:30 p.m. and arrived at the fire at approximately 3:00 p.m. County emergency managers and state forestry officials were invited to participate in the team in-briefing. Due to the fire's increasing complexity, the decision was made to order a Type 2 team at around 6:30 p.m.; continuing escalation of fire behavior and conditions led to the decision to order a Type 1 team at 8:00 p.m. By this point, winds had picked up to 40+ mph, resulting in extreme fire behavior. The fire was in the forest canopy and was making downhill runs; both nighttime fire growth and downhill runs are unusual and are indicators of extreme conditions. Friday night (8th) through Saturday afternoon (9th) was an important time period in the fire. Fire behavior continued to be extreme and the fire grew exponentially, reaching 15,000 acres by the evening of June 9. Most of the 242 homes and 12 outbuildings that were lost in the Little Bear Fire were burned during this time.

Late Friday night and early Saturday morning the sheriff's office (with assistance from the State Highway Patrol, Ruidoso police, National Guard, and New Mexico Department of Game and Fish) evacuated numerous subdivisions threatened by the fast-moving fire. These communities were located outside Ruidoso along Highways 48 and 37. Although the fire ultimately did not enter Ruidoso, there was substantial concern that it could and several areas in the town were placed under a pre-evacuation alert. Evacuation and pre-evacuation notices were sent out by the emergency notification systems (Code Red in Lincoln County and Call Me Ruidoso in Ruidoso). In addition, law enforcement officers drove through the affected areas with flashing lights, sirens, and a public address system and, when possible, conducted door-to-door notifications. Given the rapid spread of the fire many people had only a few hours between the pre-evacuation notice and the actual evacuation order. People who had not registered their cell phone number for emergency notifications received far less warning if they also did not have a land line (land lines are automatically registered). Residents were described by officials as generally responsive to

²In wildfire terminology "containment" refers to the status of a wildfire suppression action signifying that a line has been completed around the fire, and any associated spot fires, which can reasonably be expected to stop the fire's spread (Glossary of Wildland Fire Terminology, National Wildfire Coordination Group, July 2012).

³There are five levels of IMTs in the United States ranging from Type 5 teams at the local level to Type 1 teams at the national level. Each successive team level has more experience, training, and available resources, thus increasing the capacity of the incident response as needed. Responses are initiated by the local team (level 5, 4, or 3, depending on the location) and are transferred to higher-level teams when the situation warrants greater response capacity.

evacuation orders.⁴ If people chose not to evacuate, officers collected contact information so that they could check on them should their house burn down or if they were missing after the fire. Forest Service rangers were also sent out to campgrounds and along trails to evacuate overnight recreationists. Staffed roadblocks restricted entry into evacuated areas throughout the evacuation.

Local churches opened shelters Friday night and early Saturday morning; the Red Cross based out of Roswell, NM took over the shelter functions for most communities on Saturday (the church-run shelter in Capitan remained open because the highway between Capitan and the Red Cross shelter was closed for much of the evacuation). The shelters were reported to not be heavily utilized. The Red Cross also set up a registration system to help keep track of evacuated residents; people could sign up either in person or online. The Humane Society moved most of the animals previously under its care to foster families to accommodate evacuated pets; however, this animal shelter was also described as being underutilized.

Throughout the day on June 9, members of the Type 1 team integrated with the Type 3 team and were formally in-briefed at 4:00 p.m. The Type 1 team assumed command of the fire on Sunday, June 10 at 6:00 a.m., having received a delegation of authority from Lincoln National Forest, Bureau of Indian Affairs, NM State Forestry, and Bureau of Land Management. An ICP was set up at the Sierra Vista Primary School in Ruidoso. Local law enforcement set up a separate ICP nearby. The Governor of New Mexico authorized deployment of approximately 200 National Guard troops to help evacuate residents, manage roadblocks, prevent looting in evacuated subdivisions, provide security at the ICP, and assist with air support.

After the Type 1 team assumed command, more resources were added, extreme fire conditions began to abate, and by June 11 fire spread had slowed. To determine when residents could return to their property, the sheriff's office representative and Type 1 Incident Commander (IC) met each morning to discuss which neighborhoods could be opened. The IC gave recommendations based on what was or was not ready, but it was ultimately up to the sheriff's office when to lift an evacuation order. Most people were allowed to return to their homes by Thursday the 14th. By June 19 the fire was no longer spreading. On June 23 command of the fire was returned to the Type 3 team.

COMMUNICATION

The Forest Service did not initiate extensive public outreach efforts during the first 4 days of the fire as at that point it was relatively small and far from any structures. Once the fire grew and threatened communities, standard communication procedures were implemented. These efforts were disrupted during a critical period of the fire (morning of June 9), when the fire burned through communication lines, shutting down all Internet, land lines, and Verizon cell phones within 30 miles of the fire area. As a result,

⁴New Mexico is not a mandatory evacuation state and people cannot be forced to leave their property.

communication was severely disrupted until the afternoon of the 9th, when Verizon established an emergency replacement line through the Mescalero Apache Reservation.

When the Type 1 IMT took over on the 10th its communication specialists began to work to facilitate information flow both between fire management agencies and with the public. During the fire there were numerous opportunities for face-to-face communication among fire personnel and other entities involved in the fire response. The IMT's liaison officer facilitated a cooperators' meeting each morning at 10:00 a.m. that included fire personnel, county emergency management, law enforcement, nongovernmental organizations, and a number of others engaged in the fire response. Meetings consisted of fire status updates, upcoming fire suppression strategies, and planned activities of each cooperator (including what resources were available and needed to complete the activity). The meetings provided a forum for all entities to discuss responsibilities and coordinate responses where appropriate. In addition, local law enforcement representatives were stationed at the ICP to maintain open lines of communication, both so that law enforcement would have up-to-date information on fire operations and so that the IMT could glean local knowledge on locations and resources.

Approximately 30 public information officers (PIOs) were assigned to the fire to facilitate communication with the public. Multiple methods were used to provide information including traplines⁵, social media, Inciweb, an information phone line, and daily public meetings. PIOs from different agencies participated in a daily meeting to coordinate messages and discuss what kinds of questions they were getting from their constituencies. Ruidoso's PIO also played an active role in providing information to the public. She updated the Ruidoso Facebook page with current information (also used to quell rumors), and produced user-friendly updates twice daily that were distributed to local businesses, elected officials, and residents, as well as to pre-established media contacts. On Sunday (10th) Ruidoso set up a phone bank at the fire station that was run by Forest Service PIOs and Village staff. This joint arrangement allowed Ruidoso staff to provide the incident PIOs, many of whom lacked familiarity with the area, with local knowledge regarding the fire's status and progress.

Prior to lifting evacuation orders, the sheriff and county emergency managers tried to individually notify homeowners of damaged or destroyed homes. The county emergency and assessor's offices first went through the neighborhoods and identified burned homes, and then provided the resultant list to the sheriff's office to contact the owners. A center was also set up in Ruidoso where homeowners could go to find out if their home had burned. The center was staffed with deputies, county employees, and clergy.

Residents

Most residents interviewed were aware of the initial fire that started on Monday, but were not concerned as it was in the backcountry and appeared to be under control. Most learned about the growing fire potential on Friday (8th) afternoon from informal conversations and

⁵A trapline is a set of public locations where fire information is distributed every day.

seeing smoke plumes. Many did not anticipate that the fire would affect them given its location on Friday. Once aware of the increased fire activity, people actively monitored the fire's status, often by driving to a vantage point where they could actually see the fire and by asking more informed friends, family, and colleagues (e.g., those associated with local fire departments or government agencies) for current information.

As the fire progressed, a clear desire of all the residents we spoke with was for information on the fire's trajectory to assess how they or their friends and family might be affected. For evacuees, the dominant information needs shifted over time: first they wanted to know where to go once evacuated, then what houses had been lost and when they could return to their neighborhood. Throughout the fire, all the residents we interviewed continued to seek information from a variety of sources. Residents often mentioned speaking with local contacts who they felt were better positioned to provide reliable information. The public meetings hosted by the IMT each evening were also generally seen as a good source of information. In particular several residents reported that the maps displayed at the meetings were especially helpful. Inciweb.com and LittleBearFire.Info⁶ were two online resources frequently mentioned as being useful.

OUTCOMES: SUCCESSES AND CHALLENGES

Overall Fire Management

Among primary first responders, overall management of the fire was highly regarded, with the acknowledgment that fire personnel did the best they could under difficult biophysical circumstances (e.g., drought, heat, wind, high fuels). With a few key exceptions, roles and responsibilities among the different responding agencies were clear and everyone was seen to have played his or her part. The local fire departments were involved in structure protection in the evacuated neighborhoods, federal fire personnel were involved in wildfire suppression, and law enforcement was managing evacuations and roadblocks with support from the National Guard.

Residents

Residents' views of the management of the fire were more mixed with just under half of the residents interviewed offering critiques. The most common comment in this regard was the perception that the fire was not fought aggressively enough in its first few days. For instance, three residents we spoke with reported hearing differing accounts of fire management strategies, including the allegation that the Mescalero Hotshots had offered their firefighting services on the first day but were turned away by the Forest Service. Another comment was that the fire was intentionally allowed to burn in the Wilderness area to meet fuel management goals. Whether true or not, the perceptions were significant to these participants because they felt that more aggressive early suppression efforts could have prevented the losses suffered by the community.

⁶LittleBearFire.Info was a local source of fire information during the event, but is no longer a functioning Web site.

Challenges in Coordinating across Multiple Jurisdictions

An important feature of this fire was its threat to numerous values on federal, county, tribal, and municipal lands. Therefore, multiple entities were engaged in planning operations to protect values at risk within their jurisdiction. According to participants, this resulted in the ordering of (or plans to order) additional firefighting resources by state and municipal agencies independent of the operations planning conducted by the IMTs. Two important incidents were repeatedly mentioned by participants involved in the fire response:

- (1) During the height of the fire on June 9, Ruidoso independently ordered fire protection equipment (dozers) to create a containment line around the town. This action was generally described by participants as Ruidoso emergency personnel feeling that they needed to do something to protect the community without fully understanding the fire management system already in place. Since the fire was an imminent threat to properties in Lincoln County, county and state officials were directly engaged with the Type 3 team, but Ruidoso was less integrated into the fire response.
- (2) On June 9 the New Mexico Governor ordered a second Type 1 IMT. This decision was made without consulting the existing Type 1 team, which learned of the order hours after it had taken command of the fire.

Both actions raised significant confusion and concerns, particularly for the Type 1 IMT, as independent and uncoordinated fire management actions can contribute to problematic outcomes. Critical questions included: (1) how the dozer line proposed by Ruidoso would impact existing fire operations, as well as likely costs to repair any damage such a line would create; and (2) what to do with the second Type 1 IMT given there were no additional resources being brought in and all existing resources were being managed by the current Type 1 IMT.

Once aware of these actions the IMT held meetings with key parties to get everyone back on the same page. The team provided more information about how the incident response system works and discussed the specific fire management operations and strategies in place for protecting Ruidoso and other values at risk. These meetings also provided local actors the opportunity to clarify their concerns with the IMT. As a result, several mid-course adjustments were made:

- (1) Operations to put a dozer line around Ruidoso were suspended.
- (2) A decision was made to stage the second Type 1 IMT in Albuquerque, NM so that the team would be readily available to assist if the fire became a more imminent threat to Ruidoso. It was reported that after this incident the IMT and Governor had good communication and the Governor was widely credited by a range of interviewees for working hard to dispel rumors and support firefighting efforts.

In reflecting on the independent ordering of dozers, participants emphasized a psychological mandate to act that all jurisdictions were experiencing in order to protect their community. While this incident was reported to have caused tension at the time, many participants who spoke of it described it ultimately as a success story in interjurisdictional cooperation. Once parties could sit down together and talk through what they wanted and needed, a longer-term plan for protective actions was developed that could be implemented over the next year; energy that had been focused on immediate action was redirected to address future needs. Perspectives on whether this incident will have lasting positive or negative impacts on professional relationships were mixed. Some people reported that Ruidoso's independent actions reflected a lack of trust and a breakdown in the type of communication which federal and local personnel had trained and planned for in the event of a wildfire or other emergency. Others felt the experience solidified relationships by clarifying who can do what, when, and demonstrating they were able to successfully work together through a very difficult situation.

Communication

The loss of communication lines on the 9th created a major disruption that inhibited communication between all parties, but particularly with and between members of the public. Once the communication infrastructure was repaired, information was more readily available. However, by this time, many inaccurate stories about the fire had developed and the PIOs had to play catch-up to correct rumors and misinformation.

Communication among Emergency Responders

Communication between these entities was largely considered to be good, with the exception of issues around roadblocks and reentry (see below). Even though the fire burned through the region's primary communication line, fire personnel had trained for communicating without cell phones during a fire. So while their communications were hindered, they were able to use the radio and talk face-to-face to each other with little disruption to fire management. Previous relationships between the Forest Service and other local emergency responders on the Little Bear Fire were largely credited with an integrated, open response. This perspective seems to hold true for people who were working at and through the ICP, or who participated in the cooperators' meetings. In addition, members of the Type 1 IMT had been working together for approximately 10 years, giving them a great deal of experience working with each other and developing a framework for effective communication with others engaged in fire response.

Communication with the Public

Except for when the communication lines went down, the Forest Service and IMT personnel felt that communicating with and providing information to the public generally went well. However, several issues were identified with getting information to the public:

- There were no contingency plans to get information to the public when standard methods were unavailable. While the communication lines were down it was

difficult to update Inciweb, send out press releases or social media updates, or answer phone inquiries.

- Public service announcements were broadcast on three local radio stations three times a day; however, radio reception was limited in some areas of the fire. Local newspapers are published only twice a week and there are no local television stations, so these were not viewed as especially effective means of information sharing.
- It was announced that a public information line would be staffed 24 hours a day, but the line was staffed only from 6 a.m. to midnight.
- There was some initial confusion during the fire on where public information meetings would be held. This situation was later corrected.
- Lack of active outreach about the fire before the blow-up was seen by some to have contributed to subsequent rumors and dissatisfaction with how the fire was managed.

Several primary responders suggested that in the future contingency communication plans were needed for getting information to the public in a timely manner. Ideas included posting someone at the local radio stations to provide ongoing, accurate information and pre-identifying traplines for more efficient information dispersal.

Resident Perceptions of Communication

Views of communication during the fire were more mixed among the residents interviewed, with some providing positive views of communication efforts and others feeling they were dismal. Overall most felt that communication during the initial blow-up was poor, in large part due to communication equipment failures. This early loss of communication lines was particularly stressful for residents as it hindered ability to check on friends and family and locate each other during the height of fire activity. However, many of those we spoke with found workarounds (e.g., sharing an AT&T cell phone and asking family outside of the area to tell them what was going on) to obtain the information they were looking for. Like agency personnel, a number of residents felt that the communication equipment failure contributed to the large number of rumors about management of the fire. Most residents gave higher ratings for the latter portion of the fire with some specific exceptions. The most common communication-related criticisms were as follows:

- (1) The available mass media did not provide fire updates frequently enough. Television and newspapers were generally seen as inadequate sources of information, either due to timeliness (frequency of the local newspapers), lack of local specificity, or sensationalism (particularly in the national news). Local radio stations were cited by a few residents as a good source of timely information, but others thought that the information was not updated frequently or consistently enough. Several participants expressed the desire for a single dependable information source they could turn to in an emergency such as an emergency

alert station, a specific radio station which would shift from the regular format, or a phone number that would have a continuous loop of information updated on a regular basis. Even if there was no change in the information participants indicated it would be helpful to know that it was the most current available, or know when an update would be available.

- (2) Several people expressed frustration and confusion over the term “containment,” which they believed indicated the fire was out; when the fire later blew up they were caught off guard and felt that they had been misled. This perception contributed to mistrust of explanations of management actions throughout the fire.
- (3) Resident participants expressed considerable frustration with the timeliness and accuracy of information on structural damage and losses. They were upset with both the reported house loss estimates (which they thought were too low based on what they were seeing) and how long it took to formally provide specifics about home losses. Evacuees described the most stressful part of the fire as “just not knowing” whether they had a house to return to.⁷ Individuals needed to know, one way or the other, the status of their home so they could plan accordingly and begin moving forward.

The frustration associated with a lack of timely notification was recognized by officials. One official said: “I think it was very frustrating for people to go a week or 5 days not knowing whether their house survived, not knowing what they needed to do to plan if their house had been destroyed.” Several factors contributed to the time it took to provide information on house loss. Officials with the Lincoln County Office of Emergency Services and the Sheriff’s Office felt it was important to personally notify owners of losses before the neighborhoods were re-opened to residents. However, prior to notification all the properties had to be identified and contact information for the owners had to be tracked down. Many of the houses were seasonal or vacation homes owned by people out-of-area and contact information was not always readily available. In addition, if individuals did not have a cell phone, finding a contact phone number for individuals not at their property was a challenge.

By the time the sheriff’s office had cross-referenced the burned property with owner contact information and reached the owner, the vast majority of people already knew they had lost their house. Resident participants primarily mentioned two informal methods of learning the status of their home: sneaking back in to evacuated areas to check on their and their neighbors’ homes, and contacting friends, family, or acquaintances who had access to the evacuation zone and could check on the status for them. This informal learning of the status of structural losses also allowed residents to compare the low

⁷Not knowing was also quite stressful for non-evacuees. People reported worrying about whether they would have to evacuate or not, and, once it was evident they would not be personally affected by the fire, they reported being worried about how the fire was affecting other people, animals, and the landscape.

officially reported losses to the much greater scale of losses they were learning had actually occurred (official tallies included losses only as they were verified). For some residents this discrepancy led to a general distrust in information they were being given from official sources.

Evacuation

The perspective of all interviewees, agency and resident, was that the evacuation itself was very well executed. That there were no lives lost or major injuries was seen as notable, particularly given the speed of the fire and the limited access to many evacuated areas, often on twisty, narrow roads. The timely notifications (both by phone and door-to-door visits by emergency personnel) were noted by a majority of participants as key reasons for the successful evacuation.

All but one household interviewed in the evacuation zone spoke of getting at least one, and sometimes two, pre-evacuation phone calls through the emergency notification system and a final call that it was time to leave. Most participants indicated that the pre-evacuation call gave them several hours to prepare, while a few indicated that they were woken from their sleep and had little time to get out. Most of those in an evacuation area also reported having at least one visit by a sheriff's deputy. However, some people were missed; the one couple that reported not receiving outside evacuation warnings ended up losing their house, indicating that despite being in the evacuation zone they did not learn of the evacuation from official sources. In most cases the sheriff's deputy knocking on the door or the phone call saying it was time to leave was the point where individuals decided to evacuate. Several reported leaving because of the amount of ash that was falling around their house. We spoke with one person in a pre-evacuation area who also chose to evacuate, out of concern for her pet. And one couple in an evacuation area reported that the wife left but the husband stayed, as did their son, who lived in a nearby house.

Shelters

Several resident interviewees expressed frustration at not knowing where to go once they had evacuated and at how difficult it was to find this information. The first night in particular was problematic. Agency personnel recognized that there was some confusion regarding the location of shelters as some residents were directed to area churches that were not, in fact, open as shelters. This confusion was attributed to out-of-date information on shelters being used in emergency notifications.

Ultimately, none of our participants stayed at a shelter. Instead, those who evacuated stayed either in hotels, with friends or relatives, in an RV, or in seasonal homes volunteered by out-of-area owners. For the majority of the evacuees we spoke with, a major concern when evacuating was animals, from household pets to livestock. For several residents, having animals also caused complications in finding a place to stay. One resident reported that she, her mother, and their dogs stayed the first night at a relative's house. However, as the house was really too small to accommodate all the evacuees,

they spent the second night in their car before getting permission to use the trailer of a seasonal resident for the remainder of the evacuation. For its part, the Humane Society mobilized to make space for evacuated pets. However, due to some misinformation reported to the public concerning the available capacity of the shelter for housing evacuated animals, the shelter was not utilized as much as expected.

Roadblocks and Access

Roadblocks were an area where all groups interviewed raised concerns. Although law enforcement cannot legally force people to leave their properties in New Mexico, once people leave they can be prevented from returning for the duration of the evacuation order. To allow firefighters to safely complete mop-up, prevent a second evacuation should the fire pick back up, and complete damage assessments, most areas were evacuated for almost a week. This was seen as longer than necessary by some members of the public. Once the immediate fire danger had passed there were reports of people who wanted access to their homes running the roadblocks and receiving citations. Residents who needed to feed pets or pick up medication were escorted in and out of the evacuation zone, when possible. From law enforcement's perspective managing the roadblocks went relatively well, given the circumstances. The residents we spoke with, however, reported a wider range of experiences with roadblocks. Some reported courteous interactions at roadblocks, some felt their concerns were treated too cavalierly, and others were quite frustrated by their interactions. Some people who were refused entrance at the roadblock reported using off-road equipment to bypass the roadblocks and check their property.

Participants in all three stakeholder groups mentioned that some people staffing the roadblocks lacked updated information on who should have access to the evacuation zone. Given the large area evacuated, number of roadblocks (eight), and number of agencies helping the sheriff's office staff the roadblocks (often from outside the area), keeping everyone updated was a challenge. Some of the problem was technology related. For example, when the National Guard soldiers arrived they did not have radios, so the local law enforcement had to get radios for them (which was accomplished fairly quickly). Most people we spoke with noted the inherent challenges with keeping everyone updated and thought that overall the roadblocks were successful. However, they lamented the consequences of failed communication. For instance, some utility workers were denied access to neighborhoods when they were trying to check on infrastructure, which delayed reopening of the neighborhood (see *Reentry* below).

Reentry

A number of participants spoke of significant frustration within the community with how long it took for the evacuation orders to be lifted. Emergency responders we spoke with described several factors that contributed to how long it took. Before lifting the evacuation order, the sheriff's office consulted with fire personnel about the likelihood the neighborhood would need to be re-evacuated and about the safety concerns related to power and gas lines, propane tanks, hazard trees, and embers or smoldering areas.

Assessing these factors took longer than anticipated; the overarching explanation given by fire and emergency personnel was that there was not a comprehensive plan for reentry. Consequently decisions were made independently and things took place haphazardly. For instance, each of the separate utility companies needed access to the restricted areas, but sometimes they were not allowed through roadblocks (some arrived in unmarked vans; other times the person managing the roadblock didn't know the utility representatives should have access) and there was no central location or mechanism set up to share their findings and expedite reentry. In addition, several actions had to be taken before a neighborhood could be opened back up. For example, once the gas company goes in and re-pressurizes the lines, there is a 24-hour wait period to make sure there are no leaks. But this type of information was not well communicated to the public.

Improvements in this regard were actively underway at the time of our interviews. The IC mentioned his team was drafting a one-page list of conditions to consider when deciding whether to open an area up that could be shared with the public and sheriff. In addition, Lincoln County was working on a comprehensive reentry plan (including homeowner notification) in consultation with a Type 3 IMT from Texas that was brought in to assist with recovery.

Integration of Volunteer Organizations at Disasters (VOADS)

Two positive outcomes from the Little Bear Fire frequently noted by residents and members of local organizations were: (1) the community cohesion exhibited during the fire, and (2) the helping behavior exhibited by both community members and those outside the community during and after the fire. Local community organizations (e.g., churches, Humane Society, Red Cross) can play key support functions during disasters such as providing food and shelter for humans and animals, and helping people to cope with losses. These organizations are collectively known as Volunteer Organizations Active in Disasters, or VOADs. However, our interviews suggest that coordinating this work can be a challenge and we heard of several issues that arose. Most of them were related to the poor integration of VOADs into the emergency responder system despite their integral role in community response and recovery. During the Little Bear Fire several organizations faced obstacles that were perceived as undermining their ability to work effectively to support the community. Some identified issues were as follows:

- Uncoordinated self-deployment of VOADs early in the fire added to the confusion of a very complex fire event. Although VOADs had sponsored a training event that provided opportunities to interact with county and sheriff's deputies, these relationships were still relatively new.
- There were challenges with coordinating the large number of individuals and groups interested in assisting.
- Closure of a primary transportation corridor (Highway 48) created logistical challenges with coordinating informational meetings and work at shelters in Capitan and in Ruidoso. Once the highway was opened it was easier for groups to coordinate efforts and pool resources.

-
- Several key actors were new to their roles or were based outside the immediate area and had yet to develop trust and good relationships locally. For VOADs based outside the community, community distrust of outsiders meant that organizations without a strong local contact faced additional obstacles. There was also a sense that organizations from outside the area were not sufficiently aware of local resources and capacity.

Preparedness/Mitigation

Perceptions of Emergency Responder Preparations

Participants from responding agencies reported that there were multiple ongoing efforts in Ruidoso to help agencies prepare for working together during an incident like the Little Bear Fire. For example, there is a greater Ruidoso working group that includes representatives from the Forest Service, Lincoln County, Bureau of Indian Affairs, the State of New Mexico, Ruidoso, and others. This group meets once a month to discuss and coordinate projects, as well as to plan and train for a variety of scenarios. Emergency responders have prearranged partnerships and agreements in place that outline cost shares and equipment/resource sharing so that when there is an ignition everyone can respond immediately. In addition, shared radio frequencies have been established so they can easily communicate with each other during a fire (or other emergency) event. These prior efforts were widely considered invaluable in mounting an integrated response and maintaining open lines of communication, particularly given the loss of communication lines on June 9.

Perceptions of Community Preparations

While the fire burned public and county lands, local wildfire capacity had been developed primarily within Ruidoso (in terms of mitigation, preparedness, and response capacity) rather than in the county. Lincoln County covers a broad area (4,831 square miles) and has limited staff to coordinate its management compared to the more compact and well-staffed Village of Ruidoso. For example, the county had a new PIO whose limited time in the position meant that relationships and communication networks had yet to be developed. Differences were also mentioned in terms of residents' level of preparedness; several county residents interviewed indicated that it would be good for the county to have defensible space requirements similar to those in Ruidoso (the town has requirements for completing defensible space activities and a weekly disposal service for yard debris). That is not to say that the county was completely unprepared. The county had recently developed a community wildfire protection plan (CWPP) which was credited with helping the community prepare. In addition, the seven volunteer fire departments in the county participate in a wildland fire academy to receive training and information that can be passed to members of their communities. Some of these departments have received money from the state to update equipment and prepare for wildfire.

Multiple research participants in all stakeholder groups mentioned that Ruidoso and the surrounding area is largely a resort community. For both agency personnel and residents

the main issue identified with being a resort community was that some part-time residents seemed less aware of wildfire risk and were less likely to engage in defensible space activities. As such, the conditions on parcels owned by part-time residents were thought to make neighboring properties more vulnerable. On the flip side, an indirect benefit of the presence of many absentee and part-time owners was that some of these owners volunteered use of their home to evacuees during the fire event and, in some cases, during the rebuilding of burned homes.

Residents

All interviewed residents were very aware of the fire risk and had taken basic actions on their property to mitigate the risk such as trimming vegetation and raking up pine needles. In some cases the actions taken were quite extensive including significant thinning of large areas and designing a new house with fire in mind. Despite this preparation, more than half of respondents indicated that while they weren't surprised the fire happened, they were surprised that it actually affected them: "I guess we thought it would not happen to us." The primary impact of experiencing a fire on residents' future preparedness plans was in terms of evacuation planning. Even though a fair number of residents had had some level of plan for what they would do and what they would take, many of them identified additional actions they could take, such as having a large bag handy to throw everything into. A few also indicated they were looking more closely at their insurance policies. Many residents expressed concern that the fire would lead to flooding. Several had engaged in mitigation actions, including acquiring sand bags and digging trenches around their homes.

Pre-fire Forest Management Concerns

A majority of residents interviewed felt that poor forest management before the fire contributed to the extreme behavior of the Little Bear Fire. Some participants were upset over environmentalists' appeals on fuels reduction projects, while others felt lack of fuels treatments was due to budgetary or other agency constraints. The management of the adjacent Mescalero Apache Reservation land was brought up by several residents that we spoke with as an example of how Forest Service land should be managed. The thought was that if the forest in the Wilderness area had been thinned to look like the Tribal lands, which were easily visible along one of the local highways, then the fire would not have threatened the community. Some of the local agency personnel interviewed recognized that this perception was held by some community members, but pointed out that people were comparing two different forest types with different fire regimes and that different management strategies were appropriate in each forest type. Local personnel also expressed frustration that members of the public did not seem to recognize the many fuels reduction projects that were implemented each year.

The critique that the destructiveness of the Little Bear Fire was attributable, at least in part, to ineffective forest management practices was also expressed by a non-local elected official and some media outlets. The fire was used as an example of the need to change Forest Service policies, which had the effect of politicizing the fire. This involvement was

seen by many in the primary responder group as complicating management of the fire by adding confusion and stirring negative emotions within the community, straining professional relationships, and encouraging local entities to take action independent of the IMT. As one person in the primary responder group put it, “This was a difficult fire with all the politics...and emotions running high. There were a lot of people who had worked together for a lot of years that were really upset with each other for a short period of time.”

These critiques, along with notions held by some community members that the fire had intentionally not been fought aggressively during initial attack, personally affected several of the local fire personnel that we spoke with. They expressed dismay that people in the community believed that they would have purposely let the fire get large and burn down homes. From their perspective they had done everything they could to effectively fight the fire, beginning the moment the fire was spotted. They frequently spoke with emotion when they said that the Little Bear Fire personally affected them, too; it was also their homes and their community that burned.

Looking towards the future, two people in the primary responder group suggested the need for better preparations on the political and social side of wildfire, particularly how to more effectively respond on a politicized fire. One of these participants went further to suggest the Forest Service needs to do more outreach on what the Forest Service does, why it does the things it does, and being more explicit on what is and is not possible.

SUMMARY

Once the Little Bear Fire escaped the initial fireline, it moved very quickly for 24-48 hours, during which time the fire grew exponentially and burned hundreds of homes. The intensity of fire behavior and resulting loss of homes made it a complex fire. Social responses added to the complexity. While most of the people we spoke with thought the fire was managed well despite difficult biophysical circumstances, some held the perspective that the fire should have been extinguished sooner and that if more fuels treatments had been implemented before the fire it would not have been as extreme. These different perspectives have resulted in some tensions within the community.

One of the most agreed-upon successful aspects of the fire was that everyone was evacuated without injury or loss of life, despite the rapid fire spread in an area with limited access. Notifying individuals of house loss and getting people back into their neighborhoods in a timely manner were the two areas most frequently identified as needing improvement. Both issues had been recognized by the county and the IMT and development of plans to improve both notification and reentry had already begun.

The independent ordering of fire resources by different entities was a major concern for many in the primary responder group. The ordering of additional resources took place during a period of extreme fire behavior, when the communication lines were down,

and the Type 1 team was still transitioning into command. Each of these factors, along with the practical need to do something, may have contributed to decisions to take independent action and highlights the challenges that are faced during initial periods of heightened fire activity. However, two dynamics mentioned by multiple participants point to areas for possible improvement: (1) A number of individuals felt that a key underlying issue was lack of understanding of how the incident command system (ICS) works. Working to improve non-emergency responders' understanding of the ICS could potentially decrease the impetus for taking independent actions. It was also suggested that greater understanding by non-emergency responders would help integrate VOADs into community response. (2) A commonly expressed view was that the actions were taken out of a simple need to "do something" to protect one's community. Recognizing that people have this need highlights the importance of ensuring all parties affected, or potentially affected, by a fire have a chance to discuss fire management decisions and how they can best contribute.

Interagency and intra-agency communication were universally highly regarded within the primary responder and local responder groups. The daily cooperators' meetings were especially well received and thought to be successful. These two groups also perceived communication with the public to have been successful. However, members of the public we spoke with thought there were some significant communication issues and wanted certain information sooner and more frequently. Part of the problem was that the primary regional communication infrastructure was burned through during the height of the fire and was out for several hours. The combination of a lack of initial information and disruption to communication capacity when the fire blew up was identified by participants as contributing to rumors and misunderstandings of fire and forest management, and the public's feeling that it was not kept informed. Better advance planning for communication technology failures as well as more proactive outreach, both when a fire is relatively non-threatening and in terms of explaining agency management actions, were suggestions of how to minimize such misunderstandings.

An additional area where communication attention may be needed to minimize misunderstandings is in relation to clarity of fire terminology. While the term "containment" has a specific meaning within the fire community, to some of the residents we spoke with it was taken as meaning there was no chance of further fire growth; the fire was essentially out. This confusion contributed to distrust of fire management efforts and suggests the need to better explain what the term means from a practical point of view—that embers can travel beyond the fireline—when using the term with the public.

ACKNOWLEDGMENTS

We thank all the individuals who generously gave their time to speak with us. We also thank Dale Gormanson, U.S. Forest Service, Northern Research Station, Forest Inventory and Analysis, for graciously developing the map of the general fire area.

AUTHORS

This report was developed by Sarah McCaffrey, U.S. Department of Agriculture, Forest Service, Northern Research Station; Melanie Stidham, The Ohio State University; and Hannah Brenkert-Smith, University of Colorado. For questions or comments please contact: Sarah McCaffrey, smccaffrey@fs.fed.us, or Hannah Brenkert-Smith, hannahb@colorado.edu.

McCaffrey, Sarah; Stidham, Melanie; Brenkert-Smith, Hannah. 2013. **Little Bear Fire Summary Report**. Res. Note NRS-RN-178. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 18 p.

KEY WORDS; wildfire, emergency response, evacuation, wildland-urban interface, social dynamics, fire management, communication

Manuscript received for publication 11 June 2013

Published by:
U.S. FOREST SERVICE
11 CAMPUS BLVD SUITE 200
NEWTOWN SQUARE PA 19073

For additional copies:
U.S. Forest Service
Publications Distribution
359 Main Road
Delaware, OH 43015-8640
Fax: 740-368-0152
Email: nrspubs@fs.fed.us

September 2013

Visit our homepage at: <http://www.nrs.fs.fed.us/>



Northern Research Station
www.nrs.fs.fed.us