

2014

**IMPROVING COMMUNITY
RESPONSE TO WILDFIRE:
2013 FIRE SEASON FINDINGS
REPORT**

LOGEPOLE FIRE

In 2013, the Fire Chasers Research Team at North Carolina State University developed a series of incident performance measures in collaboration with incident response and land management professionals. The goal of this effort was to provide metrics that can help improve interagency coordination and communication during complex, large scale wildfires. In the summer of 2013, data on these incident response outcomes were collected from 22 Type I and Type II wildland-urban interface fires in Idaho, Montana, Oregon, and Washington. This report summarizes the findings from the Lodgepole Fire in the areas of interagency network performance, incident management team performance, use of social media and incident learning and capacity building.

This report was prepared by

North Carolina State University's Fire Chasers Research Team:

Branda Nowell, Ph.D. (Principal Investigator)

Toddi Steelman, Ph.D. (Principal Investigator)

AJ Faas, Ph.D. • Anne-Lise K. Velez, MPA • Joy Davis, BA •

Clare FitzGerald, MPA • Mary Clare Hano, MPH

Lodgepole Fire: Incident Report

Study Background

This report summarizes findings on incident response outcomes for the Lodgepole Fire that occurred in 2013. The report presents outcomes of the Lodgepole Fire compared to twenty-one other Type I and Type II incidents that occurred in Idaho, Montana, Oregon, Washington, and one pilot incident in Colorado, during the 2013 wildfire season. The goal of this report is to provide disaster, fire response, and land management agencies with feedback on the incident. This feedback is designed to help identify areas of strength, as well as prioritize areas for capacity building to improve incident response in the upcoming fire season. This report summarizes findings on the following areas: 1) interagency network performance; 2) incident management team performance; 3) use of social media; and 4) incident learning and capacity building. All findings are based on surveys completed by key personnel associated with the incident management team, host agency, and cooperating disaster response agencies on each incident. County and municipal elected officials in the affected area were also surveyed. Surveys were generally collected from Type I/Type II incident management team members immediately before they transitioned off the incident. Surveys with host agencies and county disaster response agencies were collected in October/ November of 2013. A total of 22 surveys were completed for the Lodgepole Fire (54 percent response rate).

How Should I Interpret the Data in This Report?

Incidents differ in their complexity and more complex incidents can create more challenges. The information contained in this report is based solely on the survey data and indicators *do not* account for differences between incidents. This should be kept in mind when interpreting findings from a single incident in relation to the regional incident averages. Findings with lower response rates should also be interpreted with greater caution as there may be key perspectives that are missing. Recommended questions for reflection in interpreting the findings from this report include:

In what areas did we excel during this incident? What strategies and actions did we take that may have contributed to this success? What actions can we take to make sure these practices and lessons are retained for future incidents?

In what areas were our ratings comparatively less positive? How do we make sense of those? Were there missed opportunities either *before* or *during* the incident that might have improved our outcomes in this area? Are there actions we can take *now* to help ensure future success in this area?

Overview: A brief summary of the Lodgepole Fire

According to Inciweb, the Lodgepole Fire was detected around noon on Saturday, July 20, 2013. Local agencies attacked the fire aggressively with efforts continuing under new direction as of July 22nd, when Adell's Type II Incident Management Team (IMT) was called on to the fire. On August 4th, Houseman's National Incident Management Organization (NIMO) and Whalen's Type II IMT were called onto the fire until the Salmon Challis National Forest Type III organization took over on August 17th. The Salmon Challis National Forest served as the Host Unit on this incident and worked with local cooperators that included the Custer County Board of Commissioners, Lemhi County Commissioners, North Custer Rural Fire District, Challis Mayor's Office, Custer County Sheriff's Office, Challis Volunteer Fire District, Custer Telephone Co-op Inc., Mosquito Flat Irrigation District. Idaho State Police, Idaho Bureau of Homeland Security, Idaho Department of Transportation, Idaho Department of Fish and Game, and the Idaho Falls District of the Bureau of Land Management also responded to the incident.

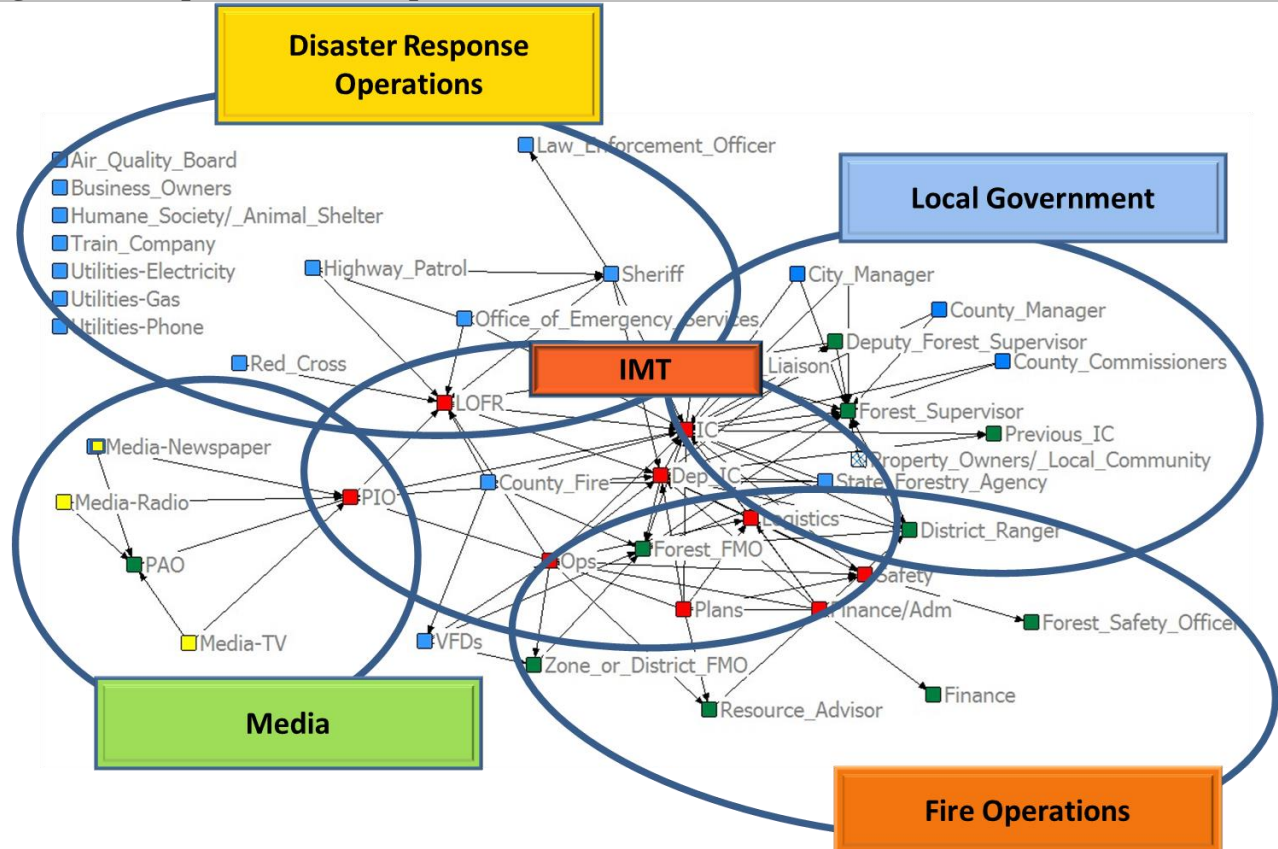
Steep rocky terrain, weather, and fire behavior made managing the fire difficult in the initial days, with ongoing complications due to dry fuels, bug killed timber, and dry windy conditions. The incident threatened to impact the Challis Watershed along with 15 residences and 20 outbuildings, none of which were ultimately damaged. Fire management personnel communicated that between 10 and 12 residents were evacuated, and formal reports cited that road closures occurred primarily on Forest Service roads. By August 22nd, the Lodgepole Fire was 75 percent contained, having burned approximately 22,850 acres.

Incident Response Network Performance: Lodgepole Fire

What Is an Incident Response Network?

Effective incident response to a complex wildfire event involves the coordination of multiple organizations and agencies with formal response responsibilities during the incident. This group of organizations and agencies can be referred to as the *incident response network*. This network typically includes the incident management team, fire management operations, disaster management operations, county and municipal government, and the media. Diagram 1 shows what this network might look like.

Diagram 1. Sample Incident Response Network



What is network performance?

When working as part of an inter-connected network like the one shown in Diagram 1, the actions of any one agency within the network can affect others in the network. Consequently, incident outcomes are often the result of the *combined* management actions of the entire network, and the level of communication and coordination within it. Not all agencies are involved in all areas of incident response. However, problems in one area of the network can lead to problems in other areas. As a result, effective incident response is not about the performance of any single organization or agency, but is related to the performance of the *network as a whole* in the following areas:

- ❖ Interagency coordination and fire response
- ❖ Public information
- ❖ Road closures
- ❖ Evacuation and re-entry
- ❖ Sheltering & mass care
- ❖ Cost share

To learn more about network performance, we asked all agency and organizational leaders in the incident response network to rate how things went in each of these six areas. Respondents were asked their level of agreement with a set of statements. Options ranged from (1) “strongly disagree” to (5) “strongly agree.” Overall, network performance scores were high. Some areas are also worthy of additional attention prior to fire season 2014. For the twenty-two fires in our sample, overall network performance was the highest for interagency coordination and fire response (average = 4.44) and public information (4.34). On average, lower performance ratings were provided for cost share (3.87), evacuation (3.99), and sheltering/mass care (4.0). See Appendix A for specific questions asked in each category and average level of agreement for each.

Network Performance: How did things go on the Lodgepole Fire?

Figure 1 shows network performance ratings for the Lodgepole Fire in comparison with the average across all twenty-two fires in our sample. Lodgepole Fire network performance was slightly higher than average for evacuation and re-entry and close to regional average for road closures. Formal reports indicated that closures were primarily on Forest Service roads.

Lodgepole Fire network performance was slightly lower than the all incident average for the areas of coordination and fire response, and public information. However, respondents on average rated these areas more positively than evacuation and sheltering. Sheltering and mass care was identified as the area with the most room for improvement on the Lodgepole Fire. Specifically, respondents identified preparing adequate sheltering options for pets and livestock as a particular area for improvement. According to respondents and official reports on this incident, there was no cost share on this incident, so there are no data to present on this network performance factor for the Lodgepole Fire.

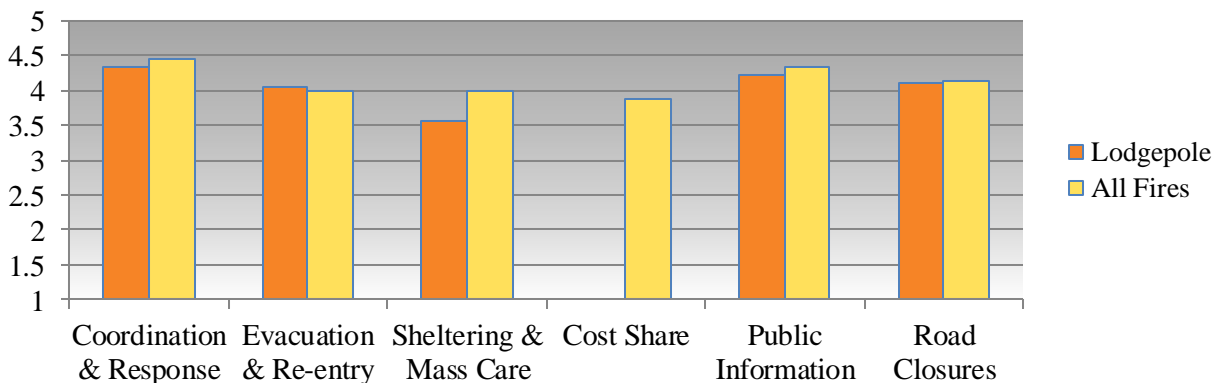
KEY FINDINGS

Ratings for evacuation and re-entry were higher than the regional average

Respondents on average rated public information and interagency coordination and fire response more positively than evacuation and sheltering

While evacuations were minimal, sheltering was identified as the area with the most room for improvement, particularly in preparing adequate sheltering options for pets and livestock

Figure 1. Average Network Performance by Activity: Lodgepole Fire



Incident Management Team Performance: Perspectives from host agencies and local cooperators

On each incident, we asked representatives of local cooperating agencies, the Forest Service, and other host agencies to reflect on how well the incident management team communicated and coordinated with local host agencies and cooperators. Incident management teams (IMTs) were assessed across 19 areas outlined in Table 1 on the following page. The response options ranged from “No room for improvement” to “A lot of room for improvement”, and included “Don’t know” and “Not applicable” choices.

Across all twenty-two incidents, incident management teams were reported to perform the best in: 1) being accessible; 2) acknowledging cooperation; 3) sharing credit; and 4) serving as positive ambassadors in interactions with the local community. On average, scores were quite positive across all areas. However, host communities

reported the greatest room for improvement for IMTs in the areas of: 1) obtaining local context information to inform fire operations; 2) incorporating information about local values at risk into fire management plans; and 3) engaging affected jurisdictions in planning and decision making from the beginning. The first column of Table 1 lists the average room for improvement for incident management teams across all fires. The second column displays average room for improvement for the Lodgepole Fire incident management team. For each item in Table 1, **lower numbers indicate less room for improvement**. The scale includes (0), indicating “no” room for improvement, (1) “a little,” (2) “some,” (3) “quite a bit,” and (4) “a lot.”

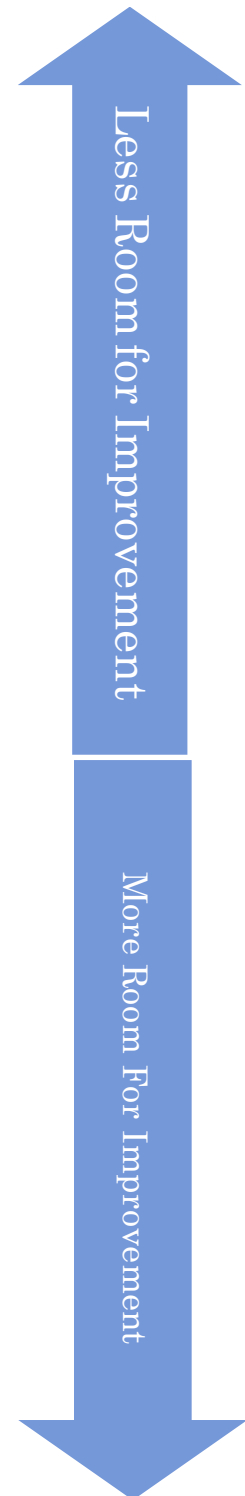
Average responses for Adell’s Type II IMT on the Lodgepole Fire ranged from 1.3 to 2.5, indicating a range of ratings, the lowest being “a little” room for improvement and the highest two ratings falling between “some” and “quite a bit” of room for improvement. Overall, the IMT was rated slightly less positively than the regional average in all areas during the Lodgepole Fire, in part due to the complex response on this incident, including numerous IMT transitions, a NIMO team, a variety of cooperating agencies, difficult terrain, and fire behavior. On average, Adell’s Type II IMT was rated most positively in terms of being accessible to local agencies, acknowledging cooperation, and being helpful to cooperating agencies. Particular areas for improvement included clarifying roles and responsibilities, being flexible in adapting the fire management strategy to local preferences, using the incident as a training opportunity to build local capacity and engaging affected jurisdictions in planning and decision making from the start. Greatest strengths and areas for improvement for the IMT on the Lodgepole Fire are highlighted in the IMT Key Findings box above.

KEY FINDINGS

- On average, respondents indicated that Adell’s Type II IMT had “some” room for improvement on Lodgepole
- The IMT was rated as having the least room for improvement in:
 - being accessible
 - acknowledging cooperation
 - being helpful to cooperating agencies
- Areas the IMT may want to continue to focus on for improvement include:
 - clarifying roles and responsibilities
 - being flexible in adapting their fire management strategy to account for local preferences
 - using the incident as a training opportunity to build local capacity
 - engaging affected jurisdictions in planning and decision making from the start

TABLE 1. Lodgepole Incident Management Team Room for Improvement

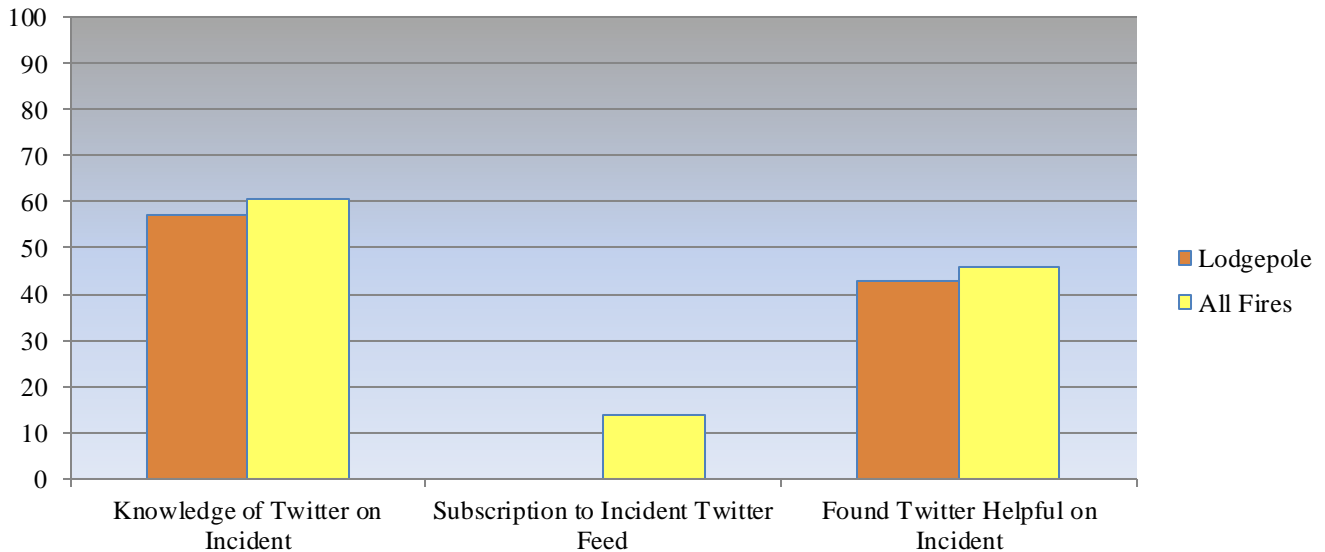
Area for improvement in working with Host Unit(s) and local cooperators	22 Incident Average Room for Improvement (0-4)	Lodgepole Average Room for Improvement (0-4)
Being accessible to you	1	1.3
Acknowledging cooperation	1	1.4
Being helpful to cooperating agencies	1.1	1.5
Incorporating information about local values at risk (e.g., biological, archeological, cultural, recreational) into the management of the fire	1.3	1.6
Rapidly identifying key local players they needed to be communicating with during the incident	1.2	1.6
Serving as a positive ambassador in interactions with the local community	1	1.6
Seeking to understand organizational culture, values, and capacities of your agency	1.2	1.7
Staying in their lane and not over-stepping their delegation of authority	1	1.7
Including your agency in the dissemination of vital information during the incident	1.2	1.8
Valuing your agency's input	1.2	1.8
Getting your agency information you needed to be effective	1.2	1.8
Being sensitive to local community culture and political climate	1.25	1.9
Sharing credit with your agency	1	1.9
Obtaining local context (e.g., burn scars, trail systems, local weather patterns) to inform their operations	1.3	2
Valuing local knowledge and local input	1.2	2
Engaging affected jurisdictions in planning and decision making from the beginning	1.3	2.1
Using the incident as a training opportunity to build local capacity	1.2	2.1
Being flexible in adapting their fire management strategy to account for local preferences	1.2	2.3
Clarifying roles and responsibilities	1.2	2.5



Twitter Use

Social networking sites, such as Twitter, have become important tools for sharing information during various emergencies. Researchers are only beginning to study the implications of social media for risk communication and practitioners are often interested in best practices for using social media. As part of our survey, we asked local cooperators and Forest Service personnel whether they knew of an “official” Twitter feed associated with the wildfire incident, whether they subscribed to this feed, and whether or not they found the information on Twitter helpful. Figure 2 shows percentage of Twitter use for Lodgepole Fire compared to the average rate across twenty-one fires in our sample that reported on social media.

Figure 2. Percent Social Media Use and Utility on the Lodgepole Fire



Inciweb, personnel from the Challis-Yankee Fork Ranger District on the Salmon-Challis National Forest, the Idaho Department of Health and Welfare, the National Weather Service, and engaged but unofficial firewatchers all tweeted information about the Lodgepole Fire. Much of the Twitter activity about the Lodgepole Fire was comprised of Inciweb retweets. When compared to the 21 incident average, respondents from the Lodgepole Fire had slightly less knowledge of Twitter and were somewhat less likely to report finding Twitter helpful in general. No respondents reported subscribing to an incident Twitter feed.

KEY FINDINGS

- Lodgepole Fire respondents were slightly less aware of Twitter information resources than respondents across other incidents
- No Lodgepole Fire respondents reported subscribing to an incident Twitter feed

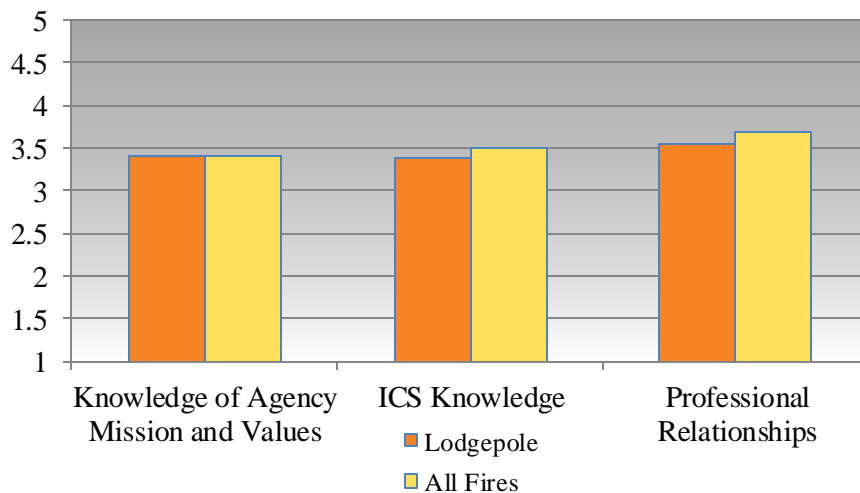
Moving Forward: Incident learning and capacity building

The field of incident response prioritizes using every incident as an opportunity for learning and relationship building to improve capacity for responding to future events. To assess incident learning and capacity building, respondents were asked to report how personal outcomes were influenced by the incident in the areas of: 1) increased knowledge of other agencies' missions and values; 2) enhanced knowledge of the Incident Command System (ICS); and 3) increased familiarity and strengthened professional relationships within the local network. Respondents were asked to rate how each factor was affected by the incident, on a scale ranging from (1) "much worse" to (5) "much better", with (3) indicating "no change." See Appendix B for specific questions asked in each category and average level of agreement for each.

KEY FINDINGS

- Over all wildfire incidents we studied, evidence suggests that knowledge of agency missions and values, ICS knowledge, and professional relationships were perceived to have improved
- For the Lodgepole Fire, the greatest improvement was in professional relationships, specifically knowledge of local communities and professional networks among leaders of cooperating agencies

Figure 3. Incident Learning and Capacity Building from the Lodgepole Fire



Across all the wildfire incidents we studied, evidence suggests that knowledge of other agency missions and values, ICS knowledge, and professional relationships were perceived to have improved. Across all incidents, local cooperators and host agencies reported the greatest improvements in the area of professional relationships, which included respondents reporting strengthened

professional relationships with leaders of cooperating agencies, stronger relationships within counties, and better knowledge of the capacities and constraints of cooperating agencies. Slight improvement was shown in local cooperator and host agency knowledge of agency missions and values, which included knowledge of the mission and values of state land management agencies and the National Forest. Comparable improvement was shown in knowledge of the Incident Command System, which includes familiarity with ICS, opportunities to gain additional training in an area of incident response, and understanding how to work with an IMT, including what the IMT can and cannot do to assist your county during an incident.

On the Lodgepole Fire, responses varied between "no change" and "somewhat better" for knowledge of agency missions and values, ICS knowledge, and professional relationships. While improvements in ICS knowledge and professional relationships were slightly lower for Lodgepole Fire than across all fires, respondents did not report any negative outcomes in these areas. For the Lodgepole Fire, the greatest improvement was in professional relationships, specifically in knowledge of local communities and in professional networks among leaders of cooperating agencies.

APPENDIX A. Network Performance: Lodgepole Fire

Areas of Network Performance	22 Incident Average Level of Agreement (1-5)	Lodgepole Fire Average Level of Agreement (1-5)
Coordination & Fire Response		
A coordinated set of fire management objectives were agreed upon among all affected jurisdictions	4.29	4.08
All concerned jurisdictions prioritized maintaining good communication across agencies	4.21	4.40
Credit for success and effort was shared among agencies during public meetings and media events	4.37	4.38
There was a general willingness across agencies to offer assistance to other agencies or jurisdictions	4.48	4.44
“Borrowed resources” were released in a timely fashion to minimize burden on the lending agency	4.38	3.91
Community values at risk from wildfire were readily identified	4.64	4.68
Efforts to protect community values were appropriate given available resources and risks to firefighter safety	4.59	4.53
The overall strategy taken in managing this fire was appropriate	4.40	4.06
Local resources were incorporated into the incident management operations	4.50	4.33
Evacuation Performance		
Cooperating agencies were able to use existing evacuation plans to quickly establish a coordinated evacuation strategy	3.82	3.82
Residents received timely notification of evacuation status using clear, pre-established language to distinguish between an evacuation warning and an evacuation notice	4.03	3.85
Evacuations were executed in a timely and orderly fashion	4.15	4.15
Cooperating agencies had a prepared plan for how re-entry into evacuated areas would be coordinated	4.05	4.00
Trigger points for when evacuated areas would be opened for re-entry were clearly communicated to the public	3.88	4.08
Re-entry was carried out in an organized and orderly fashion	4.15	4.15
Sheltering & Mass Care		
Adequate sheltering options were prepared to house evacuees	4.16	3.71
Sheltering options were clearly communicated to evacuees	4.01	3.83
Donations for evacuees were well-coordinated	3.74	3.67
Auxiliary care needs of evacuees (e.g., food, water, clothing, transportation, spiritual or mental health assistance) were adequately provided for	4.05	3.67
Adequate sheltering options were made available to evacuate pets and livestock	3.88	3.60
Cost Share Performance		
We used pre-agreed frameworks/principles to expedite cost share agreements	3.80	NA
The process through which cost share was decided upon was fair	3.86	NA
The resulting cost share agreement was fair	3.96	NA

APPENDIX A. Network Performance: Lodgepole Fire (continued)

Areas of Network Performance	22 Incident Average Level of Agreement (1-5)	Lodgepole Fire Average Level of Agreement (1-5)
Public Information Performance		
Public information was coordinated among cooperating agencies to ensure continuity of the message	4.35	4.11
Local resources were leveraged to ensure timely dissemination of public information	4.32	4.07
Social media was used effectively to provide timely public updates concerning the status of the fire	4.16	4.36
A system for communication with the media was put in place to ensure timely dissemination of public information	4.42	4.36
Road Closure Performance		
All cooperating and fire management agencies maintained a timely awareness of the status of road closures	4.25	4.07
Trigger points for making decisions about road closures were proactively communicated to the local community	4.05	4.06
A consistent message was provided to the public about the status of road closures	4.11	4.06

APPENDIX B. Incident Learning and Capacity Building: Lodgepole Fire

Areas of Incident Learning and Capacity Building	22 Incident Average Reported Impact (1-5)	Lodgepole Fire Reported Impact (1-5)
Knowledge of Agency Mission & Values		
Your understanding of the mission and values of state land management agencies (e.g., Oregon State Forestry, DNR/DNRC, Idaho Department of Lands, Fire/Timber Protective Associations, etc.) in your area	3.43	3.27
Your understanding of the mission and values of federal land management agencies (e.g., BLM, National Park Service, USFS, etc.) in your area	3.38	3.53
Knowledge of ICS		
Your understanding of what an incident management team can and cannot do to assist your county during an incident	3.44	3.40
Your familiarity with Incident Command Systems	3.48	3.40
Your knowledge of how to work effectively with an incident management team	3.67	3.53
Opportunities for you to gain additional training in an area of incident response	3.45	3.20
Professional Relationships and Networks		
The strength of working relationships within your county	3.76	3.17
The strength of working relationships between your county the local National Forest District	3.60	3.33
The strength of working relationships with National Forest Headquarters	3.42	3.43
Your knowledge of the capabilities and constraints of cooperating agencies in your area	3.73	3.53
Your knowledge of the capabilities and constraints of the local National Forest	3.58	3.29
Your professional networks with leaders of cooperating agencies in your area	3.89	3.67
Your knowledge of your local community	3.72	3.67

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Fire Chasers: Improving Community Response to Wildfire Project

firechasers.ncsu.edu

20 Enterprise St., Suite 6

Raleigh, NC 27607

Phone: (919) 576-0843

info@ncsufirechasers.com

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