

2014

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

**GC COMPLEX**

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 GC Complex in the areas of interagency network performance, incident management team performance, use of social media and incident learning and capacity building.

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## GC Complex: Incident Report

### Study Background

This report summarizes findings on incident response outcomes for the GC Complex that occurred in 2013. The report presents outcomes of the GC Complex 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 26 surveys were completed for the GC Complex (58 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 GC Complex**

The GC Complex Fire started one mile north of John Day in the late afternoon on August 7<sup>th</sup>, 2013, as the result of a lightning strike. GC Complex consisted of the Grouse Mountain and Starvation Fires. Response was headed by Watt's Type II Incident Management Team and Oregon of Forestry, followed by Myer's Type II IMT. Malheur National Forest and the Oregon Department of Forestry acted as host agencies on this fire. According to ICS-209 Incident Reports, evacuations of residents and campgrounds were in progress from the beginning of the fire through August 10<sup>th</sup>, when containment lines were completed around both fires in the Complex. On Thursday August 8<sup>th</sup>, shifting winds spread the Grouse Mountain Fire toward John Day. The fire came within half a mile of populated areas and precipitated pre-evacuation orders as retardant bombers made drops. According to an August 9 article in the *Oregonian*, an assisted living center temporarily voluntarily evacuated almost two dozen residents to the local Elks Lodge. Residents returned to the assisted living center at the urging of officials. An evening rainstorm stopped the spread of the Complex as it reached the edge of John Day. A few days later, as smoke lessened, the Grant County Fair and parade were held as scheduled.

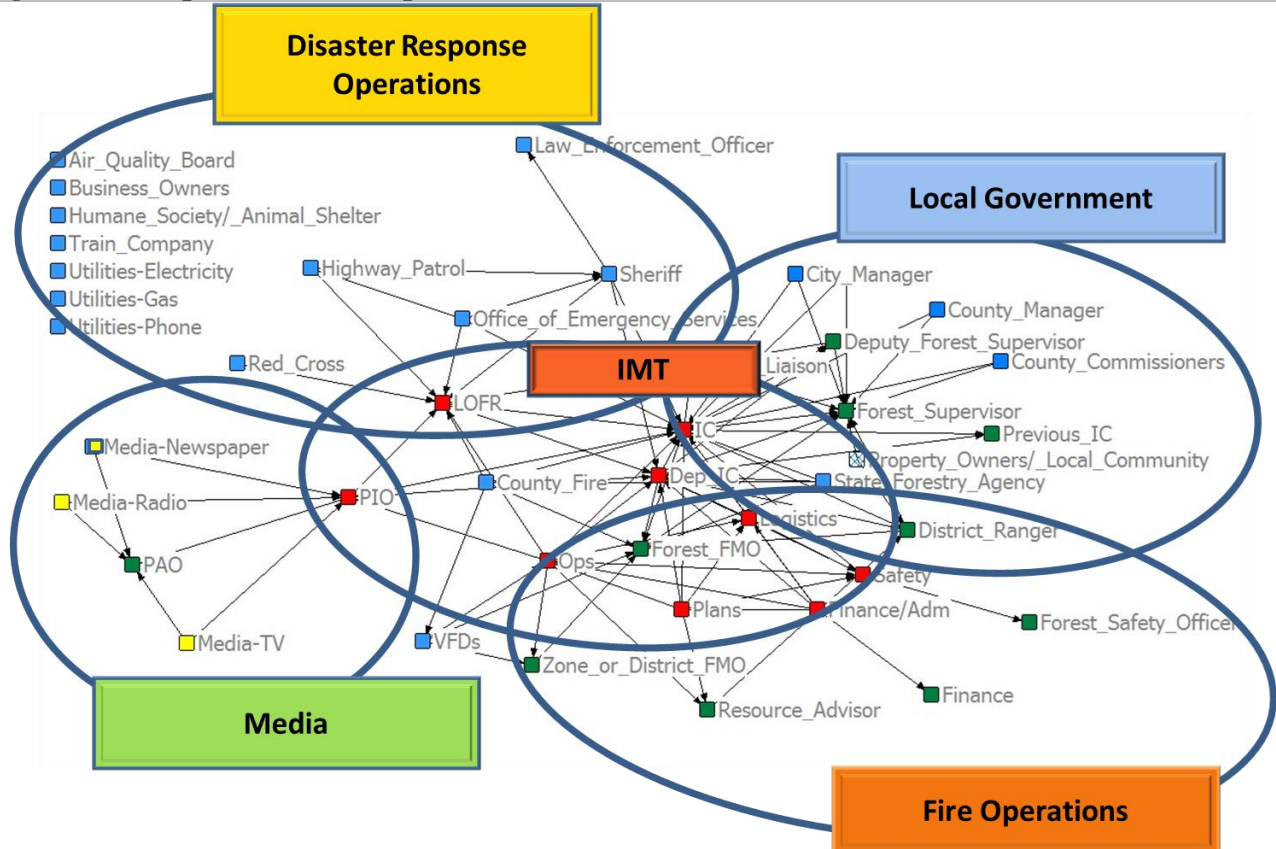
At its peak, the complex threatened 100 residences, 10 commercial structures, and 290 outbuildings. One outbuilding was destroyed. Ranchers moved cattle off grazing lands ahead of the advancing fire. ICS- 209 Incident Reports list cooperating agencies as Grant County, Oregon Department of Forestry, Malheur National Forest, John Day Fire, Mount Vernon Rural Fire Department, Oregon Department of Transportation and Grant County Sheriff. Other responders included Prairie City Fire Department, Oregon Fire Marshal Incident Team, John Day Police, Central Oregon Interagency Dispatch, John Day Emergency Communications Dispatch, Blue Forest Mountain Partners, and local landowners. According to ICS-209 Incident Reports, the complex was 100 percent contained by August 15<sup>th</sup>, having burned a total of 12,161 acres.

## Incident Response Network Performance: GC Complex

### 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 & 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 this coming fire season. 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.

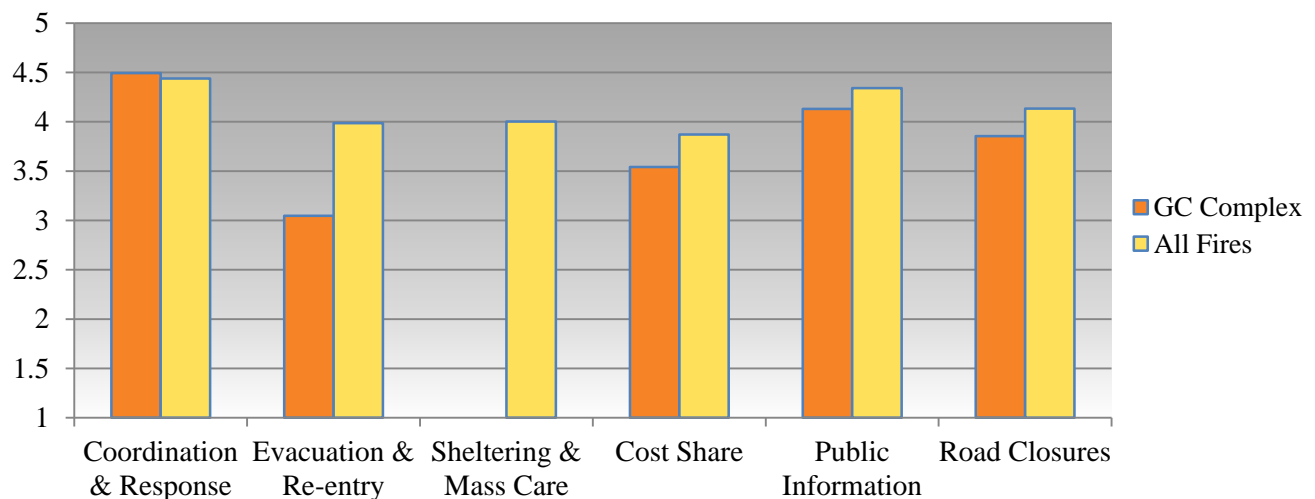
**Network Performance: How did things go on the GC Complex?**

Figure 1 shows network performance ratings for the GC Complex in comparison with the average across all twenty-two fires in our sample. Coordination and fire response scores were slightly higher than the regional average for coordination and fire response. GC Complex network performance in relation to evacuation and re-entry, cost share, public information, and road closures was lower than the regional average. Evacuation and re-entry was identified as the area with the most room for improvement on the GC Complex. In particular, respondents noted the need to improve the use of existing evacuation plans to coordinate evacuation strategies and make sure cooperating agencies have a plan in place to coordinate re-entry into evacuated areas (see details in Appendix A). According to respondents, there was no sheltering and mass care on the GC Complex, so we do not have data on these network performance indicators for this incident.

**KEY FINDINGS**

- Coordination and fire response was an area of particular success on the GC Complex
- Evacuation and re-entry was identified as a particular area for improvement on the GC Complex

**Figure 1. Average Network Performance by Activity: GC Complex**



## 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 GC Complex 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 Watts’ Type II IMT on the GC Complex ranged from 0.7 to 1.4 indicating, in general, a little room for improvement. The team was rated equal to or better than the regional average in 16 of 19 areas during the GC Complex.

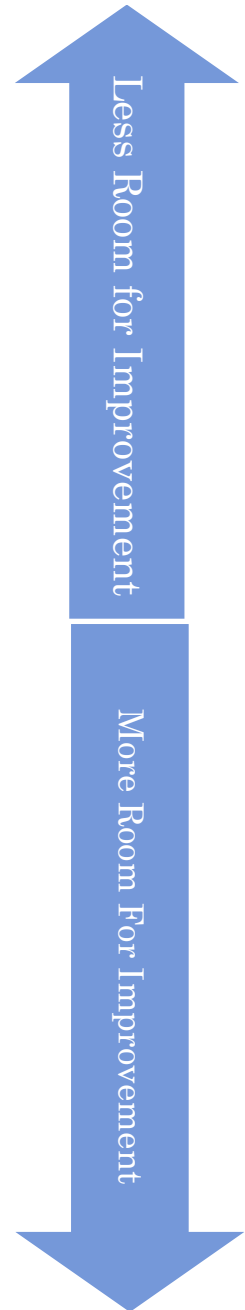
Responses indicated that Watts’ IMT demonstrated particular strengths in not overstepping their authority, sharing credit with local agencies and acknowledging cooperation. Relative to other areas, the team was rated as having more room for improvement in how quickly they were able to identify key local players they needed to communicate with and obtain local context to inform their operations. The Team’s sensitivity to the local community and political climate was also rated as having more room for improvement. Greatest strengths and areas for improvement for the incident management team on the GC Complex are highlighted in the IMT Key Findings box.

### KEY FINDINGS

- On average, Watts’ Type II IMT was rated more positively than the regional average in 16 out of 19 areas during the GC Complex
- IMT strengths:
  - staying in their lane and not over-stepping their delegation of authority
  - sharing credit with local agencies
  - acknowledging cooperation
- Areas rated as having relatively more room for improvement:
  - being sensitive to local community culture and political climate
  - obtaining local context to inform operations
  - quickly identifying and communicating with key local players

**TABLE 1. GC Complex Incident Management Team Room for Improvement**

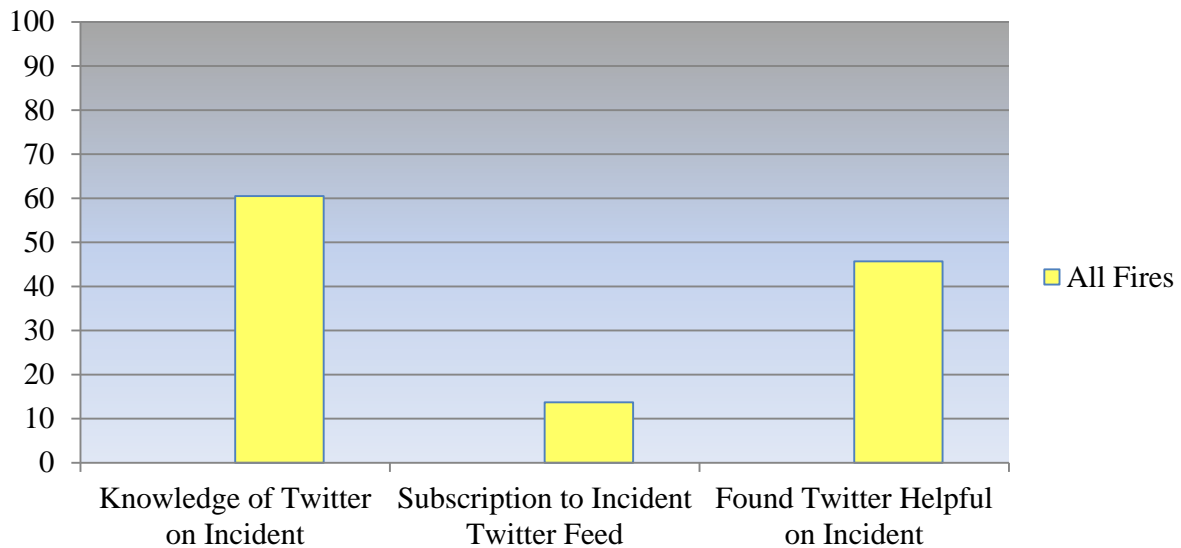
<b>Area for improvement in working with Host Unit(s) and local cooperators</b>	<b>22 Incident Average Room for Improvement (0-4)</b>	<b>GC Complex Average Room for Improvement (0-4)</b>
Staying in their lane and not over-stepping their delegation of authority	1	0.7
Sharing credit with your agency	1	0.7
Acknowledging cooperation	1	0.7
Using the incident as a training opportunity to build local capacity	1.2	0.8
Being helpful to cooperating agencies	1.1	0.9
Serving as a positive ambassador in interactions with the local community	1	1
Being flexible in adapting their fire management strategy to account for local preferences	1.2	1
Clarifying roles and responsibilities	1.2	1.1
Including your agency in the dissemination of vital information during the incident	1.2	1.1
Valuing your agency's input	1.2	1.1
Getting your agency information you needed to be effective	1.2	1.1
Valuing local knowledge and local input	1.2	1.1
Incorporating information about local values at risk (e.g., biological, archeological, cultural, recreational) into the management of the fire	1.3	1.2
Being accessible to you	1	1.2
Seeking to understand organizational culture, values, and capacities of your agency	1.2	1.2
Engaging affected jurisdictions in planning and decision making from the beginning	1.3	1.2
Rapidly identifying key local players they needed to be communicating with during the incident	1.2	1.3
Obtaining local context (e.g., burn scars, trail systems, local weather patterns) to inform their operations	1.3	1.4
Being sensitive to local community culture and political climate	1.25	1.4



## 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 the twenty-one fires in our sample that reported on social media. We do not have Twitter data for GC Complex. According to the official GC Complex Fire Narrative, Facebook and Twitter were not used by fire information on the incident, but photos were placed on Flickr and Blogspot. General Twitter use is shown below.

**Figure 2. Percent Social Media Use and Utility on 21 Summer 2013 Fires**



### KEY FINDINGS

- Across all fires in our study approximately 60% of survey respondents reported knowledge of Twitter on their incident
- Across all fires in our study, approximately 15% of respondents reported subscribing to a Twitter feed on their incident
- Across all fires in our study, approximately 45% of respondents reported they found Twitter helpful on their incident



## APPENDIX A. Network Performance: GC Complex

Areas of Network Performance	22 Incident Average Level of Agreement (1-5)	GC Complex Average Level of Agreement (1-5)
<b>Coordination &amp; Fire Response</b>		
A coordinated set of fire management objectives were agreed upon among all affected jurisdictions	4.29	4.25
All concerned jurisdictions prioritized maintaining good communication across agencies	4.21	3.84
Credit for success and effort was shared among agencies during public meetings and media events	4.37	4.47
There was a general willingness across agencies to offer assistance to other agencies or jurisdictions	4.48	4.63
“Borrowed resources” were released in a timely fashion to minimize burden on the lending agency	4.38	4.31
Community values at risk from wildfire were readily identified	4.64	4.58
Efforts to protect community values were appropriate given available resources and risks to firefighter safety	4.59	4.55
The overall strategy taken in managing this fire was appropriate	4.40	4.42
Local resources were incorporated into the incident management operations	4.50	4.57
<b>Evacuation Performance</b>		
Cooperating agencies were able to use existing evacuation plans to quickly establish a coordinated evacuation strategy	3.82	2.78
Residents received timely notification of evacuation status using clear, pre-established language to distinguish between an evacuation warning and an evacuation notice	4.03	3.31
Evacuations were executed in a timely and orderly fashion	4.15	3.73
Cooperating agencies had a prepared plan for how re-entry into evacuated areas would be coordinated	4.05	2.71
Trigger points for when evacuated areas would be opened for re-entry were clearly communicated to the public	3.88	3.25
Re-entry was carried out in an organized and orderly fashion	4.15	3.50
<b>Sheltering &amp; Mass Care</b>		
Adequate sheltering options were prepared to house evacuees	4.16	NA
Sheltering options were clearly communicated to evacuees	4.01	NA
Donations for evacuees were well-coordinated	3.74	NA
Auxiliary care needs of evacuees (e.g., food, water, clothing, transportation, spiritual or mental health assistance) were adequately provided for	4.05	NA
Adequate sheltering options were made available to evacuate pets and livestock	3.88	NA
<b>Cost Share Performance</b>		
We used pre-agreed frameworks/principles to expedite cost share agreements	3.80	3.86
The process through which cost share was decided upon was fair	3.86	3.38
The resulting cost share agreement was fair	3.96	3.57

**APPENDIX A. Network Performance: GC Complex (continued)**

<b>Areas of Network Performance</b>	<b>22 Incident Average Level of Agreement (1-5)</b>	<b>GC Complex Average Level of Agreement (1-5)</b>
<b>Public Information Performance</b>		
Public information was coordinated among cooperating agencies to ensure continuity of the message	4.35	4.25
Local resources were leveraged to ensure timely dissemination of public information	4.32	4.12
Social media was used effectively to provide timely public updates concerning the status of the fire	4.16	4.00
A system for communication with the media was put in place to ensure timely dissemination of public information	4.42	4.31
<b>Road Closure Performance</b>		
All cooperating and fire management agencies maintained a timely awareness of the status of road closures	4.25	4.00
Trigger points for making decisions about road closures were proactively communicated to the local community	4.05	3.50
A consistent message was provided to the public about the status of road closures	4.11	4.00

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