How Emergency Managers & Broadcast Meteorologists Receive, Use & Communicate Wildfire Forecasts & Alerts

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Study Motivation

• Two destructive fires occurred in the area of the Norman, OK NWS Weather Forecast Office (WFO)
  o “Simpson Road Fire” north the Oklahoma City, OK metro area (March 31, 2023)
  o “Route 66 Fire” near Weatherford, OK (April 4, 2023)
• Fire Warnings were issued for both fires using a novel “IWT Fire Warning procedure” developed at WFO Norman to help warn and evacuate the public
• Questions remained about how fire weather information was received by the public, broadcast meteorologists and other emergency managers, and what type of response(s) occurred:
  o What was happening on the ground?
  o What was being communicated?
  o What kinds of actions were taken?

Surveys

Researchers developed two (2) surveys to better understand emergency managers’ and broadcast meteorologists’ use of fire weather forecast information/products:
• Deployed in fall/winter of 2023/2024 (broadcast meteorologist survey still ongoing)
• Pilot area: Oklahoma and north Texas
• Many quantitative questions, three qualitative questions (EM survey):
  ▪ Thematic analysis conducted on qualitative answers
  ▪ Inductive coding used to form general themes

Emergency Manager Survey Topics
• Jurisdiction information
• Fire weather forecasting sources
• Active wildfire operations
• NWS fire weather products
• 2023 Oklahoma wildfires

Broadcast Meteorologist Survey Topics
• Wildfire risk regarding television market
• NWS fire weather products
• Usefulness of fire weather products for communication on television
• Demographics

Results - Emergency Managers

<table>
<thead>
<tr>
<th>Total Responses</th>
<th>46</th>
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<tbody>
<tr>
<td>Jurisdiction Type</td>
<td>22:1 County: 20 City: 20 Tribal: 5 Other: 3</td>
</tr>
<tr>
<td>EM Office Organization</td>
<td>Standalone Agency: 34 Part of Fire Dept: 4 Part of Law Enforcement: 1 Other: 7</td>
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<tr>
<td>Local WFO (EM) may receive more than one WFO</td>
<td>Norman: 36 Tulsa: 11 Amarillo: 3 Shreveport: 1</td>
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• What are some actions that you or your jurisdiction typically take in preparation for potential wildfires based on forecast information?
• What kind of actions might a Fire Weather Watch prompt for your jurisdiction?
• What kind of actions might a Red Flag Warning prompt for your jurisdiction?

General themes

Four categories of preparation
• Alerting contacts (fire departments & chiefs, city, county, state & tribal entities)
  ▪ Using multiple modes (email, pager, phone call, Slack, text group, virtual call like Zoom)
• Assessing staffing (EOC, dispatchers, volunteers, spotters)
• Checking and readying resources (initiating WAR days, road equipment, water tankers, aircraft)
• Maintaining situational awareness (field reports, weather conditions)

Communication with the public
• Public is most actively engaged once a Fire Weather Watch and/or a Red Flag Warning is issued
• Primary modes of informing the public include:
  ▪ Social media, mass notification systems, local media (also mentioned - billboards and red flags)

Future Work

• Collect additional data from broadcast meteorologists and conduct full analysis
• Conduct potential follow up interviews with emergency managers and broadcasters
• Expand geographic extent with future iterations of the survey