Camp Fire
Search & Recovery Operation

- Fire Overview
- Sheriff Search & Rescue
- FEMA / OES US&R Teams
- US&R Operations
- Data Collection
- GIS Products
- US National Grid
- Lessons Learned
Camp Fire Overview

• The fire started at sunrise on Thursday, November 8, 2018, and was first reported at 06:29 hours
• 76 Acres per minute / 1+ Football Field per second
• Burned area: 153,336 acres
• Most destructive wildfire in California history
• Largest SAR Operation in California history
• Over 21,000 structures destroyed
• Approximately 17,000 livable structures
• Another 4,000 commercial and other structures
• *86 confirmed fatalities
"We don’t normally have a process to deal with many unaccounted-for individuals"

-Butte County Sherriff-Coroner: Korey Honea
California does not have a State Coroner or Medical Examiner.
A “Catastrophic Mass Fatality” event is one in which the loss of life overwhelms the state’s coroner mutual aid system and requires extraordinary support from the state, federal, and private resources.

Primary responsibility for the investigation, recovery, and management of human remains resides within the authority of the local coroner or medical examiner.
Sheriff Search & Rescue (SAR)

- Volunteers
- Search for stranded, lost or injured persons
- Activated during natural disasters
- Organization Components:
  - Search Units
  - Plans Section
  - K-9 Units
  - Coroners & Anthropologists
  - Communications Unit
  - Logistics Unit
  - Medical Unit
SAR Priority Searches

• **TUBBS Fire 2017:**
  - Priority 1: High Probability

*Only Priority 1 searches completed*

• **Camp Fire 2018:**
  - Priority 1: High Probability
  - Priority 2: Moderate Probability
  - Priority 3: Low Probability
• Works for small area search
• Web based with offline option
• Search Operations
• Search Planning
• Post Operation Reports
• Interfaces with google maps
• Manage & Edit GPS Data
SARTopo & Data Collection
5110 Pentz Rd (Seg AC, # 2)

-121.5732, 39.7295

Plumas Co reported already searched today
5471 S LIBBY RD (Seg AB, # 1)

Note: No unit # provided; marker on map is NOT exact location

START DATE: 11/30
Lunch Break: 1:30 - 2:40
STOP: 16:08

UTM:

SEARCH DETAILS:
- DECEASED Dog, Peacock MAP for location. On Spring FORD of Morey Home
- TASK IS TO SEARCH Whole PARK
- TEAM ECO NO 2 STARTS LONG SEARCH AT DETECT OF PARK AT 9:30 OR 10:30

Human Remains Found at 12:36
UTM of 105 062 012.05
Remains 4400.500

Remains Address: 5471 S. LIBBY RD #33
Remains Found By PEACOCK

- LIVE Cat Found (SEE Map)
  Live Cat #1 FOUND AT 13:10
  Black, No Tail
  White Markings on Face, Animal Control Notified

- LIVE Cat #2 Found (SEE MAP), Trapped
  In Swamp Cooler Cat was freed by FEE FAL

Orange Highlight Denotes ALL SEARCHED Units/Addresses
Red Highlight Denotes #2 Live Cat Found in Swamp Cooler

NOT SEARCHED

Human Remains Found, 1 person

#1 LIVE Cat #2 Found at 13:10
Evacuation Zones and Repopulation

- Sherriff #1 Priority: Repopulation
- Search areas based off evacuation zones
- Repopulation data being collected in SCOUT
Montecito Mudslides
"You don't see what's going on until you come here, and what we saw at Pleasure, what a name right now... but what we just saw we just left Pleasure, or Paradise."

- President Trump
Rescue Group

- Assigned 11/15/18
- 5812A was assigned to the Search and Rescue effort
- Primary Mission: Assist Echo Group in Paradise
- Established a system for documentation
Zone Parcel Maps
Early Data Collection

MAP CODING

X = Burned down w/ no signs of victims
H = Roofs/walls fell in & cannot see if victims are in building
\[=\text{Unburned locked doors}\]
\[=\text{Confident no victims}\]

\[\text{Need heavy equipment to search building}\]
• 28 National Teams
• 8 Teams in California
OES California Regional US&R Task Forces

- 12 Total in California
- A Regional US&R Task Force includes 29 specially trained personnel.
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Resource #</td>
<td>People</td>
<td>Resource #</td>
<td>People</td>
</tr>
<tr>
<td>USAR TASK FORCE</td>
<td>9</td>
<td>278</td>
<td>9</td>
<td>278</td>
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<tr>
<td>OES STA/TF</td>
<td>14</td>
<td>259</td>
<td>14</td>
<td>259</td>
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<td>CAL FIRE STC</td>
<td>2</td>
<td>42</td>
<td>2</td>
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<td>CAL FIRE OVERHEAD</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>BUTTE COUNTY FIRE TF</td>
<td>2</td>
<td>32</td>
<td>2</td>
<td>32</td>
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<tr>
<td>Forest Service Hand Crew</td>
<td>1</td>
<td>17</td>
<td>1</td>
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<tr>
<td>Private Heavy Equipment</td>
<td>13</td>
<td>13</td>
<td>13</td>
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<tr>
<td>SAR Volunteers</td>
<td>124</td>
<td>78</td>
<td>-</td>
<td>91</td>
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<tr>
<td>National Guard</td>
<td>106</td>
<td>126</td>
<td>126</td>
<td>126</td>
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<tr>
<td>Anthropologist +</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>18</td>
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<tr>
<td>TOTAL</td>
<td>885</td>
<td>859</td>
<td>845</td>
<td></td>
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</tbody>
</table>
Data Collection Reset

- CA-TF3
- CA-TF4
- CA-TF6
- CA-TF8
- RTF-4
- RTF-5
- RTF-6
- RTF-10
- RTF-12
- 4816A
- FOBS
## Search Icons, Symbol Name, and Symbol Description

<table>
<thead>
<tr>
<th>Number</th>
<th>Symbol</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;01</td>
<td><img src="image1.png" alt="Green Diamond" /></td>
<td>Structure No Damage</td>
<td>Low Risk, low probability of further collapse</td>
</tr>
<tr>
<td>&amp;02</td>
<td><img src="image2.png" alt="Yellow Square" /></td>
<td>Structure Damaged</td>
<td>Medium Risk, structure is moderately damaged</td>
</tr>
<tr>
<td>&amp;03</td>
<td><img src="image3.png" alt="Orange Square" /></td>
<td>Structure Failed</td>
<td>High Risk, may be subject to sudden collapse</td>
</tr>
<tr>
<td>&amp;04</td>
<td><img src="image4.png" alt="Red Diamond" /></td>
<td>Structure Destroyed</td>
<td>Complete destruction of structure</td>
</tr>
</tbody>
</table>

### Search Type
- **Targeted Search**
- **Rapid Recon (Outline)**
- **Primary Search**
- **Secondary Search**
- **Secondary Search**

**Custom Symbols Quick Reference**

- **Search Specifications:**
  - Mission-specific placeholders to be determined.
  - Example: abandoned vehicle, commercial structure, evidence.
Task Force Briefings
Damage Inspection Data

13,972 residences, 528 commercial and 4,293 other buildings
<table>
<thead>
<tr>
<th>Primary Search</th>
<th>Structure Damaged, Primary Search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Search</td>
<td>Structure Damaged, Secondary Search</td>
</tr>
<tr>
<td>Structure No Damage, Not Searched</td>
<td>Structure Failed</td>
</tr>
<tr>
<td>Structure No Damage, Primary Search</td>
<td>Structure Destroyed, Not Searched</td>
</tr>
<tr>
<td>Structure Damaged, Not Searched</td>
<td>Structure Destroyed, Primary Search</td>
</tr>
</tbody>
</table>
Position Formats

FEMA US&R Standard

Used by Fire & Aircraft

Used by Sheriff SAR
US National Grid

• Functionally, it is the same system that was created in 1947, Military Grid Reference System (MRGS). It’s been used by the military since 1949.

• An Alphanumeric Point reference system that has been overlaid on the Universal Transverse Mercator (UTM) numerical grid.

• Developed in 1999 and adopted as the Federal Standard in 2001

• 2015: Directive 092-5
U.S. National Grid

- Map products to Scale:
  - 1:2,500
  - 1:6,000
  - 1:24,000 - Index
Product: USNG Map Packets
Avenza Maps

• Most used mapping tool next to GPS (fire)
• Export and import data with connectivity
• Map Store
• Cost
• Setup
• Easy to use!
Avenza Maps
Task Force Debriefing & Data Processing
Tracking Remains
Human Remains Detection (HRD)
Remains Database

- Data received 11/26/18
- *Victim data only
- Request was for;
  - HRD- Canine
  - Victim remains
  - Animal remains
  - Unknown bones
Incomplete & Parcel Data

- Primary Search
- Secondary Search
- Incomplete Data
• Incomplete data Identified
• SAR Zone Maps modified to show incomplete data
• Crews to Seek and Confirm
• 11/25/18 was the last day for RTF and US&R Teams to Search
11/26/18 SAR Data Collection
**UNIT LOG CONT. (ICS 214)**

<table>
<thead>
<tr>
<th>TIME</th>
<th>MAJOR EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2 31' 45' 05' 29&quot;</td>
<td>13395 Jordan Hill - Passed wooded gate - 12' 52' 30' 27&quot; Road Blocker - Red vehicle stopped at lower lot. glow field at lower and upper lots</td>
</tr>
<tr>
<td>H1 37' 44' 02' 26&quot;</td>
<td>13233 A205 Location - signed on opposite side</td>
</tr>
<tr>
<td>H7 39' 47' 13' 34&quot;</td>
<td>4065 Wilderness - horse standing - door locked searched previously - outside?</td>
</tr>
<tr>
<td>H8 57' 15' 31</td>
<td>13362 Cowan Rd - searched previously</td>
</tr>
<tr>
<td>H9 57' 19' 30&quot;</td>
<td>13371 Cowan Rd - searched previously</td>
</tr>
</tbody>
</table>

1. Incident Name: U320 Big Bend Rd Trailer Park
2. Operational Period: Date From: 11/26/18 Date To: 11/27/18
3. Camp Law/Rescue Time From: 0700 Time To: 0700
Tactical Assault Kit (TAC)
Lessons Learned & Recommendations

• The Catastrophic Mass Fatality SOP needs to be revisited. *This process does not work for California.*
• Data Collection reciprocity for Fire and LE must exist
• Operations and the IMT Situation Unit must establish search criteria and data collection processes
• Clearly communicate with searchers using standardized terminology
• Define the roles for Urban Search teams and Wilderness SAR teams
Lessons Learned & Recommendations

• The Regional Task Forces must be working with the same symbol sets, if not the same exact equipment as the FEMA task forces

• USNG Map product to replace the IAP Map

• USNG Template for GSTOP

• Search Zones should relate to USNG map pages (100 Meter Grid)

• Training for GISS needs occur prior to disaster incidents.
Questions or Comments