

Incident Summary Page for the 100 Fires Project

Incident Name: Yarnell Hill Fire	Incident Date & Time: 06/30/2013 @ 16:45
Incident Location: West of Yarnell, Arizona	Incident Size: 7,660 acres
Type of resources involved: Local government Interagency Hotshot Crew	# of Fatalities/injuries: 19 fatalities
Reasons this fire was selected for the 100 Fires list:	
<ul style="list-style-type: none"> ➤ Fire made a notable impact within the wildland fire service ➤ 3 or more firefighter fatalities by entrapment 	
Conditions leading up to the event:	
<p>On Friday June 28, 2013 much of Yavapai County in Arizona including the Prescott National Forest and Arizona State Lands received significant lightning, starting several wildland fires. Late in the afternoon on June 28, the Yarnell Hill Fire started high on a ridge west from the town of Yarnell. The fire, which was under the jurisdiction of the Arizona State Forestry Division, started in a boulder field in steep terrain with limited vehicle access; it was about one-half acre in size that evening. Responders saw minimal fire activity or spread potential, and they had several safety concerns with putting firefighters on the hill overnight. In consideration of these and other factors, the Incident Commander prepared for full suppression on the following morning.</p> <p>On June 29 Single Engine Airtankers worked the fire until 11:00 when 13 personnel were transported to the fire (Arizona Department of Corrections Lewis Crew and helitack personnel). The fire was held until 16:00 when afternoon winds pushed it over containment lines and by late evening it was approximately 100 acres and moving northeast. The fire was staffed by 13 firefighters overnight.</p> <p>Early on June 30, a local Type 2 Incident Management Team was mobilized and two hotshot crews (Granite Mountain IHC and Blue Ridge IHC) were enroute along with a variety of other resources. In a briefing at 07:00, the incoming Granite Mountain IHC Superintendent accepted the role of Division Supervisor A. His assignment was to establish an anchor point at the heel of the fire with the Granite Mountain IHC. The Type 2 IMT assumed command, an action formally announced by radio at 10:22. The fire was estimated to be about 400-500 acres that morning.</p>	
Brief description of the event:	
<p>By 09:30 on June 30 the Granite Mountain IHC was hiking to the heel of the fire along a two-track road that led up to the point of origin. There they began their assignment to establish an anchor point at the heel. A squad was assigned to cold trail the west flank. The anchor was to tie into the two-track road and use it for indirect line on the east flank. A firing operation was initiated at approximately 11:00 along the east flank. Soon after, Air Attack directed two Single Engine Airtankers to drop directly on the burnout; frustrating Division A. This action forced Granite Mountain to begin constructing direct line from the two-track road in rugged terrain and heavy brush.</p> <p>About 12:00 the Blue Ridge IHC overhead drove up in their UTV to meet with Division A and Granite Mountain IHC. The crews agreed to a plan of attack with Granite Mountain continuing work along the east flank. When the Blue Ridge overhead left the meeting they transported a Granite Mountain crewmember back down to the crew vehicles and dropped him off to act as a lookout. By 13:00 fire activity picked up as the fire spread north away from Division A. Evacuations were occurring in subdivisions adjacent to Peoples Valley, a community several miles to the north of Yarnell. Additionally, multiple aircraft were being utilized and radio traffic was non-stop. At 14:02 the Fire Behavior Analyst issued a weather update indicating approaching thunderstorm outflow winds of 35-45 mph. During this time Granite Mountain continued to work direct line near the heel of the fire. At 15:26 a second weather update was issued on the Tac 1 radio net indicating stronger outflow winds between 40-50 mph. About this same time the Granite Mountain lookout was forced from his location by the fire activity and was hastily evacuated from the area to the crew vehicles by the Blue Ridge Superintendent in his UTV. From there the Granite Mountain lookout and drivers from Blue Ridge drove the Granite Mountain crew vehicles to safety.</p> <p>By 16:00 it was evident to everyone on the fire that the direction of spread was beginning to shift due to the influence of the approaching thunderstorms. At this point in time, Granite Mountain was held up on the heel of the fire adjacent to previously burned fuels. (This is the location where the attached photo was taken). The Operations Section Chief checked with Division A to confirm if he received the weather update and inquire if he was in a "good spot." Division A affirmed the weather update and stated the winds were squirrely and he was working his way off the ridge. The Operations Chief then advised him to "<i>hunker and be safe.</i>"</p> <p>Less than 10 minutes later, the crew left their location and began hiking east toward Yarnell, downhill through unburned fuels in a direction they perceived as moving parallel with the fire's direction of spread. After telling Air Attack that they were moving down their escape route to a safety zone, there was little or no communication with the crew for almost 30 minutes until some urgent radio transmissions came from the crew at 16:37. They were in front of the fire coming up canyon at them and attempting to establish a</p>	

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deployment site with chainsaws and backfiring. This radio traffic from Granite Mountain led to some confused exchanges between the Air Attack and Operations as they tried to get a retardant drop in support of the crew. With the crew's location being unknown, the extreme wind and smoke conditions, and the short amount of time available to Air Attack these efforts were unsuccessful. In less than 30 minutes the fire had changed its direction of spread, swept through Yarnell, hooked around the unburned ridge between the crew and the fire, and overran their location.

Fire behavior factors that were present during the event:

Extreme drought (a Fuels & Fire Behavior Advisory had been issued for the region on June 16).
Old decadent brush fuels (approximately 50 years old).
Steep rugged terrain.
Record high temperature readings in the area.
Single digit relative humidity readings with poor nighttime recovery.
Early monsoon stage which generally produces drier thunderstorms.
Approaching line of thunderstorms.
Strong thunderstorm outflow winds.

Operational lessons available for learning from this incident:

Disengaging from one assignment and attempting to relocate and attack an established running fire during the Burning Period (from 13:00-18:00) requires extreme caution, especially when moving through unburned fuels.

It is important to maintain solid communication with adjacent forces and your supervisor.

Ensure lookouts have a continuous read on what the fire is doing; sometimes it only takes a few minutes for a fire to completely change in character.

Thunderstorm outflow winds can have a very unpredictable influence on fire spread.

Notable impact or historical significance for the wildland fire service from this incident:

There were three books written about this event as well as a Hollywood movie production. For better or worse, this event created a high degree of exposure for the wildland fire service with the public.

To this day, there is still significant controversy within the wildland fire service regarding the outcome of this incident. And it has created an on-going national level dialog regarding how we conduct investigations.

Links to more information on this incident:

<https://www.nwcg.gov/publications/training-courses/rt-130/case-studies/cs214>
<https://www.nwcg.gov/committee/6mfs/weekremembrance/wor-2022-day1>
<https://wildfirelessons.wordpress.com/2018/10/23/honor-the-fallen/>
https://wildfiretoday.com/?s=Yarnell&monthnum=&year=&states_provinces=&countries=&topics=
<https://wlfalwaysremember.net/2013/06/30/yarnell-hill-19/>
<https://www.yarnellhillfire revelations.com/>
<https://www.firelinefactors.com/resources>
<https://www.investigativemedia.com/yarnell-hill-fire-2/>

Books:

- *On the Burning Edge: A Fateful Fire and the Men Who Fought It* ~ by Kyle Dickman
- *Granite Mountain: the First Hand Account of a Tragic Wildfire* ~ by Brendan McDonough
- *The Fire Line: The Story of the Granite Mountain Hotshots* ~ by Fernanda Santos

Movie:

- [https://en.wikipedia.org/wiki/Only_the_Brave_\(2017_film\)](https://en.wikipedia.org/wiki/Only_the_Brave_(2017_film))

This summary page was proudly provided by:
Jim Cook & Kurt La Rue

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Granite Mountain IHC Memorial at the fatality site

Andrew Sterling Ashcraft
Robert E. Caldwell
Travis Clay Carter
Dustin James DeFord
Christopher A. MacKenzie

Eric S. Marsh
Grant Quinn McKee
Sean M. Misner
Scott Daniel Norris
Wade S. Parker

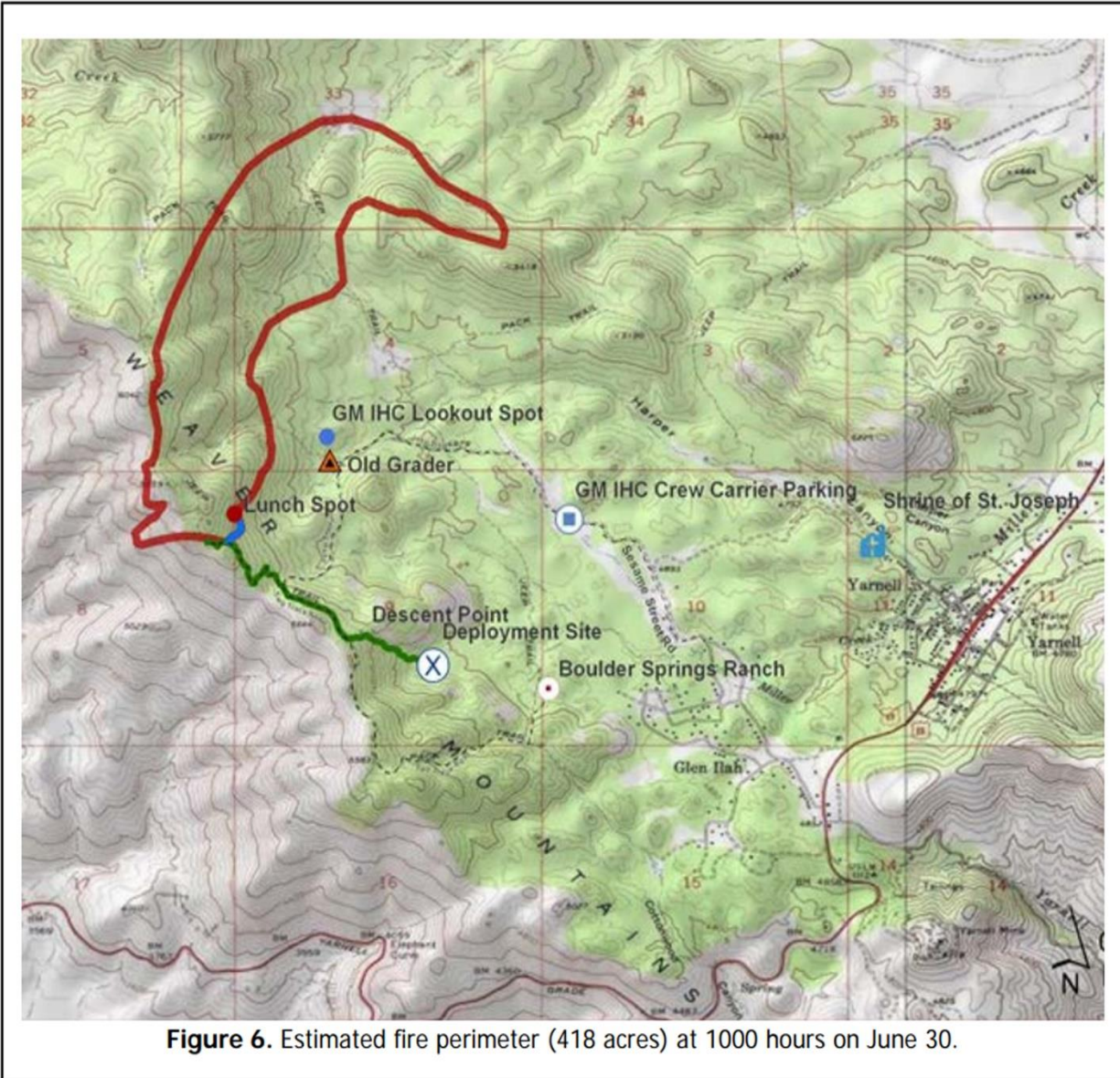
John J. Percin Jr.
Anthony M. Rose
Jesse James Steed
Joe B. Thurston
Travis Turbyfill

William Howard Warneke
Clayton Thomas Whitted
Kevin J. Woyjeck
Garret Zuppiger



Photo by Granite Mountain crewmember at approximately 16:00

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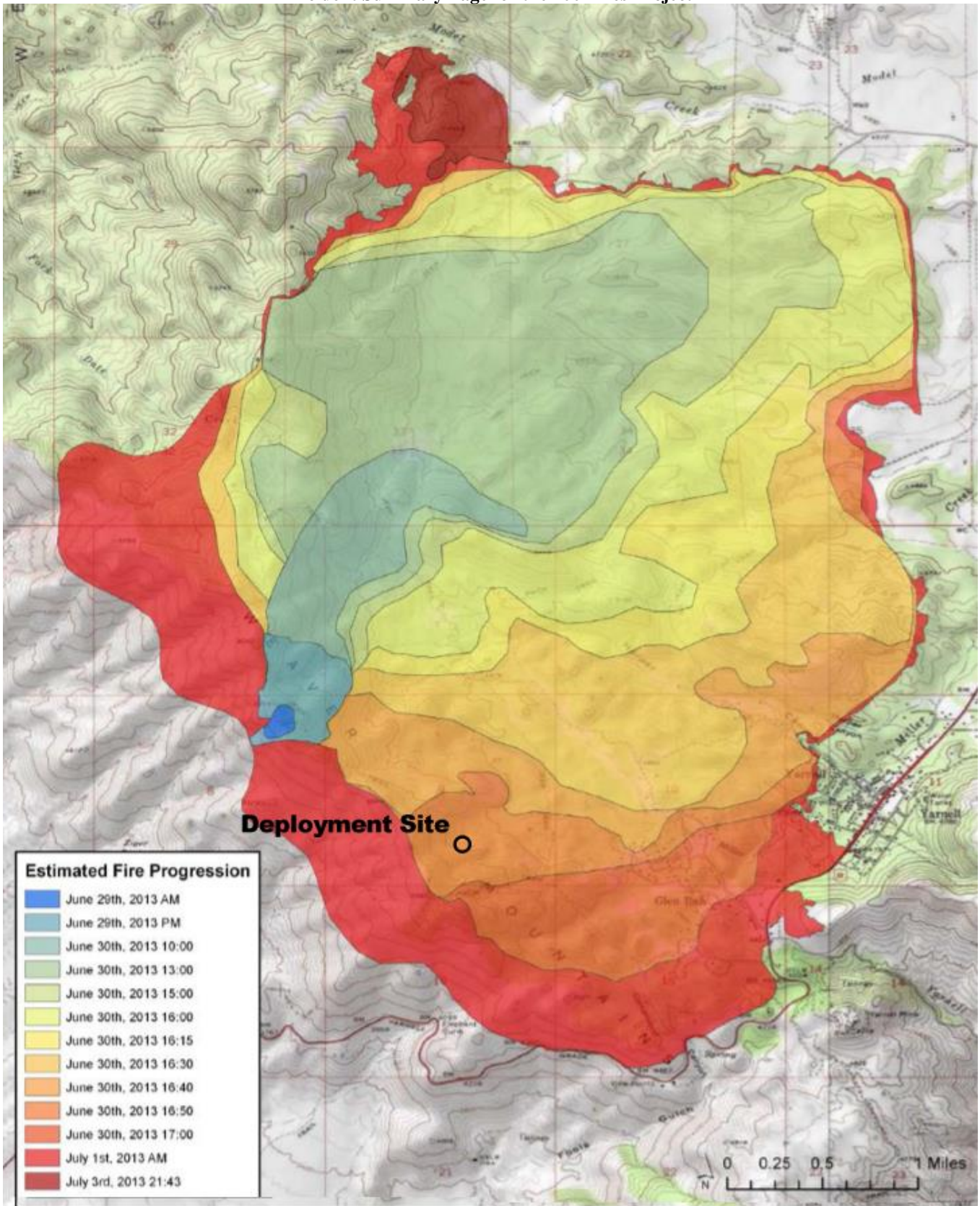


Figure 22. Yarnell Hill Fire Progression Map, June 29 through July 3, 2013.