Using Cameras to Monitor Stream Recovery Following a Wildfire at a High Elevation Site

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Using Cameras to Monitor Stream Recovery: A Case Study

Background – Mountain Yellow-legged Frog

- The Mountain Yellow-legged Frog (*Rana muscosa*) is California State and Federally listed as Endangered.
- Occurs in the San Gabriel, San Bernardino, and San Jacinto Mountains of southern California.
- Only 7 remaining populations with less than 300 adults.
- Highly aquatic.
- In conjunction with a 19 year USGS research program.

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Background – Wildfire

- Wildfires are a normal part of the southern California landscape.
- These wildfires are increasing in frequency and size in recent years.
- Streams
  - Fire
  - Rains
  - Creates sediment loads in streams
  - Over time, rains flush out sediments

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Cuddeback

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- This study took place in the San Jacinto Mountains.
- Mountain Fire burned in July 2013.
- Seven cameras were installed in 2014 and were removed in 2018. Six cameras installed in the burn footprint and one camera installed in a nearby non-burned area.
- Monitoring the effects of rainfall on the stream.

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Fire and post-fire process.

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Monitor with cameras.

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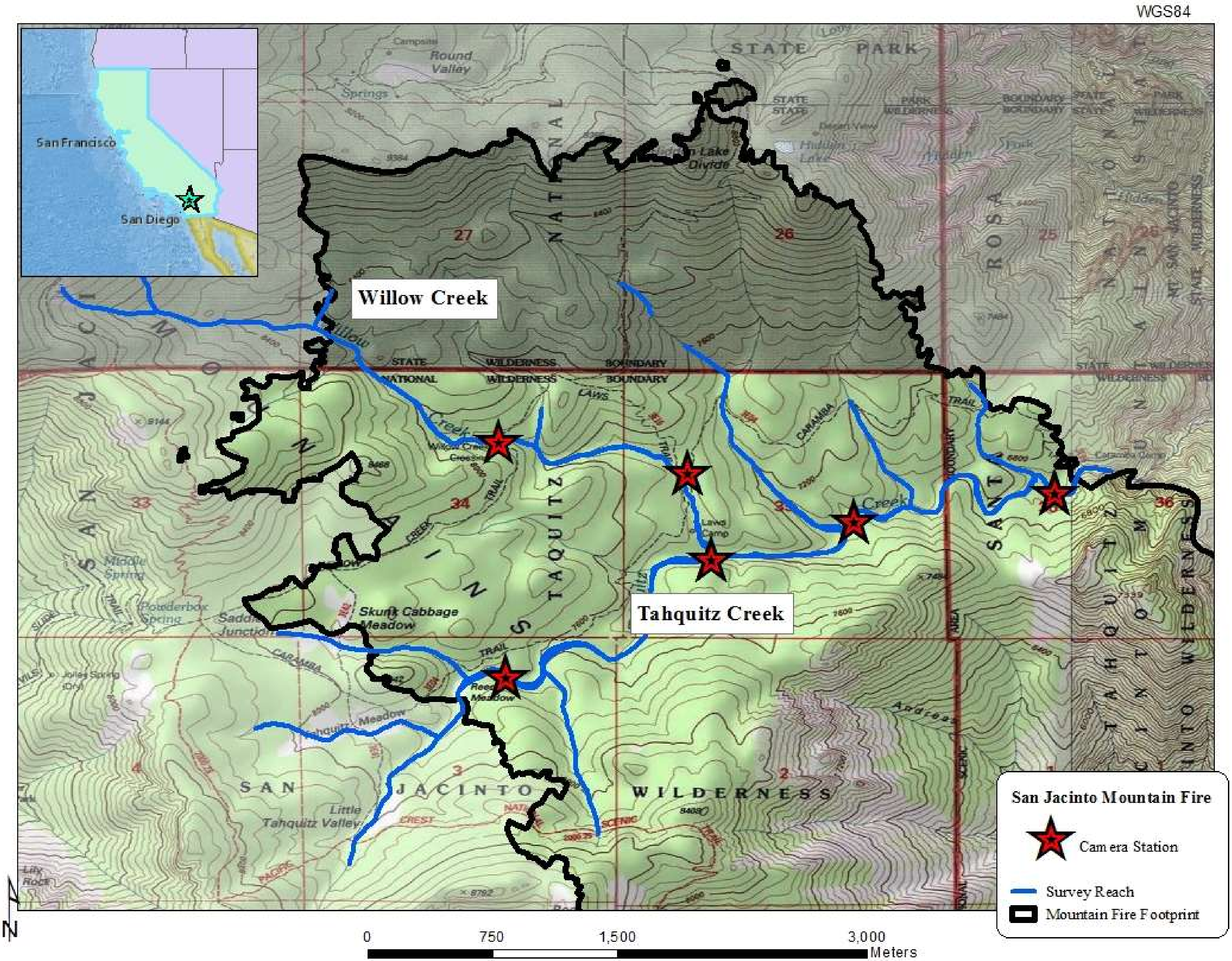
WGS84
San Francisco
San Diego
Willow Creek
Tahquitz Creek
STATE PARK
SAN JACINTO WILDERNESS
Skunk Cabbage Meadow
Little Tahquitz Valley
Round Valley
San Jacinto Mountain Fire
Camera Station
Survey Reach
Mountain Fire Footprint
0
750
1,500
3,000
Meters
N

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Methods

- Seven photo stations were set up in 2014.
- CuddeSafe® E series cameras.
  - Mounted to trees approximately two meters above the ground.
  - Programmed to take photos at one-hour intervals to document habitat changes over time.

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Results

- 207,844 pictures taken - 47,066 pictures scored.
- Captured many incidental species.
- We didn't get the results we were expecting due to low rainfall.

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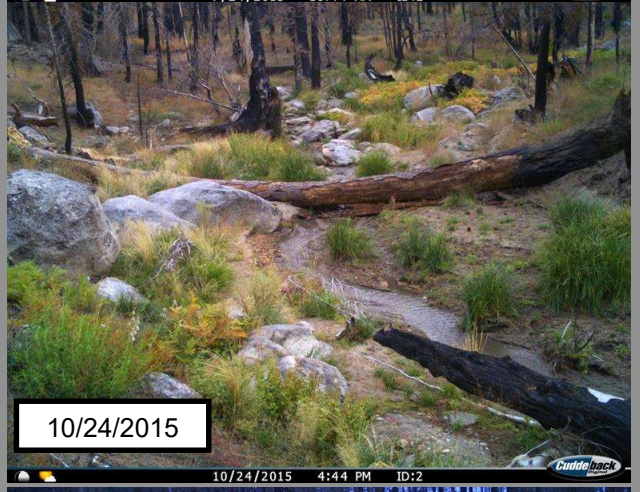
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8/28/2018

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Conclusions

- Useful for long term monitoring.
  - Fire
  - Vegetation
  - Restoration sites

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