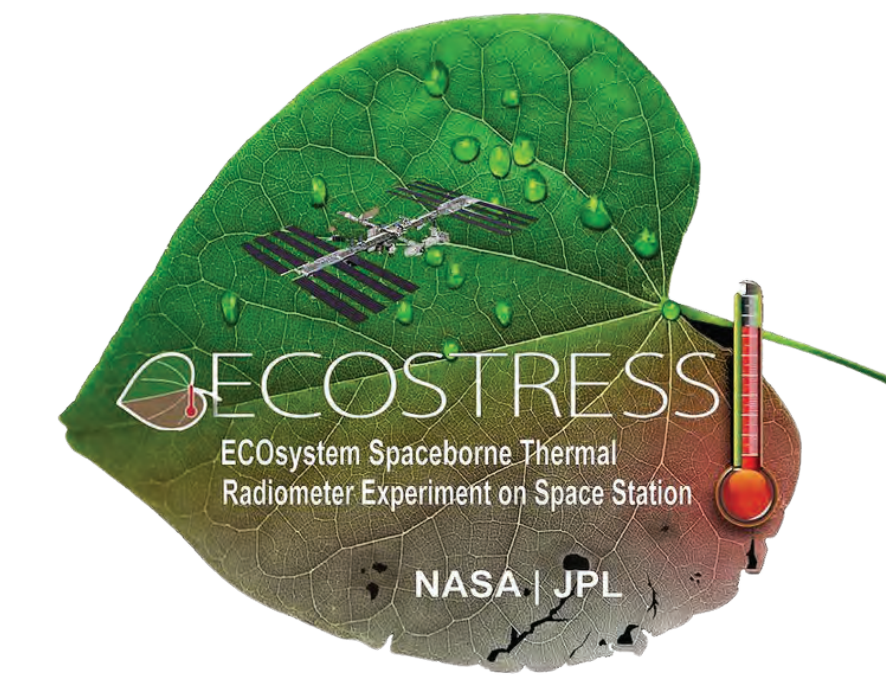


Visualizing California's 2024 Environmental Events with ECOSTRESS Data



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Goal

Understand what significant environmental events look like in ECOSTRESS data

Method

Create a data pipeline that can convert locations and time spans into interactive web visualization

Events

1. Park Fire

July 24 - September 30

California's 4th largest wildfire in history. 429,603 acres burned across Butte and Tehama Counties, destroying 709 structures.

2. July Heat Wave

July 1-15

Record-breaking temperatures across Central Valley. Fresno reached 115°F, with widespread temperatures exceeding 110°F.

3. September Heat Wave

September 4-10

Southern California experienced temperatures 10-20°F above normal. Heat-related emergency room visits doubled during the event.

4. October Drought

October 1-31

Drought conditions expanded across Central California, affecting 85.47% of the region with severe water stress.

5. Borel Fire

July 25 - August 31

Rapid wildfire spread through Sequoia National Forest during peak fire season conditions.

6. Line/Bridge/Airport Fires

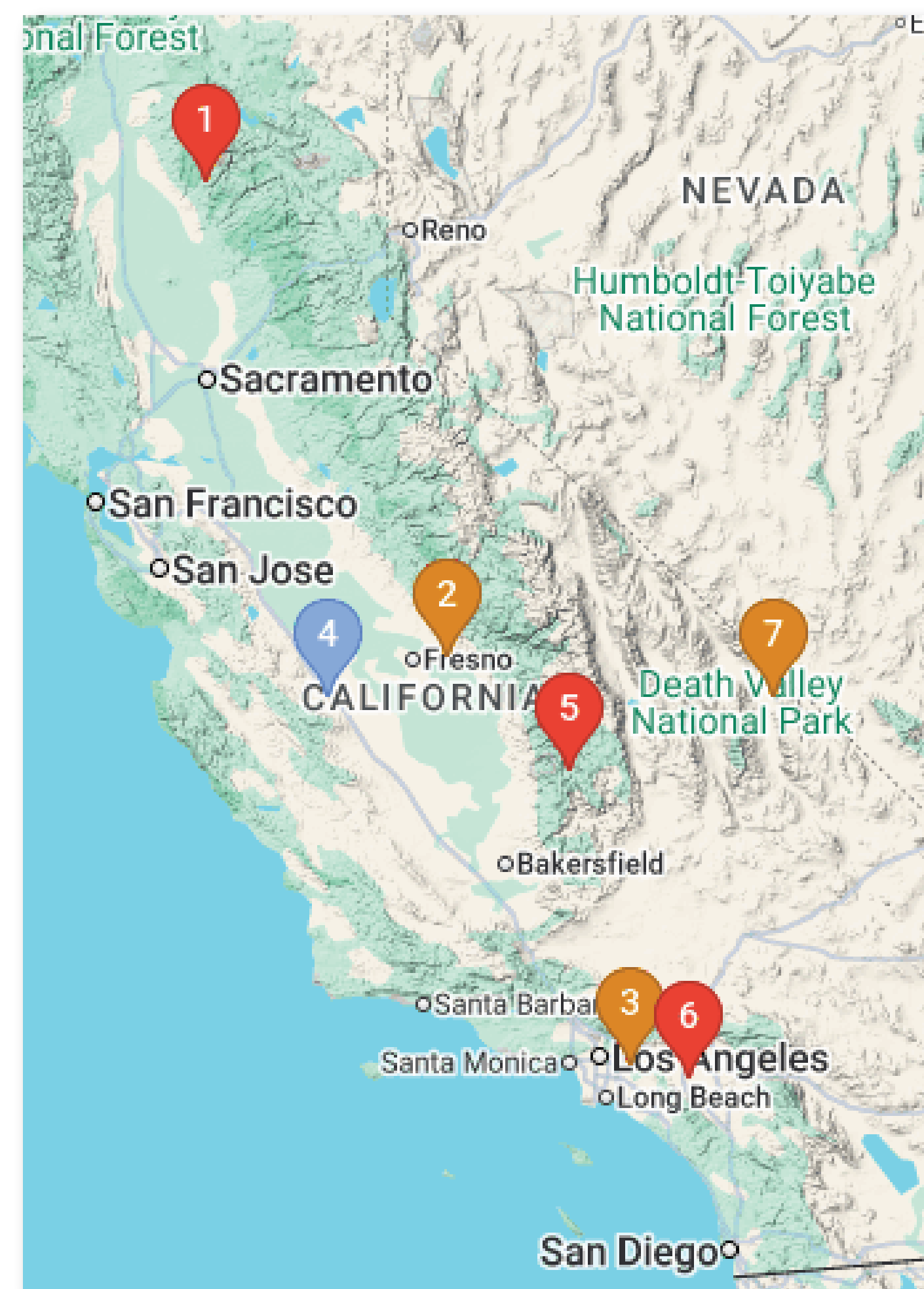
September 5-30

Multiple simultaneous wildfires in San Bernardino and Orange Counties during extreme heat period.

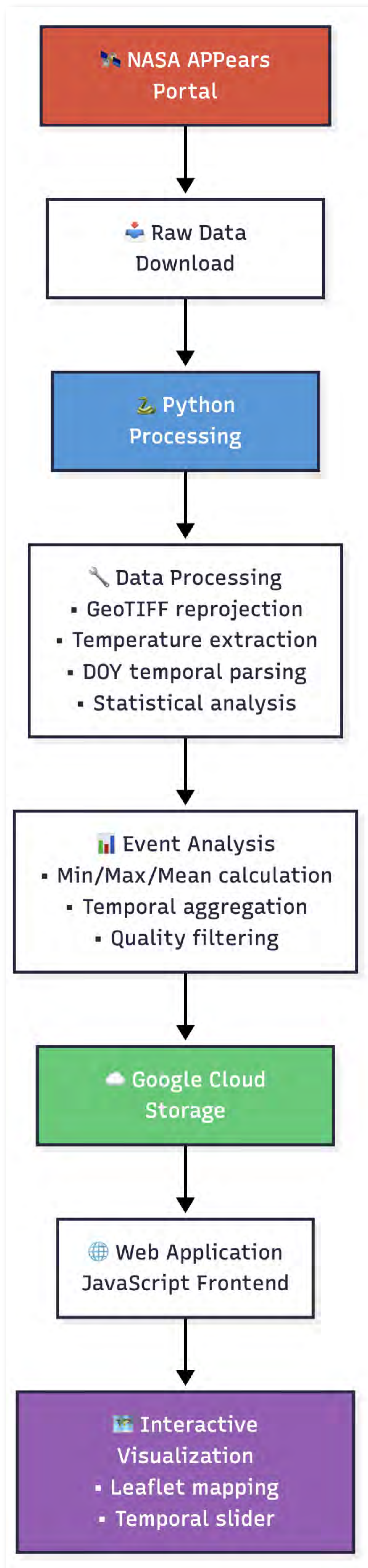
7. Death Valley Extreme Heat

July 5-10

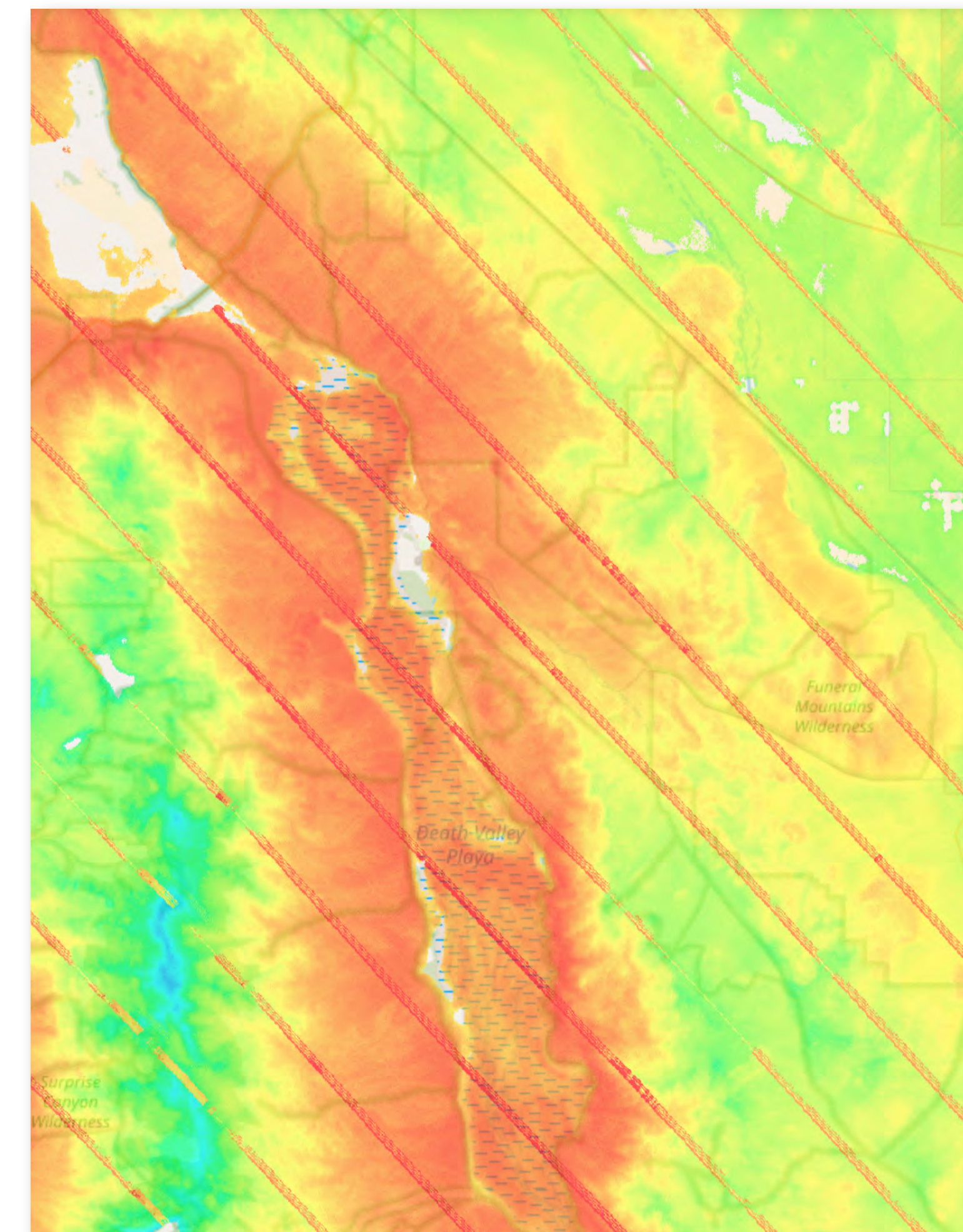
Temperatures approached 130°F, nearing world record levels in one of Earth's hottest locations.



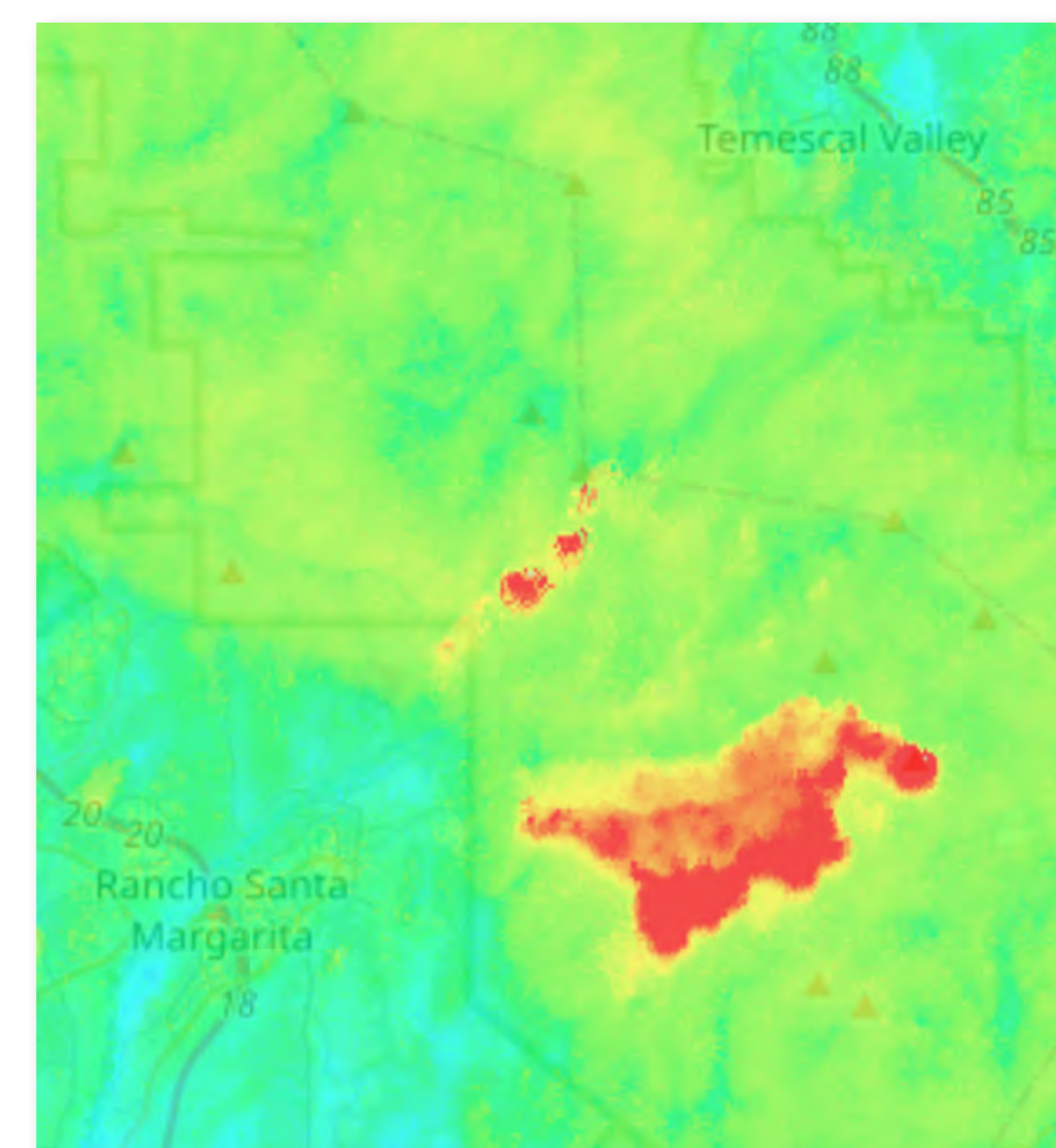
Flowchart



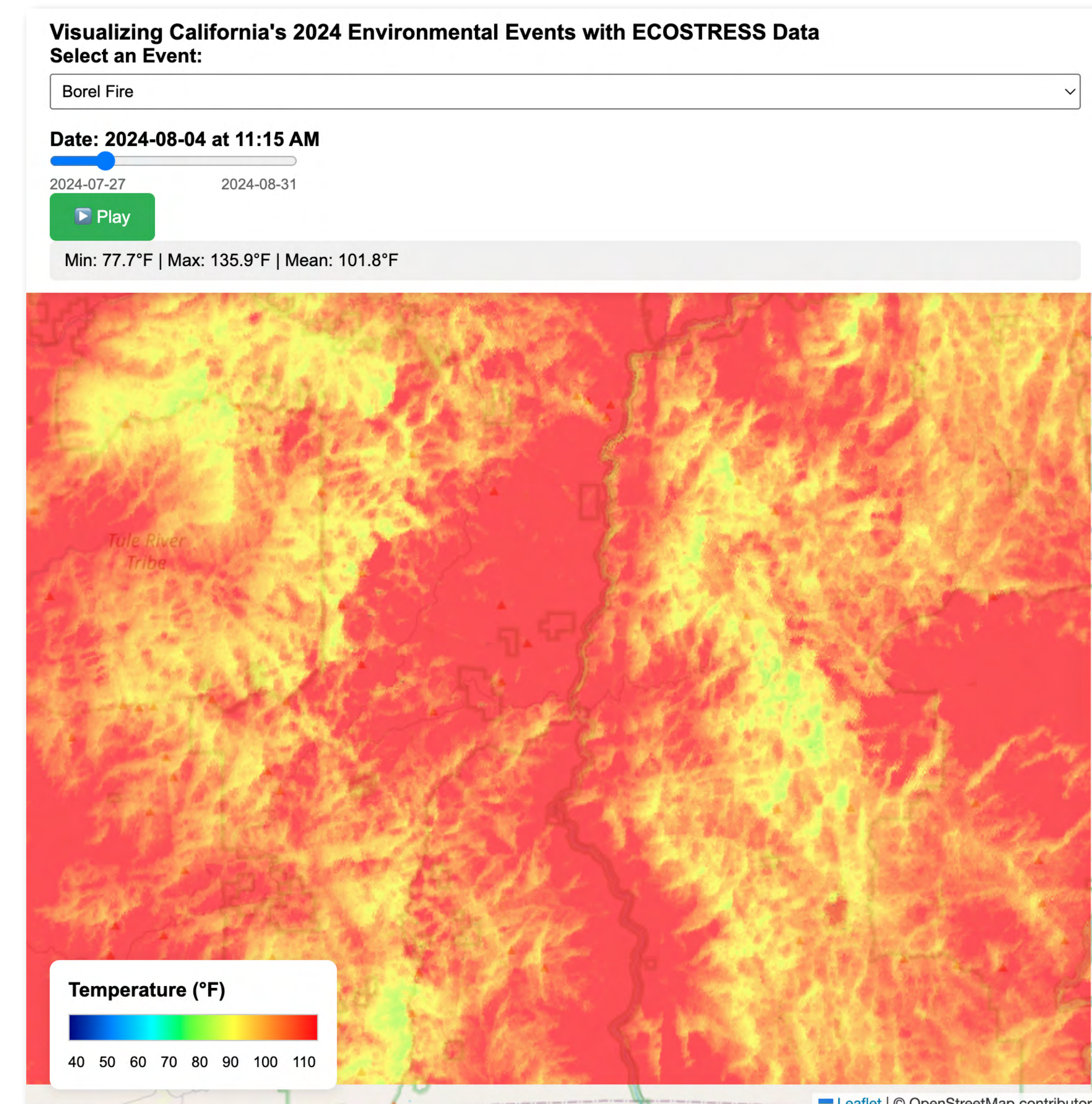
Death Valley Extreme Heat



Line/Bridge/Airport Fires



Screenshot



Challenges

- 1 ECOSTRESS passes over California at a different time each day
- 2 Data sizes are much larger compared to lower resolution MODIS satellite
- 3 Clouds often obscure covered regions

Results

- 1 Standardized interactive visualizations can quickly show what data ECOSTRESS has available for a specific region
- 2 Sets the stage for deeper exploration of specific events
- 3 Can be combined with MODIS data for multiresolution event analysis

In collaboration with Nidhi Vinod (UCLA), Dr. Joshua B. Fisher (Chapman University), Dr. Lawren Sack (UCLA)