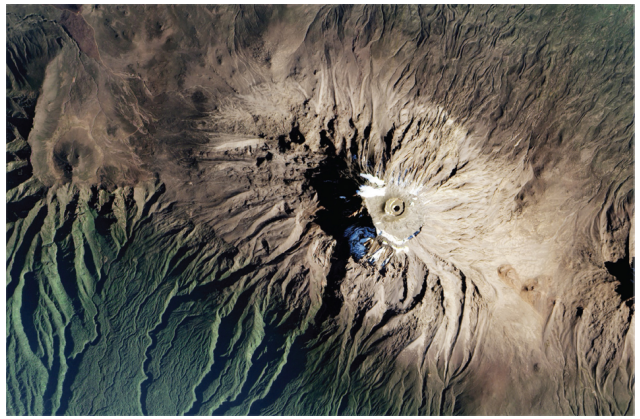
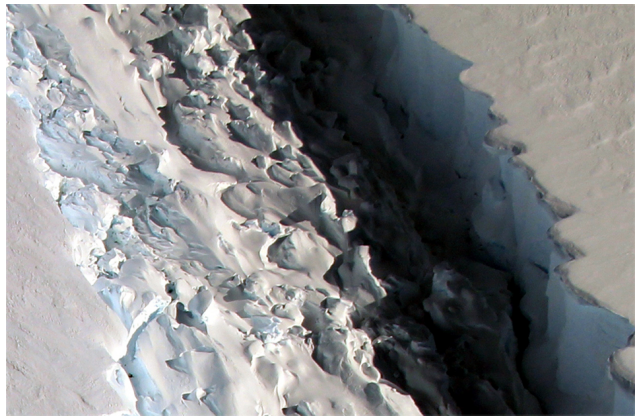
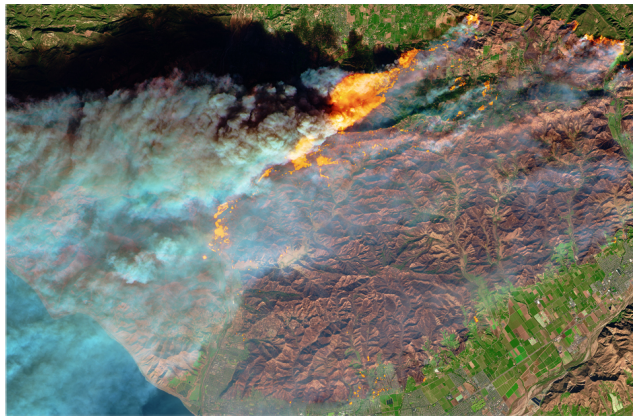
National Aeronautics and Space Administration

SCIENCE

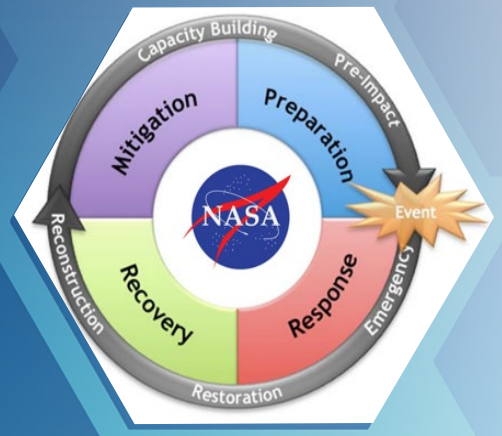





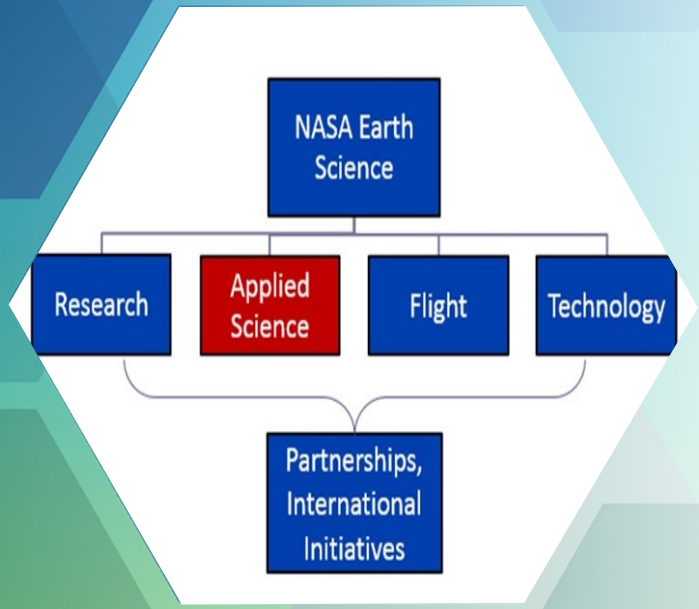
The NASA Disasters Mapping Portal
maps.disasters.nasa.gov

Jeremy Kirkendall
NASA Disasters Program

NASA Operating Missions

Approach and Principles of the Disasters Program





- *Utilizing the various NASA centers and their resources, a robust response program has been assembled to respond to various disasters worldwide*
  - *Meteorological (hurricanes, tornadoes)*
  - *Hydrological (heavy rain/flood)*
  - *Geophysical (earthquakes, volcanoes)*

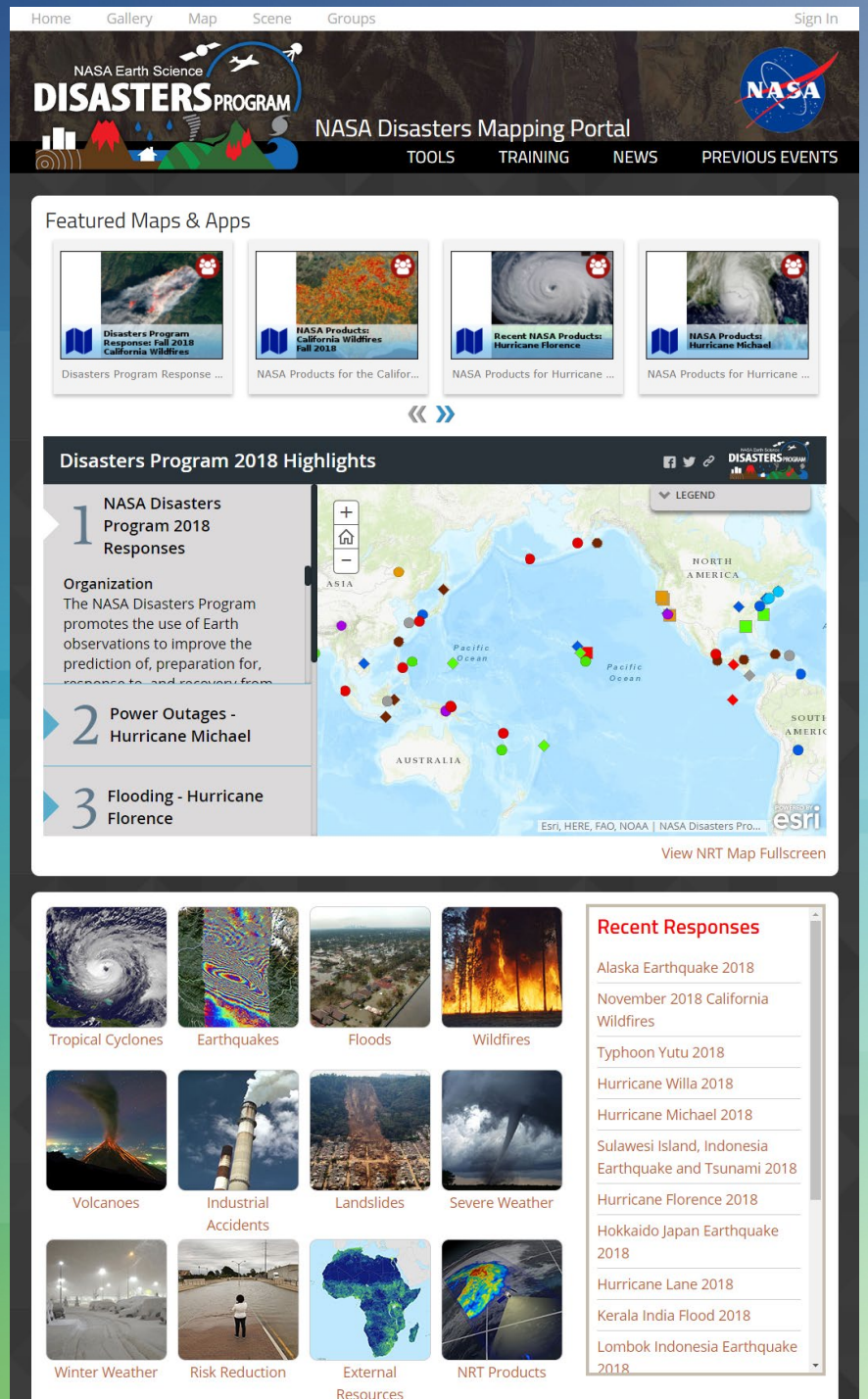
Assessment	Tier 1	Tier 2	Tier 3
Rapid Hazard Assessment Expected - Centers and program experts to contribute within scope of daily activity - Guidance to elevate to Tier response, direct to research or no action - Days *E.g.: media report*	**Response and Recovery Short Term and Best Effort** - Centers and programs respond as available with only minor impact to existing/on-going activities - Detailed assessment and products scaled to modest response - Weeks to Month(s) *E.g..: Napa Earthquake (2014), Chile Earthquake (2015), Oklahoma tornadoes, yearly floods*	**Significant Contributions Over Extended Period** - Contributions are considerable given continual assessment of size and scale of impact - Personnel relevant to disaster type (s) expected, tasked, and assigned to support - Data and products adapted into recovery - Weeks to Month(s) *E.g.: Nepal Earthquake (2015), Deep Horizon (2010), Eyjafjallajökull Eruption (2015)*	**Disaster is of major national importance** - All relevant personnel expected to review activities for level of support to the disaster and/or be on-call - Assets and personnel may specifically assigned and tasked for lengthy time period (Months into recovery). *E.g.: Super Storm Sandy (2012), Hurricane Katrina (2005), September 11, 2001 attacks*

What is the NASA Disasters Mapping Portal?

- The Portal takes data from NASA scientists related to disasters and puts it into a geospatial format to allow easy ingestion by emergency managers and the public.
- The goal is to bridge the gap between the science products and the people who can find the data useful to assist in disaster response and mitigation.
- All data is free and openly available without any login requirements.
- Every service has a REST endpoint making it possible to ingest into your own GIS
- The Portal has two types of products:
  - Event-based Products
  - Near Real Time Products

Portal Demo

Homepage


Home
Gallery
Map
Scene
Groups
Sign In
NASA Earth Science
DISASTERS PROGRAM
NASA Disasters Mapping Portal
TOOLS
TRAINING
NEWS
PREVIOUS EVENTS
Featured Maps & Apps
Disasters Program Response ...
NASA Products for the Califor...
NASA Products for Hurricane ...
NASA Products for Hurricane ...
Disasters Program 2018 Highlights
1 NASA Disasters Program 2018 Responses
Organization
The NASA Disasters Program promotes the use of Earth observations to improve the prediction of, preparation for,
2 Power Outages - Hurricane Michael
3 Flooding - Hurricane Florence
LEGEND
NORTH AMERICA
ASIA
AUSTRALIA
Pacific Ocean
Esri, HERE, FAO, NOAA | NASA Disasters Pro...
View NRT Map Fullscreen
Tropical Cyclones
Earthquakes
Floods
Wildfires
Volcanoes
Industrial Accidents
Landslides
Severe Weather
Winter Weather
Risk Reduction
External Resources
NRT Products
Recent Responses
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November 2018 California Wildfires
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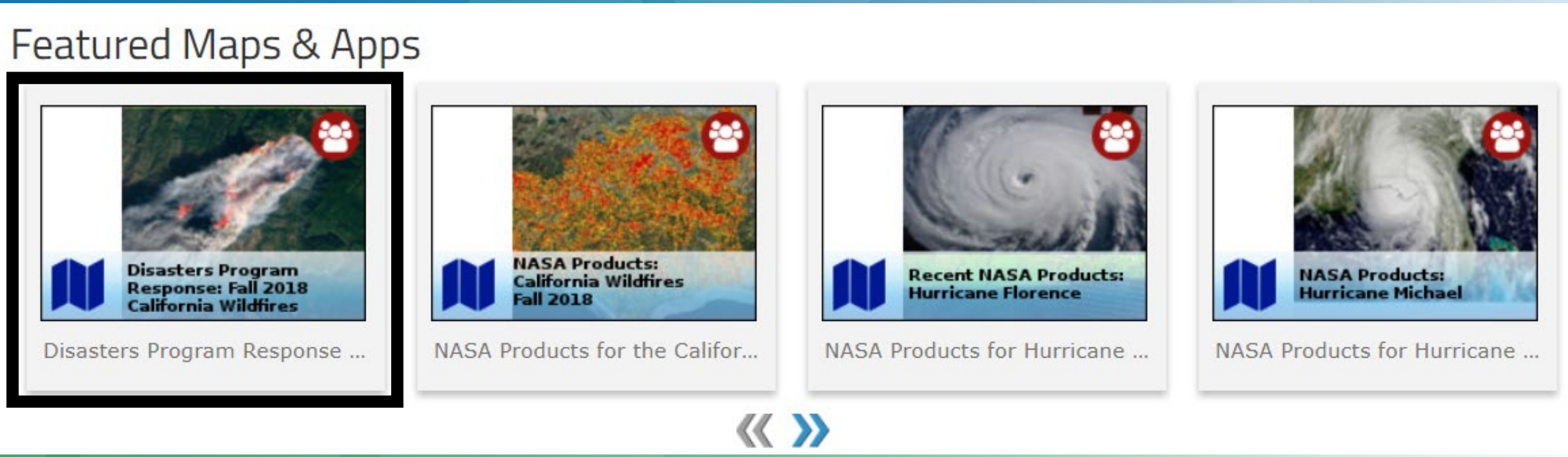
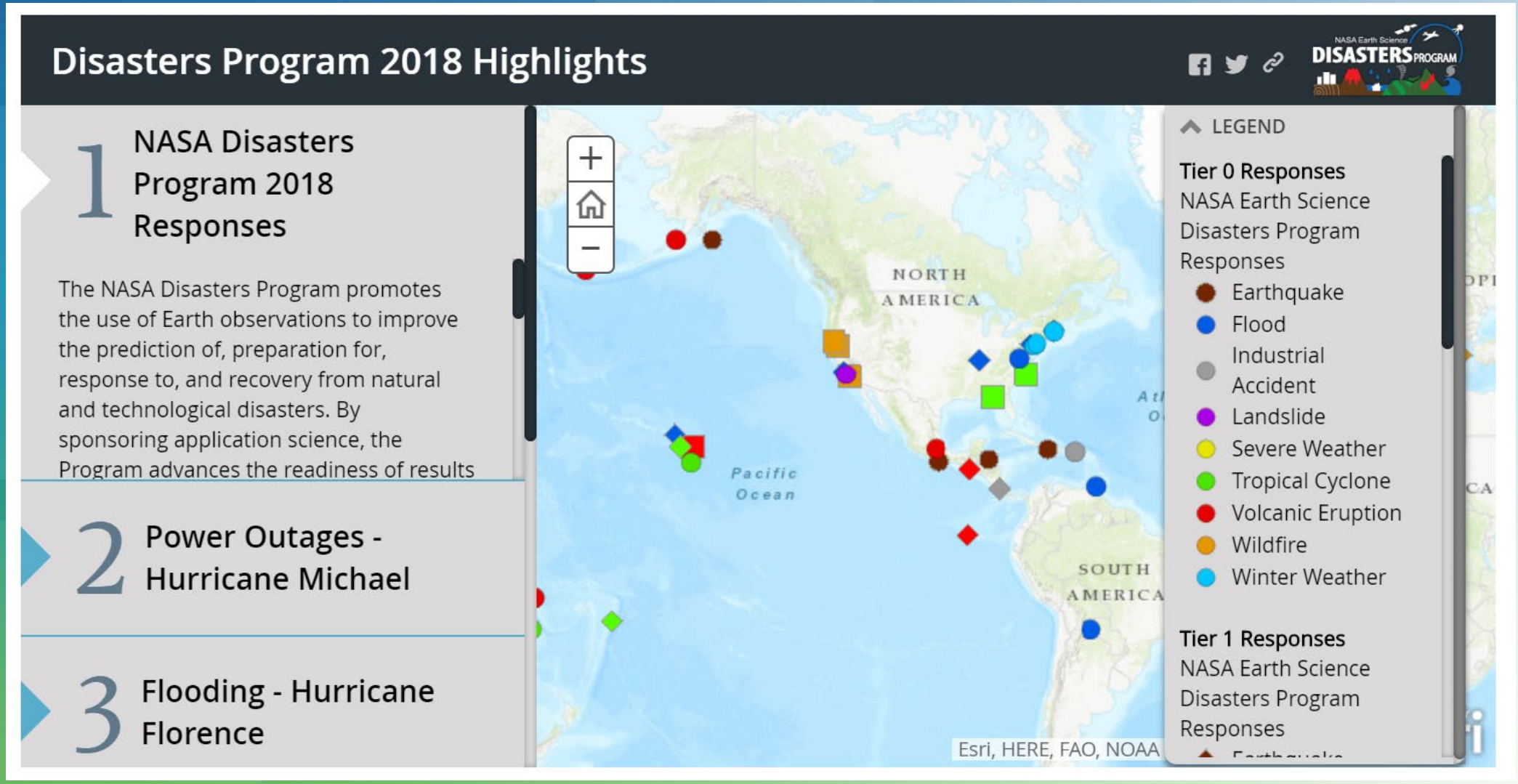
Sulawesi Island, Indonesia Earthquake and Tsunami 2018
Hurricane Florence 2018
Hokkaido Japan Earthquake 2018
Hurricane Lane 2018
Kerala India Flood 2018
Lombok Indonesia Earthquake 2018

Featured Maps and Apps

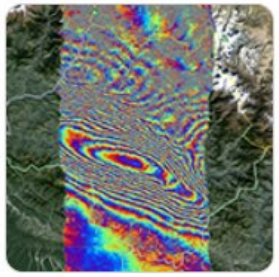


Featured Story Map



Recent Responses


Tropical Cyclones


Earthquakes


Floods


Wildfires


Volcanoes


Industrial Accidents

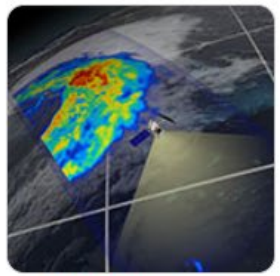

Landslides


Severe Weather


Winter Weather


Risk Reduction


External Resources


NRT Products

Recent Responses

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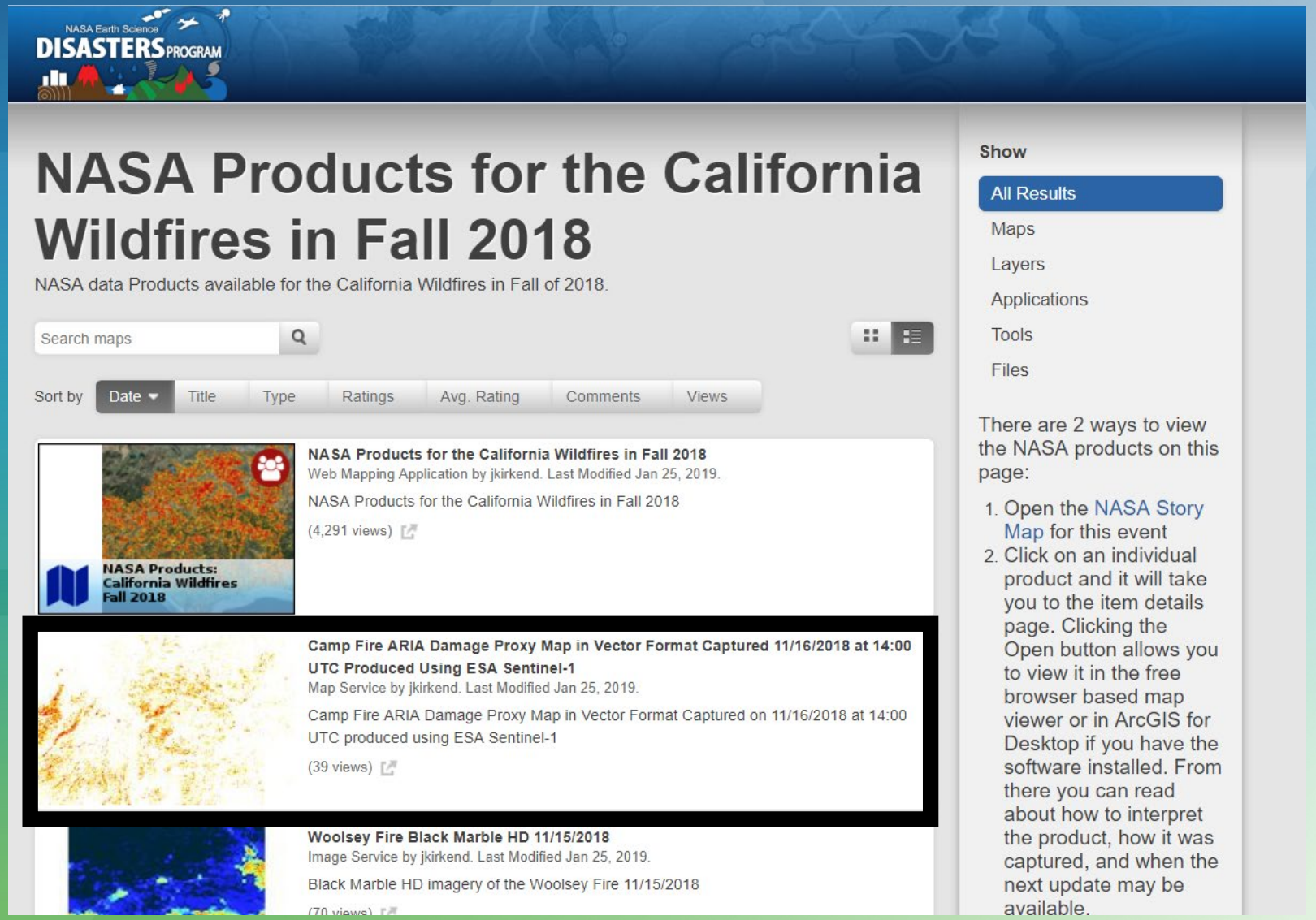
- Lombok Indonesia Earthquake 2018

Example of Event Response Product Gallery



Example of Image Service for the Camp Fire

Home Gallery Map Scene Groups Sign In

Camp Fire ARIA Damage Proxy Map in Vector Format Captured 11/16/2018 at 14:00 UTC Produced Using ESA Sentinel-1

Camp Fire ARIA Damage Proxy Map in Vector Format Captured on 11/16/2018 at 14:00 UTC produced using ESA Sentinel-1
Map Image Layer by jkirkland
Source: Map Service
Last Modified: January 23, 2019
(0 ratings, 69 views)
Sign in to rate this item.

OPEN METADATA

Description

Date of Imagery:
11/16/2018 14:00 UTC (11/16/2018 6:00am PST)

Next Update:
11/18/2018

Summary:
The Advanced Rapid Imaging and Analysis (ARIA) team at NASA's Jet Propulsion Laboratory in Pasadena, California, created this Damage Proxy Map (DPM) depicting areas of California that are likely damaged (shown by red and yellow pixels) as a result of the Camp Fire. The map is derived from synthetic aperture radar (SAR) images from the Copernicus Sentinel-1 satellites, operated by the European Space Agency (ESA). The pre-event images were taken before (November 5, 2018) and the post-event image was acquired during the fire (November 16, 2018). The map covers an area of 50 miles x 25 miles (80 km x 40 km). Each pixel measures about 33 yards x 33 yards (30 m x 30 m). The color variation from yellow to red indicates increasingly more significant ground surface change. Preliminary validation was done by comparing to the Approximate fire location by the Google Crisis map. This damage proxy map should be used as guidance to identify damaged areas, and may be less reliable over vegetated areas. For example, the scattered single colored pixels over vegetated areas may be false positives, and the lack of colored pixels over vegetated areas does not necessarily mean no damage.

Suggested Use:
The color variation from yellow to red indicates increasingly more ground surface change. This damage proxy map should be used as guidance to identify damaged areas, and may be less reliable over vegetated areas. For example, the scattered single colored pixels over vegetated areas may be false positives, and the lack of colored pixels over vegetated areas does not necessarily mean no damage.

Satellite:
Synthetic Aperture Radar (SAR) from Copernicus Sentinel-1 operated by the European Space Agency (ESA); 30 meter resolution

Credits/Acknowledgements:
Sentinel-1 data were accessed through the Copernicus Open Access Hub. The image contains modified Copernicus Sentinel data (2018), processed by ESA and analyzed by the NASA-JPL/Caltech ARIA team. This research was carried out at JPL funded by NASA. For more information about ARIA, visit: http://aria.jpl.nasa.gov

Access and Use Constraints

NASA data and products are freely available to federal, state, public, non-profit and commercial users. This information can be experimental- or research-grade data products and may not be appropriate for operational use. These NASA data products, services, and the Disasters Mapping Portal are intended to aid decision makers and enhance situational awareness, but these data are not guaranteed to be consistently available or routinely updated. Please cite the information according to the direction provided in the metadata. Use of this product should include: "Contains modified Copernicus Sentinel data (2018) processed by ESA"

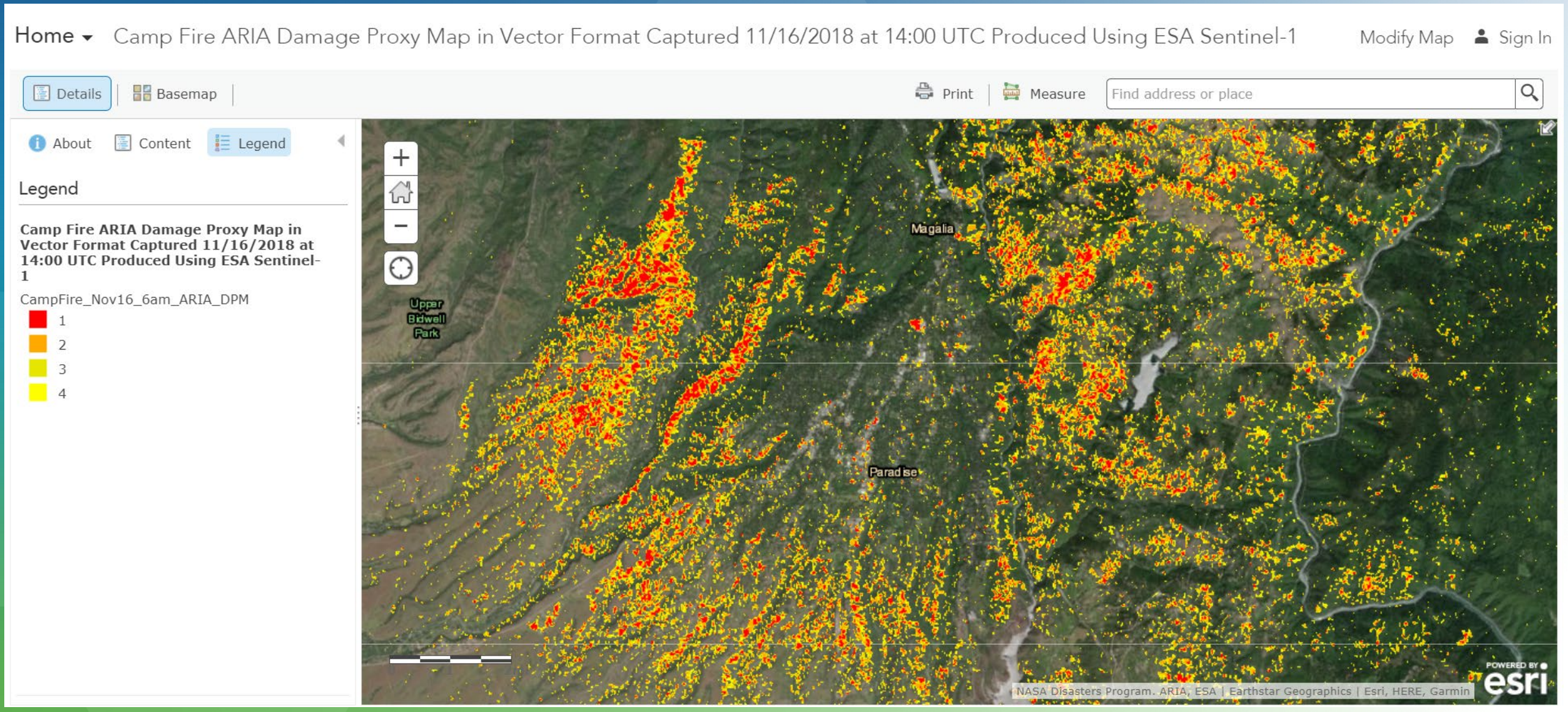
Map Contents

Camp Fire ARIA Damage Proxy Map in Vector Format Captured 11/16/2018 at 14:00 UTC Produced Using ESA Sentinel-1
https://maps.disasters.nasa.gov/arcgis/rest/services/CA_fires_2018/camp_fire_aria_dpm_vector_20181116_1400/MapServer

Properties

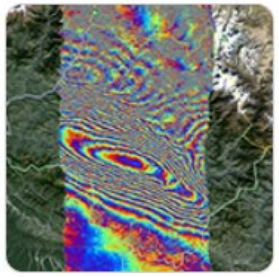
Tags	NASA Disasters Program, ARIA, DPM, ESA, Sentinel, Sentinel-1, Camp, Camp Fire, Wildfire, Fire, Wildfires, Fires, California, vector
Credits	NASA Disasters Program, ARIA, ESA

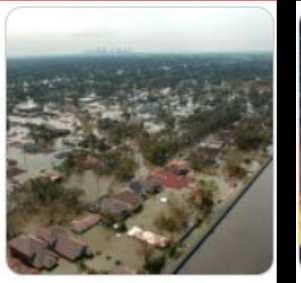
Example of Image Service for the Camp Fire



Disaster Type


Tropical Cyclones


Earthquakes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Industrial Accidents


Landslides


Severe Weather


Winter Weather


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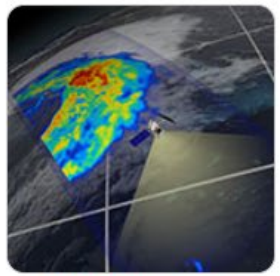
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Example of Fire Events

Home Gallery Map Scene Groups

Sign In

wildfire

Search Results

Related Searches

Find items related to "wildfire"

Find items published by Esri related to "wildfire"

4 results

Relevance Title Owner **Date**

California Wildfires Fall 2018

NASA data Products available for the California Wildfires in Fall of 2018.

owned by jkirkend on November 11, 2018

Details

California Wildfires Summer 2018

Sharing Data Products available for California Wildfires. Summer 2018 (click here for more information)

owned by gwlayne on August 8, 2018

Details

Greece Wildfires July 2018

Sharing Data Products available for Greece Wildfires. (click here for more information)

owned by gwlayne on July 26, 2018

Details

Southern Calfornia Wildfires, December 2017

NASA Derived Data Products available for Southern California Wildfires. December, 2017

owned by gwlayne on February 13, 2018

Details

More Information

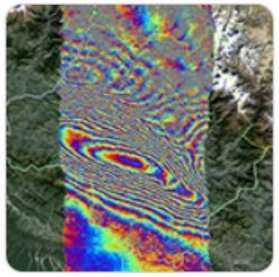
What types of items can I find here?

Advanced search options

Finding layer packages and other ArcGIS desktop content.

Near Real-Time Products


Tropical Cyclones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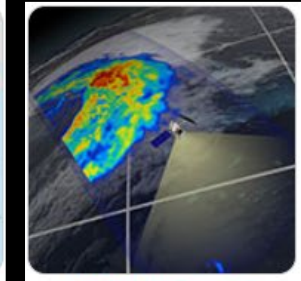
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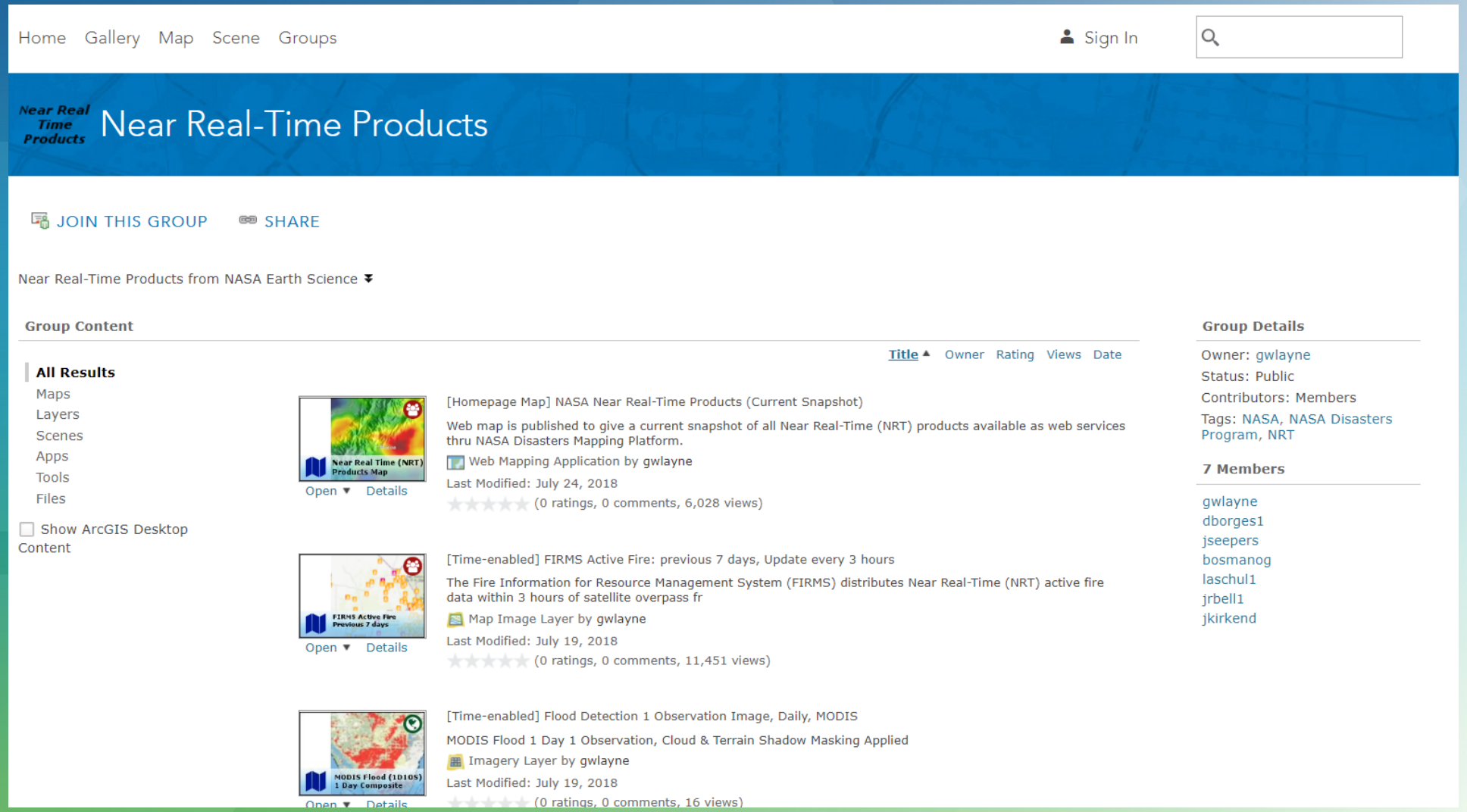
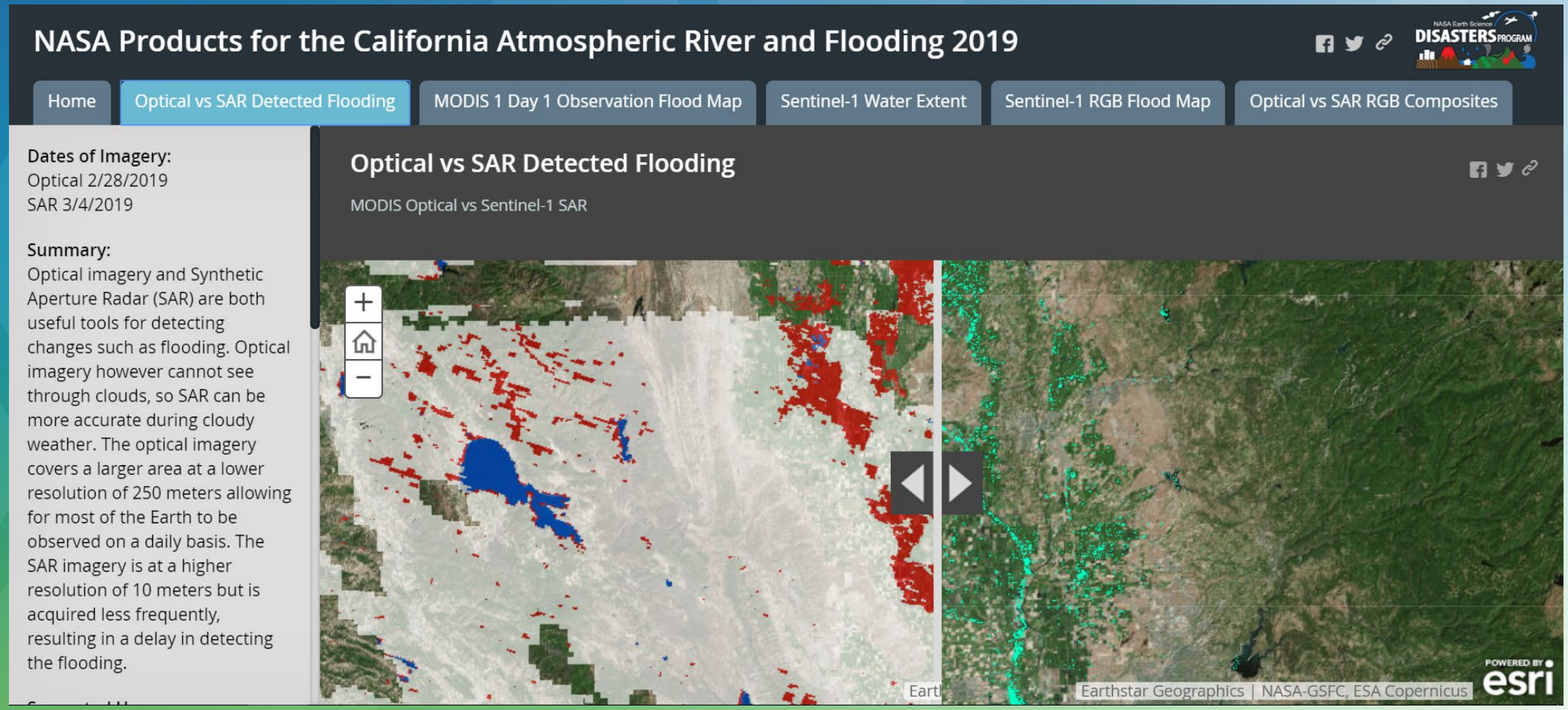
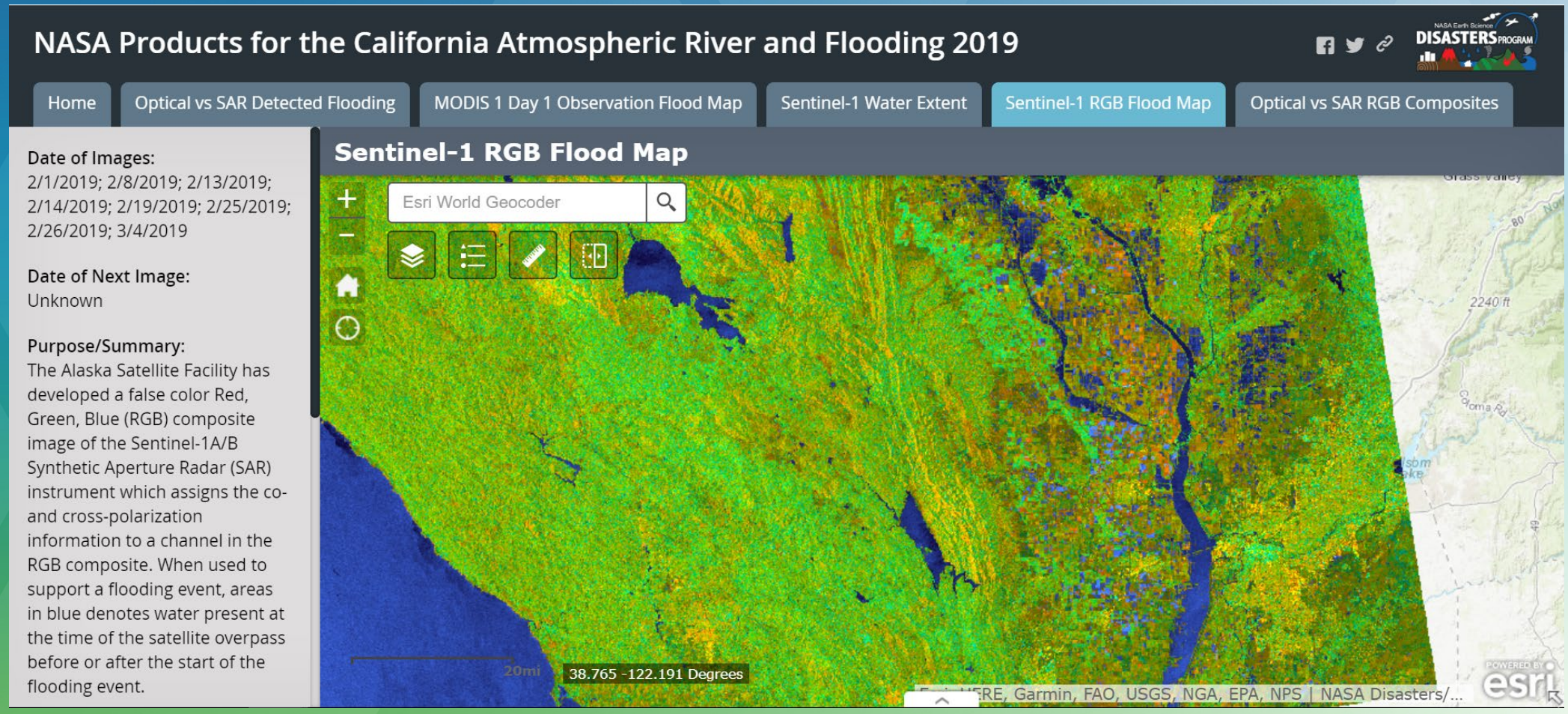


California Atmospheric River and Flooding Feb/March 2019

California Atmospheric River and Flooding Feb/March 2019



California Atmospheric River and Flooding Feb/March 2019



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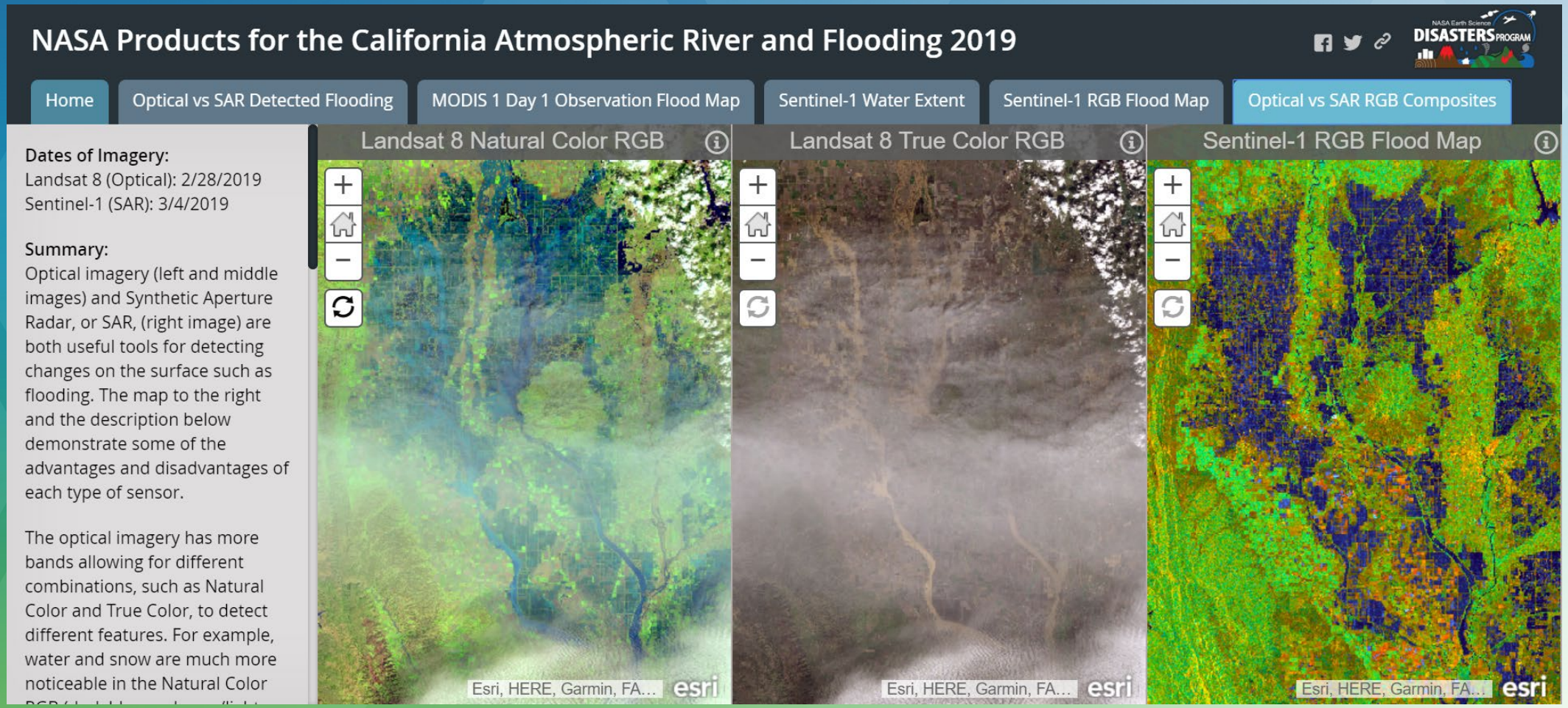

Learn More

NASA Disasters Mapping (GIS) Portal:
https://maps.disasters.nasa.gov

Jeremy.J.Kirkendall@nasa.gov