The DTN Fire Hotspot

A Mega Wildfire Example: The 2018 Camp Wildfire in California

DTN

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Camp Fire Burn Scar

The beginning of a highly destructive mega wildfire occurred on November 8, 2018, near Paradise, California. According to the California Department of Forestry and Fire Protection, the fire was caused by electrical transmission lines owned by PG&E. The fire destroyed the town of Paradise and claimed 85 lives. The wildfire lasted 17 days with 90% containment achieved by November 22 and 100% containment occurring on November 25. More than 150,000 acres and 18,000 structures were lost in this deadliest and costliest wildfire event in California history.
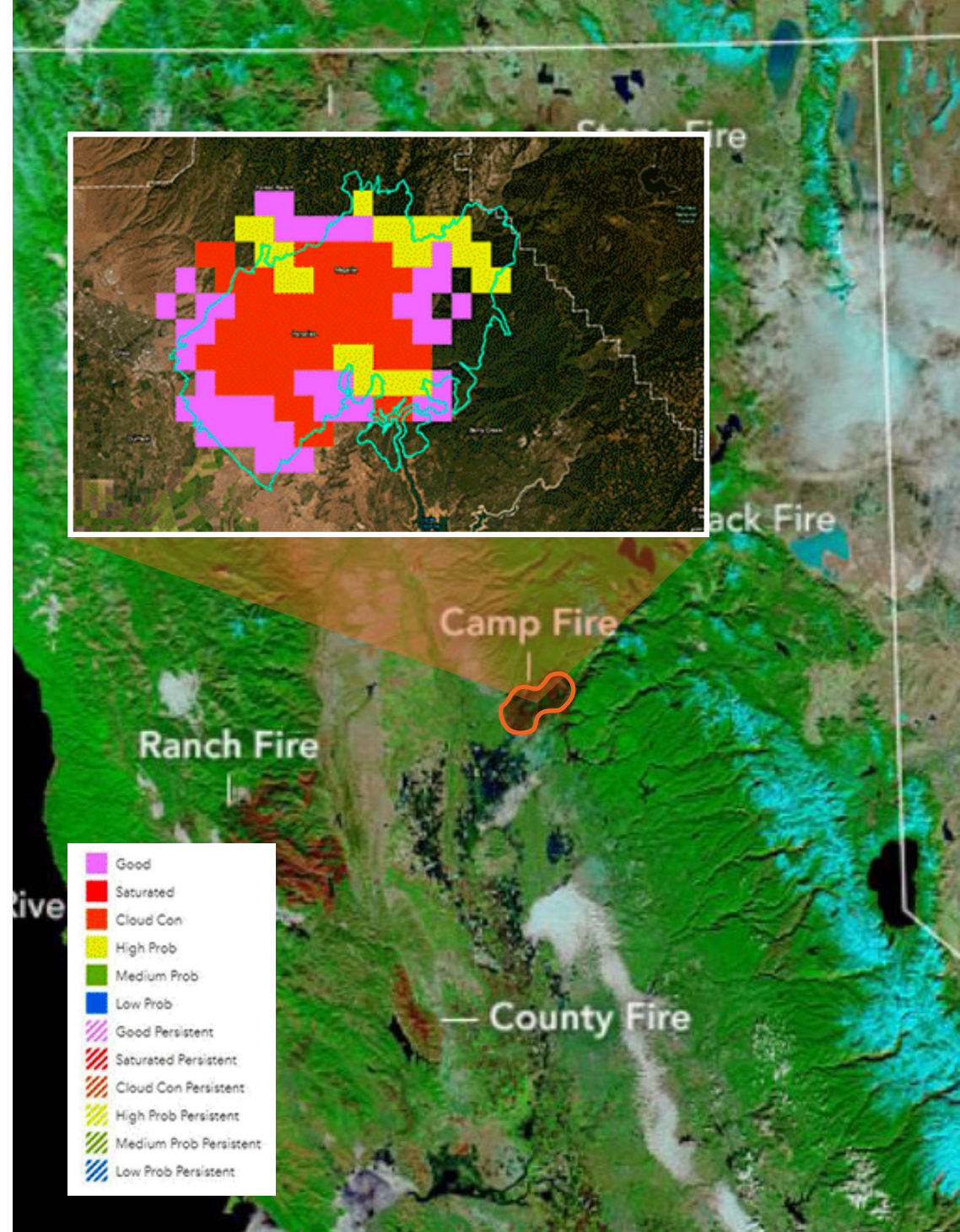
The Camp wildfire, along with other wildfire burn scars, are illustrated in this image from the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite on November 25, 2018. (Source: NASA Earth Observatory)

Using Technology to Locate Wildfires

Wildfires commonly occur in the U.S. threatening life, property and livestock. DTN leverages the latest technology to identify and diagnose the presence and location of wildfires. The fire identification (or hotspot) is illustrated in the image on the right. The wildfire event shown is the Camp Wildfire in California that burned for 17 days (November 8 to November 25, 2018). The hotspot data are represented on a 2km grid and is updated every 5 minutes for the CONUS. Saturated pixels represent fires which exceed the maximum radiative power threshold of the on-board satellite sensor, a good classification indicates a positive but less intense fire, and cloud contaminated pixels convey a positive indication of a fire but clouds are precluding the actual intensity of the fire. In addition, each fire is checked for time continuity which lends greater confidence that a fire is occurring and the estimated burn area (scar) over time, especially for long-lived wildfires.

The Camp wildfire along with other wildfire burn scars are illustrated in this image from the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite on November 25, 2018. (Source: NASA Earth Observatory)

Legend:
- Good
- Saturated
- Cloud Con
- High Prob
- Medium Prob
- Low Prob
- Good Persistent
- Saturated Persistent
- Cloud Con Persistent
- High Prob Persistent
- Medium Prob Persistent
- Low Prob Persistent

Live GIS Layer Service

The map shown on the right comprises a time animation of the area of the Camp wildfire during the event. The time interval between frames is three hours. DTN hosts a live GIS layer service in ArcGIS server containing the latest fire hotspot data. The data are symbolized to depict the likelihood of a fire and whether the data are cloud contaminated, saturated or "good".
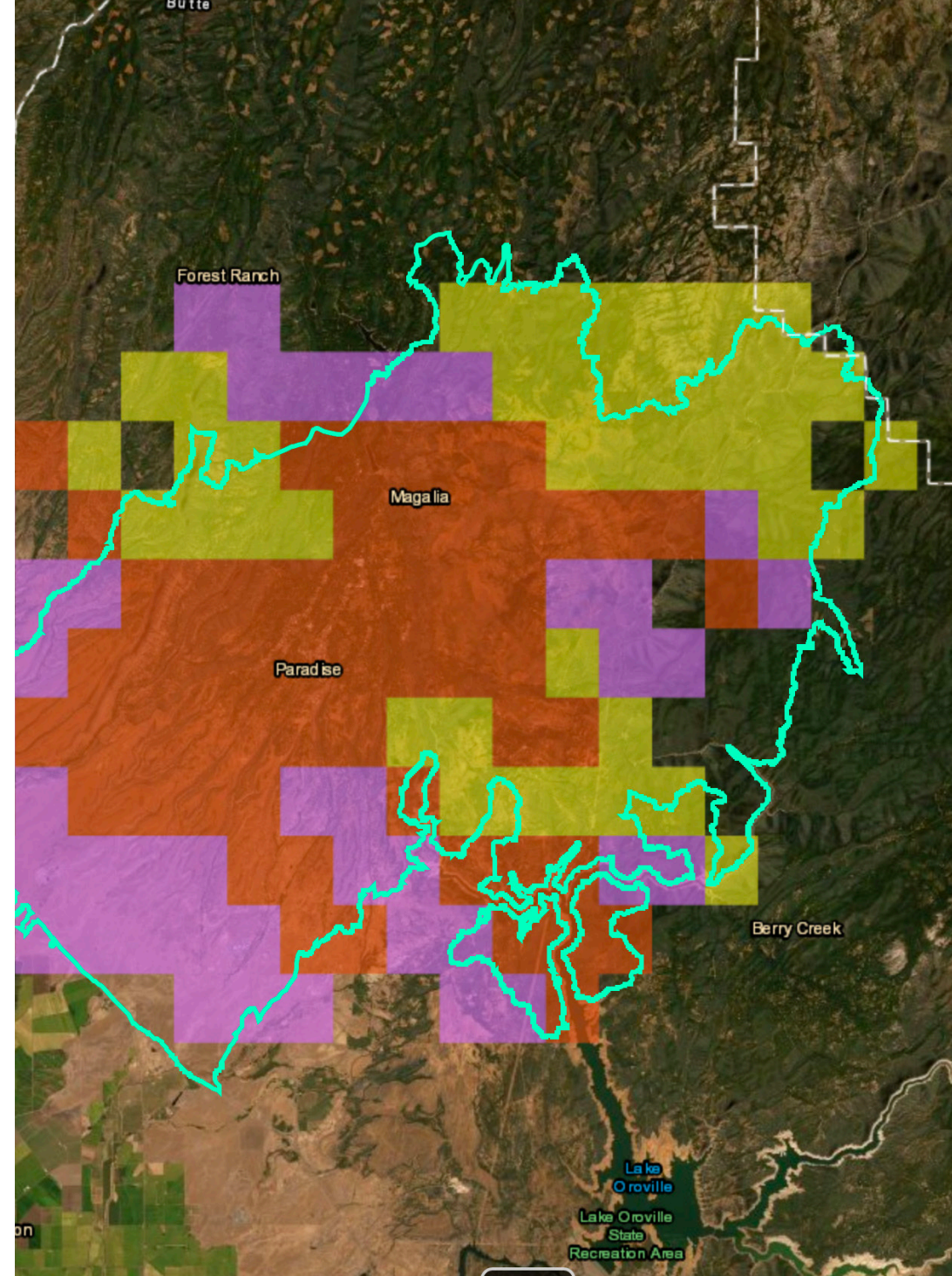
Violent Rage of a California Mega Wildfire

The Camp Fire raged violently beginning at 6:30 a.m. on November 8, 2018. By 8 p.m. the same day, the fire consumed 20,000 acres of forest and structures. This picture illustrates a close-up view of the ravage of this mega fire and attendant smoke as the town of Paradise, California is consumed.
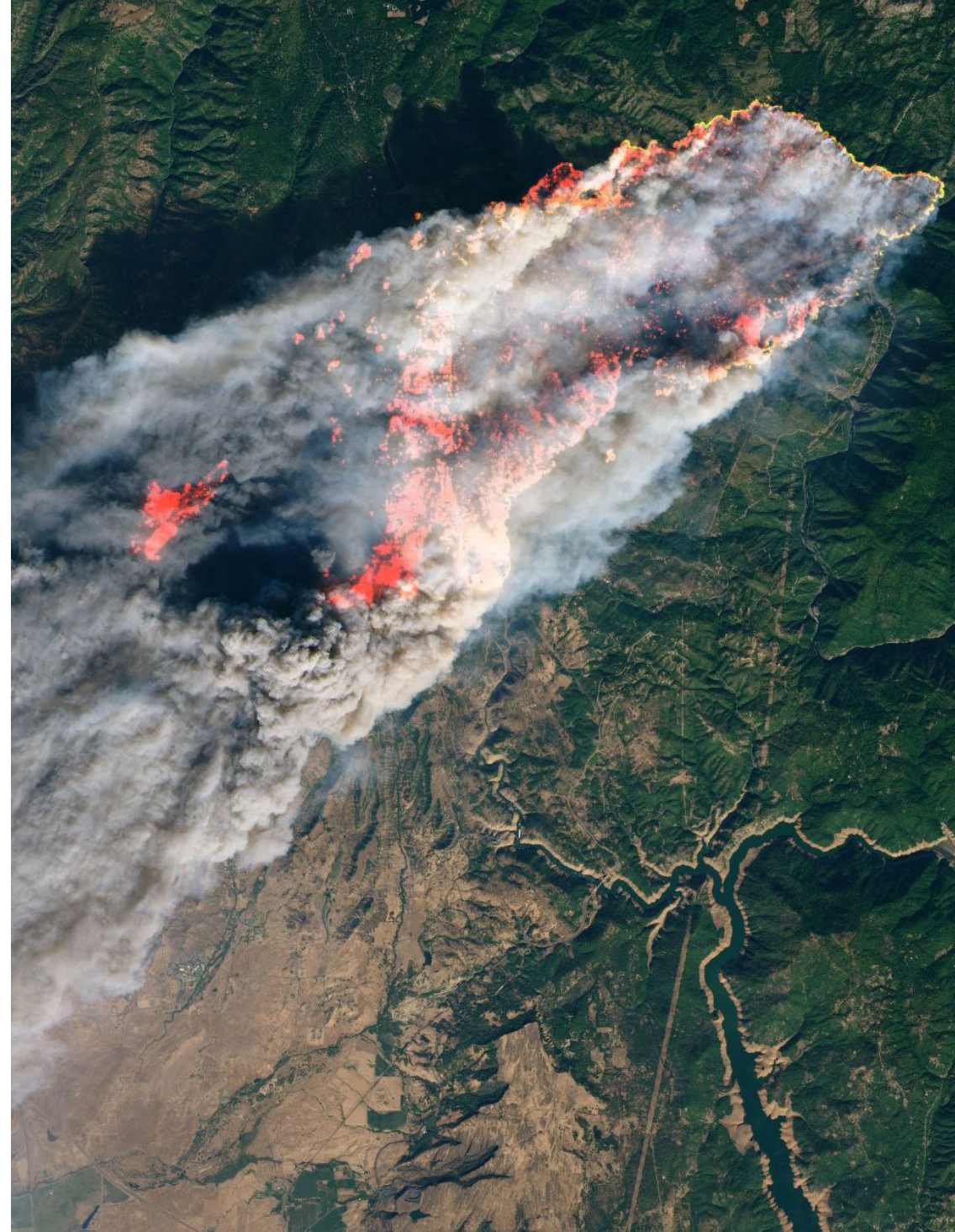
Satellite Detection of Wild Fires

The National Oceanic and Atmospheric Administration (NOAA) launched two new satellites, GOES-16 and GOES-17, in 2016 and 2018, respectively. Although principally used for monitoring atmospheric properties, each of these geostationary satellites comprises spectral bands (channels) for the purpose of identifying fires. GOES-16 and GOES-17 provide high spatial (2 km) and temporal (5 minutes for CONUS) resolution imagery suitable for monitoring the initiation, development and duration of wildfires.

Learn more: www.dtn.com/weather/utilities/gis/