NASA missions and science push the limits of knowledge and innovation in the study of Earth and atmospheric science. The NASA Earth Applied Sciences Disasters program area aims to share this knowledge with domestic and international agencies responding to the threat of fires before, during, and after they impact local communities.

NASA takes an Earth-system approach to reveal the knowledge needed to understand wildfire risks and translate that understanding into actionable information. Our resources can inform capabilities to assess potential wildfire threats, anticipate what may happen next, and help leaders and emergency officials understand and identify effective interventions. Learning from collaborations in previous fire seasons helps us know where we can improve or fill critical knowledge gaps. Greater insight can transform how communities strengthen resilience, respond to perils, aid relief, and sustain recovery.

### ROUTINE PRODUCTS

The program area has developed a catalog of imagery and data products used in previous fire seasons by the user community. This abbreviated list serves as a starting point of available resources used in past wildfire seasons. These resources can help:

- Create easily accessible and usable information to inform choices to develop resilience, support disaster management, and guide actions toward faster and sustained recovery
- Enable the situational awareness needed to prioritize planning, target response, and focus recovery efforts
- Advance actionable understanding of the wildfire risks and the nature of vulnerability and exposure

<table>
<thead>
<tr>
<th>PRODUCT TYPE</th>
<th>PRODUCT NAME</th>
<th>PURPOSE</th>
<th>RESOLUTION WAND LATENCY</th>
<th>LINKS TO DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Fire Detection</td>
<td>FIRMS Active Fire Points</td>
<td>Determine which regions are currently burning</td>
<td>MODIS – 1 km, VIIRS – 375m updated every 3 hours</td>
<td>VIIRS/MODIS FIRMS Active Fire</td>
</tr>
<tr>
<td>Burn Extent</td>
<td>Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER)</td>
<td>Identifying burned region</td>
<td>15m, varies</td>
<td>California Fires 2020</td>
</tr>
<tr>
<td>Soil Moisture</td>
<td>Land Information System (LIS)</td>
<td>Identify dryness conditions that make fires more likely</td>
<td>3km, updated daily</td>
<td>1cm, 10cm, 200cm</td>
</tr>
<tr>
<td>Damage Detection</td>
<td>Damage Proxy Map (DPM)</td>
<td>Identify potentially damaged buildings and infrastructure</td>
<td>30m, 1-2 days after good overpass</td>
<td>Bobcat Fire 2020, Creek Fire 2020</td>
</tr>
<tr>
<td>Power Outage</td>
<td>Black Marble</td>
<td>Identify areas that lost power</td>
<td>750m, updated daily</td>
<td>Black Marble Nighttime</td>
</tr>
<tr>
<td>Optical Imagery</td>
<td>Burn Scars and True Color</td>
<td>Aids in identifying burned areas</td>
<td>Resolution and latency varies based on sensor</td>
<td>MODIS/Aqua Burn Scar, MODIS/Terra Burn Scar, VIIRS/Suomi-NPP Burn Scar, VIIRS/NOAA-20 Burn Scar, MODIS/Aqua True Color, MODIS/Terra True Color, VIIRS/Suomi-NPP True Color, VIIRS/NOAA-20 True Color</td>
</tr>
</tbody>
</table>

EVENT-SPECIFIC PRODUCTS AVAILABLE UPON REQUEST FOR FIRE RISK REDUCTION, RESPONSE AND RECOVERY

NASA Applied Sciences Program develop event-based products to answer specific questions from the user community.

- A hallmark of the Disasters program, these products strive to provide additional information to user workflows.
- Products may use techniques more experimental in nature.
- Partnerships with stakeholders enable both the advancement of science and the expansion of user knowledge.

**NASA DISASTERS MAPPING PORTAL**

The Mapping Portal serves as a hub of relevant near real-time (NRT) and event-specific products developed by NASA scientists and collaborators and provided in geographic information systems (GIS) format. The fire emissions dashboard displays multiple gas and aerosol datasets generated by the Global Fire Emissions Database (GFED).

Click here to visit the Global Fire Emissions dashboard.

**NASA AIRBORNE FIRE SUPPORT**

NASA operates a fleet of aircraft and airborne sensors that contribute to risk reduction, response and recovery from wildland fires. Airborne sensors such as MASTER, AVIRIS, and UAVSAR collect data on fire spread, air quality and burn scars, which provide critical awareness for responders on the ground and a greater understanding of how communities are impacted by fire.

Click here to learn more about NASA Airborne Fire Support.

**SUPPLEMENTAL INFORMATION**

Disasters Mapping Portal Fires Homepage
Notable Past Activation Story Maps:
California Fires 2020
Australia Fires 2020

**CONNECT WITH US**

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Scan the QR code here to visit the Wildfires program area landing page.