

***This service summarizes current satellite mapping activities of interest to GDACS stakeholders. It is issued weekly and based on contributions from map-producing entities and GDACS partners.***

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## Satellite mapping overview

As of 07 September 2015

### Africa

#### **Cape Verde hurricane – GLIDE number: TBD**

On 30 August 2015, a Category 1 hurricane named Fred developed quickly over the Atlantic Ocean. The NASA Earth Observatory acquired satellite imagery of the hurricane on 31 August 2015 and produced an overview map. At this time Fred was visible off the west coast of Africa, hovering over the Cape Verde islands with sustained wind speeds of 140 kilometers per hour. The hurricane caused flash flooding and substantial wind damage in Cape Verde. It is believed that Fred is the first hurricane to hit Cape Verde since 1892 and it appears to be the easternmost hurricane to develop in the tropical Atlantic during the satellite era. As of 01 September 2015, Fred had weakened into a tropical storm. By 06 September 2015, the storm had dissipated further into a tropical depression and was situated 1,200 miles southwest of the Azores. The remnants of Fred are expected to travel in a north-northeast direction. This map product is available for online viewing and download in GeoTIFF and JPEG format on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86517&eocn=home&eoci=nh>

#### **South Sudan complex emergency – GLIDE number: CE20131218SSD**

As a result of ongoing conflict in South Sudan, many areas have experienced destruction, looting, and local population displacement. UNITAR-UNOSAT recently released a web map which consists of a rapid assessment over parts of the Unity and Jonglei states. Using satellite imagery acquired in July and August 2015, UNITAR-UNOSAT identified areas of visible destruction, internally displaced persons (IDPs), looting, and cattle herds. Numerous areas in the counties of Leer, Koch, Mayendit and southern Rubkona were observed to have suffered from medium to devastating destruction. Many areas with IDPs were also visible in these counties, as well as several with cattle herds and looting. Some areas with IDPs were found in the Ayod county of Jonglei state, though no destruction or looting was observed there. This may be attributable to the fact that imagery for several parts of Jonglei state was obscured by cloud cover. Further analysis of western and southern Unity state is currently in progress. A link to this web map is available on the UNITAR-UNOSAT website. Accompanying data in ESRI shapefile and geodatabase format is also provided. Additionally, photographs from the field may be taken and added to the map using the UN-ASIGN smartphone app.

Source: UNITAR-UNOSAT

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Link: <http://www.unitar.org/unosat/maps/SSD>

## Asia

### **Myanmar floods – GLIDE number: FL-2015-000089-MMR**

Torrential rainfall at the onset of the monsoon season caused severe flooding in several parts of Myanmar. The western regions of Chin, Magway, Sagaing and Rakhine were declared disaster zones by the government. In an effort to aid disaster response, UNITAR-UNOSAT began work for this event on 13 July 2015 and triggered the International Charter on Space and Major Disasters on 05 August 2015 on behalf of the UNDP Myanmar. Analyses conducted by UNITAR-UNOSAT revealed a total of more than 895,300 hectares of flood affected land in parts of the Rakhine, Sagaing, Bago, Magway, Kayin and Mon States. The Copernicus Emergency Management Service recently released monitoring and delineation flood maps for the areas of Bogale, Hinthada, Irrawaddy Delta, Kaiklat, Kyauktan, Kyondadun, Labutta, Monyo, Pathein, Pathwe, Pyinsalu, Yegyi, eastern and western Yangon. Analysis of satellite imagery acquired 10, 15 and 17 August 2015 as well as 04 September 2015 revealed a total of approximately 1,069,748 hectares of flood affected land and 1,590,121 impacted inhabitants in these areas. Past live and static UNITAR-UNOSAT map products are available for online viewing and PDF download on its website, along with data in ESRI shapefile and geodatabase formats. Copernicus map products are available in TIFF, PDF, and JPEG formats on its website. Data can also be accessed there in shapefile and KML formats.

Sources: UNITAR-UNOSAT, International Charter on Space and Major Disasters, Copernicus Emergency Management Service

Links: <http://www.unitar.org/unosat/maps/MMR>

<https://www.disasterscharter.org/web/guest/-/flood-in-myanmar>

<http://emergency.copernicus.eu/mapping/list-of-components/EMSR130>

## Middle East

### **Iraq dust storm – GLIDE number: TBD**

In early September 2015, Iraq, Iran, and the Persian Gulf region experienced a massive dust storm. Originating over the Iraq-Syria border on 31 August 2015, the dust storm encapsulated the entire basin by 03 September 2015. The NASA Earth Observatory gathered satellite imagery of the storm on 01 and 03 September 2015 and produced overview maps. As of 01 September 2015, the storm had formed into a cyclonic shape and covered a large portion of northern Iraq. By 03 September 2015, wind strewn dust was visible over the Persian Gulf. Reports indicate that wind gusts reached up to 80 kilometers per hour in Iran during the dust storm. Consequences of the storm included flight cancellations, road closures, and fear of agricultural damage. According to media reports and

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anecdotal evidence, it appears that such dust storms have occurred more frequently in Iraq and Iran in recent years due to drought as well as the natural and human destruction of wetlands in the Tigris-Euphrates watersheds. Map products are available for online viewing and download in GeoTIFF and JPEG format on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86539&eocn=home&eoci=nh>

## North America

### Pacific Ocean hurricanes – GLIDE number: TBD

During August 2015, three Category 4 hurricanes simultaneously traversed the central and eastern Pacific Ocean for the first time in recorded history. Warm sea surface temperatures produced by the atmospheric phenomenon known as El Niño aided the development of these storms. The NASA Earth Observatory acquired 30 August 2015 and 02 September 2015 satellite imagery of the hurricanes and created overview maps. The hurricanes, known as Kilo, Ignacio, and Jimena, did not pose a direct threat to land on 30 August 2015, though remained powerful. As of this date, Kilo moved in a north-northwest direction with maximum sustained winds of 215 kilometers per hour. Ignacio’s winds reached 200 kilometers per hour as it neared the Hawaiian mainland and Jimena hovered over the Pacific Ocean to the east of the other hurricanes with maximum sustained winds of 210 kilometers per hour. By 02 September 2015, Ignacio had weakened into a tropical storm and a tropical depression called Fourteen E had developed to the east of Jimena. As of 07 September 2015, Kilo moved to the northwest of Wake Island and is expected to weaken into a tropical storm later in the week. It is also anticipated that Jimena will weaken soon, though the storm could bring heavy rains to the Hawaiian islands in the middle or latter part of the week. Map products are available for online viewing and download in JPEG format on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Links: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86512&eocn=home&eoci=nh>

<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86532&eocn=home&eoci=nh>

### United States wildfires – GLIDE number: WF-2015-000103-USA

In 2015 the state of Alaska experienced intense wildfires that burned through more than 5.2 million acres of land. An average year generally consists of 800,000 burned acres, though this year has marked the second most severe wildfire season in Alaska since 1950. The NASA Earth Observatory collected satellite imagery of forests in Alaska on 14 June 2015 before the fire season intensified and on 01 September 2015 following the containment of major fires. An overview map of the affected area shows a significant increase in burn scars on 01 September 2015 as compared with 14 June 2015. The majority of large fires occurred in Alaska’s boreal forests and the southwestern part of the

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state. Due to dry conditions, warm temperatures, severely diminished snowpack, and an early start of the lightning season, many of these fires grew large in size. Control of the fires in numerous areas was not seen as urgent since they posed minimal risk to the population and infrastructure. Map products are available for online viewing and download in JPEG format on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86536&eoqn=home&eoci=nh>

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*This summary is compiled by the GDACS mapping & satellite imagery coordination mechanism, operated by the UNITAR Operational Satellite Applications Programme (UNOSAT).*

*When referring to this summary, please credit: GDACS, UNITAR-UNOSAT.*

*For comments, questions and to submit information on satellite image derived products, please contact:*

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*Sources indicate satellite analysis production entities and imagery providers. The products referenced in this summary are based on remote satellite imagery and may not be validated in the field prior to release, in which case findings are based only on what is observed in the satellite imagery.*

*\*Not an official GLIDE number, as event has no entry in GLIDE database, but used by GDACS for seamless information integration.*