

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.

Satellite mapping overview

As of 25 April 2016

Africa

Seychelles tropical cyclone – GLIDE number: TBD

On 17 April 2016, a tropical cyclone named Fantala travelled over the Farquhar Atoll in Seychelles and caused severe damage to Farquhar Island. According to reports, almost all of the island's buildings were damaged or flattened by strong winds from the category 5 storm. The International Charter on Space and Major Disasters was activated on 19 April 2016 by UNITAR-UNOSAT on behalf of the UN Resident Coordinator for Seychelles. UNITAR-UNOSAT released a damage assessment report for the Farquhar Atoll. Using 22 April 2016 satellite imagery, a total of 50 affected buildings were identified, of which 19 were destroyed, 27 severely damaged, and 4 moderately damaged. The NASA Earth Observatory acquired 18 April 2016 satellite imagery of Fantala and produced an overview map. As of this date the tropical cyclone was visible hovering over the Indian Ocean, just north of Madagascar. A few hours before the satellite image was taken, Fantala's wind speeds reached up to 280 kilometers per hour. As of 19 April 2016, Fantala was downgraded to a category 3 storm and was not expected to make landfall. Report and map products are available for download in various formats on the International Charter on Space and Major Disasters, UNITAR-UNOSAT, and NASA Earth Observatory websites.

Sources: International Charter on Space and Major Disasters, NASA Earth Observatory

Links: <https://www.disasterscharter.org/web/guest/activations/-/article/cyclone-in-seychelles>

<http://www.unitar.org/unosat/maps/SYC>

<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=87898&eocn=home&eoci=nh>

Asia

Japan earthquake – GLIDE number: EQ-2016-000033-JPN

A magnitude 6.2 earthquake struck east of Kumamoto in southern Japan on 14 April 2016 and a series of aftershocks followed. Due to the shallow depth of the initial earthquake at 10 kilometers and its location under populated areas, severe damage resulted and at least 32 deaths have since been reported. The International Charter on Space and Major Disasters was activated on 14 April 2016 by JAXA on behalf of the Cabinet Office, and project management was assumed by the University of Tokyo's Center for Spatial Information Science. Several new maps and reports were recently produced by Tokyo Tech, JAXA, Asian Institute of Technology, Chiba University, and Yamaguchi University. Satellite imagery collected 14, 15, 17, 18, 19 and 20 April 2016 was analyzed

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for signs of structural damage, landslides, and evacuation monitoring following the earthquake. The situation in Japan was aggravated with the occurrence of a magnitude 7.0 earthquake in the Kyushu region on 16 April 2015, followed by aftershocks, heavy rainfall, and the possibility of additional landslides. Map and report products are available for online viewing and download as JPEGs or PDFs on the International Charter on Space and Major Disasters website.

Source: International Charter on Space and Major Disasters

Link: <https://www.disasterscharter.org/web/guest/-/earthquake-in-jap-1>

Middle East

Syria complex emergency – GLIDE number: CE20130604SYR

As a result of continuous violence in Syria, the country has experienced significant damage and destruction. UNITAR-UNOSAT recently published a map showing the percentage of buildings damaged in the cities of Tadmur and Al-Amiriyah, located in Homs Governorate. Using satellite imagery acquired 30 March 2016, 18 October 2015, 27 August 2015, and 26 June 2015, UNITAR-UNOSAT identified a total of 611 damaged structures within the map extent. Of these, 29 structures were destroyed, 103 severely damaged, and 479 moderately damaged. These impacted structures were compared with the total number of buildings found in a pre-conflict satellite image collected in 2009 to determine the percentage of damaged buildings across the two cities. In general, structural damage appeared to be most concentrated on the outskirts of Tadmur and Al-Amiriyah. Due to the nature of the combat and image quality, it is likely that some minor and moderate damage was not detected. This map product is available for download as a PDF on the UNITAR-UNOSAT website. Accompanying data in ESRI shapefile and geodatabase format is also accessible on this website.

Source: UNITAR-UNOSAT

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

North America

United States fire – GLIDE number: TBD

A massive wildfire, referred to as the Rocky Mount fire, has burned through the southern portion of Shenandoah National Park in Virginia. Sections of trails and part of Skyline Drive – the principal paved thoroughfare – have been closed as a result. The NASA Earth Observatory collected 20 April 2016 satellite imagery of the fire and created an overview map. At this time, the fire was visible burning around a large burn scar to the east and smoke drifted in a northwest direction toward Harrisonburg. Smoke from the fire has travelled up to the southwestern suburbs of Washington, causing concern from residents of that area. Since the fire began on 16 April 2016, it has consumed more than 36 square kilometers and is only 43 percent contained. It has been reported as the largest

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wildfire in the history of the Shenandoah National Park's Southern District. This map product is 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=87927&eocn=home&eoci=nh>

South America

Ecuador earthquake – GLIDE number: EQ-2016-000035-ECU

On 16 April 2016, a 7.8 magnitude earthquake struck near the town of Muisne on the western coast of Ecuador. Hundreds of aftershocks were reported and a state of emergency was declared in the coastal provinces of Guayas, Manabi, Santo Domingo, Los Rios, Esmeraldas, and Galapagos. The International Charter on Space and Major Disasters was activated on 17 April 2016 by UNITAR-UNOSAT on behalf of UN OCHA. UNITAR-UNOSAT has since released damage assessments for the Atacames, Salinas, La Libertad, Crucita, San Jainto, El Pueblito, San Vicente, Bahia de Caraquez, Muisne, and Chone areas. Using satellite imagery acquired 18, 19 and 20 April 2016, UNITAR-UNOSAT identified a total of 1,054 potentially damaged structures in these areas. The Copernicus Emergency Management Service also produced maps depicting damage in the Pedernales, north Esmeraldas, south, northeast and northwest Manta areas. Analysis of 18 and 19 April 2016 satellite imagery revealed a total of 238 damaged structures and 705 affected inhabitants. As of 24 April 2016, more than 650 people were reportedly dead, 12,500 injured, 58 missing, and 7,000 buildings destroyed as a result of the earthquake. Map products and data are available for download in various formats on the International Charter on Space and Major Disasters, UNITAR-UNOSAT, and Copernicus Emergency Management websites.

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

Links: <https://www.disasterscharter.org/web/guest/-/earthquake-in-ecuador>

<http://www.unitar.org/unosat/maps/ECU>

<http://emergency.copernicus.eu/mapping/list-of-components/EMSR159>

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: maps@gdacs.org

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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.*