

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 02 November 2015

Africa

Somalia floods – GLIDE number: FL-2015-000145-SOM

In late October 2015, flash floods affected thousands of people residing in low lying areas of southern and central Somalia. UNITAR-UNOSAT is currently working with IGAD/ICPAC and FAO SWALIM to monitor the El Niño situation in Somalia and East Africa in general. It recently produced a map of saturated soils over the Buulobarde Shabelle region of Somalia, as well as two weekly estimated precipitation accumulation maps. Analysis of satellite imagery acquired 30 October 2015 revealed a total of 10,088 hectares of potentially saturated soils and 346 hectares of probable standing flood waters over the districts of Bulo Burto, Jalalaqsi, and Jowhar. Probable flood waters were specifically located in the Jowhar district of Shabelle Dhexe province, southeast of the Dudunle settlement. Detected water bodies were likely underestimated due to the low spatial resolution of the satellite data used. Estimated precipitation accumulation maps indicate that parts of the Shabelle Dhexe, Hiraan, Bakool, Bay, and Shabelle Hoose provinces were most affected from 14 to 29 October 2015. Up to 600 millimeters of accumulated rainfall was recorded in these areas each week. Map products are available for download as PDFs on the UNITAR-UNOSAT website. Accompanying data for the saturated soils map is also accessible in ESRI shapefile and geodatabase format on the UNITAR-UNOSAT website.

Source: UNITAR-UNOSAT

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

South Sudan complex emergency: GLIDE number: OT-2014-000001-SSD

As a result of escalating violence in South Sudan during the month of December 2013, over 30,000 civilians sought refuge in United Nations facilities. UNITAR-UNOSAT has monitored the progression of this situation and recently released an updated map of IDPs at the UNMISS base in Bor, Jonglei state. Using satellite imagery acquired 08 October 2015, UNITAR-UNOSAT identified 1,077 structures within the IDP settlement, of which 976 were shelters and 101 infrastructure buildings. Since the previous UNITAR-UNOSAT analysis in January 2015, IDP structures were relocated from one Protection of Civilian (PoC) area in the northeastern corner of the UNMISS base to a southern extension of the base. Nevertheless, a large portion of this southern extension remained unoccupied as of 08 October 2015. 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 through UNITAR-UNOSAT's product links.

Source: UNITAR-UNOSAT

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

Asia

Afghanistan earthquake – GLIDE number: EQ-2015-000147-AFG

On 26 October 2015, the Hindu Kush region of northeastern Afghanistan was struck by a 7.5 magnitude earthquake. In response to this event, the International Charter on Space and Major Disasters was activated by UNITAR-UNOSAT on behalf of UN OCHA. UNITAR-UNOSAT produced two damage assessments for the Fayzabad and Kunduz areas. Using satellite imagery acquired 28 October 2015, UNITAR-UNOSAT identified 4 potentially damaged structures within the city of Fayzabad as well as 75 structures on the city's outskirts and in nearby settlements. Analysis of satellite imagery from the same date revealed a total of 12 potentially affected structures within and surrounding the city of Kunduz. The Copernicus Emergency Management Service also published maps of damage detected with 28 October 2015 satellite imagery. A landslide of 3.3 hectares that moderately damaged 0.2 kilometers of local roads was found in Badakhshan province, south of Wular. In the Keshem area, 4,898 inhabitants and 143.7 hectares of residential settlements were affected, though most structures sustained slight to negligible damage. No damage was detected in other examined areas of Badakhshan, Taloqan, Erghesak, and Emtala. Map products and data are available for download in various formats on the websites below.

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

Links: <https://www.disasterscharter.org/web/guest/-/earthquake-in-afghanist-1>

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

<http://emergency.copernicus.eu/mapping/list-of-components/EMSR145>

India fires – GLIDE number: TBD

Farmers in the Indian state of Punjab typically practice agricultural burning to clear fields for new growing seasons each year. Before the November 2015 growing season, the NASA Earth Observatory captured satellite imagery of this phenomenon on 30 October 2015 and produced an overview map. As of this date, hundreds of hot spots associated with fires were detected by the satellite sensor and outlined by the NASA Earth Observatory. Thick plumes of smoke emanating from the hot spots were also visible throughout the affected area, which lies in close proximity to the border with Pakistan. The smoke resulting from this practice, referred to as stubble burning, is known to contain many substances that are harmful to human health including nitrogen oxides, carbon monoxide, and particulate matter. This map product is available for online viewing and download in JPEG format on the NASA Earth Observatory website.

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Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86909&eocn=home&eoci=nh>

Philippines typhoon – GLIDE number: TC-2015-000143PHL

On 18 October 2015 Typhoon Koppu made landfall over the island of Luzon in the northern Philippines. Designated a Category 4 storm at the time, Koppu brought heavy rainfall and strong winds of up to 240 kilometers per hour. Although Koppu was downgraded to a remnant area of low pressure on 21 October 2015, Luzon continued to receive significant rainfall thereafter. The Copernicus Emergency Management Service monitored the situation in the Dagupan area of Pangasinan province and recently released updated maps. Using satellite imagery acquired 25, 28, and 31 October 2015, the Copernicus Emergency Management Service identified 2,037 hectares of flooded area in Dagupan on 25 October 2015, 792 hectares by 28 October 2015, and 1,388 hectares as of 31 October 2015. Most flood waters were located outside of Dagupan city, particularly in a rural area southeast of the city and northwest of the Moncada settlement. Map products are available for download in TIFF, PDF, and JPEG formats on the Copernicus Emergency Management Service website. Accompanying zipped vector packages are also provided on the website.

Source: Copernicus Emergency Management Service

Link: <http://emergency.copernicus.eu/mapping/list-of-components/EMSR143>

Central America

Guatemala landslide – GLIDE number: LS-2015-000138-GTM

Heavy rainfall caused a landslide to occur on 01 October 2015 in the municipality of Santa Catarina Pinula, Guatemala. More than 160 people were killed and hundreds remained missing as of 14 October 2015 after the village of El Cambray II was buried. The International Charter on Space and Major Disasters was activated on 07 October 2015 by the USGC on behalf of the National Emergency Operations Center of Guatemala and project management assumed by CATHALAC. CATHALAC and CONRED have since produced several maps depicting the area affected by the landslide in El Cambray II. Using satellite imagery acquired 08 October 2015 and 22 August 2015, CATHALAC and CONRED identified a total of 2.2 hectares buried by the landslide in El Cambray II. Approximately 0.84 hectares of this affected area was originally covered by housing. Map products are available for online viewing and download in JPEG format on the International Charter on Space and Major Disasters website.

Sources: International Charter on Space and Major Disasters, CATHALAC

Link: <https://www.disasterscharter.org/web/guest/-/landslide-in-guatemala>

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Middle East

Yemen cyclone – GLIDE number: TC-2015-000149-YEM

On 02 November 2014, tropical cyclone Chapala made landfall over the remote Yemeni island of Socotra. Considered to be the country's most powerful storm in decades, Chapala generated sustained winds of up to 240 kilometers per hour, equivalent to a Category 4 hurricane. The UNITAR-UNOSAT Rapid Mapping Service has been activated for this event based on a request from UN OCHA. Recently, the NASA Earth Observatory acquired 29, 30 and 31 October 2015 satellite imagery of Chapala and produced overview maps. While the newly formed tropical cyclone could be seen off the coast of India on 29 October 2015, by 30 October 2015 Chapala was visible moving westward in the Arabian Sea with sustained winds between 240 to 250 kilometers per hour and wave heights of 38 feet. As of 31 October 2015, the tropical cyclone was visible nearing the Arabian Peninsula with sustained winds of 215 kilometers per hour. Chapala is forecast to make landfall west of Mukalla city on the southern coast of Yemen's mainland on 03 November 2014 with sustained winds of 140 kilometers per hour. 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=86899&eocn=home&eoci=nh>
<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86913&eocn=home&eoci=nh>

North America

Mexico hurricane – GLIDE number: TC-2015-000144-MEX

The strongest hurricane on record in the Americas made landfall over Jalisco state in western Mexico on 23 October 2015. Hurricane Patricia was a Category 5 storm at the time and had winds of up to 325 kilometers per hour. The NASA Earth Observatory and the Copernicus Emergency Management Service recently published new maps of the hurricane and its aftermath. Satellite imagery collected by the NASA Earth Observatory on 26 October 2015 shows the remnants of Patricia drifting over the Gulf of Mexico and the southeastern United States. The Copernicus Emergency Management Service analyzed 25 October 2015 satellite imagery over multiple locations in the Mexican provinces of Jalisco, Colima, and Nayarit. A total flooded area of 973.8 hectares was identified. Additionally, 934 inhabitants, 282 settlements, and 61.6 kilometers of transportation routes were found to be affected. Although the hurricane quickly weakened to a tropical storm after making contact with the Sierra Madre Occidental mountain range, its remnants brought heavy rainfall and flooding to Texas and Louisiana. Map products are available for online viewing and download in various formats on the NASA Earth Observatory and Copernicus Emergency Management Service websites.

Sources: NASA Earth Observatory, Copernicus Emergency Management Service

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Links: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=86886&eocn=home&eoci=nh>
<http://emergency.copernicus.eu/mapping/list-of-components/EMSR144>

*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*

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.*