

***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 30 October 2014

### Africa

#### **Central African Republic complex emergency – GLIDE number: CE20131212CAF**

Since an outbreak of violence beginning in December 2013, the Central African Republic has experienced considerable hardship. UNITAR/UNOSAT has monitored the effects of this conflict and recently released a live web map that compiles all of its damage assessment data. Using satellite imagery acquired 06, 20 and 22 January 2014, as well as 22 and 28 February 2014, UNITAR/UNOSAT detected a large amount of destroyed infrastructure in each of the analyzed localities. In total, UNITAR/UNOSAT identified 153 destroyed structures in Bambari, 506 in Bouar, 1,234 in Bossangoa, 1,875 in Bangui, and estimates 339 structures were destroyed in Bozoum. The interactive web map allows for dynamic viewing of damage data. Data files can be imported in Excel or CSV format and links to UNITAR/UNOSAT PDF damage assessments are accessible through a link list widget.

Source: UNITAR/UNOSAT

Link: [http://www.unitar.org/unosat/node/44/2082?utm\\_source=unosat-unitar&utm\\_medium=rss&utm\\_campaign=maps](http://www.unitar.org/unosat/node/44/2082?utm_source=unosat-unitar&utm_medium=rss&utm_campaign=maps)

#### **Somalia complex emergency – GLIDE number: CE20130710SOM**

As a result of conflict as well as political, security, development, and humanitarian challenges, more than one million internally displaced persons (IDPs) currently reside within Somalia. Using satellite imagery acquired 03 March 2013, 24 November 2013, 15 September 2014, and 09 October 2014, UNITAR/UNOSAT recently published four maps of IDP shelters in the border town of Doolow and the Mogadishu districts of Daynile and Dharkenley. Analysis of 15 September 2014 imagery revealed that the Qansalay IDP settlement, located southwest of Doolow, was composed of 904 shelters and 11 administrative buildings at that time. The Kabasa IDP settlement, situated east of Doolow, consisted of 1,457 shelters and 20 administrative buildings as of 15 September 2014. While the number of detected shelters decreased since the last UNITAR/UNOSAT analysis of this area on 03 March 2013, improvised shelters (buuls) have been transformed into temporary housing or semi-permanent structures. Within the Mogadishu districts of Daynile and Dharkenley, UNITAR/UNOSAT identified a total of 17,010 IDP structures as of 09 October 2014. The majority of structures in both districts consist of temporary housing and buuls. Map products are maps are available for download as PDFs on the UNITAR/UNOSAT website.

Source: UNITAR/UNOSAT

Link: <http://www.unitar.org/unosat/maps/92>

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### **Ethiopia refugee camps – GLIDE number: RC20140228ETH**

Ethiopia provides shelter and protection to hundreds of thousands of refugees from more than 13 countries, the majority of which originate from Sudan, South Sudan, Somalia, and Eritrea. In response to a request by the UNHCR, UNITAR/UNOSAT used satellite imagery acquired 31 December 2013 and 07 January 2014 to produce two land cover classification maps for refugee camp planning purposes. The maps illustrate varying environmental conditions in two different regions of Ethiopia during the country's dry season. Five separate land cover classes depict dense vegetation, vegetation, sparse vegetation, bare soil, and burnt areas. In the Bench Maji area of the Southern Nations, Nationalities, and People's Region, the Okugo camp was mainly surrounded by sparse vegetation, bare soil, and burnt areas on 31 December 2013. On 07 January 2014 the Sherloke and Ashura camps, situated in the Benishangul Gumuz region, were surrounded by all five land cover classes, although vegetated areas were more pervasive than burnt areas within the immediate vicinity of the camps. Both of these land cover classification maps are available for download as PDFs on the UNITAR/UNOSAT website.

Source: UNITAR/UNOSAT

Link: <http://www.unitar.org/unosat/maps/29>

## **Asia**

### **India air pollution – GLIDE number: TBD**

Northern India has experienced a thickening haze over its land since 22 October 2014. The cause of this air pollution has mainly been attributed to smoke from agricultural fires, as well as urban and industrial pollution. The NASA Earth Observatory acquired satellite imagery of the widespread haze on 27 October 2014 and detected more than 15 separate fires burning. While air pollution usually dissipates quickly, this haze has remained trapped in the region due to a temperature inversion caused by a storm system in northern Pakistan and India. In May 2014, the World Health Organization identified four cities in India that have the worst air pollution in the world. While a new air quality index for the country was proposed by India's Central Pollution Control Board in October 2014, it has yet to be implemented. A map of the 27 October 2014 haze 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=84623&eocn=home&eoci=nh>

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## North America

### United States volcano – GLIDE number: TBD

Lava from Hawaii’s Kilauea volcano flowed into residential areas in the town of Pahoa on 28 October 2014. Previous NASA Earth Observatory imagery analysis illustrated the lava flow 3.3 kilometers away from Pahoa on 24 September 2014. Although lava from the volcano usually flows south towards the ocean, this atypical flow has moved in a northeast direction. The NASA Earth Observatory acquired satellite imagery of the lava flow on 24 October 2014 and produced a situational overview map. The lava flow and smoke are visible in this map, as is a large burn scar to the southwest of Pahoa. While the lava can be seen approaching Pahoa’s Apa’a Street on 24 October 2014, by 25 October 2014 it had traversed the road. An aerial photograph from 27 October 2014 shows the lava progressing closer to a more densely populated part of Pahoa at approximately five meters per hour. Map products of Kilauea are available for online viewing and download in GeoTIFF and JPEG formats on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/event.php?id=36090>

## North Atlantic Ocean

### Bermuda hurricane – GLIDE number: TBD

Following the passage of hurricane Gonzalo over Bermuda on 17 October 2014, satellite imagery captured the storm’s aftermath. The NASA Earth Observatory acquired pre-event satellite imagery from 02 October 2014 and post-event imagery from 18 October 2014 for comparison. While pre-event imagery depicts relatively calm ocean waters around Bermuda, post-event imagery illustrates vast expanses (25 to 30 kilometers) of sediment plumes dispersed throughout the water surrounding the island. Suspended sediments most likely consist of beach sand as well as carbonate sediments from the reefs and shallows. According to the NASA Earth Observatory, some changes to the island itself are also visible in the post-event imagery. An image comparison tool provided by the NASA Earth Observatory allows users to visualize these differences. Map products are available for online viewing and download in GeoTIFF, JPEG, and KML formats on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=84595&eocon=home&eoci=nh>

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## South America

### **Chile & Argentina volcano – GLIDE number: TBD**

Located on the border of Chile and Argentina in the Andes, the Copahue volcano showed signs of activity in October 2014 with explosions as well as ash and steam emissions. Although the Copahue volcano has been active since 2012, its last major eruption occurred in 1992. The NASA Earth Observatory obtained satellite imagery of the volcano on 21 October 2014. An overview map was subsequently produced in which a long ash plume can be seen emanating from the volcano and moving in a southeast direction. Ash-stained snow surrounding the plume's path is also visible. By 24 October 2014 Copahue's activity had decreased, however, officials recommended a distance of three kilometers from the volcano's crater be maintained. The map of Copahue on 21 October 2014 is available for online viewing and download in GeoTIFF and JPEG formats on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=84638&eocn=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: [maps@gdacs.org](mailto: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.*