



***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 06 May 2014

### Africa

#### **Somalia complex emergency – Glide number: CE20130710SOM\***

Mainly due to clan conflict, Somalia has experienced significant movement of IDPs. The UNITAR Operational Satellite Applications Programme (UNOSAT) recently released a map depicting IDP settlements and shelters in Kismayo, Lower Juba, Somalia. Using satellite imagery acquired 05 March 2014, UNITAR/UNOSAT identified 1,969 shelters in 57 IDP settlements. Significant uncertainty remains, however, due to shelter density, poor image quality, and assorted construction materials. Nonetheless, this analysis was compared to satellite data from 11 August 2013 in order to determine whether settlements were new, had closed, or had expanded or contracted. This map product is available for download as a PDF on UNITAR/UNOSAT's website. An accompanying shapefile and geodatabase in ESRI format can also be accessed through UNITAR/UNOSAT's product links.

Source: UNITAR/UNOSAT

Link: <http://www.unitar.org/unosat/node/44/1978>

### Middle East

#### **Afghanistan floods – Glide number: FF-2014-000060-AFG**

On 25 April 2014, six provinces in northern Afghanistan experienced flash floods as a result of heavy rainfall from passing storms. Four days later, the International Charter Space and Major Disasters was activated by the UNITAR Operational Satellite Applications Programme (UNOSAT) on behalf of UNOCHA. UNITAR/UNOSAT has since produced two estimated rainfall accumulation maps, four flood maps, and one landslide map. Precipitation data from the Tropical Rainfall Monitoring Mission (TRMM) was utilized to create two maps of estimated total rainfall accumulation in Afghanistan from 23 to 24 April 2014 and from 25 to 29 April 2014. TRMM estimated rainfall values range from zero to over 90 millimeters for the earlier dates and from zero to 300 millimeters for the later period. Using satellite imagery acquired 29 April 2014, UNITAR/UNOSAT identified several areas of standing flood waters as well as a probable IDP settlement in Kwanjanduko, Jowzjan Province. Satellite-detected flooded areas from the same date reveal that a large part of the town of Khwaja Du Koh was affected. Additionally, a Water Index extracted from the satellite image illustrates areas of standing water and soils with varying levels of water content (i.e. mud). Similarly, water and inundated soils within and north of Sar-E Pol city were extracted from satellite imagery acquired 01 May 2014. Lastly, a map of a landslide on 02 May 2014 depicts the partially buried village of Ab Barek in Badakshan Province. Using pre-crisis satellite data from 30 March 2014 and a post-crisis satellite

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image acquired 02 May 2014, UNITAR/UNOSAT delineated the primary landslide area, a secondary area affected by the landslide, and probable buried houses. Map products are available for download as PDFs on the UNITAR/UNOSAT website and the International Charter Space and Major Disasters website.

Source: UNITAR/UNOSAT, International Charter Space and Major Disasters

Links:

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

UNOSAT LIVE Map: <http://www.unitar.org/unosat/node/44/1987>

[http://www.disasterscharter.org/web/charter/activation\\_details?p\\_r\\_p\\_1415474252\\_assetId=ACT-489](http://www.disasterscharter.org/web/charter/activation_details?p_r_p_1415474252_assetId=ACT-489)

### **Syria complex emergency – Glide number: CE20130604SYR\***

In the context of Syria's humanitarian crisis, the UNITAR Operational Satellite Applications Programme (UNOSAT) has been monitoring the situation in two refugee camps for Syrians – Al Zaatari and Al Azraq. While Al Zaatari is located in Jordan's Mafraq Governorate, Al Azraq is situated in the Az Zarqa Governorate of Jordan. UNITAR/UNOSAT recently published updated maps of these refugee camps. Analysis of 06 April 2014 satellite imagery of Al Zaatari revealed a camp size of 534.4 hectares and a total of 31,280 shelters, as well as 1,796 infrastructure and support buildings. In comparison with satellite data from 07 January 2014, a total of 3,443 shelters have been closed or moved, and 6,700 shelters have been constructed. This represents a shelter increase of 3,257 or approximately 4.5% since the previous UNITAR/UNOSAT assessment. Using satellite imagery of Al Azaq acquired 26 April 2014, UNITAR/UNOSAT identified a total of 7,333 structures, including 2,494 infrastructure and support buildings as well as 4,839 shelter structures. This total indicates an increase of 4,159 structures since the last UNITAR/UNOSAT analysis which utilized satellite imagery from 28 December 2013. The number of paved and unpaved roads has also increased substantially and water as well as sanitation services capable of supporting thousands of proximate shelters are under development in many camp zones. Although the camp is currently under construction, it has the capacity to host approximately 12,500 refugees. Map products are available for download as PDFs on the UNITAR/UNOSAT website. Accompanying shapefiles and geodatabases in ESRI format can also be accessed through UNITAR/UNOSAT's product links.

Source: UNITAR/UNOSAT

Link: <http://www.unitar.org/unosat/maps/108>

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## Europe

### **Netherlands fire – Glide number: EMSR081\***

A wildfire occurred in the Netherlands' Hogue Veluwe National Park near the city of Arnhem on 20 April 2014. In order to assist the recovery phase, the National Operations Centre of the Netherlands requested that the Copernicus Emergency Management Service produce reference, delineation, and grading maps of the situation before and after this event. Although most of these maps are currently under production, a reference map of the area that uses pre-crisis satellite imagery from 19 April 2014 was recently published. The map illustrates information about the area of interest including land use, vegetation, transportation infrastructure, settlements, and administrative boundaries. This map product and its associated data are available on the Copernicus website in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package. Data can also be accessed in GeoTIFF, GeoPDF, GeoJPEG and vector (shapefile and KML) formats.

Source: Copernicus Emergency Management Service

Link: <http://emergency.copernicus.eu/mapping/list-of-components/EMSR081>

### **Romania floods – Glide number: EMSR082\***

Between 03 and 04 May 2014, heavy rainfall and severe flooding struck several parts of southern Romania, particularly the country's south-western region. At the request of Romania's National Operations Centre, the Copernicus Emergency Management Service published four reference maps and two delineation maps of this region. Although two delineation maps are currently under production, one detailed delineation map that has already been published uses satellite imagery acquired 05 May 2014 and shows 4.3 hectares of flood affected land in the Balacita area. Inhabitants as well as settlements were not impacted, however, 0.2 kilometers of secondary roads were flooded. Map products and their associated data are available on the Copernicus website in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package. Data can also be accessed in GeoTIFF, GeoPDF, GeoJPEG and vector (shapefile and KML) formats.

Source: Copernicus Emergency Management Service

Link: <http://emergency.copernicus.eu/mapping/list-of-components/EMSR082/ALL/ALL>

## Asia

### **North Korea fire – Glide number: TBD**

Satellite imagery acquired on 25 April 2014 shows dozens of active fires burning in North Korea. The National Aeronautics and Space Administration (NASA) Earth Observatory has produced a map that outlines these burning areas in the color red. The smoke produced by all of the fires together is

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visible over the Sea of Japan. Typically, fires are purposefully ignited in farming regions in order to clear agricultural debris and fertilize soil. Some fires, however, appear to be burning in densely forested areas, indicating that they may be wildfires. This map product is available for online viewing as well as download in JPEG format and as a KMZ file on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=83593&eocn=home&eoci=nh>

## North America

### United States tornado – Glide number: TO-2014-000061-USA

On 27 April 2014 a powerful tornado struck Arkansas, resulting in death and destruction. Analysis of satellite imagery from 25 and 28 April 2014 was conducted by the National Aeronautics and Space Administration (NASA) Earth Observatory and shows Little Rock as well as its surrounding area before and after the tornado. An image comparison tool is provided for examining the differences between pre-crisis and post-crisis imagery. The tornado's 66 kilometer path of destruction was situated just north of Little Rock and is visible in the post-crisis image as light brown trails where plants and trees were uprooted. A more detailed satellite image acquired 02 May 2014 shows the storm's aftermath in the towns of Mayflower and Vilonia. These map products are available for online viewing as well as download in JPEG and GeoTIFF formats on the NASA Earth Observatory website.

Source: NASA Earth Observatory

Links:

<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=83578&eocn=home&eoci=nh>

<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=83612&eocn=home&eoci=nh>

## South America

### Peru volcano – Glide number: TBD

In mid-April, Peru's Ubinas Volcano began to experience explosive activity. On 28 April 2014, the volcano erupted an ash plume which caused officials to declare a state of emergency. A satellite image of the event was captured the same day and rendered into a map by the National Aeronautics and Space Administration (NASA) Earth Observatory. Billows of smoke are visible as well as vegetation which is depicted in the color red. This map product is available for online viewing as well as download in JPEG and GeoTIFF formats on the NASA Earth Observatory website.

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Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=83583&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:*

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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.*