

***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 09 March 2015

### Asia

#### **Kamchatka Peninsula volcano – GLIDE number: TBD**

Located on the Kamchatka Peninsula of Russia, Shiveluch is one of the region's largest and most active volcanoes. In late February 2015 Shiveluch displayed explosive activity. The NASA Earth Observatory acquired satellite imagery of an explosive event on 28 February 2015 and produced two overview maps. An animation of the activity was also created with two images taken ten minutes apart. As of 28 February 2015, a plume of volcanic ash that attained an altitude of approximately 9,000 meters was visible migrating in a northeast direction. According to news reports, the ash eventually traveled across the Bering Sea into western Alaska. 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=85414&eocn=home&eoci=nh>

### Middle East

#### **Syria complex emergency – GLIDE number: CE20130604SYR**

As a result of ongoing conflict in Syria, damage and destruction within the country continues. UNITAR-UNOSAT recently published neighborhood and city-wide damage assessments for Kobane in Aleppo Governorate, as well as a security analysis for the Yarmouk and Falesteen Palestinian refugee camps in Damascus, Syria. Analysis of satellite imagery acquired 22 January 2015, 06 December 2014, and 06 September 2014 revealed a total of 3,247 affected structures within Kobane and its immediate surroundings. Approximately 1,206 of these were destroyed, 1,169 severely damaged, and 872 moderately damaged. A total of 979 impact craters were also identified. As of 06 December 2014 UNITAR-UNOSAT had found a total of eight craters within the neighborhoods of Sanayi and Kaniya Kurdan that were possibly caused by air strikes. By 22 January 2015 an additional 12 craters were identified in the neighborhoods of Kaniya Kurdan and Saredari. UNITAR-UNOSAT also analyzed 10 January 2015 and 03 November 2014 satellite imagery of the Yarmouk and Falesteen refugee camps. As of 10 January 2015, 22 possible roadblocks and 2 possible checkpoints were detected. Several damaged zones within the camps were also identified. These maps are available for download as PDFs on the UNITAR-UNOSAT website. Accompanying data for Kobane in shapefile and ESRI geodatabase format are also accessible through UNITAR-UNOSAT product links.

Source: UNITAR-UNOSAT

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

## Europe

### Spain floods – GLIDE number: EMSR120\*

Snowfall melt in the Pyrenees caused flooding in the Ebro River Basin in late February and early March 2015. In an effort to aid Disaster Response Authorities, the Copernicus Emergency Management Service continues to produce delineation maps for floods in Zaragoza Province. Using satellite imagery from 02 March 2015 Copernicus identified 11,203 hectares of flooded area, including residential and urbanized multi-functional settlements, roadways and railways, as well as cropland, scrubland and woodland. This represents a significant increase since the 27 February 2015 Copernicus analysis in which 3,651 hectares of flooded area were detected. Additionally, 3,940 inhabitants were affected by 02 March 2015, as compared with 1,260 on 27 February 2015. Map products are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package on the Copernicus Emergency Management Service website. 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/EMSR120>

## North America

### United States volcano – GLIDE number: TBD

The Pu'u 'O'o crater of Hawaii's Kilauea volcano erupted in late June 2014 and its lava continued to flow in February 2015. The NASA Earth Observatory collected satellite imagery of the volcano on 18 and 26 February 2015 and produced two maps. As of 18 February 2015, volcanic gas drifted towards the west and was transported hundreds of kilometres downwind of Kilauea. By 26 February 2015, the active lava flow was situated a few kilometres southeast of the town of Pahoa. Although some property on the outskirts of Pahoa was damaged, the lava had not yet reached the town center. Map products are available for online viewing as well as 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=85446&eocn=home&eoci=nh>

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## South America

### **Argentina wildfire – GLIDE number: TBD**

Argentina experienced one of the worst wildfires in its recorded history from mid-February 2015 to early March 2015. As of 28 February 2015, more than 20,000 hectares had been burned and the wildfire posed a threat to some of the world's oldest trees located in Alerces National Park. The NASA Earth observatory acquired satellite imagery of the wildfire on 28 February 2015 and produced a two overview maps. Smoke from the fire burning in Chubut Province was visible moving in an eastern direction over southern Argentina. Approximately seven hot spots were detected in locations with surface temperatures typically associated with fire. 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=85419&src=nha>

### **Brazil floods – GLIDE number: TBD**

Heavy rainfall in northern Brazil caused severe flooding in late February 2015. The International Charter for Space and Major Disasters was activated on 27 February 2015 by Brazil's National Center for Disaster and Risk Management (CENAD). CENAD has since produced two maps of flooding in the cities of Rio Branco and Xapuri, Acre State, Brazil. Analysis of satellite imagery collected 02 March 2015 revealed widespread flooding along a portion of the Acre River that passes through the state capital of Rio Branco. Using satellite imagery acquired 01 March 2015, CENAD also identified two flooded areas within the city of Xapuri that were situated along the Acre River. CENAD map products are available for online viewing and download in JPEG format on the International Charter for Space and Major Disasters website.

Sources: International Charter for Space and Major Disasters, CENAD

Link: <https://www.disasterscharter.org/web/guest/activations/-/article/flood-in-braz-2>

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

One of Chile's most active volcanoes, Villarrica, erupted on 03 March 2015 and necessitated the evacuation of thousands of residents from the nearby towns of Pucon and Panguipulli. Consequently, the International Charter for Space and Major Disasters was activated the same day by Chile's National Emergency Office of the Interior Minister (ONEMI). The German Remote Sensing Data Center of the DLR produced two maps of the volcano using satellite imagery acquired 04 March 2015, 20 February 2015, and 07 January 2015. Probable lava flow burn scars were visible primarily to the north and east of the volcano's mouth. Maps are available for online viewing on the International Charter for Space and Major Disasters website and download in JPEG, KMZ, and ESRI world file formats on the DLR website.

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Sources: International Charter for Space and Major Disasters, DLR

Links: <https://www.disasterscharter.org/web/guest/activations/-/article/volcano-in-ch-19>

<http://www.zki.dlr.de/article/2715>

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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.*