

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 07 October 2014

Middle East

Gaza complex emergency – GLIDE number: CE20140715PSE

Gaza experienced ongoing violence from July to August 2014. UNITAR/UNOSAT recently published a report and six new damage assessments depicting the situation in the Gaza Strip. Analysis of Pleiades satellite imagery from July and August 2014 reveals extensive damage to building structures, health facilities, education facilities, agricultural fields, and greenhouses. A total of 6,761 structures were destroyed, 3,565 severely damaged, and 4,938 moderately damaged. Additionally, 7,473 craters in agricultural and non-urbanized areas were detected. UNITAR/UNOSAT report and map products are available online for download as PDFs. Corresponding shapefiles and geodatabases in ESRI format can be accessed through UNITAR/UNOSAT product links.

Source: UNITAR/UNOSAT

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

Syria complex emergency – GLIDE number: CE20130604SYR

As a result of ongoing conflict in Syria, citizens continue to flee the country in search of refuge. Using satellite imagery acquired 01 October 2014, UNITAR/UNOSAT identified 132 probable internally displaced persons (IDP) shelters in the desert along the Jordanian border, approximately 25 kilometers southwest of the Al Waleed border crossing. In comparison with UNITAR/UNOSAT analysis of satellite imagery from 25 July 2014, this represents an increase of 47% in visible IDP shelters. It is possible that some shelters were missed or erroneously included in this assessment due to the structures' small size and irregularity. This map product is accessible as a PDF on the UNITAR/UNOSAT website.

Source: UNITAR/UNOSAT

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

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Africa

South Sudan complex emergency – GLIDE number: CE20131218SSD

Instability in South Sudan's Bor region has resulted in multiple IDP camps on the west bank of the White Nile in Awerial County. UNITAR/UNOSAT analysis of satellite imagery from 01 September 2014 detected approximately 16,364 shelters and 670 infrastructure or support buildings at the Minkaman IDP site in Lakes State. This represents a considerable increase since UNITAR/UNOSAT's previous analysis in July 2014 which identified approximately 13,492 shelters and 572 infrastructure or support buildings. An underestimation of these figures is possible as IDP shelters situated under trees were not detected by this analysis. Map products are available for viewing as PDFs on UNITAR/UNOSAT's website. Accompanying shapefiles and geodatabases in ESRI format can also be accessed through online product links.

Source: UNITAR/UNOSAT

Link: <http://www.unitar.org/unosat/maps/110>

Asia

Pakistan floods – GLIDE number: FL20140910PAK

Monsoon rains caused destructive floods and landslides in Pakistan during September 2014. UNITAR/UNOSAT consequently activated the International Charter Space and Major Disasters on 12 September 2014 and released maps depicting the most adversely affected regions. Optical and radar satellite imagery from 10, 15, and 16 September 2014 was used for assessing floods in the Wazirabad, Fatehpur-Puran, Multan, Chiniot, and Tarind Muhammad Panah areas of Punjab Province. Flooding occurred along the Chenab, Jhelum, Indus, and Panjnad rivers and their surrounding lands, many of which are agricultural. A total of six products relating to this event were published on the UNITAR/UNOSAT website and can be viewed as PDFs. Corresponding shapefiles and geodatabases in ESRI format are also available on the UNITAR/UNOSAT product links. An online real-time map provided by the Dartmouth Flood Observatory (DFO) illustrates flooding in Pakistan within the last two weeks, as well as since the year 2000. The NASA Earth Observatory has also published maps of satellite imagery comparing the progression of the flooding from 07 to 11 September 2014.

Source: UNITAR/UNOSAT, International Charter Space and Major Disasters, DFO, NASA Earth Observatory

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Links: <http://www.unitar.org/unosat/maps/PAK>

<https://www.disasterscharter.org/web/guest/-/flood-and-landslide-in-pakistan>

<http://floodobservatory.colorado.edu/Version3/2014Pakistan4179.html>

<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=84352&eocn=home&eoci=nh>

Japan volcano – GLIDE number: TBD

Located 200 kilometers west of Tokyo, Japan's Mount Ontake stratovolcano erupted on 27 September 2014. The cause of this eruption was initially attributed to a steam-driven phreatic eruption in which underground water boiled causing subsequent steam, water, and ash explosions. The NASA Earth Observatory acquired MODIS satellite imagery of this event and produced two maps displaying the eruption's gas and steam progression from 27 to 28 September 2014. The plume appears to decrease considerably from one day to the next, though it remains notable on the second day. These map products are available for online viewing and download on the NASA Earth Observatory website in JPEG format.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=84456&eocn=home&eoci=nh>

Europe

France floods – GLIDE number: TBD

Following days of torrential rain, flash floods hit France and the International Charter Space and Major Disasters was triggered on 18 September 2014 by the Direction Générale de la Sécurité Civile et de la Gestion des Crises (COGIC). Acting as Project Manager, SERTIT analyzed satellite imagery from 20 and 22 September 2014 to produce situation maps of the Lamalou-les-Bains, Saint-Hippolyte-du-Fort, and Saint-Laurent-le-Minier areas, located near the Mediterranean coast of France. Damage in these areas consisted of river bank erosion, a landslide, debris, and extensive mud deposits. Situation maps are available for online viewing on the SERTIT and International Charter Space and Major Disasters websites. Metadata as well as associated Google Earth files are also accessible on the SERTIT website.

Source: SERTIT, International Charter Space and Major Disasters

Links: <http://sertit.u-strasbg.fr/RMS/action.php?id=1116758401>

<https://www.disasterscharter.org/web/guest/-/flood-in-france>

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Iceland volcano – GLIDE number: EMSR099*

A volcanic eruption occurred in southeast Iceland on 01 September 2014. The Copernicus Emergency Management Service responded to this event by producing delineation and reference maps of the Askja and Husavik areas. Copernicus analysis of satellite imagery acquired 03, 06, and 14 September 2014 revealed magma flow, sediments of volcanic flows, and lava-river interaction in the Askja region. MODIS thermal anomalies in the Vatnajokull National Park were also identified. Post-crisis delineation maps of Husavik are not yet available, but reference maps provide the general area of interest's extent along with an estimated population of 5,305 inhabitants. Copernicus products are intended to help Humanitarian Aid Operators as well as Civil Protection authorities operating in the field. Map products and data for this event are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package. Data can be accessed in GeoTIFF, GeoPDF, GeoJPEG and vector (shapefile and KML) formats. The NASA Earth Observatory also released a series of maps depicting the eruption and lava flow using satellite imagery.

Source: Copernicus Emergency Management Service, NASA Earth Observatory

Link: <http://emergency.copernicus.eu/mapping/list-of-components/EMSR099>

<http://earthobservatory.nasa.gov/NaturalHazards/event.php?id=84283>

Italy landslides – GLIDE number: EMSR100*

As a result of heavy rainfall, Italy's Puglia region experienced severe floods and landslides in early September 2014. Post-crisis satellite imagery acquired 19 September 2014 was used by the Copernicus Emergency Management Service to assess the damage. The Gargano region, comprised of 132,390 inhabitants, was particularly impacted. Landslides, mudflow, and erosion affected 449 of its inhabitants, 19.4 hectares of settlements, 1 kilometer of local roads, as well as 191.1 hectares of scrub, croplands and grasslands. Copernicus maps were created in support of the Italian Civil Protection Department. Map products and data for this event are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package. Data can 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/EMSR100/ALL/ALL>

Croatia floods – GLIDE number: EMSR101 *

Following a few days of severe rainfall, flooding ensued in north-eastern Croatia during mid-September 2014. Nearly all of northern Croatia's rivers experienced exceptionally high water levels

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and the Mura, Sava, Sutla, Kupa, and Lonja rivers flooded. The Copernicus Emergency Management Service responded to this event by analyzing post-crisis imagery acquired 15 and 18 September 2014, as well as producing reference and delineation maps of the Legrad, Sisak, and Karlovac areas. Sisak was impacted the most with 3,624 hectares of flooded land, followed by Karlovac with 927 hectares affected, and Legrad with 49.8 hectares inundated. A total of 6,560 inhabitants were touched by the flooding in all three regions. Use of Copernicus products is intended for Disaster Response Authorities involved in operations. Map products and data for this event are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package. Data can 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/EMSR101/ALL/ALL>

Slovenia floods – GLIDE number: EMSR102 *

Due to successive days of torrential rain in northeast Slovenia, extensive flooding occurred in the regions of Prekmurje and Pomurje during the month of September 2014. The Copernicus Emergency Management Service subsequently used satellite imagery from 15 and 17 September 2014 to create situation maps for the affected areas of Kostanjevica, Odranci, and Gornja. Odranci was most severely impacted with 1,487 hectares of flooded area, followed by Gornja with 389 hectares, and Kostanjevica with 71 hectares of inundated land. A total of 721 inhabitants were touched by the floods in these three areas. Use of Copernicus products is intended for Disaster Response Authorities involved in operations. Map products and data for this event are available in JPEG, PDF and TIFF formats as well as a downloadable zipped vector package. Data can 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/EMSR102/ALL/ALL>

North America

United States wildfire – GLIDE number: TBD

Flames referred to as the *King fire* appeared in California's Eldorado National Forest on 13 September 2014. As of 23 September 2014, the fire had burned 36,320 hectares of forest. The NASA Earth Observatory has produced two maps of the situation with satellite imagery from 17 and 19 September 2014. Map products identify and outline fire hot spots as well as provide both natural and false color depictions of the wildfire and its expansive smoke plumes. These map products are

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available for online viewing and download on the NASA Earth Observatory website in JPEG and GeoTIFF formats.

Source: NASA Earth Observatory

Link: <http://earthobservatory.nasa.gov/NaturalHazards/event.php?id=84398>

United States volcano – GLIDE number: TBD

As a result of a volcanic eruption from a vent on the Hawaiian Kilauea Pu’u ‘O’ o crater in late June 2014, lava continued to flow northeast through the Puna Forest Reserve during September 2014. The NASA Earth observatory acquired satellite imagery of the lava flow from 11 and 24 September 2014 to produce situational overview maps. Imagery from 11 September 2014 displays lava burning through the forest, only 0.6 kilometers away from the Kaohe Homesteads development. As of 24 September 2014, the lava flow progressed northeast through forests only 3.3 kilometers away from the town of Pahoa. Natural and false color depictions of this state of the lava flow, as well as its hotspots are available for online viewing and download on the NASA Earth Observatory website in JPEG and GeoTIFF formats.

Source: NASA Earth Observatory

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

*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.*