

***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 30 November 2015

### Asia

#### **India tropical cyclone – GLIDE number: TC-2015-000163-IND**

On 10 November 2015, a tropical cyclone which formed in the southwest Bay of Bengal made landfall over the coast of India's northern Tamil Nadu State. Continuous heavy rainfall led to widespread flooding and the evacuation of roughly 10,000 Chennai residents as of 17 November 2015. UNITAR-UNOSAT produced maps of probable flood waters over the Chennai area using satellite imagery acquired 12 November 2015, 01 September 2015, and 14 October 2015. It identified an expansion of wetlands and standing waters in the Chennai area, as well as saturated soils mainly located in agricultural fields. Saturation in the examined area increased between 14 October 2015 and 12 November 2015, and the total expansion of water was estimated to be approximately 28 percent. Map products are available for download as PDFs on the UNITAR-UNOSAT website. Accompanying data in ESRI shapefile and geodatabase format is also accessible on this website.

Source: UNITAR-UNOSAT

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

### Middle East

#### **Iraq complex emergency – GLIDE number: CE20140613IRQ**

Ongoing conflict in Iraq has caused significant structural damage and destruction to some of the country's towns and cities. UNITAR-UNOSAT recently published a damage assessment for the town of Sinjar, located in Iraq's Sinjar District of Nineveh Province. Analysis of satellite imagery acquired 18 November 2015 and 07 August 2014 revealed a total of 1,293 potentially affected structures. Approximately 369 of these were destroyed, 336 severely damaged, 380 moderately damaged, and 208 possibly damaged. Before and after inset images within the map illustrate the extent of damage and destruction sustained by a few neighborhoods in the southern part of town. Due to less than ideal characteristics of the imagery used, the margin of error for this analysis is likely higher than usual. This damage assessment is available for download as a PDF on the UNITAR-UNOSAT website. Accompanying data in ESRI shapefile and geodatabase format is also accessible on this website.

Source: UNITAR-UNOSAT

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

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## North America

### **Northeast Pacific Ocean hurricane – GLIDE number: TBD**

Hurricane Sandra formed over the northeast Pacific Ocean in late November 2015. On 26 November 2015, the hurricane was classified as a Category 4 storm with sustained winds of up to 145 miles per hour. Recorded as the strongest storm in the western hemisphere to be observed so late in the year, Sandra quickly weakened into a tropical storm the next day. The NASA Earth Observatory acquired 24 November 2015 satellite imagery of Sandra as a tropical storm and created an overview map. As of this date, Sandra was visible moving in a west-northwest direction over the eastern Pacific Ocean, near the western coast of Mexico. The storm had maximum sustained winds of at least 60 miles per hour at that time and was quickly gaining strength. As of 28 November 2015, Sandra had dissipated to a remnant and brought some rainfall to the western Mexican coast. This map product 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=87067&eocn=home&eoci=nh>

### **United States snowfall – GLIDE number: TBD**

Between 20 and 21 October 2015 the United States Midwest experienced significant snowfall from South Dakota to Ohio. Records were made in some areas for the highest first snowfall total of the year. A record first snowfall of 28.4 centimeters over Chicago's O'Hare International Airport necessitated the cancellation of nearly 800 flights. The NASA Earth Observatory acquired 22 November 2015 satellite imagery of the affected region and produced overview maps. At this time the most snowfall was visible over parts of Iowa, Illinois, Indiana, and Michigan. A close-up view shows places like Chicago, Gary, and other areas surrounding south Lake Michigan covered with snow. According to meteorologists from the National Weather Service's Chicago office, prior to the snowfall November 2015 was also much warmer than usual with average monthly temperatures 6.5 degrees above normal. 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=87040&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.*