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## Flood Event 2016-Myanmar-4365

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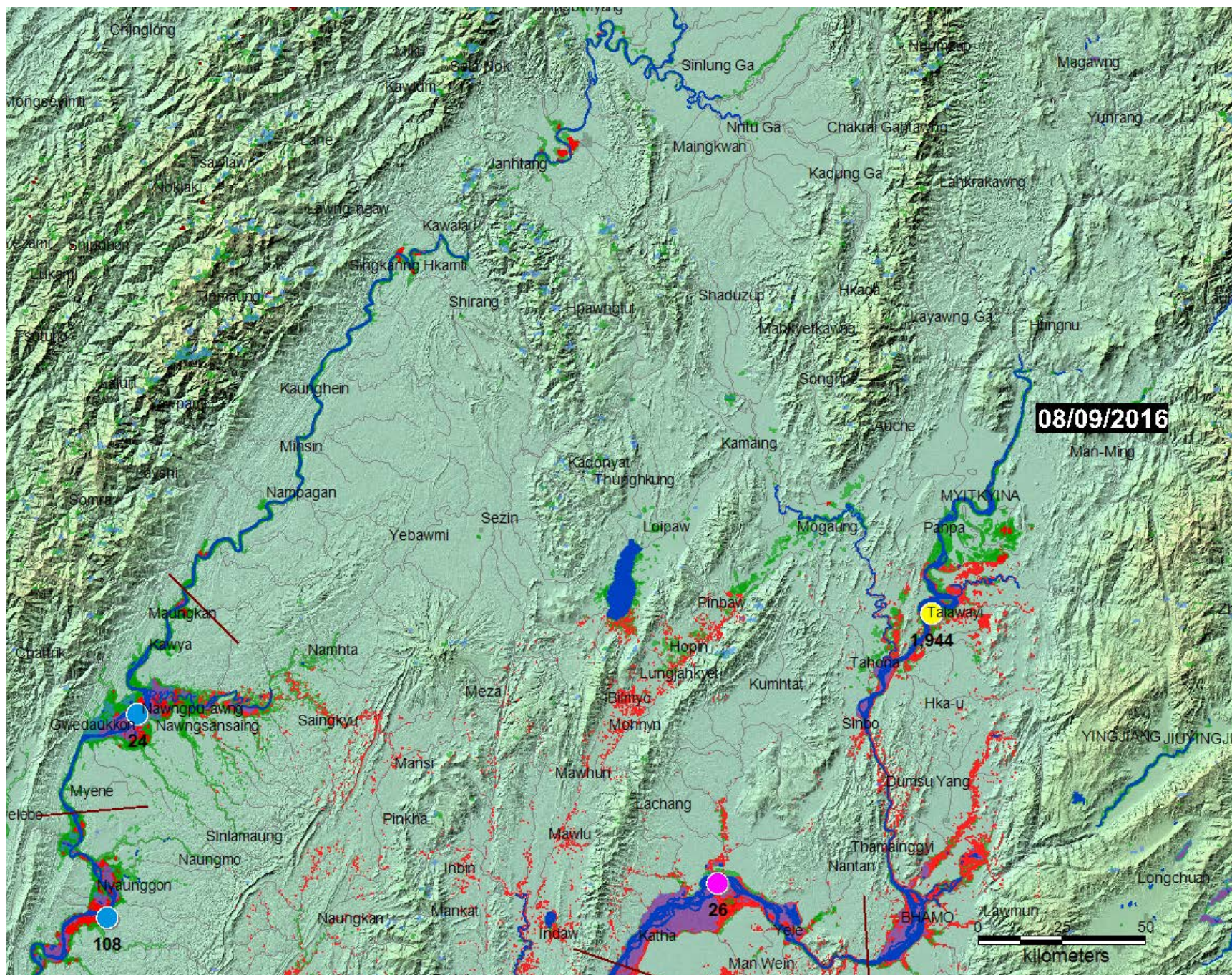
Myanmar Flooding, July 28-August 9, 2016 from NASA MODIS and ESA Sentinel 1 Data

*This is an experimental data product.*

*Red is flood water extending beyond the typical annual high water. Blue is typical annual high water (normal monsoon flooding). Purple/Maroon is flooding within the normal high water limits. Dark blue is permanent water mapped in winter. Green is all previously mapped flooding, 2000-present.*

*Reservoirs created since yr 2000 will appear in purple/maroon (currently imaged water not imaged in February 2000)*

### Flood Map North



[Geotif version](#)

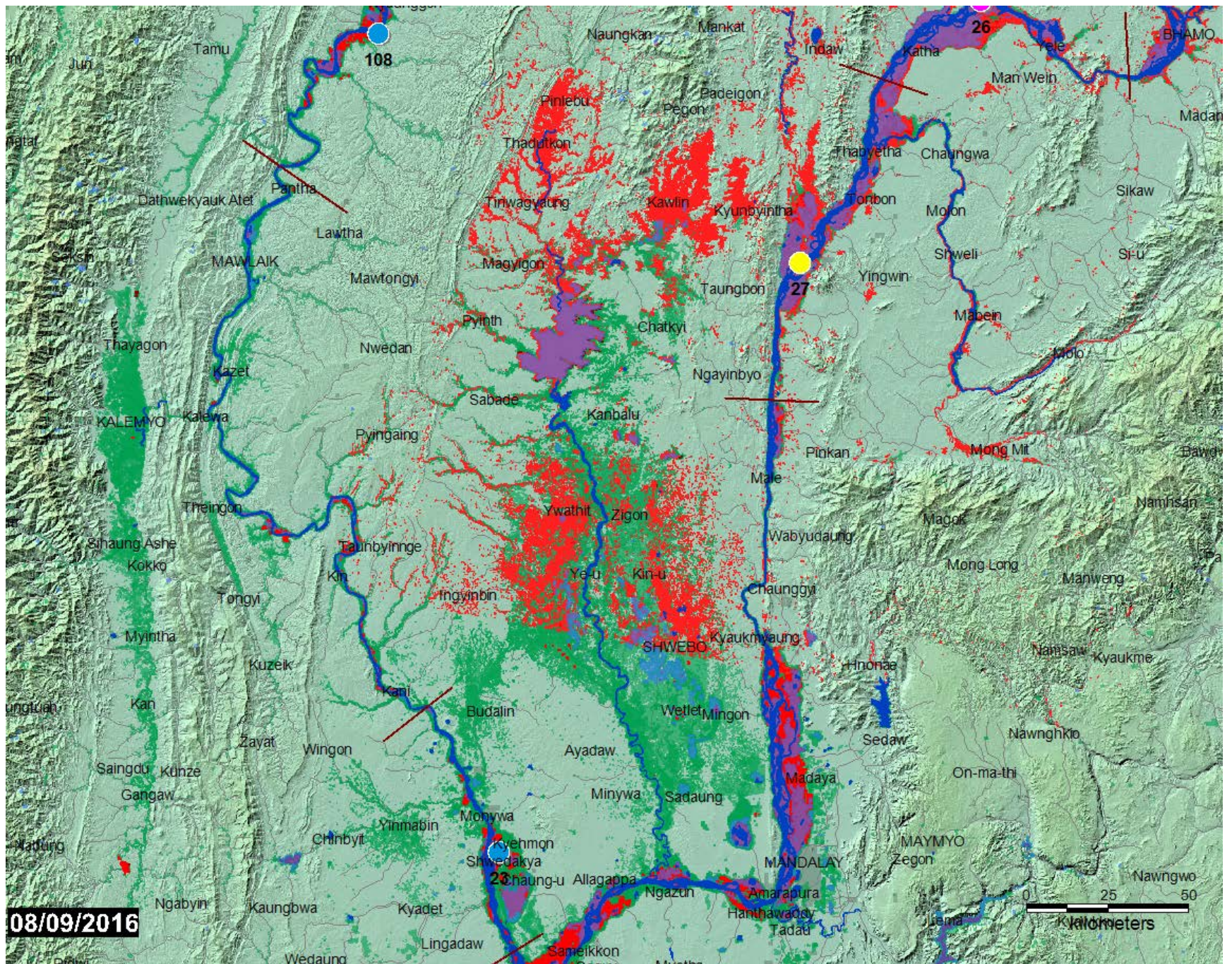
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### Flood Map Central

**Live Traffic Feed**

- A visitor from **Boulder, Colorado** viewed "The Flood Observatory" 34 secs ago
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- A visitor from **Golden, Colorado** viewed "The Flood Observatory" 3 hrs 3 mins ago
- A visitor from **Myanmar** viewed "Myanmar Flooding" 3 hrs 9 mins ago
- A visitor from **Venezia, Veneto** viewed "The Flood Observatory" 3 hrs 40 mins ago
- A visitor from **United States** viewed "Dartmouth Flood Observatory" 3 hrs 48 mins ago
- A visitor from **Bonn, Nordrhein-Westfalen** viewed "The Flood Observatory" 3 hrs 59 mins ago

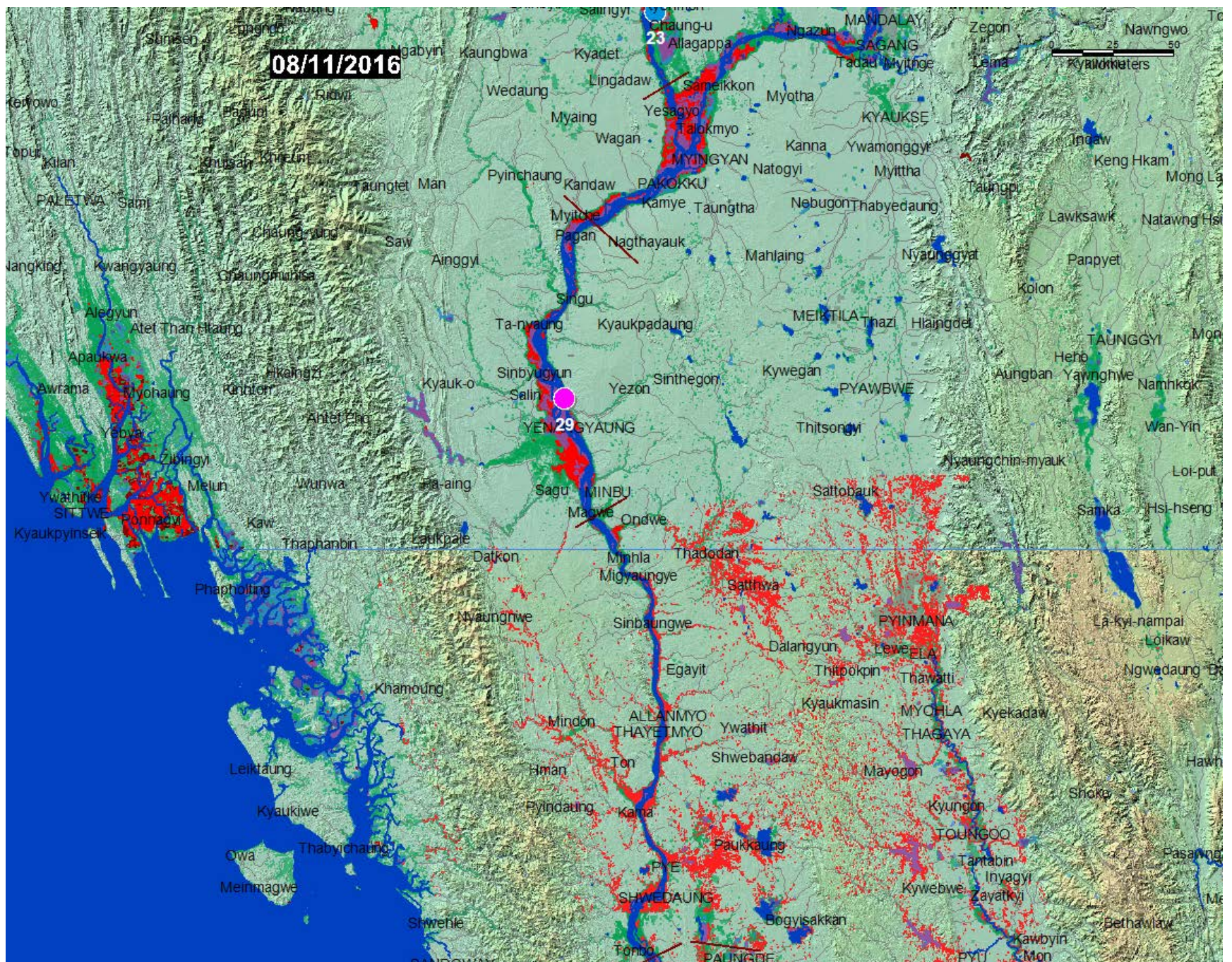
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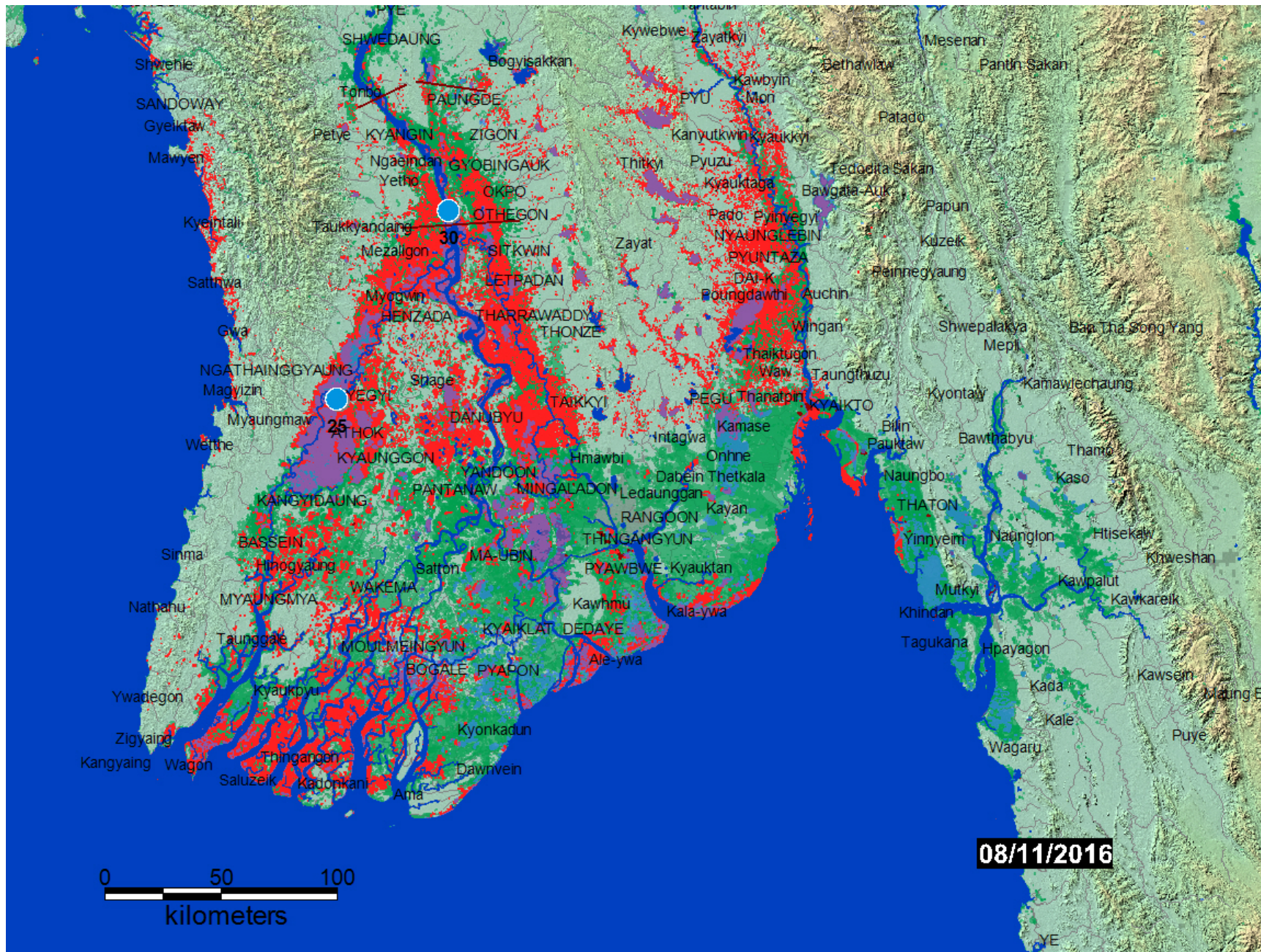
### Flood Map South Central



[Geotif version](#)

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### Flood Map South

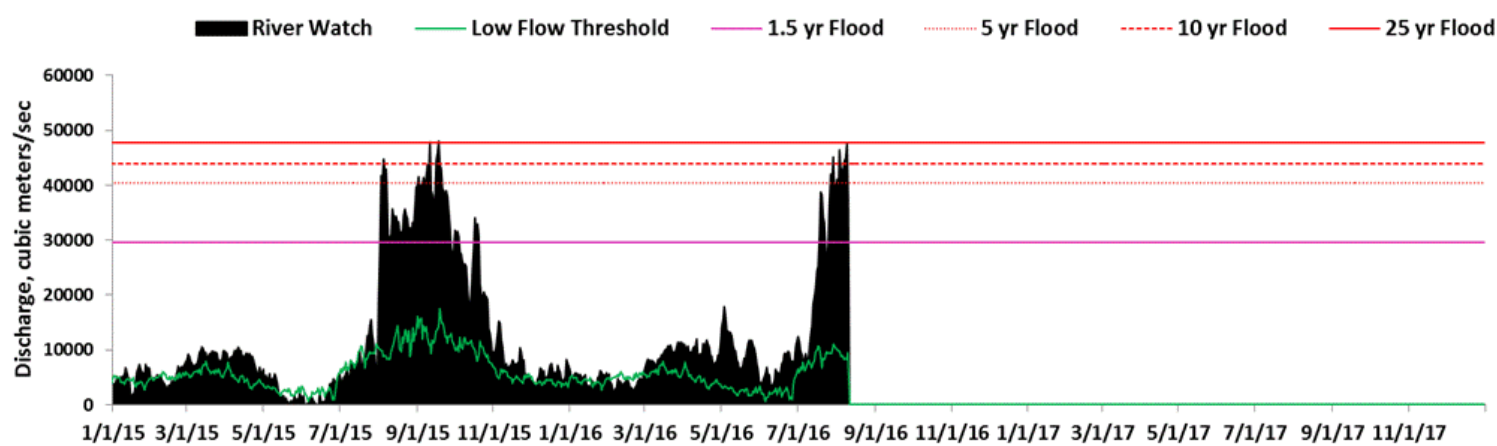


[Geotif version](#)

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### Representative River Watch Flood Hydrograph (clickable dots above)

At selected locations, a time series of satellite microwave-based daily river discharge measurements are available from the Flood Observatory. See [River Watch Global Display](#) for more information. A sample from [Site 29](#) is shown below.



### Explanation

#### Event Reporting:

The Flood Observatory maintains a [Global Active Archive](#) of large flood events, 1985 to present. It is freely available to the public in both spreadsheet and GIS formats (both formats together provide the complete Archive). New events are entered into this archive each week. As of the end of 2015, there were 4319 events; each has a unique archive number and, starting in 2016, a unique name (example: "2016-Southern USA-4337").

#### Event Mapping:

In some cases, severe or damaging floods become the focus of Observatory inundation mapping. As part of collaborations with other organizations, and the [Global Flood Partnership](#), the Observatory's maps and other data are made available to the public. With appropriate attribution, they can be used freely, including for commercial purposes, under the terms of the [Creative Commons Attribution 3.0 Unported License](#). Geotif versions and GIS files are also provided for these maps through the links below. *This event is selected for Observatory production of map and GIS data products.*

#### This Event:

[This Flood List link provides a summary.](#) According to Flood List: "As many as 100,000 people are currently displaced by flooding in Myanmar, according to figures from the country's Relief and Resettlement Department (RRD). RRD report that 6 states or regions are affected: Kachin State and Sagaing, Magwe, Mandalay, Ayeyarwady and Bago regions. Magwe (55,336 displaced) Mandalay (25,040), and Sagaing (13,040) are the worst hit" According to two River Watch sites along the Chindwin River, flooding in mid August reached or exceeded the 10 yr recurrence interval threshold.

#### Information From The Maps and River Watch Sites:

The maps show in red unusual flooding imaged by the automated MODIS NRT Flood processor at a spatial resolution of 250 m for the 14 days ending with the date on the map. Red also shows in some cases much higher spatial resolution (10 m) surface water imaged by ESA's Sentinel 1 SAR satellite during the same time period. This web page and associated image and map (GIS) files are the permanent Flood Observatory record of this event.

#### Caution:

Floods in hilly or mountainous regions are difficult remote sensing targets and not always observable. Also, cloud cover or heavy vegetation may restrict the ability to capture peak inundation everywhere. The maps may not illustrate all areas of flooding, and cloud and terrain shadows may be misclassified and falsely mapped as flood water. Finally, due to the relatively coarse resolution of MODIS 250 m bands, some areas mapped as flooded may include smaller parcels of dry land.

#### Suggested citation:

Brakenridge, G.R., Kettner, A.J., Slayback, D. and Policelli, F., date accessed, "Flood Event 2016-Myanmar-4365", Dartmouth Flood Observatory, University of Colorado, Boulder, Colorado, USA, <http://floodobservatory.colorado.edu/Events/2016Myanmar4365/2016Myanmar4365.html>

#### Mapping Data Sources:

The Land Atmosphere Near-real-time Capability for EOS ([LANCE](#)) system provides daily NASA MODIS data at 250 m spatial resolution. Landsat 8 data, if used, are provided by the [U.S. Geological Survey Hazards Data Distribution System](#). Landsat 8 is jointly managed by NASA and the United States Geological Survey. COSMO-SkyMed synthetic aperture radar (SAR) data are occasionally provided by the Italian Space Agency (ASI) as a contribution to the [CEOS Flood Pilot](#). Sentinel SAR data, when used, are provided by the European Space Agency. NASA EO-1 satellite tasking and data are provided by Stuart Frye and colleagues at the NASA Goddard Space Flight Center. MODIS data beginning in year 2012 are based on an automated product provided by the MODIS NRT Flood project at the [NASA Goddard Space Flight Center](#). Non-automated, MODIS-based .shp or MapInfo GIS files supporting this Flood Event Map are located in a map sheet folder [here](#) together with any other high resolution (using Landsat 8, EO-1, etc) GIS files. [Click here for access to the automated daily .shp file GIS record](#) (record commences in 2011). Choose appropriate 10 deg x 10 deg map sheet directory and appropriate dates; longitude and latitudes refer to upper left map sheet corner.

#### Related Data:

[Global Flood Monitoring System](#) (GFMS) displays, if provided, are from the University of Maryland. Reference: Wu, H., R. F. Adler, Y. Tian, G. J. Huffman, H. Li, and J. Wang (2014), Real-time global flood estimation using satellite-based precipitation and a coupled land surface and routing model, Water Resour. Res., 50, doi:10.1002/2013WR014710. [Global Flood Awareness System](#) (GloFAS) displays, if provided, are from the European Commission Joint Research Centre and the European Centre for Medium-Range Weather Forecasts. Reference: Alfieri, L., Burek, P., Dutra, E., Krzeminski, B., Muraro, D., Thielen, J., and Pappenberger, F.: GloFAS – global ensemble streamflow forecasting and flood early warning, Hydrol. Earth Syst. Sci., 17, 1161-1175, doi:10.5194/hess-17-1161-2013, 2013.

#### Support provided by:

The Disasters Program of NASA Applied Sciences to the University of Colorado. GPM and AMSR-2 satellite microwave data for River Watch specially processed first within GDACS at the Joint Research Center of the European Commission. DFO participates in the Global Flood Partnership.



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(counting since July 28, 2016)



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[http://floodobservatory.colorado.edu/Flood Observatory](http://floodobservatory.colorado.edu/Flood%20Observatory)