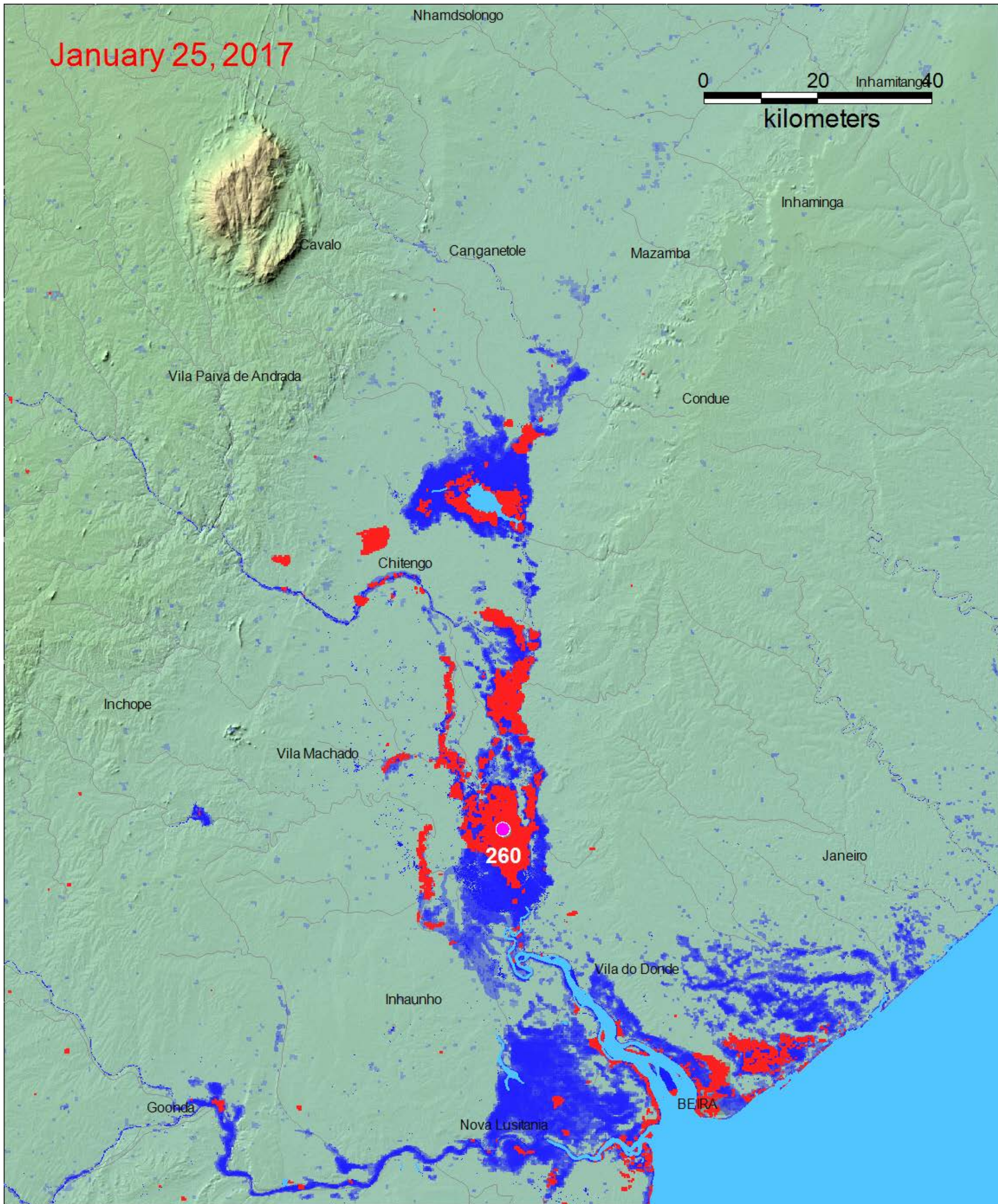# DFO Flood Event 4439

pdf version

Mozambique, January, 2017

Flood Map

Layers, top to bottom: Light Blue is normal annual water extent mapped via NASA 90 m (spatial resolution) SWBD. Red is flood water mapped from MODIS 250 m data. Dark Blue is all previously mapped flooding.

January 25, 2017

Nhamdsolongo

Inhamitange

kilometers

Inhaminga

Cavalo

Canganetole

Mazamba

Vila Paiva de Andrada

Condue

Chitengo

Inchope

Vila Machado

260

Janeiro

Vila do Donde

Inhaunho

BEIRA

Goonda

Nova Lusitania

[*Large Geotif version*](#)

[*Google Earth kmz view 1*](#)

Related Data

Satellite-measured precipitation, modeled flooding, and atmospheric moisture related to this flood event

7-day accumulated rainfall from NASA [Satellite Precipitation](#)	SSMI/SSMIS/AMSR2 [Total Precipitable Water](#)	**Flood depth above threshold, from [GFMS](#).**

Explanation

Event Reporting:

The Flood Observatory maintains a [Global Active Archive](#) of large flood events, 1985 to present. It is 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 2016, there were 4432 events; each has a unique archive number.

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 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 web page and associated image and map (GIS) files are the permanent Flood Observatory record of this event.

This Event:

[This Flood List link provides a summary](#). According to Flood List (January 20, 2017): "Torrential rains falling in central and southern Mozambique have resulted in flooding in Sofala province, leaving thousands cut off in the district of Dondo. According to [analysis by UNITAR-UNOSAT](#) (pdf), precipitation levels between 12 to 18 January reached over 650 mm. Around 5,000 people of Dondo district, Sofala province, are without road communication with the rest of Mozambique.Moving around the district is only possible by boats according to local media. Several rivers, including the Buzi River in southern Mozambique, have overflowed. A report by UNITAR-UNOSAT of 19 January says that approximately 600,000 people in Mozambique may have been exposed to over 500 mm of precipitation and 1,000,000 people may be exposed to 300-500 mm of precipitation between 12 and 18 January 2017. Parts of the provinces of Inhambane, Gaza, Manica and Sofala have seen the highest levels of rainfall."

River Watch Flow Series:

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 [260](#) is shown below or click on the site location dot above.
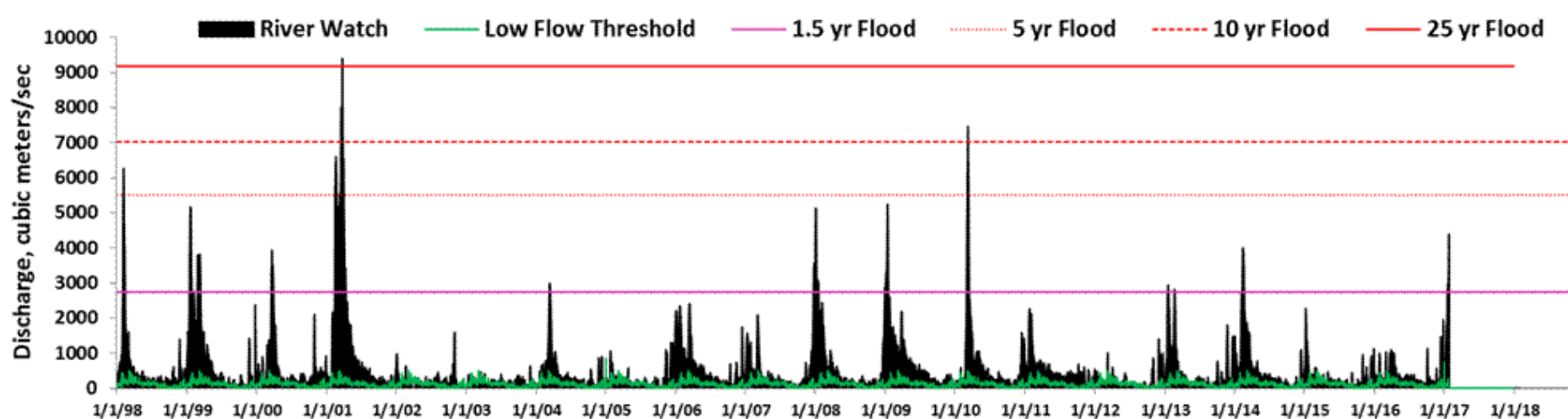
Suggested citation for this [Creative Commons](#)-licensed publication:

Brakenridge, G.R., date accessed, "DFO Flood Event #", Dartmouth Flood Observatory, University of Colorado, Boulder, Colorado, USA, http address.

Image Data Sources:

NASA Landsat 8 and ESA Sentinel SAR data if used in this map were obtained from the the [U.S. Geological Survey Hazards Data Distribution System.](#) and the [Sentinels Science Data hub](#), respectively. Landsat 8 is jointly managed by NASA and the United States Geological Survey. Flood modeling results if used are from the NASA/University of Maryland [Global Flood Monitoring System](#) (GFMS), Drs. Robert Adler and Huan Wu, University of Maryland/ESSIC.

GIS Data Sources:

GIS files supporting this Flood Event Map are located [here](#).

[Click here](#) for access to the automated daily MODIS-derived .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.

The [Global Surface Water Explorer](#) provides part of the (dark blue) annual surface water extent layer. It is based on Landsat data at a spatial resolution of ~ 30m (*Jean-Francois Pekel, Andrew Cottam, Noel Gorelick, Alan S. Belward, High-resolution mapping of global surface water and its long-term changes. Nature 540, 418-422, 2016*). On the map, it is shown together with the NASA Shuttle Water Boundary Data (SWBD) surface water extent (90 m resolution) processed from the 11-day February, 2000, SRTM mission. The [SWBD](#) information was corrected using Landsat data. Large flood events are not normally depicted in either data set. Thus, red areas on our maps show flood extent beyond these nomal annual limits

When used, [NASA NRT Global Flood Mapping](#) maximum water extent for the years 2013-2015, at 250 m spatial resolution, provide part of the (dark blue) maximum flood mapped. DFO creates these annual water extent layers from data provided by that project, by accumulating into one annual file all of the daily .shp files for each year. DFO has

also produced abundant flood extent files through mapping of individual floods; these are also included where available in this maximum flood extent layer.

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 from:

NASA Applied Sciences Program to the University of Colorado. GPM and AMSR-2 satellite microwave data for River Watch is processed first within GDACS at the Joint Research Center of the European Commission.

(counting since January 26, 2017)

Return to Flood Observatory