



Typhoon Haima (Lawin) Report #4

20 October 2016, 3.00PM PHT

Manila Observatory

SUMMARY

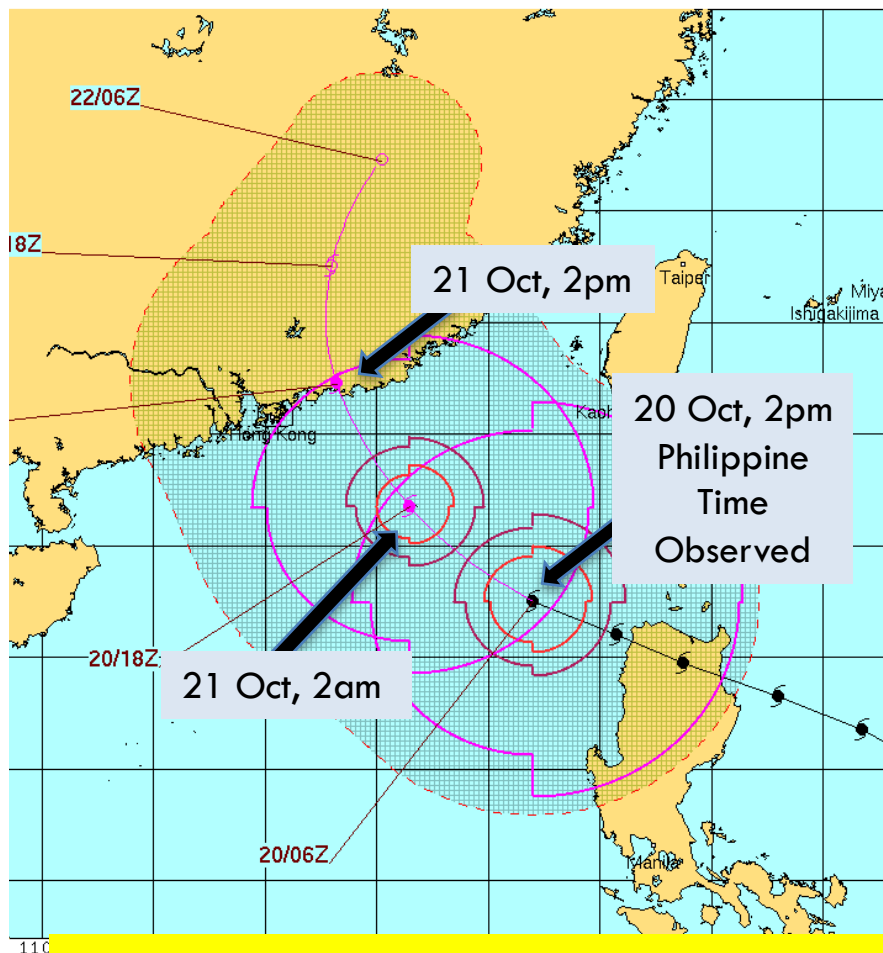


- PAGASA reports eye of Super Typhoon Haima (Bagyong Lawin) located at 18.5°N , 119.7°E (as of 10 AM Oct 20) with max 10-min sustained winds of up to 150 kph near center, gustiness of up to 185 kph. Haima continues to weaken as it moves further northwest of Laoag City, Ilocos Norte, possibly exiting PAR tonight. Moderate to heavy rainfall estimated within 700 km around TC center.
- Signal #2 Ilocos Norte, Apayao, Abra, Ilocos Sur and Calayan Group of Islands; Signal #1 Batanes Group of Islands, Cagayan, Kalinga, Isabela, Quirino, Northern Aurora, Mountain Province, Ifugao, Nueva Vizcaya, Benguet, La Union, Pangasinan and Northern Zambales
- Multi-tracks show agreement in the track as it moves west-northwest.
- According to JTWC (as of 5pm Oct 20), Haima still Cat 2 (max 1-min wind speed: 167 kph) with eye located near 19.0°N , 118.8°E (over sea); forecast to weaken as it moves west-northwest
- Satellite rainfall from 2.30PM-3:29PM 20 Oct shows intense rainfall of 20-30 mm/hr over northeast Luzon and surrounding eye (SW section) of tropical cyclone.
- Northern Luzon has received more than 250 mm rainfall in the past 24 hours.
- Past destructive typhoons with similar tracks include TY Megi (Juan) (2010), TY Zeb (Iliang) (1998) and TY Sarika (Karen) (2016)

Current status of Typhoon Haima (Lawin)

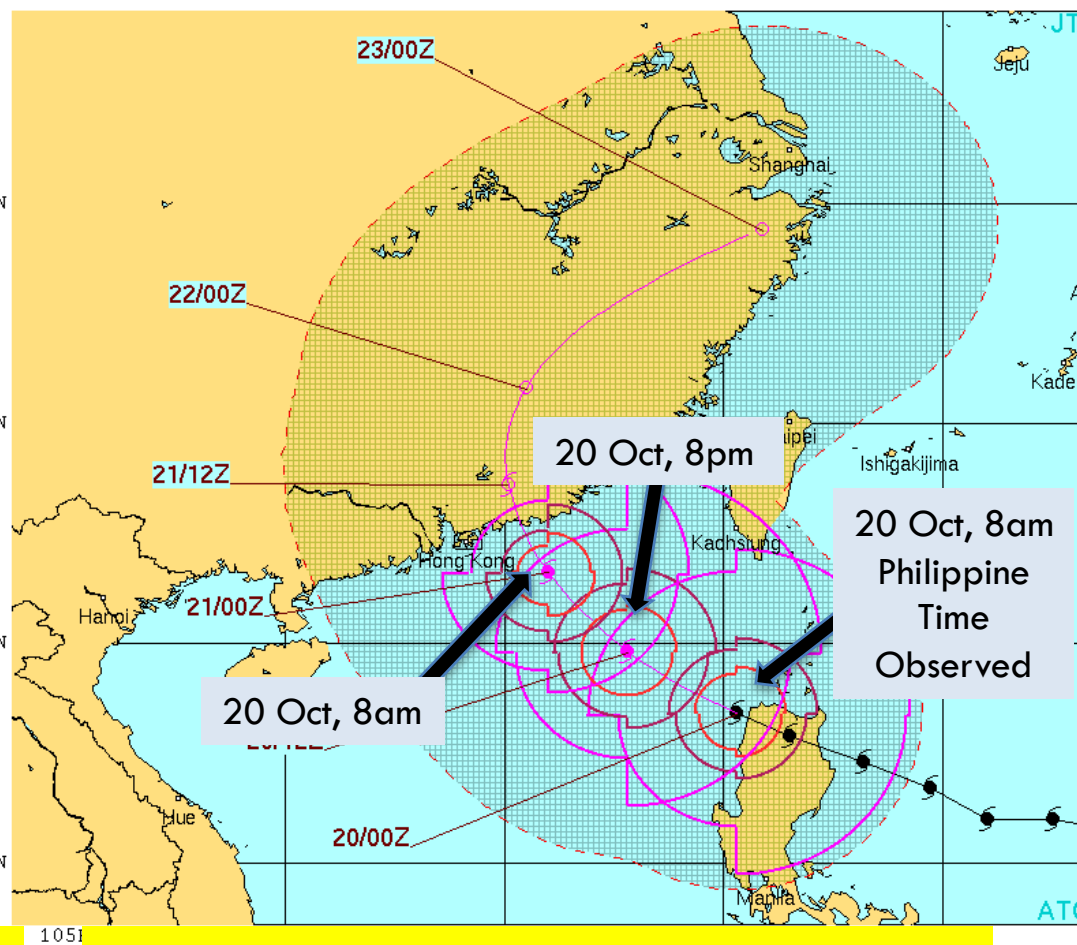


Observed track (black) and forecast (pink)
issued at **20 Oct, 5 PM**



As of 2pm Oct 20, Haima still Cat 2 (167 kph) with eye located near 19.0°N, 118.8°E (over sea); forecast to weaken as it moves west-northwest

Previous forecast
issued at **20 Oct, 11 AM**

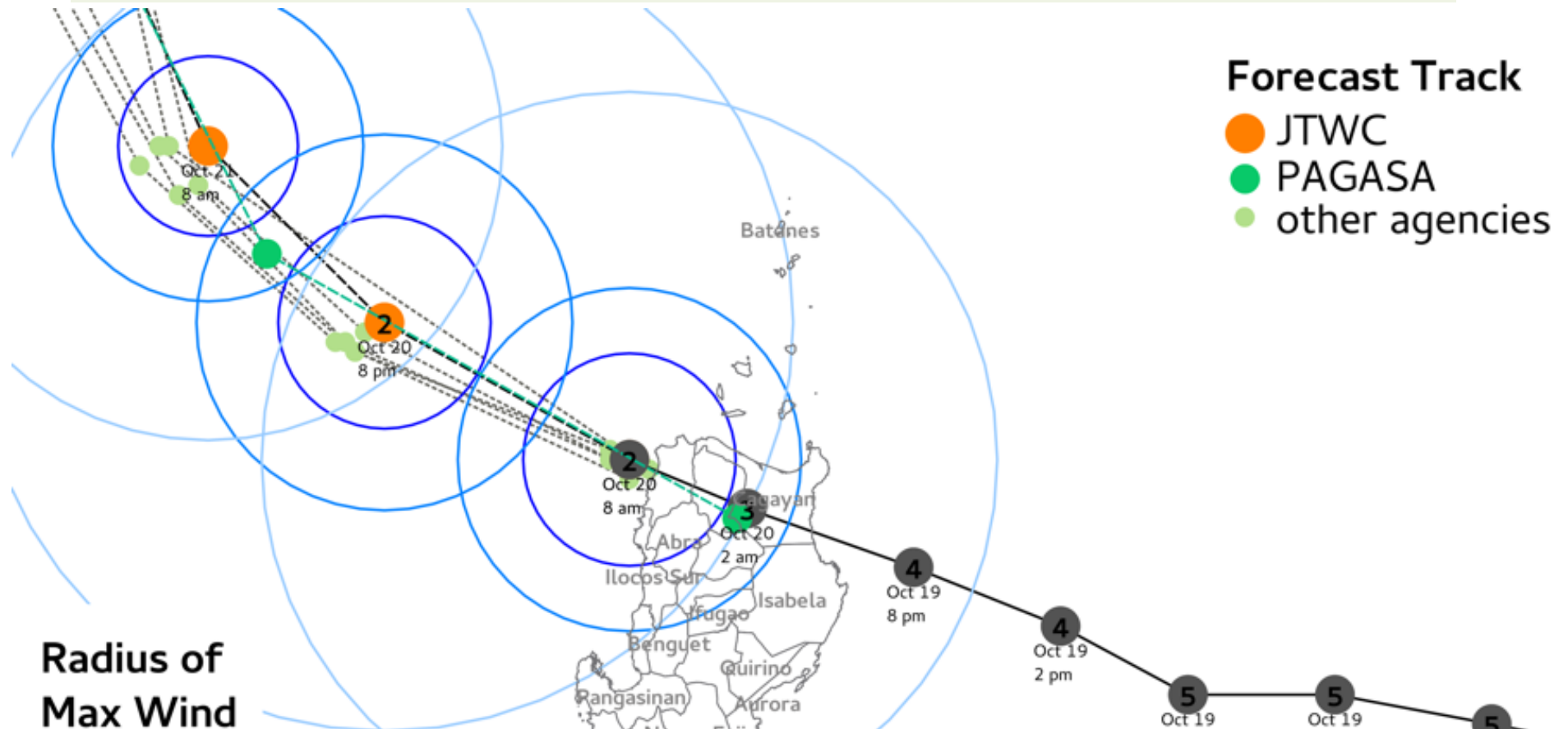


As of 8am Oct 20, Haima weakened to Cat 2 (176 kph) with eye located near 18.4°N, 120.3°E; forecast to leave PAR (with max winds of about 167 kph) by 8pm Oct 20

Current status of Typhoon Haima (Lawin)



PAGASA reports eye of Super Typhoon Haima (Bagyong Lawin) located at 18.5°N, 119.7°E (as of 10 AM Oct 20) with max 10-min sustained winds of up to 150 kph near center, gustiness of up to 185 kph. Haima continues to weaken as it moves further northwest of Laoag City, Ilocos Norte, possibly exiting PAR tonight. Moderate to heavy rainfall estimated within 700 km around TC center. There is consensus in tracks of other agencies.



PAGASA TCWS as of 11 am Oct 20

TCWS#2-Ilocos Norte, Apayao, Abra, Ilocos Sur and Calayan Group of Islands

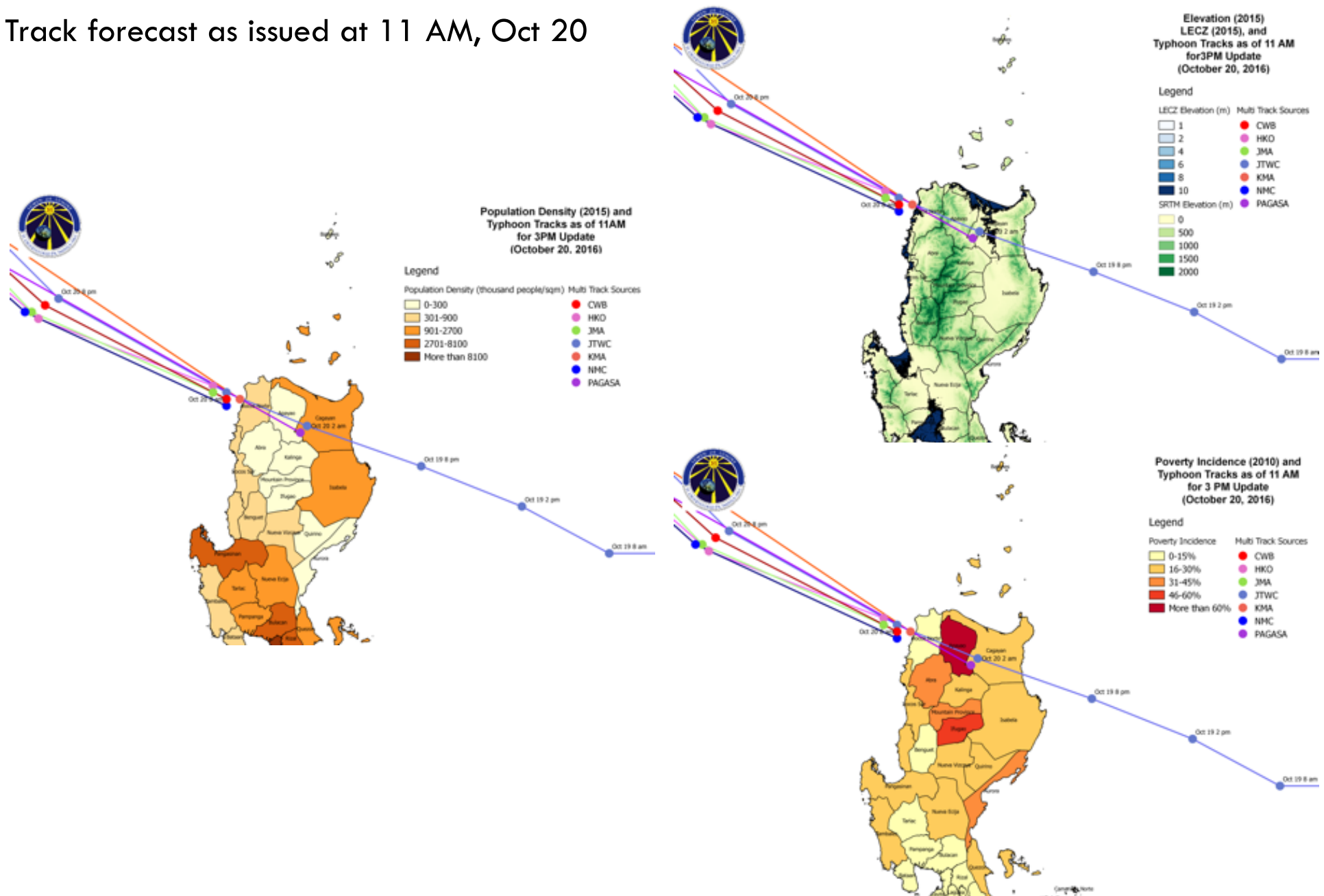
TCWS#1-Batanes Group of Islands, Cagayan, Kalinga, Isabela, Quirino, Northern Aurora, Mountain Province, Ifugao, Nueva Vizcaya, Benguet, La Union, Pangasinan and Northern Zambales

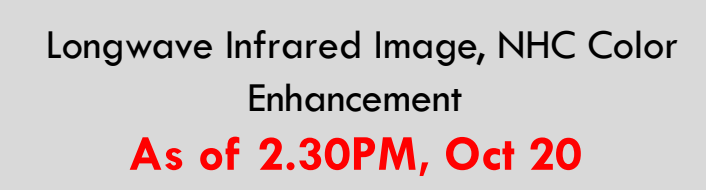
Typhoon Haima (Lawin): Exposure, and Vulnerability



TRACK, POTENTIAL EXPOSURE AND VULNERABILITY

Track forecast as issued at 11 AM, Oct 20





Satellite data via the Univeristy of Wisconsin Space Science and Engineering Center (SSEC) : <http://tropic.ssec.wisc.edu/real-time/westpac/images/irngms.GIF> (cropped image displayed here)

Potential rainfall associated with Typhoon Haima (Lawin)



衛星全球降水マップ
GSMaP
GLOBAL SATELLITE MAPPING OF PRECIPITATION

JAXA Realtime Rainfall Watch

世界の雨分布リアルタイム

日本語

Last Update: 20 Oct 2016 07:34:01 UTC

Date: 2016 / 10 / 20 06:30-07:29 UTC Submit

Full Screen

Normal

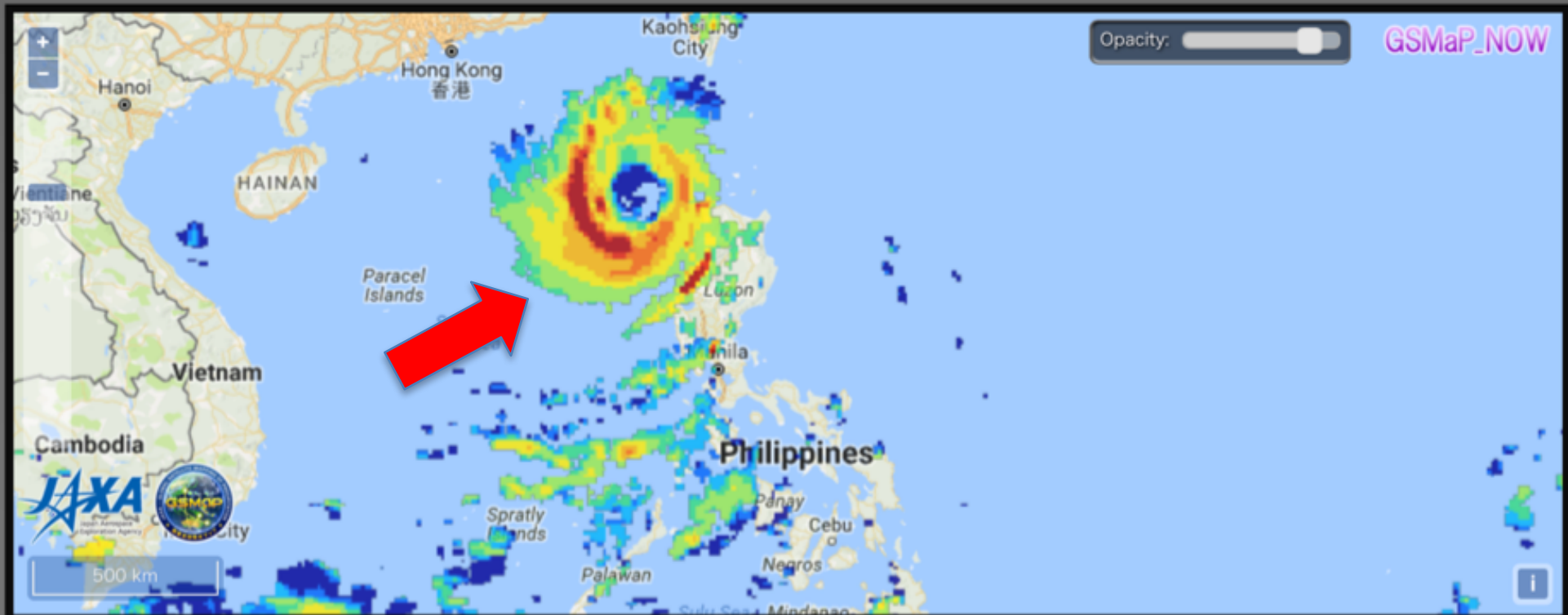
« Prev

Latest

Next »

Opacity:

GSMaP_NOW



Rain 0.1 0.5 1.0 2.0 3.0 5.0 10.0 15.0 20.0 25.0 30.0 (mm/hr)

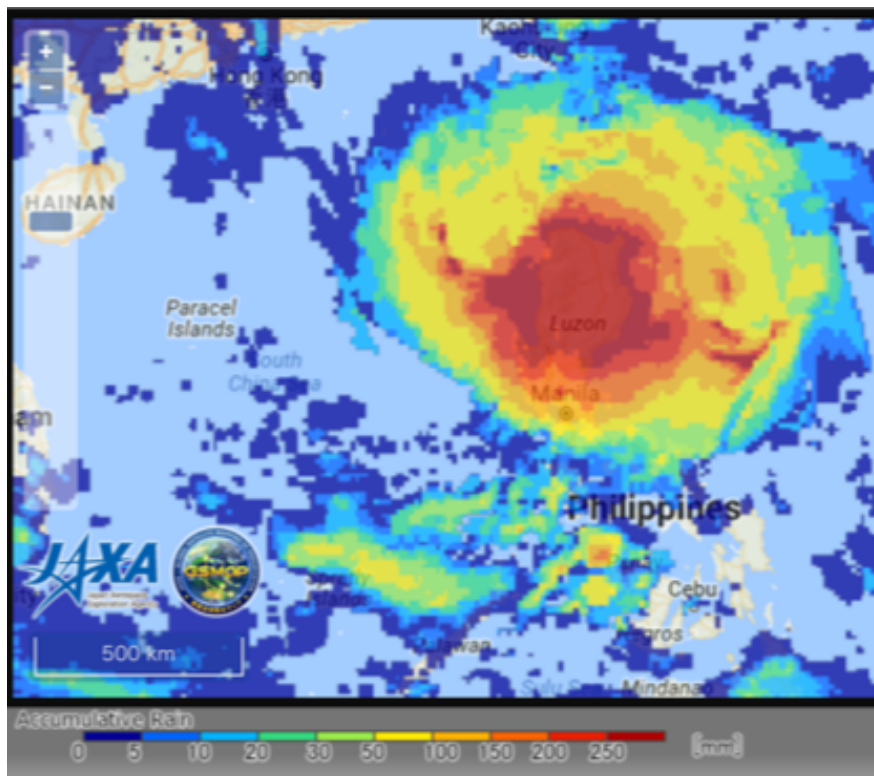
☐ GSI Map ☐ OpenStreetMap ☒ Google Map

Satellite rainfall from 2:30PM-3:29PM 20 Oct shows intense rainfall of 20-30 mm/hr over northeast Luzon and surrounding eye (SW section) of tropical cyclone. http://sharaku.eorc.jaxa.jp/GSMaP_NOW/

Potential rainfall associated with Typhoon Haima (Lawin)



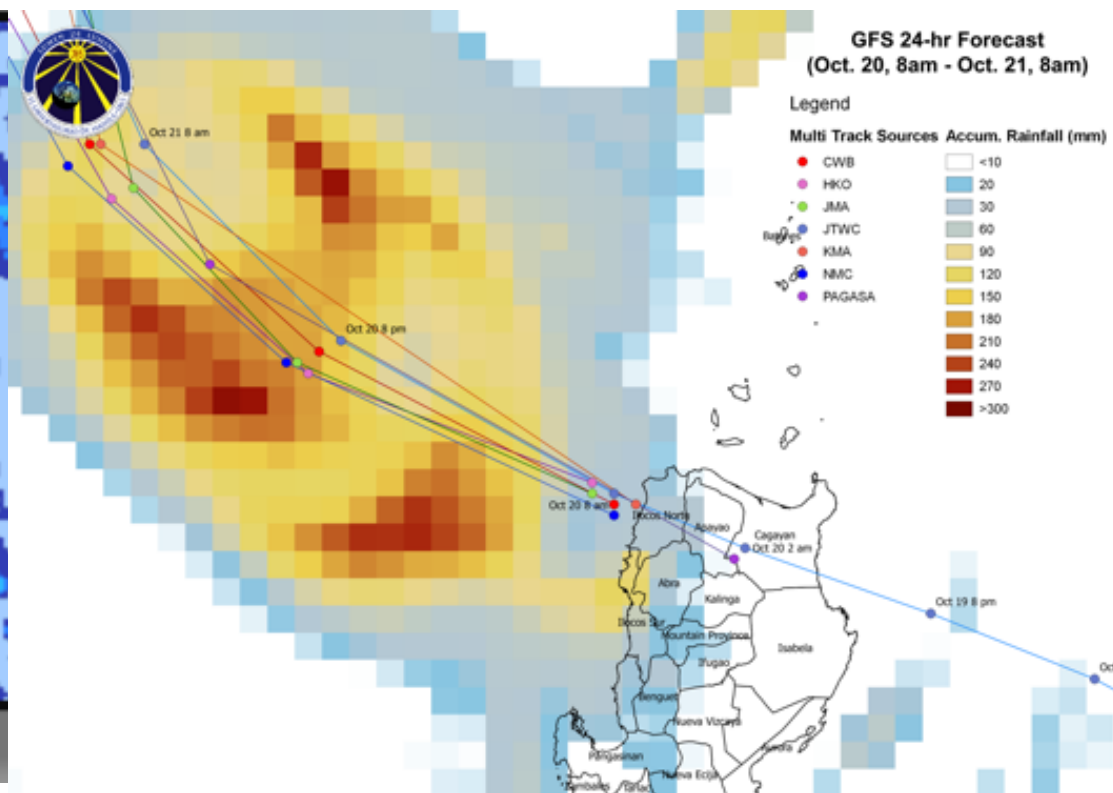
Northern Luzon has received more than 250 mm rainfall in the past 24 hours.



http://sharaku.eorc.jaxa.jp/GSMaP_NOW/

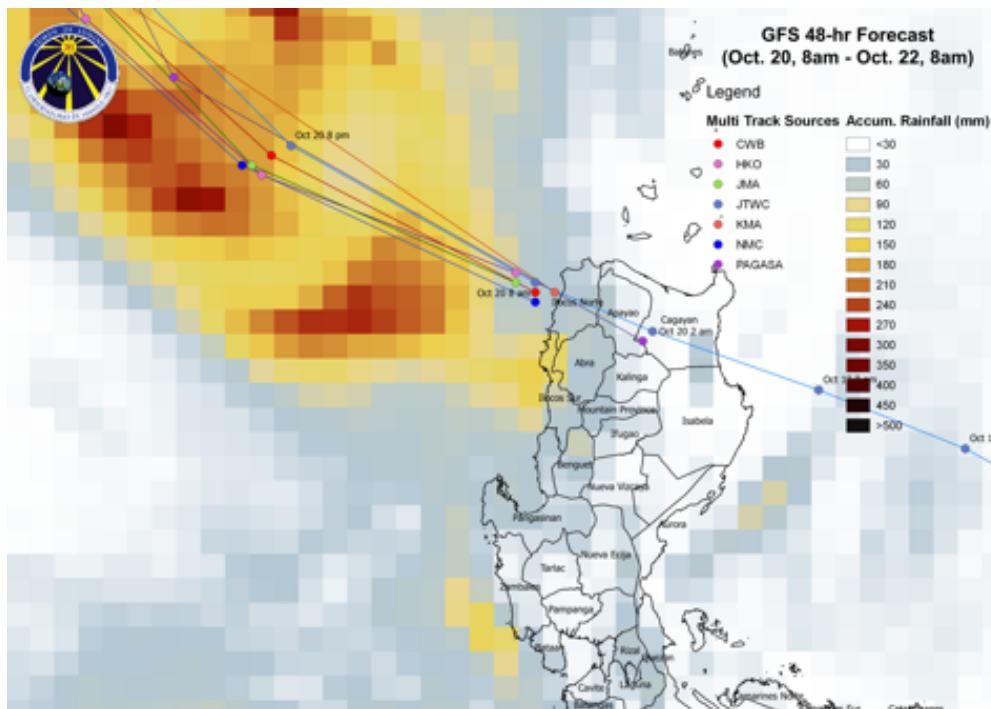
* Cropped image is displayed

Observed 24-hour satellite-based rainfall,
from Oct 19 3:29PM – Oct 20 3:29PM

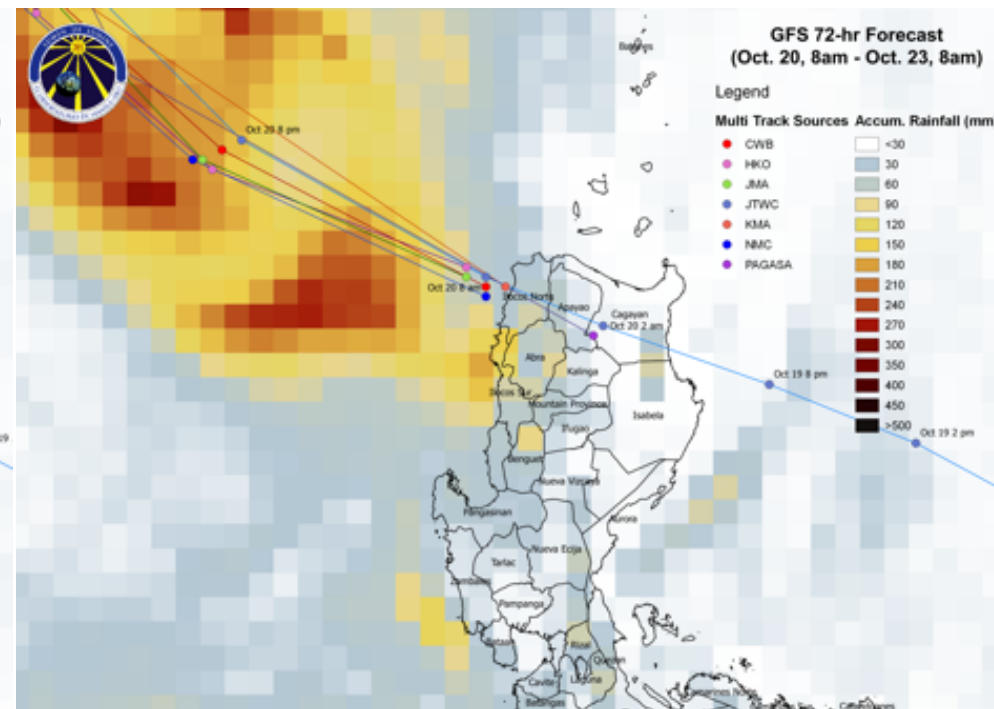


24-hour Model forecast from the NCEP
Global Forecasting System for accumulated
rainfall from Oct 20 8am – Oct 21 8am

Potential rainfall associated with Typhoon Haima (Lawin)



2-day Model forecast from the NCEP Global Forecasting System for accumulated rainfall from Oct 20 8am – Oct 22 8am

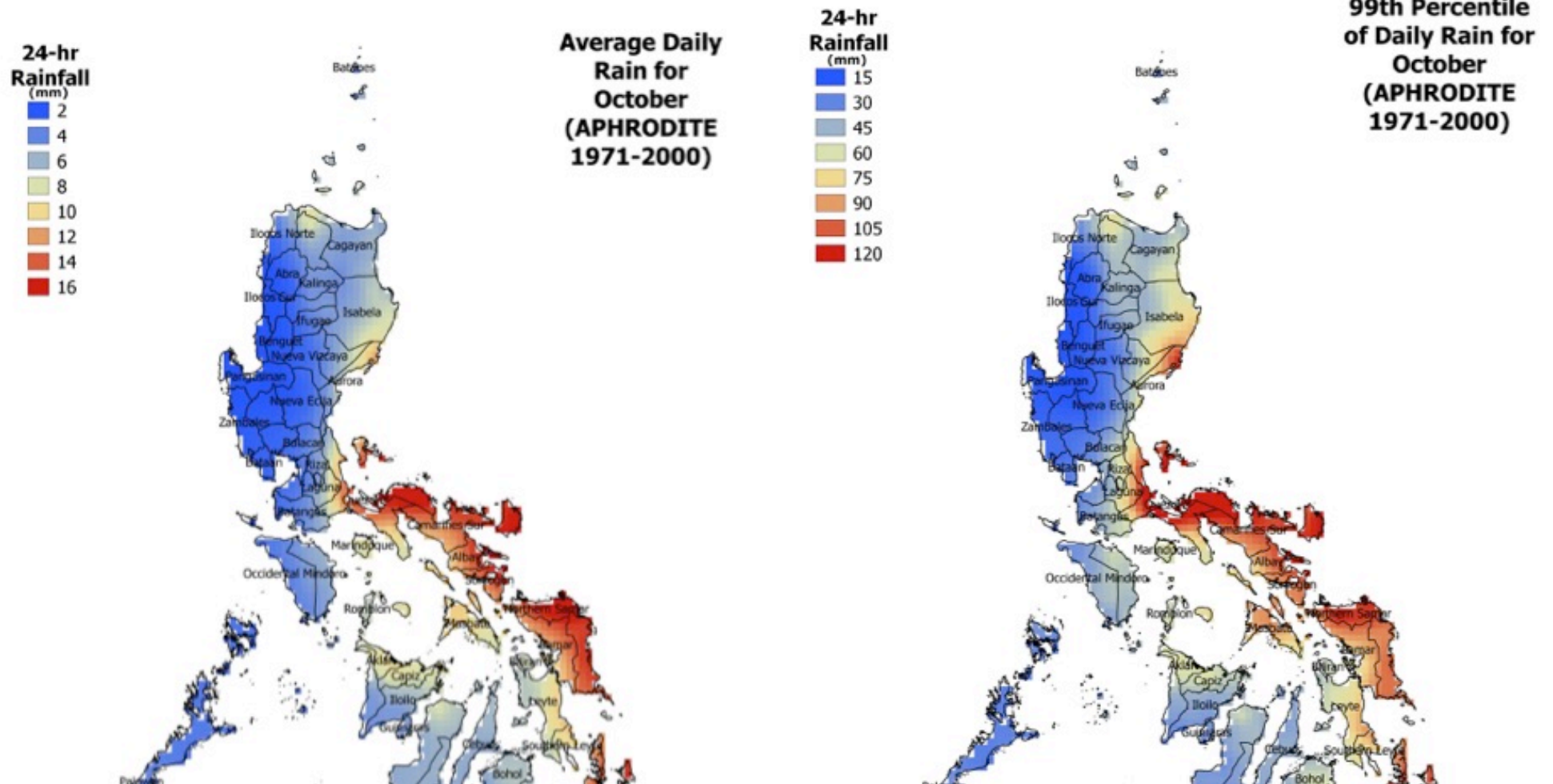


3-day Model forecast from the NCEP Global Forecasting System for accumulated rainfall from Oct 20 8am – Oct 23 8am

Historical daily average and extreme rainfall (October)



In October, Parts of Quezon, Bicol region, and Samar can receive more than 10 mm/day rainfall on average, with extreme rainfall days of above 100 mm rainfall.



Data accessed from <http://www.chikyu.ac.jp/precip/index.html> (APHRODITE dataset).

Note the difference in the color scales.



IMPACTS OF DESTRUCTIVE TYPHOONS (IN OCTOBER) WITH SIMILAR TRACKS TO HAIMI 2016

Megi was CAT5 at landfall
on October 18, 2010
in Palanan, Isabela.
2 million persons affected
\$255.1 million in damages

- Haima Forecast Track (JTWC)
- Haima Past Track (JTWC)
- TC Megi (Juan) 2010
- TC Sarika (Karen) 2016
- TC Zeb (Iliang) 1998

Sarika was CAT4 at landfall
on October 16, 2016
in Baler, Aurora.
80,458 persons affected
\$41.7million in damages

Zeb was CAT5 at landfall
on October 14, 1998
in Palanan, Isabela.
925,000 persons affected
\$576million in damages

SOURCES:
PhilGIS
JTWC
NDRRMC



0 100 200 300 400 km

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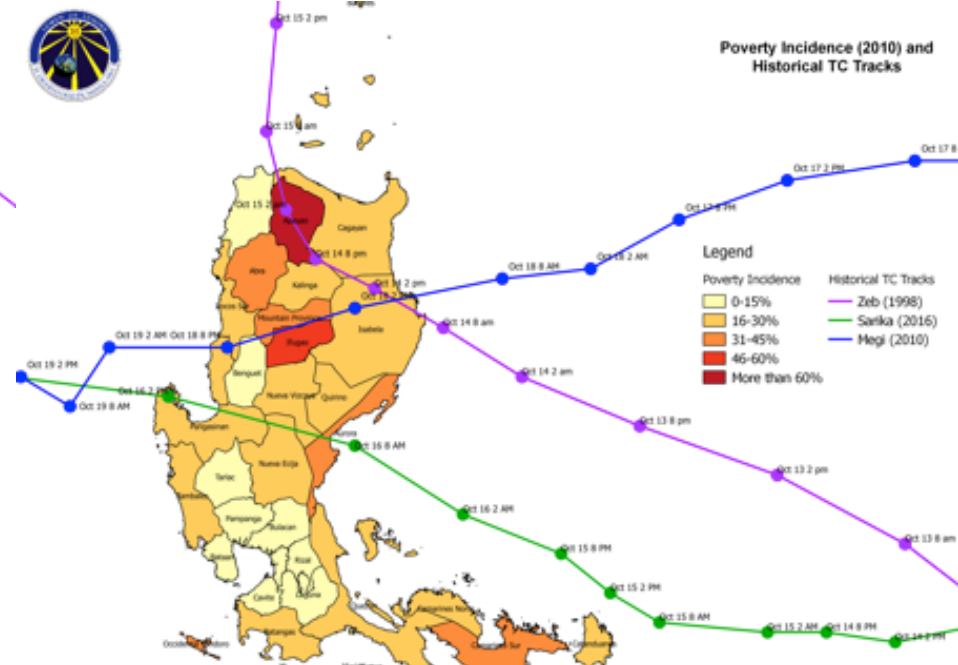
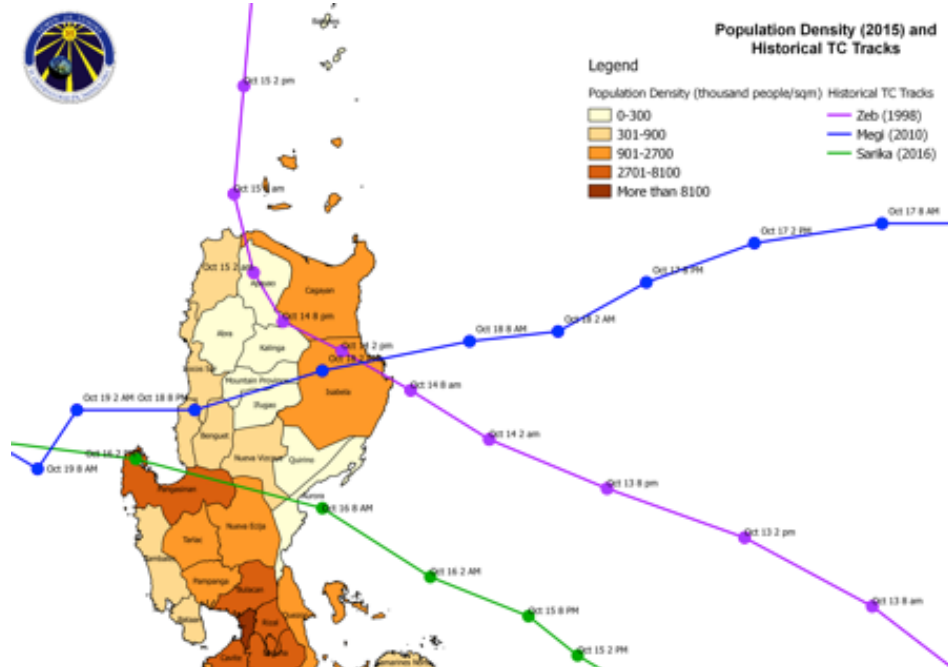
<http://blogs.reuters.com/photo/files/2010/10/RTXTMFS.jpg>

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http://cnnphilippines.com/news/5qdxij-Baler_ty-karen_CNNPH.jpg/alternates/FREE_640/Baler_ty-karen_CNNPH.jpg

Destructive typhoons with similar tracks to Haima (2016)



Elevation (2015)
LECZ (2015), and
Historical TC Tracks

Legend

LECZ Elevation (m) SRTH Elevation (m)

- 1
- 2
- 4
- 6
- 8
- 10
- 0
- 500
- 1000
- 1500
- 2000

Historical TC Tracks

- Zeb (1998)
- Megi (2010)
- Sarika (2016)

Destructive typhoons with similar tracks to Haima (2016)

