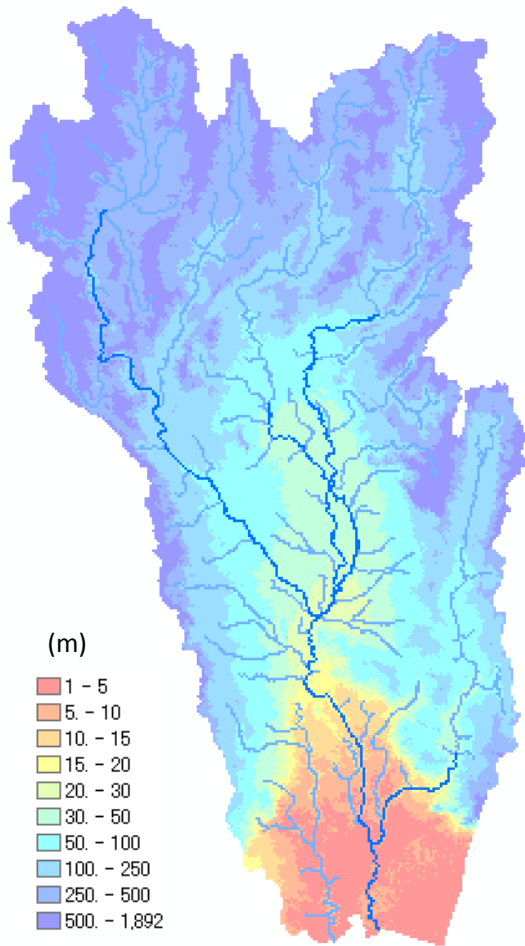


Rainfall-Runoff-Inundation Forecasting in the Chao Phraya

(ICHARM, as of Nov 1)



Topographic Data by HydroSHEDS

- Purpose: Understanding and predicting the flooding in Thailand at the entire Chao Phraya River Basin with RRI (Rainfall-Runoff-Inundation) Model.
- The simulation is conducted with globally available topography and satellite based rainfall data without parameter calibrations; therefore, more detailed analysis is necessary by including effects of reservoirs, tides, embankment, etc.

Simulation Domain : 163,293 km²

Simulation Period :

2011/07/01 0:00 (UTC) – 2011/11/30 0:00 (UTC)

Input Rainfall:

✓ 2011/07/01 0:00 (UTC) – 2011/10/31 15:00 (UTC)

3B42RT (Satellite Based Rainfall)

(Every 3 hours, Spatial Resolution: 0.25 deg)

✓ 2011/10/31 18:00 (UTC) – 2011/11/8 12:00 (UTC)

JMA- GSM Weekly Weather Forecasting

(Forecasting Lead Time: 8 days, Update every 12 hours)

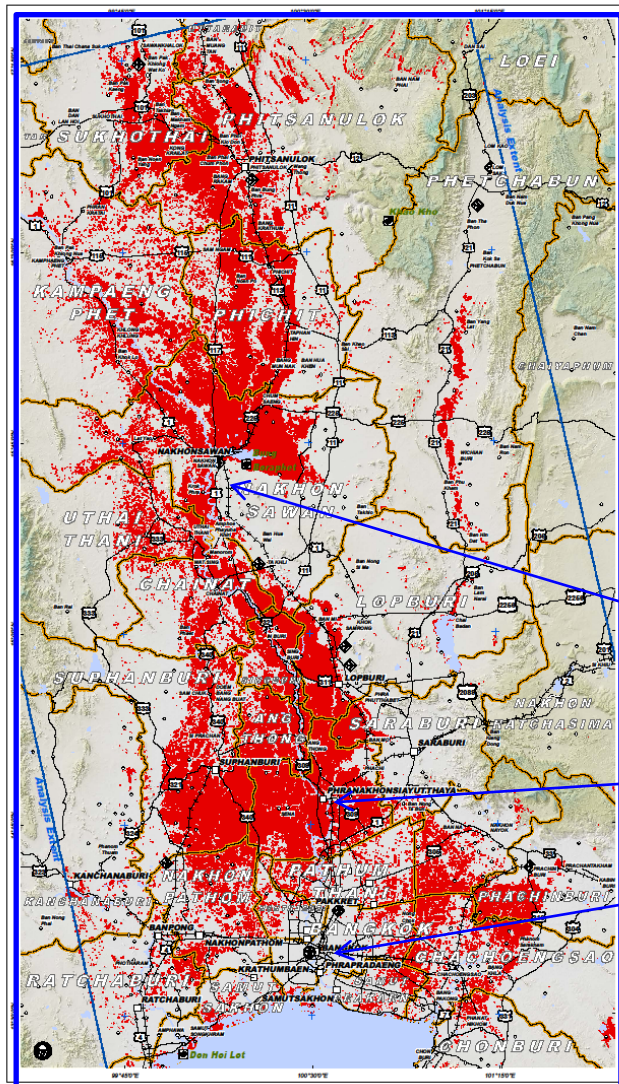
✓ 2011/11/8 15:00 (UTC) – 2011/11/30 0:00 (UTC)

(Last year's 3B42RT rainfall in the same period)

Inundation Extent by Satellite (as of Oct 13) Simulated Water Depths on Oct 13 (Case 4)

UPDATE2: OVERVIEW OF FLOOD WATERS OVER CENTRAL PROVINCES, THAILAND

Flood Analysis with Envisat ASAR W3 Radar Data recorded from the 13 October 2011 centered on Phra Nakhon Si Ayutthaya Province, Thailand



Tropical Cyclone & Flooding
Production Date: 13/10/2011
Version: 4.0
Globe Number: FL-2011-00035-THA



This map presents the standing flood waters over the affected Central Provinces of Thailand based on analysis of satellite data recorded 13 October 2011. A preliminary analysis shows extensive flooding over the provinces of Phra Nakhon Si Ayutthaya, Nakhon Sawan, Chaiyaphum, Pathum Thani, Nakhon Pathom, Ang Thong, Lopburi, Singburi and Suphanburi. This analysis has not yet been validated in the field. Please send ground feedback to UNTAR/UNOSAT.

Legend
□ Major Towns/City
□ Towns/Villages
□ Airport/Airfield
□ Protected Areas
— International Boundary
— Province Boundary
— Primary & Secondary Roads
— Railway Line
■ Probable Flood Waters as on 13 October 2011 (Envisat ASAR W3)
■ Pre-Crisis Water Extent (2007)

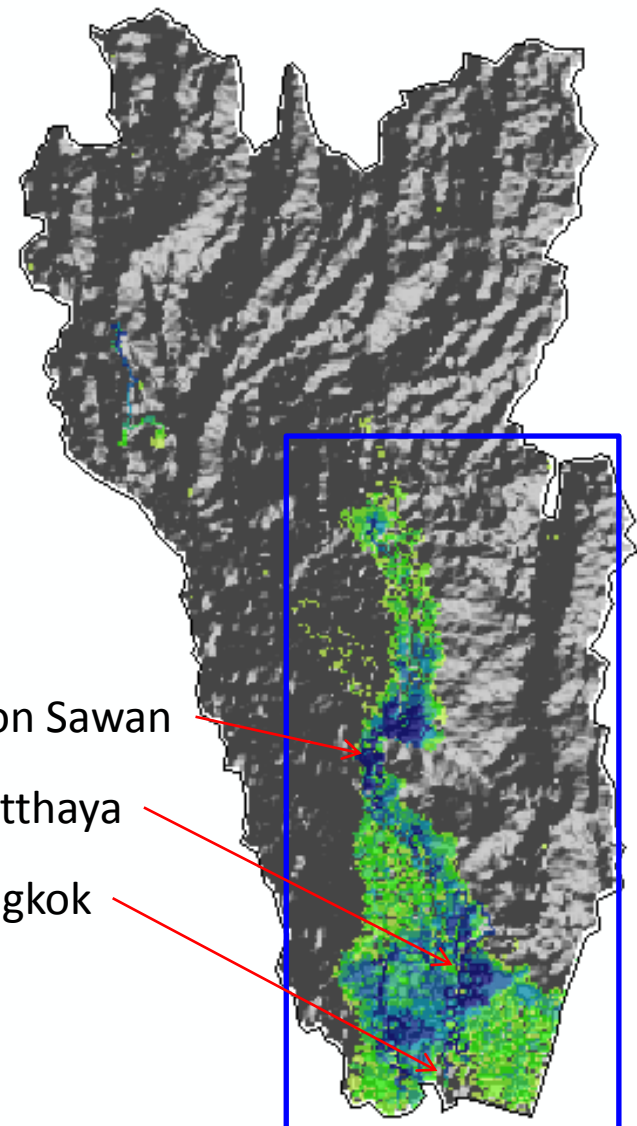
geopictures

Satellite Date(s): Envisat ASAR W3-HV
Imagery Date: 13 October 2011
Resolution: 126 m
Source: European Space Agency
Processor: GeoPictures/ASAT
Settlement Date: 13/10/2011/NGA
Road Date: EPR
Other Data: OCHA, USGS
Analysis: UNTAR/UNOSAT
Production: UNTAR/UNOSAT
Analysis conducted with ArcGIS v10
This work by UNTAR/UNOSAT is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Map Scale for A3: 1:1,250,000
20 10 0 20 40 Km
Coordinate System:
WGS 1984 UTM Zone 47N
Projection: Transverse Mercator
Datum: WGS 1984
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: 105.0000
Scale Factor: 0.9993
Latitude Of Origin: 0.0000

The depiction and use of boundaries, geographic names and related data shown here are not intended to be authoritative nor do they reflect endorsement or disapproval by the United Nations. UNOSAT is a project of the United Nations Institute for Training and Research (UNITAR), providing satellite imagery and related geographic information, research and analysis to UN humanitarian & development agencies & their implementing partners.

unitar
UNOSAT
Contact information: unosat@unite.org
Self-Register: +41 78 60 4040
www.unitar.org/unosat



Nakhon Sawan

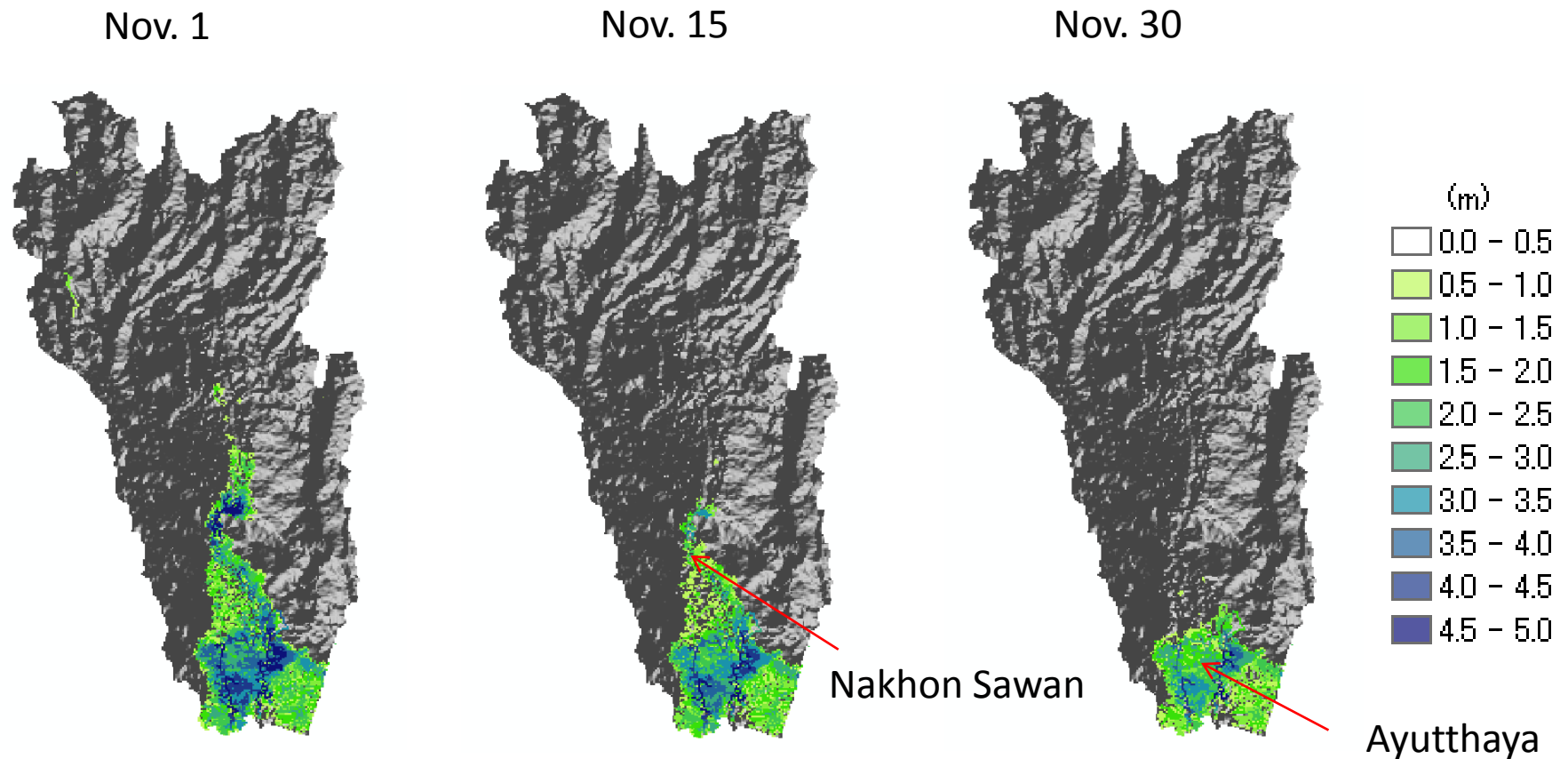
Ayutthaya

Bangkok

(m)
0.0 - 0.5
0.5 - 1.0
1.0 - 1.5
1.5 - 2.0
2.0 - 2.5
2.5 - 3.0
3.0 - 3.5
3.5 - 4.0
4.0 - 4.5
4.5 - 5.0

- The simulated inundation extent agrees general pattern with the remote sensing image
- Large degree of uncertainty in the simulation in Bangkok due to no tidal effect consideration

Forecasted Inundation Depths (Case 4)



- At Nov. 1, flooding still remains high around the Nakhon Sawan and Ayutthaya
- At Nov. 15, flooding around the Nakhon Sawan is reduced
- At Nov. 30, the flooding remains only partially at the northern part of Bangkok