TROPICAL CYCLONE RAI-21

PRELIMINARY SATELLITE-DERIVED STANDING WATERS AND BUILDING DAMAGE ANALYSIS

Dinagat Island, Siargao Island, and Southern Leyte province, Region XIII (Caraga): Philippines

Status: Water standing decrease and severally potentially damaged structures observed.

Further action(s): Continue monitoring
PHILIPPINES

AREA OF INTEREST

PROVINCE

Manila
Dinagat Islands
Southern Leyte
Siargao Island
**AOI 1-1: CAGDIANAO VILLAGE, DINAGAT ISLAND, REGION XIII (CARAGA)**

No visible damage
AOI 1-2: CUARINTA VILLAGE, DINAGAT ISLAND, REGION XIII (CARAGA)

Potentially damaged structures

BEFORE

AFTER

Potentially damaged structures

ESRI Basemap

SPOT7 / 19 December 2021
AOI 2-1: BURGOS TOWN, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Damaged structures and affected vegetation along the shoreline

Before

Affected vegetation and potentially damaged structures

After

Affected area along the coastal

Damaged structures

150 m

ESRI Basemap

SPOT7 / 20 December 2021
AOI 2-2: RIZAL VILLAGE AND SANTA MONICA TOWN, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Potentially damaged structures

Image center:
126°29.547'E
10°1'28.198"N

ESRI Basemap

SPOT7 / 19 December 2021
AOI 2-3: DEL CARMEN TOWN, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Potentially damaged structures

Before

After

Potential damaged structures

Image center: 125°58’29.552”E 9°52’18.872”N

ESRI Basemap

SPOT7 / 19 December 2021
AOI 2-4: DAPA TOWN, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Potentially damaged structures

Image center:
126°3’15.989”E
9°45’37.431”N

Potentially damaged structures

Potentially damaged structures

Potentially damaged structures

Before

After

ESRI Basemap

SPOT7 / 18 December 2021
AOI 2-4: TAWIN-TAWIN VILLAGE, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Inundated areas and potentially affected structures
AOI 2-4: TAWIN-TAWIN VILLAGE, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Standing waters decrease

Before: SPOT7 / 18 December 2021

AFTER: SPOT7 / 20 December 2021
AOI 2-5: GENERAL LUNA TOWN, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Inundated areas and potentially affected structures

Image center: 126°9'20.314"E 9°47'15.317"N

Siargao Island

General Luna
AOI 2-6: SANTA FE VILLAGE, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Inundated areas

Santa Fe

Standing waters

Potentially affected houses

Potentially affected agricultural area

Standing waters

ESRI Basemap

SPOT7 / 18 December 2021

Image center:
126°8’13.147”E
9°50’23.536”N

Siargao Island

UNOSAT
AOI 2-6: SANTA FE VILLAGE, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Standing waters decrease

SPOT7 / 18 December 2021

SPOT6 / 19 December 2021
AOI 2-7: LIBERTAD VILLAGE, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Inundated areas

Image center:
126°8'29.259"E
9°49'32.078"N

Standing waters

Standing waters in agricultural area

ESRI Basemap

SPOT7 / 18 December 2021
AOI 2-7: LIBERTAD VILLAGE, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Standing water decrease

SPOT7 / 18 December 2021

SPOT7 / 19 December 2021
AOI 2-8: SANTA LNES AND CATANGNAN VILLAGES, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Inundated areas and potentially affected structures

Image center:
126°38.165'E
9°48'26.932"N

ESRI Basemap

SPOT7 / 18 December 2021
AOI 2-8: SANTA LINES AND CATANGNAN VILLAGES, SURIGAO DEL NORTE PROVINCE, REGION XIII (CARAGA)

Standing waters decrease and potentially affected structures

Before:

- Potentially affected structures
- Standing waters

Image center:
126°9'38.165"E
9°48'26.932"N

SPOT7 / 18 December 2021

After:

- Potentially affected structures
- Decreasing waters
- Potentially affected structures

SPOT7 / 19 December 2021
AOI 3-1: LILOAN TOWN, SOUTHERN LEYTE PROVINCE, REGION VIII (EASTERN VISAYAS)

Potentially damaged structures and affected area

Image center:
125°7'16.823'E
10°9'20.584"N

Potentially damaged structure

Affected area

ESRI Basemap

SPOT 6 / 19 December 2021
AOI 3-2: PINUT-AN VILLAGE, SOUTHERN LEYTE PROVINCE, REGION VIII (EASTERN VISAYAS)

Potentially damaged structures and affected area along the shoreline
SUMMARY OF FINDINGS

- Potentially damaged structures in Cuarinta Village, Dinagat Island, Region XIII (Caraga) as of 18 Dec 2021.
- No visible damage in Cagdianao village, Dinagat Island, Region XIII (Caraga) as of 19 Dec 2021.
- Severely damaged structures and affected areas along the coastal areas of Surigao Del Norte Province, Region XIII (Caraga) Region XIII (Caraga) observed as of 18 and 19 December 2021.
- Decreasing waters observed in several areas in Siargao Island, Region XIII (Caraga) observed as of 19 and 20 December 2021.
- Damaged structures in Burgos town, Surigao Del Norte Province, Region XIII (Caraga) observed as of 20 Dec 2021.
- Potentially damaged structures in Rizal village and Del Carmen town Surigao Del Norte Province, Region XIII (Caraga) observed as of 19 Dec 2021.
- Potentially damaged structures in Dapa town, Siargao Island, Region XIII (Caraga) observed as of 18 December 2021.
- Affected structures by standing waters in Twin-twin, Santa Fe, Libertad, Santa Lnes, and Catangnan villages and Genaral Luna town, Siargao Island, Region XIII (Caraga) observed as of 18 December 2021.
- Potentially damaged structures and affected area in Pinut-an Village and Liloan town, Southern Leyte province, Region XIII (Caraga) as of 18 Dec 2021.
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Data sources:

(1) Satellite Image (Post-event)
SPOT 6: 19 Dec 2021
SPOT 7: 18 & 20 Dec 2021
Resolution: 1.5 m
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Source: Airbus DS

(2) Satellite Image (Pre-event)
ESRI Basemap

(3) Ancillary data
Administrative boundaries: National Mapping and Resource Information Authority (NAMRIA), Philippines Statistics Authority (PSA)
Populate place: OpenStreetMap

Analysis: United Nations Satellite Centre (UNOSAT)
Production: United Nations Satellite Centre (UNOSAT)