

FLOOD AND LANDSLIDE SUSCEPTIBLE AREAS IN MIMAROPA REGION (3-DAY FORECAST)

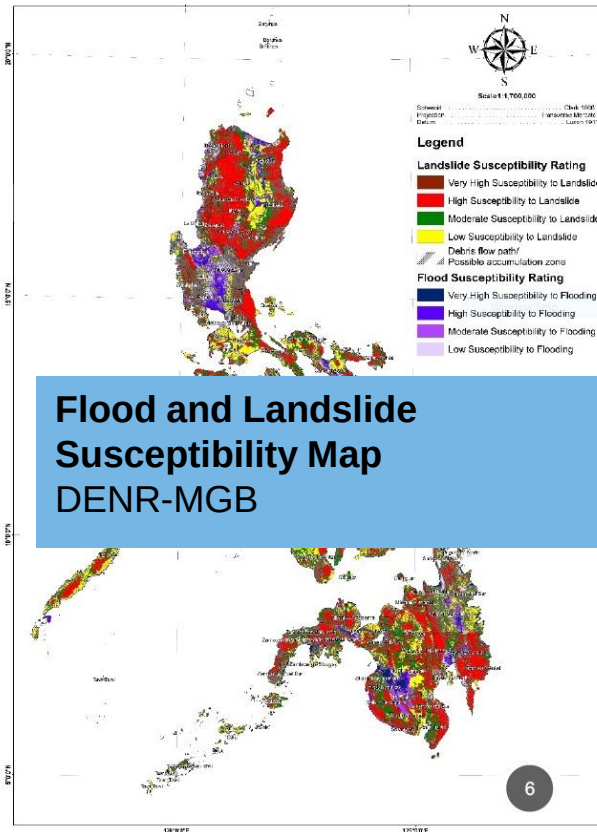
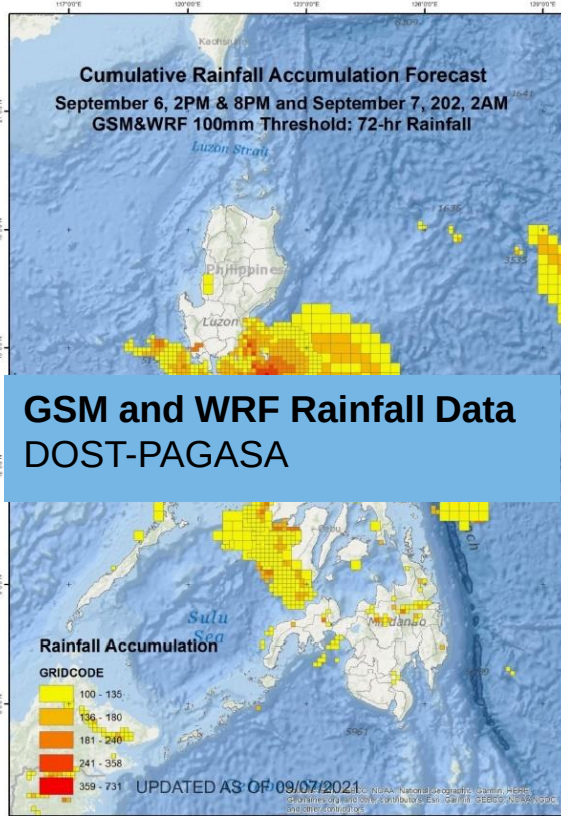
MAY 03, 2023, 8:43 AM UPDATE
LPA 93W

PRE-DISASTER RISK ASSESSMENT MEETING
MAY 03, 2023, 4:00 PM



MERARI B. ROSAROSO, R.GEO
GEOLOGIST

METHODOLOGY



Based from cumulative CMR and WRF T2 hour model of PAGASA dated from 6 September to 7 September 2021, 0800										7 September 2021, 0800
REGIONS	PROVINCE	MUNICIPALITY	BARANGAY	IN HIGH LANDS	IN LOW LANDS	INCO. LANDS	INTERM. LOW	IN HIGH FLOODS	IN LOW FLOODS	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 13 - Irawed west Pollahan	HL						
Recd Region (Region V)	Albay	Legazpi City	Rgy. 14 - Irawed Pollahan	HL						
Recd Region (Region V)	Albay	Legazpi City	Rgy. 15 - Irawed East Pollahan	HL	ML		DF		HF	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 16 - Irawd East Washington Dr	HL			DF			
Recd Region (Region V)	Albay	Legazpi City	Rgy. 17 - Irawd Street - Irawed	HL			DF			
Recd Region (Region V)	Albay	Legazpi City	Rgy. 18 - Cabañagan west	HL			DF	UNF		
Recd Region (Region V)	Albay	Legazpi City	Rgy. 19 - Cabañagan East	HL	ML		DF			
Recd Region (Region V)	Albay	Legazpi City	Rgy. 2 - Emily Balboa South	HL	ML					
Recd Region (Region V)	Albay	Legazpi City	Rgy. 20 - Cabañagan East	HL	ML				HF	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 21 - Sinabuan West	HL						
Recd Region (Region V)	Albay	Legazpi City	Rgy. 22 - Sinabuan East	HL	ML				HF	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 23 - Imperial Court Island	HL					HF	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 24 - Rizal Street	HL					HF	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 25 - Lapaan West	HL					HF	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 26 - Oragona	HL					HF	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 27 - Victory village south	HL	ML				HF	
Recd Region (Region V)	Albay	Legazpi City	Rgy. 28 - Victory village North	HL					HF	
Recd Region (Region V)	Albay	Malibit	Sabuyan						HF	
Recd Region (Region V)	Albay	Malibit	San Roque	VPL			DF		HF	
Recd Region (Region V)	Albay	Malibit	Santa Cruz		ML				HF	
Recd Region (Region V)	Albay	Malibit	Santa Teresa	VPL					HF	
Recd Region (Region V)	Albay	Malibit	Anang					UNF	HF	
Recd Region (Region V)	Albay	Malibit	Bagtikan					UNF	HF	
Recd Region (Region V)	Albay	Malibit	San Agustin					UNF	HF	

**MGB List of Barangays Susceptible to
Landslide and Flooding**
Mines and Geosciences Bureau - Central Office
Lands Geological Survey Division

#	Local Region (Region V)	Albany	Leggett City	Rpt. 67 - Baris	HL	MAL	VMP	HF
	Local Region (Region V)	Albany	Leggett City	Rpt. 68 - San Francisco	HL	MAL		
	Local Region (Region V)	Albany	Leggett City	Rpt. 69 - Riverside City	HL	MAL		
	Local Region (Region V)	Albany	Leggett City	Rpt. 7 - Idaho	HL	MAL	DF	HF
	Local Region (Region V)	Albany	Leggett City	Rpt. 70 - Chagrinburg	HL	MAL		HF
	Local Region (Region V)	Albany	Leggett City	Rpt. 8 - Saguenay/Lesepres	HL	MAL	DF	HF
	Local Region (Region V)	Albany	Leggett City	Rpt. 8 - Montreal	HL			
	Local Region (Region V)	Albany	Urbain	Alouette	VML	MAL		HF
	Local Region (Region V)	Albany	Urbain	Alouette	HL		VMP	HF
	Local Region (Region V)	Albany	Urbain	Beaulieu	HL	MAL		HF
	Local Region (Region V)	Albany	Urbain	Beauve	HL	MAL		HF
	Local Region (Region V)	Albany	Urbain	Beaumont	HL	MAL		HF
	Local Region (Region V)	Albany	Urbain	Bugs	HL	MAL	VMP	HF
	Local Region (Region V)	Albany	Beaumont	Beaumont	HL			HF



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MINES AND GEOSCIENCES BUREAU
MIMAROPA Region

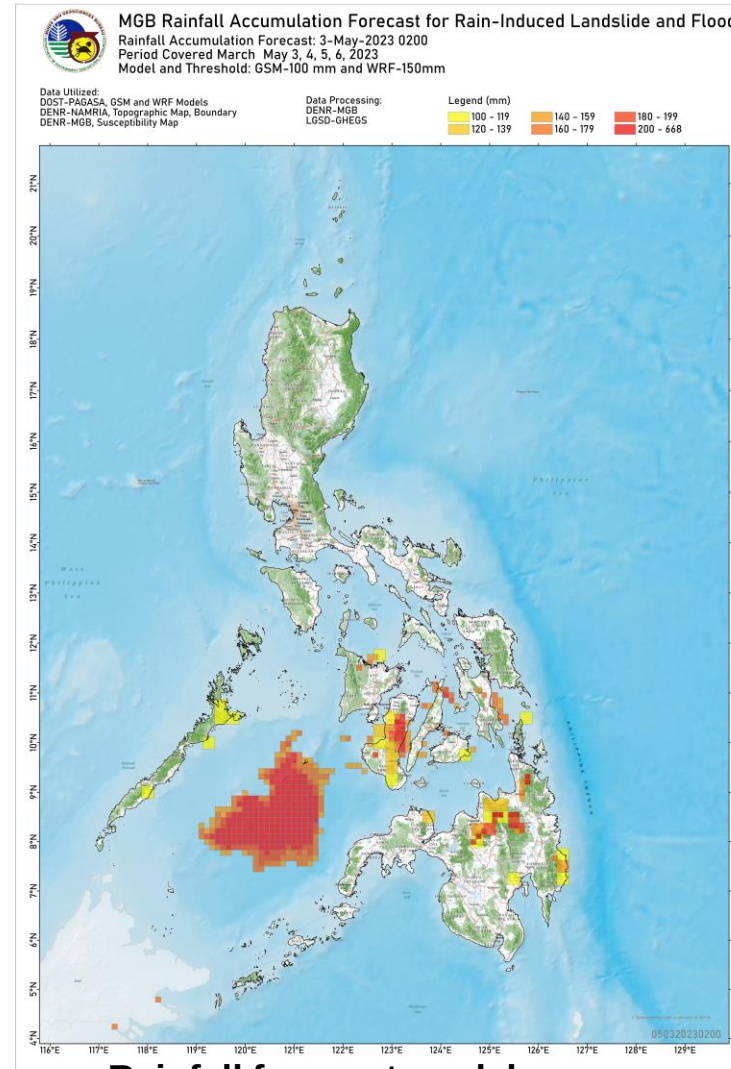
MGB List of Barangays Susceptible to Landslides and Flooding

MGB List as of 2023 May 03 09:00 AM

3-day forecast

(valid until **May 06 0200H, Sat**)

May 3 2am, 2023	GSM 100mm WRF 150mm
Row Labels	Count of BARANGAY
⊕ Davao Region (Region XI)	165
⊕ Northern Mindanao (Region X)	419
⊕ MIMAROPA (Region IV-B)	84
⊕ Caraga (Region XIII)	104
⊕ Central Visayas (Region VII)	542
⊕ Western Visayas (Region VI)	337
⊕ Eastern Visayas (Region VIII)	125
Grand Total	1776



Rainfall forecast models:

GSM – big squares.

WRF – small squares.

Tropical Cyclone (TC)-Threat Potential

Initialization: 02 May 2023 (8 AM)

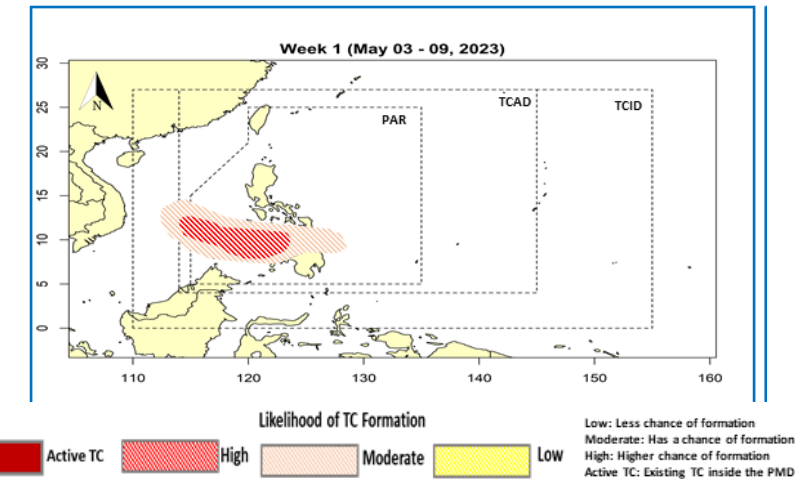
Date Issued: 03 May 2022

Validity: Valid within the forecast period, unless superseded by succeeding forecast.

Forecast Summary:

Week-1 (May 03-09, 2023)

- For the TC-like vortex (TCLV) present within the PAR, surveyed models predict a moderate to high likelihood of cyclogenesis.
- Therefore, the **TC-THREAT is active** in week-1.



Based from **GSM** and **WRF** 72-hour model of PAGASA dated **03 May 2023, 0200**

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MIMAROPA Region

Geohazards Operations Center

Lands Geological Survey Division

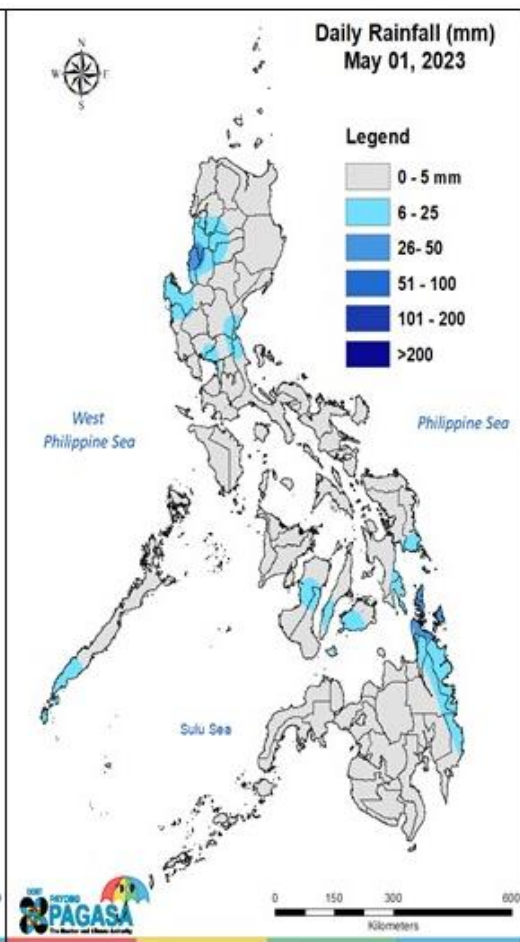
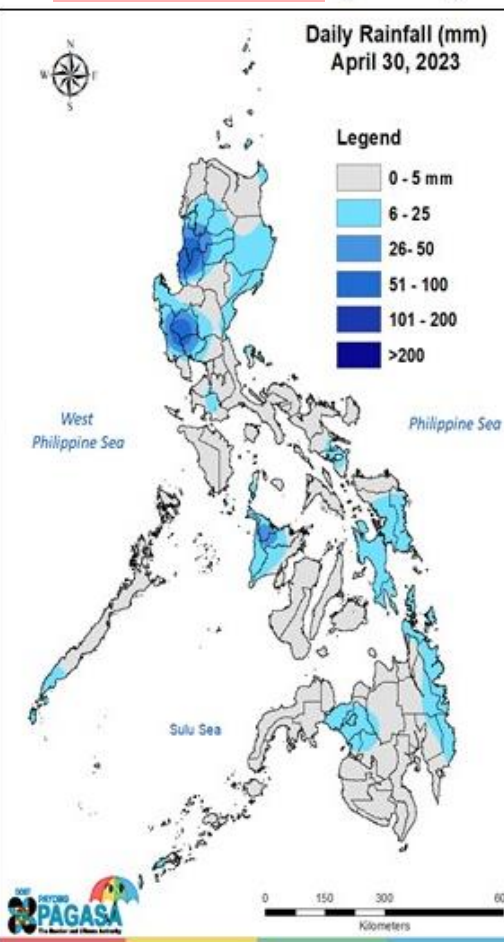
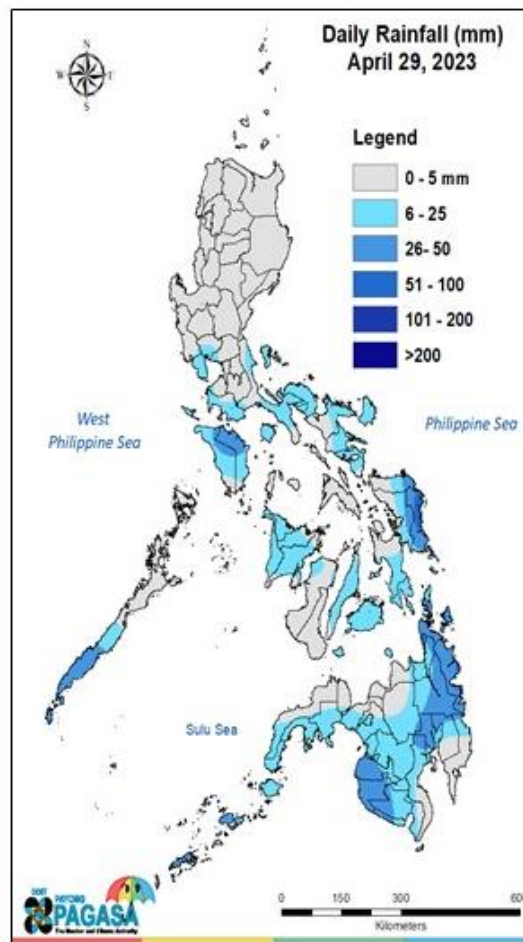
Mines and Geosciences Bureau - Central Office,
May 03, 2023 09:00 AM Bulletin

GROUND SATURATION & FORECAST VALIDATION

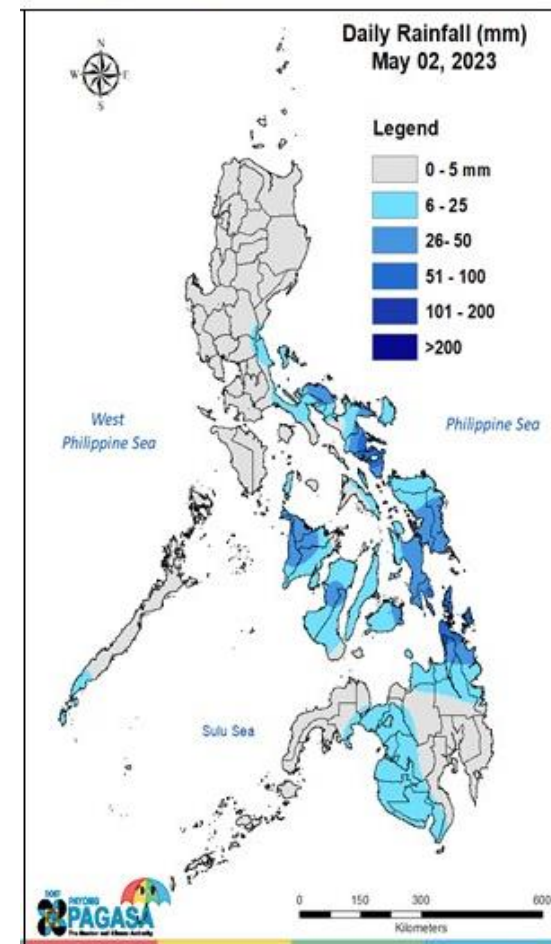


Daily Rainfall for **April 29, 30 & May 01, 2023**

Observed (mm)



Forecast (mm)
for May 1 & 2, 2023



MGB List of Barangays Susceptible to Landslides and Flooding

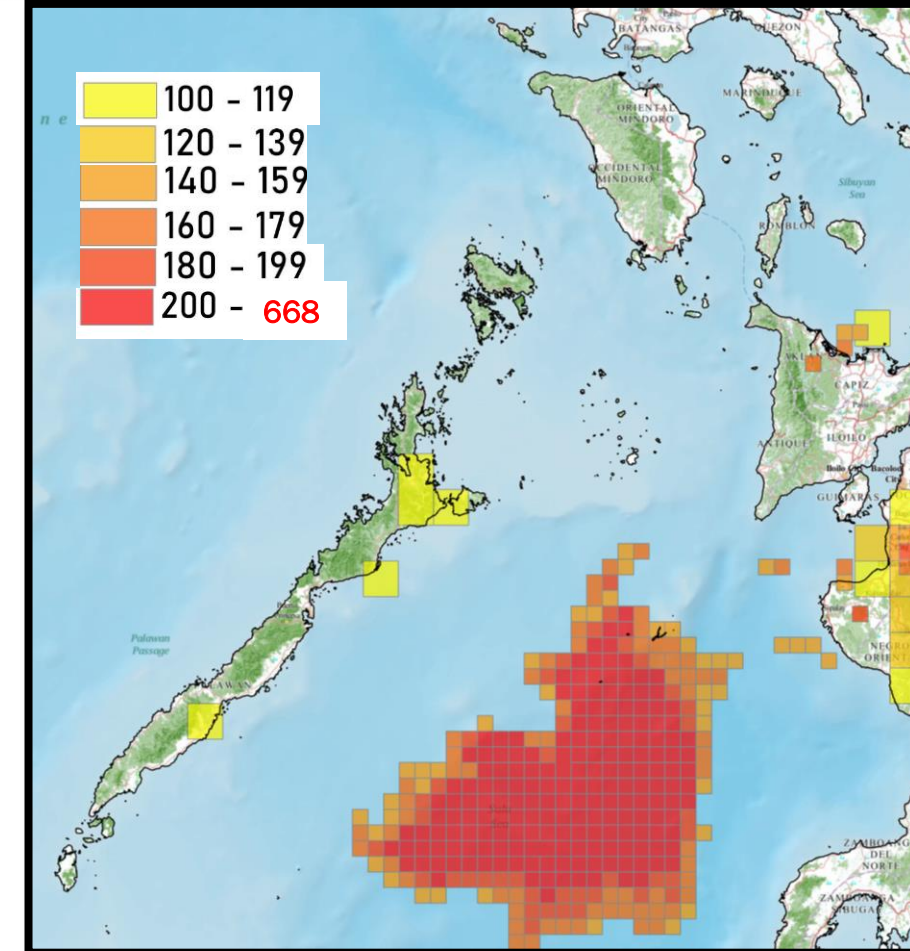
Data Utilized:
DOST-PAGASA, GSM and WRF Models
DENR-NAMRIA, Topographic Map, Boundary
DENR-MGB, Hazard Susceptibility Map

Data Processing:
DENR-MGB
LGSD-LGIMS

MGB List as of 2023 May 03 09:00 AM 3-day forecast (valid until **May 06 0200H, Sat**)

Based from **GSM** and **WRF** 72-hour model of PAGASA dated **03 May 2023, 0200**

May 3 2am, 2023	GSM 100mm WRF 150mm	Total Brgy	% Affected Brgy	Max Rainfall/ 24 Hrs
Row Labels	Count of BARANGAY			
MIMAROPA (Region IV-B)	84	1459	5.8%	180-199
Palawan	84	433	19.4%	180-199
Oriental Mindoro	0	426	0.0%	<100
Occidental Mindoro	0	163	0.0%	<100
Marinduque	0	218	0.0%	<100
Romblon	0	219	0.0%	<100



Geohazards Operations Center
Lands Geological Survey Division

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Per PAGASA: WRF and GSM models cannot forecast isolated thunderstorms.

Local observers are advised be wary of sudden heavy downpours that may produce **FLASH** floods and landslides.

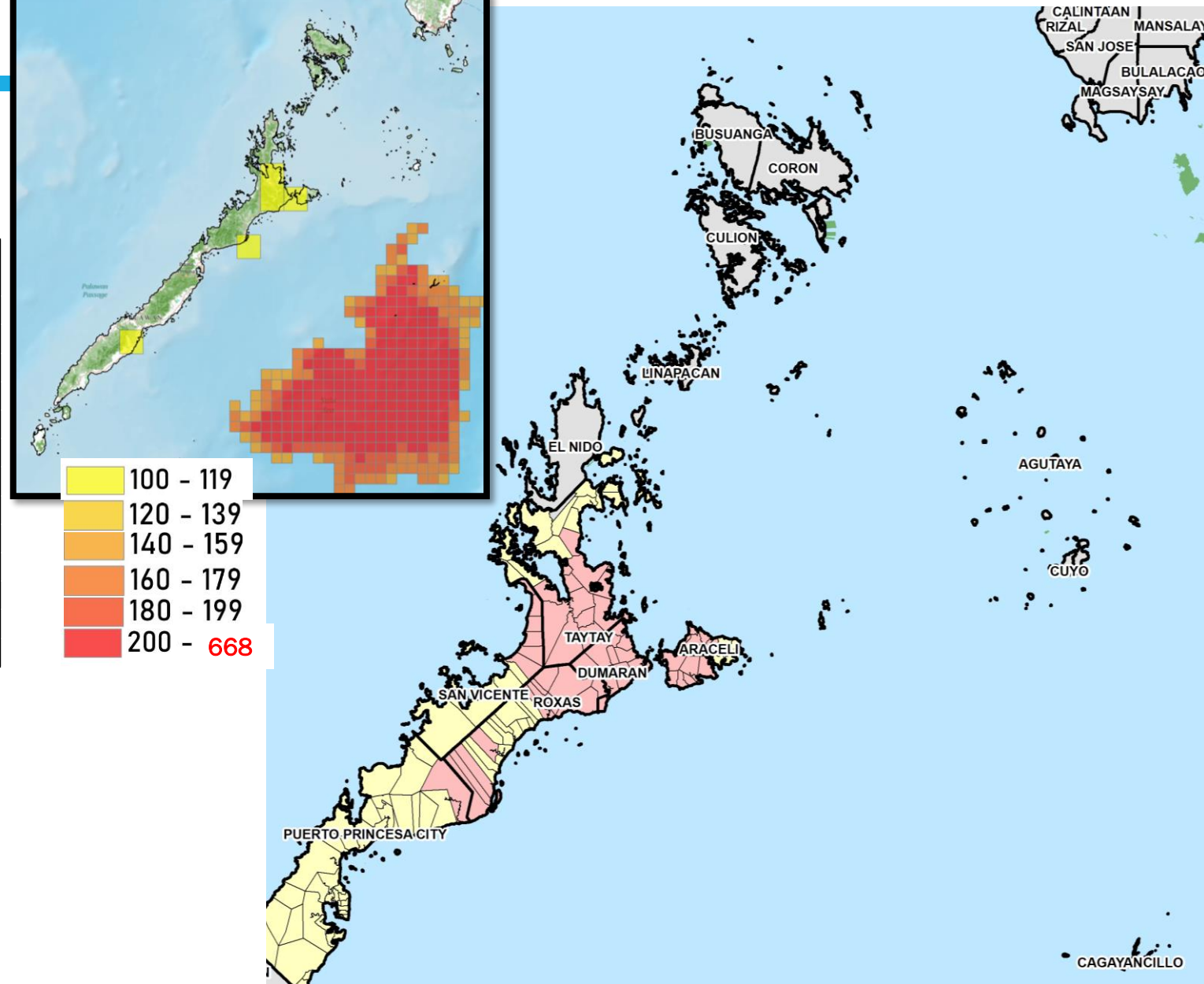
Prepared by: MBR



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MINES AND GEOSCIENCES BUREAU
MIMAROPA Region

PALAWAN

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Quezon	3	14	21.4%	110-119
Roxas	14	31	45.2%	110-119
Taytay	14	31	45.2%	110-119
San Vicente	6	10	60.0%	110-119
Puerto Princesa City	1	66	1.5%	110-119
Brooke's Point	4	18	22.2%	110-119
Sofronio Espanola	8	9	88.9%	110-119
Araceli	6	13	46.2%	110-119
Dumaran	16	16	100.0%	110-119
Cagayancillo	12	12	100.0%	180-199

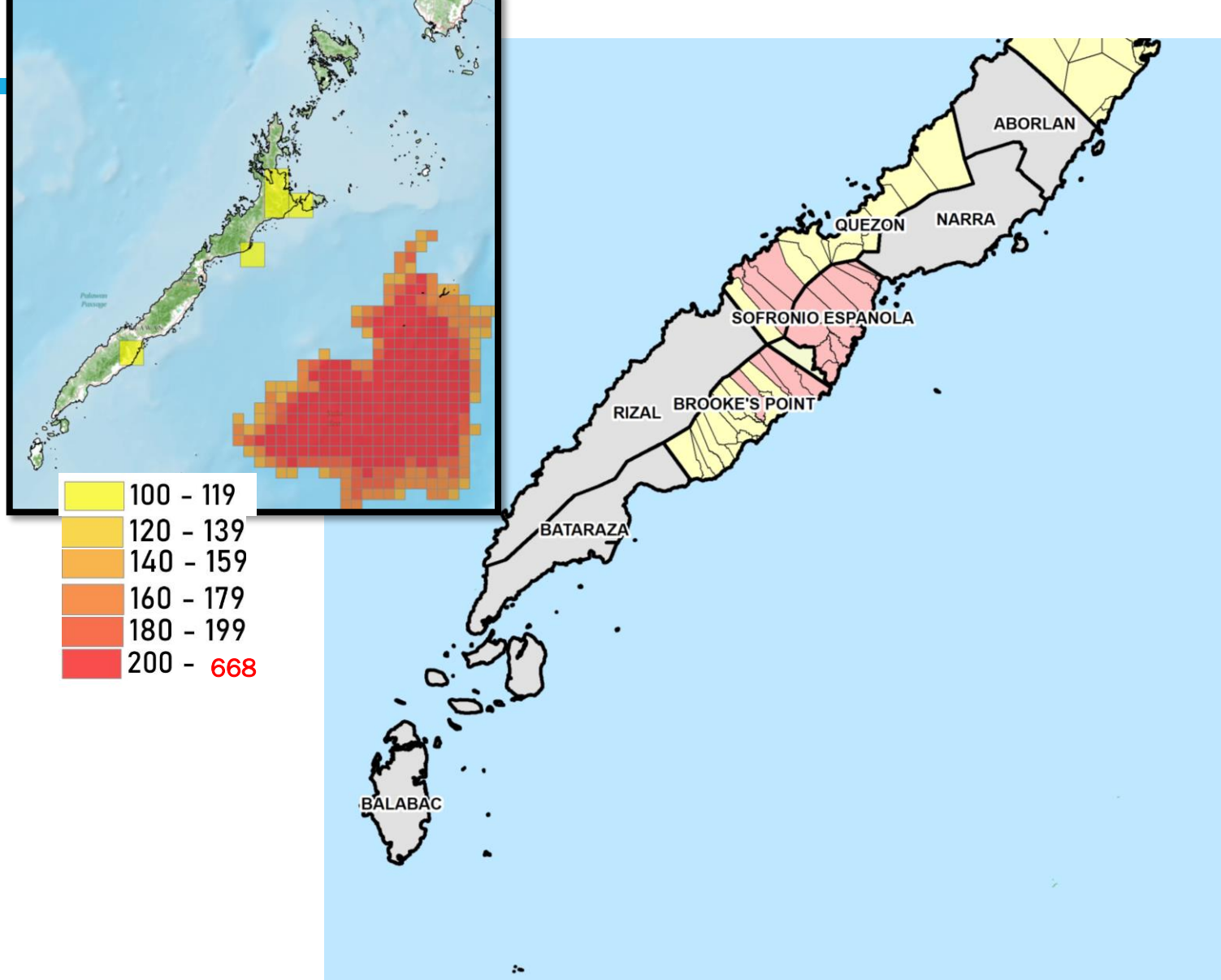


Boundaries approx., for visualization.
Map Prepared by: MBR



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Based from **GSM** and **WRF** 72-hour model
of PAGASA dated **03 May 2023**, 0200

Boundaries approx., for visualization.

Map Prepared by: MBR



Geosciences Division
MINES AND GEOSCIENCES BUREAU
MIMAROPA Region

RIVERS AS NATURE'S MOST EFFICIENT DRAINAGE SYSTEM

A DYNAMIC SYSTEM CARRYING: WATER, SEDIMENTS, NUTRIENTS, WASTE, ECOSYSTEM

River Natural Processes: Erosion, Deposition, Channel Switching, Wetland subsidence, Flooding.



VERY HIGH LANDSLIDE ADVISORY AND DEBRIS FLOW*

V. HIGH LANDSLIDE	VHL	
	GSM 100mm	
May 3 2am, 2023	WRF 150mm	
Row Labels		Count of BARANGAY
[-] MIMAROPA (Region IV-B)		11
[-] Palawan		11
Roxas		6
Taytay		4
Puerto Princesa City		1
[+] Caraga (Region XIII)		43
[+] Central Visayas (Region VII)		163
[+] Western Visayas (Region VI)		50
[+] Eastern Visayas (Region VIII)		6
Grand Total		337

DEBRIS FLOW	DF	
	GSM 100mm	
May 3 2am, 2023	WRF 150mm	
Row Labels		Count of BARANGAY
[+] Caraga (Region XIII)		19
[+] Central Visayas (Region VII)		97
[+] Western Visayas (Region VI)		12
[+] Eastern Visayas (Region VIII)		13
Grand Total		177

*adjacent towns and barangays may also be affected depending on rainfall distribution.



Present-day Debris Flow
Illgraben, Alps, Switzerland (Zufferey, 2016)

FOR MORE DETAILS ON
HISTORICAL GEOHAZARD DATA
PLEASE VISIT:
REGION4B.MGB.GOV.PH



Republic of the Philippines
Department of Environment and Natural Resources
MINES AND GEOSCIENCES BUREAU
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AREAS WITH HIGH TO VERY HIGH
LANDSLIDE/FLOOD
SUSCEPTIBILITY RATING

based on the 1:10,000 scale geohazard mapping activities
conducted by the Mines and Geosciences Bureau MIMAROPA Region

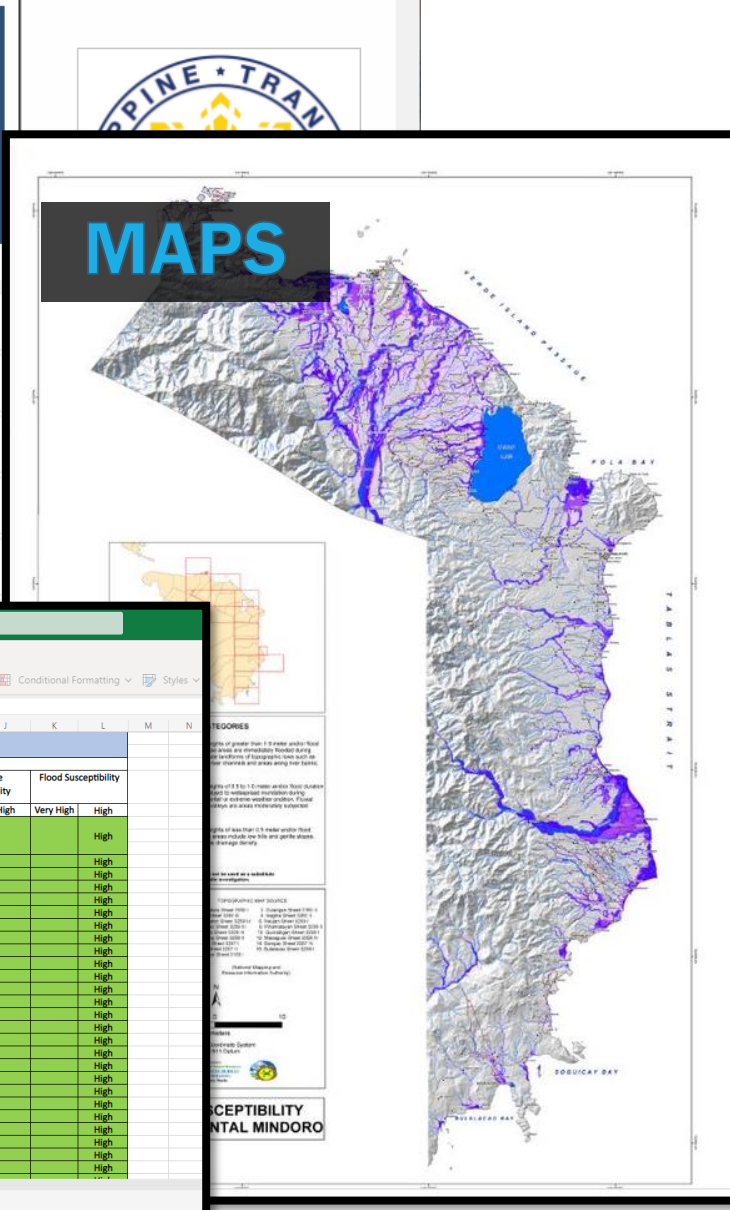
Occidental Mindoro

Oriental Mindoro

Marinduque

Romblon

Palawan



LISTS

LIST OF AREAS IN OR. MINDORO WITH VERY HIGH TO HIGH LANDSLIDE AND FLOOD SUSCEPTIBILITY BASED ON 1:10,000 SCALE MAPPING

Region	Province	Municipality	Barangay	Sitio	Remarks	Landslide Susceptibility		Flood Susceptibility	
						Very High	High	Very High	High
Region IV-B MIMAROPA	Province of Oriental Mindoro	Municipality of Baco	Bankalan	Dahila	Concentrated runoff from higher ground and overflowing of Dulangan River are the main cause of flooding in this area.				High
				Alpiz	The flooding in these areas is caused by overflowing of Alag River during incessant rains.				High
			Mangangan 2	Paltan					High
				Ibaba					High
			Sta. Rosa 1	Arungyanan 1	Most of flood-prone areas are situated near the river banks of the meandering channel of Alag River.				High
				Arungyanan 2					High
			Alag	Matining					High
				Hilltop	Alag River and its tributaries are the main contributor of flood water in these areas. The barangay is traversed by the meandering river channel of Alag River which overflows during excessive rainfall.				High
				Navotas I					High
				Katanagan					High
			Lumangbayan	Navotas II					High
				Libtong	Swelling of Malaylay River caused flooding in the area.				High
			Water	Ilaya					High
				Pacalahot	Low-lying areas of these sitios near the river bank and mouth of Malaylay River are prone to 0.5 meter deep flooding.				High
			Dulangan II	Lagunloong					High
				Carumaling	Concentrated runoff and floodwaters from Dulangan River are the main cause of inundation in the area.				High
			Sta. Rosa 2	Nalbot					High
				Batang-gasang					High
			San Andres	Tibay	Most of flood-prone areas are situated along the floodplain and inner banks of Alag River.				High
				Binaybay	Both Baco and Malaylay Rivers contribute flooding in the area when it overflows during incessant rains.				High
			Tabon-tabon	Karitan					High
				Kabilang Malaylay					High
			Pulang-tubig	Centro Ibaba West	Overflowing of Malaylay and Alag River had caused flooding in this portion of barangay.				High
				Centro North					High
			Pulang-tubig	Kankuran					High
				Tabag	These areas are situated near the mouth of Malaylay River. Storm surge is also other cause of flooding in the coastal areas.				High

MGB List of Barangays Susceptible to Landslides and Flooding

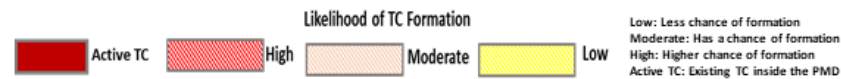
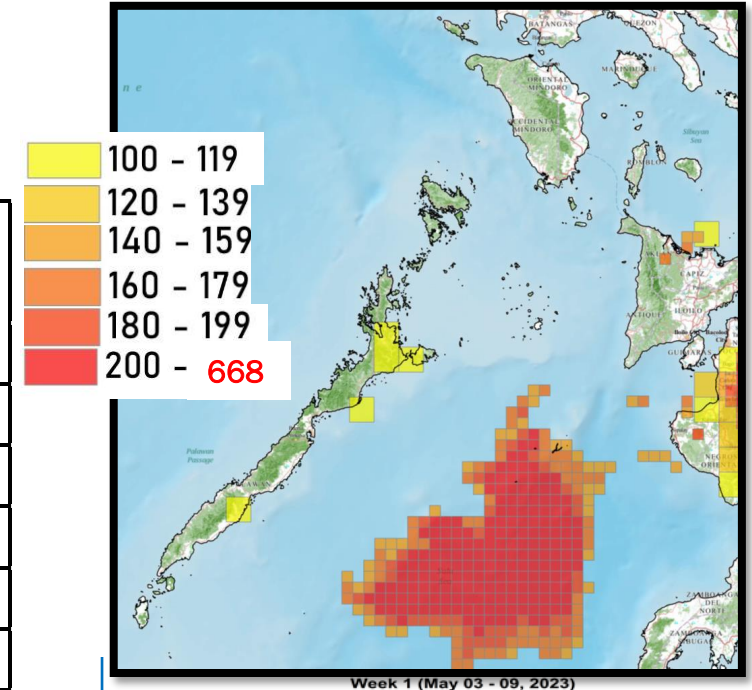
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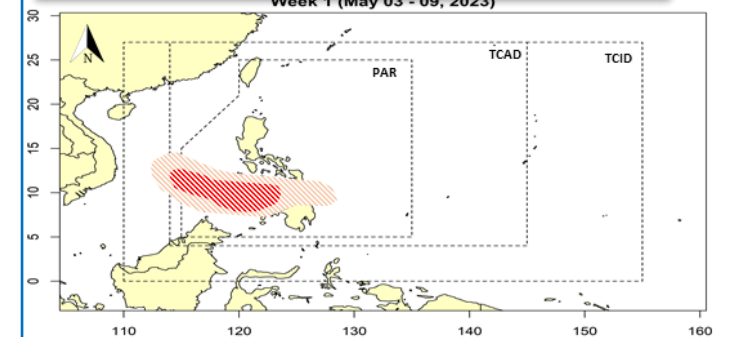
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MINES AND GEOSCIENCES BUREAU
MIMAROPA Region

**THANK YOU
AND
STAY SAFE!!!**

**MGB-MIMAROPA
7F DENR BLDG., 1515 ROXAS BLVD
ERMITA, MANILA**