



**India Meteorological Department
(Ministry of Earth Sciences)**

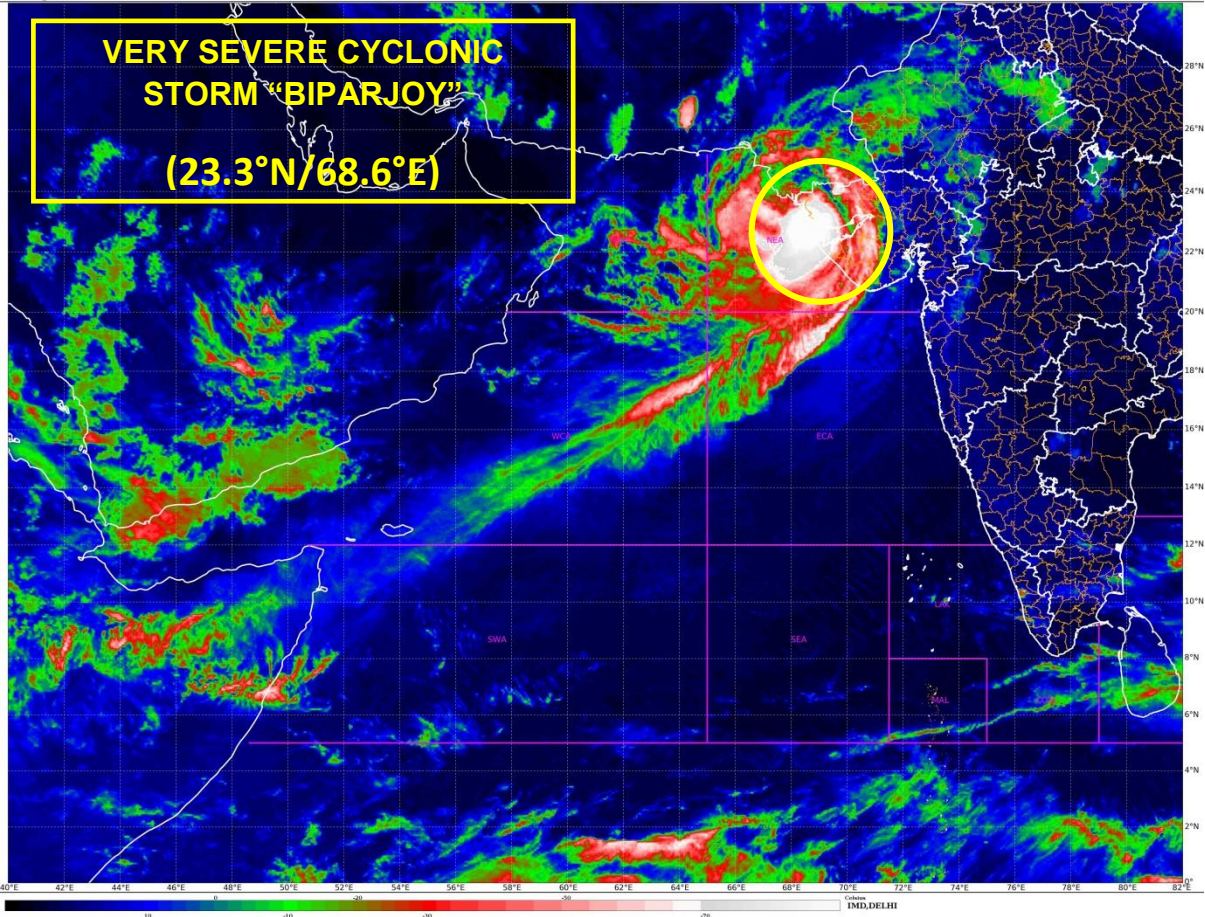
HOURLY UPDATE ON VERY SEVERE CYCLONIC STORM '**BIPARJOY**'

BULLETIN NO. 13

DATE: 16-06-2023

TIME OF ISSUE: 0030 HRS IST

DATE/TIME (IST) OF OBSERVATION	BASED ON 15-06-2023 (2330 HRS IST)
LANDFALL	VERY SEVERE CYCLONIC STORM ' BIPARJOY ' MOVED NORTHEASTWARDS AND CROSSED SAURASHTRA-KUTCH COAST NEAR JAKHAU PORT (GUJARAT) BETWEEN 2230 AND 2330 HRS IST OF 15 TH JUNE 2023 AS A VERY SEVERE CYCLONIC STORM WITH WIND SPEED OF 115-125 KMPH GUSTING TO 140 KMPH.
CURRENT LOCATION (LATITUDE/LONGITUDE)	LAY CENTERED OVER SAURASHTRA-KUTCH NEAR LATITUDE 23.3°N AND LONGITUDE 68.6°E ABOUT 10 KM NORTH OF JAKHAU PORT (GUJARAT), AND 30 KM WEST-NORTHWEST OF NALIYA.
CURRENT INTENSITY NEAR CENTRE	105-115 KMPH GUSTING TO 125 KMPH
FORECAST MOVEMENT AND INTENSITY	IT WOULD MOVE NORTHEASTWARDS AND WEAKEN INTO A CYCLONIC STORM BY EARLY MORNING OF 16TH JUNE OVER SAURASHTRA-KUTCH WITH WIND SPEED OF 75-85 KMPH GUSTING 95 KMPH AND INTO A DEPRESSION BY THE EVENING OF 16TH JUNE OVER SOUTH RAJASTHAN WITH WIND SPEED OF 40-50 KMPH GUSTING TO 60 KMPH.



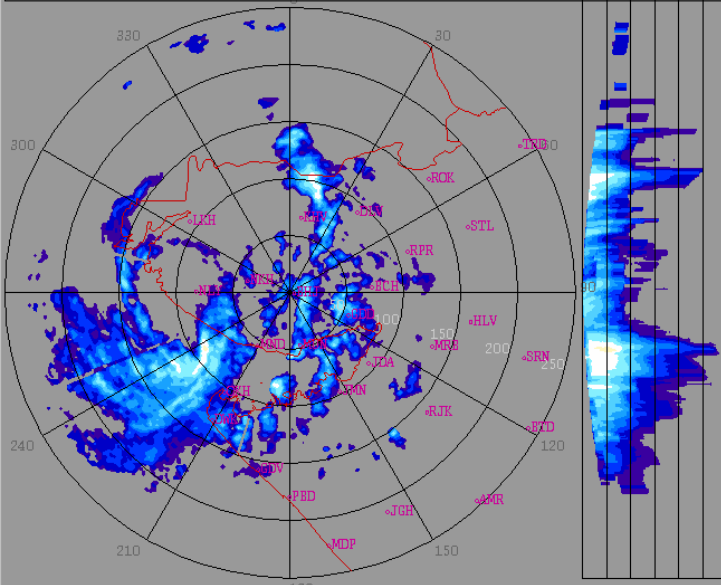
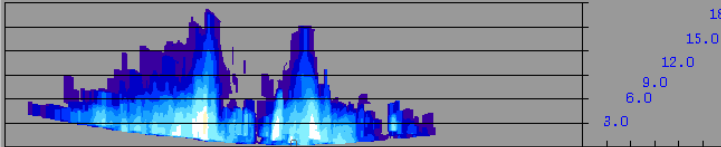
bhuj_weather_2023_06_15_18_21_37_hsfimd-b-bel.dwr

2023/06/15

18:21:37 (UTC)

MAX(Z)

DWR BHUJ
 (23.2416N , 69.6458E , 100.00 mts)



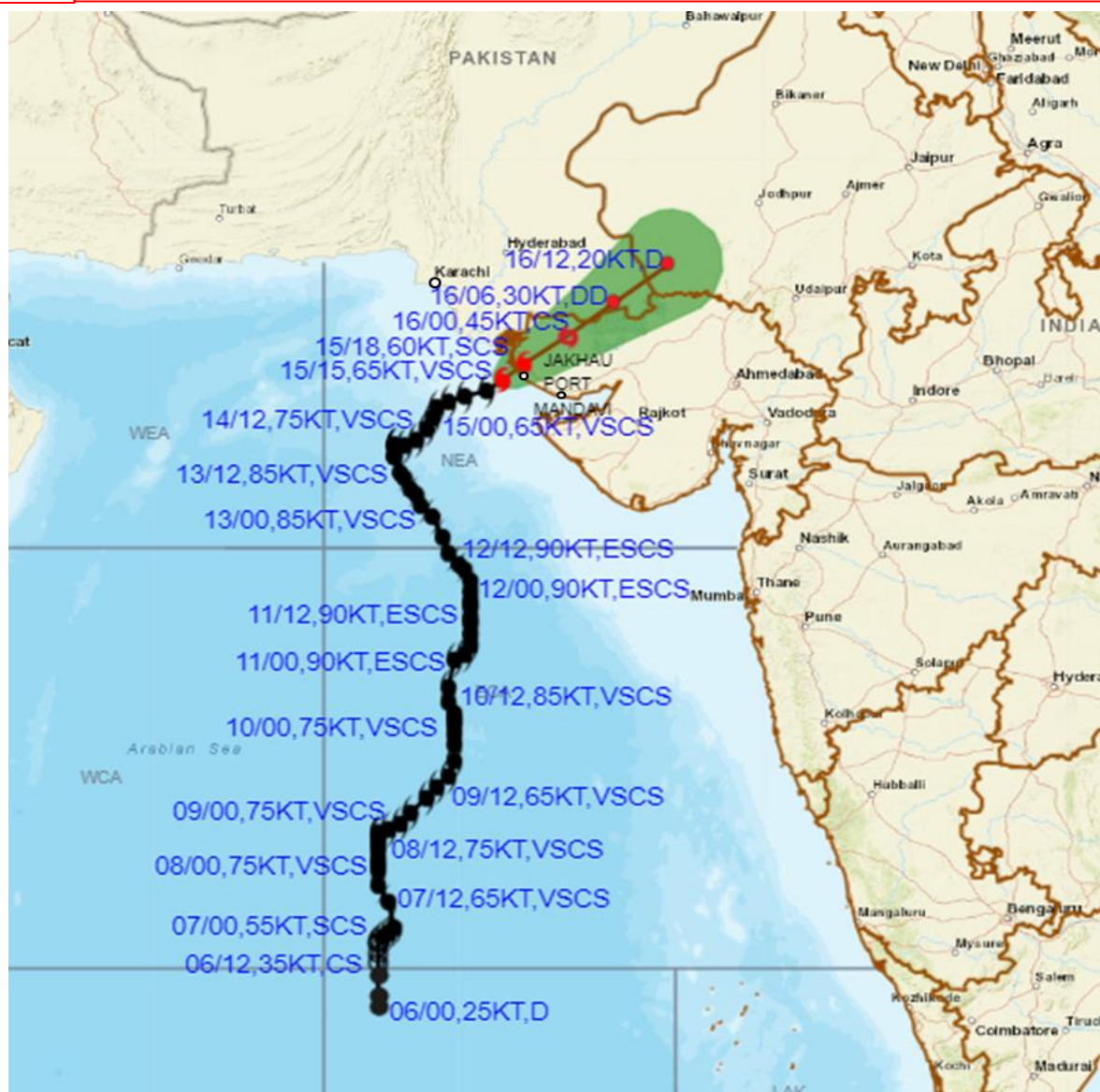
Height	: 18.0 Km
Layer Spacing	: 0.100 Km
Z (Lo, Hi)	: -32.0, 95.0 dBZ
Grid size	: 1 Km
Display Range	: 250 Km
Display Res	: 1.0 Km/Pix
DDR Enable	: Yes
Scan Elev (Lo, Hi)	: 0.2, 21.0 Deg
PRF (Lo, Hi)	: 450, 600 Hz
Scan Res	: 150 mts
Scan RPM	: 2.0
Log Threshold	: 4 dB
DTP	: 42
Pulse Width	: 1.0
Notch Width	: 54.0 Hz
SQI	: 0.25
CSR	: 20
Scan Range	: 240 Km
Preprocessings	: NONE

dBZ	
No Data	
61.3 : > 65.0	
57.7 : 61.3	
54.0 : 57.7	
50.3 : 54.0	
46.7 : 50.3	
43.0 : 46.7	
39.3 : 43.0	
35.7 : 39.3	
32.0 : 35.7	
28.3 : 32.0	
24.7 : 28.3	
21.0 : 24.7	
17.3 : 21.0	
13.7 : 17.3	
10.0 : 13.7	

Reflectivity imagery from Doppler weather Radar -Bhuj based on 2350 hrs IST of 15th June 2023.



OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "BIPARJOY" OVER NORTHEAST ARABIAN SEA CLOSE TO SAURASHTRA-KUTCH COAST BASED ON 1500 UTC (2030 IST) OF 15TH JUNE 2023.



DATE/TIME IN UTC

IST=UTC + 0530

L: LOW PRESSURE AREA

WML: WELL MARKED LOW PRESSURE AREA

D: DEPRESSION (17-27 KT)

DD: DEEP DEPRESSION (28-33 KT)

CS: CYCLONIC STORM (34-47 KT)

SCS: SEVERE CYCLONIC STORM (48-63KT)

VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)

ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)

SuCS: SUPER CYCLONIC STORM (\geq 120 KT)

● LESS THAN 34 KT

○ 34-47 KT

○ \geq 48 KT

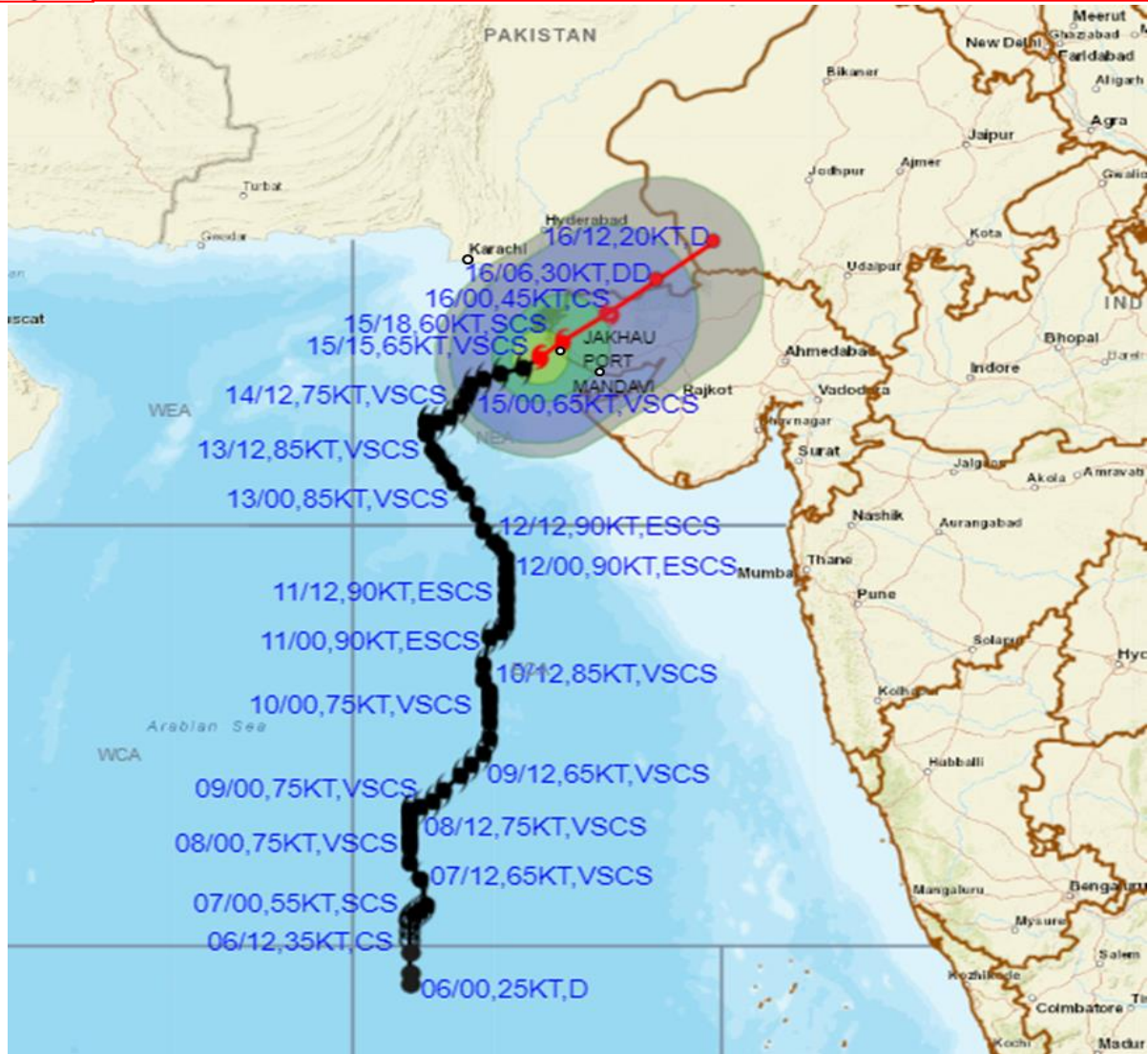
█ OBSERVED TRACK

█ FORECAST TRACK

▲ CONE OF UNCERTAINTY



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM "BIPARJOY" OVER NORTHEAST ARABIAN SEA CLOSE TO SAURASHTRA-KUTCH COAST BASED ON 1500 UTC (2030 IST) OF 15TH JUNE 2023.



DATE/TIME IN UTC

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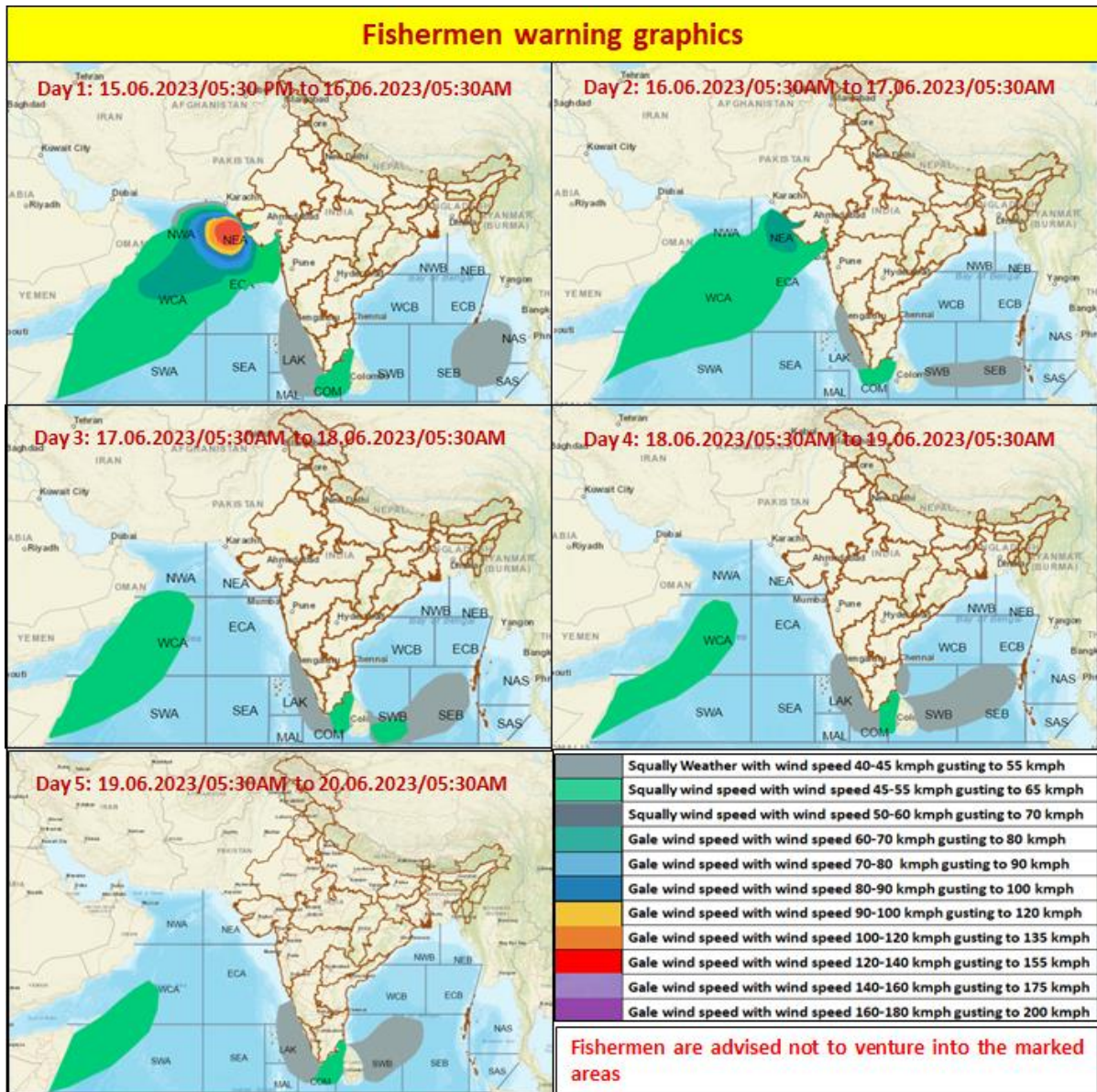
SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

- LESS THAN 34 KT
- 34-47 KT
- ◐ ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- ▲ CONE OF UNCERTAINTY
- AREA OF MAXIMUM SUSTAINED WIND SPEED:
- 28-33 KT (52-61 KMPH)
- 34-49 KT (62-91 KMPH)
- 50-63 KT (92-117 KMPH)
- ≥ 64 KT (≥118 KMPH)

IMPACT OVER THE SEA

MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

FISHERMEN WARNING GRAPHICS



STORM SURGE HEIGHT INFORMATION:

* The below listed surge heights are over and above astronomical tide.

Astronomical Tide On 15th June 2023		
Station	Time (IST)	Height (M)
Porbandar	09:37	2.61
Navlakhi	13:38	7.54
Okha	11:36	3.74
Deendayal Port (Kandla)	13:02	6.79