



Government of Fiji
FIJI METEOROLOGICAL SERVICE
PRIVATE MAIL BAG (NAP 0351)
NADI AIRPORT, FIJI

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2011/2012 TROPICAL CYCLONE SEASON

SUMMARY OF ALERTS AND WARNINGS PROCEDURES FOR FIJI

1. ACTIVATION OF NADI TCWC

- 1.1 The Nadi Tropical Cyclone Warning Centre (Nadi TCWC) will be activated whenever there is a tropical cyclone threat to Fiji, It will start issuing Special Weather Bulletins containing TROPICAL CYCLONE ALERTS or TROPICAL CYCLONE WARNINGS, as appropriate.
- 1.2 The Nadi TCWC is operated within the Weather Forecasting Division of the Fiji Meteorological Service (FMS) and can be accessed 24 hours a day as follows:

Telephone: **6724888** (Switchboard) or
6736005, 6736006, 6736007 (Direct)
(Calls must be kept short).
Facsimile: **6720190** / 6720636 / 6720645
Weather Fax: **6721227** (Polling fax)
FMS Web Site: .met.gov.fj or
.met.gov.fj/fijimet/slowlinks (for those with
slow internet access)

2. SPECIAL WEATHER BULLETINS

- 2.1 All Tropical Cyclone “Alerts” or “Warnings” for Fiji will be contained in SPECIAL WEATHER BULLETINS (SWBs) as opposed to *Regular* Weather Bulletins routinely issued all the year round.

SWB Numbering and Heading

- 2.2 All SWBs will be numbered sequentially, starting with BULLETIN NUMBER ONE. This numbering sequence will be maintained for the same system until the threat to communities warned have ceased completely. If SWBs are dropped for a time, but resumed later for the same cyclone, then the numbering sequence will resume from the last issue.
- 2.3 Where a system is already a *Tropical Cyclone*, its name shall be included in the heading of the SWB, e.g. “SPECIAL WEATHER BULLETIN NUMBER ONE ON TROPICAL CYCLONE ‘MATT’ ISSUED FROM NADI AT.....”
- 2.4 Where a system is still a *Tropical Depression* (i.e. yet to develop into a tropical cyclone) it shall be sufficient to refer to the bulletin type and number only, e.g. “SPECIAL WEATHER BULLETIN NUMBER ONE ISSUED FROM NADI AT” However, the procedure in 2.3 is to be adopted as soon as the system is named as a tropical cyclone. The numbering sequence shall be maintained all the time.
- 2.5 SWBs containing Tropical Cyclone “Alerts” or “Warnings” shall be headed “TROPICAL CYCLONE ALERT” or “TROPICAL CYCLONE WARNING” as appropriate. Where a SWB

contains warnings for some areas and an alert still for other areas, the warning header shall take precedence.

Tropical Cyclone Alert Bulletin

- 2.6 A SWB containing a TROPICAL CYCLONE ALERT will give progress information on the development of an incipient cyclone or the progress of a cyclone still some distance away, if there is significant probability that winds over one or more parts of Fiji may later reach gale force or stronger. Alerts bulletins will be started, where possible, about 48 hours before the likely onset of gales or stronger winds, and will be maintained until such time specific warnings become necessary, or the threat to Fiji recedes.
- 2.7 Bulletins containing TROPICAL CYCLONE ALERTS will be issued at least every six hours, preferably at regular bulletin times.

Tropical Cyclone Warning Bulletin

- 2.8 A SWB containing a TROPICAL CYCLONE WARNING will give GALE, STORM or HURRICANE Warning for specified areas according to the maximum average wind force expected. It will be issued when there is an expected occurrence of gales or stronger winds within 24 hours over the areas so warned. Apart from average wind speeds, expected winds in momentary gusts will also be given.

Type of Warning	Average Winds* Expected	Beaufort Force	Typical Effects
GALE WARNING	63 – 87 km/hr (34 – 47 knots)	8, 9	Very rough to high seas. Normally minor damage on land, mainly to branches and loose materials. Occasional heavy rain and flooding.
STORM WARNING	88 – 117 km/hr (48 – 63 knots)	10, 11	High to very high seas. Damage to trees, crops, overhead wires, temporary shelters and weaker structures. Often accompanied by heavy rain and flooding.
HURRICANE WARNING	Over 117 km/hr (Over 63 knots)	12	Phenomenal seas, heavy surf and abnormally high storm tides. Severe damage to trees, crops, overhead wires, and many buildings. Accompanied by torrential rain and flooding
* Winds averaged over a 10-minute period. Momentary gusts will be much higher.			

- 2.9 Full SWBs headed as TROPICAL CYCLONE WARNING will normally be issued every three hours.
- 2.10 If and when information becomes available that points to a substantial change in the situation, thus invalidating the current warning, a SWB will be issued as soon as possible to inform users of the sudden change in the situation. Such an intermediate SWB will be brief and contain essential information including, for example, new areas threatened and/or new course taken by the cyclone. The numbering sequence for SWBs will be retained. All intermediate bulletins will be identified for emphasis by the prefix "**FLASH**" e.g.

**"FLASH SPECIAL WEATHER BULLETIN NUMBER 10 FOR
FIJI ON TROPICAL CYCLONE MATT ISSUED FROM NADI AT"**

Tropical Cyclone threatening Rotuma

- 2.11 The above-mentioned procedures will also apply to Rotuma. When a Tropical Cyclone is anticipated to affect Rotuma only, and not any other part of Fiji, SWBs will only be issued for Rotuma and the forecast for Fiji continued in *regular* weather bulletins. However, if the system is likely to later threaten Fiji (onset of gales or stronger within 48 hours), then the forecast for Fiji shall be provided in the same SWBs and the *regular* bulletin ceased. The numbering sequence of the SWB shall be retained when Alerts and Warnings are commenced for Fiji.

Tropical Cyclone Category

- 2.12 A Tropical Cyclone will be categorised as per the Australian and South Pacific Category System as follows:

Category	10-Min Mean Wind	Maximum 3-Sec Gust
1 (Tropical Cyclone)	63 – 87 km/hr (34 – 47 knots)	Less than 125 km/hr (Damaging Winds)
2 (Tropical Cyclone)	88 – 117 km/hr (48 – 63 knots)	125-169 km/hr (Destructive Winds)
3 (Severe Tropical Cyclone)	118 – 157 km/hr (64 – 85 knots)	170-224 km/hr (Very Destructive Winds)
4 (Severe Tropical Cyclone)	159 – 200 km/hr (86 – 110 knots)	225-279 km/hr (Very Destructive Winds)
5 (Severe Tropical Cyclone)	Over 200 km/hr (Over 110 knots)	Over 280 km/hr (Very Destructive Winds)

Tropical Cyclone location, movement

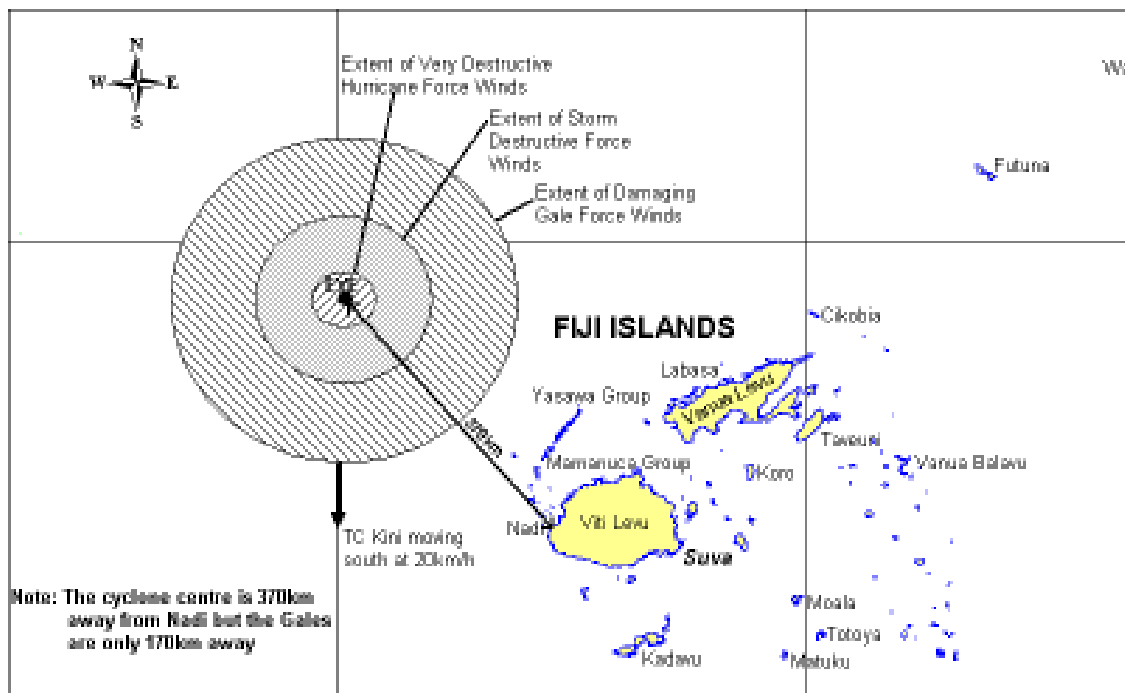
- 2.13 The location of a Tropical Cyclone is usually determined with respect to its centre which is given in *Latitude* and *Longitude* coordinates (to one-tenth of a Degree) plus the distance (in Kilometres) and the general direction from one or more islands or places. The general direction of movement of the cyclone centre is indicated together with the speed at which it (the centre) is moving. For example, TROPICAL CYCLONE MATT CENTRE 950HPA CATEGORY 3 WAS LOCATED NEAR 15 DECIMAL 5 SOUTH 175 DECIMAL 0 EAST OR 370 KM NORTHWEST OF NADI AT 9 AM TODAY MOVING SOUTH AT 20 KM/HR.

Tropical Cyclone intensity and size

- 2.14 The intensity and size of a Tropical Cyclone are usually given in terms of maximum (10-minute) average winds and momentary gusts close to its centre (within the eye wall), and the distribution or extent of winds of GALE FORCE and above from the cyclone centre, respectively. These are generally estimated. All winds are stated in Kilometres per Hour (KM/HR) and distances in Kilometres (KM) (except in the case of information for Mariners, which is stated in KNOTS and Nautical Miles (NM) respectively). Where possible the estimated central pressure may be given usually corresponding to the maximum estimated winds.
- For example, THE CYCLONE IS ESTIMATED TO HAVE MAXIMUM AVERAGE WINDS OF 150 KM/HR WITH MOMENTARY GUSTS TO 220 KM/HR CLOSE TO ITS CENTRE. VERY DESTRUCTIVE HURRICANE FORCE WINDS EXTEND TO ABOUT 50 KM FROM THE CENTRE AND DESTRUCTIVE STORM FORCE WINDS TO ABOUT 100 KM FROM THE CENTRE. DAMAGING GALE FORCE WINDS EXTEND TO ABOUT 200 KM FROM THE CENTRE.

Note: From the example given in Para 2.13 and 2.14 above, damaging GALE FORCE winds would be 200 KM closer to Nadi than the cyclone centre, i.e. only 170 KM (370 KM–200 KM) away. For this reason, in SWBs containing WARNINGS it is stated that “DAMAGING WINDS

SHOULD COMMENCE A FEW OR SEVERAL (in large and slow moving systems) HOURS BEFORE THE CYCLONE CENTRE PASSES OVERHEAD OR NEARBY.



3. SPECIAL MARINE BULLETIN

- 3.1 There will be circumstances when gales or stronger winds from a tropical cyclone are already affecting or expected to affect part(s) of the Fiji waters only, and not any land areas. Under these circumstances a **Special Marine Bulletin (SMB)** will be issued giving specific warning to the marine community. Routine weather bulletins for the general public will be continued. The nautical system of units shall be used with speeds given in KNOTS (Nautical miles per hour) and distances in Nautical Miles (NM).
- 3.2 SMBs will be issued at least every six hours, preferably at regular marine bulletin times.
- 3.3 SMBs (otherwise regular marine bulletins) will be maintained during the period when Fiji is placed under public Alert issued in SWBs. However, all marine bulletins will be discontinued upon the issue of the first SWB containing any warning for the Fiji Group. From thereon essential information for mariners will be included in the SWB.
- 3.4 In the event of a *Tropical Cyclone* threatening Rotuma, prompting the issue of an *Alert* or *Warning* for Rotuma, and not any other part of Fiji, the routine marine weather bulletin or any marine warnings for part(s) of Fiji waters will be continued.

4. PROMULGATION OF ALERTS AND WARNINGS

- 4.1 The Nadi TCWC will disseminate all SWBs and SMBs directly to the local radio stations for immediate broadcast to the public and marine community. SMBs will also be available on Suva Radio 3DP. The Wellington TCWC will provide backup services to the Nadi TCWC under an existing contingency plan (Para 6.2 to 6.5 of Circular).
- 4.2 Fiji Broadcasting Corporation Ltd (FBCL) will broadcast all ALERTS and WARNINGS (including marine warnings when these are in force) on receipt and at regular intervals thereafter. FBCL will continue to broadcast any routine weather bulletins for parts of Fiji for which a SWB is not in force, e.g. when an alert or warning is in force for Rotuma only.
- 4.3 COMMUNICATIONS FIJI LIMITED (CFL) will also broadcast all SWBs upon receipt and at regular intervals thereafter.

- 4.4 Information on any cyclone threat including specific ALERTS and WARNINGS issued for Fiji will be available to other radio stations and local television stations as well.
- 4.5 **SUVA RADIO 3DP** will broadcast all marine bulletins including marine warnings contained in SMBs. It will also broadcast all SWBs containing GALE, STORM or HURRICANE WARNINGS on receipt as well as at scheduled weather broadcast times. (It will not broadcast SWBs designated as TROPICAL CYCLONE ALERTS, which are meant for land areas). It will also repeat ALL WARNINGS at the end of first silence period after receipt and at 3 minutes past each hour. The frequencies used are given in Appendix 1.
- 4.6 **RECORDED BULLETINS** can also be listened to by dialling the following numbers:
- o **6736080** – for all SWBs and regular weather bulletins for public (*operated by FMS*)
 - o **6736081** – for all SMBs and regular marine bulletins (*operated by FMS*)
 - o **3301642** – for all regular and special weather bulletins (*operated by Telecom*)
- 4.7 The latest SWB for Fiji (and other countries served by RSMC Nadi-TCC) can be accessed from the **FMS Weather Fax No 6721227** (Polling fax). It will also be available on the **FMS Web Site** URL: .met.gov.fj and .met.gov.fj/slowlinks along with other information on the tropical cyclone(s) including track map(s).

5. DISTRIBUTION OF TROPICAL CYCLONE ALERTS AND WARNINGS

- 5.1 The Nadi TCWC will distribute **Special Marine Bulletins** containing MARINE WARNINGS for Fiji as follows :

1.	<u>NEOC</u> (National Emergency Operations Centre)	<u>Fax</u> 3319315 (NEOC - <i>First Priority</i>) <u>Fax</u> 3303256 (Registry - <i>Second Priority</i>) <u>Fax</u> 3300346, 3317721 (PS)
2.	<u>Suva Radio 3DP</u>	<u>Fax</u> 3304479
3.	<u>Fiji Broadcasting Corporation Ltd</u> (FBCL)	<u>Fax</u> 3220990 (<i>First Priority</i>) <u>Fax</u> 3220991 (<i>Second Priority</i>)
4.	<u>Communications Fiji Limited</u>	<u>Fax</u> 3303748
5.	<u>Fiji Television Ltd</u>	<u>Fax</u> 3304630

- 5.2 The Tropical Cyclone Warning Centre, Nadi will distribute **Special Weather Bulletins** containing ALERTS and WARNINGS as follows:

1.	<u>NEOC</u>	<u>Fax</u> 3319315 (NEOC - <i>First Priority</i>) <u>Fax</u> 3303256 (Registry- <i>Second Priority</i>) <u>Fax</u> 3300346, 3317721 (PS)
2.	<u>Fiji Broadcasting Corporation Ltd</u> (FBCL)	<u>Fax</u> 3220990 <u>First Priority</u> <u>Fax</u> 3220991 <u>Second Priority</u>
3.	<u>Communications Fiji Limited</u>	<u>Fax</u> 3303748
4.	<u>Suva Radio 3DP</u>	<u>Fax</u> 3304479 (when there is no SMB)
5.	<u>Fiji Television Ltd</u>	<u>Fax</u> 3304630
6.	<u>Fiji Police</u>	<u>Fax</u> 3300996/3303218
7.	<u>FMF</u> and <u>NAVAL Division</u>	<u>Fax</u> 3370033 <u>Fax</u> 3314783
8.	<u>Government Shipping Services</u>	<u>Fax</u> 3240054
9.	<u>Nausori Met., Tower</u>	<u>AFTN</u> NFNAYMYX NFNAZTZX

- | | | |
|-----|--|---|
| 10. | Nadi Control Tower Air/Ground,
Area Control Centre | <u>AFTN</u> NFFNZTZX NFZZMLXX
NFFNYSYX NFFFZRZX |
| 11. | CAAFI HQ | <u>AFTN</u> NFHOYAYX |
| 12. | <u>Air Terminal Services</u> | <u>AFTN</u> NFFNXHAX |
| 13. | <u>Air Pacific Operations</u> | <u>AFTN</u> NFFNFJIX |
| 14. | <u>Wellington TCWC</u> | <u>AFTN</u> NZKLYMYX
<u>Fax</u> 644 - 471 2078; 470 0817 |
| 15. | <u>Ministry of Transport, Works &
Public Utilities</u> | <u>Fax</u> 3373729 (PS) or
3383198 (Registry) |

(Note that some of the above authorities may be reached by electronic mail as well.)

5.3 Advice of First SWB containing an ALERT or WARNING

	<u>Work</u>	<u>Telephone Numbers After Hours/Mobile</u>
1. <u>Ministry of Provincial Development, Multi Ethnic Affairs, NDMO & Sugar</u>		
Permanent Secretary	3313400	9905865
(National Disaster Controller)	ext. 354100	
Deputy Secretary (Deputy Controller),	3312767	9905249
Director NDMO	3313400, 3313361,	9995492
NEOC	3319250, 3319255 (Direct Lines)	
2. <u>Ministry of Transport, Works & Public Utilities</u>		
Minister	3389600	9905274
Permanent Secretary	3389616	9905833
Deputy Secretary (O)	3389603	9905285
Deputy Secretary (T)	3389587	9905695
3. <u>Ministry of Defence, National Security, & Immigration</u>		
Permanent Secretary	3211210/ 9905249/9905578	
4. <u>Government Shipping Services</u>		
Director,	3314322/3311380/3240054/9905631	
Principal Marine Officer	3314322 Ext: 316	
Fleet Superintendent	3314322 Ext: 105	
Operations Cargo Officer	3314322	
5. <u>Fiji Ports Corporation Ltd</u>		
Harbour Master	6662160	7088934
Senior Supervisor Administration	6662160	7088935
Harbour Master, Suva	3304551	7088933

6. COMMUNICATIONS - Backup

6.1 In the event of partial failure of communication from Nadi, the first priority will be given to pass Warnings to DISMAC/NEOC, FBCL and Suva Radio 3DP by the best means available.

6.2 The following means of communications will be used:

To DISMAC/NEOC

- | | |
|-------------------|--|
| 1. Facsimile | : 3319315 (First Priority)
3303256 (Second Priority) |
| 2. Telephone | : 3319250, 3319255 (NEOC)
3216436 / 37 Direct Line (D/NDC) |
| 3. Radio (HF R/T) | : Nadi TCWC to NEOC
: Nadi TCWC to Suva MET or 3DP
for relay to NEOC |

To Fiji Broadcasting Corporation Ltd

- | | |
|-------------------------|---|
| 1. Facsimile | : 3220990 (First Priority)
3220991 (Second Priority) |
| 2. Telephone | : 3314333 (Public circuit to FBCL) |
| 3. Radio Telephone (HF) | : Nadi TCWC to FBCL
: Nadi TCWC to Suva MET or 3DP
for relay to FBCL. |

To SUVA RADIO 3DP

- | | |
|----------------------|--|
| 1. Telephone | : 3371323(direct) 3210358 (Telecom) |
| 2. Radio (HF or R/T) | : Nadi TCWC to 3DP
: Nadi TCWC to Suva MET for relay to 3DP
: Broadcast Frequency:
Freq: 4372/4080 MHz; 8746/8222 MHz |
| 3. Facsimile | : 3381515 |

6.3 In the event of Nadi TCWC being unable to meet its responsibilities, the Wellington TCWC will be requested by FMS through any of the available means of communications [telephone (644) 4729379/4700794, facsimile (644) 4735231/4712078, email, or through Air Ground channels] to prepare and pass Fiji domestic bulletins to Suva Meteorological Office or directly to FBCL. In the event of a total loss of communications of 90 consecutive minutes, Wellington TCWC will immediately assume the responsibilities of Nadi TCWC.

6.4 When requested, the Wellington TCWC will assume responsibility for cyclone warnings and endeavour to pass them to:

- | | | |
|--|-----------|--|
| 1. DISMAC/NEOC | Telephone | 3313400 |
| | Facsimile | 3319315 (1st Priority)
3303256 (2 nd Priority) |
| 2. Fiji Broadcasting Corporation Limited | Telephone | 3314333; |
| | Facsimile | 3220990 (First Priority)
3220991 (Second Priority) |
| 3. Suva MET (Laucala Bay) | Telephone | 3300992 (Office),
9317152 (OIC Mobile) |
| | Facsimile | 3315895 |

6.5 Once the Nadi TCWC is able to resume responsibility for domestic bulletins after temporary incapacitation, it will advise the Wellington TCWC, and the two Centres will then agree on a time for the hand-back of these responsibilities.

- 6.6 Radio New Zealand International (RNZI) will broadcast on its shortwave service all Alerts and Warnings for Fiji (and several other countries in the region) upon receipt and at regular intervals thereafter. For this reason, all SWBs for Fiji will be sent to RNZI. In the event of failure of the broadcasting system in Fiji, the Wellington TCWC will ensure that this broadcast service is available from RNZI. The broadcast frequencies can be obtained from RNZI web site <http://www.rnzi.com>.
- 6.7 Special Weather Bulletins for Fiji should also be available on the short-wave broadcast service of Radio Australia. The broadcast frequencies are available on their website <http://www.radioaustralia.net.au/>.
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FREQUENCIES USED BY SUVA RADIO 3DP
FOR BROADCAST OF
REGULAR MARINE WEATHER BULLETINS,
SPECIAL MARINE BULLETINS
AND SPECIAL WEATHER BULLETINS CONTAINING
TROPICAL CYCLONE ALERTS AND WARNINGS

1) REGULAR MARINE WEATHER BULLETINS

Initial announcement on 2182 kHz, 6215.5 kHz followed by broadcasts on the working frequencies of 4372 and 8746 kHz at following times:

0803	)	
1203	)	Local time
1603	)	
2003	)	

2) SPECIAL MARINE BULLETIN or SPECIAL WEATHER BULLETIN containing GALE, STORM or HURRICANE WARNING

Initial announcement on 2182 kHz, 6215.5 kHz followed by broadcasts on the working frequencies of 4372.9 and 8746 kHz as follows:

- On Receipt
- After 1st silence period following receipt
- At 3 minutes past the hour.

Otherwise as considered appropriate whilst the HURRICANE, STORM or GALE WARNINGS are in force.

CONVERSION TABLE**KILOMETRES PER HOUR TO KNOTS****1 KM/HR = 0.54 KNOTS**

KILOMETRES PER HOUR	KNOTS	KILOMETRES PER HOUR	KNOTS
5	3	10	5
15	8	20	11
25	14	30	16
35	19	40	22
45	24	50	27
55	30	60	32
65	35	70	38
75	41	80	43
85	46	90	49
95	51	100	54
105	57	110	59
115	62	120	65
125	67	130	70
135	73	140	76
145	78	150	81
155	84	160	86
165	89	170	92
175	94	180	97
185	100	190	103
195	105	200	108
210	113	220	119
230	124	240	130
250	135	260	140
270	146	280	151
290	157	300	162
310	167	320	173
330	178	340	184
350	189	360	194
370	200	380	205
390	210	400	216

GALE FORCE : 63 KM/HR (34 KNOTS) TO 87 KM/HR (47 KNOTS)

STORM FORCE : 88 KM/HR (48 KNOTS) TO 117 KM/HR (63 KNOTS)

HURRICANE FORCE : OVER 117 KM/HR (63 KNOTS)

APPENDIX III

Category	Strongest Gust (km/h)	Typical Effects (indicative only)
1 (Tropical Cyclone)	Less than 125 (Gales)	Negligible house damage. Damage to some crops, trees and caravans. Craft may drag moorings.
2 (Tropical Cyclone)	125-169 (Destructive winds)	Minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of power failure. Small craft may break moorings.
3 (Severe Tropical Cyclone eg. <i>Roma</i>)	170-224 (Very destructive winds)	Some roof and structural damage. Some caravans destroyed. Power failure likely.
4 (Severe Tropical Cyclone eg. <i>Tracy</i>)	225-279 (Very destructive winds)	Significant roofing loss and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failures.
5 (Severe Tropical Cyclone eg. <i>Vance</i>)	More than 280 (Very destructive winds)	Extremely dangerous with widespread destruction.