Community Information Sheet
Onslow (Beadon Creek) Maritime Facility
2019/20 Cyclone Season

CYCLONE WARNINGS
Bureau of Meteorology (BoM) issues Tropical Cyclone (TC) Advice whenever a TC is expected to cause winds in excess of 62 km/h (gale force) over land. A TC Advice may be a Watch and/or a Warning, depending on when and where the gales are expected to develop.

For ongoing information from BoM during Tropical Cyclone periods refer to:
Recorded Cyclone Warning Service: 1300 659 210

Department of Fire and Emergency Services (DFES) will release a Cyclone Community Alert to keep people informed and safe. Alert Levels change to reflect the increasing risk to life and advises what you need to do before, during and after a cyclone. DFES issues the following cyclone alerts, Blue, Yellow, Red and All Clear. (see reverse side)

Internet: https://www.emergency.wa.gov.au

KEY CONTACTS NUMBERS
Cyclone Control/Coordination
Office hours: P: 6551 6186
M: 0467 811 543
M: 0419 881 014

WA Police Onslow:
P: 9159 9150

All Emergencies:
P: 000

CYCLONE WARNING TO BE ISSUED... During a Cyclone "RED ALERT"... P: 9159 1400

UFES SES Karratha) P: 13 3337

NOTES
1. This plan is not to be used for navigation.
2. Positions on this plan are related to the Map Grid of Australia, Zone 50, based on the Geodetic Datum of Australia (GDA 94). For GPS use, this approximates WGS 84.
3. Bounding Datum is Lowest Astronomical Tide (LAT) which is 1.49 metres below AHD (2013).
5. The waters of this boat harbour, and its approaches, form part of a declared Shipping and Pilotage Act Port. Vessel operators are also subject to controls and directions by Shipping and Pilotage Act appointed Harbour Master and subject to direction by the Pilbara Ports Authority Harbour Master when traversing the adjacent Port of Ashburton.

SIGNIFICANT HEIGHTS
4.5m Cyclone Vance water level
3.5m Public Jetty Deck
3.0m HAT
2.4m MHWS
1.8m MHWN
1.5m Mean Sea Level
1.4m AHD
1.2m MLWH
0.6m MLWS
0.0m LAT

MOORING & PEN INFORMATION
The Sticks
Vessel length Bow & stern line loads Spring line loads
20 metres 11 tonnes 5 tonnes

Note: Line loads will vary depending on the mooring configuration, wind direction and cyclone category.

Pen clearance widths
P1 to P4 8.5 metres
P5 and P6 6.9 metres
P7 and P8 8.0 metres

DISCLAIMER & ACKNOWLEDGEMENT
The information contained in this publication is provided in good faith and believed to be accurate at time of publication.

The State shall in no way be liable for any loss sustained or incurred by anyone relying on the information. This information in no way takes away the responsibilities of a Vessel’s Master.

This Community Information Sheet has been prepared for community safety advice to preserve life and property.

The support of the reader is crucial to the effectiveness in protecting life, property and the environment.

To be read in conjunction with the Department of Transport Onslow Cyclone Mooring Guidelines.

1. Purpose of the Community Information Sheet
This Community Information Sheet has been developed to assist users of the Onslow (Beadon Creek) Maritime Facility during the period leading up to, the impact of and recovery from, a Tropical Cyclone. It is important that commercial and recreational boat users are well prepared and meet their Legislative requirements in having their own Cyclone Contingency Plans in place. The Department of Transport (DoT) has a number of preparedness, response and recovery arrangements, including DoT Cyclone Management Plans to manage the impact of a Tropical Cyclone on its facilities.

2. Activation of the DoT Cyclone Management Plan
This DoT Cyclone Management Plan will be activated once a Cyclone Watch or Warning has been issued for the Onslow area by the Bureau of Meteorology (BoM). This activation is an internal process of the DoT.

3. DoT Appointed Harbour Coordinator
An authorised DoT Harbour Coordinator will be appointed on the issue of a “BLUE ALERT”, who will initiate cyclone preparedness actions for the Onslow (Beadon Creek) Maritime Facility, including some involving harbour users.

4. Communication Mediums
While the DoT will not be providing scheduled radio broadcasts (in line with industry consultation) frequencies will be monitored, while practical, through several local sources including:
- VHF 16 and 27MHz 88

A 24 hour, 7 day/week HF service operates from the Water Police Coordination Centre that monitors the 4125, 6215 and 8291 kHz distress and calling frequencies. This service covers WA coastal waters within 200 nautical miles offshore. The closest transceiver is at Port Hedland and the call sign is “Coast Radio Hedland”.

Key Contacts listing can be seen on the reverse side of this Sheet.

5. Responsibilities of Masters and Owners of Vessels
The information contained within this Community Information Sheet in no way replaces the existing legal obligations of owners and masters of vessels, nor does it seek to override the responsibilities of a Master to take appropriate precautions for the safety of the crew, or to interfere with the Master’s independent discretion.

In general terms, Vessel Owners or Masters should undertake the following tasks in order to prevent or minimise damage by ensuring:
- Mooring lines are strong enough, are not chaffed and are correctly tensioned.
- Where bow or stern mooring lines are inappropriately angled (say greater than 40°), it may be necessary to moor to the nearest piles. Ensure springs are in place.
- All Biminis and canopies should be removed.
- Roller jibs and mainsails furled to booms should be removed or securely tied to prevent them coming loose.
- All equipment such as dinghies should be removed from the decks and stored below or ashore or securely fastened.
- Check that adequate fendering is in place on boats and that these are correctly located.
- Ensure that the length of the boat moored in each berth is no longer than the length designated for that berth.

6. Limited Number of Mooring Pens and Mooring Positions
It is important to recognise that the Onslow (Beadon Creek) Maritime Facility has a limited number of mooring positions. Every effort will be made to maximise the use of the Onslow (Beadon Creek) Maritime Facility, however Masters should be prepared (as part of their own Cyclone Contingency Plan) to seek alternate shelter if necessary.

Please note that the Onslow (Beadon Creek) Maritime Facility cannot guarantee to provide secure shelter and safety for vessels and crews in all weather and storm surge conditions.

7. Cyclone Emergency Welfare Centre
There are no suitable onshore Cyclone rated shelters at the Onslow (Beadon Creek) Maritime Facility for crew during a Cyclone and all crews must relocate to suitable shore based accommodation or the Primary Emergency Welfare Centre. The Shire of Ashburton (Onslow) Primary Emergency Welfare Centre is located at the Multi-purpose complex situated in Hooley Avenue Onslow. Crews should bring clothing, toiletries and other personal effects with them to the Welfare Centre to assist local emergency management arrangements.

8. Tidal Storm Surge
Harbour users need to be aware that a significant positive storm surge may result from the extreme meteorological effects of a Tropical Cyclone. Storm surge may be exacerbated when a Cyclone impacts on a coastal community in conjunction with high tide. Masters of a Vessel need to factor in the effects of storm surge when mooring and preparing their Vessel.

9. Cyclone Mooring Arrangements
Moorings priority will be given to vessels covered by an existing mooring agreement. Please refer to the DoT Harbour Coordinator for mooring availability.

A Cyclone Mooring Guideline has been prepared by the DoT, and is available, to be read in conjunction with this Community Information Sheet. The Cyclone Mooring Guideline for Onslow (Beadon Creek) Maritime Facility can be obtained from the DoT Onslow Office or at the following web address https://www.transport.wa.gov.au/imarine/boating-emergencies-and-incidents.asp#28092

10. Masters and Owners Actions during Alerts and Warnings
BoM Declares Tropical Cyclone WATCH or WARNING

- Initiate actions in line with vessel or Company cyclone contingency plan.

DFES-SES “BLUE ALERT” Declared
- If en route to-Onslow, establish/maintain contact with the Harbour Coordinator.
- Plan to be secured in the harbour at least 24 hours before predicted Gale Force winds.
- Ensure vessel has been adequately moored.
- Ensure sufficient fuel on board to clear the harbour after the Cyclone for a return journey.
- Secure all equipment and/or remove the equipment from the harbour precinct.

DFES SES “YELLOW ALERT” Declared

- Ensure vessel and area of responsibility have been secured.
- Relocate to the Shire of Ashburton Onslow– Emergency Welfare Centre or make other suitable arrangements.

DFES SES “RED ALERT” Declared

- There are no actions defined during this phase of ALERT and appropriate rated shelter should be used for your own safety and observe standard DFES SES guidelines and procedures for a Tropical Cyclone.

DFES-SES “ALL CLEAR”
- Extreme caution is to be taken in the post impact phase of a Cyclone both on land and on the water and where hazards or damage is observed it is to be reported to the Harbour Coordinator.
- When leaving the harbour from a berth or a dedicated cyclone mooring extreme caution is to be exercised as navigation aids may be displaced or missing and there could be additional floating/submerged hazards.

Note: Masters and Owners must consider their own “DUTY OF CARE” responsibilities to remain safe, to protect people, property and the environment.

This Community Information Sheet is available online from the Department of Transport at the following web address: https://www.transport.wa.gov.au/imarine/boating-emergencies-and-incidents.asp#28092
CYCLONE MOORING GUIDELINES

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8.1.  General

Cyclones have wind gusts in excess of 62 km/h around their centres and, in the most severe Cyclones, gusts can exceed 280 km/h. Cyclone Advices are prepared by the Bureau of Meteorology (BoM) with the severity of a Cyclone being described in terms of categories ranging from 1 to 5 related to the zone of maximum winds.

<table>
<thead>
<tr>
<th>Category of Tropical Cyclone</th>
<th>Strongest 3 second Gust (km/h)</th>
<th>Typical Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1</td>
<td>Less than 125 km/h Gales</td>
<td>Minimal house damage. Damage to some crops, trees and caravans. Boats may drag moorings.</td>
</tr>
<tr>
<td>2 2</td>
<td>125 - 164 km/h Destructive winds</td>
<td>Minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of power failure. Small boats may break moorings.</td>
</tr>
<tr>
<td>3 3</td>
<td>165 - 224 km/h Very destructive winds</td>
<td>Some roof and structural damage. Some caravans destroyed. Power failure likely.</td>
</tr>
<tr>
<td>4 4</td>
<td>225 - 279 km/h Very destructive winds</td>
<td>Significant roofing and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failures.</td>
</tr>
<tr>
<td>5 5</td>
<td>More than 280 km/h Extremely destructive winds</td>
<td>Extremely dangerous with widespread destruction.</td>
</tr>
</tbody>
</table>

Table 1: Description of cyclone categories

8.2.  General Mooring Information

Due to the erratic nature of Cyclones, the impact on maritime facilities and vessels moored within Beadon Creek is difficult to predict. It is acknowledged that there are several options for the mooring of vessels. The following are guidelines to assist the users of the Facility with their decision making.

The number of cyclone mooring sites available within Beadon Creek is limited. The Beadon Creek Maritime Facility cannot guarantee to provide secure shelter and safety for vessels and crews in all weather and storm surge conditions. Furthermore, there are no suitable onshore shelters at the harbour for crew during a cyclone. Space is generally not available for swing moorings, therefore for ad-hoc moorings, vessels should moor in a fixed orientation aligned with the axis of the Creek to minimise the loading from currents. Mooring forces may be ten (10) times greater than normal non-cyclonic mooring forces due
to the forces generated by winds, waves and currents. This needs to be taken into account when installing mooring apparatus.

It is suggested that as a general rule each boat would require at least four "two way" mooring lines, set one to each quadrant such that at least two will share the load from any direction. Furthermore, with the possible increased range of sea level change during a storm event, the length of any line from a boat to a mooring point should, to the extent practicable, be sufficient to allow the line to have a slope of 3 to 1 or flatter.

8.3. Beadon Creek Water Levels

The 100 year return period Storm Tide Level has been predicted at a level of 4.7 m above Chart Datum (i.e. 1.2 metres above deck of Public Jetty).

Both positive and negative surges are possible. For example:

Positive surge --- consider a one metre surge.
If this coincides with MHWS, 2.5 + 1.0 = 3.5 metres above Chart Datum (i.e. the height of the Public Jetty).

Negative surge --- consider a half metre surge.
If this coincides with MLWS, 0.6 - 0.5 = 0.1 metres above Chart Datum

Wave heights of up to a metre could further complicate the conditions.

During Cyclone Bobby in February 1995, a lowering of 0.45m below the predicted tide, peaked 8 hours before the cyclone crossed the coast. The lowering phase commenced some 24 hours before the cyclone crossing. A positive surge of 0.9m above the predicted tide peaked at 4 hours after the cyclone crossed the coast. Because the surges were acting against the astronomic tide in each case, the actual change in water level around the time the cyclone crossed the coast was only 1.4m over a period of about 2 hours.

During Cyclone Vance in March 1999, the Tide Recorder failed, however water level marks inside the electrical distribution cubicle at the Public Jetty indicated a Storm Tide Level of approximately 4.6m above Chart Datum (i.e. 1.1 metres above the deck of the Jetty).

8.4. “The Sticks” Pile Moorings

The Sticks mooring pens consists of 21 circular piles. The eight mooring positions are designed to handle vessels up to 20 metres in length. The Sticks mooring pens in Beadon Creek have been designed for winds generated by cyclonic conditions in accordance with the Australian Wind Loading Code AS1170.2, and with the length of vessel in each berth equal to or less than the designed length.

The cyclone moorings have been designed for a thirty second gust wind speed of 69 m/sec which is equivalent to a Category 5 cyclone.

Approximate clearance widths for the - pens are as follows:
Pens 1 to 4, Clearance Width = 8.5 metres.
Pens 5 and 6, Clearance Width = 6.9 metres.
Pens 7 and 8, Clearance Width = 8.0 metres.

Pile tops and chafers have been cut off at 5.0 metres above Chart Datum. Mooring lines should be attached to the sliding rings on the mooring bars.

The masters of vessels shall be responsible for ensuring:

- Vessel is adequately secured for Cyclonic conditions;
- Mooring lines are serviceable,
- Mooring lines are of adequate capacity for the anticipated line loads,
- Mooring lines, to the extent practicable, are set to allow for the likely range in the water level, and
- Anchor points on the vessel will take the line loads without failing.

Furthermore, masters of vessels will be responsible for ensuring that the mooring lines are correctly tensioned in accordance with accepted best practice, to avoid vessels swinging and hitting other vessels or the mooring/berthing structures.

The lines elasticity needs to allow for storm surge conditions, hence **steel wire ropes should not be used.**

### 8.4.1. Minimum Mooring Guideline

The following DoT Minimum Mooring Guideline has been developed to assist the Master of a Vessel and should be considered as the minimum requirement for securing a vessel prior to the impact of a Cyclone.

Mooring arrangements are generally specific for each vessel and correct mooring is the responsibility of the Owner/Master.

**Note: These guidelines do not absolve the Master from meeting his/her responsibilities under legislation and that of his/her employer. All lines are to be in good condition and fully serviceable at the time of Mooring.**

In cyclonic conditions, the minimum mooring guideline arrangement for vessels moored at “Sticks” pens is shown in Figure 1.

The estimated mooring line loads when moored in this configuration is shown in Table 2. This information is provided as a guide only. The master of the vessel is responsible for selection of suitable mooring lines

<table>
<thead>
<tr>
<th>VESSEL SIZE LOA (m)</th>
<th>TOTAL SIDE WIND LOAD (Tonnes)</th>
<th>BOW/STERN LINE LOADS FOR VARIOUS LINE ANGLES (α)</th>
<th>TOTAL BOW WIND LOAD (Tonnes)</th>
<th>BOW/STERN LINE LOADS FOR VARIOUS LINE ANGLES (α)</th>
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</thead>
<tbody>
<tr>
<td>10</td>
<td>6</td>
<td>6 4 3 3</td>
<td>2 1 1 2 3</td>
<td></td>
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<td>15</td>
<td>12</td>
<td>12 9 7 6</td>
<td>4 2 3 4 8</td>
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<td>5 3 3 5 9</td>
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<td>20</td>
<td>21</td>
<td>21 15 12 11</td>
<td>5 3 4 5 10</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Typical line loads for various vessel sizes when moored at the Sticks pens when subject to a Category 5 Cyclone
Figure 1: Minimum Mooring Guideline for vessels using “Sticks” Pens in Cyclonic Conditions

Note: Vessels must be moored directly on the piles using the mooring rings provided.