

PARRY INLET SANDBAR OPENING PROTOCOL

December 2013

Responsible Agencies

The responsible agencies involved with the management of Parry Inlet are the Shire of Denmark and the Department of Water.

The Shire of Denmark has management responsibility for all Council infrastructure and facilities. The Chief Executive Officer has delegated authority (Delegation D100505) to determine the location and level for the opening of the Parry Inlet sandbar (Attachment 1).

The Department of Water has responsibility, in partnership with the community and other agencies, to manage the State's water resources, including Parry Inlet. The Department monitors water quality in the inlet and responds to water quality issues such as algal blooms and fish kills.

Parry Inlet Physical Features

The catchment of Parry Inlet is relatively small, just over 100km², of which at least 80% of is cleared farmlands. The approximate total area of the inlet is 1.6km², and the estuary is very shallow over most of its extent (<0.5m deep), being deepest in the mouth channel (max 2m). The inlet is bordered by Shire of Denmark reserve (R20928, Purpose: Camping and Recreation) and adjacent privately owned land to the west, and the William Bay National Park (Department of Parks and Wildlife managed estate) to the east.

The estuary is wave dominated, and as such the bar would breach naturally most years. Currently, the sandbar is opened artificially once water levels have risen sufficiently in the inlet. In the past, this has been indicated by inundation of nearby paddocks and flooding of Parry Rd. Recently a gauge board has been installed at the picnic area opposite 298 Parry Road. This will be used to indicate the appropriate water level that must be reached prior to breaching the bar. Artificial openings to the sea occur each winter, remaining open for a few weeks to a couple of months at a time.

The estuary suffers anoxic and hypoxic events and can dry out in some years. Shallow waters will become hyper saline as the waters evaporate.

Sandbar Opening Issues

The sandbar is currently breached by the Shire of Denmark to reduce flooding impacts on Parry Road and adjacent private property. Shire of Denmark decides the location of the bar opening in consultation with the Parry's Beach Voluntary Management Group (PBVMG). Location is based on achieving maximum initial scouring of the channel and minimum erosion of the coast sandhills on the western bank of the channel. The channel is pegged by a representative of the PBVMG prior to excavation commencing.

The timing of the opening is a joint decision made by the Shire of Denmark, adjacent landholders and the PBVMG. The bar opening can present a hazard to recreational fisherman, Bibbulmun track walkers and other beach users on Parry Beach, who should be pre-warned of the imminent opening of the sandbar, or of risks once the inlet is open to the ocean.

Timing of Opening

The timing of the bar opening is determined by water levels in Parry Inlet, which is dependent on rainfall and river discharge. Tide patterns and barometric pressure systems are also given consideration.

In a natural state, the bar would open in response to rainfall events, with openings occurring predominantly during winter or spring. With bar openings at this time, there is a likelihood of continuing rainfall replenishing water levels in the inlet, resulting in sustaining water levels into the summer period to maintain ecological systems in a healthy state. However, as Parry Inlet is very shallow over most of its extent, hyper saline and hypoxic events have been observed during dry periods.

If summer or autumn (unseasonal) extreme rainfall events result in the requirement for a bar opening, consultation with the Department of Water is essential to assess the risks to the Inlet's ecological health. It may be necessary to consider other options to mitigate the effects of temporary high water levels in the inlet.

RECOMMENDED SANDBAR OPENING CONDITIONS

Factors that are considered in determining the need to artificially open the Parry Inlet sandbar are:

- Human safety concerns arising from traffic hazards caused by flooding of Parry Road, which is currently the only sealed access road to Parry Beach campsite and Hillier Bay;
- Achieving adequate inlet levels above 0m AHD to ensure scouring of the inlet mouth channel to allow for good inlet outflows, and sustained marine exchange for estuarine fish population recruitment and breeding cycles;
- Ensuring the protection of Shire of Denmark Council road infrastructure;
- Limiting any negative impacts resulting from the flooding and inundation of surrounding adjacent farmlands.

Water Height

A staff gauge to measure water height was recently installed near the picnic area approximately 2 kms along Parry Road. This has been tied to AHD using the Landgate marker on the opposite road verge. The PBVMG have been monitoring the water height and determined at this stage the optimal, maximum and minimum levels estimates as outlined in the table below. In future, the optimum height will be confirmed by using levels recorded by the PBVMG over a period of time. This document will then be reviewed and the appropriate levels incorporated.

The estimated optimal, minimum and maximum are provided in the table below. These estimates relate to the water levels recorded just prior to the bar opening in 2012.

Optimal	1.2m
Maximum	1.25m
Minimum	1.0m

It is unlikely that an opening would occur if inlet levels persist below the minimum opening level beyond winter months, as low water levels would not cause road infrastructure flooding problems, but would be likely to impact negatively on the condition of the inlet.

Timing

Sandbar openings should be timed to coincide with periods of higher river inflow to the Inlet, during the months from April to September. Timing must satisfy the need to achieve an effective opening whilst minimising property inundation and road damage.

Once the minimum sandbar opening level is reached and an opening looks imminent, factors that need to be considered to determine the specific time of sandbar opening in order to achieve effective water exchange are:

- Daily tide readings to ensure opening is conducted at the peak/end of the high tide to allow optimal initial flushing from the Inlet;
- Wind speeds, weather patterns and oceanic levels due to tides and barometric pressures; and
- Availability of staff to undertake the scheduled opening, and provide for the safety of other beach and Inlet user groups.

(Forecasts for wind and tidal conditions can be accessed from the Bureau of Meteorology website - www.bom.gov.au. Wind speed predictions for up to 21 hours for three hour intervals should also be consulted.)

Sandbar Opening Location

The PBVMG and local professional fishermen in consultation with the Shire of Denmark decides the location of the bar opening. Location is based on achieving maximum initial scouring of the channel and minimum erosion of the coast hills on the western bank of the channel. A volunteer from PBVMG pegs the location before excavation commences. Signage will be erected by the PBVMG in the vicinity of the pegs 24-48 hours prior to the opening to inform beach users of the imminent opening.

SANDBAR OPENING PROCEDURE

Parry's Beach Voluntary Management Group members monitor Inlet water levels at the Parry Inlet water level meter on Parry Road, and inform the Shire of Denmark CEO once minimum opening water levels are reached.



Shire of Denmark CEO will, in consultation with a PBVMG delegate, determine that a sandbar opening is required due to flooding risk.



- If conditions are suitable and sandbar opening is to proceed, then the CEO will advise community (List of stakeholders: Attachment 1) and proceed, taking into account any additional recommendations included in the Parry Inlet Sandbar Opening Protocol.
- Shire of Denmark to continue to undertake actions to address flood management issues, including human safety, public liability and inundation of private farmland.

ATTACHMENT 1:**PARRY INLET SANDBAR OPENING PROTOCOL**

DELEGATION NUMBER -	D100505
LEGISLATIVE POWER -	Local Government Act 1995
DELEGATE	- Chief Executive Officer
ACTIVITY	- Protection Environment

The Chief Executive Officer is delegated authority to determine the location and level for the opening of the Parry Inlet sandbar. The delegation is to be exercised in accordance with the adopted sandbar opening protocol.

The Shire Chief Executive Officer advises the relevant agencies and stakeholders when the water level reaches the absolute minimum opening water level of 1.0 M AHD.

Any relevant information from stakeholders shall be considered when deciding opening location and water level, with the final decision being delegated to the Shire Chief Executive Officer.

Relevant Agencies & Stakeholders

Agency / Stakeholder	Email	Phone	Fax
Department of Water	tracy.calvert@water.wa.gov.au	9841 0122	9842 1204
Department of Parks & Wildlife's Recreation & Trails Unit	recreationandtrails@dpaw.wa.gov.au	9334 0265	9334 0100
Department of Parks & Wildlife- Frankland District Office	Frankland.District@DPaW.wa.gov.au	9840 0400	9840 1251
Department of Fisheries	Mark.kleeman@fish.wa.gov.au	9841 7766	9842 1112
Parry's Beach Voluntary Management Group	belinda.dufall@agric.wa.gov.au	0427 417 260 98408 123	9841 7268
Commercial Fisherman - by contacting the President of the South Coast Licensed Fisherman's Association Inc.	Greg Sharp, President	0428 448 159	
Current leaseholder of portion of Reserve 20928 (L Pinniger)	Refer Council records for contact details (A2678)		
The Bibbulmun Track Foundation	friends@bibbulmuntrack.org.au	9481 0551	9481 0546
Denmark Visitors Centre	manager@denmark.com.au	9848 2055	9848 2271
Walpole Nornalup Visitor's Centre	wnta@wn.com.au	9840 1111	9840 1355

The Chief Executive Officer may on delegate this responsibility.

RECORDING REQUIREMENTS

Advice of decision is to be recorded on central records and in the Council's monthly Information Bulletin.

Opening Protocol - see File GOV.52.B

NOTE: This Delegation is current as at December 2013, noting that the delegation may be amended from time to time thus readers of the protocol should refer to the Council's Delegation Register to ensure the most up-to-date delegation is being referenced.