

WILSON INLET SANDBAR OPENING PROTOCOL

(revised version 7 July 2009)

Agency Roles

There are three organisations that manage the Wilson Inlet sandbar opening.

The Water Corporation artificially opens the sandbar, to ensure flooding is controlled within the Lake Saide, Sleeman and Cuppup catchments. These catchments form part of the Albany Drainage District, within which drainage is managed by the Water Corporation as part of its responsibility under various statutes, including the Land Drainage Act and Water Agencies Powers Act.

The Water Corporation has primary responsibility for the artificial opening of the sandbar, including informing the local community on the agreed timing and location of the sandbar opening.

The Water Corporation collects water level information in Wilson Inlet to monitor when the sandbar can be opened, based on the Decision Tool prepared to guide the timing of bar openings (attached). The Corporation will undertake the opening of the sandbar at a time and location agreed to in consultation with the Department of Water and the Shire of Denmark.

The Department of Water has responsibility, in partnership with the community and other agencies, to manage the State's water resources, including Wilson Inlet. The Department of Water provides a recommendation on the location of the sand bar opening to the Water Corporation. In providing this advice the Department has regard for environmental factors, existing policy (such as the Wilson Inlet Nutrient Reduction Action Plan), past advice from the community based organisations that have had responsibility for managing the Inlet (such as the Wilson Inlet Management Authority). The Department also receives advice on community opinion from the Shire of Denmark.

The Wilson Inlet sandbar is located within the Shire of Denmark. The Shire has planning, development and management responsibilities for areas within the Shire, and takes a major role in managing public use of the sandbar. The Shire has a responsibility in expressing community opinion with regard to the sand bar opening location.

These agencies are supported by a number of other groups, including the Wilson Inlet Management Advisory Group, that encourages integrated management of Wilson Inlet. This group provides advice on any issues in relation to the Inlet, and promotes cross agency and community communication on Inlet matters.

The Denmark Surf Lifesaving Club plays an important role in managing sand bar openings. Representatives from the Club attend bar openings, supervising recreational use and ensure public safety on Ocean Beach.

**MAIN RESPONSIBILITIES IN RELATION TO WILSON INLET
BAR MANAGEMENT**

WATER CORPORATION	DEPARTMENT OF WATER	SHIRE OF DENMARK
<ul style="list-style-type: none"> • Monitors water level in Wilson Inlet • Uses Decision Tool to provide guidance on timing of bar openings. • Undertakes opening of the sandbar at time and location agreed with DoW and Shire of Denmark. • Advises agencies and community on timing of opening. • Manages bar openings until opening stabilises (normally 12-24 hours). 	<ul style="list-style-type: none"> • Provides advice to Water Corporation on location of bar opening. • Undertakes research in relation to Wilson Inlet and coordinates work to improve condition of Inlet • Services WIMAG, which enables wider community and agency input into management of Wilson Inlet 	<ul style="list-style-type: none"> • Manages vehicle and pedestrian access onto sandbar. • Manages adjacent landuse and development compatible with Inlet levels. • Manages public use of bar and foreshore areas. • Represents local community opinion on sand bar openings, including location.

Timing of Opening

The Water Corporation opens the sandbar by excavating a channel. The timing of this work is largely dependent on the water level in Wilson Inlet, which is determined by rainfall and discharge from rivers.

The Water Corporation monitors water level in the Denmark River at the Old Railway Bridge.

Until 2007, the sandbar was opened when Inlet levels reached approximately 1-1.1 m AHD at the Old Railway Bridge, or at a lower level if landowners were impacted by flooding in the Lake Sadie catchment. The Water Corporation, working with other agencies, sought to balance the needs to maximise water levels at the time of opening the sandbar with the need to minimise flooding of property.

In 2007 the sandbar was not opened due to a referral of the proposed sandbar opening to the Environmental Protection Authority (EPA). This referral was in response to community concerns with opening of the Inlet at a ‘low’ (approximately 0.7m AHD) level two years in a row due to reduced rainfall.

The EPA recommended a review of the timing of the opening, and this took place and concluded in June 2009. The Decision Tool prepared to guide the timing of future openings is attached.

The main elements of this review are that the timings of the Inlet’s sandbar openings will be primarily guided by ecological considerations, with protection of Ruppia

seagrass and fringing vegetation being the key factors. Optimally, openings of the sandbar will take place when inlet levels are between 0.9 and 1.0 m AHD, between June and the end of the first week in September. Minimum inlet opening levels are considered to be 0.7m AHD. The inlet's sandbar will not be breached after this time period unless water levels exceed this optimal.

A key consideration is that earlier openings of the sandbar are desirable as much as higher inlet levels – as with openings in early winter can provide longer periods of water exchange and larger channels. Waiting to obtain maximum inlet levels in late winter or spring can bring about short periods of water exchange. In terms of water exchange, there needs to be consideration of both timing and height of inlet.

Once a decision has been made to breach the sandbar, consideration of various factors will be given to ensure the difference between inlet and ocean levels is maximised, the flooding risk is managed and the opening is managed in a safe manner.

Factors that will be considered to decide on the specific date for the sandbar opening (once the primary decision has been made to open) include

- forecast rainfall and river flow for that year and their impact on inlet levels and flooding of property
- wind speeds and their impacts on inlet levels and flooding
- ocean levels due to tides, barometric pressure due to passing of fronts and other weather patterns
- availability of appropriate personnel and need to provide advanced warning of opening.

More details explaining the timing of the opening can be found in the Decision Tool for monitoring and opening the Wilson Inlet sandbar which is attached.

Location of Opening

The location of the sandbar opening is constantly debated in the local community, and has been for at least the past 50 years. Some sections of the community consider a location in the 'west' is appropriate, while others favour an 'eastern' opening located some 400m from the southern cliffs.

The Water Corporation, based on advice from the Department of Water, decides the location of the bar opening.

Between 1994-2001 the Wilson Inlet Management Authority provided advice on the sandbar opening location, and in 1996 recommended a change from the normal western openings to an eastern opening. This resulted in a significant community objection, that included opposition and support for ongoing western openings from the Shire of Denmark. The Minister for the Environment supported the community's objections, and directed western openings to continue. In 2000 a policy was adopted to continue western openings, in light of community opinion and advice from the Water and Rivers Commission.

The Department of Water, and previously the Water and Rivers Commission, does not consider the location of the opening to have a significant impact on the inlet's condition. The inlet's main threat is considered the input of nutrients, and few nutrients end up leaving the inlet due to the nutrient processes involved and the size of the inlet. Modelling of water exchange shows huge natural fluctuations in water exchange (up to 600%) will occur regardless of opening location, that are

considerably far greater than any difference due to the location itself. Eastern openings are likely to generate increased water exchange than western openings (in order of 65%), but dredging of channels can achieve improvements with western openings, and Prawn Rock Channel is not connected with eastern openings.

In light of the Department of Water's advice that the condition of the inlet is not likely to be affected significantly by the location of the sandbar opening, the decision as to the location has been left to the community and western openings have continued since the Shire of Denmark's and Minster's direction of 1996. Should the Shire of Denmark advise community opinion has changed, and this be communicated and accepted by the Minister, then a change in sandbar opening locations can be made.

The exact location of the opening (within 0-100m from the western cliffs) is determined on site just prior to opening by representatives of the Water Corporation and Department of Water.

Development and bar openings

The Shire of Denmark controls development, and has a policy within its Town Planning Scheme that prevents development located on land less than 2.5m AHD. This policy prevents the creation of new development likely to be affected by water levels in Wilson Inlet.

Procedure of Bar Openings

The procedure for sandbar openings is being reviewed and has changed as a consequence of the 2007-2009 drainage review. The following is provided as a guide only.

Water Corporation to administer drainage review implementation, in partnership with the Department of Water.

June to September

Inlet levels to be monitored closely, and inlet levels matched to predictive model, with community informed about likelihood of opening.

Once minimum (0.7m AHD) level obtained, likelihood of reaching optimal levels needs to be assessed, and consideration of operational factors eg rainfall, pressure systems.

October - January

Inlet level to be monitored on regular basis. If bar not opened, it will only be opened if inlet level is forecast to rise above optimal level (1.0m AHD).

Responsibility for ensuring community are informed about likelihood of sandbar opening lies with the **Water Corporation**. Risks in relation to ecological values are assessed by the **Department of Water**.

Approx 2 weeks before opening

- Meeting arranged to manage bar opening and explain reasons for proposed date of opening. Participants are representatives from the Department of Water, Shire of

Denmark, Water Corporation, Denmark Surf Lifesaving Club and WIMAG. Meeting is arranged by **Department of Water**.

- Water Corporation to inform relevant agencies and groups of likely bar opening time/date and reason based on Decision Tool. People to be informed include members of Surf Lifesaving Club, Shire Ranger, Director of Nursing at Denmark Hospital, representative/s from the Department of Water, District Manager - DEC. **Water Corporation**.
- Meeting on site arranged between Water Corporation and Department of Water and WIMAG representatives to determine exact bar opening location. Arranged **Department of Water**.
- Media release issued just prior to opening when definite timing of opening decided and to refer to safety precautions. **Water Corporation**.
- Notices confirming timing of opening issued to Shire of Denmark, Environment Centre, library, tourist bureau, Denmark Bulletin and Department of Environment and Conservation. **Water Corporation**.

Immediately prior to opening

- Water Corporation manages bar opening and access into excavation area, through use of movable barrier and signs. These barriers to be gradually moved with openings. **Water Corporation**.
- Vehicle barriers at Surf Club. **Shire of Denmark**.
- Tape put up to prevent pedestrian access to cliff face from lookout. **Shire of Denmark**.
- **Denmark Surf Lifesaving Club** to attend and monitor recreational use.
- **Shire of Denmark** rangers to attend and monitor public access.
- **Water Corporation and Department of Water** to respond to general public enquires.
- **Water Corporation** to respond to specific enquires in relation to water levels and timing of opening

RELEVANT CONTACTS

SUBJECT	CONTACT
Timing of opening. Excavation works. Height of Inlet prior to opening.	Willie McDougall, Operations Manager, Water Corporation. Tel: 9842 4211 Mob: 0427 907 769 Leith Philips Communications/Media, Water Corporation Tel: 9842 4211
Vehicle/pedestrian access to sandbar. Public amenity Issues. Development issues	Dick Dimmock, Ranger, Shire of Denmark Tel: 9848 0300 Mob: 0429 482 244
Recreational use and public safety	Martin Norwood (President Ocean Beach Surf Lifesaving Club), Ph: 9848 1314 (H) or Mob: 0427 487 314. Warren Rudd, Ph:9848 1513 (H) or Mob:0428 481 513
Location of bar opening. General enquiries.	Daniel Endacott, Department of Water, Tel: 98425760

Original version was prepared in October 1999 following concerns with the 1999 bar opening. The paper was prepared in consultation with the Water Corporation, Denmark Surf Life Saving Club, Water and Rivers Commission, and Shire of Denmark. The protocol was endorsed by the (then) Wilson Inlet Management Authority.

Changes were subsequently made in July 2000, following a meeting to review the bar opening in 2000, between officers from the Water Corporation, Shire of Denmark, Surf Lifesaving Club, and Water and Rivers Commission.

Further modifications were made in December 2000 after consultation with the Wilson Inlet Restoration Group, and agreement with the Water Corporation, Shire of Denmark and Water and Rivers Commission. Changes were also introduced in October 2001, after the 2001 bar opening, in consultation with the Shire and the Water Corporation.

Changes were introduced in August 2002 due to ending of Wilson Inlet Management Authority, and new role of the Wilson Inlet Management Advisory Group. Further alterations to the protocol document were made in June 2006 after formation of new WIMAG as inter-agency and community group.

Changes made in 2007 following the formation of the Department of Water and to reflect the role of new personnel within the Water Corporation.

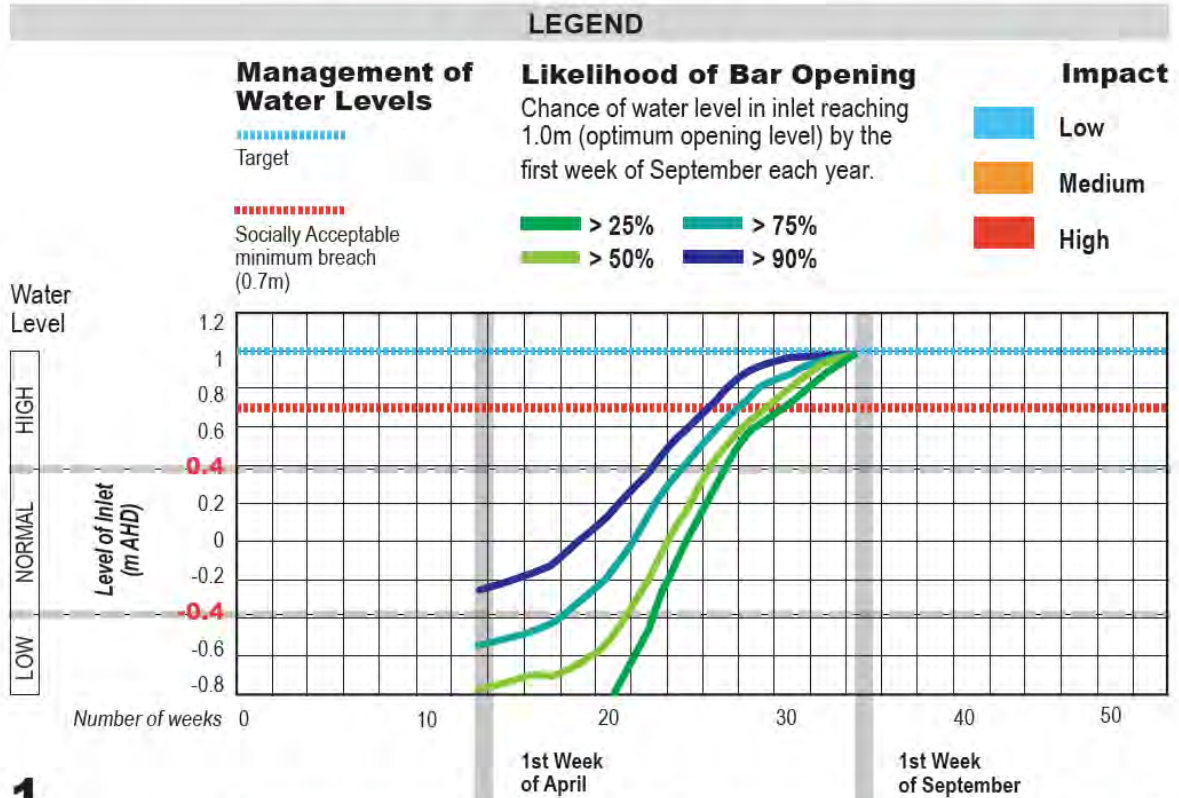
Changes made in April 2008 as a result of the 2007 non-opening, and EPA's establishment of a management group to guide future sandbar openings.

This version prepared in June to take into account Drainage Review findings and launch of Decision Tool. Took on board comments from Water Corporation and DEC June 17 2009.

Shire of Denmark contact details changed July 7 2009

Attachment – Decision Making Tool

WILSON INLET MANAGEMENT OF BAR OPENING



1.

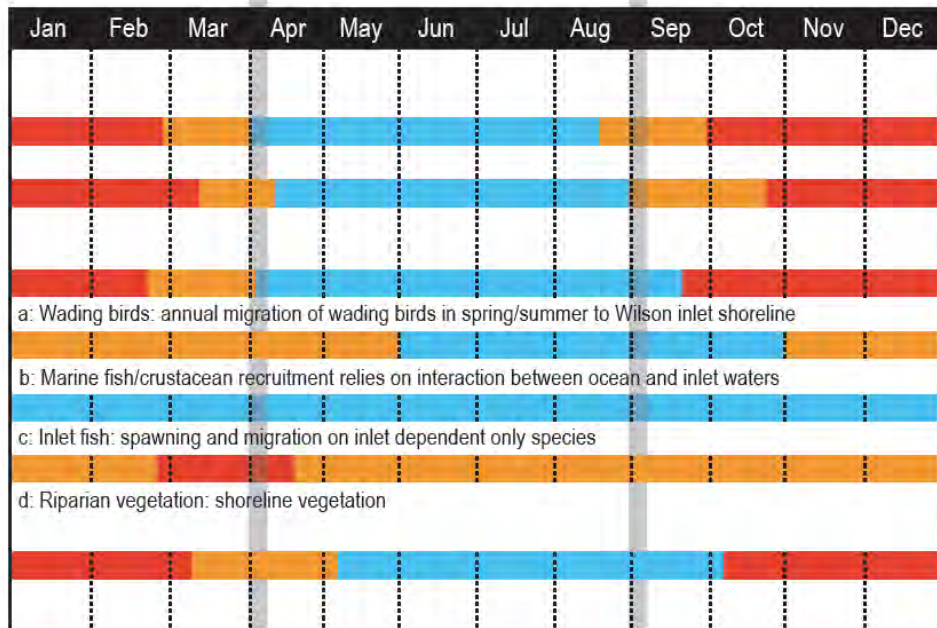
Impact of bar opening time on Key Indicators:

Seagrass (Ruppia)

Marine Exchange

2.

Impact of low and high water level on other indicators



3.

Impact of low and high water level on activity in Drainage District:

Definitions	Description	Description of level of risk
Seagrass	Likelihood of retention of sea grasses (ruppia) to manage nutrients in inlet.	<p>LOW: Ruppia more resilient to bar opening. Less decaying vegetation.</p> <p>HIGH: Ruppia less resilient to bar opening. More decaying vegetation.</p>
Marine Exchange	Likelihood of poor marine exchange between minimum and maximum level. (Note: success of opening also depends on conditions at opening.)	<p>LOW: Longer opening, increase storm/wind, more runoff into inlet.</p> <p>HIGH: Shorter openings, reduced storm/wind, less runoff into inlet.</p>