

Transport and Main Roads

Currumbin Creek Bar Navigational Safety Management

A review of options to manage risks associated with
interaction between vessels and surfers

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1 Introduction

1.1 Purpose

This report has been prepared by Maritime Safety Queensland (MSQ) to review options to mitigate risks associated with the interaction between vessels and surfers at Currumbin Creek on the southern Gold Coast following a recent fatality resulting from the collision of a vessel and a surfer.

1.2 Methodology

Previous investigations regarding engineering options such as dredging to improve navigation at the entrance are reviewed and revised as appropriate to reflect current circumstances and knowledge. Operational management options are similarly discussed. While Currumbin Creek is the focus, this report has been prepared with a contextual awareness of potentially similar circumstances at other coastal bars in Queensland. Similarly, while the discussion is focused on vessel interaction with surf craft, an awareness of other recreational users such as swimmers has been maintained.

1.3 Background

Activities over the last 200 years that modified the catchment include logging and agriculture, notably bananas and cattle (GHD 2004). More direct intervention at the entrance includes mining operations that commenced in the late 1950s and extended into the late 1980s (*ibid*). The southern wall, which connects the shoreline to Currumbin Rock, was built in 1973 to deflect sand that would block the entrance and exacerbate flooding, effectively transforming the rock into a headland; the northern wall was added in 1980 to stabilise the entrance (D'Agata 2001).

These works have occurred within the context of comprehensive shoreline management planning that commenced in 1964 with engagement of the Delft Hydraulics Laboratory by the Queensland Coordinator General. Historical evidence of high erosion potential combined with the value of the beaches to the local economy and the extensive coastal development have ensured that coastal management is a high profile activity. Prior to stabilisation the entrance would periodically migrate northwards, eroding South Palm Beach, as evidenced by these photos from the Delft report (1970).



1962



1967



1969

1.4 Current context

Currumbin Creek and its surrounding waters have been popular with recreational boating enthusiasts for many years. Boats frequently transit the creek from the public boat ramps to the creek mouth to gain access to the ocean, particularly Palm Beach Reef. The creek is also very popular for passive water activities such as kayaking, stand up paddle boards and swimming.

Currumbin 'Alley' is extremely popular with surfboard riders and learner surfers and stand up paddle boarders venture out beyond the break when the swell is small to catch waves amongst the crowds of experienced surfers. (The 'Alley' is the open ocean area lying roughly between the north side of Currumbin Rock and the creek; the surf zone varying with swell and bottom conditions.)

While conditions at the entrance bar vary, the most navigable track for small vessels is often through the surf break used by board riders. This creates interaction between vessels and surfboard riders who compete for the same areas to carry out their activities. Navigating a small vessel through the bar is more difficult when the swell is over 1 metre. Waves breaking on the outer bar impede seagoing vessels and potentially attract increased levels of surfboard riders and other paddle craft.

The most suitable track for vessels wishing to cross the bar changes regularly based on a number of factors. At times the best approach is along the northern training wall, followed by a north westerly heading out through the breaking surf. This track allows for interaction with board riders surfing north west of the training wall. As most surfers begin their ride off Currumbin Rock, potential vessel/surfer interaction is highest when the most navigable track leads towards Currumbin Rock.

On Sunday 8 May 2011, a 42 year old male Currumbin resident surfboard rider died from injuries sustained after being run over by a speed boat that was crossing the bar at the entrance to Currumbin Creek. This matter is subject to a current investigation.

There is an extended history of calls to dredge Currumbin Creek, as well as other coastal bars, as evidenced by the WBM Oceanics report in 1999 for the state and council (discussed further below), as well as other initiatives. Coastal bar crossings are a recognised navigational hazard and MSQ has a number of initiatives to ensure that mariners are aware of the dangers and take appropriate safety precautions, such as wearing personal flotation devices (required on designated bars, including Currumbin, for vessels less than 4.8 m).

Transport and Main Roads (TMR) promotes the recognition and management of risks from coastal bar crossings, but does not dredge coastal bars, except as part of an adopted management scheme. While dredging will alleviate the hazard, the highly dynamic environment can quickly re-establish the bar, and dredge operations are restricted by the frequent hazardous surf at these locations. Thus, dredging is generally an expensive and unreliable solution to coastal bar hazards. Where investments have been made in dredging and other works, these relate to a formal scheme, such as the Tweed and Nerang river sand bypass systems or dredging at the entrances to state boat harbours. Such investments are predicated on engineering investigations and economic studies to ensure that it is possible to achieve a practical, cost-effective and socially acceptable outcome.

1.5 Current (council) dredging program

Gold Coast City Council (GCCC) dredges Currumbin and Tallebudgera creeks annually, primarily to mitigate flooding and coastal erosion. Water quality and navigational benefits are also realised, but coastal access is not a design objective, reflecting the limits of Council's jurisdiction and obligations.

The campaign extends from roughly August to October, with Tallebudgera typically dredged before Currumbin.

The ~\$0.8 million annual cost allows for pumping of ~66,000 m³, with costs roughly split, but slightly more sand removed from Currumbin due to lower unit costs. Council manages the program in consultation with a committee and reports consistently favourable outcomes in recent years and general stakeholder satisfaction.



1.6 Comparison to other areas

The Gold Coast is Australia's largest non-capital city and its popularity in part is linked to the coastal lifestyle, including a number of surf breaks that are internationally recognised and used for competitions. The Alley is one of the Coasts' iconic surf spots. As such, there is a comparatively high level of surf craft activity, in terms of both the number of surfers at peak times and a high frequency of use. While there are other areas where vessels and surf craft interact, there would be few with a similar or greater level of activity.

'The Pass' in Byron Bay, NSW, is also a popular surf spot and, while not a river mouth, does have frequent activity from a boat ramp, but is quite different in that vessel operations are restricted to a few commercial dive operators. The Mooloolah, Maroochy and Noosa river mouths also attract surf craft, but not at the same intensity as Currumbin.

This report is not intended to provide a comprehensive or extended comparison, but these examples provide a bit of context that allows for appreciation of the fact that the situation at Currumbin combines a number of factors that contribute to a relatively high risk of unsafe vessel/surf craft interaction.

2 Physical processes and engineering options

2.1 Regional context

A number of coastal process studies have been undertaken of Currumbin entrance and the wider Gold Coast area. These studies, starting with Delft (1970), have identified a net northerly movement of approximately 0.5 million m³ of sand along the Gold Coast beaches per annum. The high transport rate sustains the complex bar system at the Currumbin Creek that provides the famous surfing break. It also makes it both costly and difficult to maintain a fixed navigational channel through the entrance.

2.2 Local studies and works

Previous studies of the Currumbin Creek area have focused on four main issues:

1. Keeping the entrance open to maintain recreational and environmental water quality.
2. Keeping the entrance open to provide flood mitigation for properties in the creek catchment.
3. Sourcing sand for erosion mitigation at Palm Beach.
4. Investigating the feasibility of improving navigational access to the ocean.

Several coastal process studies have been undertaken in the area and the physical processes are well documented. The first three issues above are managed by Gold Coast City Council (GCCC) via an annual dredging campaign clearing the inner Currumbin Creek entrance throat and placing the material on Palm Beach as beach nourishment. An investigation by WBM Oceanics (1999) specifically analysed the potential of two non-conforming dredging tenders to also address issue #4 above and concluded the conforming tenders, which only addressed issues #1-3, were preferred.

This recommendation is largely attributable to the high longshore sand transport rates, which make it difficult/costly to provide a reliable navigation channel. A channel can be easily dredged, but natural processes will fill it in a relatively short time. Even with a (substantial) commitment to fund ongoing maintenance dredging, providing a consistent level of service would be challenging in this dynamic environment. Accordingly, Transport and Main Roads will generally not fund dredging at coastal bars like Currumbin Creek entrance, where high transport rates mean high recurrent dredging costs and high uncertainty regarding the ability to maintain standards. Dredging is only considered in cases where detailed engineering and economic analyses demonstrate it is part of a viable solution to improved navigational outcomes.

2.3 Engineering options

As noted above, engineering options investigated for Currumbin Creek have been focused on the four issues above; primary outcomes have been to keep the throat – the area immediately inland of the entrance – clear and the beach nourished. Navigational benefits have also been realised, but have not been a primary focus and have been limited due to the difficulty of maintaining a channel at and beyond the entrance.

Managing risk associated with vessel/surf-craft interaction has not been a primary objective of engineering investigations or interventions. While improved navigational conditions may provide safety benefits, any of these options could increase the risk of vessel/surf-craft interaction by promoting increasing boating activity (including less experienced skippers), thereby increasing the risk of conflict between vessels and surf craft.

Furthermore, it is important to note alteration of the surf break is likely to be an unavoidable consequence of providing a safe navigation channel through engineered options such as a fixed sand bypass system, sand bed fluidisation, modified training walls and/or dredging. Retention of the sand bars that are

fundamental to the surf break is at odds with the concept of keeping sand out of a navigation channel; the ends are diametrically opposed.

2.3.1 Sand Bypass System

While fixed sand bypass systems (SBS) are relatively uncommon, there are plants just north and south of Currumbin. The Tweed SBS commenced operation in 2001 at a capital cost of approximately \$22 million (plant only, no modification to existing walls); operational costs are a commercial matter. The Gold Coast SBS, which was the model for the Tweed system, has operational costs of ~\$1 million per annum (excludes depreciation); capital costs in 1986 were ~\$7 million, plus ~\$50 million to construct the Seaway (walls and dredging). These costs are only indicative; a number of location-specific considerations would influence both cost and the feasibility of a SBS at Currumbin.

This option would involve installation of a jet pump system, notionally on a fixed jetty to the south of Currumbin Rock, to pick up the sand moving north before it gets to the entrance channel. One or more discharge outlets would need to be established on Palm Beach. Land would be required to establish a pumping plant and pipes would be required for both slurry (from jetty to plant to outlet) and feed water. A calm water intake would be required in Currumbin estuary, which may be less favourable than the Broadwater or Tweed estuary for this purpose. Similarly, the highly developed shoreline at Currumbin does not provide the buffer offered by The Spit or Fingal Head to isolate the “industrial” plant from relatively sensitive residential land. Electricity services may need upgrading.

Removal of the entrance bar by dredging would be fundamental to the establishment of a fixed SBS. This would remove or greatly alter ‘the Alley’ surf break. While this would potentially reduce the risk of vessel/surf-craft interaction, the same outcome could be achieved by banning surfing there (at a lower cost, but reduced navigational benefits).

Additional challenges at this location relate to research into an optimal training wall configuration. The relatively small tidal prism of Currumbin Creek as compared to the Tweed and Nerang estuaries means that any sand leaking past the SBS during storm events would rapidly fill in the entrance; frequent dredging would be required to maintain navigability.

While it may be possible to design a system that is sensitive to local conditions, the challenges are considerable. Although the creek and entrance are relatively small, the littoral drift is the same and the plant must have a similar capacity to the Tweed and Nerang systems to bypass enough sand.

2.3.2 Dredging

Improved navigational access could be provided through dredging, but the dredge would have to be available on a permanent basis to ensure a clear channel because of the highly dynamic nature of the location. Furthermore, operation of the dredge would be restricted by wave climate, so a permanent channel cannot be assured. The frequent presence of an operating dredge would create a potential hazard for both vessels and surf-craft.

Plant options include:

Trailing suction hopper dredge, dumping just offshore of Palm Beach

Custom catamaran, side-casting dredge material north,

Mobile jet pump with an umbilical pipe to southern end of Palm Beach

Compared to a SBS, dredging has the advantages of avoiding the large capital outlay and being amenable to a ‘trial’. However, the local market for suitable dredges is very limited, with few providers and vessels,

which may be out of the area when required. The second and third options above do not exist locally, so either a capital purchase or a market contract sufficiently attractive to stimulate investment, would be required. As dredges are mobile, they are also much more adaptable to changing environmental conditions; however, this mobility also means potentially increased conflict with other uses, who can't acclimate to the presence of a mobile dredge the way that they can to a fixed system. Dredging plant would also have a smaller footprint than a fixed SBS.

2.3.3 Sand bed fluidisation

This concept relies on a grid of pipes anchored to the sea floor at the entrance and/or along the channel. Water or air is pumped through the pipes, which are perforated or have nozzles, during an ebb tide. This mobilises any sand in the channel, allowing the tidal flows to carry the sand away from the entrance.

This option relies heavily on the tidal flows being high enough to carry the sand away. Currumbin Creek has a very small tidal prism, which is why the entrance requires annual dredging; on balance, the ocean pumps more sand into the system than is carried out by tide and storm flows. Such a system would only work in the throat of the channel – where it is narrowest and tidal flows are concentrated – so it would not improve navigation across the bar unless it was installed in conjunction with modified training walls to provide an extended narrow channel out to sea.

The pipes themselves could prove to be a navigational hazard within the channel and the training walls could alter the surf break and/or provide a hazard for surfers. Implementation of a pipe grid without large training works would potentially enhance GCCC's current dredging objectives, but is unlikely to maintain a navigable entrance. A fluidisation system was tested at Evans River entrance (NSW) with limited success. Clearing of the jets proved to be an operational problem. While this option may provide some benefits to the management of Currumbin Creek, the technology is largely unproven, and would probably require substantial training wall works for there to be any hope of acceptable navigational outcomes. It is hard to imagine a configuration for works at this location that would address navigational requirements without compromising other amenity values, including surfing.

2.3.4 Modified council dredging program

While GCCC's current dredging program is not focused on navigational outcomes, it does provide a better defined channel through the throat of the estuary, thereby concentrating tidal and flood flows. Historical aerial photos indicate that this concentration of flows can extend the channel seawards, providing improved navigability. Council typically dredges once per year, but there have been suggestions to increase this to twice per year.

This would probably provide increased navigational benefits; however, the magnitude and duration would be dependent on weather conditions. It is also uncertain how this modification would affect the other outcomes that Council seeks to provide through dredging. While improvements could be realised, unintended consequences are also possible. Current practices, evolved over time, have provided relatively stable and satisfactory outcomes recently. Change comes with uncertainty, risk and additional expense.

Council currently spends ~\$0.8 million annually for dredging at Currumbin and Tallebudgera creeks, with the cost relatively evenly split. A second campaign per year at Currumbin probably wouldn't double the cost, as the annual volume would not be expected to double. However, costs would increase due to the relatively high mobilisation costs for dredging equipment. An increase of \$0.2-0.4 million per year is suggested as an indicative cost (50% to 100% increase in the ~\$0.4 million annual cost at Currumbin).

2.4 Currumbin Entrance Research Program (CERP)

This program was initiated by the Griffith University Centre for Coastal Management in 2004 to:

- Investigate historical changes affecting Currumbin entrance and attempt to correlate dredging and other coastal management activities with specific hydrodynamic and sedimentary responses within the entrance and on adjacent beaches.
- Examine flow and sediment transport characteristics using a numerical model.
- Develop predictive capability for changes in the entrance and on adjacent beaches.
- Assess alternative approaches to channel maintenance against traditional dredging.
- Identify potential safety issues for entrance users.
- Develop a decision framework for future dredging activities based on an understanding of community issues and environmental and technical constraints.

A number of specific activities have occurred in an ad-hoc fashion under this umbrella by students and as part of other projects such as the Gold Coast Shoreline Management Plan, including: stream gauging, preliminary hydrodynamic modelling of the entrance, water quality assessment and scoping of a dredge management plan.

More comprehensive tasks associated with sediment transport modelling and dredging options have been estimated to cost approximately \$500,000 over three years. Transport and Main Roads has declined invitations to contribute funding, in part over concern about perceived uncertainty regarding outcomes, but also fundamentally due to convictions that engineering solutions are not a feasible approach to improving navigational outcomes at Currumbin due to both physical and economic constraints. Irrespective of costs, engineering solutions to maximise navigability would threaten or compromise surf ability.

3 Usage, operational arrangements and options

3.1 Usage

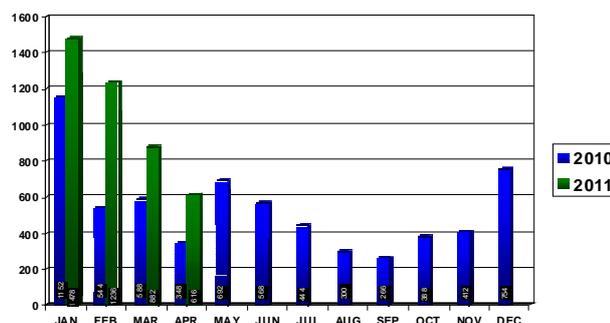
Users can be classified by distinguishing vessels from swimmers and other users, with the state and local government (bathing reserves), respectively, having the lead jurisdiction. However, the 'other users' are becoming increasingly difficult to classify, with more and larger paddle craft – many recognisable as 'boats', but being used as surf craft – and powered craft such as jet skis, or personal watercraft (PWC), being used in the surf, for freestyling or to facilitate tow-in surfing.



The number of vessel crossings at Currumbin bar varies with the available depth of water and the size of the ocean swell. Weather is a major factor for vessels seeking to access to the ocean. Vessels using Currumbin bar are generally less than 7 m long, with the majority less than 5 m. Mean sea level at Currumbin is approximately 0.8 m and the average tidal range is approximately 1.2 m, so bar crossings generally require a shallow draught vessel.

The Currumbin Volunteer Marine Rescue (VMR) base on Duringan Street has unobstructed views of the entrance and vessels operating across the bar. The VMR radio operators record each vessel that transits the bar. During the last calendar year (2010) they recorded 6456 bar crossings by approximately 3228 vessels, or an average of 62 vessels per week or eight per day. The statistics recorded by VMR show that recreational vessel activity is highest during the summer months, between December and March (mackerel fishing season), which is also the busiest time for passive recreational activities at this location.

Crossings of Currumbin Bar



MSQ observations over the past 18 months as part of the Gold Coast Boating Safety Initiative included 30 observation sessions at Currumbin Creek. Of the 265 vessels recorded, 7 were listed as operating too close to either swimmers (1) or other craft (6). The table below, summarising results at Currumbin from those observations, reflects the mixed use of the area.

Vessel	May	July	November	January	Grand Total
1. Motorboat	18.0%	6.5%	18.9%	32.9%	25.4%
3. Sail craft	0.0%	0.0%	27.0%	4.0%	6.3%
4. Paddle	66.7%	83.9%	40.5%	27.5%	42.2%
6. PWC	15.4%	9.7%	8.1%	35.6%	25.4%
99. Other (Dredge)	0.0%	0.0%	5.4%	0.00%	0.8%
Number of Vessels	39	31	37	149	256

Statistics provided by the Gold Coast City Council Life Guard Service indicate large numbers of passive users, including paddle craft and swimmers, at Currumbin Alley. CoastalCOMS data collected for Council indicate 42,785 passive water craft and 45,570 swimmers used the area over 3-months (12/2010 to 02/2011). This data was collected everyday during daylight hours, whereas the vessel statistics collected by VMR were taken between 5.00 am to 12.30 pm daily.

Passive craft statistics were gathered in the location known as the Alley and the beach area near the car park. The beach area within the entrance is not part of the GCCC Bathing Reserve and warning signs advise that swimming there is dangerous due to strong currents.

3.2 Operational arrangements and options

3.2.1 Traffic lanes/marine zones

In November 2010 MSQ gazetted a Notification of Danger to Marine Safety that prohibited freestyling, wave jumping or tow-in surfing when non-powered watercraft are present at the mouth of Currumbin and Tallebudgera Creeks.

The establishment of these restricted areas has seen a decline in the number of persons operating PWCs (personal watercraft or jet skis) at Currumbin and thus a decline in the interaction of passive craft and PWCs. The restricted areas prohibit certain activities but do not ban the use of PWCs or other motorised craft from navigating through Currumbin bar.

The introduction of any specific boating traffic lanes at Currumbin bar would be difficult to maintain given the dynamic nature of the waterway. Rapidly changing conditions at the bar would necessitate the relocation of any traffic lanes that may be established. Crews would find themselves at Currumbin every week to reposition markers that would identify any traffic lanes. Alternatively, vessels would be directed to navigate in a way that may not be the safest navigational course.

The only way to eliminate the interaction of motorised craft and passive non-motorised craft would be to establish a marine zone prohibiting the use of motorised vessels at Currumbin bar. This would not be popular with the boaters that use Currumbin bar and to some extent the residents of the upstream canal systems who like the status of ocean access.

3.2.2 Warning horns/flags

A warning system using horns is in use for boats operating off the beach at the Pass at Byron Bay. Commercial dive boats negotiate the surf break to access offshore dive grounds and in doing so use the horn warning system per the code of conduct (set up by National Parks). One long blast of the vessel's horn is sounded before moving through the surf zone. The code of conduct prescribes other conditions for operators navigating in the area like minimum speeds to be observed while crossing the break and use of

the far end of the beach to gain access to the ocean. A similar warning system could be used by vessels operating through Currumbin bar, however unrestricted access at Currumbin could compromise adoption due to the greater number and diversity of operators.

Vessels operating at Currumbin could also be required, or encouraged, to use a flag, similar to those sometimes seen on bicycles. The intent would be similar to the use of horns, only providing a visual rather than aural warning.

While these options both have the advantage of being relatively low cost, the extent to which they would be effective is uncertain it may be difficult to get 100% compliance if this is the only location in the State where they are implemented as vessels may arrive without the required equipment. It might be possible to install some sort of centralised warning system, but it is not obvious how this could be designed to operate automatically or remotely. Therefore, this may require provision of an operator (possibly through negotiation with VMR).

3.2.3 Education

The waters around Currumbin Estuary are serviced by two public boat ramps where the majority of vessels using the bar launch and retrieve. Signage is already in place at both ramps warning vessel operators about the Notification of Danger to Marine Safety (prohibited area) and a general warning about the dangerous bar conditions. These signs could be updated to incorporate all messages on the one sign and an additional warning could be included about interaction between surfers and boats. A suggestion was also made to provide signage at the entrance, potentially promoting the 'stop, observe, react' program (Appendix 1, Brad Smith).

VMR at Currumbin could be utilised to warn vessel operators by marine radio whether surfers are present in the navigational area and to provide general cautionary advice regarding crossing of the bar. The statistics provided by VMR indicate that in April this year there were 616 crossings of the bar by 313 vessels of which only 18 contacted VMR to advise of their movements. Using VMR to disseminate marine safety information would encourage more vessels to call before negotiating the bar. However, there may be concerns for the State and/or VMR regarding liability from this approach.

3.2.4 Legislation

There is some debate regarding the definition of a surfer. Under marine safety legislation, is a surfboard a vessel, or is a surfer a swimmer using a floatation device? Reasonable arguments can be made for both cases. While it is possible for someone to fall off of a vessel, effectively becoming a swimmer, that scenario is far more likely in the case of a surfer. Even if they are still attached to their surf board or boogie board by a leash, they are still effectively a swimmer.

If a surfer is a swimmer, then vessels would be limited to 6 knots within 30 m of any board riders. In a location such as Currumbin, this could effectively prohibit boating activity at the entrance when surf conditions are such that board riders are within 30 m of the entrance and the surf is such that a vessel must travel faster than 6 knots to safely execute a bar crossing. While this might provide some mitigation of risk, there is a high potential for uncertainty and it would be difficult for vessels to assess the conditions prior to launching and/or to re-evaluate conditions prior to crossing.

While it would perpetuate the risk of interaction, it would probably be more appropriate to clarify the legislation so that board riders, and perhaps even body surfers, are specifically excluded from the definition of swimmers. They could also be defined as a vessel for the purpose of a bar crossing, which would mean that an ocean going vessel seeking to cross the bar would have to yield to a surfer riding a wave towards shore, and surfers would have to yield to incoming vessels.

4 Consultation

As part of the preparation of this report, MSQ officers undertook informal consultations with a number of stakeholders. Notes from the consultations with some of these stakeholders are provided in Appendix 1; information from other stakeholders, such as Griffith University and GCCC, has been incorporated in previous sections of this report.¹ An excerpt from an on-line discussion forum in Appendix 2 provides additional insight into stakeholder views in relation to the recent fatality at Currumbin. MSQ officers provided an oral briefing based on a draft of this report to the Queensland Recreational Boating Council at their 08 June 2011 meeting; notes are provided in Appendix 3. A record of discussions with two of the Council officers responsible for lifeguard services is provided in Appendix 4.

Perhaps the most noteworthy sentiment in relation to the management of the risk at Currumbin is the relatively universal (but not complete) lack of support for any sort of bans or restrictions that would effectively support the rights of one set of stakeholders by denying use to another group. There is recognition that this approach would mitigate the risk – in fact, many acknowledge it as the only way to meaningfully reduce the potential for vessel/surf craft interaction at this location. However, neither surfers nor boaties want to be banned and neither group is inclined to impose that outcome on the other.

This sentiment is accompanied by a general acknowledgement that the presence of vessels and surf craft in the area is simply a risk that users accept in deciding to recreate at that location. This attitude is not surprising, given that both sets of enthusiasts engage in sports that are inherently risky and both are accustomed to having to accept personal responsibility for managing those risks.

It was also evident that stakeholders saw the recent changes in relation to the operation of PWCs in the area as a positive outcome. Both surfers and boaties recognised PWCs as an unacceptable risk in this location.

The discussion forum in Appendix 2 is noteworthy in that some surfers suggest that it might be fair to leave the entrance to boaties, as there are a lot of surf breaks, but very few places for boats to enter the ocean. This is by no means a consensus, but it does illustrate the generally high level of sympathy, and/or low level of animosity, between the groups using Currumbin Alley (indeed, a number of individuals consulted are both surfers and boaties).

While there is some support for dredging, it is notable that a number of stakeholders appreciate the complex dynamics of the problem and the limitations of alternative physical interventions. Specific suggestions included placement of a 'sausage groyne' – a soft membrane filled with sand and anchored to the sea floor – to help retain the inshore gutter or navigation channel that often forms following council's dredging program. There were also suggestions to remove part of the northern wall to facilitate navigation.

MSQ officers advise that both of these concepts would require investigation regarding potential effects on flooding and coastal erosion (as well as potential navigational benefits), including sufficient documentation for required approvals. Officer level consultation with GCCC reveal concerns that shortening the northern wall could potentially allow more sand to drift back into the entrance; it is designed to reduce this outcome. Current coastal process understanding at Currumbin Creek entrance indicates that neither the sausage groyne nor wall shortening options would be effective; further investigations are not considered warranted.

¹ Stakeholders were not asked to review or endorse the final text of this report.

5 Recommendations

5.1 Dredging is not a solution

The concept of using dredging to provide a predictable navigational outcome at Currumbin is impractical due to the naturally high sand transport rates at this and other coastal bars.

5.2 A designated channel is not a solution

A marked, but un-dredged, channel could direct vessels to navigate through an area that is not the safest option. Even if a dredged channel could be maintained, there would still be a risk of surfer/vessel interaction within the channel. Preliminary information on the recent fatality indicates that it occurred in the most likely area for a designated channel (adjacent to the northern wall).

5.3 A ban, while effective, is unsupported

Banning either vessels or surfers would effectively eliminate the risk of unsafe interaction (absent non-compliance), but both groups consider the existing risk to be preferable to a ban.

5.4 Ongoing and increased education is supported

Safe behaviour is universally supported as a way to manage risk. Opportunities to enhance existing signage, promote the role of the VMR as a communications base, and adopt systems such as horns and/or flags should be explored further and pursued where feasible.

5.5 Legislation should be clarified

The current lack of uncertainty regarding whether a surfer (used here generically to represent a number of cases that need to be considered) is a vessel is problematic. Legislation should be amended, as necessary, to clearly define surf craft as either vessels or swimmers. This preliminary report offers the suggestion that the former would be preferable.

5.6 Further investigations are not warranted

TMR has invested in physical interventions – through sand bypassing, training walls, and/or dredging – at certain locations where technical investigations and economic studies support action. The challenges at Currumbin are such that further investigations are not considered warranted. The inability to manage sand for navigation without adversely affecting surfing is probably the most significant factor; any solution would have to favour one over the other and would probably struggle operationally and attract constant criticism. In addition, the value of boating activity is relatively small and unlikely to warrant the substantial level of investment that would probably be required.

6 Sources

Castelle, Bruno, et. al. (2007) "Dynamics of a wave-dominated tidal inlet and influence on adjacent beaches, Currumbin Creek, Gold Coast, Australia", Coastal Engineering 54(2007)77-90, Elsevier.

Cox, R.J. and R.A. Cook (1984) "Planform models – A useful tool for studying tidal flow behaviour and sediment transport in estuaries", Conference on Hydraulics and Civil Engineering, Adelaide, 1-2 October 1984, pp.59-62.

D'Agata, Michael and Rodger Tomlinson (2001) "Discussion of the dredging of the internal delta of Currumbin estuary and its impact on adjacent beaches", 5pp.

GHD (2004) "Currumbin Creek Catchment Study", a report prepared for Gold Coast City Council, 8pp (section 1, may be partial report)

Griffith Centre for Coastal Management (2009) "Currumbin entrance research program: dredging management plan", Research Report No. 106, prepared by Guillaume Principato, 22pp.

seabreeze.com.au (2011) "Marine Safety in River Mouths" discussion forum accessed 02/06/11: www2.seabreeze.com.au/forums/Stand-Up-Paddle/SUP/Marine-Safety-in-Rivermouths/

WBM Oceanics (1999) "Currumbin and Tallebudgera Creeks entrance dredging study", a report prepared for Queensland Transport Maritime Division, 18pp.

Appendix 1 – Notes from Consultations

The notes below by MSQ officers include any amendments provided by stakeholders following review.

- **Brad Smith, Elanora**
 - Chairman Alley Boardriders (80 members)
 - Been using the bar since before development (1973)
 - On Dredging committee with Daphne McDonald
 - Alley Boardriders has taken action already – ‘Stop, observe, react’ program for surfers and boat drivers - wait at end of wall, post extra lookout.
 - Info should be on end of wall.
 - Could put lifeguards on duty as pilots
 - Dredge used for flood mitigation could be used for navigation. ‘Centre line cut’ of creek naturally forms the inshore gutter and the water moves north up the beach and creates a break in the banks near Jefferson Lane.
 - Should trial the sausage groyne idea to promote this
 - Could develop the ‘bar buster 2000’
 - Sausage groyne could be placed within the ‘borrow zone’ of Andrew Mathey/John McGrath – 18-20 metres out from the end of the groyne.
 - Currumbin Creek can only be dredged to about 2.7m as that is where the rock floor lies.
 - An awareness program should commence initially with signage to describe the risks, then dredging program should be modified and a trial of a sausage groyne should be undertaken. The sooner the better.

- **Peter Saunders President VMR Currumbin**
 - It was not a case of how, but when.
 - Expectations are to complete the feasibility study by Griffith Uni.
 - There will never be a definitive answer – you have to prove something will work so the study has to happen first.
 - The dredge does it’s best to help – they cut as far north into the break as they safely can.
 - The flood mitigation cuts have been going for about 5 years
 - Forget dredging – move on to the feasibility study with public consultation.
 - If brochures are to be produced (by VMR, MSQ, and Surfing associations) they should all contain the same message.
 - My suggestion in moving forward is complete the study.
 - The natural thing for the creek to do is turn north. Perhaps another groyne east of the natural channel?
 - Tally could be fixed but it is safer to use Currumbin at any rate. Tally has a low road bridge which restricts the type of boat that can go out. There would be an impact on the swimming area there.
 - If a surfer is defined in legislation as a vessel, they would have right of way (starboard) over a vessel coming through the bar.

- **Gary Brown, Vice President VMR Currumbin**

- Incident was no different to walking across the road, inasmuch as the same risks exist for road users and due care and attention must always be exercised
- Dredging the Creek for flood mitigation only improves boat access for a few months.
- Doing nothing is always an option and sometimes that is ok, but there are many other criteria which must be addressed
- Option of dredging the channel – the boaties and surfers will know where the channel is – the boaties know where to look and the surfers know what can happen if you are in the channel. A clear well defined channel could be an asset, however there will always be some 'interaction' between competing needs and requirements from those using any channel
- The boaties know where to look and the surfers know what can happen if you are in the channel. Pretty much like crossing the road in traffic- responsibility rests balanced between all classes of users, and this responsibility should not be directed to or against one or more specific groups.
- Comes down to 'ban everything' or manage interaction; a ban would be non-productive. Management through education should be the key.
- Would be nice to have all levels of interaction in the creek (GCCC dredging, Griffith studies and boating channel) working in the same direction.
- Signs describing known risk should be placed on western end of groyne warning boaties of the bar and passive watercraft. The signs could include contact information for weather and water conditions available from nearby Marine Rescue.
- If VMR warn boaties or give them direction, they could be liable if an incident occurred. Such warnings might well carry some weight AGAINST the water user should the user choose to ignore warnings or take a course of action in direct contrast to the warning. This is an opinion that would need further expansion.
- VMR does do a report to 4CBR but it is normally before daybreak and information provided is only current recorded conditions.
- 10,000 crossings a year – heaviest December, January, February.
- November the mackerel season commences
- A study should be the first step, then a long term management plan be drawn. The study should not be protracted and should underpin any actions considered in relation to the management of the possible risks involving watermen and boat users of the Currumbin Bar.
- A horn should be used if you think the surfer hasn't seen you.
- A brochure could be developed suggesting self preservation
- VHF licence is to be removed – this may promote use/log on. However the use of mobile phone to log on is also to be encouraged.
- Operation (Drop in) should be run again – the message gets out in the community quickly – and soon whilst matters such as those of the recent past are still in the minds of the community.

Rob Dalton, Byron Bay Dive Centre

- Reviewed procedure after he heard about the incident
- Has been using the pass as vessel master for over 10 years.
- Always used a horn.

- Was involved in the National Parks public consultation group to get the use of horns mandatory – used as conditions on permit to operate in the park
- Can only think of more signage as further improvement.
- **Leo Hoffs, Owner Currumbin Bait and Tackle**
 - Was working as a tradie, then bought the shop from Brad Smith
 - Has used the bar (boating) since he was 18 years old (Approx 1982)
 - Has surfed Currumbin Alley for 30 years
 - Had a few encounters with boats over the years, mostly jet skis
 - Air horns are the go
 - A traffic controller would be good, likes the concept of a permanent navigation channel.
 - Avoid banning any activity.
 - Its everyone's bar so we have to work on how the interaction can be reduced
 - Remove PWCs altogether
 - Place a high vis flag on a high pole on the boats
 - Locals have suggested taking ½ the wall away
 - Sausage groyne east of the groyne is a positive idea
 - Lifeguards should be able to act as pilots
- **Paul Chapman, Currumbin Rocks Resort**
 - President Currumbin Surfriders (member since 1964)
 - Provided history of misguided development
 - Started lobbying the then minister Jim Elder in 1995 on increase of PWCs and boats.
 - Construction of the walls promoted use and interaction.
 - Should be a passive use only area
 - Interaction happens regularly
 - Population dictates further overcrowding in future
 - Only suggestion is passive use only at Currumbin, Tally should be developed for powered craft.
 - Separation is the only workable solution
 - Counted over 140 boats on one day in February this year
 - Provided precedent in Appellate Court of Britain (R vs. Goodwin 2006) where 'ship' was further defined as a 'hollow of some description'
 - There is enough resources to fix the problem – there just seems to be not enough co-ordination of the resources
 - Lifeguards could be empowered to forward details of regos to MSQ enforcement partners for infringements.
 - 'Much better if the boats can go left at end of the wall and along the beach'
 - Thought of a sausage groyne before and running the end of the wall off to the north.
 - If you undertook the sausage groyne idea then you 'wouldn't have a problem'
 - Further enforcement of thundercats and PWCs is required

- Fishers are no real problem to experienced surfers
- Hit tow surfers and stagger the enforcement times

Appendix 2 – Discussion Forum on seabreeze.com.au

Author	
<p data-bbox="124 338 260 367">sunnySUP</p>  <p data-bbox="151 645 233 689">QLD Australia</p> <p data-bbox="146 712 237 734">140 Posts</p>	<p data-bbox="316 360 654 383">Posted 09/05/2011, 6:29 am <input type="checkbox"/> <input type="checkbox"/></p> <p data-bbox="735 338 963 376"> profile  quote</p> <p data-bbox="316 405 1469 465">Recent tragic events have highlighted our duty to take care of each other out there. Unfortunately not everyone thinks and acts this way.</p> <p data-bbox="316 495 1497 707">I have recently had discussions about the possibility of this recent event actually happening with my local authorities. I was shocked and saddened to wake up the sad sad news this morning. My concerns have mainly been with jet skis heading through a rivermouth surf break at horrendous speeds whilst surfers and paddlers are in the water. Help keep these areas more safe for surfing and paddling. As the correspondence below says, please report any incident you feel could be life endangering to the authorities. If they don't know about the incidents then they will not take any action.</p> <div data-bbox="347 770 1442 1854" style="border: 1px solid #ccc; padding: 10px;"><p data-bbox="347 801 1358 947">I understand your concern for marine safety. Maritime Safety Queensland, a division of the Department of Transport and Main Roads, is the state agency responsible for monitoring and managing the operations and activities of all boats on Queensland waters, including personal watercraft. The agency views contraventions of marine safety laws very seriously, especially those that might endanger life.</p><p data-bbox="347 976 1342 1178">I am advised your concern have been raised with the Officer in Charge of the Sunshine Coast District Water Police, the District Officer of the Queensland Boating and Fisheries Patrol at Mooloolaba, and the Manager of Maritime Safety Queensland's Field Compliance Team. These officers have been asked to include the lower reaches of the Maroochy River and the nearby offshore waters in future on-water patrols, with a focus on apprehending those who are speeding and contravening their general safety obligations.</p><p data-bbox="347 1207 1334 1352">I also encourage you to report any unsafe activities directly to Maritime Safety Queensland or one of its enforcement partners, either immediately or as soon as possible after an activity occurs. I assure you that your report will be treated very seriously and that shipping inspectors will investigate fully and take enforcement action wherever possible.</p><p data-bbox="347 1382 1342 1442">If you require further information, please call Mr Peter Kleinig, Area Manager (Sunshine Coast), Maritime Safety Queensland on 5477 8425. Mr Kleinig will be pleased to assist.</p><p data-bbox="347 1471 1031 1494">Thank you for bringing this matter to the Minister's attention.</p><p data-bbox="347 1523 531 1552">Yours sincerely</p><p data-bbox="347 1671 564 1731">Daniel Rockett Principal Advisor</p><p data-bbox="1155 1671 1445 1850">Level 13 Mineral House 41 George Street Brisbane 4000 PO Box 15456 City East Queensland 4002 Australia Telephone +61 7 3896 3691 Facsimile +61 7 3210 6214 Email mainroads@ministerial.qld.gov.au ABN 65 959 415 158</p></div>
<p data-bbox="103 1895 280 1924">Jradedmondo</p>	<p data-bbox="316 1917 654 1939">Posted 09/05/2011, 9:22 am <input type="checkbox"/> <input type="checkbox"/></p> <p data-bbox="735 1895 963 1933"> profile  quote</p> <p data-bbox="316 1962 1481 2054">it is a bit concerning that it takes someone to die for something to happen, i frequent a very nice rivermouth break on the central coast, i have had many close calls with jetski's who think it is ok to jump waves where there is 40 people surfing, this break does have a channel but this does tend to</p>



closeout or stand up a bit when there are larger waves, thus causing ferries and larger boats to fly through very close to surfers, i am sad that someone has died, but am a little suprised that it has not happened earlier, i think that these people that frequent these areas should show some caution for surfers, but that's just my opinion.

Jarryd

NSW
Australia
43 Posts

paul.j

Posted 09/05/2011, 9:40 am



A bit of a different take on things, but are we the ones in the wrong place? as the river mouths are there for access to the ocean. It just so happens that as a result of the mouth being there that there are some times good waves as well but i thought if it came to the crunch the surfers might be moved on and the boats left to use the channel!!! I feel for the guys in the boats sometimes when i see them coming in and there are 100 surfers in the way and they have to watch for waves to make sure they get in the bar safely as well as watching out for surfers.

QLD
Australia
1580 Posts

Quite often out at the alley a boat might go screaming through the wave zone in a lull to get in and you can hear people yelling at the boat to slow down, but the boat is only doing what is needed to get in the bar and if you have ever crossed a bar with breaking waves you will no what i mean..

It is sad that it has taken a accident to bring this up but maybe just maybe the boats are not in the wrong!!!!

aus301

Posted 09/05/2011, 10:02 am



well said Jacko. Think about it, the Goldy has over 50km of beaches and only 4 bar crossings, far easier to move the surfers than the boats.

QLD
Australia
1232 Posts

sunnySUP

Posted 09/05/2011, 10:08 am



I don't think its alot to ask to be looked out for while you surf the edge of a river mouth. Tha maroochy river mouth is wide, not that busy, chanel is clear and wide (unlike the alley), plenty of room for all, but you still get personal watercraft ripping thru the surf area using the surf as a "jump" without a care as to what is on the other side of that "jump"

Pretty dangerous stuff.

Of course this is only the occasional Jet ski rider, most are very courteous.

QLD
Australia
140 Posts

paul.j

Posted 09/05/2011, 10:16 am



Featured Photo



I know at the Alley now you are not allowed to wave jump on a jet ski, the bar is there as a access for boats to the ocean so maybe something like what they have done at currumbin might help at maroochy?

Jacko



Uploaded by:
[Flyingdutchy](#)
([View more](#))

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Australia

1580 Posts

doggie

Posted 09/05/2011, 11:51 am



The death of a surfer on the Gold Coast following a collision with a boat was "an accident waiting to happen", the city's acting chief lifeguard says.

Richard King, 42, of Currumbin Waters, died just hours after being hit by a boat on Sunday while surfing at the popular Currumbin Alley at the southern end of the coast.

People on the boat pulled Mr King out of the water immediately and he was rushed to Gold Coast Hospital where he died.

Peter Miller, Acting Chief Lifeguard for Gold Coast City Council, told ABC Radio on Monday they had had some close calls before.

"I guess it's an accident waiting to happen and unfortunately it's cost a life in this circumstance."

"When you have boats going in and out on a constant basis and so many people there, so many people, not just the experienced boardriders that get right out the back, but the little ones, the parents there ... there's just hundreds and hundreds of people there.

"So I guess this was always going to happen at some stage," Mr Miller said.

The end of the patrol season a couple of weeks ago would have made no difference to the outcome, he said.

The beach at the mouth of Currumbin Creek was one of the most dangerous on the coast.

"We have more rescues there than any other beach on the Gold Coast," Mr Miller said.

"It's a tidal flow, so when that tide runs out and you've got a big tide, there's a huge volume of water going out and for the unwary it's a real trap."

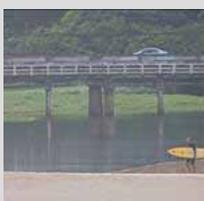
Mr Miller said as far as he could see it was just an unfortunate accident and there was very little that could be done to prevent it happening.

He also said it would not be popular or practical to ban surfers from the area.

<http://news.ninemsn.com.au/national/8246498/qld-surf-death-waiting-to-happen>

Solo

Posted 09/05/2011, 12:57 pm



Very unfortunate circumstances that have transpired, but if proceedings over the last few weeks (which are no different to the last 20 - 30 years) are anything to go by, it was quite possibly avoidable.

I wasn't there, so I can't comment on this incident, but my girl had a tinny roll over her a little over a week ago at the Alley, because the guys rushed their entry and rolled on the face of a wave.

The boaties that are worth their salt, tend to slowdown or stop to assess the area access and make

NSW
Australia

7 Posts

an informed decision before crossing the river mouth. Unfortunately others don't slow or stop to assess the situation and charge on through with ill regard for themselves and others (an all too common occurrence at the Alley).

The boating regulations require skippers to give way to unpowered craft and swimmers.

Whilst I am unaware of any accident happening at The Pass, Byron Bay where technically it is not a river mouth/bar crossing, the potential for an accident is far higher. The skippers stop before entering the surf zone, generally wait for a lull and a gap in the pack before proceeding. Better education may help to prevent further injury and death, but I believe a higher presence from the authorities will deter those who willfully disregard the safety of themselves or others.

I wouldn't advocate banning boats or surfing at the Alley... people need to look, learn and listen and conduct themselves in a respectful manner.

mikeman

Posted 09/05/2011, 1:22 pm



There is a parallel thread running on the Currumbin incident "Currumbin Alley - surfer hit by boat!"

CMC sums things up pretty well here:

"In normal creek conditions the channel runs along the breakwall and then does a dog leg out and around so that boats can access what is normally a bit of a no mans land for the crowds, learners etc between the Alley proper and Lacey's.

At the moment the sand is so choked that the breakwall is the shallowest part of the creek. This leaves boaties no choice but to run up the middle of the Alley and then try to go around the end of the shallower than normal bank coming off the rock and extending over to the wall. There is usually a more pronounced gutter and this allows the boats to navigate the bar without coming too close to regular surfers.

You'd have to think that these conditions played a part in today's unfortunate accident. What a sad day for his family and our beautiful area. Let's just hope that something is done to monitor the bar and maintain it despite the political hot potato that it has become."

Imo the likelihood of this tragedy happening at Currumbin could have been greatly reduced if the local and state governments had dredged these channels properly. All they seem to do is talk and point fingers at each other. This type of incident has been predicted by many people over the years (even here on Seabreeze).

These waters need **proper dredging** if a similar occurrence is to be prevented. I highlighted proper dredging as the locals have all seen the lame attempt at dredging that has taken place in the past by the contractors. Let's see what real action takes place from here...

QLD
Australia

521 Posts

Piros

Posted 09/05/2011, 2:03 pm



paul.j said...

A bit of a different take on things, but are we the ones in the wrong place? as the river mouths are there for access to the ocean. It just so happens that as a result of the mouth being there that there are some times good waves as well but i thought if it came to the crunch the surfers might be moved on and the boats left to use the channel!!! I feel for the guys in the boats sometimes when i see them coming in and there are 100 surfers in the way and they have to watch for waves to make sure they get in the bar safely as well as watching out for surfers.

Quite often out at the alley a boat might go screaming through the wave zone in a lull to get in and you can hear people yelling at the boat to slow down, but the boat is only doing what is needed to get in the bar and if you have ever crossed a bar with breaking waves you will know what i mean..

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Australia

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It is sad that it has taken an accident to bring this up but maybe just maybe the boats are not in the wrong!!!!

I hear what you are saying Jacko but if you are skipper of the vessel and cannot navigate the passage safely you don't go through. The ultimate responsibility of that incident will fall back onto the skipper. The same rules apply in the Seaway if you run over a surfer who is paddling across even if it's pitch black, it's the skipper's fault.

This is an absolute tragedy and my heart goes out to the family but this could have been avoided, new laws have been passed to make Currumbin passage safer but you never see anyone there enforcing them or educating/reprimanding boaties at the boat ramp.

The channel constantly shifts and if you don't use the bar frequently you are running blind and far too often do you see boaties drive straight into the impact zone only to get a rush of blood and gun it to get out or in, this is where the real danger is the mug boaties who only use Currumbin 3 or 4 times a year.

Flaker

Posted 09/05/2011, 7:29 pm



QLD
Australia
57 Posts

A few months ago I was almost hit at the Alley. I had just dived off at the dying stages of a wave and, as I surfaced, an ocean bound boat popped over the next wave of the set. It crashed down about 8-10m away and scared the absolute crap out of me. If it had skewed a bit on landing, it may have pointed at me and when he gunned it I would have been toast.

I was initially angry/hyped up and wanted to kill someone. BUT, I realised that it probably wasn't as close as I first thought, and I really was in the middle of the low tide channel. Having said that, he would have had to have been blind not to see me while surfing my wave, and was a bit stupid to be punching it through a set. (sets were about 5 min apart)

Since then, if I am surfing the alley, I will always look for boats leaving the river and not take the wave if there is.

Dazzler75

Posted 10/05/2011, 2:37 pm



QLD
Australia
43 Posts

I think any of us that regularly surfs the Alley will have seen quite a few close calls, particularly around Dec - Feb when the mackerel are running and Palmy reef looks like a car park.

Never once have I seen the Water Police in the area enforcing 6 knot speed limit, I reckon Prios is spot on the 3 - 4 times a year boatie can be a danger.

I'm sure there would be a big uproar if the Alley was closed to boats - we would hear all about how much they contribute to the local economy etc, however I'm sure that the local community who use the area would contribute more and are far greater in their numbers.

As I read on another thread any of us who regularly surf the Alley have probably had the pleasure of sharing waves with Richard. I never met him however my thoughts go out to his family & friends

Appendix 3 – Notes from QRBC meeting

The notes below were made by MSQ officers at the QRBC meeting on 08 June 2011

Currumbin Creek Fatality

Russell Witt provided generalised information on the recent fatality and more specific information on what actions MSQ is taking to reduce the risk of a similar incident.

- Fatality occurred due a collision between a surf board rider and boat crossing the Currumbin Bar.
- MSQ investigating ways to separate boats from other stakeholders on the water in the vicinity of the bar.
 - Dredging a channel through the bar is not financially sustainable and would most likely not result in a separation of users. Would likely attract more boats to the area.
 - Work with waterway users to reduce the risk. Identified potential mitigating actions:
 - Code of conduct
 - Horn blast when boat crossing bar
 - Tall flags on boats

Russell invited the QRBC to submit any ideas they had with regards to reducing the risk at the bar.

QRBC members provided some good local insight into the waterway and its users.

- They agreed that dredging a channel would not resolve the issue
- Most boaters are locals and mostly going to local offshore reef
- Most boats cross the bar (in and out) during the morning.
- Surfers attracted to the area due to point break waves and the loss of surfable waves at Kirra due to sand pumping at the Tweed River Bar.
- Surfers are mix of local and non-local.
- Kite surfers and Stand-up paddle boarders also use the waterway.

Action: Russell agreed to provide QRBC with a list of potential mitigating strategies so that they could canvas their members for comments and additional ideas.

Appendix 4 – Notes of discussions with GCCC Lifeguards

These notes, prepared by MSQ officers, include amendments provided by council officers.

- **Warren Young Chief Lifeguard GCCC**

- If we do dredge, what will be the required ongoing maintenance of the channel?
- Nature will do it's thing whether we dredge or not.
- Tallebudgera is an example of the change of sands past the area.
- It comes down to the responsibility of the individual whether on a board or a boat to keep watch.
- Education is no good unless everyone takes ownership of the risk.
- There has to a responsibility that when you go into the ocean, the keeping watch of the individual is paramount.
- The surfers paddling across the seaway are an example of how the surfers are not aware that they are not visible to boats.
- Education should go along the lines of “do you know you can not be seen?”
- Even the best vessel operator would agree, there are times when someone in the water ahead of them can not be seen.
- There has to be an acceptance of the surf craft operator that they can not be seen, then they will go “well hang on, it's up to me not to expect that I will be seen.”
- It is not like crossing the road at a zebra crossing – it's different to that.
- The difficulty we all face is that people in the water do not know how invisible they are.
- The nature of surf craft riding is a wonderfully selfish recreation.
- It is not our business to put a stop to that.
- Surfing Queensland and GCCC should be involved in the education program.
- Coaching young surfers of the risks and invisibility should be included in the curriculum.
- We would be guided by MSQ for education of vessel operators.
- We have to keep in mind there are some groups that take advantage of the sometimes lack of communication of MSQ/Water Police/GCCC and try to drive a wedge between the departments to develop confusion.
- It is unique that in this corner of the world that we have a 7 day a week lifeguard, water police and MSQ capability, but it has not reached its full potential yet.
- I have provided to other sources the following statement: “It is fair to say that the number of activities include power craft surfboard riding, surf craft, Stand up board riding and recreational boating, fishing, swimming, surf boats, surf skis, and various forms of aquatic recreation, make this sector the most challenging and popular aquatic usage area in the state of Queensland.” I believe that and I doubt anyone who knows the area could argue.
- I don't think we can control it, I think we can manage it by education and all of us doing as much as we can.

- As soon as you undertake a major dredging program, to alleviate a problem, if that is not achieved exactly the way you want it, the outcry and political negativity – you’d never survive it. I do not know a lot about dredging but it appears to me that the experts can not build into a program, all the various forces on nature and that is probably how it has always been.
- I think Currumbin Alley is here to stay as a boating channel, as a recreational activities place – I don’t think that is going to change. I think we all have to manage it and keep on with the work in progress of education.
- The attitude of “ban all power driven craft” is narrow minded – it is a wonderful access to the Palm Beach reefs and fishing areas. I don’t think vessels should be discriminated against. They would have a great discrimination case as they could go back historically and say they were here first.
- It has to be an attitudinal and education thing. We have to lay the “exclusive use” idea to rest early on so that it does not reoccur.
- The idea of the sausage groyne to help the natural flow to the north has to be balanced with the awareness of the exponential growth of the Palm Beach Parklands area and the numbers of people who take their kids to the fantastic play area and then they access the surf and the flagged area out the front.

- **Peter Miller 2IC GCCC Lifeguard Service**

- In any swell event, the current sweeps surfers and people in the water across the alley towards Palm Beach.
- They will still wash across a boating channel regardless of where you put a channel.
- Horns work at The Pass, Byron, but only for those who know what they mean. Many surfers just don’t get out of the way anyway.
- It works for them for some of the time, and may be worth a try, to at least show we are trying to deal with the problem.
- When there is reasonable size surf, the wind is normally from the south so that would blow the noise away from the closest residents on the hill.
- The area is so large, there may be surfers right through the area. At what point do you sound the horn?
- One problem is surf schools as those learner surfers involved are often spread across the creek mouth in the shallows, and have limited abilities in the surf.
- I see no point in flooding the area with signs.
- Signage has to be relevant to the area and where do you put it so that you capture the people that matter?
- People also take very little notice of the existing signs that are there now.
- Once you put everything on one sign and it becomes too wordy, no one reads it.
- I would like to see a far greater and more regular presence of MSQ and Water Police at Currumbin. There is no doubt in my mind that it would help.
- A greater presence from MSQ/Water Police would alleviate some of the frustration of my staff are finding there and also for some of the locals that are frustrated with the area usage.

- If one piece of good comes out of this tragedy, it may be that hopefully the Government realises there is an obligation there and whether it be Police or MSQ that provide the resources to spend a lot more time there I have no doubt it will help.
- A holistic approach to education would be a terrific idea – the more people that can manage it, the better. At the moment our staff feel they are a lone voice.
- If the users realize there are a number of agencies working together to try and get a solution and to try and help them out or to restrict the illegal activities surely it has got to send a positive message to everyone.
- Maintaining a channel would be a “catch 22” – It’s not until you get into the creek that the speed is 6 knots. If you have a channel, the boats would quite possibly come through the outer channel much faster which is going to make the situation more dangerous. You are still never going to eliminate the fact that surfers of all types are going to wash across there. They are going to wash across there regardless. That then could create fatalities for either swimmers or inexperienced surfers or body-boarders who could drown in the channel – it’s got many pros and cons.
- The only easy answer I can see is to ban one or the other and I can not see that as possible or desirable.
- There are days there that we would like to ban swimming, due to the number of rescues being performed, but people will still swim there regardless of signage, or the number of safety warnings over the public address system.
- If there is more presence from all enforcement parties, or a dedicated service able to act a bit like a pilot, it would be an active approach to safety.
- It would not require that much funding – one or two PWCs and a vehicle, and of course staff.
- The idea of the sausage groyne to help the natural flow to the north might work but it may create more problems. One of the problems we do have when there is a defined inshore channel is often it sends the boats well north to the patrol flags at South Palm Beach Tower 13 and then we have a major interaction problem with no other way out through the break , except in the flagged area.
- There would be no change in impact as the sweep will still be there and swimmers/surfers would pass through, channel or no channel.
- I believe the incident should be a catalyst to provide more funding for more presence in the area.