Kirra Project Update

Information Sheet October 2006

Following the two community meetings in early July, researchers at the GCCM began an investigation into options for improved wave quality at Kirra.

Kirra Point is a natural rocky headland that extends about 100m into the sea. A beach bar forms during high wave energy over which 2-4m waves break with a peel angle near the limits of surfability. It is one of the world's reknowned surf sites.

(Tweed River Entrance Sand Bypassing Project 1997, Technical Appendix III: Surf Impact Assessment, p.44)

Background

As many of you know, both on top of and under the water, Kirra has changed remarkably over the past 10 years. In the 12 months prior to the removal of a section of Big Groyne in 1996, Stage 1A of the Tweed River Estuary Sand Bypassing Project (TRESBP) delivered approximately 2,300,000m^3 of sand to the beaches and nearshore zone of Coolangatta Bay with the specific focus of 're-establishing depleted upper beach and nearshore sand levels' (Boswood 2001).

In April 1995 1,500,000 m^3 of sand was placed in the nearshore zone in the 6-10m depth range. In May, 600,000 m^3 was placed on the upper beaches; and in the 5 months following this, a further 200,000 m^3 was placed in the nearshore zone in the 0-5m depth range (remember an olympic pool contains 2,500m^3 of sand). This dredging campaign moved almost 50% of the total volume of sand that has been dredged to date. The TRESBP dredging campaign, combined with the removal of part of the groyne in 1996 led to a large and sudden change to the structure of the bay (filling in holes, smoothing the bay floor, raising the seabed height etc). This program of works succeeded in the objective of creating a wider beach but had the effect of significantly altering wave quality.

Further information on the TRESBP dredging and pumping programs are available on the TRESBP website: www.tweedsandbypass.nsw.gov.au

Current considerations

The volume of sand in Coolangatta Bay and specifically in the area around Big Groyne and Kirra Reef is significant.

Since the bypass operations commenced in March 2001, the annual average of sand pumped (to March 2006) has been 681,909m^3, with a maximum amount of 755,072m^3 pumped in the year ended March 2004.

Prior to the bypass operations commencing, 3,580,067m^3 of sand was dredged from the Tweed River. The annual average of sand dredged from April 2001 – April 2006 has been 292,438m^3 with a maximum amount of 498,898m^3 in 2001-02 and a minimum amount of 169,926m^3 in 2004-05. The average annual rate of sand deposited (dredged + pumped) since the bypass commenced operations is 974,596m^3.

These figures have been taken from the TRESBP website.

At the August 2006 Advisory Committee meeting for the TRESBP, the community was informed that the project will now deliver a volume of sand closer to the identified 'natural' littoral drift of 500,000m^3 per year, and we can expect to see a downscaling of the dredging operations over the next few years.

The purpose of the Griffith University project is to present a series of options to the local community on how surfing amenity might be improved. Any recommendations made by the community need to be considered against the expected condition of the bay in a few years time, the time it might take for an intervention to have any effect and the possible economic, management and liability considerations around these issues.

Research focus

The range of opinions from the community meetings on this issue in July can be summarised into 5 options. These are:

1. Modifications to Big Groyne.
2. Supplementary outlet to the north.
3. Extend the 'grid system' for dredged sand to be placed further to the north.
4. Realign the beach profile at Kirra.
5. TRESBP operates according to current management plans.

***Note*:** While options are being investigated independently, GCCM recognises that combinations of options are possible and may ultimately be the preferred strategy.

1. Modifications to Big Groyne.

This option involves investigating the benefit of:

- Extending Big Groyne back to the pre-1996 length
- Extending Big Groyne by 50m
- Removing Big Groyne

2. Supplementary outlet to the north.

This option involves investigating the benefit of creating a supplementary outlet in the North Kirra / Bilinga area.

3. Extend the 'grid system' for dredged sand to be placed further to the north.

This option involves investigating the benefit of extending the grid system further to the north, which will enable the dredge to dump sand further along the coast.

4. Realign the beach profile at Kirra.

This option involves investigating a number of options that may assist in realigning the beach and sandbank profile at Kirra. These options include:

- Beach scraping
- The creation of a 'lagoon' type system that may encourage the shoreline and sandbank to migrate shorewards at an angle

5. TRESBP operates according to current management plans.

The TRESBP has put forward a position statement suggesting the typical conditions that we may expect at Duranbah and Coolangatta Bay, including Kirra, in 3 years time. They are as follows:

- Duranbah Beach to be similar to now – i.e. it would need to be nourished once or twice a year. Snapper Rocks to provide good consistent surfing, but not provide the long rides of the early 2000s.
- Rainbow Bay to be similar to now – i.e. variable and not as wide as in the early 2000s.
- Greenmount Beach will also be variable. Typically it is expected to recede up to 30-50m at the Greenmount Headland end with some separation of surfing breaks between Snapper Rocks and Greenmount.
- Coolangatta Beach (closer to the Kirra Point groyne) to be similar to now, but with smaller inner nearshore shoals.
- Kirra Beach to recede about 100m to near the end of the Miles Street Groyne.
- Kirra Point to become more prominent, and "point break" surfing conditions to become more frequent.
- Kirra Reef to be significantly larger – about 3,000 square metres in area.

(Information provided by Ian Taylor Project Manager, Tweed River Entrance Sand Bypassing Project on 11/08/06)

Timeline

We expect to have the modelling completed in November.

Other surf related projects currently underway on the Gold Coast

- Investigation into the placement of safe surfing signs (Council and Surfing Qld).
- Investigation into the declaration of surfing reserves at Burleigh and Kirra/Snapper (Council and the National Reference Group).
- Report into the value of recreational surfing on the Gold Coast (Council and Griffith Centre for Coastal Management).
- Law / Lore of the Surf Forum scheduled for November 2006 (TBC).
- Video documentary on surfers, surfing and coastal processes at Kirra and Coolangatta Bay. We are currently seeking sponsors to assist with the completion of this project. If you are able to make a contribution, please contact us on the details below.

More Information

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