



Surfrider Foundation.
A U S T R A L I A

Kirra - issues and solutions

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What are the issues?

Tweed River training walls

The extension of the Tweed River entrance seawalls in the mid-1960s by approximately 400m brought about a situation whereby sand, which naturally moves northwards along the east coast of Australia, was interrupted.

These river training walls effectively blocked the flow of sand into Coolangatta Bay.

It was thought that extending the river walls into deeper water would make navigation of the entrance safer, however, only a few years after the project was completed a new bar had re-established itself in deeper water.

With the natural supply of sand cut-off, natural processes, exacerbated by a series severe storms in the late 1960s and early 1970s rapidly eroded the beaches within Coolangatta Bay. The breakdown in natural sand supply contributed to ongoing erosion problems in the Bay and most of Gold Coast City's beaches.

Beach management programs

Beach management has been practiced for over 100 years in this region. A number of strategies have been implemented on the Gold Coast to try and hold sand on beaches including pumping sand into nearshore shoals and beaches as well as sand dune construction and groynes.

However, the strategies have met with mixed success, including the shortening of the Kirra Point Groyne by approximately 30m in 1996 in an attempt to alleviate erosion problems at Greenmount.

Sand bypass system

In the mid-1990s, an agreement was reached between the State Government's of Queensland (Qld) and New South Wales (NSW) as well as Tweed Shire Council and Gold Coast City Council, for the construction and operation of the Tweed River Entrance Sand Bypassing Project (TRESBP).

The project involves using a dredge to clear and maintain the entrance to the Tweed River and the use of a specially constructed sand pumping jetty, located immediately to the south of the Tweed River, to capture sand and pump it to the southern Gold Coast beaches and nearshore area through a number of outlets.

The long term average sand net littoral transport rate is currently understood to be 500,000 m³ per year (page 8 of the Joint Consultants' Report), but analysis to date suggests that it can vary between 270,000 m³ and 900,000 m³ in any individual year (TRESBP Act, Schedule 2, Section 5.2, p.74).

On a day-to-day basis, the project is managed by a private company, which has a 25-year contract, which expires in 2024. Project management is shared between the NSW and Qld State Governments, with the NSW Government being the primary management party.

The project is governed by Acts of Parliament in both States, which clearly identify the unique character of this region.

The preamble to the Act states that "the Governments of New South Wales and Queensland recognise the importance of the Gold Coast-Tweed Heads region as a major international and national tourism destination, a significant growing recreational and residential area, and a unique coastal environment (TRESBP Act p.68)."

Section 3 of the TRESBP Act states that "the States acknowledge that the Project is unique and without precedent. It is located on an open high-energy coastline subject to variable natural forces, in a highly-valued environment, subject to intensive usage. Accordingly, it is recognised that the Project must be designed, evaluated and implemented prudently and in an environmentally sensitive way, if the long-term benefits are to be effectively achieved (TRESBP Agreement p.70)."

The specific objectives of the project are identified as follows:

- For NSW - to establish and maintain a navigable depth of water of at least 3.5 metres below Indian Spring Low Water (ISLW) in the approach to and within the entrance channel to the Tweed River over a width equal to that between the rubble mound breakwaters.
- For Qld - to achieve a continuing supply of sand to the Southern Gold Coast beaches at a rate consistent with the natural littoral drift rates updrift and downdrift, together with the supply of such additional sand to the beaches as is required to restore the recreational amenity of the beaches and to maintain it".

The intention is to achieve the objectives in perpetuity (TRESBP Agreement Schedule 1, Deed of Agreement, p.7).



What are the problems?

In order to deal with the significant erosion problems in Coolangatta Bay and further to the north, the project agreement was designed in a manner that allowed the operator (under guidance from the Project Manager) to initially pump and dredge sand at more than double the rate that sand would naturally progress along the coastline under average wave conditions.

The early part of this decade was in fact characterised by generally low wave energy conditions and it is likely that sand was processed into Coolangatta Bay at possibly three times the natural rate of supply for that period. This over-supply resulted in a rapid raising of the seabed, resulting in very wide beaches and a much shallower bay.

This has contributed to:

- The loss of Kirra Point, a world famous surfbreak;
- Smothering and significant degradation of Kirra Reef;
- Increases of safety risks in bathing patrolled areas; and
- A loss of general beach amenity and intimacy, which has impacted the local community and the tourist economy.

Loss of amenity

To date the project has deposited enough sand for coastal protection of Coolangatta Bay.

Overall the project has not improved diving or fishing amenities for Kirra Reef, the surf at Kirra or the beach as evidenced by the lack of use by the general public.

These issues have been identified by community groups including the local beach users, local surf clubs, boardriding clubs, scientists and the business community. Regular reports have been provided to government at 'consultative' meeting since 2004.

If the sole goal of the TRESBP was to improve coastal protection along the southern Gold Coast beaches, then the project must be judged a success, however, this is not the case. Project documentation, including legislation in both NSW and Qld clearly identify the importance of:

- the Kirra Point surfbreak, a premier surfbreak in the region;
- Kirra Reef as a local ecosystem; and
- the area to the local community and to the regional tourism economy.

Loss of surf quality

The Environmental Impact Statement for the TRESBP project states that "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 renowned surf sites." (Tweed River Entrance Sand Bypassing Project 1997, Technical Appendix III: Surf Impact Assessment, p.44).

The Environmental Management Plan Operations - Beach Management and Nourishment (Sub-Plan B.13) requires that the project develop monitoring methods to evaluate beach amenity and surf quality along southern Gold Coast beaches (2.3).

It was identified that the implications of non-compliance may be a reduction in surf quality, which may also affect local tourism.

The problems are...

"The loss of Kirra Point, a world famous surfbreak;

Smothering and significant degradation of Kirra Reef;

Increases of safety risks in bathing patrolled areas; and

A loss of general beach amenity and intimacy, which has impacted the local community and the tourist economy"

A key performance indicator for the project is that "the local community, beach users and surfers are satisfied with beach amenity and surf quality" (9.3). The process for corrective actions is also described in the operations plan.

Loss of environmental habitat

The Environmental Management Plan Operations - Beach Management and Nourishment (Sub-Plan B.14) – Kirra Reef Monitoring Plan states that the operation of the sand bypassing system must "not have an immediate adverse impact on the reef habitat due to direct sand placement on or close to the reef..."

The project is required to monitor changes in reef condition as a result of the operation of the sand bypassing system. The significant volumes of sand deposited by the dredge in the outer areas of Coolangatta Bay has modified wave refraction patterns and has lessened the impact of wave energy to scour out inshore sand shoals.

Who is responsible?

The sand bypass system is privately owned by McConnell Dowell Constructors (financed by the ANZ Bank) and operated by the Tweed River Entrance Sand Bypassing Company. After a period of 25-years of operation ownership and operation of the system is scheduled to be transferred to the two State governments.

The annual operating funds for the project are provided by the NSW Government (\$4 million p/a) or 50% and \$2 million each by the Qld Government and Gold Coast City Council. The project Working Group consists of officers from these three organisations as well as Tweed Shire Council and is ultimately responsible for this project.



Where have Governments failed?

By passing legislation that decreases recreational amenity

The Act and management plans are worded in a manner that allows the project to acknowledge environmental degradation, reduced recreational amenity and changes in beach safety conditions without actually doing anything about it.

Two convenient excuses to date have been that we just need to wait for the system to naturally return to a state of equilibrium or that the community should be happy with the fact that there are beaches. Informally, project staff have admitted that they permitted a significant oversupply of sand in the early years of operation in the hope that big storms would help drive the sand out of the Bay and further to the north. However, they have not gone on the public record or apologised for this gross miscalculation.

The report card over reflects our assessment of the issues in the areas of improved beach, surf and reef amenity, as well as beach protection and Tweed River navigation. Note that it is difficult to rate beach protection as there have been no significant storm events to test the sand nourishment campaigns since 2002.

By ignoring community requests

- The Queensland State Government has consistently refused to make public environmental reports into Kirra Reef – and to date has not acted on concerns about the loss of reef habitat.
- The Gold Coast City Council beach and surf monitoring group was disbanded in 2004 depriving the public of a say in the issues affecting beach amenity.
- The New South Wales and Queensland State Governments consistently ignored feedback from the community about the negative impacts on surf quality in Coolangatta Bay and calls for specific goals for recreational amenity to be developed.
- The Queensland State Government EPA has ignored its own coastal plan which states that regionally significant sites should be ‘maintained, protected and enhanced’ (2.1.10 and 2.3).
- Both Queensland and NSW State Governments have refused to make public the details of the 25-year contract.
- The New South Wales and Queensland Governments have completely ignored concerns about public safety, especially safe bathing.
- The Gold Coast City Council has failed to hold the State Government responsible for the death of the Kirra Reef marine ecosystem.

What can be done?

On the evidence at hand, it is apparent that the objectives of the project are not being fulfilled. Wide beach widths have been achieved at the expense of recreational amenity and ecosystem health. Better management of this artificial system can achieve good coastal security outcomes as well as improvements to the marine environment, public safety and recreational amenity.

What do we want?

Surfrider Foundation calls on government to review and revise the contract, legislation and operating plans governing this project.



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Outcomes

- *To ensure that coastal protection is achieved in harmony with the natural environment and recreational amenity.*
- *Better protection the coastal environment (eg through the construction of sand dunes and the return of Kirra Reef).*
- *Improved recreational amenity (eg by improving surf quality and beach safety for swimmers and surf lifesavers).*
- *Stronger involvement by key stakeholders in the management of the system.*

Proposed solutions

- *Expansion of the deposition areas for the dredge to ensure that sand is deposited further to the north/west of the existing grid system to promote a faster recovery of Kirra reef and beach systems.*
- *A budget for the construction a low impact supplementary outlet north of the Bay's apex - in the Nth Kirra / Bilinga area. This will improve sand distribution and coastal protection in this area and is also likely to create a new surfbreak in the vicinity of the outlet site.*
- *Dozers used to shift sand from the waters edge to the back of the beach, building up the dune system.*
- *Review of pumping volumes in accordance with climate changes.*
- *A process whereby management works with key stakeholders to develop a vision for the marine and coastal precinct.*



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Report Card

Student's Names : *NSW and Qld Governments, Tweed Shire and Gold Coast City Councils*

Subject : *Tweed River Entrance Sand Bypassing Project*

(A: excellent, to D: poor)*

Area	Level	Comment
Improved beach amenity	D	Kirra beach too wide No dunes for natural system to work effectively
Improved surf amenity	D	Kirra Surfriders Clubs have not been able to hold an event for 8 years. Reduced number of surf breaks at other points.
Improved reef amenity	D	Reef covered with sand - ecosystem degraded Divers, commercial and recreational fishers unable to use reef
Improved beach protection	B	Sufficient in theory Untested due to lack of cyclones or storm surges
Improved Tweed River Navigation	B	Sand bank still forms Depth suitable for navigation
Responsibility for solutions	D	Students fails to take responsibility Inability to communicate with each other

What can you do?

As a member of the community you can:

- Visit www.kirrapoint.org or www.surfrider.org.au and inform yourself about the issues. On the website, you can also sign a petition, download a draft letter and write to a politician or contact Gold Coast City Council.
- Participate in events and forums such as the Australia Day paddle out or the forum in early March. Details will be posted on the www.kirrapoint.org website.
- Provide us with photos and historical evidence of the amenity provided by Kirra and Kirra Reef.
- Assist with legal or technical advice.
- Talk about this issue with friends and encourage them to contact the project managers and local politicians.
- Contribute to small scale attempts to help recover Kirra such as:
 - Kirra dune and beach sculpting project – dozers are used to shift sand from the waters edge to the back of the beach, building up the dune system.
 - Participate in dune building and re-vegetation programs in conjunction with Gold Coast City Council.

Further information

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Disclaimer

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