

Tweed River Entrance Sand Bypassing Project

Letitia Spit to Kirra



Monthly Environmental Monitoring Summary

APRIL 2007

Department of Lands 




**Queensland
Government**
Environmental
Protection Agency

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY APRIL 2007**

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1. EXECUTIVE SUMMARY

This report provides a summary of pumping and dredging activities, as well as surf, beach, river, entrance and weather conditions for the southern Gold Coast Beaches, Duranbah, the Tweed River Entrance and Letitia Spit.

- The number of vessels that passed through the entrance in April was significantly higher than on average.
- Surf quality in April was generally average.
- There were no significant impacts on the Lower Tweed River tides. Recent tidal data is consistent with ocean tidal levels.
- The amount of sand moving north towards the Tweed River entrance was approximately half the April average.

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2. INTRODUCTION

This document provides a summary of sand quantities delivered by the system, as well as surf, beach, river, entrance and weather conditions for the southern Gold Coast Beaches, Duranbah, the Tweed River Entrance and Letitia Spit for ongoing monitoring purposes.

Information has been sourced from TRESBP monitoring programs, GCCC coastal reports, media coverage, Surfing NSW and Surfing Queensland and the following World Wide Websites:

- www.burleighcam.com.au
- www.bom.gov.au
- www.coastalwatch.com.au
- www.surfgaustalia.com.au
- www.swellnet.com.au
- www.tracksmag.com



3. PUMPING AND DREDGING ACTIVITIES

Sand Delivery for APRIL 2007

| | PUMPED | DREDGED | APRIL 2007 TOTAL DELIVERY |
|-----------------------------|--------------------|---------|------------------------------------|
| Location | Snapper Rocks East | | |
| Amount (m ³) | 37,505 | 0 | 37,505 |

Total Sand Delivery This Year (January to April 2007)

| | PUMPED | DREDGED | 2007 TOTAL DELIVERY |
|-----------------------------|---------|---------|---------------------------|
| Amount (m ³) | 175,446 | 0 | 175,446 |

Total Sand Delivery to Date by the Stage 2 Permanent Sand Bypassing System (May 2000 to April 2007)

| | PUMPED | DREDGED | TOTAL DELIVERY STAGE 2 |
|-----------------------------|-----------|-----------|------------------------------|
| Amount (m ³) | 4,033,287 | 1,862,793 | 5,896,080 |

4. TWEED RIVER ENTRANCE CONDITIONS

VOLUNTEER VIDEO MONITORING LOG

The following Entrance Condition observations for April 2007 were recorded by volunteers Mr Brian Mason and Mr Robert Ford:

| Date | Observations |
|--------------------------|--|
| 13 April Mid morning | Cloudy. Choppy entrance conditions. Waves breaking seaward of entrance. |
| 20 April Late morning | Fine weather. Calm crossing conditions. No breaks in entrance. Small craft entering. |
| 27 April Morning | Overcast. Good crossing conditions. |

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TWEED RIVER ENTRANCE CONDITIONS CONTINUED

VOLUNTEER MARINE RESCUE REPORTS

Volunteer Marine Rescue Pt Danger (VMR) has been monitoring daily entrance conditions on behalf of the TRESBP since 20 January 2002, monitoring results for April 2007 are presented below.

The navigation ratings from 1–5 are as follows:

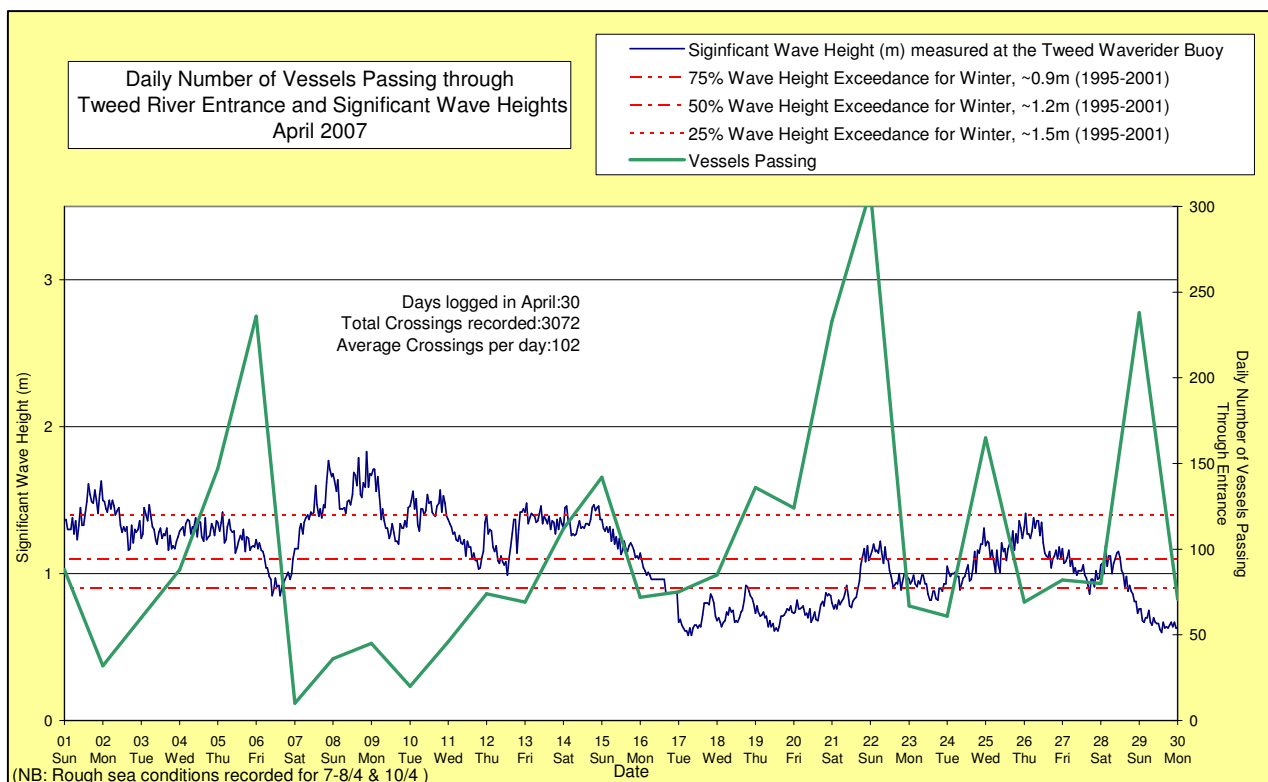
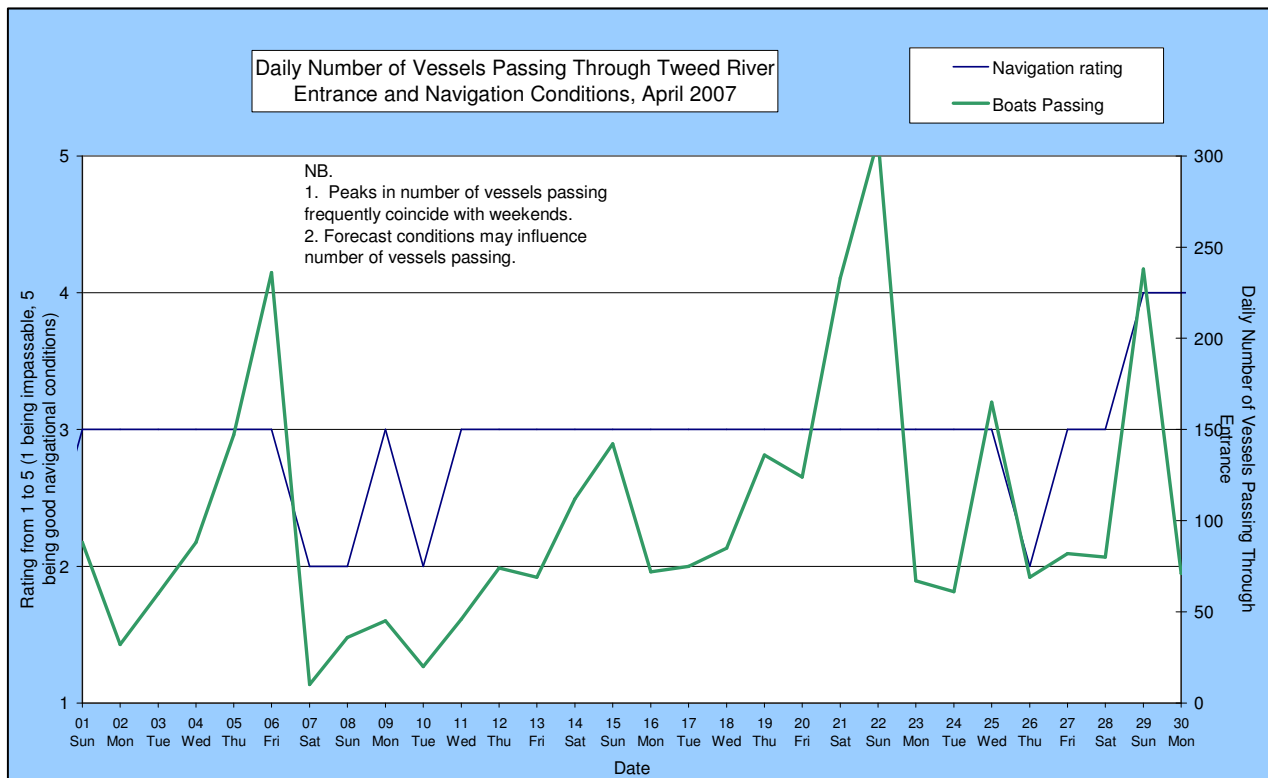
- 1 – Impassable 2 – Difficulty encountered 3 – Some difficulty encountered
4 – Relatively good crossing 5 – Good conditions

☐ – Weekends and public holidays

| Date | Entrance Conditions | Navigation Rating Impassable-----Good | | | | | Number of Boats |
|------|---------------------|--|---|---|---|---|-----------------|
| | | 1 | 2 | 3 | 4 | 5 | |
| 1 | Moderate | | | | | | 88 |
| 2 | Moderate | | | | | | 32 |
| 3 | Moderate | | | | | | 60 |
| 4 | Moderate | | | | | | 88 |
| 5 | Moderate | | | | | | 147 |
| 6 | Moderate | | | | | | 236 |
| 7 | Rough | | | | | | 10 |
| 8 | Rough | | | | | | 36 |
| 9 | Moderate | | | | | | 45 |
| 10 | Rough | | | | | | 20 |
| 11 | Moderate | | | | | | 46 |
| 12 | Moderate | | | | | | 74 |
| 13 | Moderate | | | | | | 69 |
| 14 | Moderate | | | | | | 112 |
| 15 | Moderate | | | | | | 142 |
| 16 | Moderate | | | | | | 72 |
| 17 | Moderate | | | | | | 75 |
| 18 | Moderate | | | | | | 85 |
| 19 | Moderate | | | | | | 136 |
| 20 | Moderate | | | | | | 124 |
| 21 | Moderate | | | | | | 233 |
| 22 | Moderate | | | | | | 309 |
| 23 | Moderate | | | | | | 67 |
| 24 | Moderate | | | | | | 61 |
| 25 | Moderate | | | | | | 165 |
| 26 | Moderate to Rough | | | | | | 69 |
| 27 | Moderate | | | | | | 82 |
| 28 | Moderate | | | | | | 80 |
| 29 | Slight | | | | | | 238 |
| 30 | Slight | | | | | | 71 |

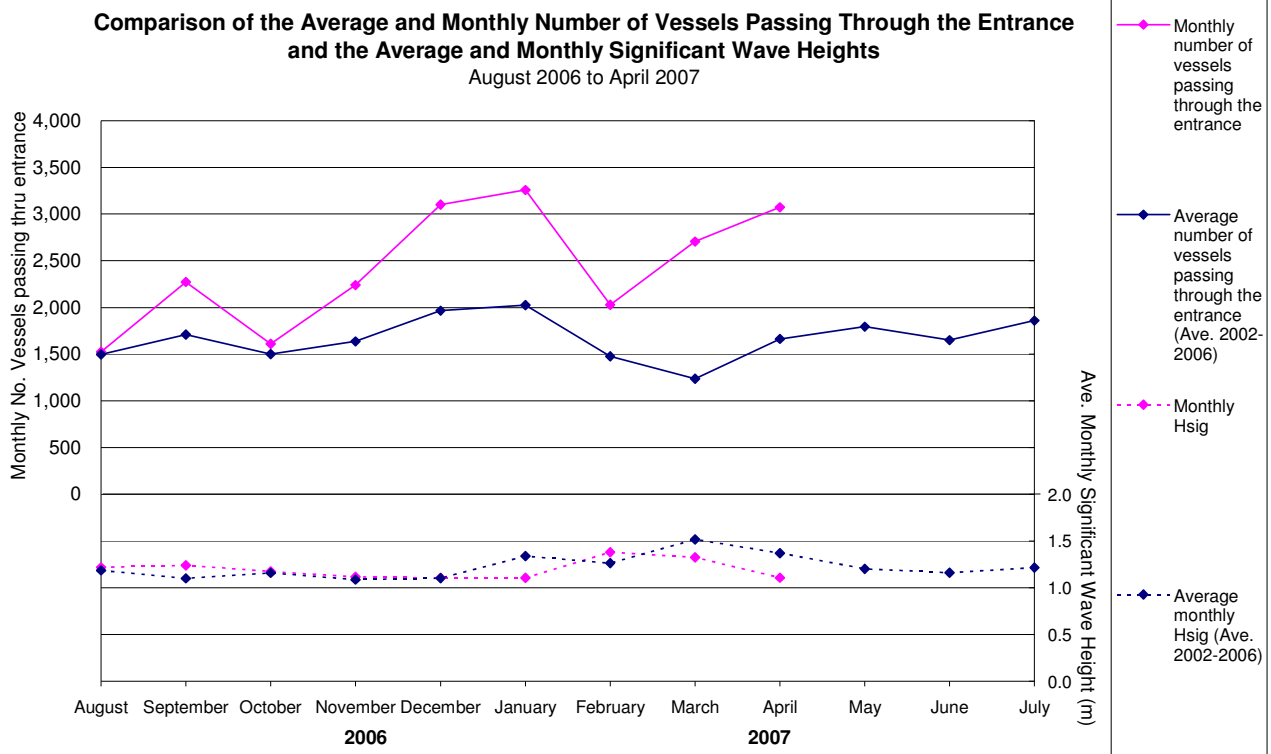
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TWEED RIVER ENTRANCE CONDITIONS CONTINUED



TWEED RIVER ENTRANCE SAND BYPASSING PROJECT LETITIA SPIT TO KIRRA MONTHLY ENVIRONMENTAL MONITORING SUMMARY APRIL 2007

TWEED RIVER ENTRANCE CONDITIONS CONTINUED



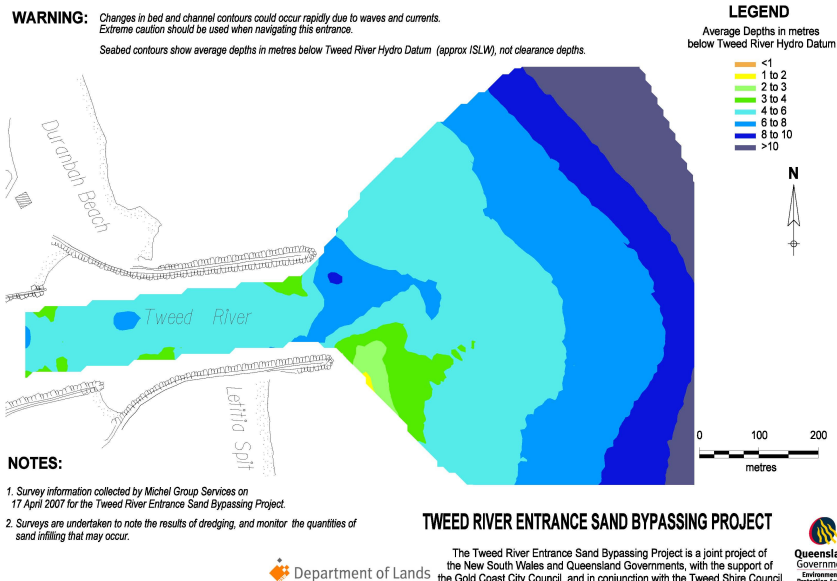
ENTRANCE SEABED MAP

A survey of the Tweed Entrance was undertaken by Michel Group Services on behalf of the TRESBP on 17 April 2007. A Tweed River Entrance Seabed Map based on the results of the survey is currently available on the project's website and is accessible at the following address:

<http://www.tweedsandbypass.nsw.gov.au/surveys.html>

This map has also been made available to the public through NSW Maritime Authority, Tweed Heads.

TWEED RIVER ENTRANCE AS AT 17 APRIL 2007



**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
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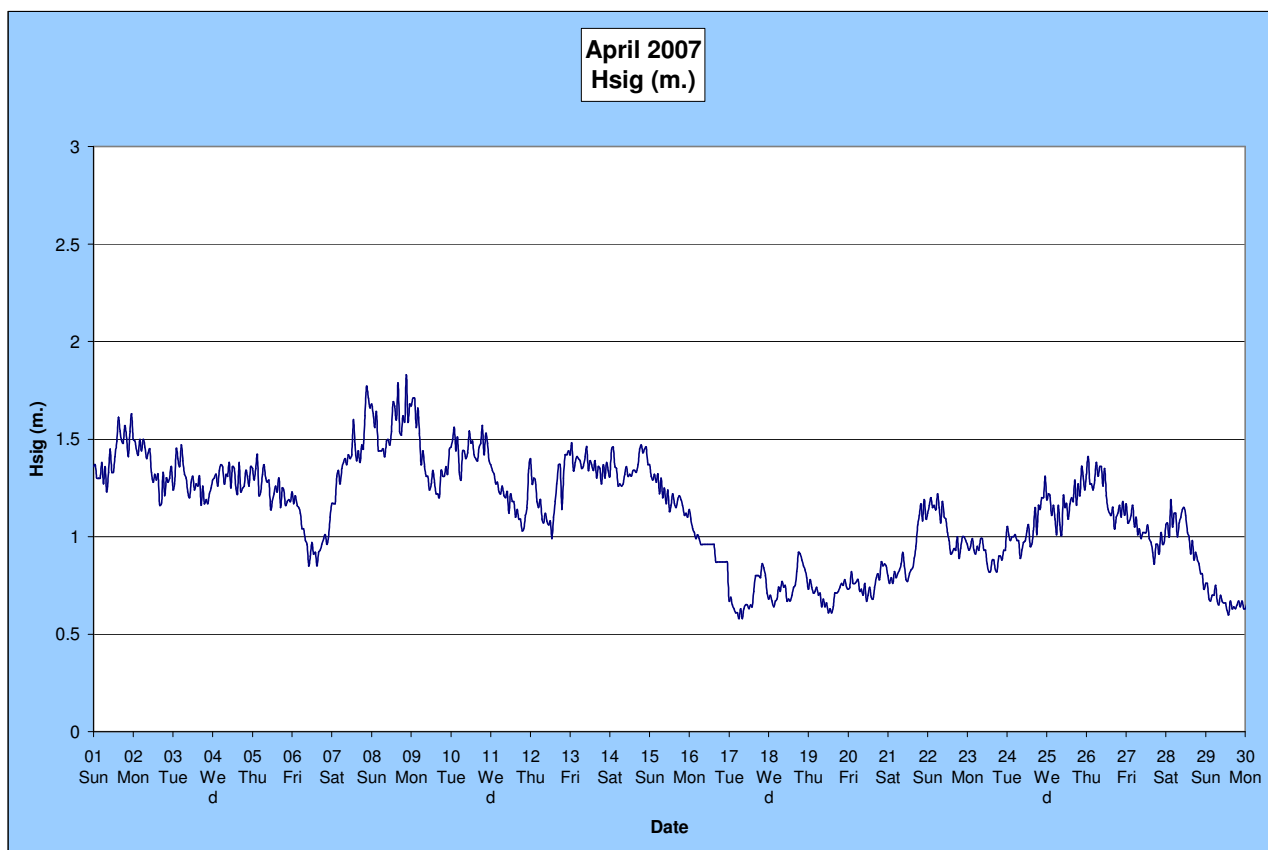
5. SURF SUMMARY

Waves of between 0.5 – 1.5 m from the ESE dominated surf conditions on the Southern Gold Coast in April 2007. Winds varied over the month where the most predominant wind conditions were SE and SW at 10-25 Knots.

Readings from the Tweed Waverider Buoy showed a minimum significant wave height of 0.41m on 30 April and a maximum significant wave height of 1.83m on 8 April. There were 15 recorded days when waves dropped below 1.0m and 0 days when waves were above 2.0m.

Surf quality in April was generally average, with better conditions occurring in the first half of the month under slightly higher than average wave conditions.

Source: Tweed and Brisbane Waverider Buoy, RealSurf, Swellnet, Burleighcam, Coastalwatch, BoM.



A link to data recorded continuously at the Tweed Waverider Buoy is available at:

www.epa.qld.gov.au/sandbypass/

SURF & SURF LIFE SAVING EVENTS

Events in April 2007

-

Upcoming events in May 2007

9-13 May - Malfunction Longboard (Rainbow Bay/Coolangatta)

Source: Surfing Australia, Surf Life Saving Australia & Surf Life Saving Queensland

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SURF SUMMARY CONTINUED

VOLUNTEER SURF QUALITY OBSERVATIONS

The following observations for April 2007 were made by volunteers Mr Brian Mason and Mr Robert Ford on behalf of the TRESBP.

| Date | Duranbah | Frog's Beach / Snapper Rocks | Kirra Point |
|--------------------------|---|--|--|
| 13 April Mid morning | 2 -2.5m ENE swell, plunging waves. 103 surfers present. | 92 surfers present. Large longshore transport occurring. No offshore bar apparent. | 1 – 1.5m spilling waves. 40 surfers present. No longshore transport occurring. Offshore bar present. |
| 20 April Late morning | 1 – 1.5m ENE swell. 62 surfers present. | 20 surfers present. Small northward longshore transport occurring. No offshore bar apparent. | <1m waves. 3 surfers present. No longshore transport occurring. Offshore bar present. |
| 27 April Morning | 1 – 1.5m ENE swell, plunging waves. 55 surfers present. | 65 surfers present. Average northward longshore transport occurring. No offshore bar apparent. | <1m spilling waves. 0 surfers present. No longshore transport occurring. Offshore bar present. |

6. MEDIA COVERAGE AND COMMUNITY FEEDBACK

MEDIA COVERAGE

16 April 2007, Daily News, "Tweed bar rescue"

"Two men had a lucky escape yesterday when their small boat was swamped by a large wave and capsized near the Tweed Bar."

16 April 2007, Daily News, Editorial

"Every weekend, quite a few boats venture across the Tweed bar. Despite the best efforts of the Port Frederick dredge over more than a few years, and lately the sand bypass pumping system, the bar can still be a very dangerous place indeed."

18 April 2007, Gold Coast Bulletin, "Rip-roaring beaches"

"A Sydney academic has been criticised for saying some Gold Coast beaches are dangerous. Releasing a 14-year old study into Australian beaches Professor Andrew Short said the region produced some of Australia's worst rips."

19 April 2007, Gold Coast Bulletin, "Saving our beaches"

"Burleigh and Snapper Rocks should be declared surfing 'parks' or reserves to protect Australia's iconic beaches from increased use over the next decade, experts have told the International Coastal Symposium on the Gold Coast."

25 April 2007, Reuters, "Australian perfect wave reveals surfing dark heart"

"Australia's tubing Superbank is arguably the beach break wave in the world, a man-made wave that can run for kilometres, but this surfer's paradise has revealed a dark heart of surfing. When the ocean produces lines of barrelling waves, some 500 surfers from around the world can litter the long line-up, hungry for the perfect wave... can be so crowded that blood has been spilt, by accident and in anger."

28-29 April 2007, Gold Coast Bulletin, "Kirra turf's wave of Brissie buyers"

"Brisbanites are snapping up Kirra units, often sight unseen, with some real estate agents claiming the beachside suburb's 'new Noosa' tag is feeding the frenzy."

30 April 2007, Gold Coast Bulletin, "World joins fight to give Kirra a break"

"The battle to bring back Kirra is hitting the world headlines. International news agency Reuters and The Times in London have published stories about the Coast's southern breaks, which has pleased Kirra crusader Wayne "Rabbit" Bartholomew."

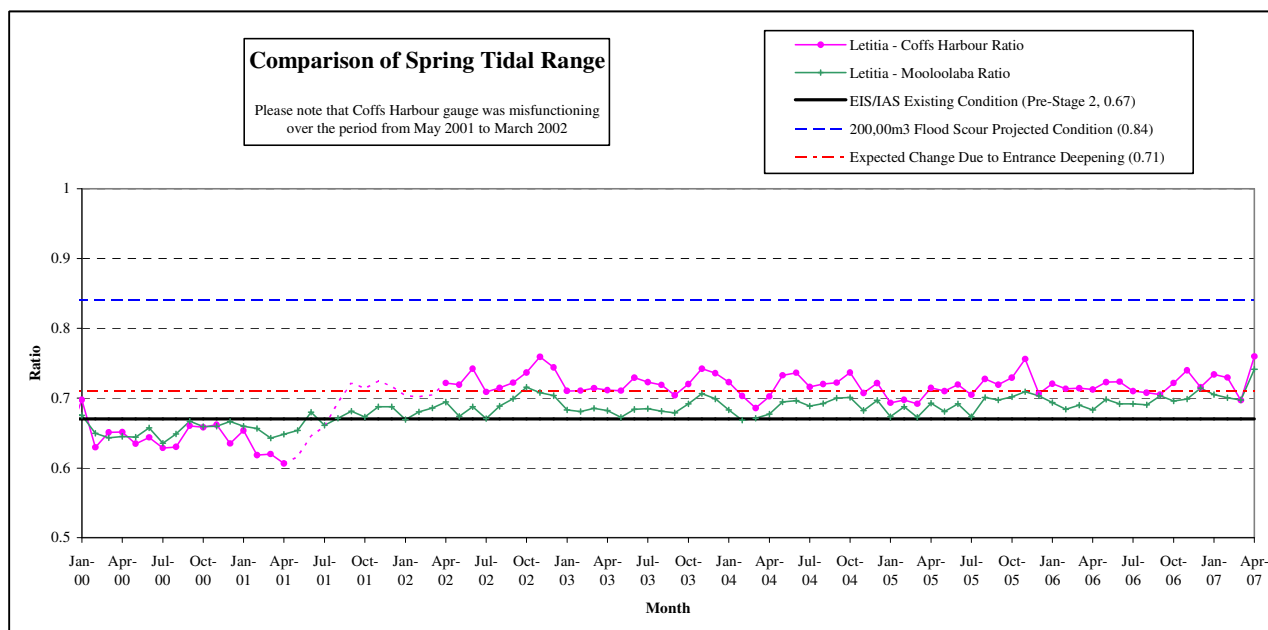
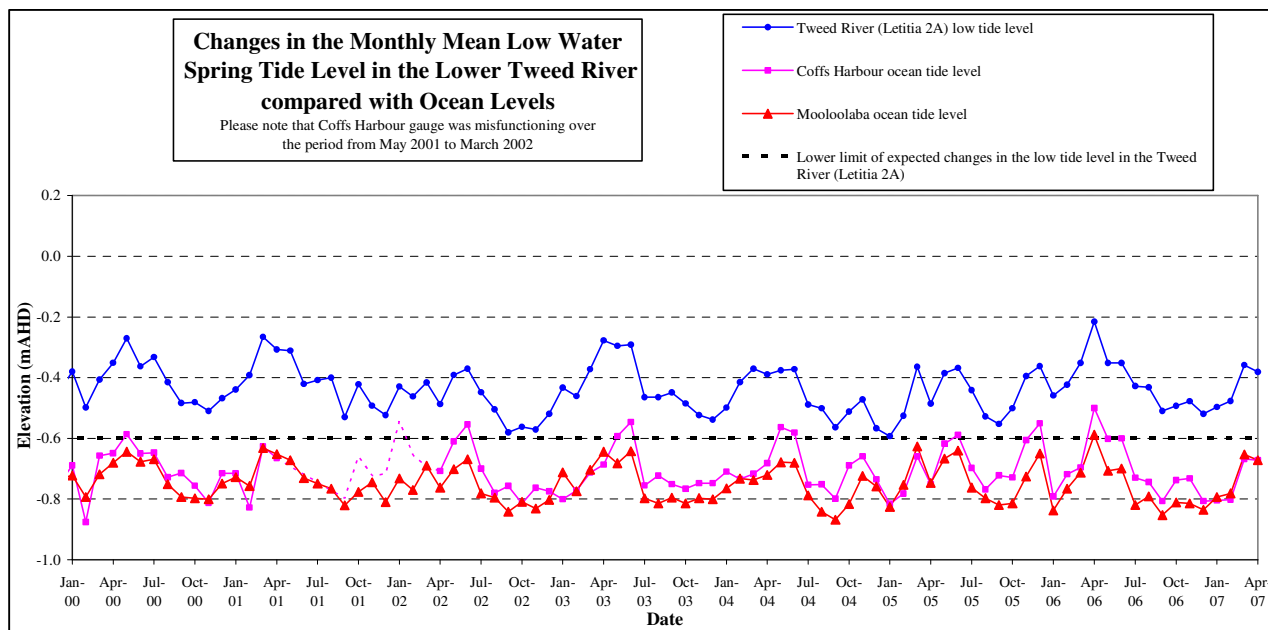
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7. TWEED RIVER LOWER ESTUARY TIDAL CONDITIONS

The Mean Low Water Spring (MLWS) tide level in the lower Tweed River decreased to -0.381 m AHD in April 2007.

The Letitia 2A tidal data for February mirrored the Mooloolaba tidal trends indicating that the TRESBP has not had a significant impact on Lower Tweed River tidal range to date.

Note: Letitia 2A tidal gauge was not working for part of April.

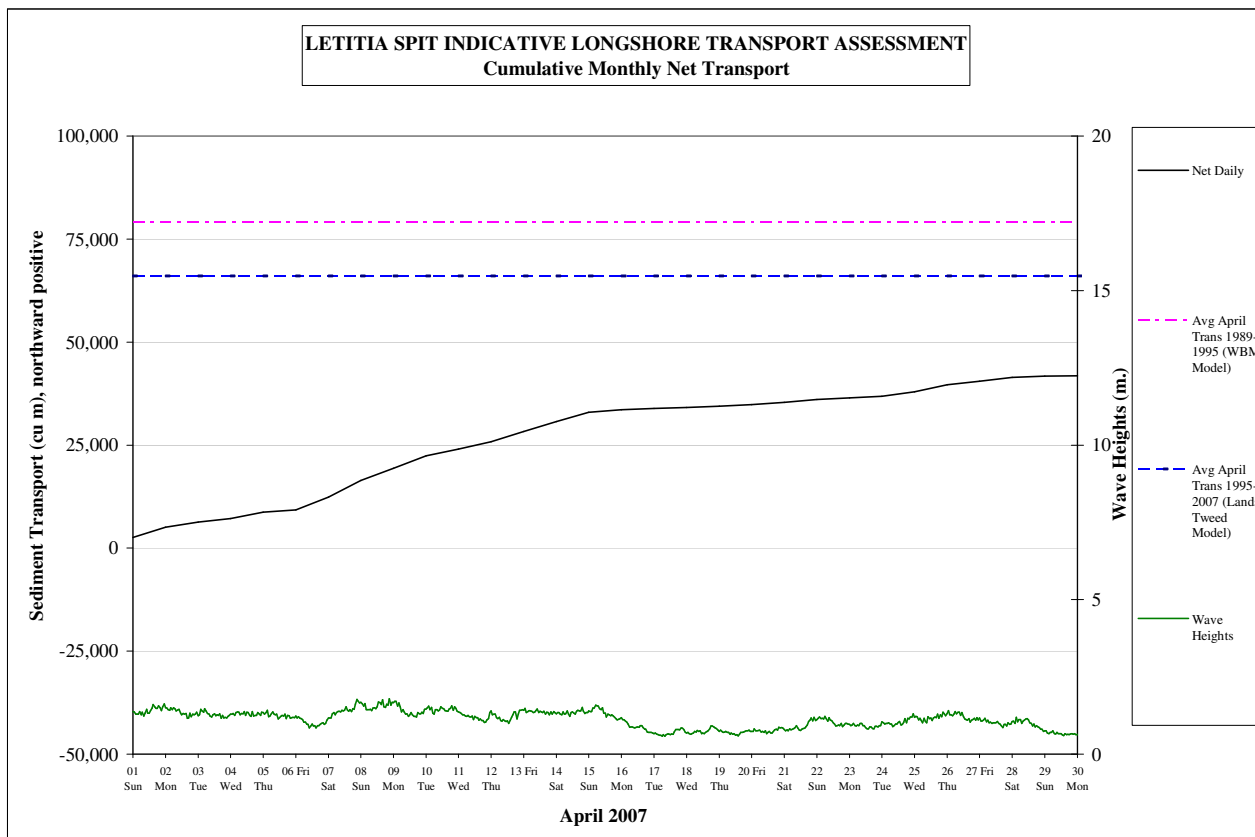


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8. INDICATIVE LONGSHORE SAND TRANSPORT

The longshore sand transport information presented in the graph below is based on a simplified sediment transport model and should only be used as an indicator of the actual sand transport quantities for the month.

It is estimated that during April 2007, 42,000m³ of sand was moved north towards the Tweed River entrance by natural processes. This is approximately half the modelled average sand transport quantity for the month of April.



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9. ARGUS COASTAL IMAGING SYSTEM

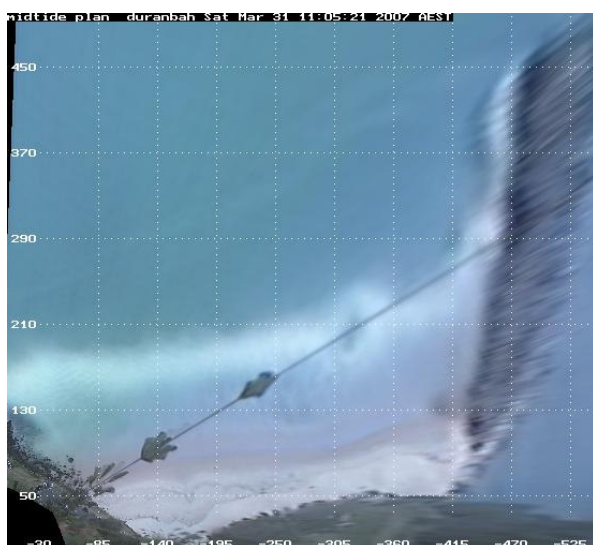
The University of New South Wales is monitoring Letitia Spit to North Kirra for the project using an ARGUS coastal imaging system. Images are available on the internet at the following address:

<http://www.wrl.unsw.edu.au/coastalimaging/public/tweed/index.html>

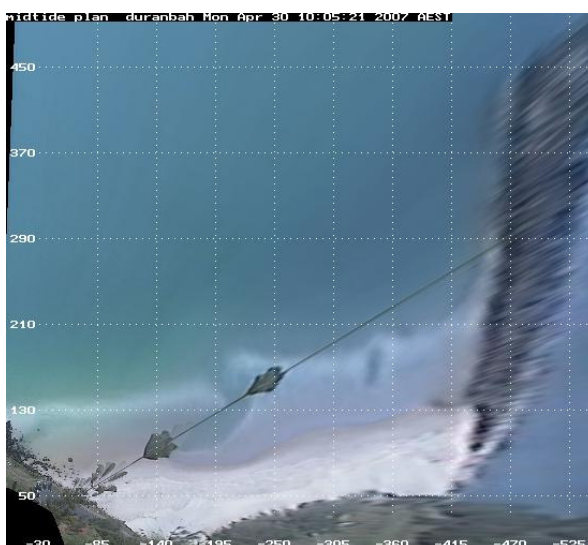
These images are updated hourly and all past photos can be accessed in the archives.

Merged and rectified images taken at mid tide for each of the locations are shown below. Refer to Appendix A for beach width and shoreline analysis for each of the beaches.

DURANBAH BEACH

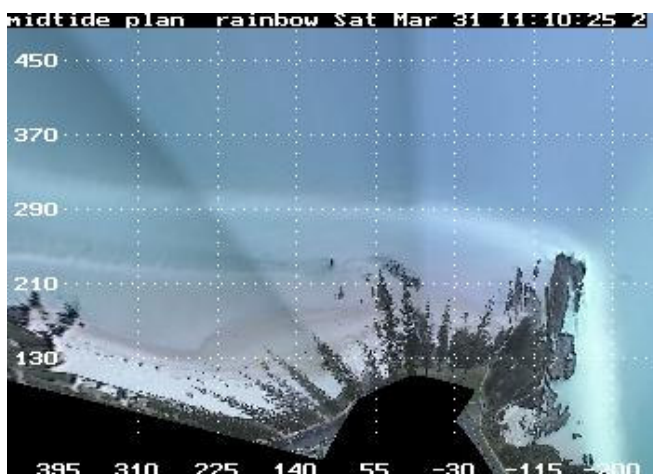


31 March 2007

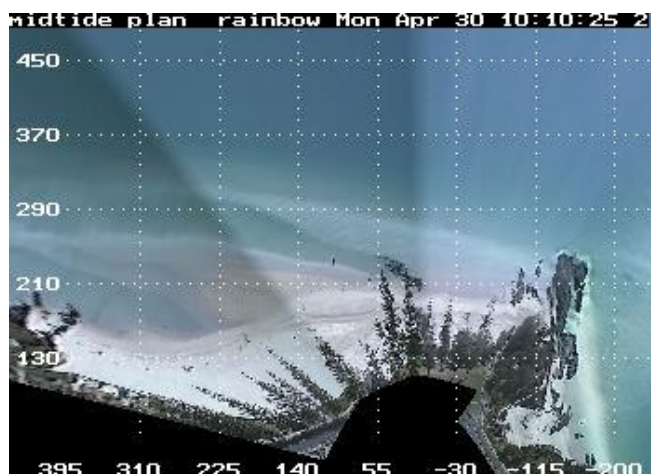


30 April 2007

RAINBOW BAY



31 March 2007

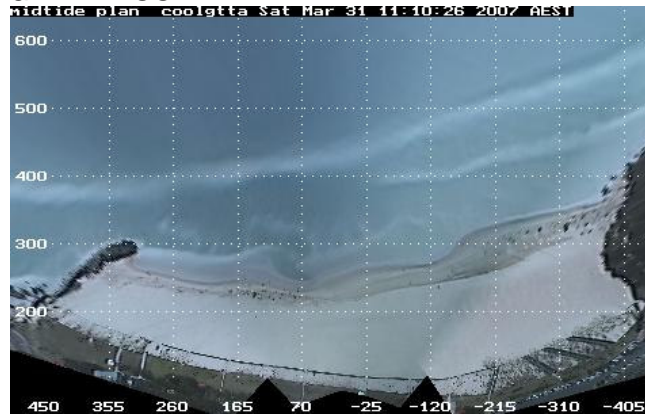


30 April 2007

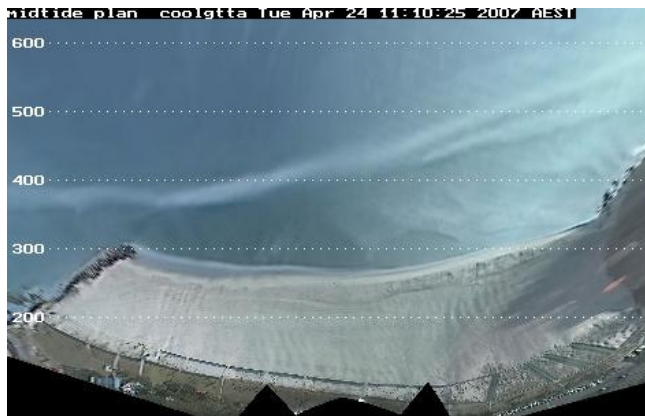
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ARGUS COASTAL IMAGING SYSTEM CONTINUED

COOLANGATTA - GREENMOUNT

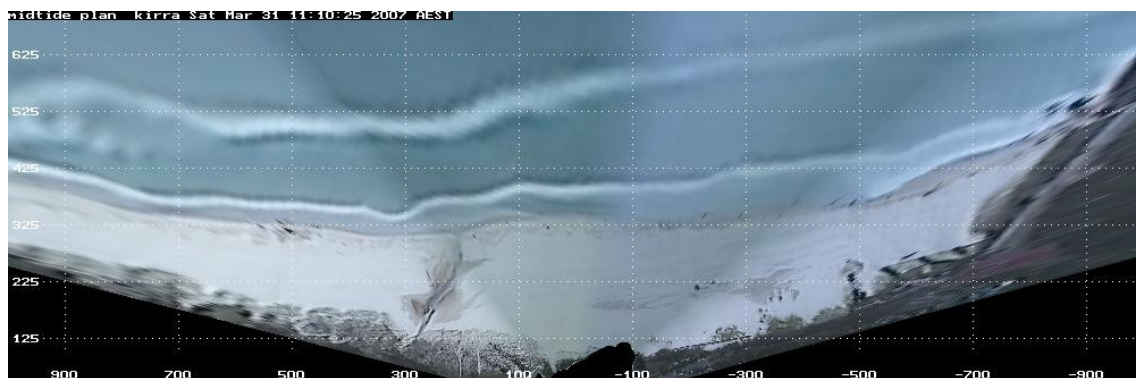


31 March 2007

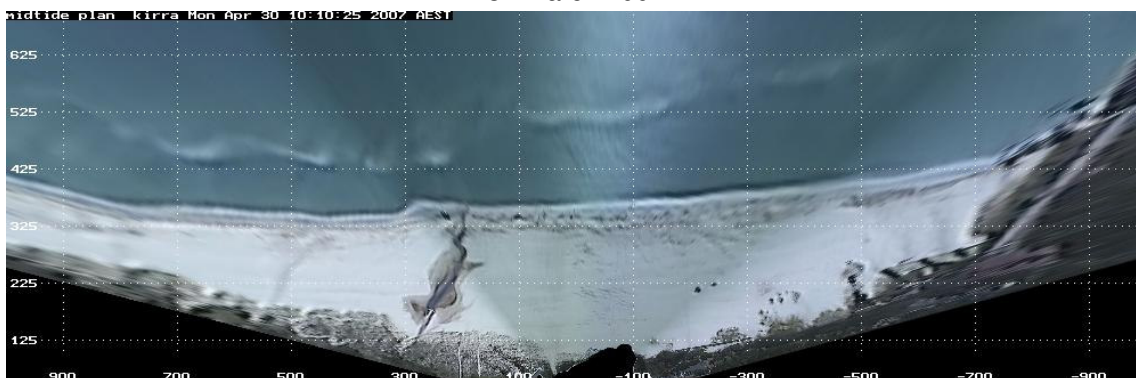


24 April 2007

NORTH KIRRA - KIRRA



31 March 2007



30 April 2007

10. CONTACT DETAILS

This report was completed by Natalie Crawford.

For more information regarding the Tweed River Entrance Sand Bypassing Project please refer to the following web addresses:

www.tweedsandbypass.nsw.gov.au

www.epa.qld.gov.au/sandbypass/

www.wrl.unsw.edu.au/coastalimaging/public/tweed/index.html

For all enquires regarding this report, please contact Natalie at any of the addresses below:

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Environmental Engineer

Tweed River Entrance Sand Bypassing Project

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