

Tweed River Entrance Sand Bypassing Project

Letitia Spit to Kirra



Monthly Environmental Monitoring Summary

JULY 2007

Department of Lands 




**Queensland
Government**
Environmental
Protection Agency

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

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	1
2. INTRODUCTION	2
3. PUMPING AND DREDGING ACTIVITIES	2
4. TWEED RIVER ENTRANCE CONDITIONS.....	3
5. SURF SUMMARY.....	7
6. BEACH CONDITIONS.....	10
7. MEDIA COVERAGE AND COMMUNITY FEEDBACK	11
8. TWEED RIVER LOWER ESTUARY TIDAL CONDITIONS	12
9. INDICATIVE LONGSHORE SAND TRANSPORT	13
10. ARGUS COASTAL IMAGING SYSTEM	14

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 July was significantly higher than on average.
- Surf quality in July was generally average.
- The amount of sand moving north towards the Tweed River entrance was approximately 65% of the July average.

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

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.surfingaustralia.com.au
- www.swellnet.com.au
- www.tracksmag.com



3. PUMPING AND DREDGING ACTIVITIES

Sand Delivery for JULY 2007

	PUMPED	DREDGED	JULY 2007 TOTAL DELIVERY
Location	Snapper Rocks East		
Amount (m ³)	70,689	0	70,689

Total Sand Delivery This Year (January to July 2007)

	PUMPED	DREDGED	2007 TOTAL DELIVERY
Amount (m ³)	347,482	0	347,482

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

	PUMPED	DREDGED	TOTAL DELIVERY STAGE 2
Amount (m ³)	4,205,323	1,862,793	6,068,116

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

4. TWEED RIVER ENTRANCE CONDITIONS

VOLUNTEER VIDEO MONITORING LOG

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

Date	Observations
6 July Late Morning	Fine weather. Calm crossing conditions.
13 July Mid Morning	Fine weather. Some wave break outside entrance.
20 July Afternoon	Some waves break outside the walls and swells enter the seaway.
27 July Mid Morning	Fine weather. Fair crossing conditions.

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

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 July 2007 are presented below.

The navigation ratings from 1–5 are as follows:

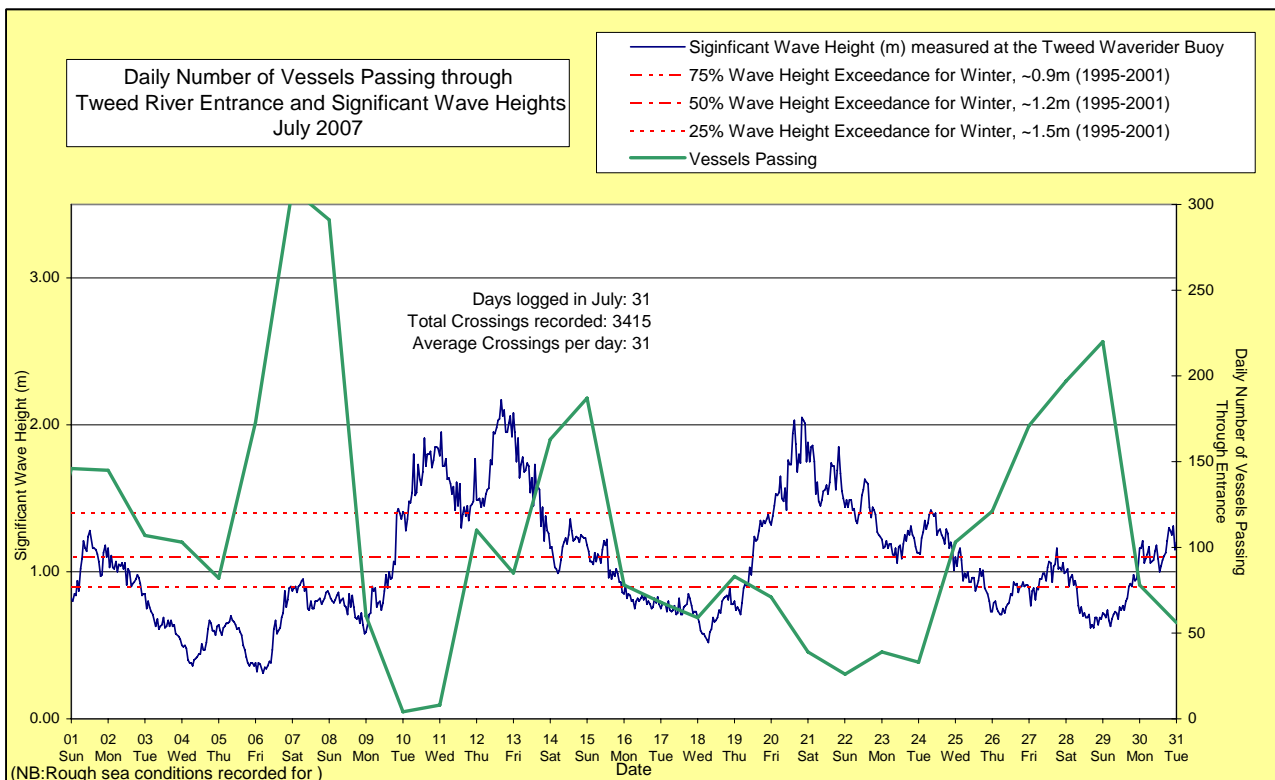
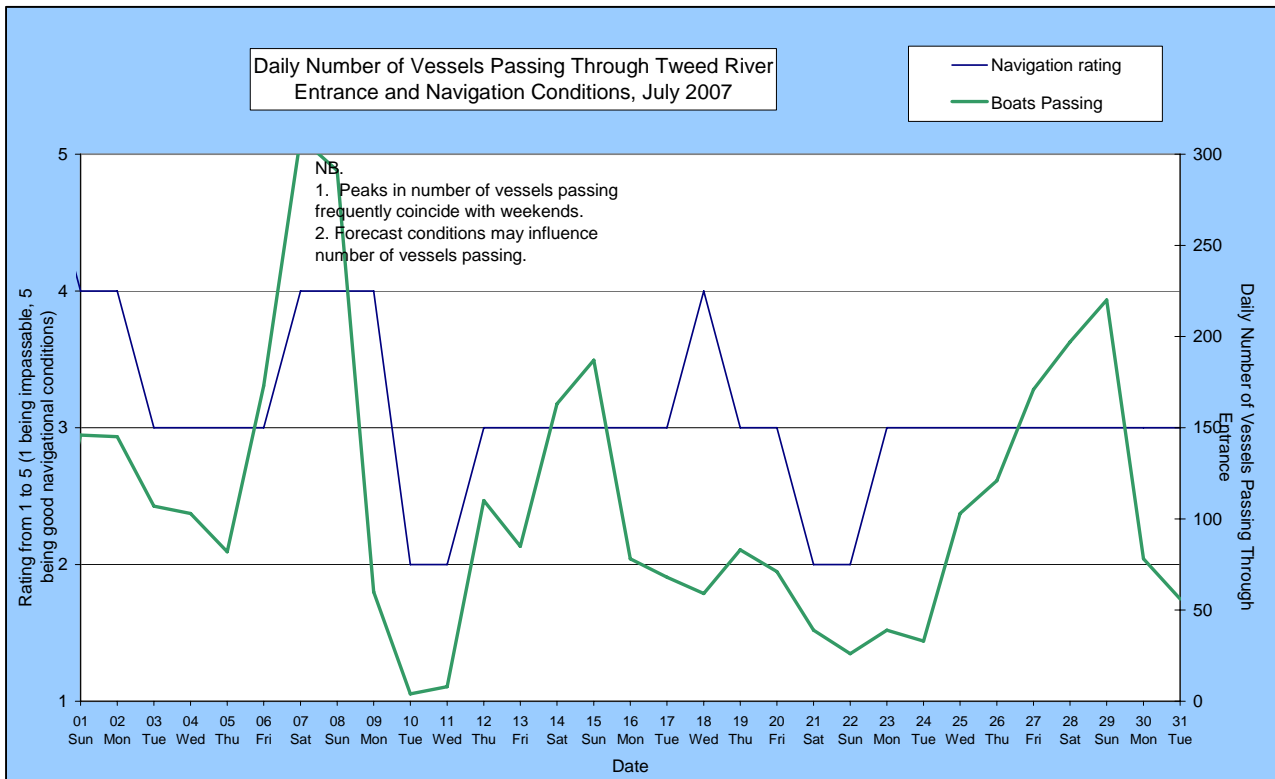
- 1 – Impassable 2 – Difficulty encountered 3 – Some difficulty encountered
4 – Relatively good crossing 5 – Good conditions

☐ – Weekends and public holidays

Date	Entrance Conditions	Navigation Rating Impassable-----Good					Number of Boats
		1	2	3	4	5	
1	Slight						146
2	Moderate						145
3	Moderate						107
4	Moderate						103
5	Moderate						82
6	Moderate						173
7	Slight						309
8	Moderate						291
9	Moderate						60
10	Rough						4
11	Rough						8
12	Rough/ Moderate						110
13	Moderate						85
14	Moderate						163
15	Moderate						187
16	Moderate						78
17	Moderate						68
18	Slight						59
19	Moderate						83
20	Moderate						71
21	Rough						39
22	Rough						26
23	Moderate						39
24	Moderate						33
25	Moderate						103
26	Moderate						121
27	Moderate						171
28	Moderate						197
29	Moderate						220
30	Moderate						78
31	Moderate						56

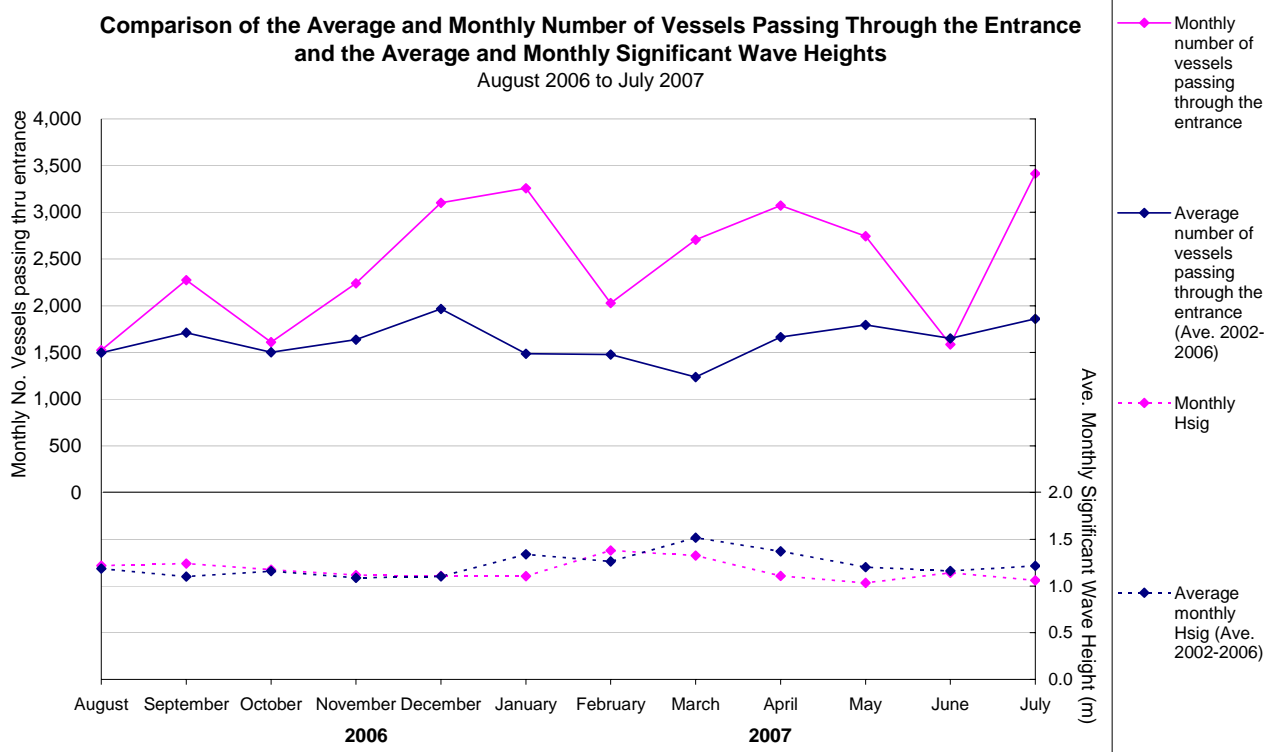
**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JULY 2007**

TWEED RIVER ENTRANCE CONDITIONS CONTINUED



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

TWEED RIVER ENTRANCE CONDITIONS CONTINUED



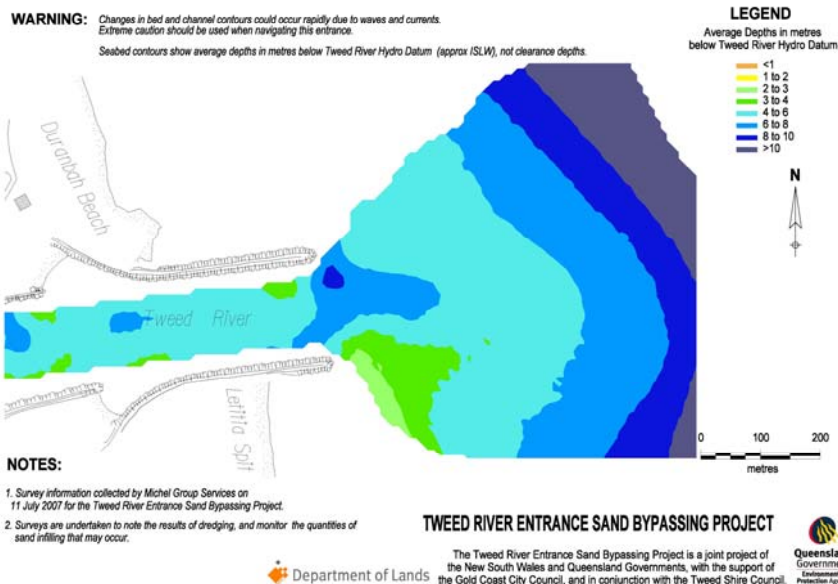
ENTRANCE SEABED MAP

A survey of the Tweed Entrance was undertaken by Michel Group Services on behalf of the TRESBP on 11 July 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 11 JULY 2007



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

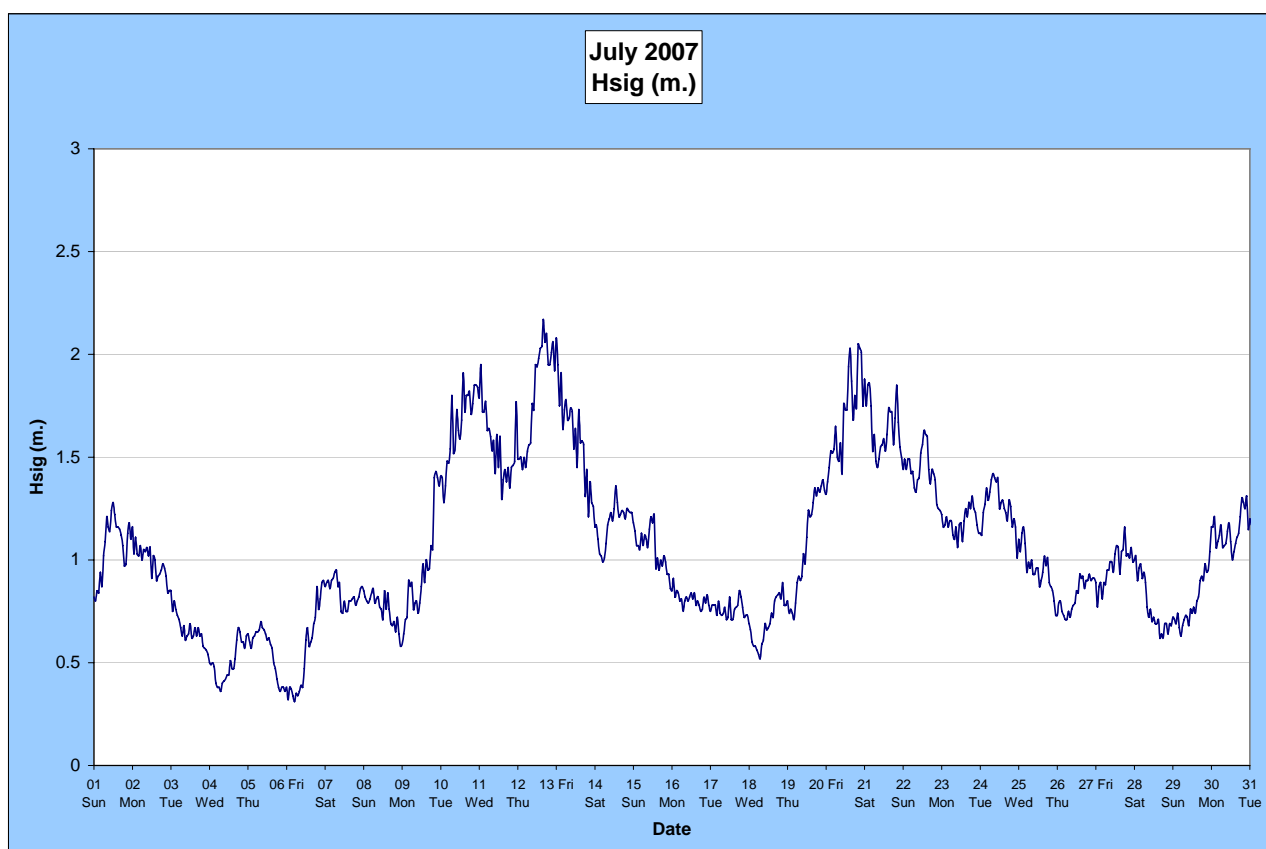
5. SURF SUMMARY

Waves of between 0.5 – 1.5 m from the SE dominated surf conditions on the Southern Gold Coast in July 2007. Winds varied over the month where the most predominant wind conditions were NW and SW at 10-30 Knots.

Readings from the Tweed Waverider Buoy showed a minimum significant wave height of 0.31m on 6 July and a maximum significant wave height of 2.17m on 12 July. There were 21 recorded days when waves dropped below 1.0m and 3 days when waves were above 2.0m.

Surf quality in July was generally average, with better conditions occurring in the middle 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 July 2007

30 June – 4 July - Billabong Occy's Grom Comp (Duranbah Beach)

14-15 July – Billabong Winter Classic (Duranbah Beach)

Upcoming events in August 2007

-

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

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

SURF SUMMARY CONTINUED

VOLUNTEER SURF QUALITY OBSERVATIONS

The following observations for July 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
6 July Late Morning	1 – 1.5m SE swell, plunging waves. 28 surfers present.	13 surfers present. No longshore transport occurring. Offshore bar present.	Flat to <1m spilling waves. 1 surfer present. No longshore transport occurring. Fairly flat surfing condition.
13 July Mid Morning	1.5 – 2m NE swell, plunging waves. 13 surfers present. Erosion scarp on beach about 1.5m. Waves run up almost to road at northern end. Lot of sand being stirred up and some longshore drift north.	103 surfers present. Large longshore transport occurring. No offshore bar apparent.	1 – 1.5m plunging waves. 0 surfers present. No longshore transport occurring. Offshore bar present.
20 July Afternoon	1.5 – 2m ENE swell, plunging waves. 8 surfers present. Lot of sand being stirred up along beach and longshore drift present.	91 surfers present. Large longshore transport occurring. No offshore bar apparent.	Flat to <1m spilling waves. 2 surfers present. No longshore transport occurring.
27 July Mid Morning	1 – 1.5m ENE swell, plunging waves. 39 surfers present.	75 surfers present. Large longshore transport occurring. No offshore bar apparent.	1 – 1.5m plunging and spilling waves. 1 surfer present. Average longshore transport occurring.

6. BEACH CONDITIONS

PHOTOGRAPHS OF BEACH CONDITIONS

DURANBAH



27 July 2007

RAINBOW BAY



View from Greenmount, 27 July 2007

COOLANGATTA



View from Greenmount , 27 July 2007



View from Kirra, 27 July 2007

KIRRA



27 July 2007



27 July 2007

Source: Department of Lands

7. MEDIA COVERAGE AND COMMUNITY FEEDBACK

MEDIA COVERAGE

2 July 2007, Surfing Australia, "Billabong Occy's Grom Comp"

"A picture perfect replica of the winter conditions experienced every day of competition so far, the border beach of Duranbah on the Gold Coast turned on it's reputation as the country's most consistent break"

15 July 2007, Surfing Australia, "Billabong Winter Classic"

"(Gold Coast- 14th July, 2007): The winter surfing action continues to fire in Queensland with day one of the Billabong Winter Classic commencing in epic 4-5 ft barrelling waves at Duranbah today."

"(Gold Coast- 15th July, 2007)...A large groundswell that has impacted southeast Queensland all week continued to deliver superb surfing conditions for the final day of competition."

18 July 2007, Daily News, "Engineers got the river walls wrong"

"Mr Sawden reckons he has a relatively simple solution to the sand build-up which has clogged Coolangatta Bay, killed the world famous Kirra 'barrel' and created a beach desert."

18 July 2007, Daily News, "Realignment may be investigated"

"Coolangatta Gold Coast City Councillor Chris Robbins said she did not believe Ed Sawden's suggestion about re-angling the Tweed River rock walls had been considered as a coastal management solution."

21-22 July 2007, Weekend Bulletin, "Wicked winter waves"

"Snapper Rocks switched on a sensational swell yesterday, with some sets peaking at 2.5m."

28 July 2007, Daily News, "Don't tinker with the north wall"

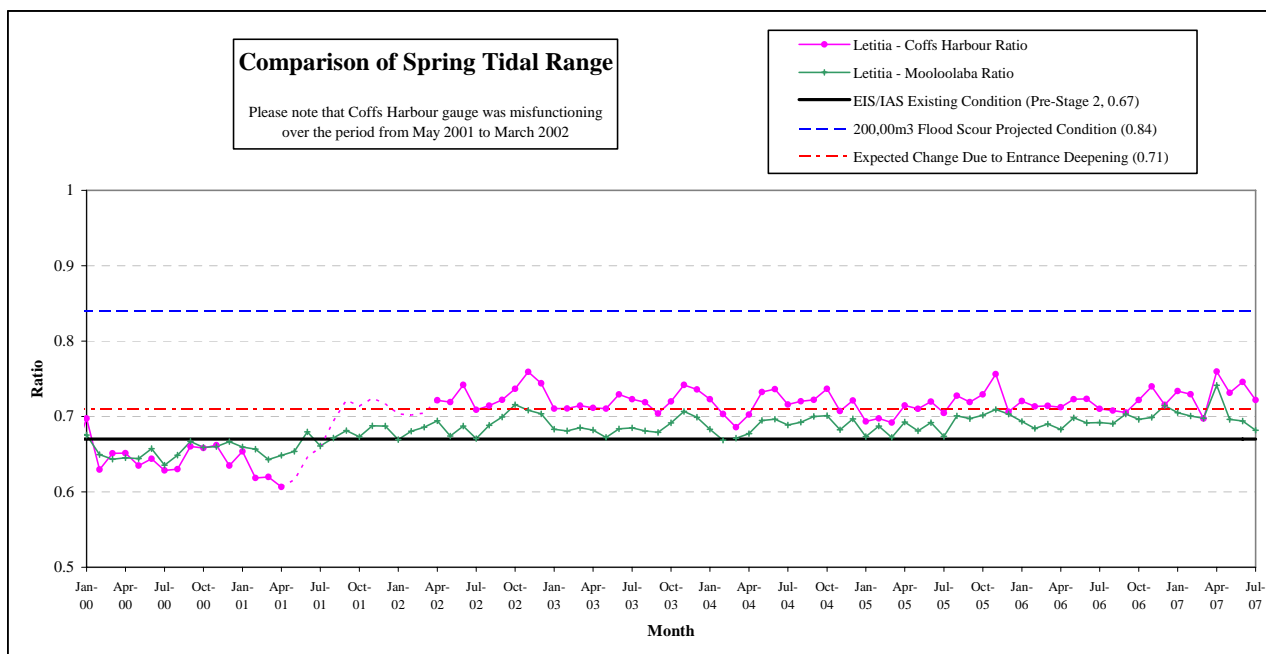
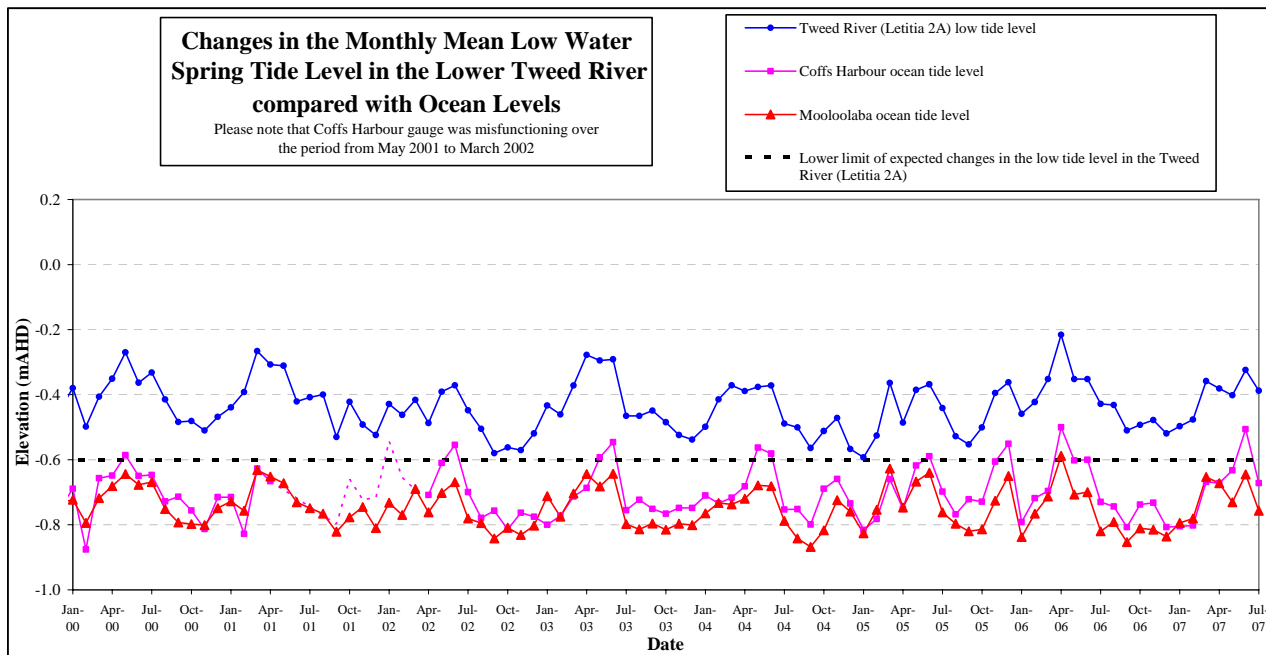
"I agree with Ed Sawden (DN 18 July 2007) on his reasoning about the Tweed River bar problems... Do not alter the north wall at all."

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

8. TWEED RIVER LOWER ESTUARY TIDAL CONDITIONS

The Mean Low Water Spring (MLWS) tide level in the lower Tweed River decreased to -0.388 m AHD in July 2007.

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

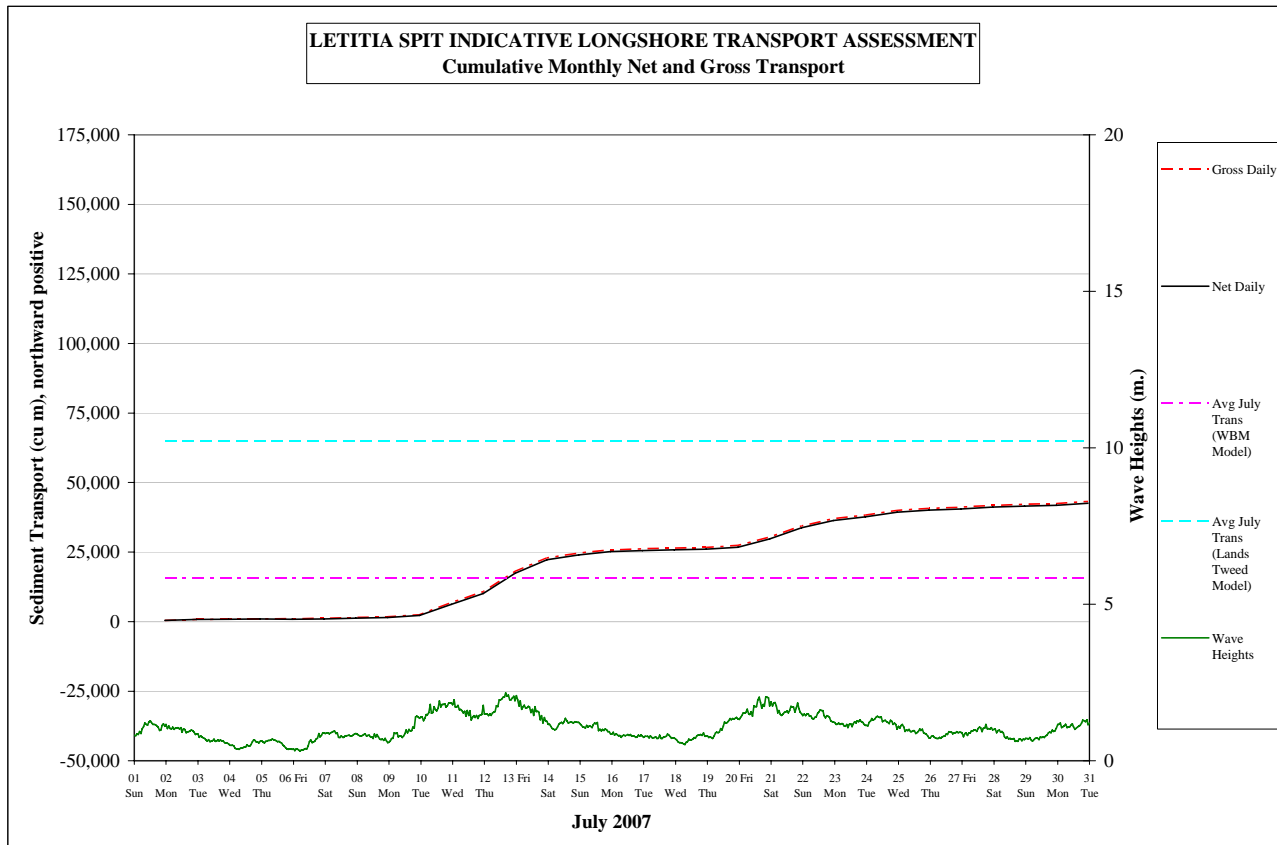


**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JULY 2007**

9. 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 July 2007, 43,000m³ of sand was moved north towards the Tweed River entrance by natural processes. This is approximately 65% of the modelled average sand transport quantity for the month of July.



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

10. 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>

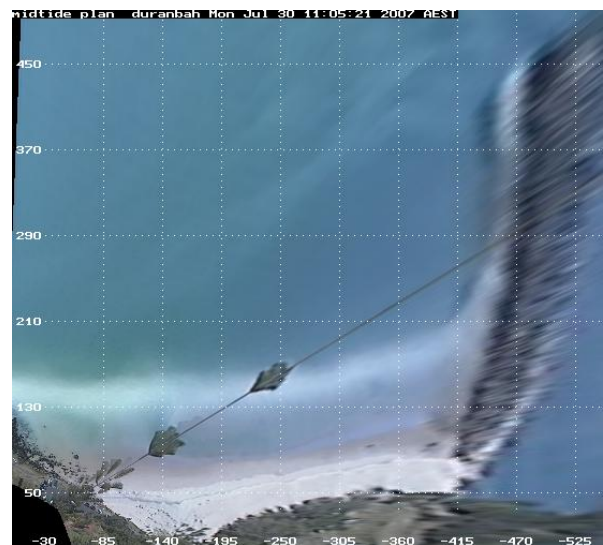
These images are updated hourly and all past photos can be accessed in the archives.

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

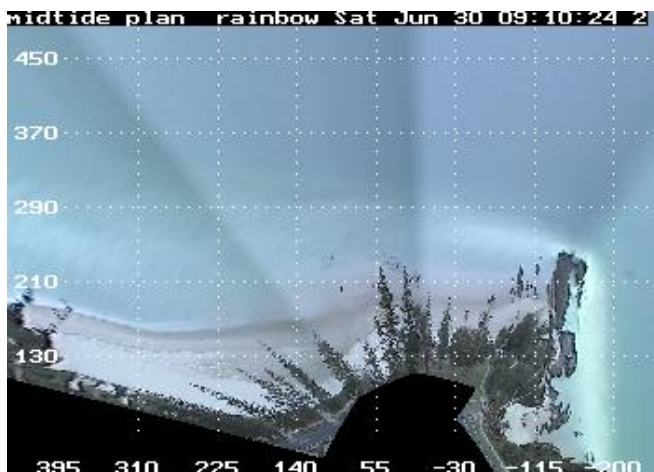


29 June 2007

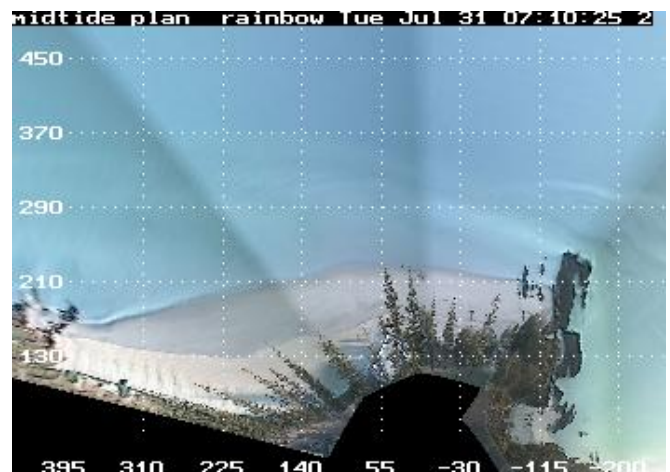


30 July 2007

RAINBOW BAY



30 June 2007

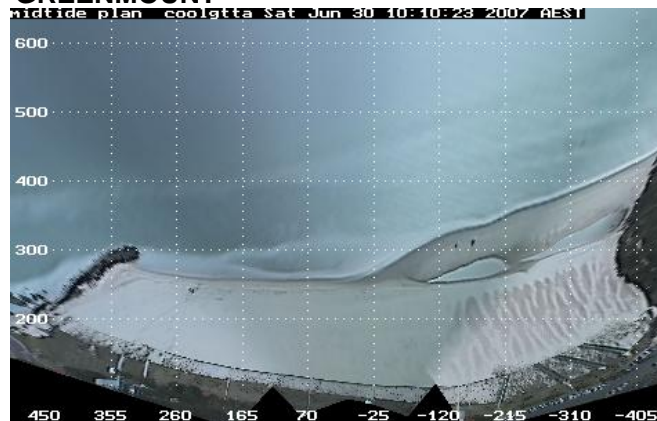


31 July 2007

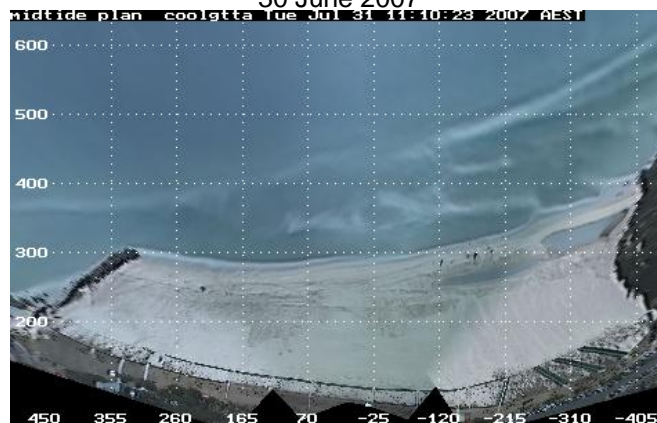
**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JULY 2007**

ARGUS COASTAL IMAGING SYSTEM CONTINUED

COOLANGATTA - GREENMOUNT

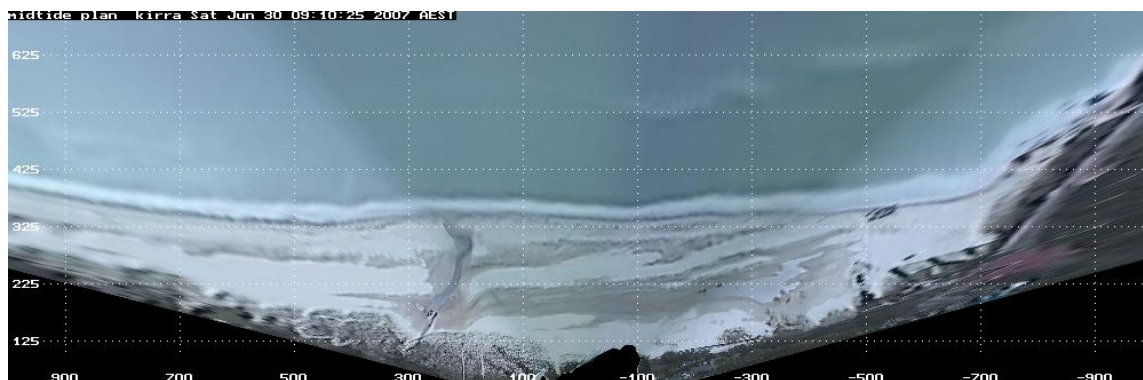


30 June 2007

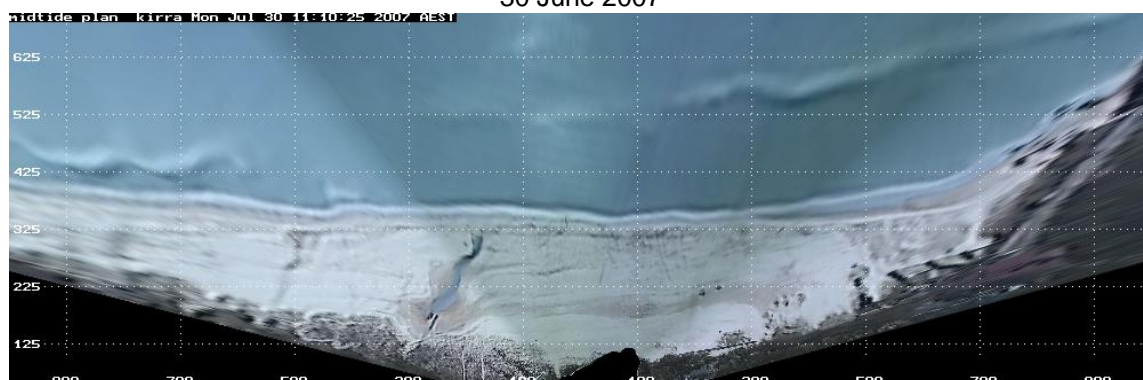


31 July 2007

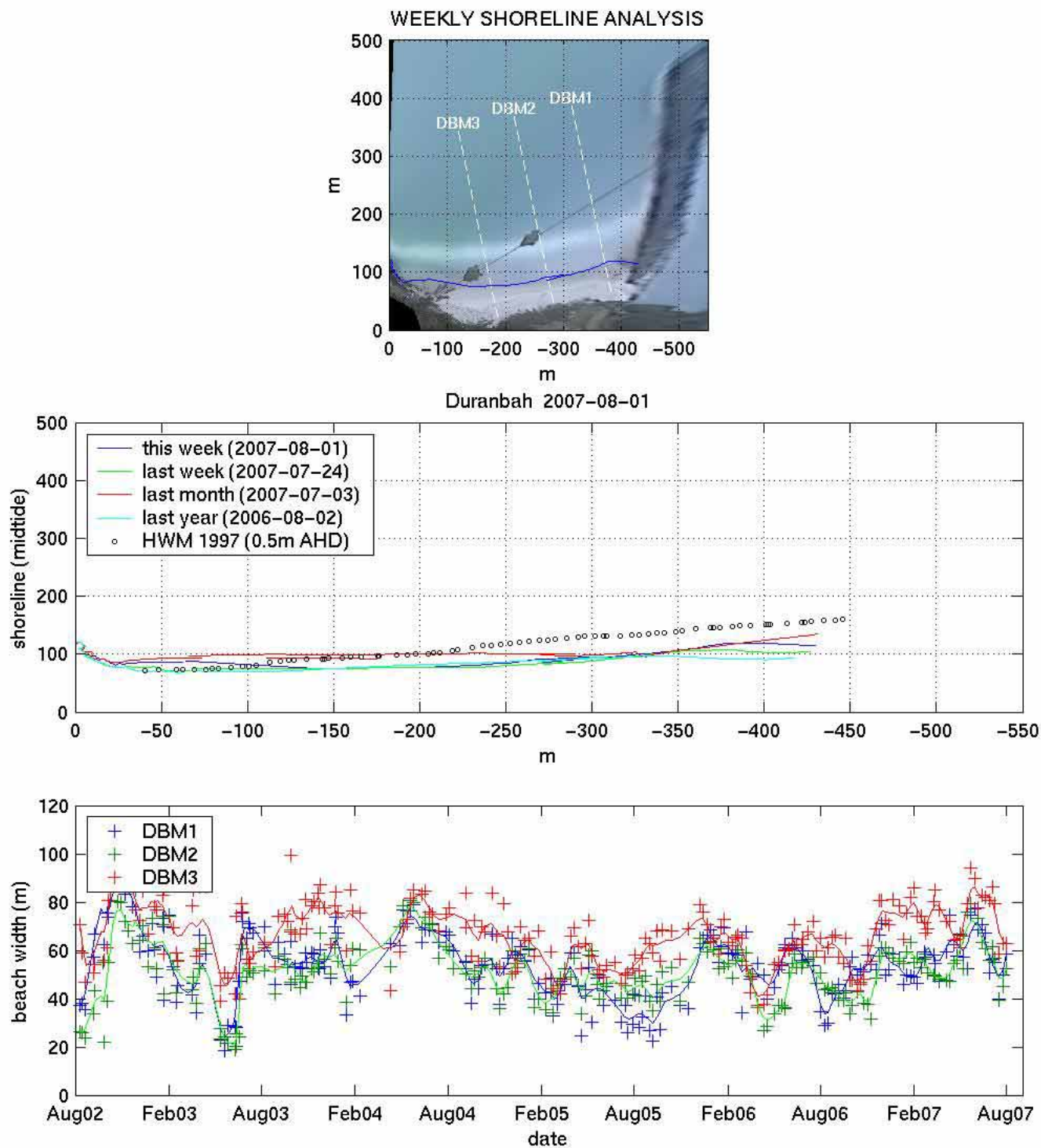
NORTH KIRRA - KIRRA



30 June 2007



30 July 2007



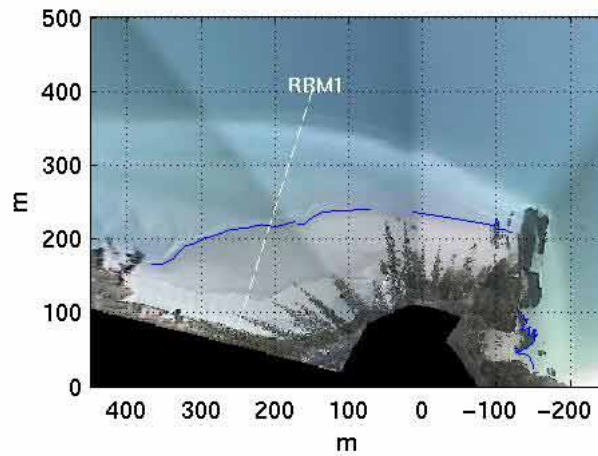
WATER RESEARCH LABORATORY



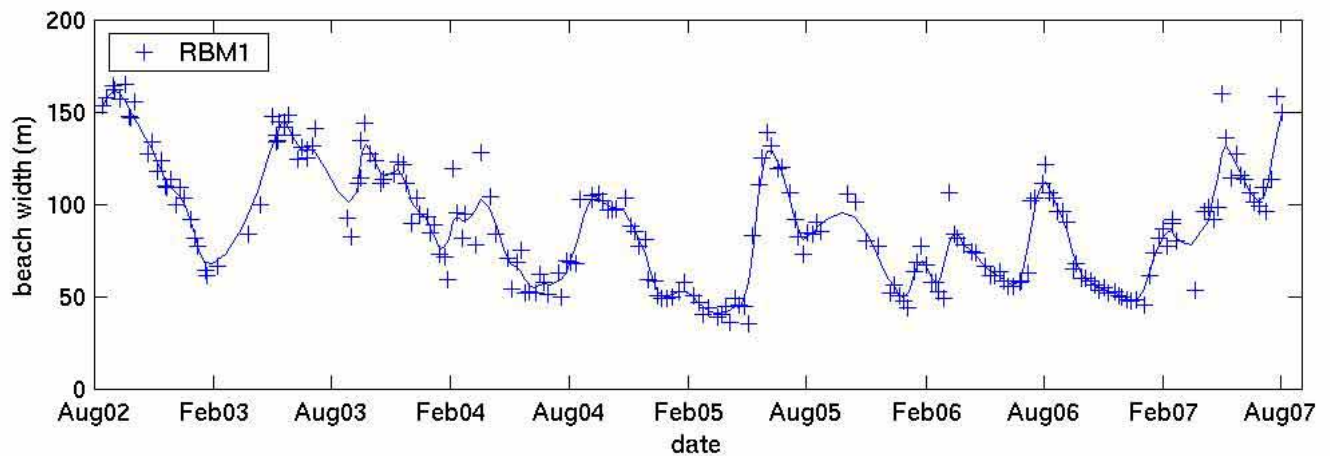
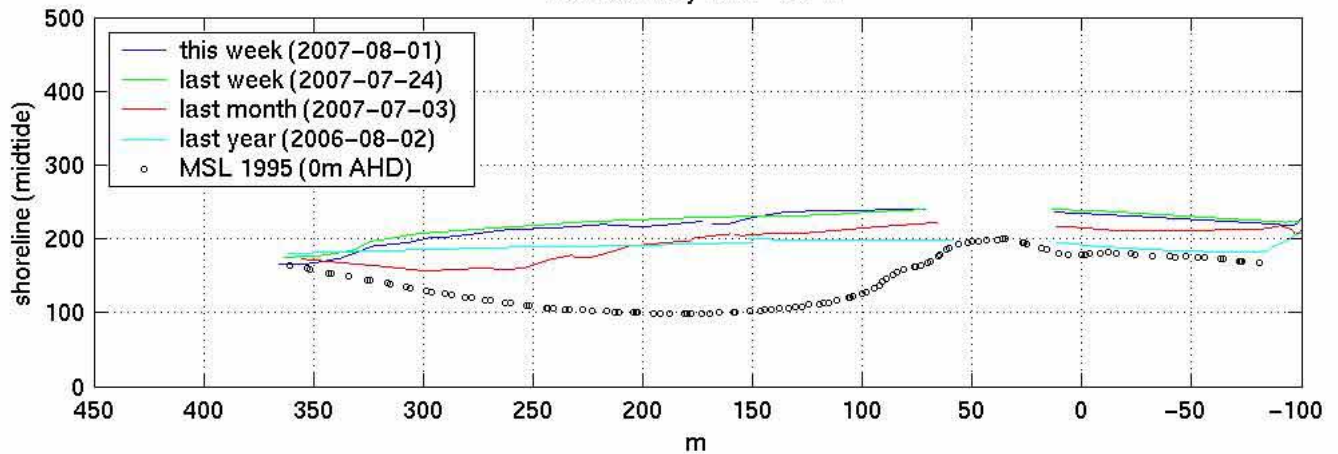
THE UNIVERSITY OF
NEW SOUTH WALES
SYDNEY AUSTRALIA

www.wrl.unsw.edu.au/coastalimaging

WEEKLY SHORELINE ANALYSIS



Rainbow Bay 2007-08-01



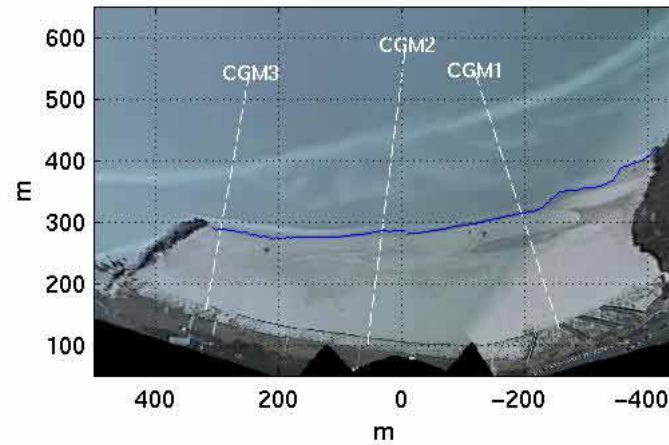
WATER RESEARCH LABORATORY



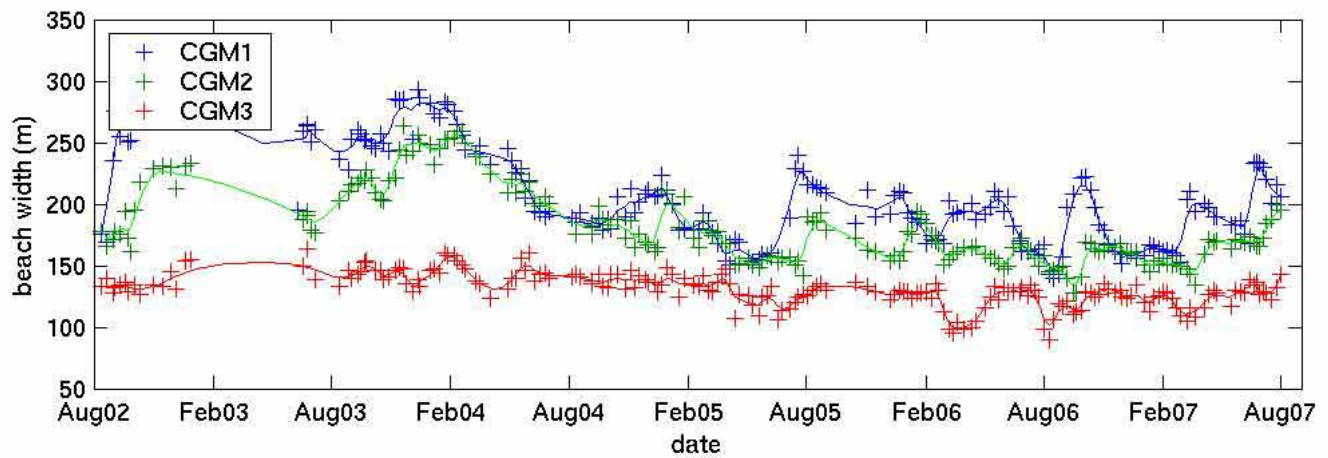
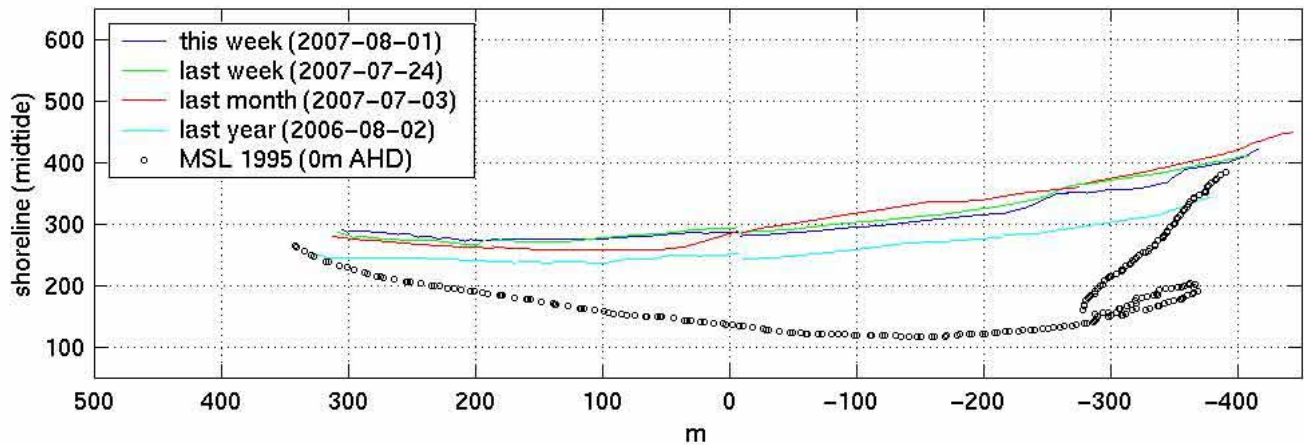
THE UNIVERSITY OF
NEW SOUTH WALES
SYDNEY • AUSTRALIA

www.wrl.unsw.edu.au/coastalimaging

WEEKLY SHORELINE ANALYSIS



Coolangatta 2007-08-01



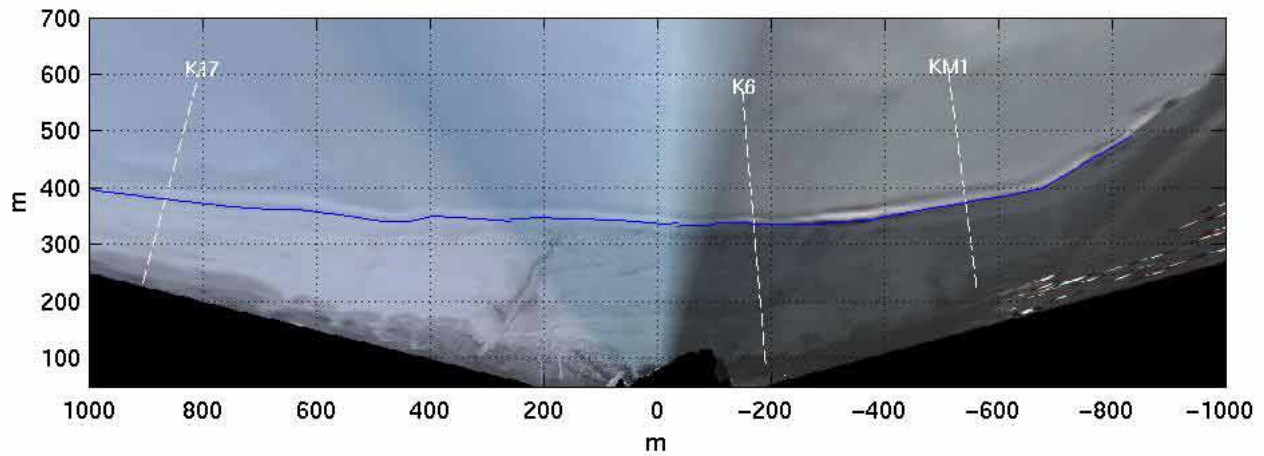
WATER RESEARCH LABORATORY



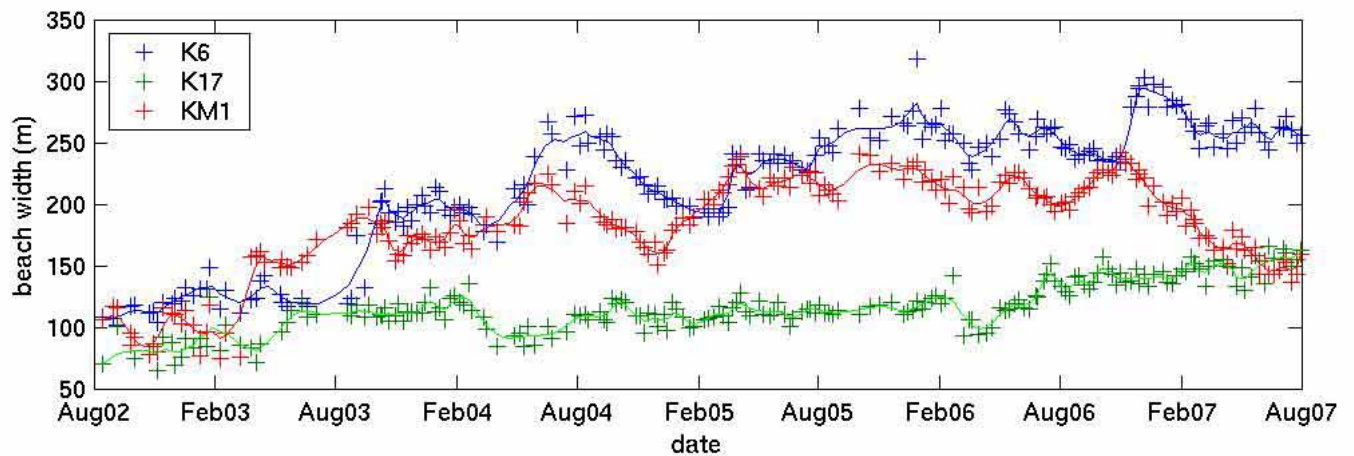
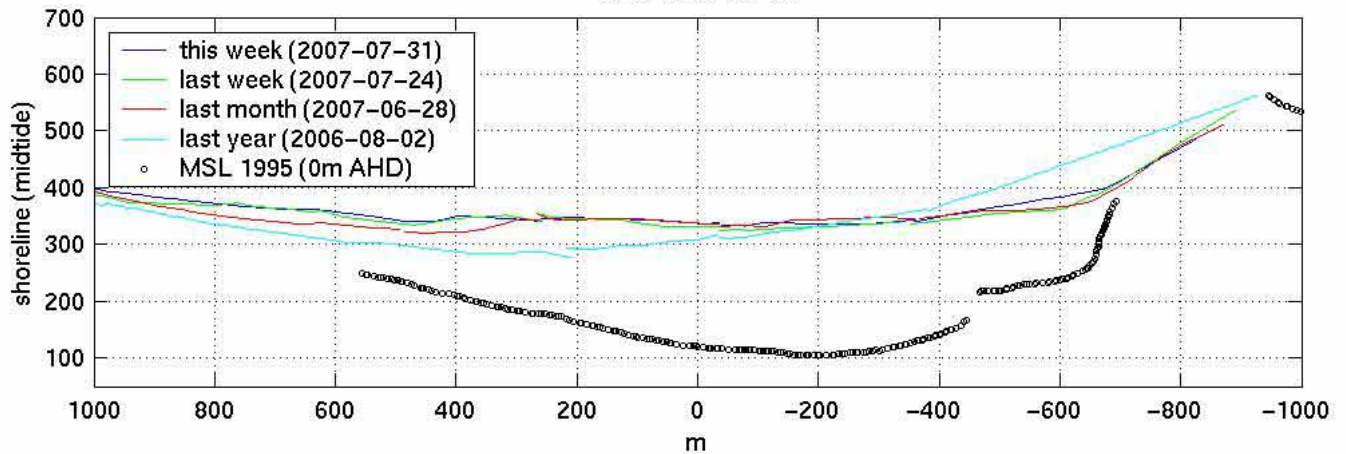
THE UNIVERSITY OF
NEW SOUTH WALES
SYDNEY • AUSTRALIA

www.wrl.unsw.edu.au/coastalimaging

WEEKLY SHORELINE ANALYSIS



Kirra 2007-07-31



WATER RESEARCH LABORATORY



THE UNIVERSITY OF
NEW SOUTH WALES
SYDNEY • AUSTRALIA

www.wrl.unsw.edu.au/coastalimaging