

Tweed River Entrance Sand Bypassing Project

Letitia Spit to Kirra



Monthly Environmental Monitoring Summary

September 2007

Department of Lands 




**Queensland
Government**
Environmental
Protection Agency

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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 wave 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 September was higher than on average.
- Surf quality in September was moderate, with reports of calm surfing conditions across most of the month.
- 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 two and a half times the September average.

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

	PUMPED		DREDGED	SEPTEMBER 2007 TOTAL DELIVERY
Location	Snapper Rocks East	Duranbah		
Amount (m ³)	45,694	5,572	0	51,266

Total Sand Delivery This Year (January to September 2007)

	PUMPED	DREDGED	2007 TOTAL DELIVERY
Amount (m ³)	482,446	0	482,446

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

	PUMPED	DREDGED	TOTAL DELIVERY STAGE 2
Amount (m ³)	4,340,287	1,862,793	6,203,080

4. TWEED RIVER ENTRANCE CONDITIONS

VOLUNTEER VIDEO MONITORING LOG

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

Date	Observations
7 September Morning	Rainy. Hazardous crossing conditions.
18 September Afternoon	Fine weather, Good crossing conditions.
28 September Morning	Fine weather. Calm crossing conditions in the entrance.

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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 September 2007 are presented below.

The navigation ratings from 1–5 are as follows:

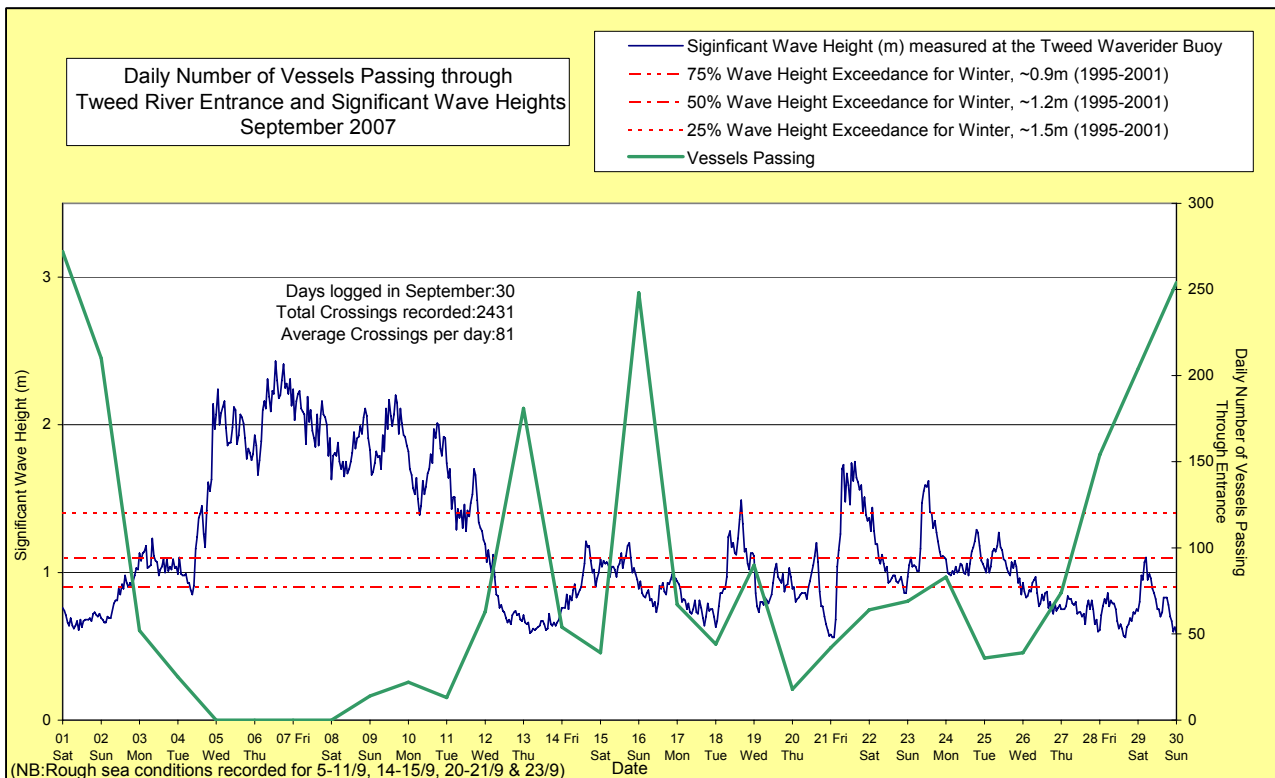
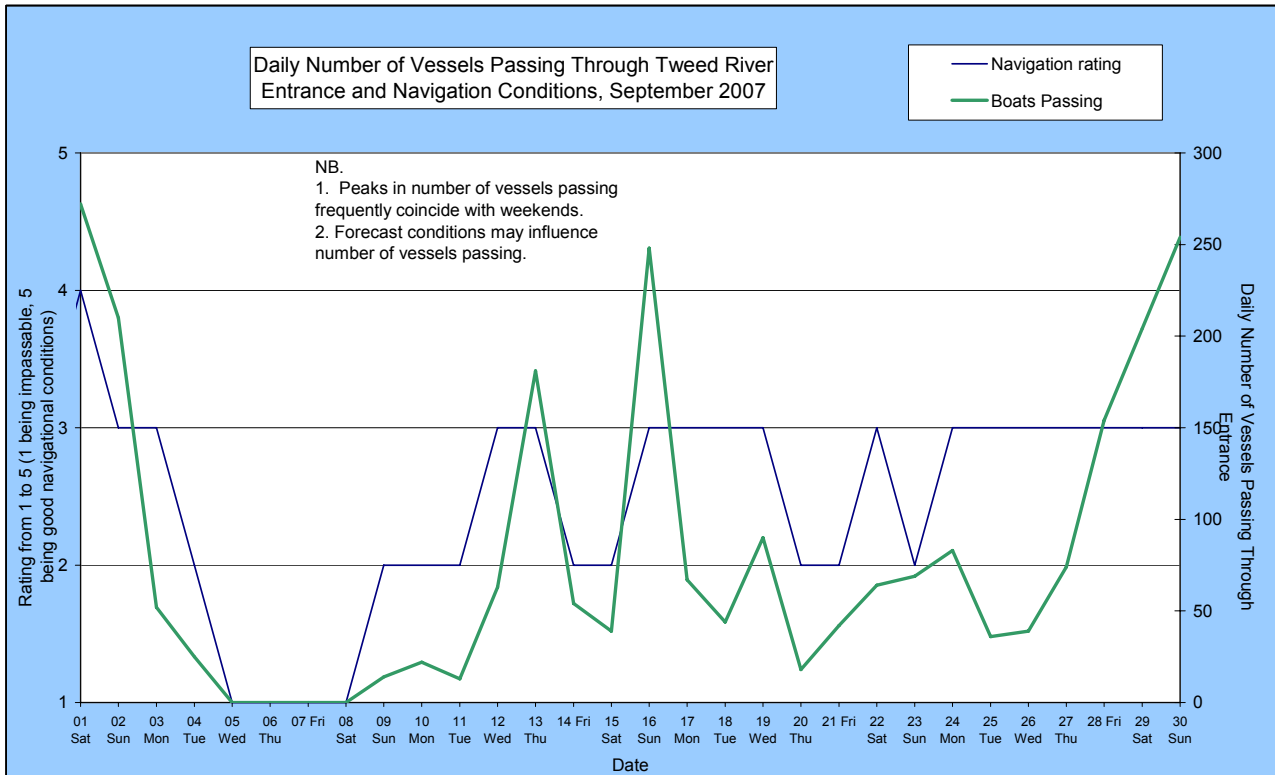
1 – Impassable 2 – Difficulty encountered 3 – Some difficulty encountered
4 – Relatively good crossing 5 – Good conditions

☐ – Weekends and public holidays

Date	Entrance Conditions	Navigation Rating Impassable-----Good					Number of Boats
		1	2	3	4	5	
1	Slight						272
2	Moderate						210
3	Moderate						52
4	Moderate						25
5	Rough						0
6	Rough						0
7	Rough						0
8	Rough						0
9	Rough						14
10	Rough						22
11	Rough						13
12	Moderate						63
13	Moderate						181
14	Rough						54
15	Rough						39
16	Moderate						248
17	Moderate						67
18	Moderate						44
19	Moderate						90
20	Rough						18
21	Rough						42
22	Moderate						64
23	Rough						69
24	Moderate						83
25	Moderate						36
26	Moderate						39
27	Moderate						74
28	Moderate						154
29	Moderate						204
30	Moderate						254

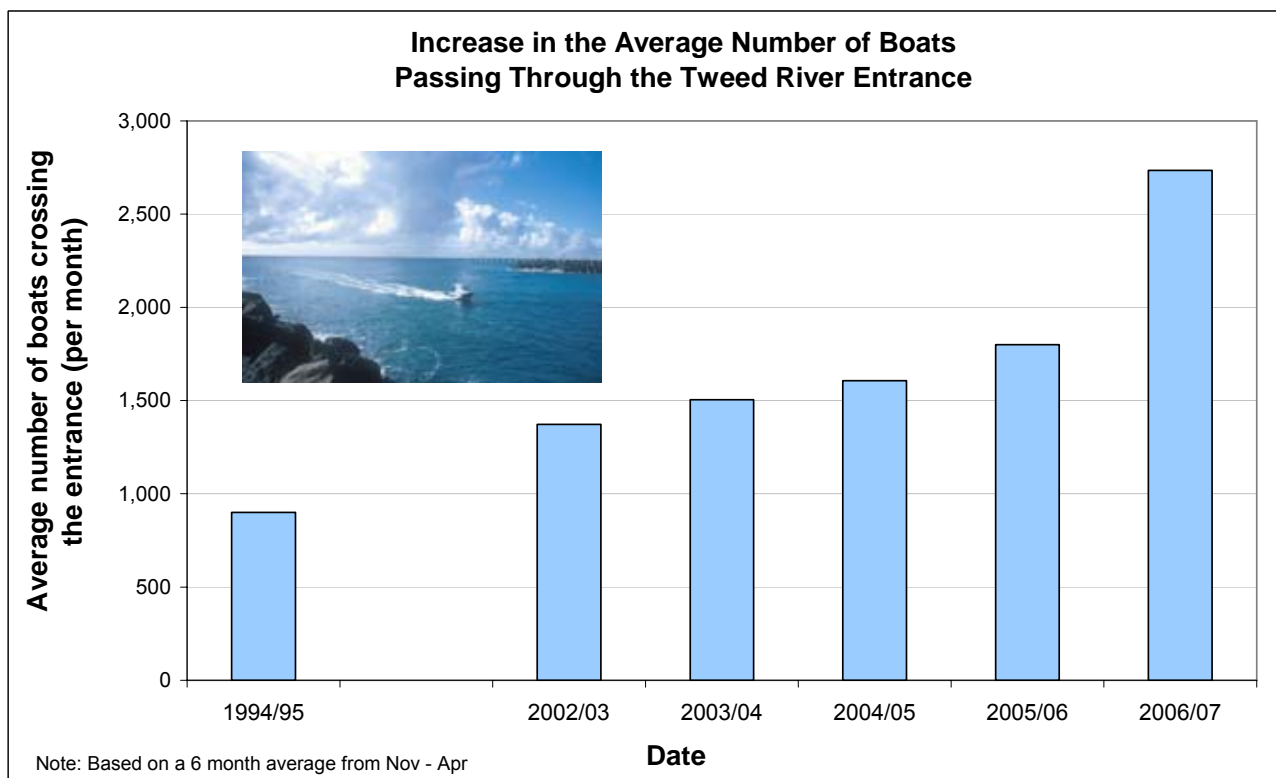
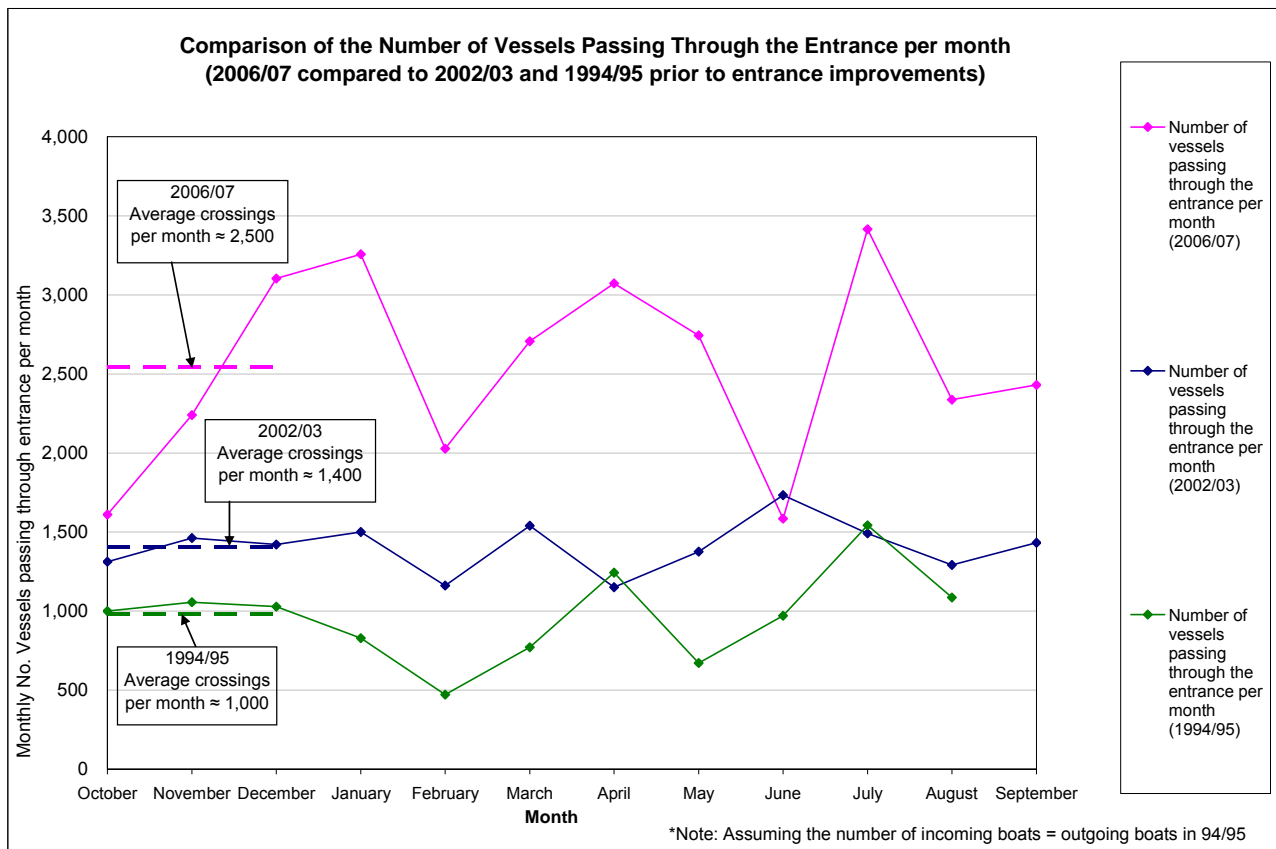
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TWEED RIVER ENTRANCE CONDITIONS CONTINUED



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TWEED RIVER ENTRANCE CONDITIONS CONTINUED

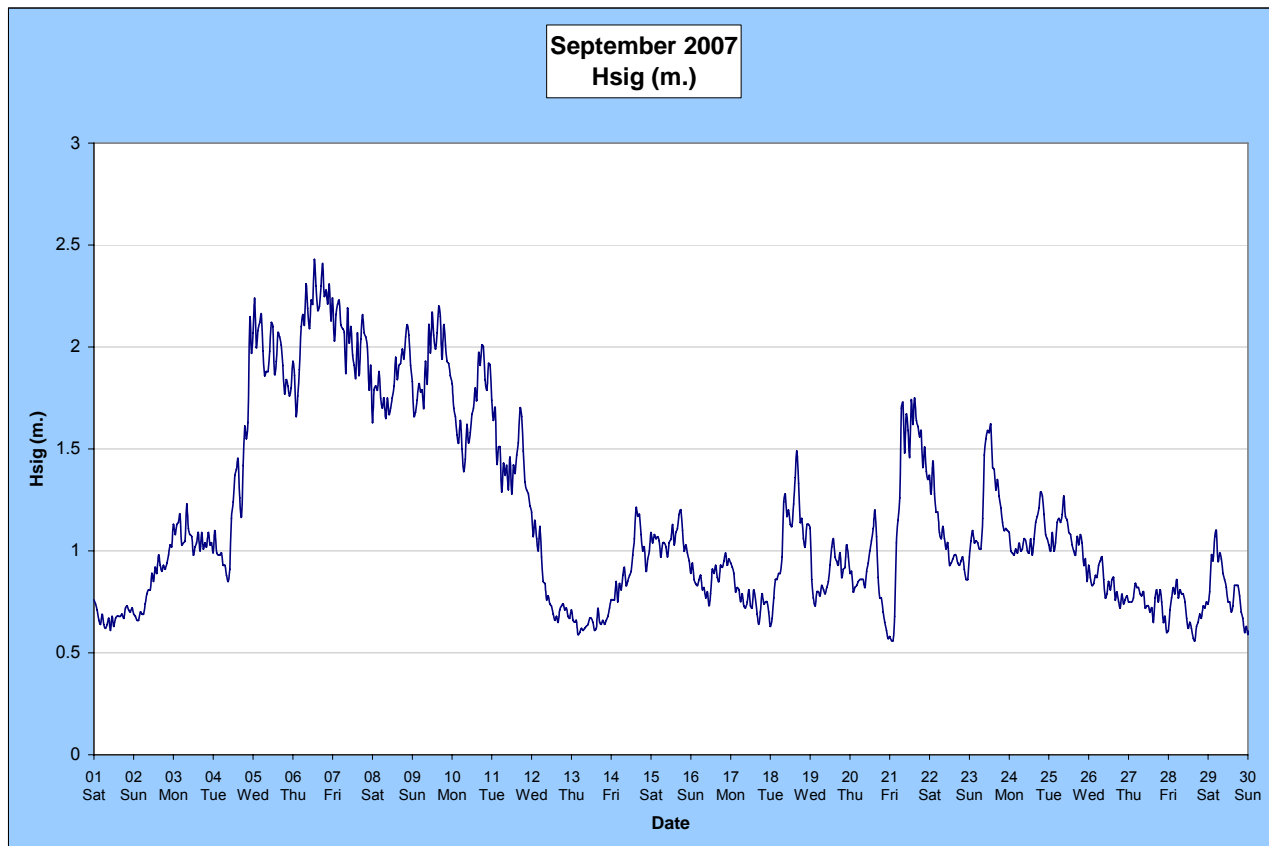


5. SURF SUMMARY

Waves of between 0.5 – 1.5 m from the SE dominated surf conditions on the Southern Gold Coast in September 2007 except for higher sea conditions from 5 to 11 September with wave heights of up to 2 – 2.4m. Winds varied over the month where the most predominant wind condition was SW at 10-20 Knots.

Readings from the Tweed Waverider Buoy showed a minimum significant wave height of 0.52m on 30th September and a maximum significant wave height of 2.43m on 6th September. There were 23 recorded days when waves dropped below 1.0m and 7 days when waves were above 2.0m.

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 September 2007

22-23 September – Billabong Girls Spring Classics (Duranbah Beach)

Upcoming events in October 2007

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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 September 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
7 September Morning	>>2.5m ENE swell. 21 surfers present.	72 surfers present. No longshore transport occurring. No offshore bar apparent.	1 – 1.5m plunging waves. 3 surfers present. No longshore transport occurring. Offshore bar present. The offshore bar is coming onshore and infilling the longshore low area which appeared during the previous high seas.
18 September Afternoon	1 – 1.5m plunging swell. 34 surfers present.	24 surfers present. No longshore transport occurring. No offshore bar apparent.	<1m spilling waves. 2 surfers present. No longshore transport occurring. Offshore bar present. Gutter along beach from Miles St groyne northwards.
28 September Morning	1 – 1.5m plunging swell. 47 surfers present.	18 surfers present. No longshore transport occurring. No offshore bar apparent.	<1m spilling waves. 12 surfers present. No longshore transport occurring. No offshore bar apparent. Large crowds on Kirra/ Greenmount reflect school holidays.

6. BEACH CONDITIONS

PHOTOGRAPHS OF BEACH CONDITIONS

DURANBAH



14 September 2007

RAINBOW BAY



View from Greenmount, 14 September 2007

COOLANGATTA



View from Kirra, 14 September 2007

KIRRA



14 September 2007

Source: Department of Lands

7. MEDIA COVERAGE AND COMMUNITY FEEDBACK

MEDIA COVERAGE

1-2 September, Gold Coast Bulletin, "Occy's pet beach blitzed"

"As we see conditions change, we will see some of the beach slowly restored... Sand pumping also plays a role in that too."

10 September, Daily News, "Bypass project delivers sand"

"Five thousand cubic metres of sand has been placed on the southern corner of Duranbah Beach by the Tweed River Sand Bypass project, after severe erosion during large easterly swells last month."

13 September, Tweed Sun, "Sand could save beach"

"Sand placed on the beach in May had provided a buffer against storm swells."

18 September, "Beach action meeting"

"The Tweed community is encouraged [by Coastal Alliance] to attend a public meeting at 6:30pm today at Greenmount Surf Life Saving Club, to address beach degradation in the region... Tweed MP Geoff Provest will also attend."

21 September, Daily News, "Push for Tweed faces on bypass project"

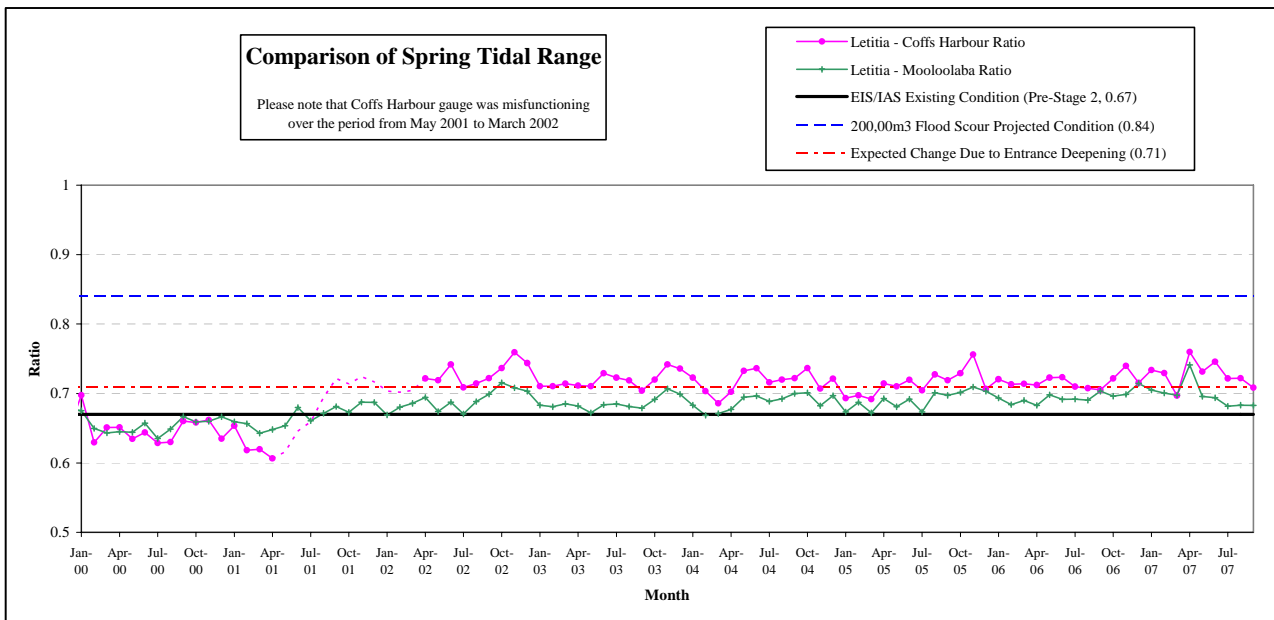
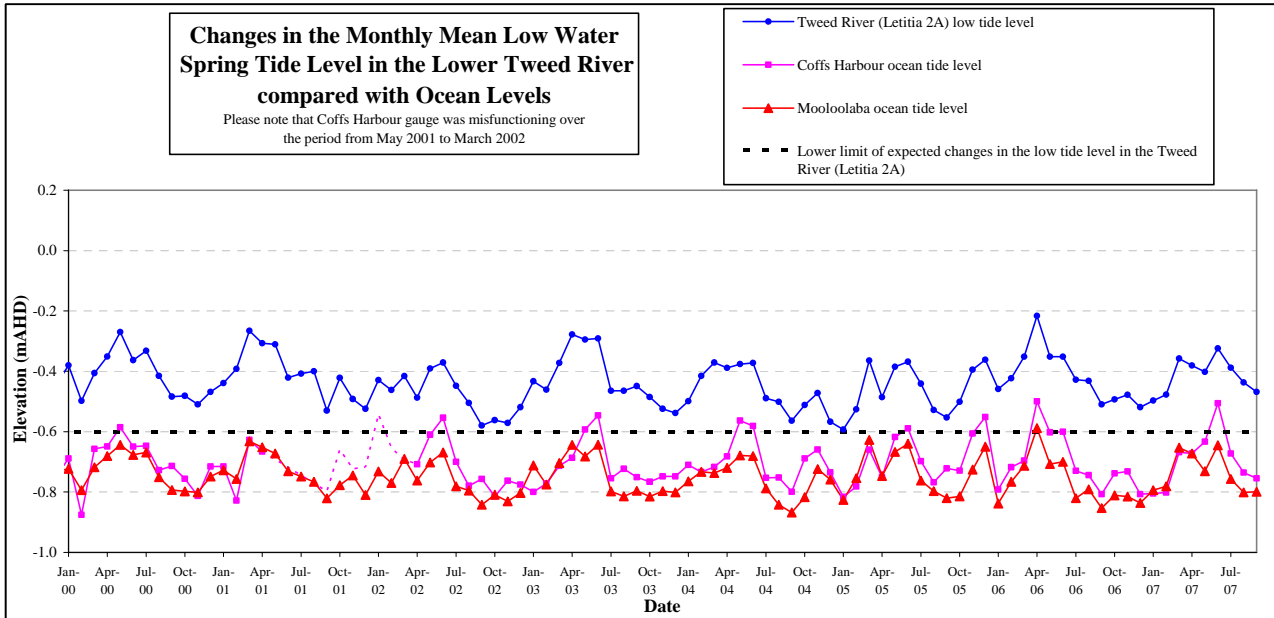
"Coastal Alliance chief Phil Arnott said it was vital to understand any predictions for longer-term sand movement."

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8. TWEED RIVER LOWER ESTUARY TIDAL CONDITIONS

The Mean Low Water Spring (MLWS) tide level in the lower Tweed River decreased to -0.437 m AHD in August 2007 and -0.468 m AHD in September 2007.

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

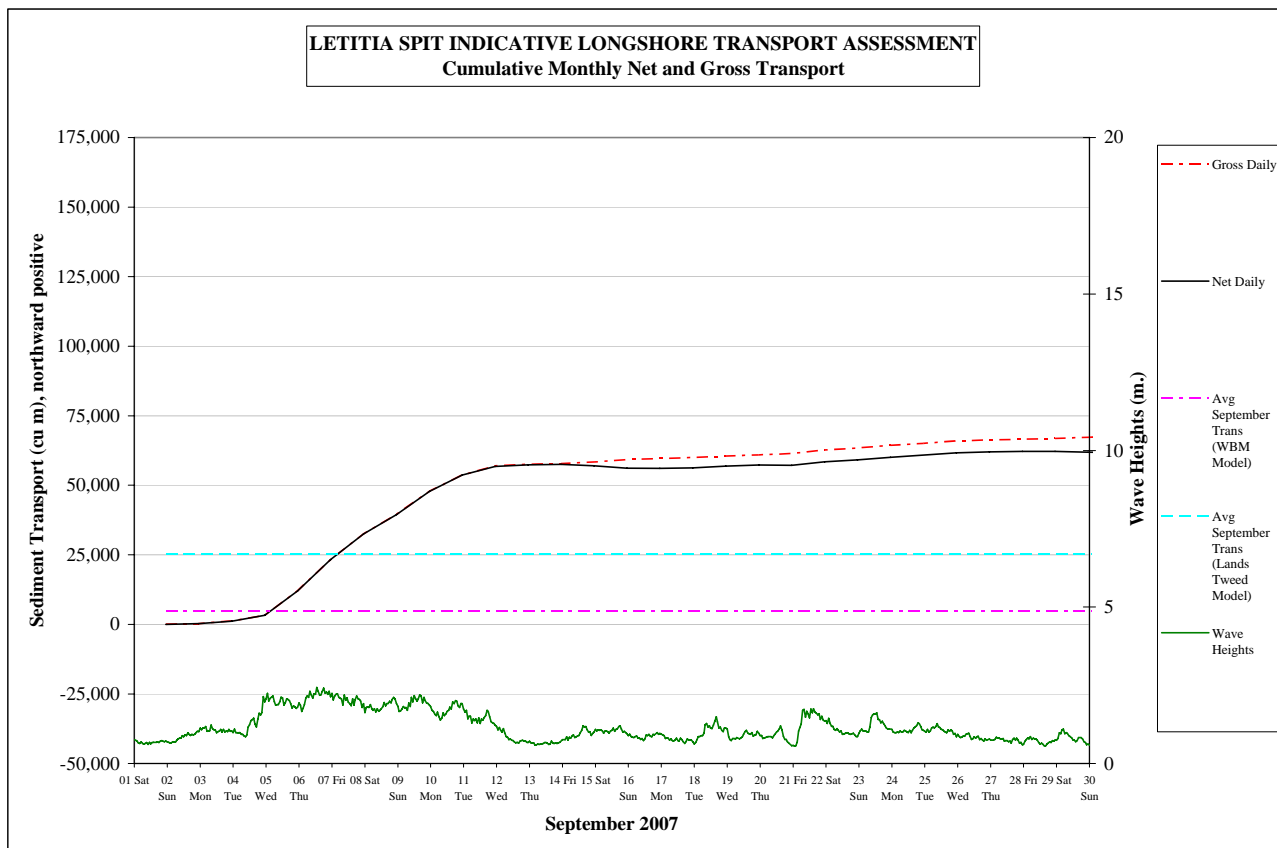


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9. INDICATIVE LONGSHORE SAND TRANSPORT

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 September 2007, 62,000m³ of sand was moved north towards the Tweed River entrance by natural processes. This is approximately two and a half times the average modelled sand transport quantity for the month of September.



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10. ARGUS COASTAL IMAGING SYSTEM

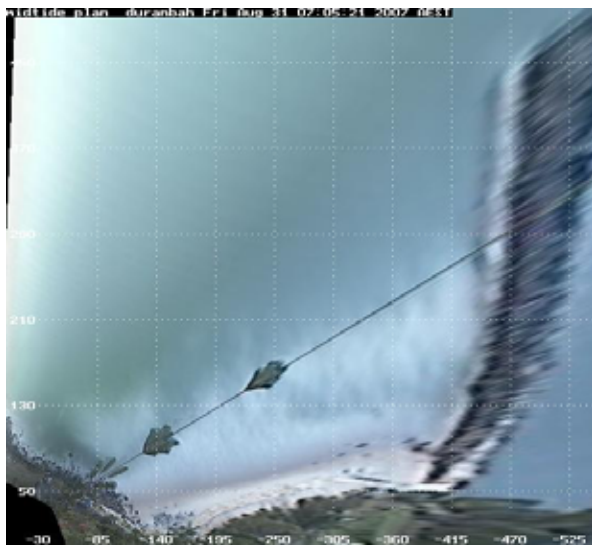
The University of New South Wales is monitoring Letitia Spit to North Kirra for the project using an ARGUS coastal imaging system. Images are available on the internet at the following address:

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

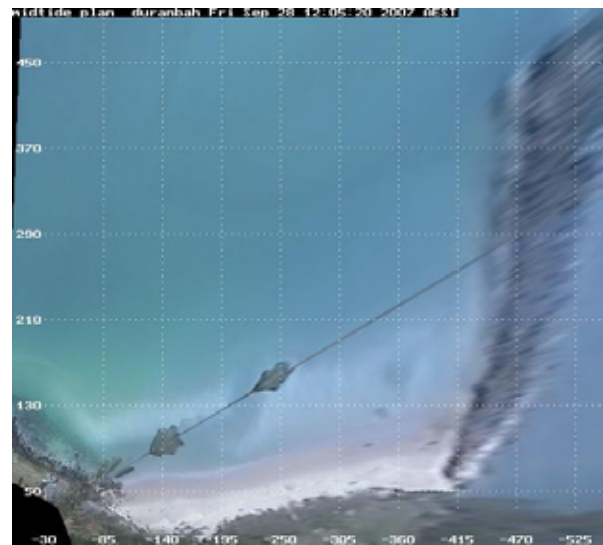
These images are updated hourly and all past photos can be accessed in the archives.

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

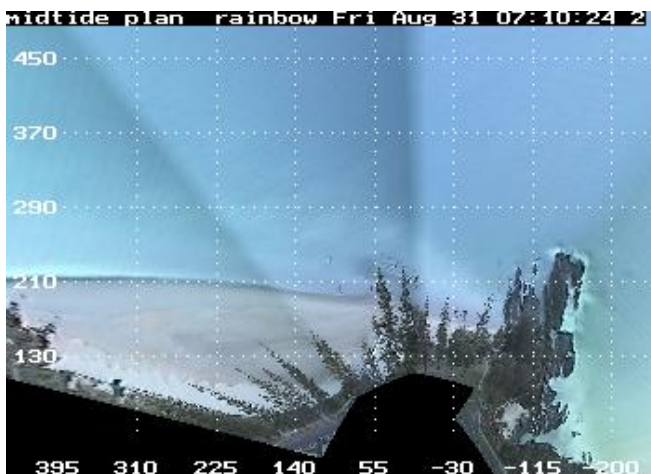


31 August 2007

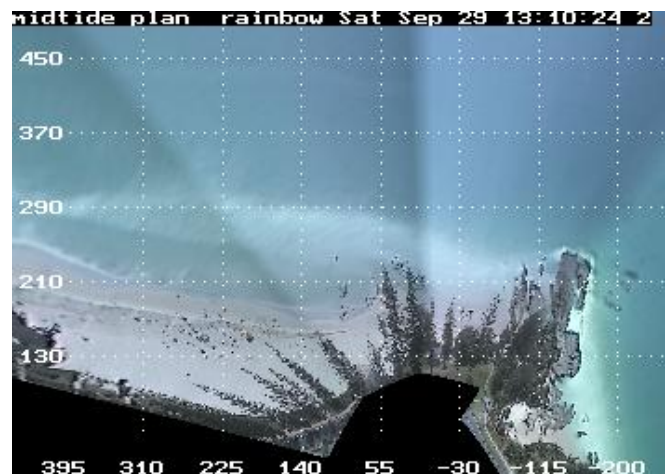


28 September 2007

RAINBOW BAY



31 August 2007

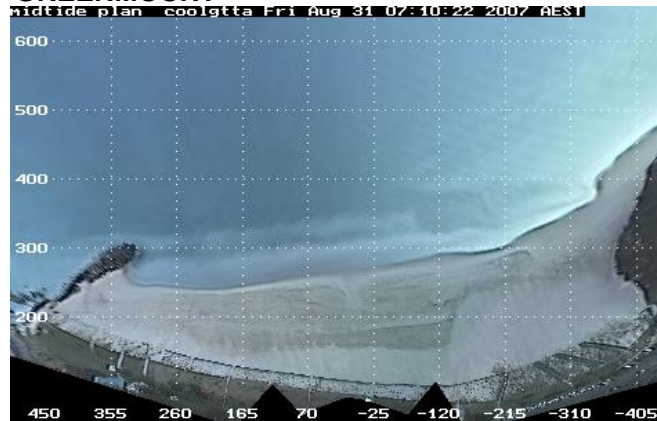


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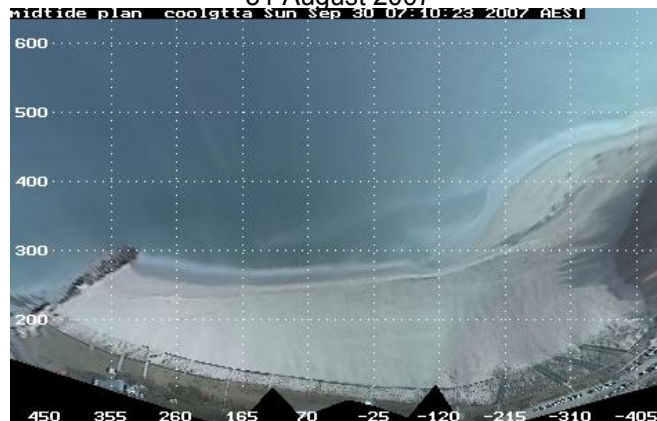
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ARGUS COASTAL IMAGING SYSTEM CONTINUED

COOLANGATTA - GREENMOUNT

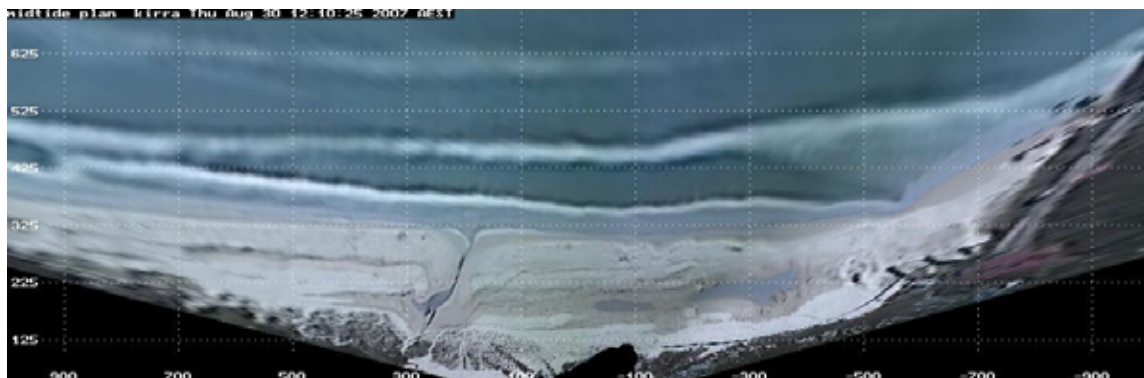


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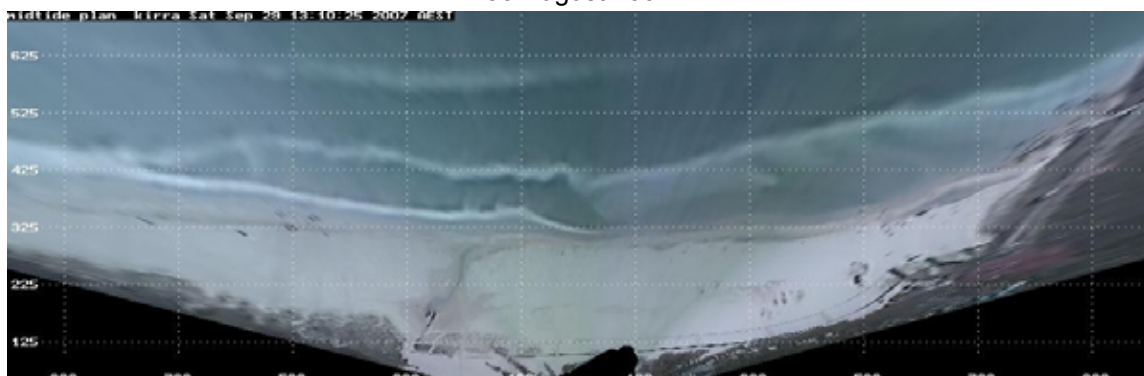


30 September 2007

NORTH KIRRA - KIRRA

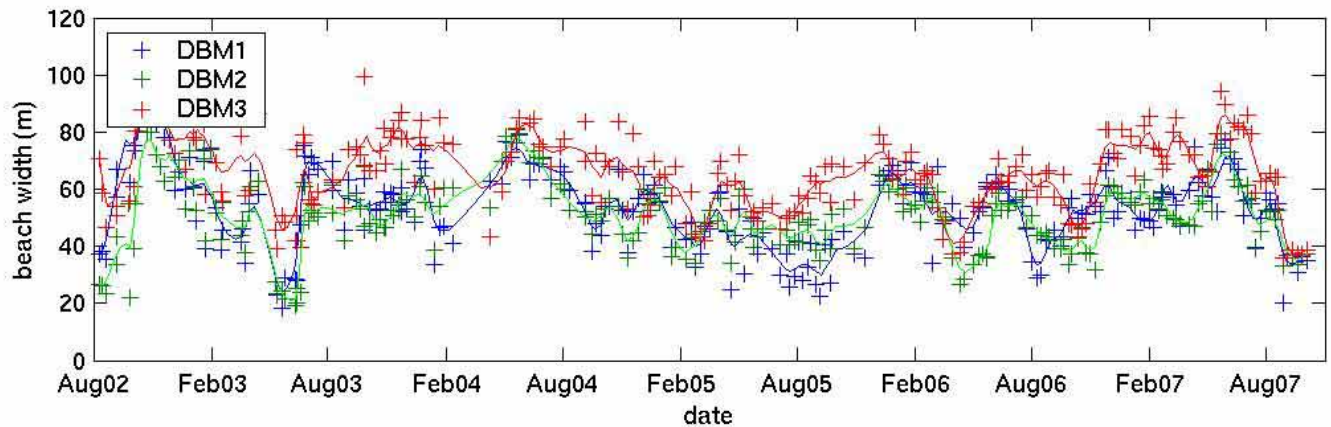
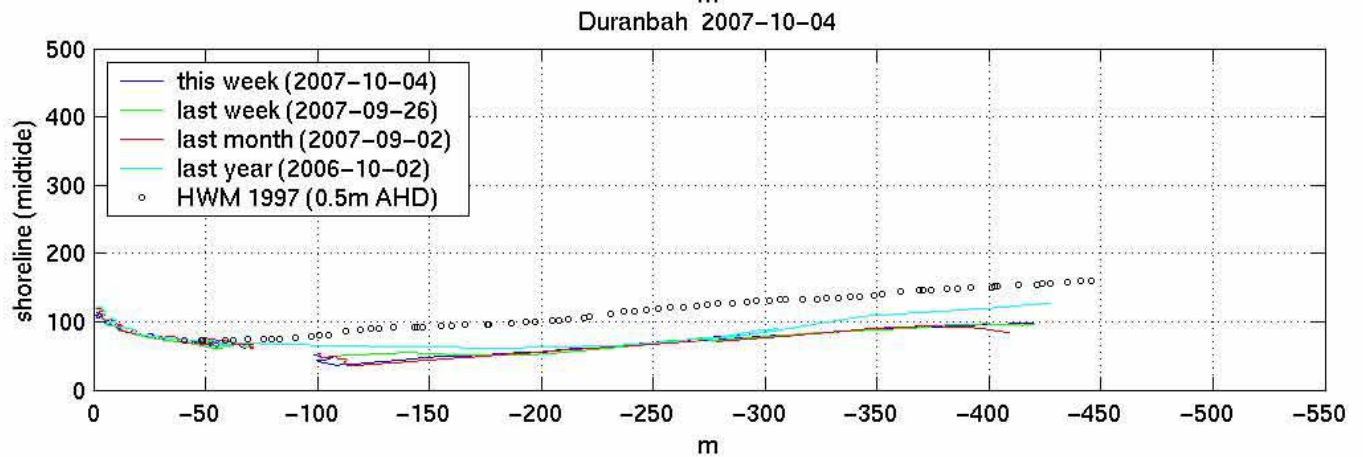
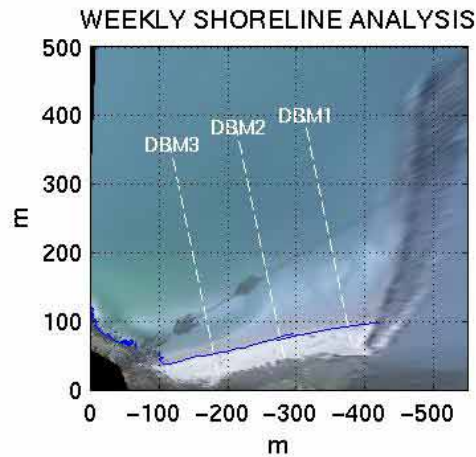


30 August 2007



29 September 2007

APPENDIX A - BEACH WIDTHS



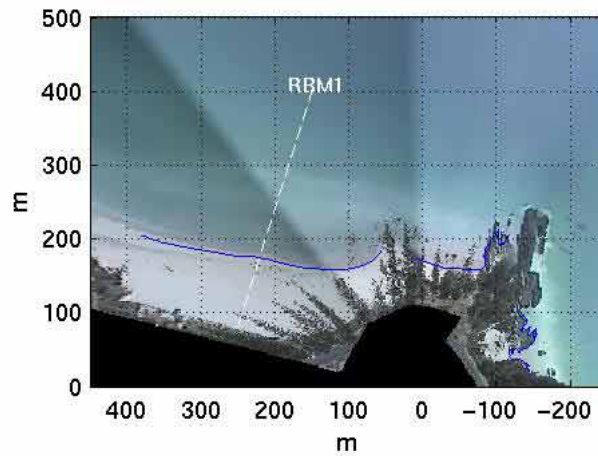
WATER RESEARCH LABORATORY



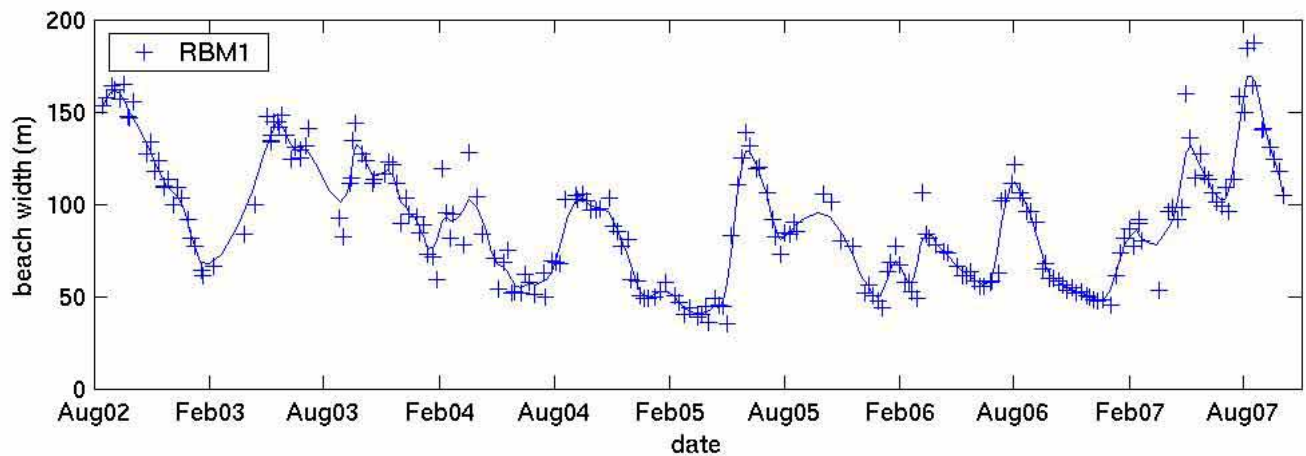
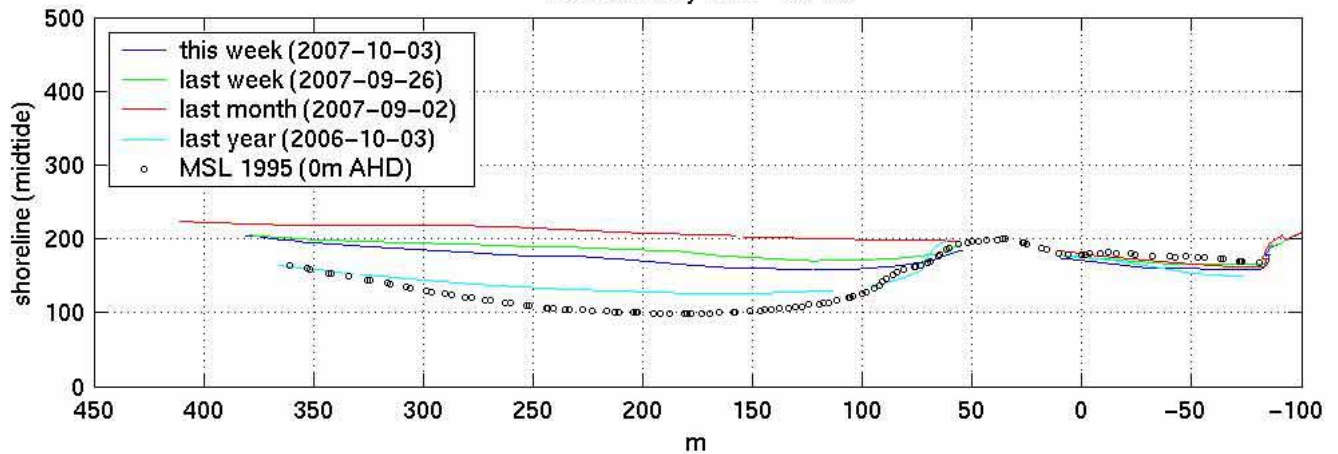
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www.wrl.unsw.edu.au/coastalimaging

WEEKLY SHORELINE ANALYSIS



Rainbow Bay 2007-10-03



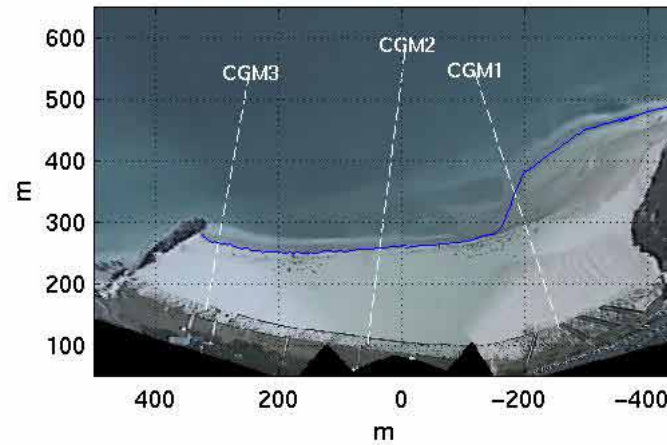
WATER RESEARCH LABORATORY



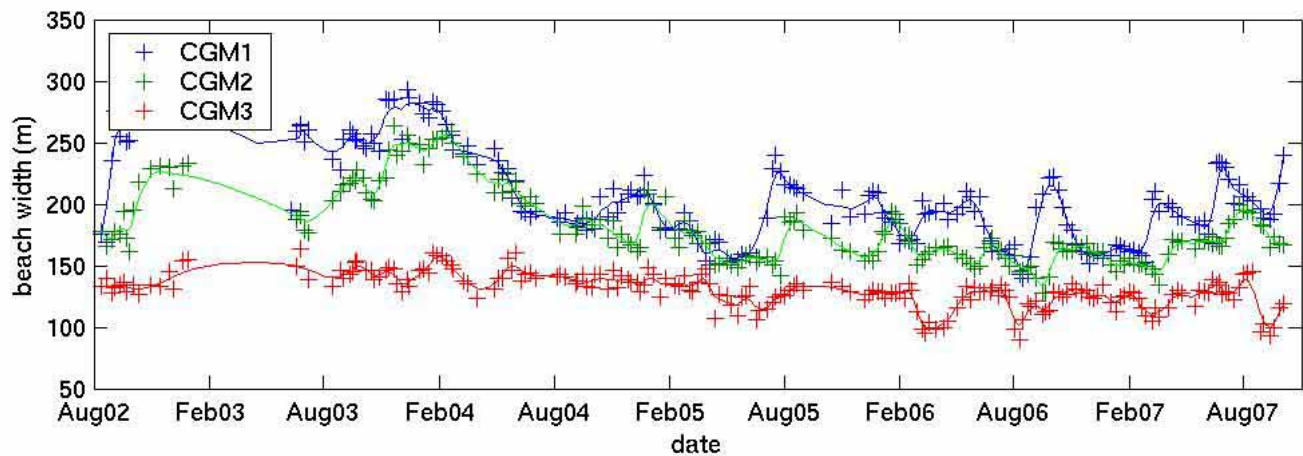
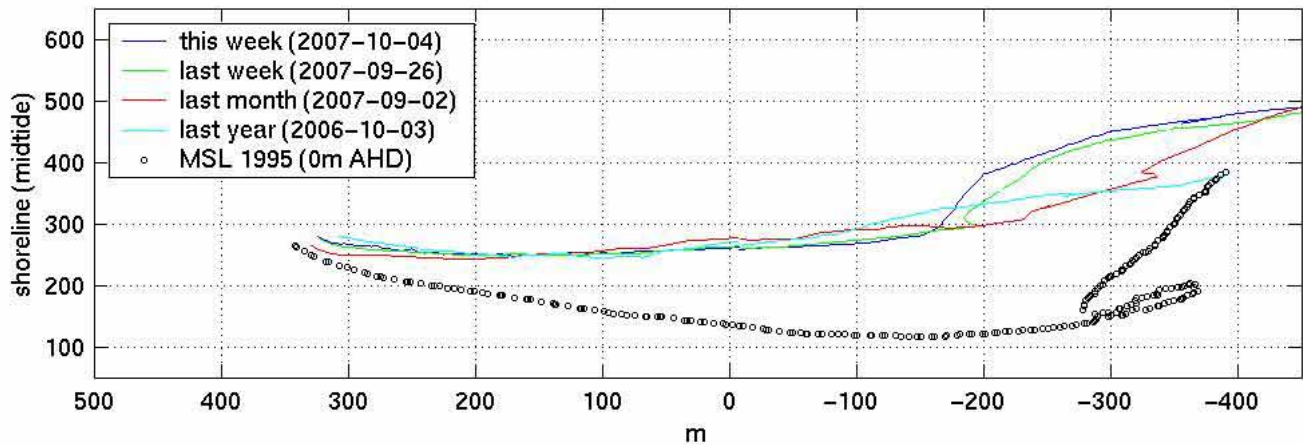
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WEEKLY SHORELINE ANALYSIS



Coolangatta 2007-10-04



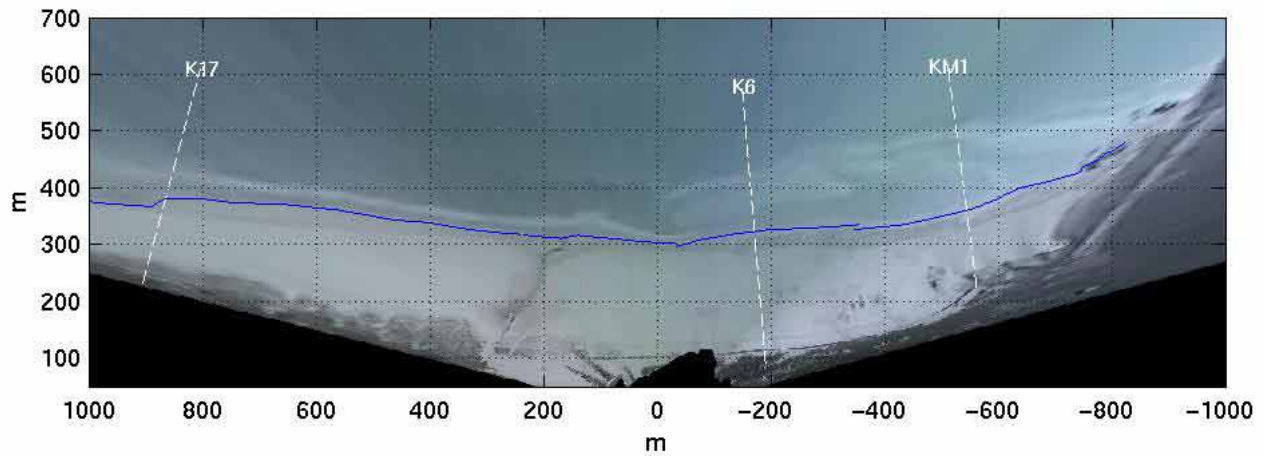
WATER RESEARCH LABORATORY



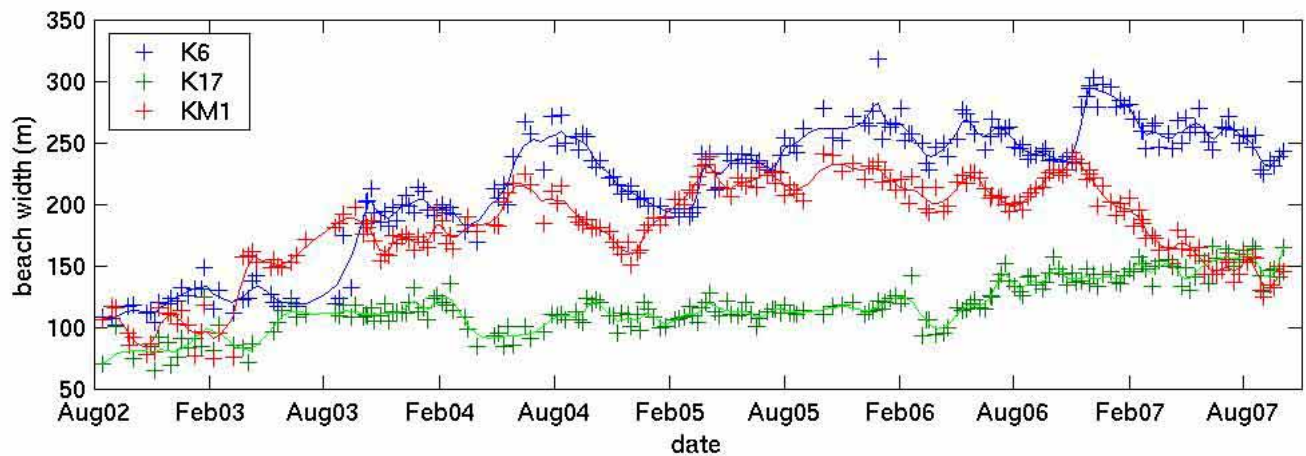
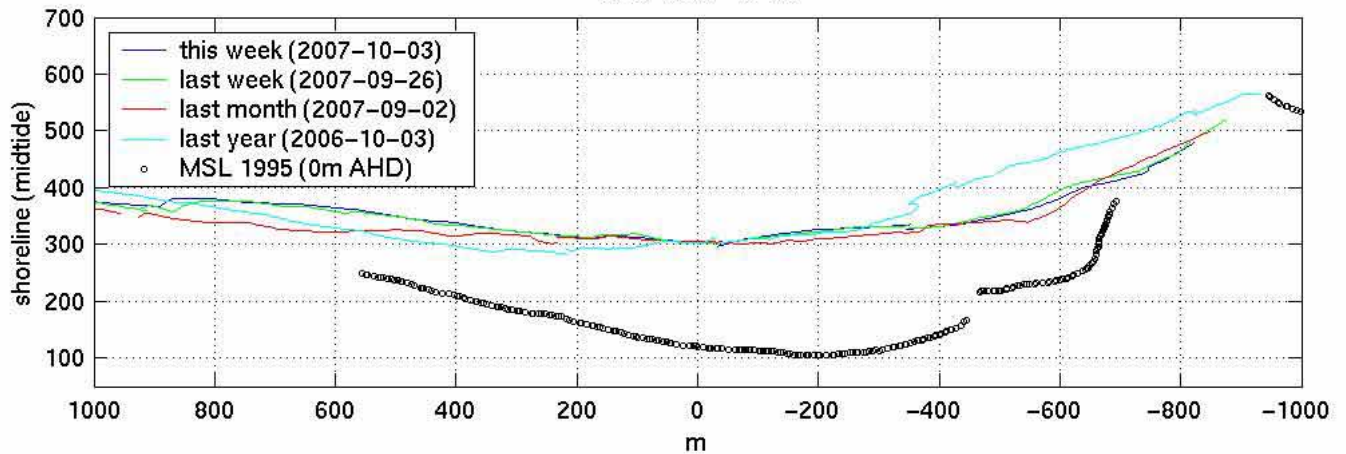
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Kirra 2007-10-03



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