

Tweed River Entrance Sand Bypassing Project

Letitia Spit to Kirra



Monthly Environmental Monitoring Summary

DECEMBER 2007

Department of Lands 




**Queensland
Government**
Environmental
Protection Agency

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
11. CONTACT DETAILS	16

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 and the Tweed River Entrance.

In December 2007:

- The number of vessels that passed through the entrance was higher than average crossings.
- Surf quality in December was generally average, with reports of excellent surf conditions for experienced surfers at the end of the month during the ocean storm occurring from 28 to 31 December.
- The amount of sand moving north towards the Tweed River Entrance was more than the December average.
- Pumping of sand onto Duranbah Beach was partially completed on 21st December, with sand pumping directed to the main Snapper Rocks East outlet for the last part of December. Pumping of sand onto Duranbah Beach is expected to be completed in early January 2008.

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY DECEMBER 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, Duranba and the Tweed River Entrance 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.tracksamag.com



3. PUMPING AND DREDGING ACTIVITIES

Sand Delivery for DECEMBER 2007

	PUMPED		DREDGED	DECEMBER 2007 TOTAL DELIVERY
Location	Snapper Rocks East	Duranbah		
Amount (m ³)	27,112	17,711	0	44,823

Total Sand Delivery This Year (January to December 2007)

	PUMPED	DREDGED	2007 TOTAL DELIVERY
Amount (m ³)	562,247	0	562,247

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

	PUMPED	DREDGED	TOTAL DELIVERY STAGE 2
Amount (m ³)	4,420,088	1,862,793	6,282,881

4. TWEED RIVER ENTRANCE CONDITIONS

VOLUNTEER VIDEO MONITORING LOG

The following Entrance Condition observations for December 2007 were recorded by volunteer Mr Brian Mason:

Date	Observations
7 December Morning	Cloudy. Good crossing conditions. No break seawards of the entrance. Sand pumping in progress on Duranbah Beach.
14 December Morning	Cloudy to Overcast. Dangerous crossing conditions.
28 December Morning	Good crossing conditions. No break seawards of the entrance. Several vessels entered and exited the entrance during the monitoring period.
29 December Morning	Overcast to Rainy. Dangerous crossing conditions with breaking waves entering the walls.

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY DECEMBER 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 December 2007 are presented below.

The navigation ratings from 1–5 are as follows:

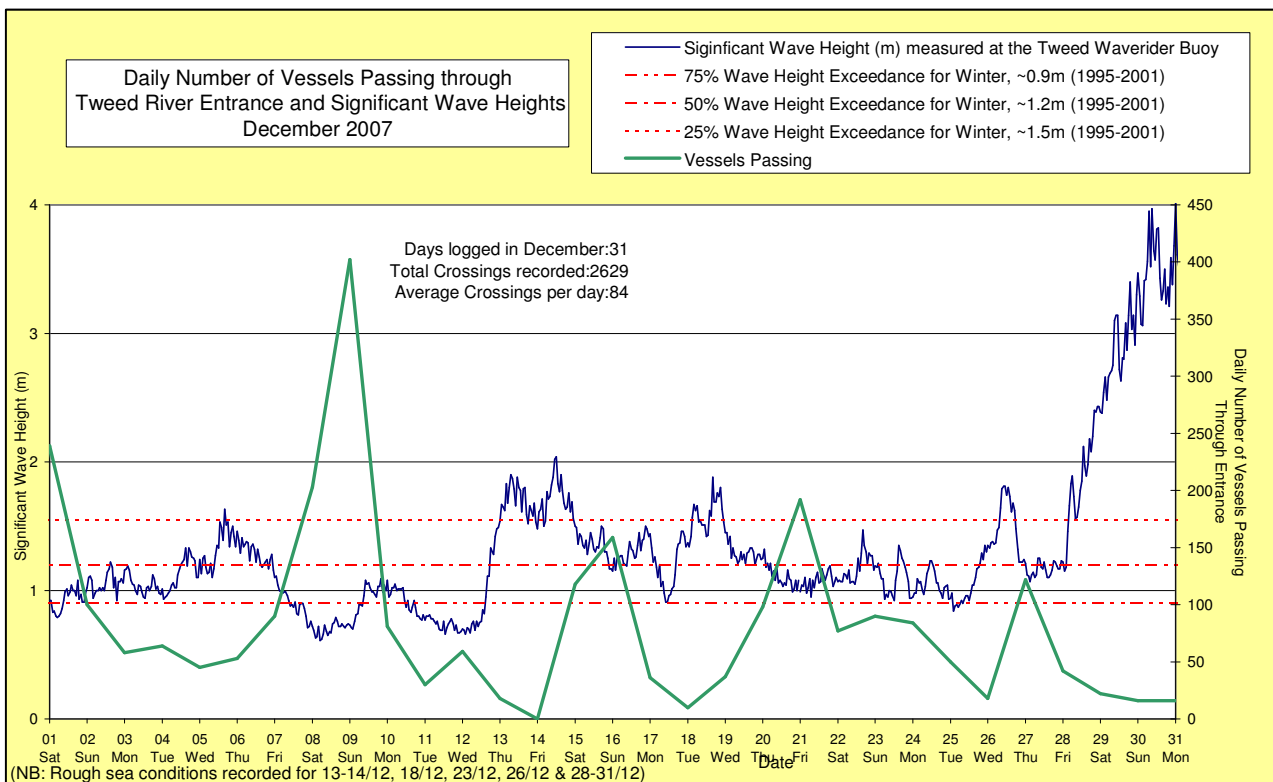
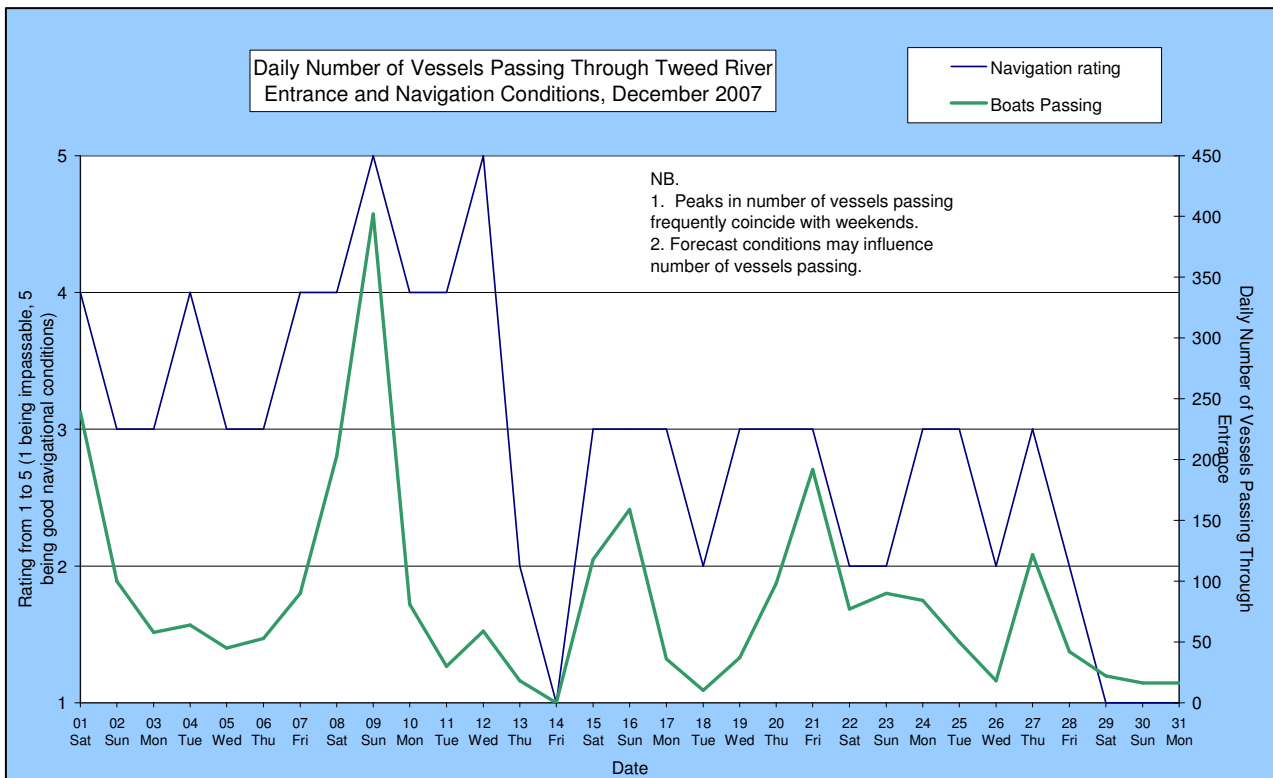
1 – Impassable 2 – Difficulty encountered 3 – Some difficulty encountered
4 – Relatively good crossing 5 – Good conditions

☐ – Weekends and public holidays

Date	Entrance Conditions	Navigation Rating Impassable-----Good					Number of Boats
		1	2	3	4	5	
1	Moderate						239
2	Moderate						100
3	Moderate						58
4	Moderate						64
5	Moderate						45
6	Moderate						53
7	Moderate						90
8	Moderate						203
9	Slight						402
10	Moderate						81
11	Moderate						30
12	Slight						59
13	Rough						18
14	Rough						0
15	Moderate						118
16	Moderate						159
17	Moderate						36
18	Rough						10
19	Moderate						37
20	Moderate						98
21	Moderate						192
22	Moderate						77
23	Rough						90
24	Moderate						84
25	Moderate						50
26	Rough						18
27	Moderate						122
28	Rough						42
29	Rough						22
30	Rough						16
31	Rough						16

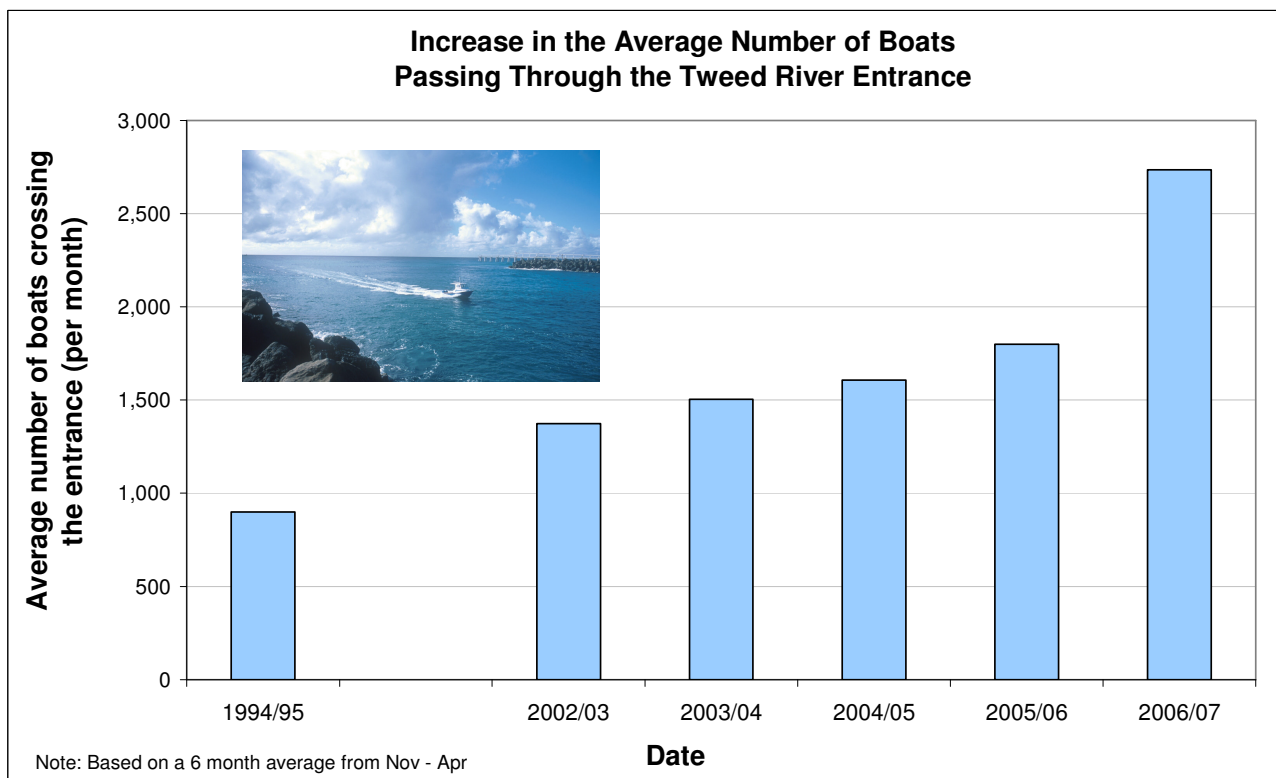
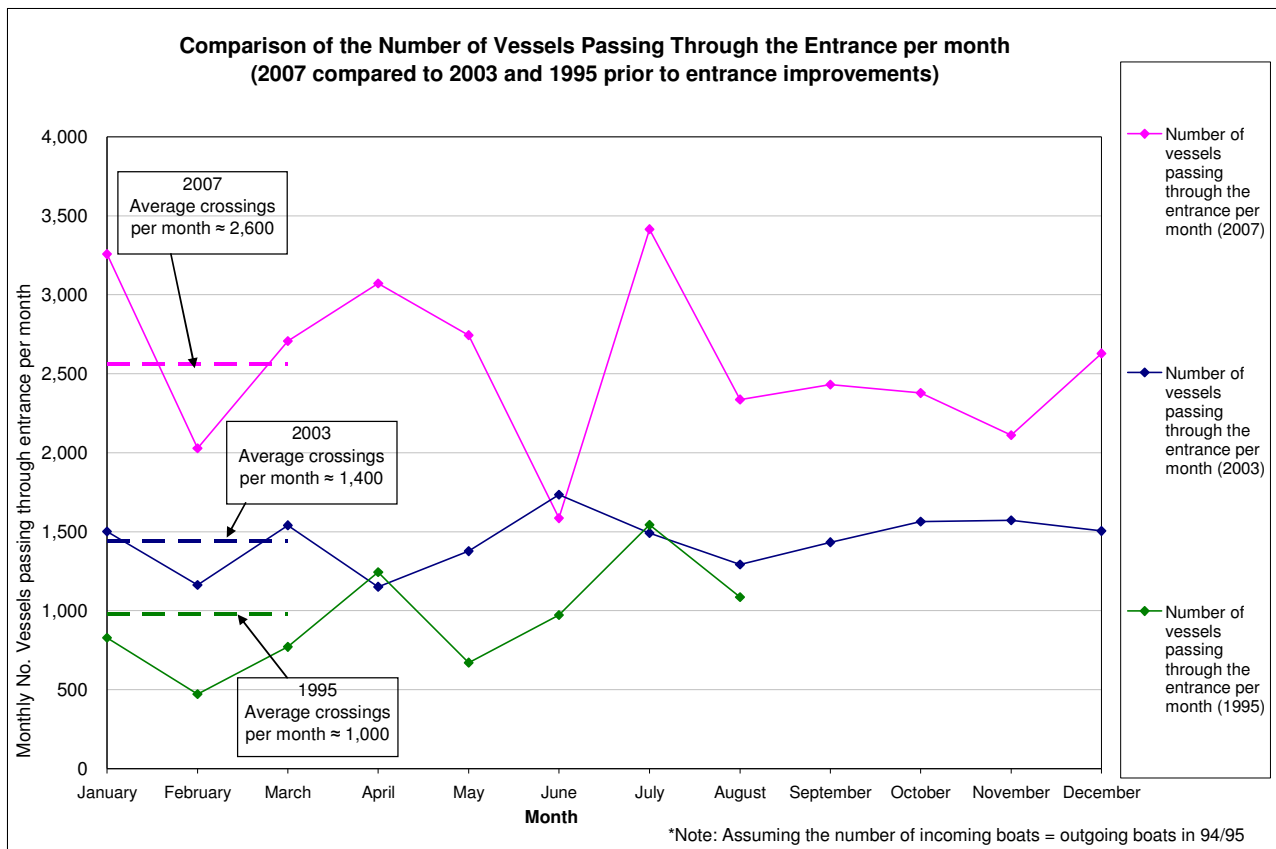
**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY DECEMBER 2007**

TWEED RIVER ENTRANCE CONDITIONS CONTINUED



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

TWEED RIVER ENTRANCE CONDITIONS CONTINUED



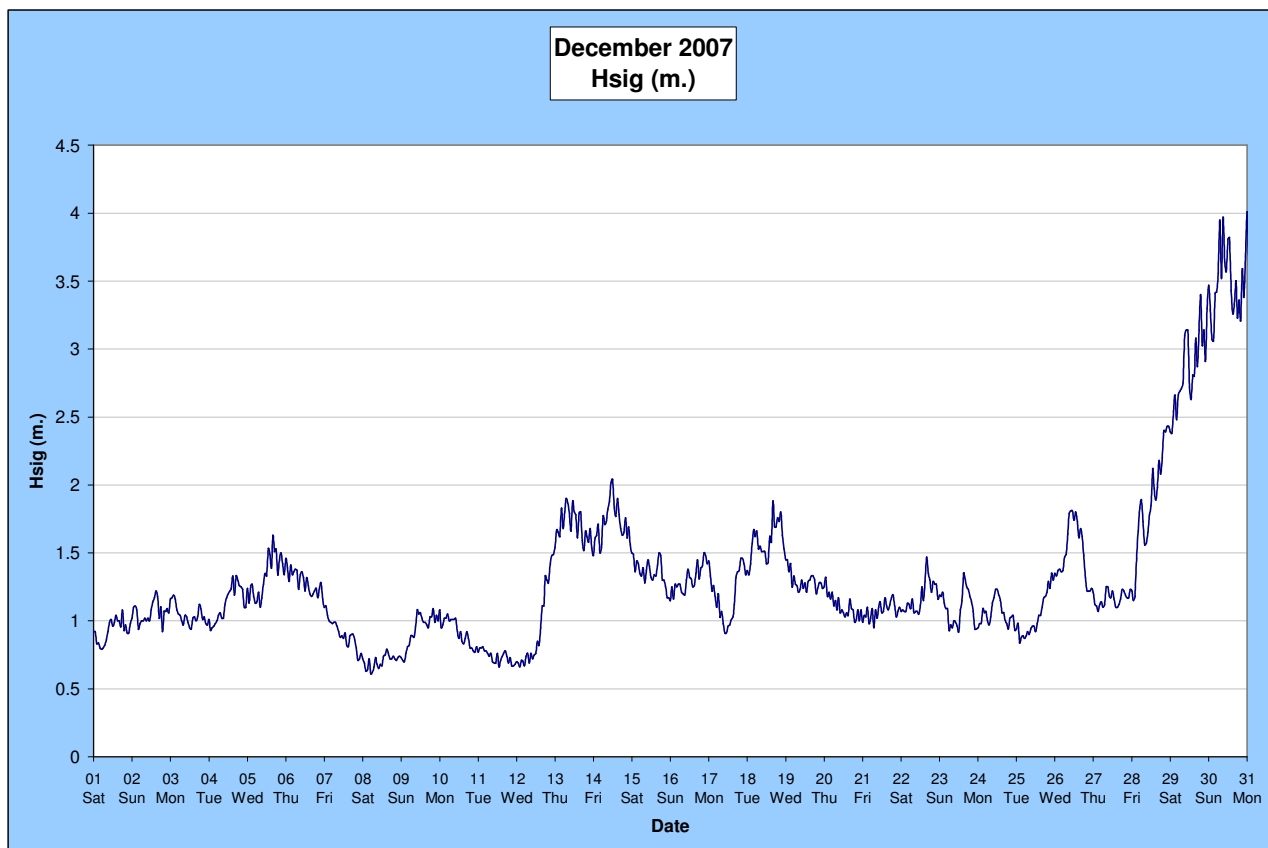
**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY DECEMBER 2007**

5. SURF SUMMARY

Waves of between 0.6 – 1.5 m from the E dominated surf conditions on the Southern Gold Coast in December 2007 except for during the ocean storm from 28 to 31 December when wave heights increased to a peak of 3.5 – 4.0 m. Winds varied over the month with the predominant wind condition being SW at 10-20 Knots.

Readings from the Tweed Waverider Buoy showed a minimum significant wave height of 0.61m on 8 December and a maximum significant wave height of 4.01 m on 31 December. There were 16 recorded days when waves dropped below 1.0 m and 5 days when waves were above 2.0 m.

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 AND OTHER EVENTS

Events in December 2007

17 - 21 December – Rip Curl GromSearch (Duranbah Beach)

Upcoming events in January 2008

19 - 20 January – XXXX Gold Beach Cricket (Coolangatta Beach)

19 - 20 January – Volleyball Queensland Beach Volleyball Open (Coolangatta Beach)

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 DECEMBER 2007**

SURF SUMMARY CONTINUED

VOLUNTEER SURF QUALITY OBSERVATIONS

The following observations for December 2007 were made by volunteer Mr Brian Mason on behalf of the TRESBP.

Date	Duranbah	Frog's Beach / Snapper Rocks	Kirra Point
7 December Morning	1 – 1.5m SE swell. 40 surfers present. Some sand being stirred up on the beach but does not seem to be moving.	46 surfers present. Small northward longshore transport occurring. No offshore bar apparent.	<1m spilling waves. 51 surfers present. No longshore transport occurring. Offshore bar present. Most swimmers I have seen on a weekday at Kirra. Number of people on beach has been rising steadily each week. Many are asians, asia airline is now landing at Coolangatta 4 times a week from Kuala Lumpur, Malaysia with up to 240 people per flight. Must make a difference to beach use.
14 December Morning	1 – 2m plunging swell. 17 surfers present.	48 surfers present. Large longshore transport occurring. No offshore bar apparent.	1 – 1.5m plunging and spilling waves. 11 surfers present. No longshore transport occurring. Offshore bar apparent.
28 December Morning	1 – 1.5m ENE swell. 101 surfers present.	46 surfers present. Average longshore transport occurring. No offshore bar apparent.	<1m waves. 69 surfers present. No longshore transport occurring. Offshore bar present. A lot of people on beach mostly families. Good safe beach for youngsters.
29 December Morning	2 – 2.5m SE plunging swell. 0 surfers present. Only vessel outside was a surfski with two aboard.	24 surfers present. Large longshore transport occurring.	1.5 – 2 m plunging waves. 11 surfers present. No longshore transport occurring. Offshore bar apparent.

SURF SUMMARY CONTINUED

PHOTOGRAPHS OF SURF CONDITIONS



14 December 2007, Duranbah

Source: Coastalwatch



17-21 December 2007, Rip Curl GromSearch, Duranbah

Source: Surfing Australia



28 December 2007, Snapper Rocks

Source: Coastalwatch



29 December 2007, Kirra

Source: Coastalwatch



30 December 2007, Kirra

Source: Coastalwatch



31 December 2007, Kirra

Source: Swellnet

6. BEACH CONDITIONS

PHOTOGRAPHS OF BEACH CONDITIONS

DURANBAH



View from Pt Danger, 25 December 2007

RAINBOW BAY



View from Greenmount, 25 December 2007

COOLANGATTA



View from Greenmount , 25 December 2007



View from Kirra Hill, 25 December 2007

KIRRA



View from Kirra Hill, 25 December 2007



View from Kirra Hill, 25 December 2007

Photos taken: 25 December 2007, approx 9am, low tide

Source: NSW Department of Lands

7. MEDIA COVERAGE AND COMMUNITY FEEDBACK

MEDIA COVERAGE

1 December, Tweed Daily News, "Bubbling under Kirra surface"

"The southern gold coast and Tweed surfing community has created a unified voice to speak out on restoring Kirra's perfect surf...During the federal election campaign, leading surfers and other stakeholders in Kirra's coastal future formed the Kirra Point Committee, securing promises from McPherson electorate major party candidates Margaret May and Eddie Saroff to 'get the ball rolling' to fix Kirra."

5 December, Tweed Daily News, "Doubt over return of Kirra reef"

"Kirra reef is "growing in its exposure", according to the former NSW Climate Change Environment and Water Minister Phil Koperberg...Mr Koperberg last week said that southern Gold Coast beaches, over the long term, would become narrower as sand at Kirra disperses, and "surfing opportunities will trend back to point breaks". Duranbah Beach will require "periodical sand nourishment" and the Tweed River entrance will require dredging every two years, or more frequently, Mr Koperberg said."

24 December, ABC News, "High tides predicted, lifesavers make safety plea"

"High tides of 1.8 m are expected on Christmas and Boxing Day mornings. A number of people were rescued outside the flags on the Gold Coast yesterday and three beaches [Greenmount included] were close for a short time after shark sightings. Stuart Hogben from Surf Life Saving Queensland says surf conditions will be testing."

29 December, ABC News, "Wild winds close SE QLD beaches"

"[Bureau of Meteorology spokesman] Geoff Deoul says 'We've seen swells on the State Government wave rider buoys between 3 and 4 m at the moment – likely to see those increase to 4 or 5 m tomorrow."

30 December, ABC News, "Wild weather threatens Gold Coast's NYE fireworks"

"Gold Coast lifeguard Scott Franzman says 3 m waves and 20 knot winds are pounding beaches along the coast and they will remain closed until conditions are safer."

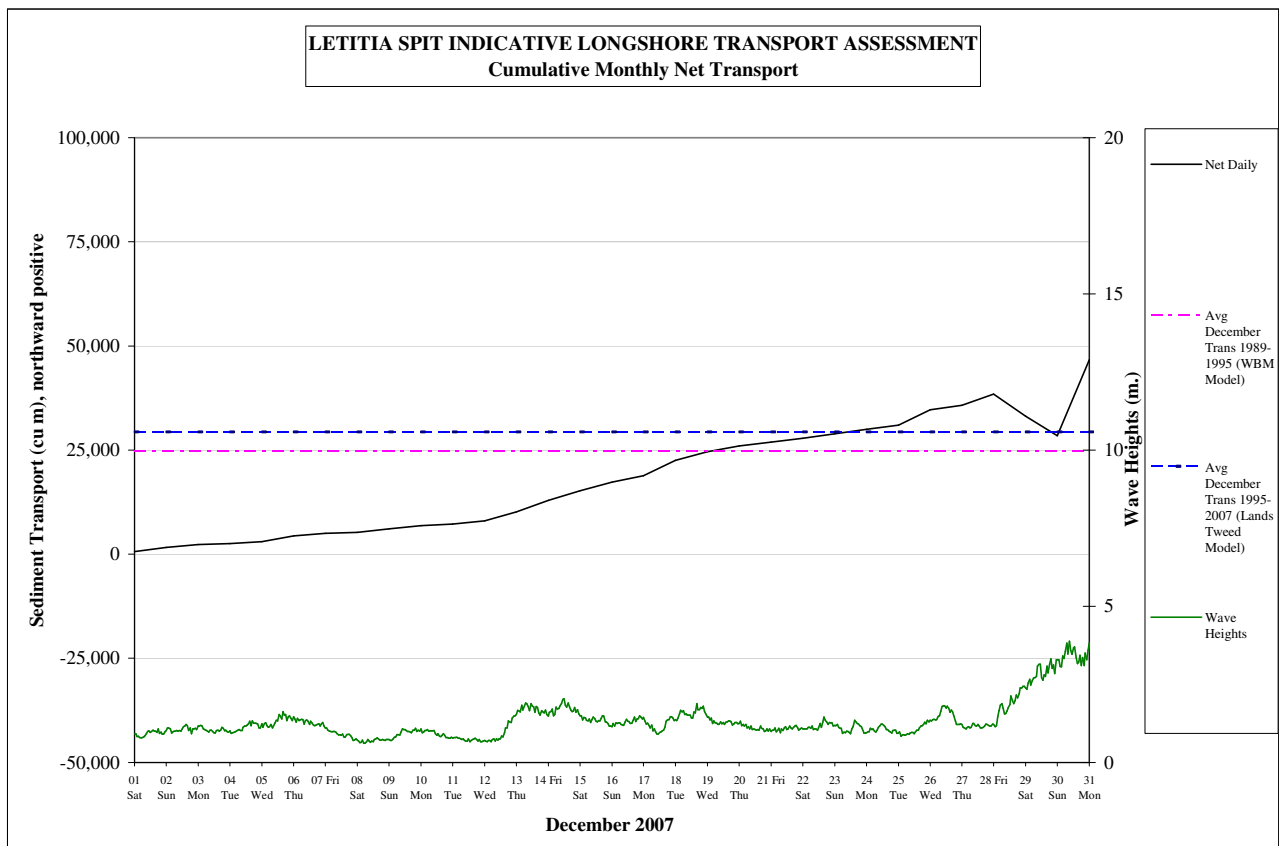
8. TWEED RIVER LOWER ESTUARY TIDAL CONDITIONS

Tidal data for the month of November and December, 2007 have not yet been received for analysis. Tidal monitoring results for November and December, 2007 will be reported in next month's monitoring summary (January, 2008).

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 December 2007, 47,000 m³ of sand was moved north towards the Tweed River entrance by natural processes. This is more than the modelled average sand transport quantity for the month of December.



10. ARGUS COASTAL IMAGING SYSTEM

The University of New South Wales is monitoring Duranbah Beach to North Kirra Beach 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>

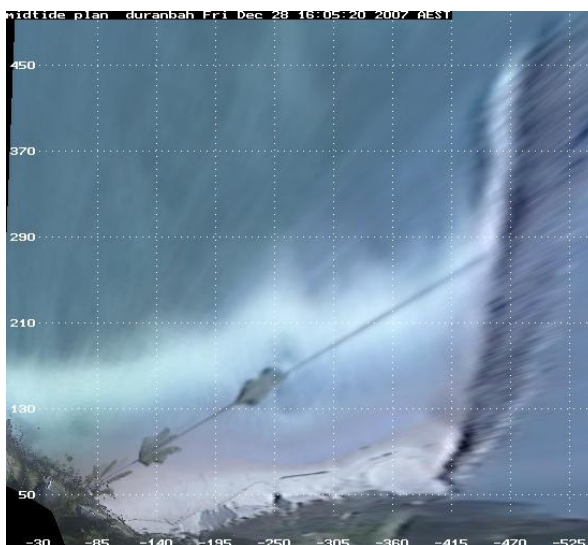
These images are updated hourly and all past photos can be accessed in the archives.

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

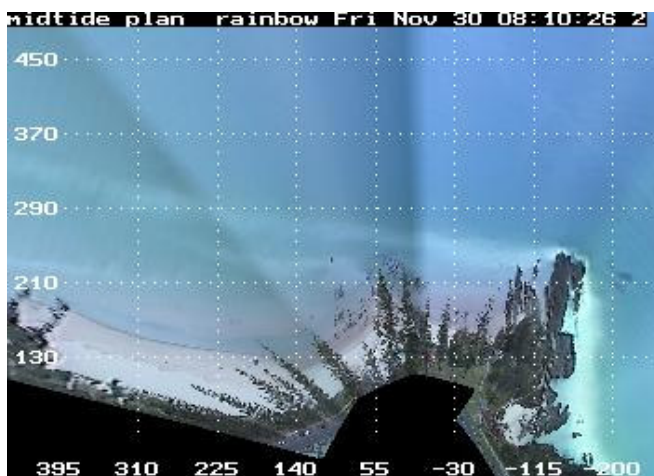


28 November 2007

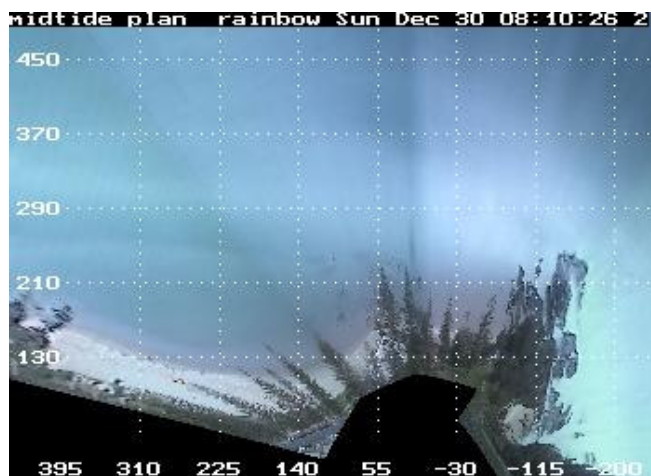


28 December 2007

RAINBOW BAY



30 November 2007

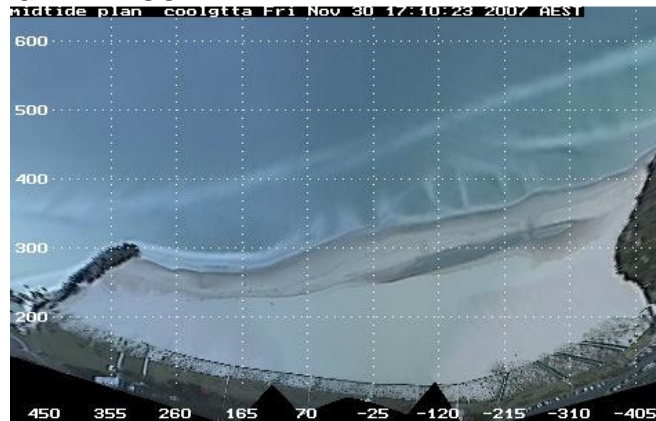


30 December 2007

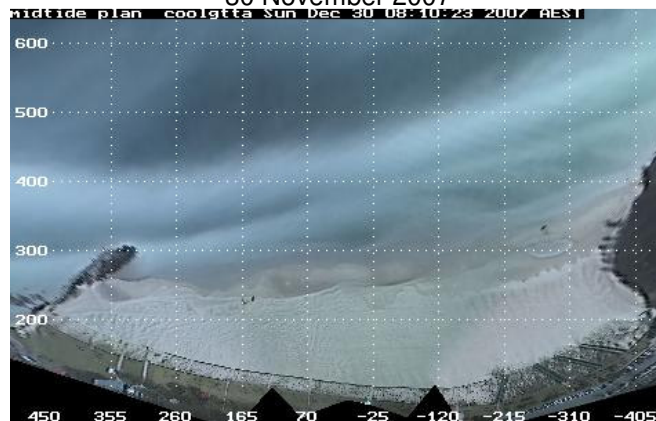
**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY DECEMBER 2007**

ARGUS COASTAL IMAGING SYSTEM CONTINUED

COOLANGATTA - GREENMOUNT

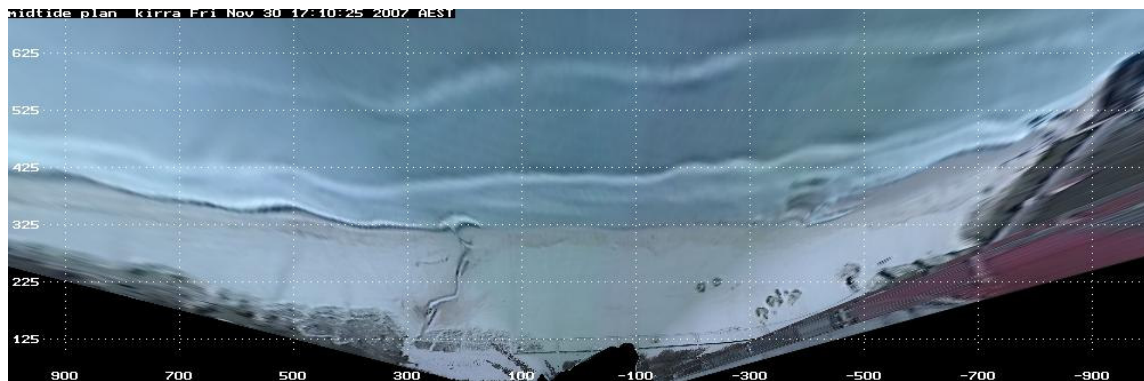


30 November 2007

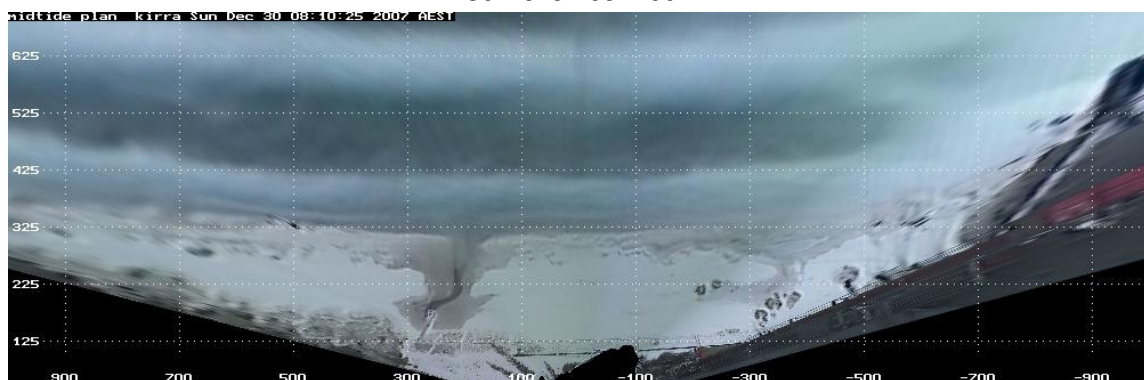


30 December 2007

NORTH KIRRA - KIRRA



30 November 2007



30 December 2007

11. CONTACT DETAILS

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 the Project Manager for the Governments:

Ian Taylor

Tweed River Entrance Sand Bypassing Project

NSW Department of Lands

Ian.Taylor@lands.nsw.gov.au

PO Box 624, Ballina, NSW 2478

Ph: (02) 6620 – 5501

Fax: (02) 6681 – 6944