

Tweed River Entrance Sand Bypassing Project

Letitia Spit to Kirra



Monthly Environmental Monitoring Summary

JANUARY 2008

Department of Lands 




**Queensland
Government**
Environmental
Protection Agency

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

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. MEDIA COVERAGE AND COMMUNITY FEEDBACK	9
7. TWEED RIVER LOWER ESTUARY TIDAL CONDITIONS.....	11
8. INDICATIVE LONGSHORE SAND TRANSPORT	12
9. ARGUS COASTAL IMAGING SYSTEM.....	13
10. CONTACT DETAILS	15

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 January 2008:

- A significant ocean storm and significant flooding of the Tweed River occurred over 31 December 2007 to 5 January 2008.
- The number of vessels that passed through the entrance this month was approximately the same as the average crossings.
- Surf quality in January was good to excellent, with reports of excellent surf conditions for experienced surfers at Duranbah, Snapper Rocks and Kirra in the beginning of the month during the ocean storm occurring from 1 to 5 January.
- Tidal data is being analysed and will be presented in the February 2008 Environmental Monitoring Summary. Tide data from November and December 2007 is consistent with ocean tide levels and shows no significant impacts.
- The estimated amount of sand moving north towards the Tweed River Entrance was more than the modelled January average.
- Pumping of sand onto Duranbah Beach was carried out from 14th to 22nd January, with sand pumping directed to the main Snapper Rocks East outlet for the last part of January while temporary pipework was relocated along Duranbah Beach. Pumping to Duranbah Beach is scheduled to recommence as soon as high seas abate.

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

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



3. PUMPING AND DREDGING ACTIVITIES

Sand Delivery for JANUARY 2008

Location	PUMPED		DREDGED	JANUARY 2008 TOTAL DELIVERY
	Snapper Rocks East	Duranbah		
Amount (m ³)	42,221	8,452	0	50,673

Total Sand Delivery to Date by the Stage 2 Permanent Sand Bypassing System (May 2000 to January 2008)

	PUMPED	DREDGED	TOTAL DELIVERY STAGE 2
Amount (m ³)	4,470,761	*1,862,793	*6,333,554

* Nb. Does not include 22,870 m³ of dredged sand delivered to Palm Beach from June to September 2005.

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

4. TWEED RIVER ENTRANCE CONDITIONS

VOLUNTEER VIDEO MONITORING LOG

The following Entrance Condition observations for January 2008 were recorded by volunteer Mr Brian Mason:

Date	Observations
5 January Morning	Dangerous crossing conditions. Waves breaking across the entrance.
11 January Morning	Overcast to rainy. Possible crossing conditions but with great care. Erosion almost back to tree line at northern end [of Duranbah Beach].
18 January Morning	Overcast. Very dangerous crossing conditions.

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

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 January 2008 are presented below.

The navigation ratings from 1–5 are as follows:

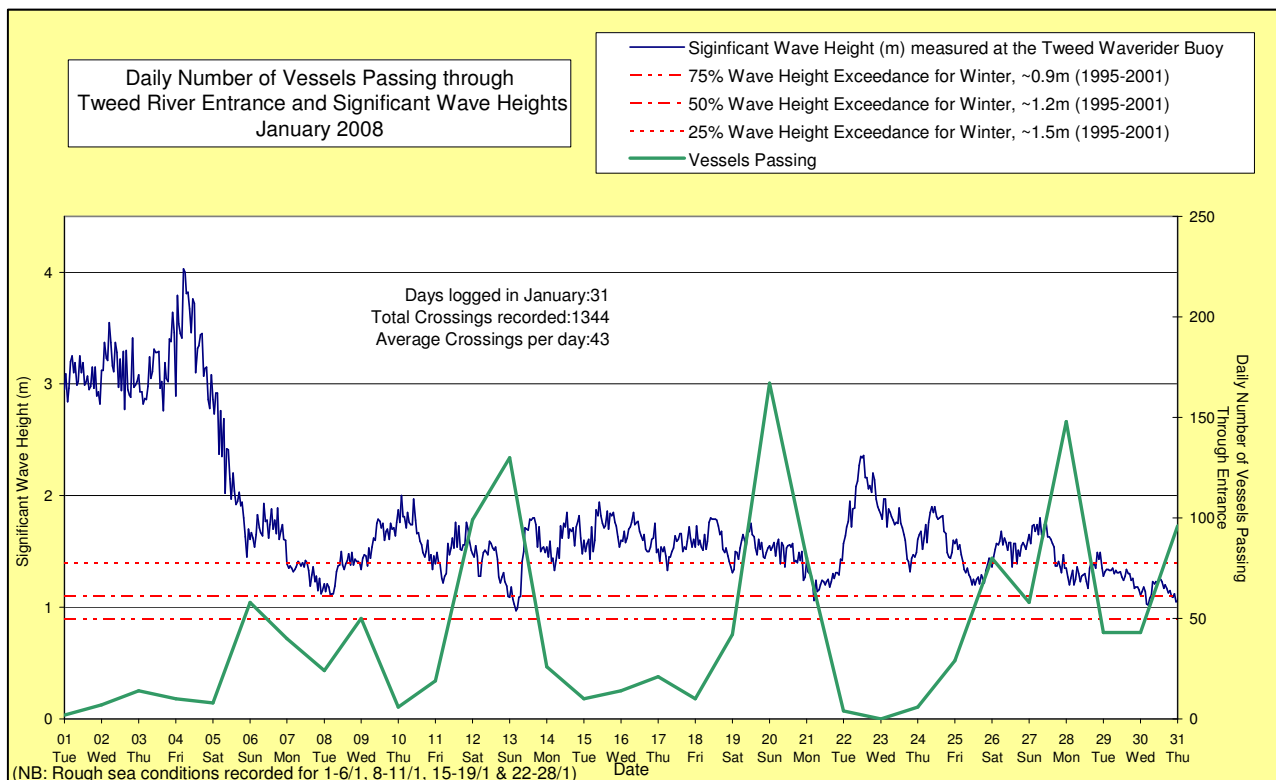
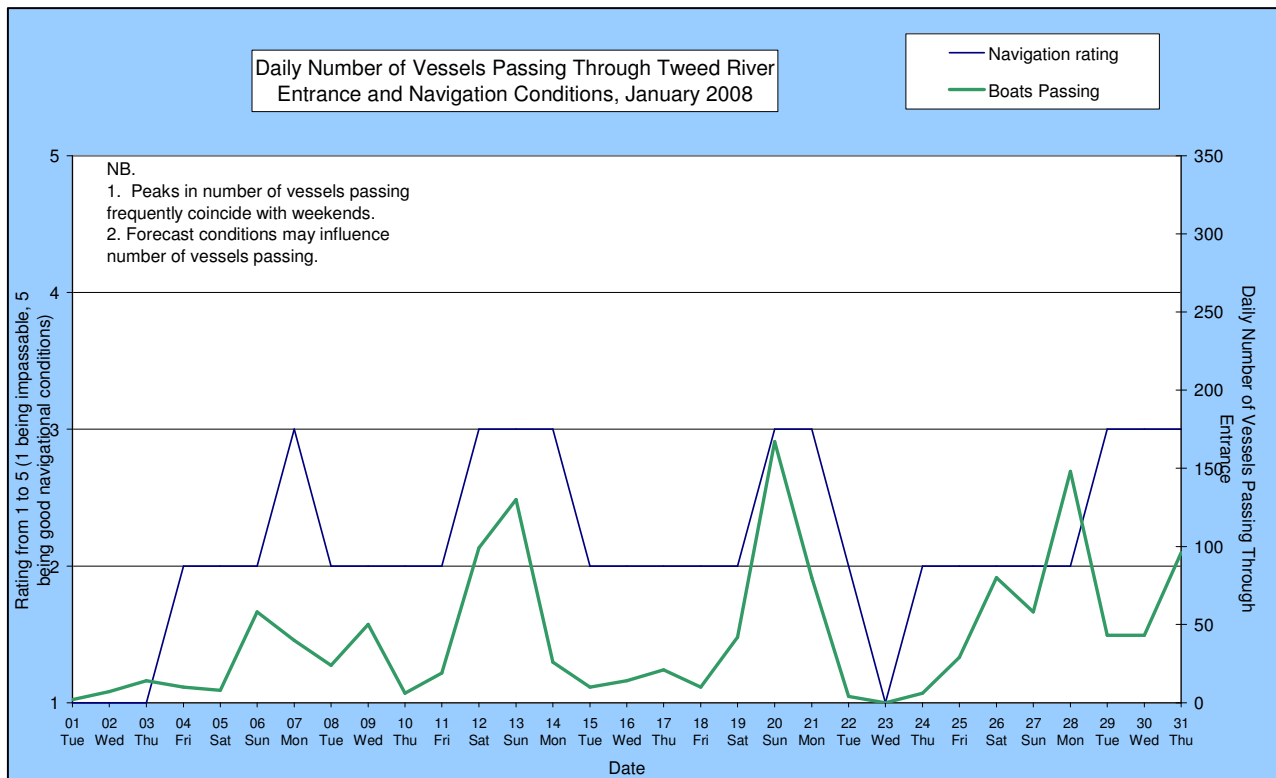
- 1 – Impassable 2 – Difficulty encountered 3 – Some difficulty encountered
4 – Relatively good crossing 5 – Good conditions

☐ – Weekends and public holidays

Date	Entrance Conditions	Navigation Rating Impassable-----Good					Number of Boats
		1	2	3	4	5	
1	Rough						2
2	Rough						7
3	Rough						14
4	Rough						10
5	Rough						8
6	Rough						58
7	Moderate						40
8	Rough						24
9	Rough						50
10	Rough						6
11	Rough						19
12	Moderate						99
13	Moderate						130
14	Moderate						26
15	Rough						10
16	Rough						14
17	Rough						21
18	Rough						10
19	Rough						42
20	Moderate						167
21	Moderate						80
22	Rough						4
23	Rough						0
24	Rough						6
25	Rough						29
26	Rough						80
27	Rough						58
28	Rough						148
29	Moderate						43
30	Moderate						43
31	Moderate						96

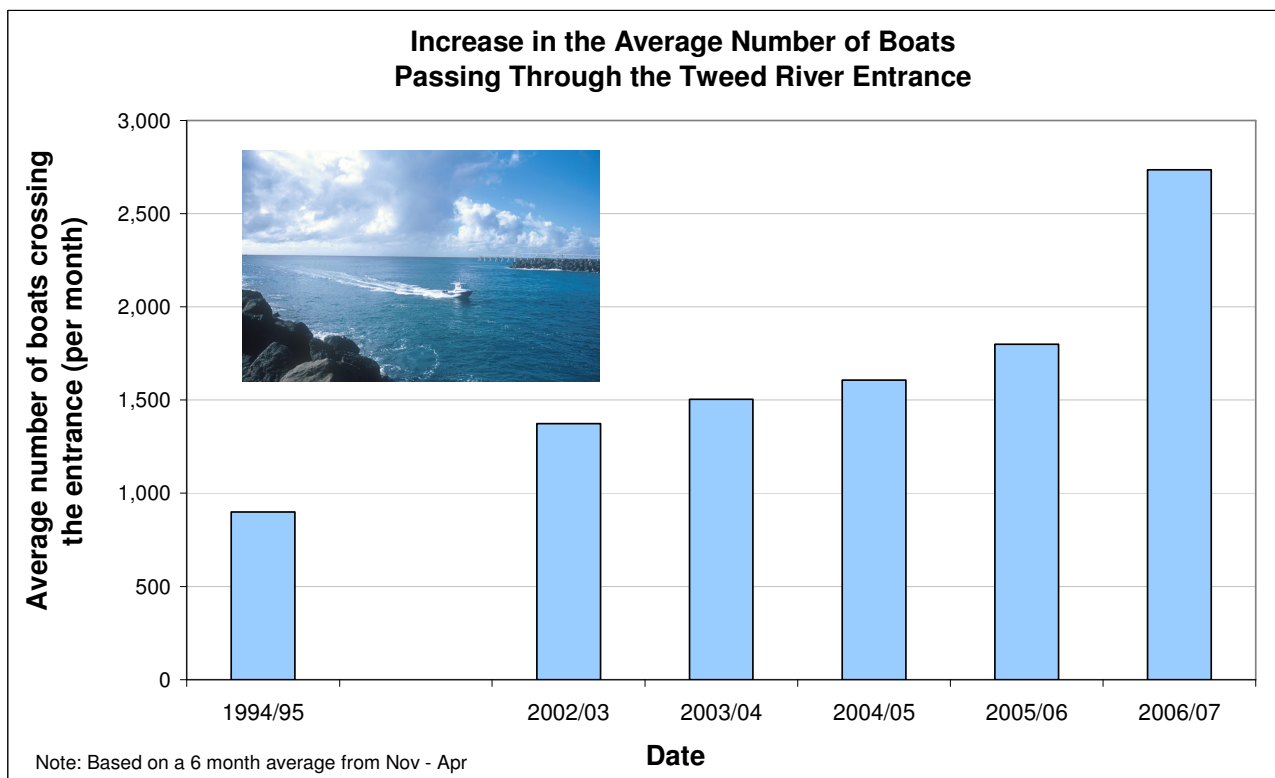
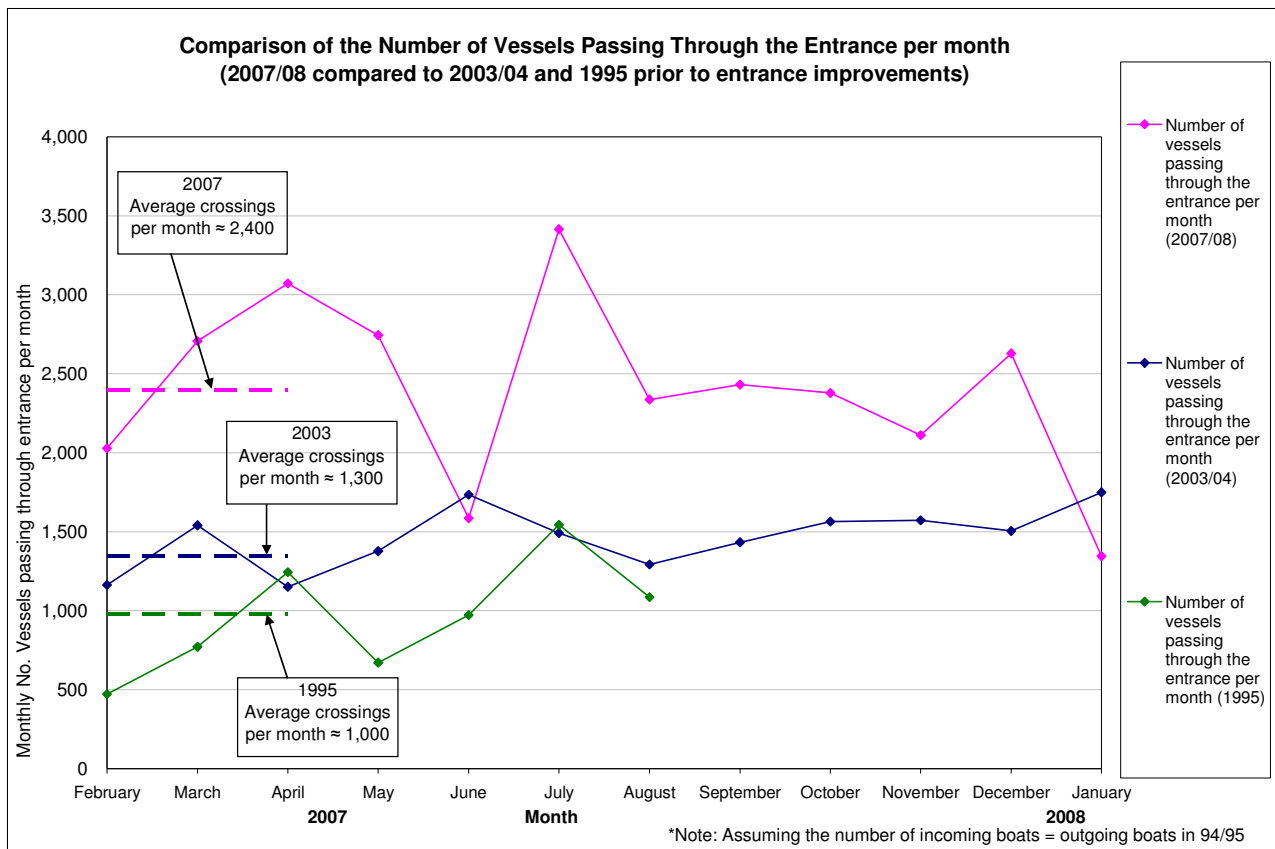
**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

TWEED RIVER ENTRANCE CONDITIONS CONTINUED



**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

TWEED RIVER ENTRANCE CONDITIONS CONTINUED



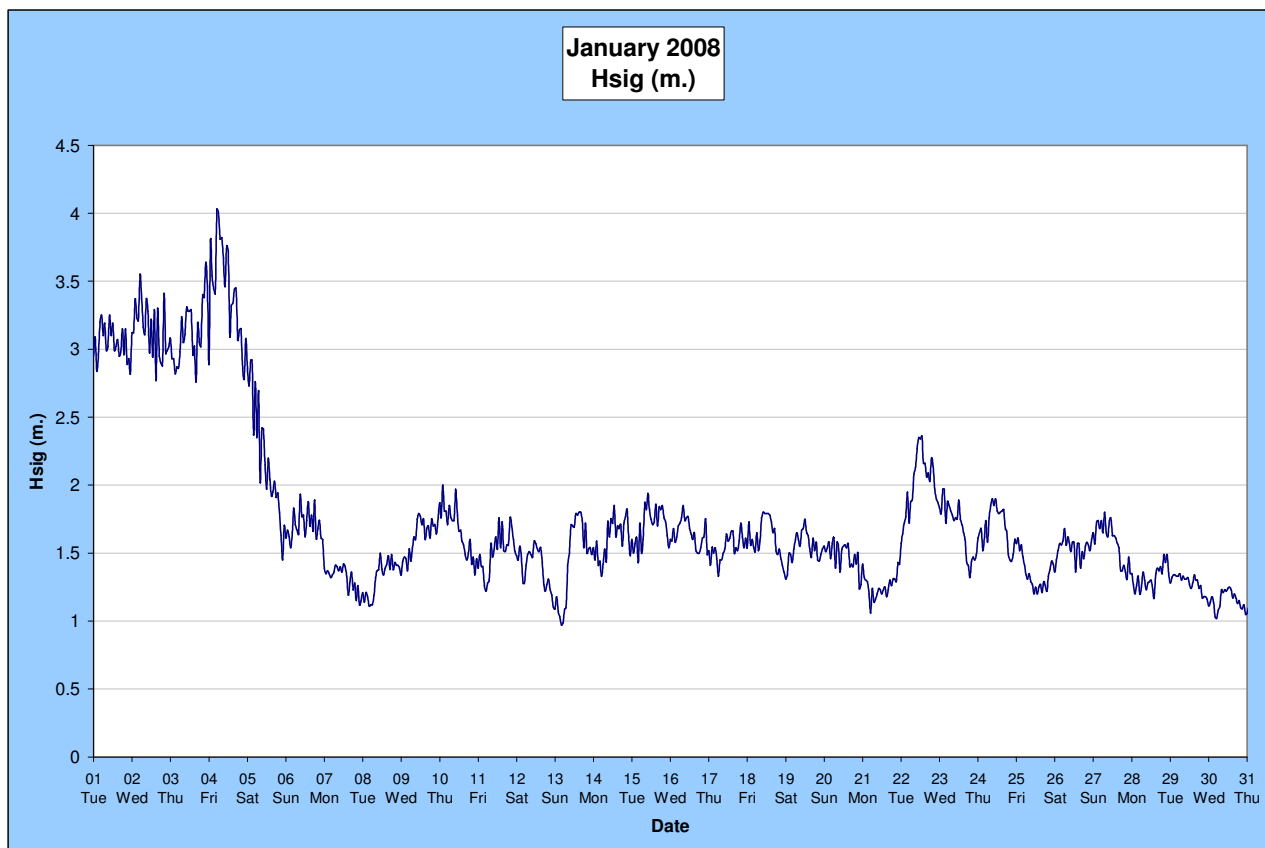
**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

5. SURF SUMMARY

Waves of between 1.0 – 2.0 m from the E dominated surf conditions on the Southern Gold Coast in January 2008 except for during the ocean storm from 1 to 5 January when wave heights increased to a peak of 3.0 – 4.0 m. Winds varied over the month with the predominant wind condition being SW at 10-30 Knots.

Readings from the Tweed Waverider Buoy showed a minimum significant wave height of 0.97 m on 13 January and a maximum significant wave height of 4.03 m on 4 January. There were 1 recorded days when waves dropped below 1.0 m and 6 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 January 2008

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

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

Upcoming events in February 2008

2 February – Rip Curl MP Classic (Kirra Beach)

22 February - 5 March – Quiksilver Pro (Snapper Rocks)

22 February - 5 March – Roxy Pro (Snapper Rocks)

Source: Surfing Australia, Surf Life Saving Australia, Surf Life Saving Queensland, Volleyball Queensland & XXXX Gold Beach Cricket

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

SURF SUMMARY CONTINUED

VOLUNTEER SURF QUALITY OBSERVATIONS

The following observations for January 2008 were made by volunteer Mr Brian Mason on behalf of the TRESBP.

Date	Duranbah	Frog's Beach / Snapper Rocks	Kirra Point
5 January Morning	>>2.5m ENE plunging swell. 1 surfers present.	128 surfers present. Large longshore transport occurring. No offshore bar apparent.	1 – 1.5m waves. 47 surfers present. No longshore transport occurring. Offshore bar apparent.
11 January Morning	1.5 – 2m ESE swell, plunging waves. 16 surfers present. Beach badly eroded. Lot of white water.	18 surfers present. No longshore transport occurring. No offshore bar apparent.	1 – 1.5m plunging waves. 32 surfers present. No longshore transport occurring. Offshore bar apparent. Kirra is by far the most popular beach with families. Beach levels appear to have been lowered and Kirra north has water laying well back from the surf. Would probably erode badly if further weather events occurred.
18 January Morning	1.5 – 2m NE swell, plunging waves. 13 surfers present. Waves breaking seawards of the entrance.	38 surfers present. Small longshore transport occurring. No offshore bar apparent.	1 – 1.5m plunging and spilling waves. 3 surfers present. No longshore transport occurring. Offshore bar apparent.

6. MEDIA COVERAGE AND COMMUNITY FEEDBACK

MEDIA COVERAGE

1 January 2008, Daily News, "Partiers warned away from surf as wind and rain running wild"

"Tweed coast beach lovers have been warned to stay away from the surf as strong wind and rain continues to lash the region... [The Bureau of Meteorology] warned of waves exceeding 5 m in the surf zone, which would likely produce significant beach erosion between Tweed Heads and Smoky Cape..."

2 January, 2008, Gold Coast Bulletin, "More rain, weather we like it or not"

"Most beaches were closed yesterday... Only three local beaches were open at Coochimudio Island, Tullebudgera Creek and Rainbow Bay... Waves peaked at more than 6m off Point Danger yesterday, with surfers enjoying swells of up to 5m at Kirra and Snapper Rocks..." Kirra was the best spot to surf today", [said surfer Davina Drinan.]"

6 January, 2008, Sydney Morning Herald, "Holiday crowds left high and wet"

"The Tweed River was flowing level with the main road heading into Murwillumbah... In South-east Queensland, authorities said rising floodwaters were the worst for 20 years."

9 January, 2008, Gold Coast Bulletin, "Supersize swells bolster Coast's surfing status"

"Big waves and hot talent are boosting the gold Coast's chances of hosting the World Masters Surfing Championship in 2009... [Gary 'Kong' Elkerton said] 'It's a natural choice for the championship. If you want to be one of the best surfers in the world you have to be training on the Gold Coast'."

9 January, 2008, Daily News, "Duranbah Beach denuded"

"Up to 20,000 cubic metres of sand will be pumped to Duranbah beach to repair severe erosion – the aftermath of last week's cyclonic weather... Much of the sand recently pumped to the beach as part of ongoing dune replenishment works has been lost as a result of the severe weather conditions."

12 January, 2008, Tweed Daily News, "Duranbah getting its sand"

"Sand pumping to repair erosion damage caused by last week's big swells got under way at Duranbah Beach yesterday. "When erosion occurs at Duranbah Beach, particularly as we've just seen, it is best to rebuild the beach quickly to provide resistance against future storm events," said Mr Taylor."

15 January, 2008, Gold Coast Bulletin, "Pumps give nature a hand with beach sand"

"After a slight hiccup workers finally began pumping sand back on to Duranbah Beach yesterday. The popular surf beach, which was badly eroded by the recent heavy swells, will receive a 20,000 cubic metre sand boost in the next few weeks in an effort to rebuild the damage dunes."

17 January, 2008, Tweed Daily News, "VMR to the rescue of shark boat"

"A shark fisherman was left stranded off the Tweed Bar for more than five hours yesterday after a broken rudder stop on his boat and dangerous conditions prevented him from reaching shore."

17 January, 2008, Gold Coast Bulletin, "Sand action call"

"The recent storms have had little of the predicted effect on the southern Gold Coast beaches..." "In the mean time, use a dredge to remove sand from the Tweed River mouth as necessary and put it somewhere it is needed," he (Gold Coast mayoral contender John Braford) said."

21 January, 2008, Gold Coast Bulletin, "Mass rescue from rip"

"Surf lifesavers pulled five females and a male from a rip at Greenmount after the group got into difficulties 50 m north of the flags."

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

22 January, 2008, Tweed Daily News, "Men plucked from choppy Tweed Bar"

"Yesterday, two Tallebudgera men... were plucked from choppy waters by a Fingal Rovers IRB crew after their centre console five-metre tinny overturned at the Tweed Bar."

23 January, 2008, Gold Coast Bulletin, "Wild Wednesday dawns on Coast as moon and weather combine"

"Further south, what sand remained on Duranbah beach was quickly washed away... [Ben Matson said] "The best waves today are probably going to be found at Kirra and Currumbin"."

30 January, 2008, Daily News, "Pumping Kirra Pt to create a classic MP"

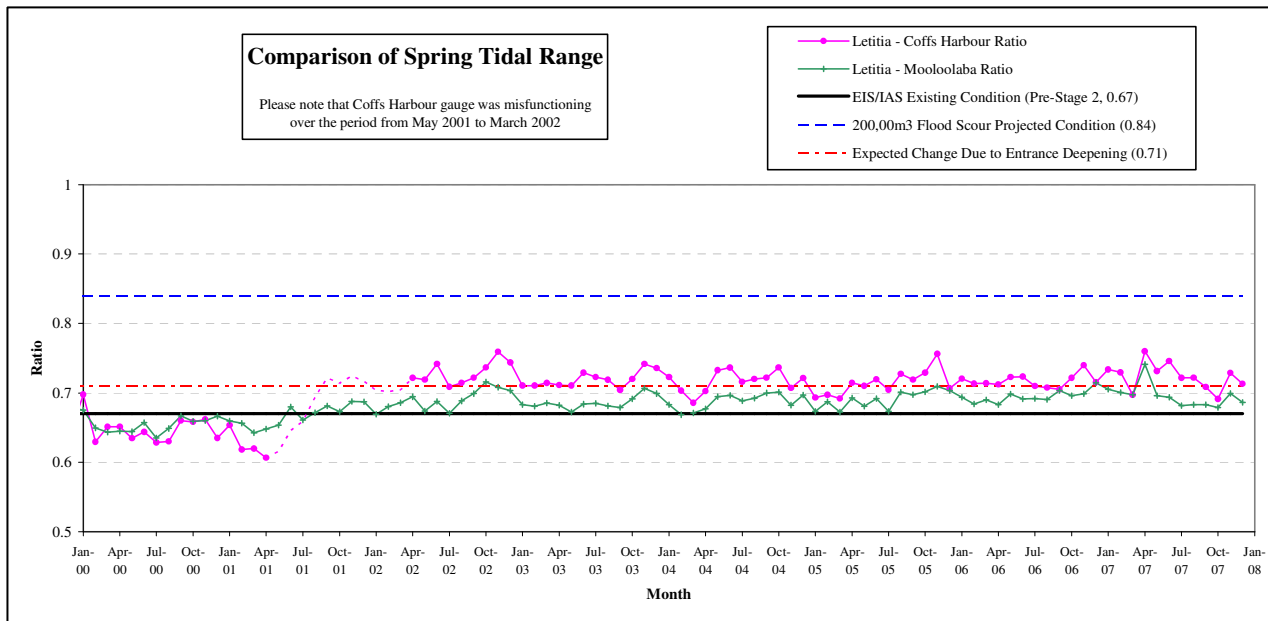
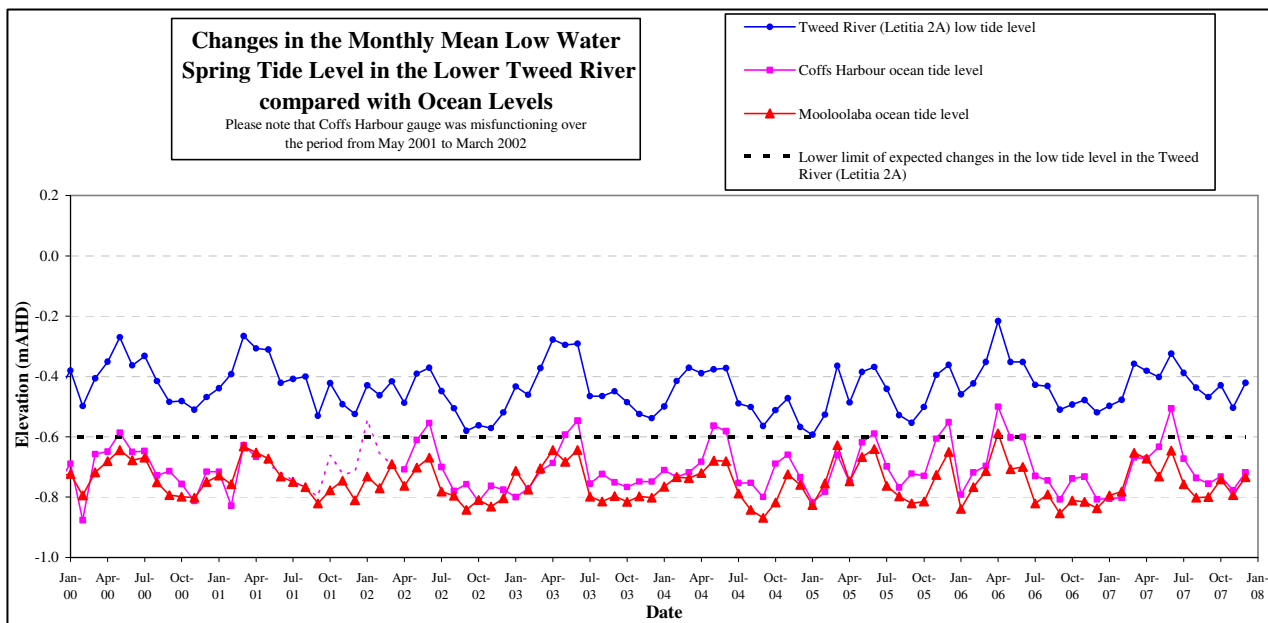
"In all the previous years, the prestigious local event has been held at D-bah, but this weekend that's all set to change with another low pressure system in the Coral Sea and pulsating east-south easterly swell set to rise on both Saturday and Sunday."

**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

7. TWEED RIVER LOWER ESTUARY TIDAL CONDITIONS

Tweed River tide data for the month of January 2008 is currently being analysed. The Mean Low Water Spring (MLWS) tide level in the lower Tweed River was -0.504 m AHD in November 2007 and -0.421 m AHD in December 2007.

The Letitia 2A tidal data for November and December 2007 mirrored the Mooloolaba ocean tidal trends indicating that the TRESBP has not had a significant impact on Lower Tweed River tidal range.

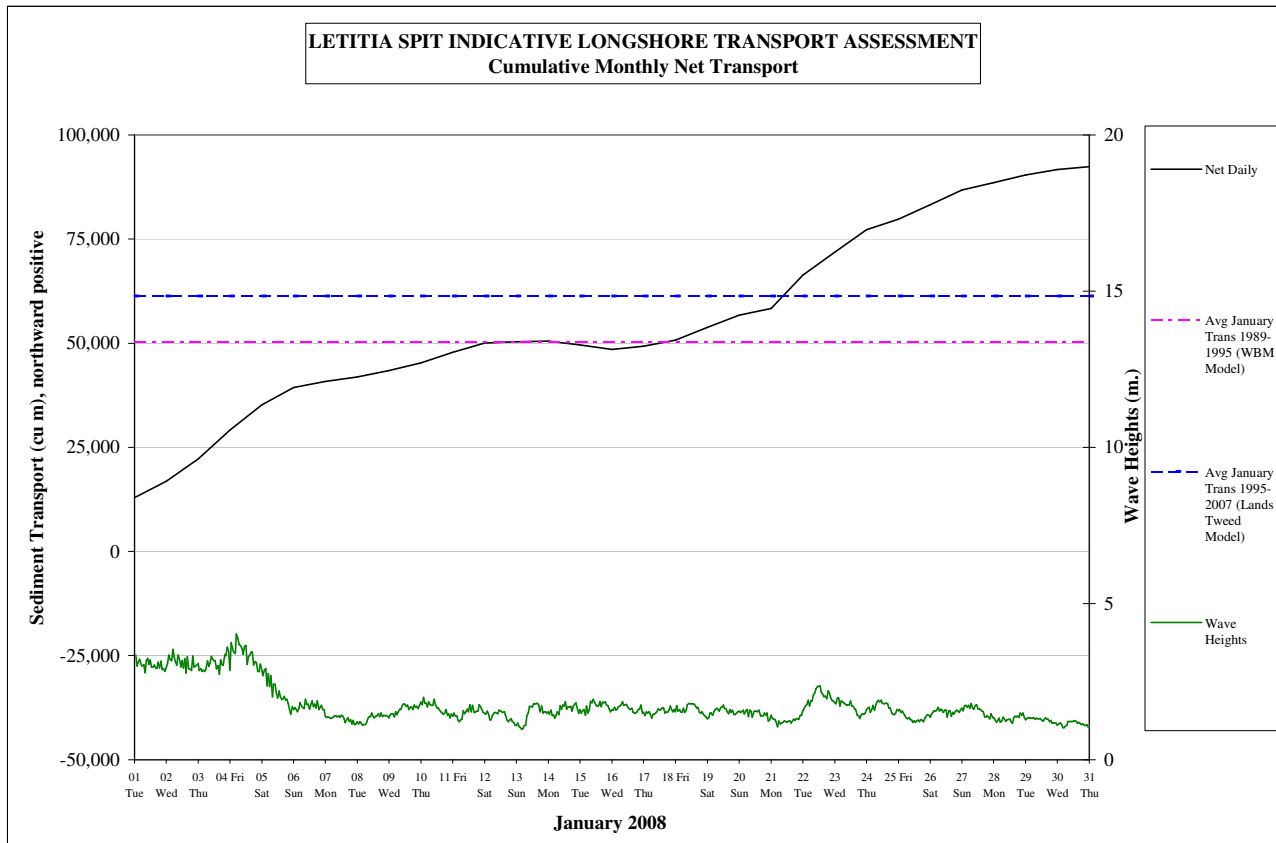


**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

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 January 2008, 92,000m³ 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 January.



**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

9. ARGUS COASTAL IMAGING SYSTEM

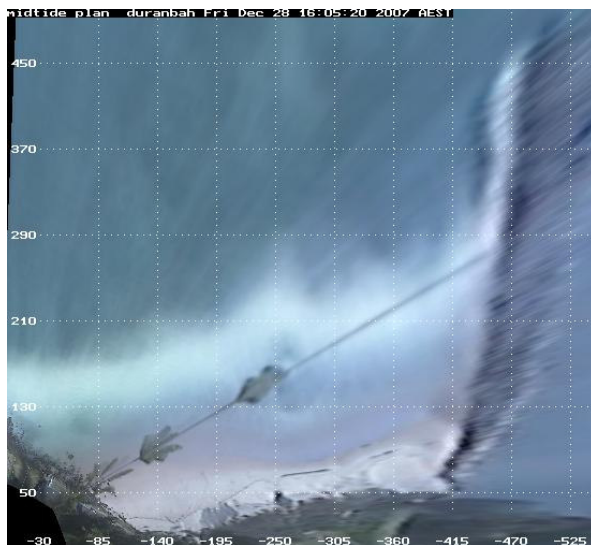
The University of New South Wales is monitoring Duranbah Beach to North Kirra Beach for the project using an ARGUS coastal imaging system. Images are available on the internet at the following address:

<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

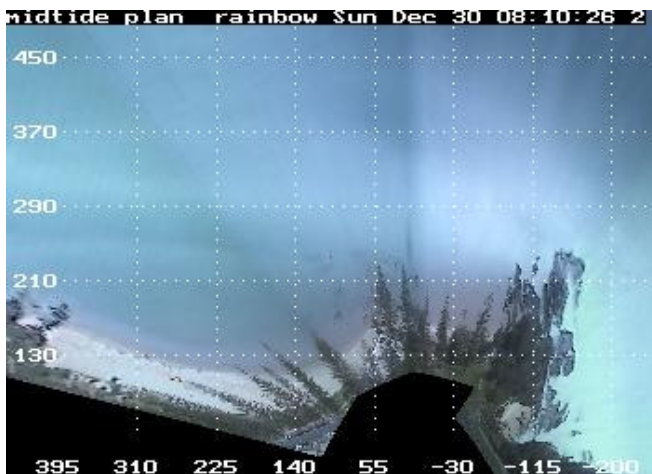


28 December 2007

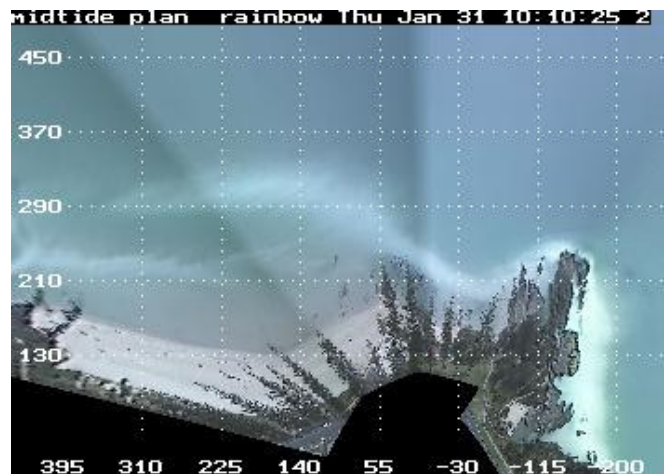


31 January 2008

RAINBOW BAY



30 December 2007

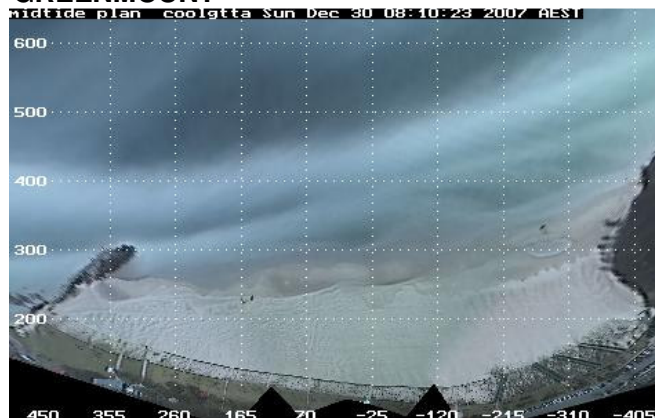


31 January 2008

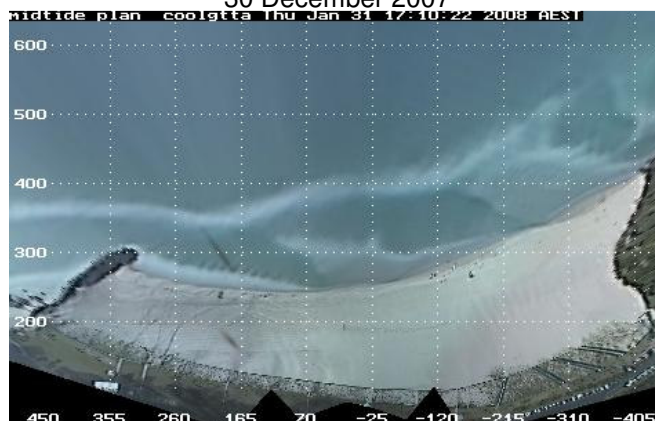
**TWEED RIVER ENTRANCE SAND BYPASSING PROJECT
LETITIA SPIT TO KIRRA
MONTHLY ENVIRONMENTAL MONITORING SUMMARY JANUARY 2008**

ARGUS COASTAL IMAGING SYSTEM CONTINUED

COOLANGATTA - GREENMOUNT

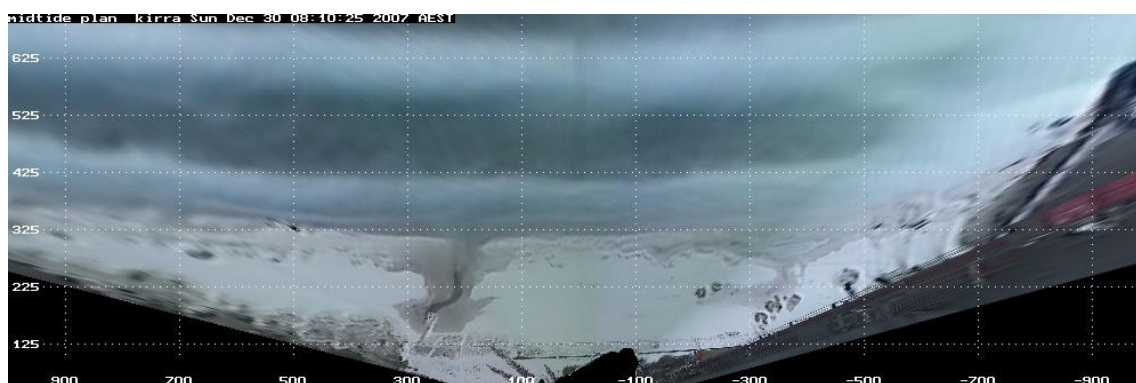


30 December 2007

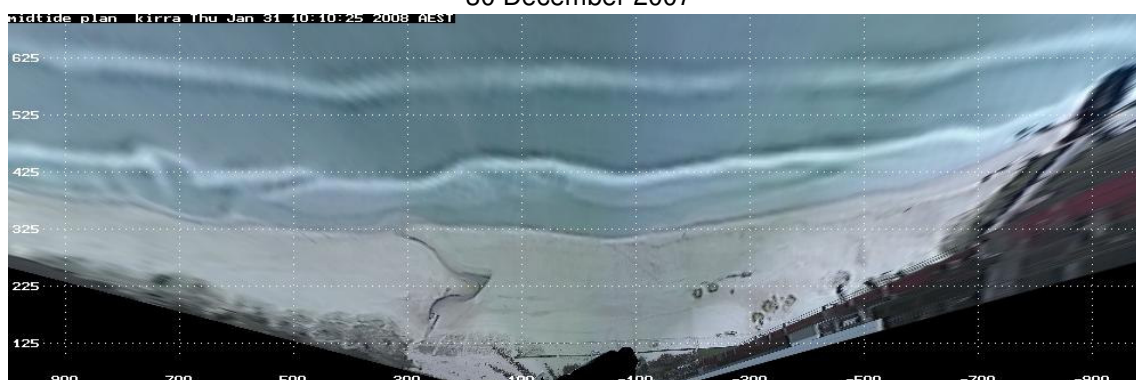


31 January 2008

NORTH KIRRA - KIRRA



30 December 2007



31 January 2008

10. 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