

Eurobodalla Shire Council

Ocean beaches: Cookies, Casey, Surf, Malua Bay, Broulee, Bengello, Shelley, Tuross Main, Brou, Narooma Main. **Netted beach:** Wagonga Inlet.



Local government area description

Eurobodalla Shire is located on the South Coast of New South Wales, between Shoalhaven City Council to the north and Bega Valley Shire to the south. It has an area of approximately 3 402 square kilometres, with 110 kilometres of coastline and 60 named beaches. There are also three major river systems: the Clyde, Deua and Tuross.

The population of the region is approximately 35 009 and growing at a rate of 1.4 per cent each year. The major towns in the shire are Batemans Bay, Narooma and Moruya. Approximately 80 per cent of the land is either State Forest or National Park. The major commercial activities include dairy farming, forestry, fishing, tourism, and the building and service industries (Eurobodalla Shire Council 2007).

Program outline

Eleven swimming sites were monitored by Eurobodalla Shire Council between October 2007 and April 2008. The sites were 10 ocean beaches and a netted beach just within the breakwalls of Wagonga Inlet.

All sites were previously monitored during summer 2006–2007, summer 2005–2006, summer 2004–2005 and summer 2002–2003 (DECC 2007, DEC 2004b, 2006a and 2006b).

Faecal coliforms and enterococci results were assessed against the NHMRC (1990) swimming water quality guidelines to determine suitability for swimming. The required five samples needed to calculate compliance were collected in all months.

Eurobodalla Council issued joint media releases with DECC during the summer swimming season to provide the community with information on water quality at swimming sites.

Rainfall data

Rainfall data presented in the timeseries plots were obtained from the Bureau of Meteorology's gauges at Batemans Bay (Buckenbowra), Moruya (The Lagoon) and Narooma. Rainfall for each site is from the closest rain gauge.

Ocean beaches

Guideline compliance

Nine of the 10 ocean beaches consistently complied with the NHMRC (1990) swimming water quality guidelines in all seven months of the 2007–2008 summer swimming season (Figure 12).

A relatively high level of compliance was also recorded at Surf Beach. This site complied in six of the seven months, failing the guidelines in November 2007 owing to elevated levels of enterococci.

A high level of compliance with the swimming guidelines was also recorded during summer 2004–2005, summer 2005–2006 and summer 2006–2007 (DEC 2006a and 2006b, DECC 2007).

Response to Rainfall

Levels of bacteria were generally low at all ocean beaches during the monitoring period, showing little response to rainfall. The exception was Surf Beach which had elevated enterococci results in response to rainfall.

Wagonga Inlet

Guideline compliance

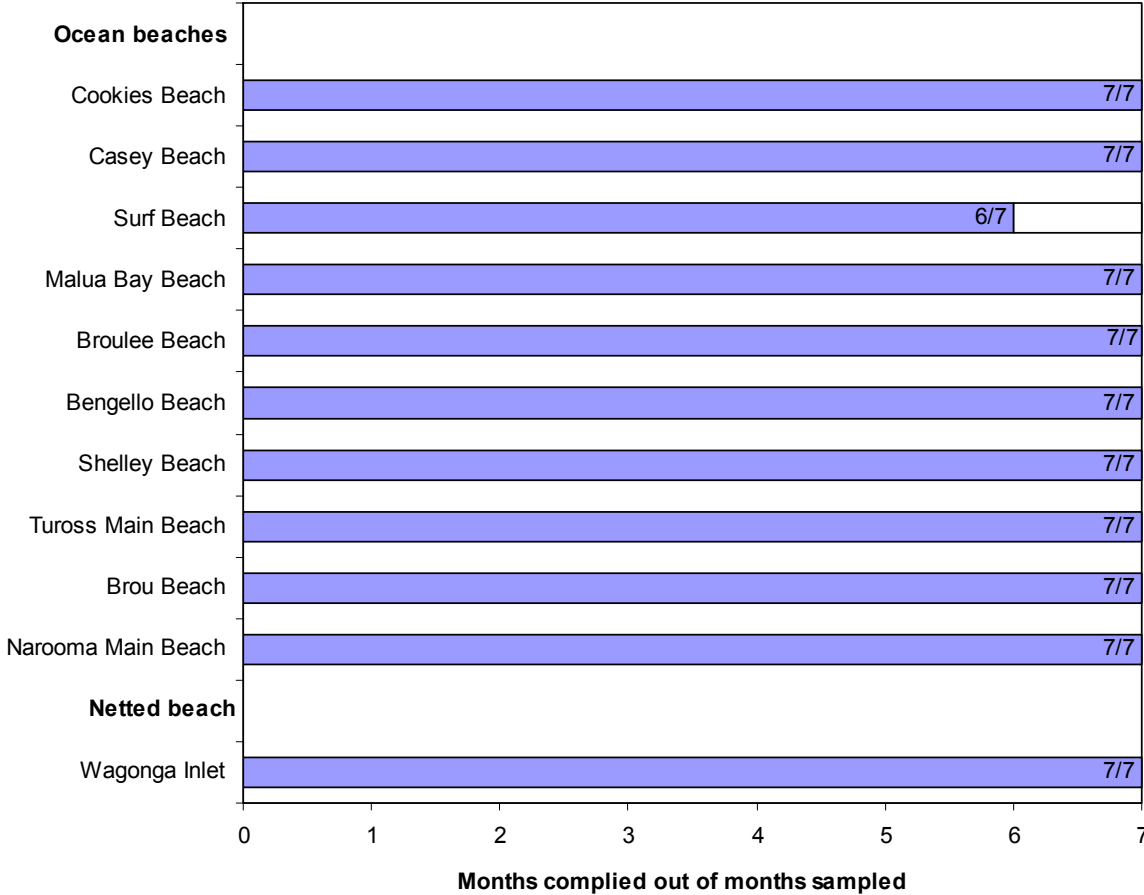
The netted beach at Wagonga Inlet consistently complied with the NHMRC (1990) swimming water quality guidelines in all seven months of the 2007–2008 summer swimming season (Figure 12).

A similar high level of compliance has been recorded in previous years (DEC 2006a and 2006b, DECC 2007).

Response to Rainfall

Levels of bacteria were generally low at Wagonga Inlet during the monitoring period, showing little response to rainfall.

Figure 12: Summary of compliance with NHMRC (1990) microbiological guidelines for swimming at Eurobodalla Shire Council swimming sites over the 2007–2008 summer season



Cookies Beach

See page 163 for key to map

Description Cookies Beach is situated east of the South Durras township. The sampling site is located at the southern end of the beach, adjacent to a caravan park and boat ramp, and north of the Murrumurang Resort National Park. The beach is popular with tourists and the local community.

Pollution sources Urban stormwater is discharged at the southern end of the beach. Water quality may also be affected by onsite wastewater management systems within the catchment.

Compliance Faecal coliform and enterococci levels at Cookies Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

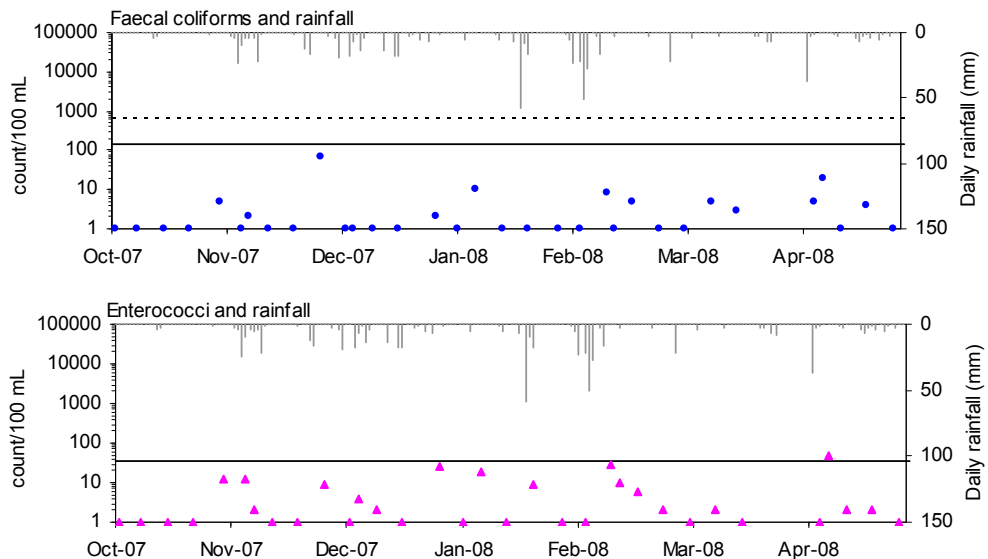


Compliance with NHMRC (1990) swimming guidelines at Cookies Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots

Levels of faecal coliforms and enterococci were generally low throughout the monitoring period. A single elevated enterococci result was recorded in early April 2008.



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Casey Beach

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Description

Casey Beach is approximately one kilometre long and is located to the south of Observation Point. The beach is not patrolled. It is backed by the village of Batehaven and is a popular swimming location for local residents and tourists. Fishing from the rocks of Observation Point is also popular.



Pollution sources

Urban stormwater runoff is discharged via an outlet adjacent to the sampling site. Beach water quality may also be affected by overflows from a sewage pumping station at the southern end of the beach and leachate from onsite wastewater systems within the catchment.

Compliance

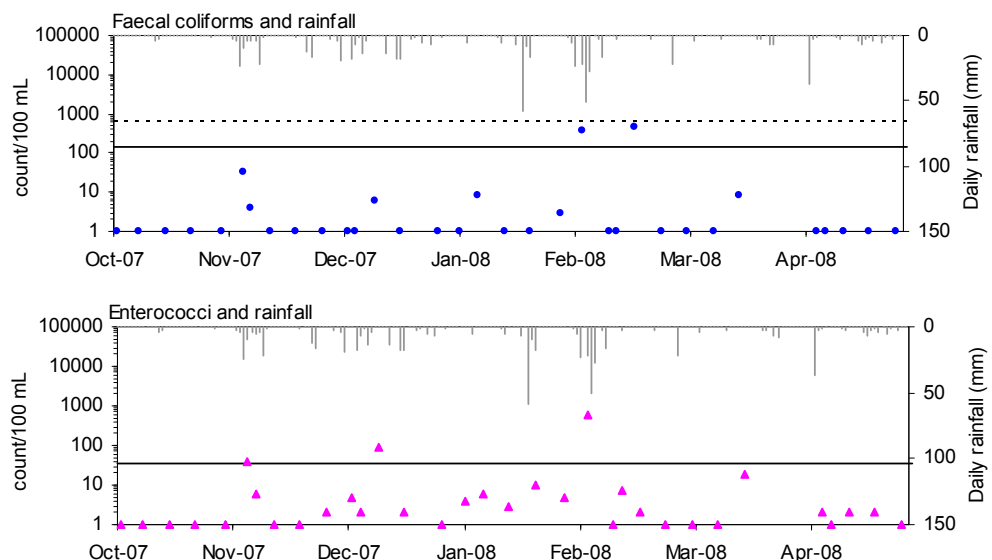
Faecal coliform and enterococci levels at Casey Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

Compliance with NHMRC (1990) swimming guidelines at Casey Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots

Levels of faecal coliforms and enterococci were generally low throughout the monitoring period, with slightly elevated values measured on two occasions for both bacterial indicators, but not always in response to rainfall.



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Surf Beach

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Description Surf Beach is approximately 300 metres long and backed by a parking area and shops. The beach is patrolled during summer and considered to be a safe swimming beach. It is popular with local residents and tourists.

Pollution sources Wimbie Creek discharges across Wimbie Beach at the southern end of the beach. Wimbie Creek carries urban stormwater, may be affected by leachate from a local landfill, and also carries wet weather overflows from the sewage treatment plant. A sewage pumping station at the northern end of the beach and public toilets in the beach reserve are also potential sources of faecal contamination via an unnamed creek behind the beach.

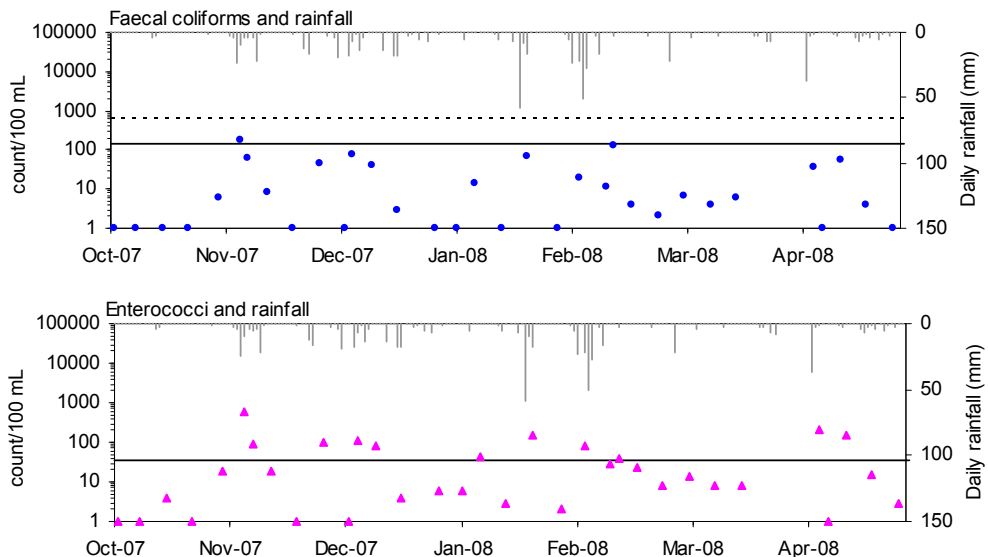


Compliance Surf Beach complied with NHMRC (1990) swimming guidelines in six months of the seven months of the 2007–2008 summer swimming season. The site failed in November 2007 owing to elevated enterococci levels.

Compliance with NHMRC (1990) swimming guidelines at Surf Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	FAIL	PASS	PASS	PASS	PASS	PASS

Timeseries plots Levels of faecal coliforms were usually low throughout the monitoring period, generally remaining below the guideline limits. Elevated enterococci levels were measured on a number of occasions throughout the monitoring period, often in response to rainfall.



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Malua Bay Beach

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Description

Malua Bay Beach is approximately 400 metres long and backed by a surf club, picnic facilities and a parking area. The beach is popular with both the local community and tourists.

Pollution sources

Beach water quality may be affected by discharges from Reedy Creek at the northern end of the beach, the stormwater outlet to the south of the sampling area, and leachate from onsite wastewater management systems within the catchment. Overflows from a sewage pumping station behind the beach may also affect water quality at the beach.

Compliance

Faecal coliform and enterococci levels at Malua Bay Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

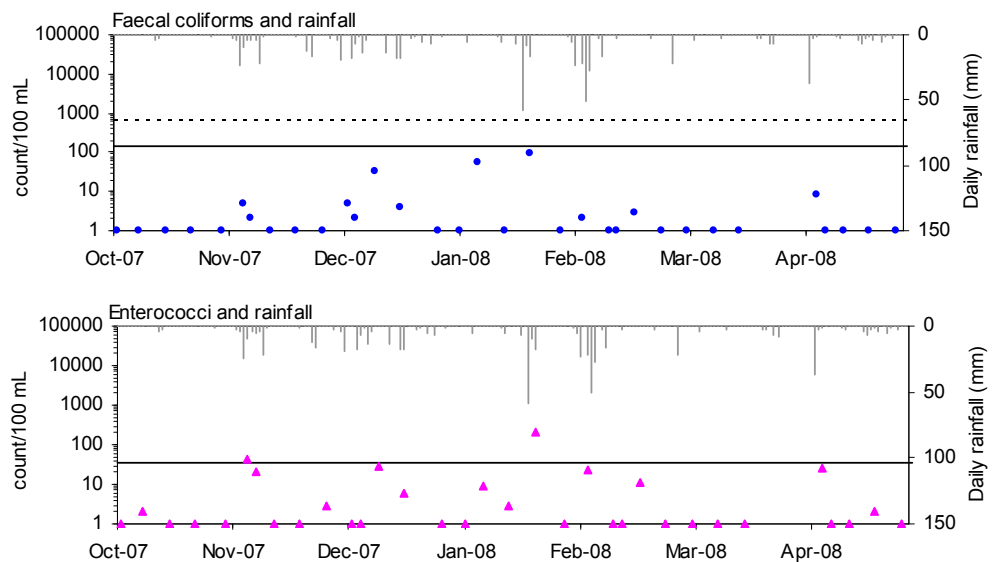


Compliance with NHMRC (1990) swimming guidelines at Malua Bay Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots

Levels of indicator bacteria were generally low throughout the monitoring period. A single elevated enterococci result was recorded in late January 2008, in response to heavy rainfall.



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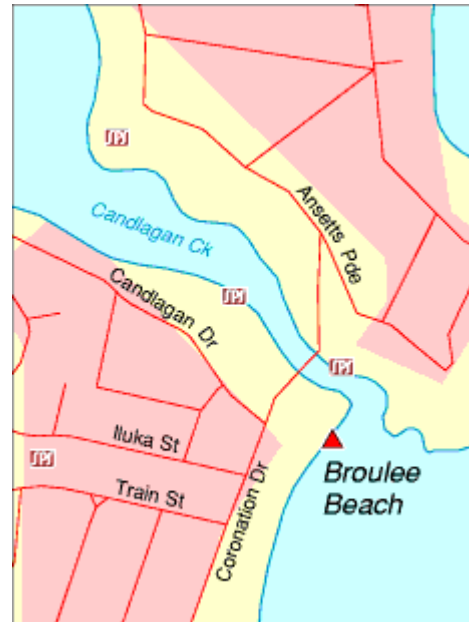
Broulee Beach

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Description Broulee Beach runs from Candlagan Creek down to Broulee Island. The sampling site is located at the northern end of the beach, near the mouth of Candlagan Creek. The beach is not patrolled but remains popular with families.

Pollution sources Urban stormwater from the surrounding residential area is a potential pollution source. Run-off from rural areas drained by Candlagan Creek may also contribute to faecal contamination at Broulee Beach.

Compliance Faecal coliform and enterococci levels at Broulee Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

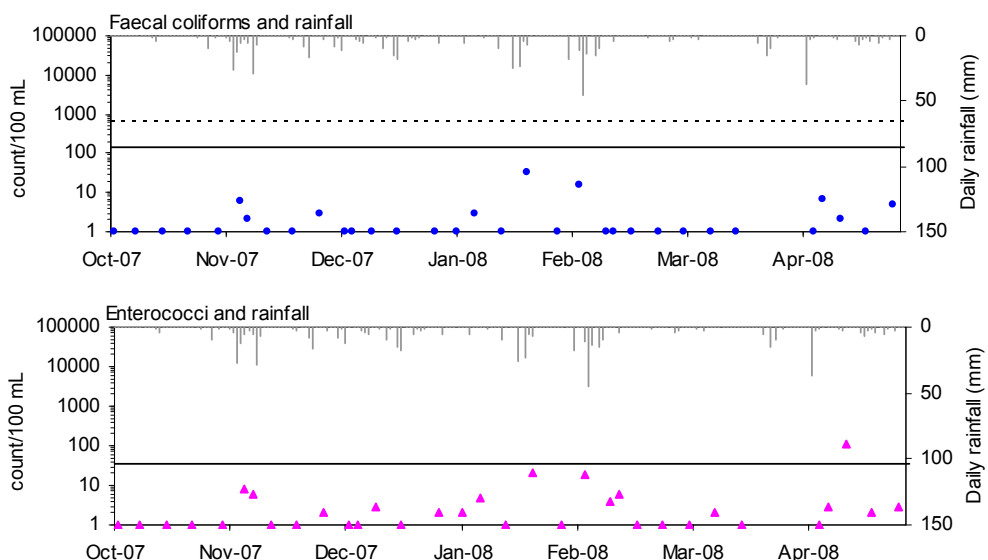


Compliance with NHMRC (1990) swimming guidelines at Broulee Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots

Levels of indicator bacteria were generally low throughout the monitoring period, remaining below the median and geometric mean guideline levels. A single elevated enterococci result was recorded in April 2008 in dry weather conditions.



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Bengello Beach

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Description

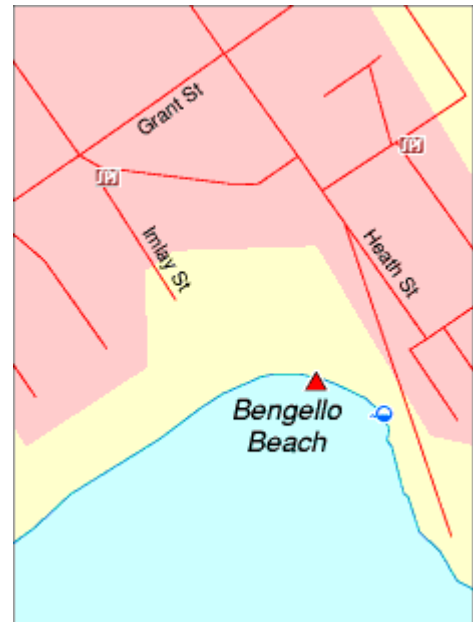
Bengello Beach extends from Broulee Head to the mouth of the Moruya River. The sampling site is located adjacent to the surf club and boat ramp. Access to the beach is at the northern end via a gravel roadway. The location is popular with the local community and tourists.

Pollution sources

Urban stormwater runoff is discharged via the drain adjacent to the sampling site during rainfall. Two sewage pumping stations are located in the catchment behind the beach and may also periodically affect beach water quality.

Compliance

Faecal coliform and enterococci levels at Bengello Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

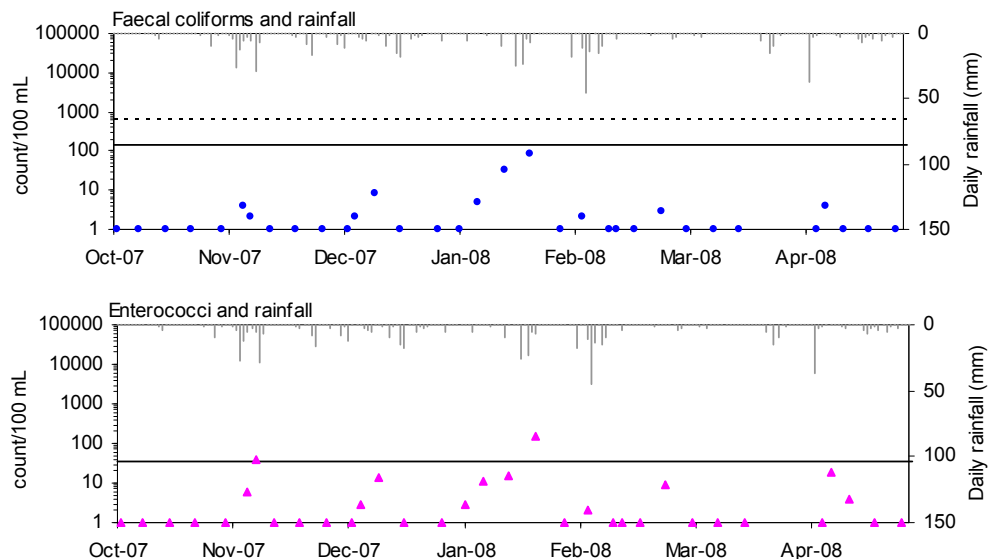


Compliance with NHMRC (1990) swimming guidelines at Bengello Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots

Levels of faecal coliforms were generally low throughout the monitoring period. A single elevated level of enterococci was recorded on only one occasion, following rainfall.



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Shelley Beach

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Description

Shelley Beach is situated east of the mouth of the Moruya River. It is backed by a well vegetated council reserve and accessed by a walkway. It is protected from the east and the south by the headland that is part of the Eurobodalla National Park. The location is popular with the local community and tourists.



Pollution sources

Beach water quality may be affected by urban stormwater runoff and overflows from a nearby sewage pumping station. A sewage treatment plant discharging to the Moruya River may also contribute to faecal contamination at this site.

Compliance

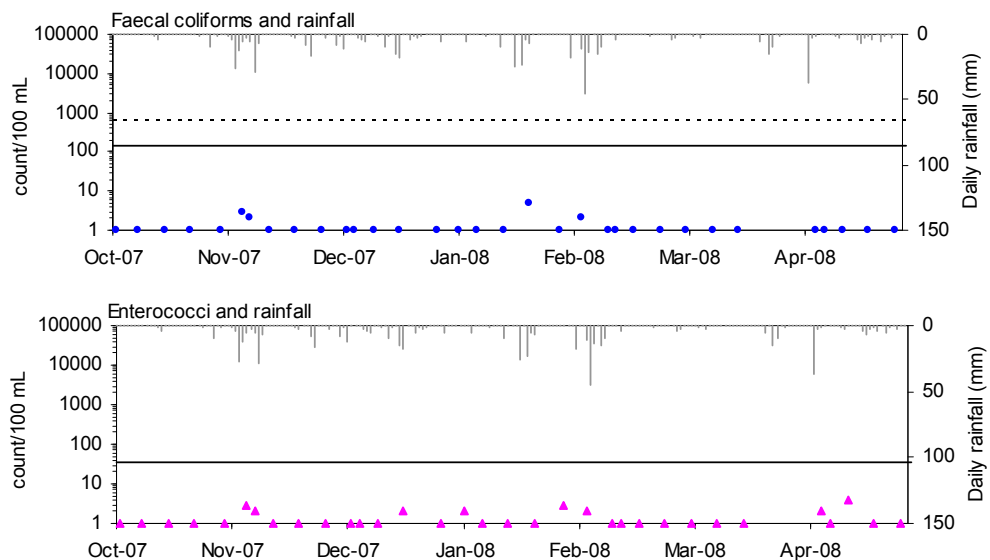
Shelley Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

Compliance with NHMRC (1990) swimming guidelines at Shelley Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots

Levels of faecal coliforms and enterococci remained very low throughout the monitoring period, providing no evidence of sewage contamination.

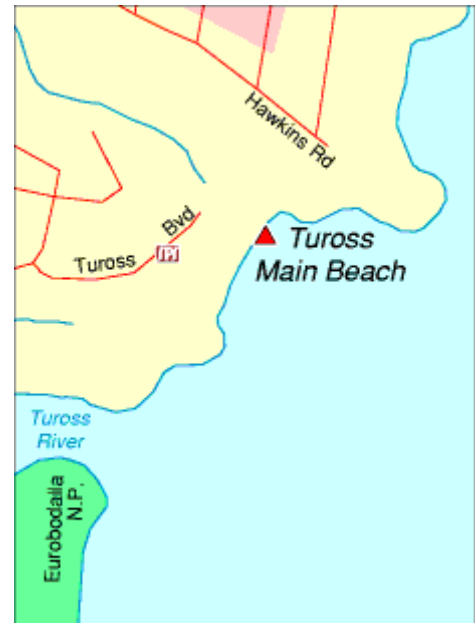


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Tuross Main Beach

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Description Tuross Main Beach is located between Tuross headland to the north and Tuross Lake to the south. It is approximately 250 metres long and is patrolled in the summer. The beach is considered to be hazardous for swimming and surfing.



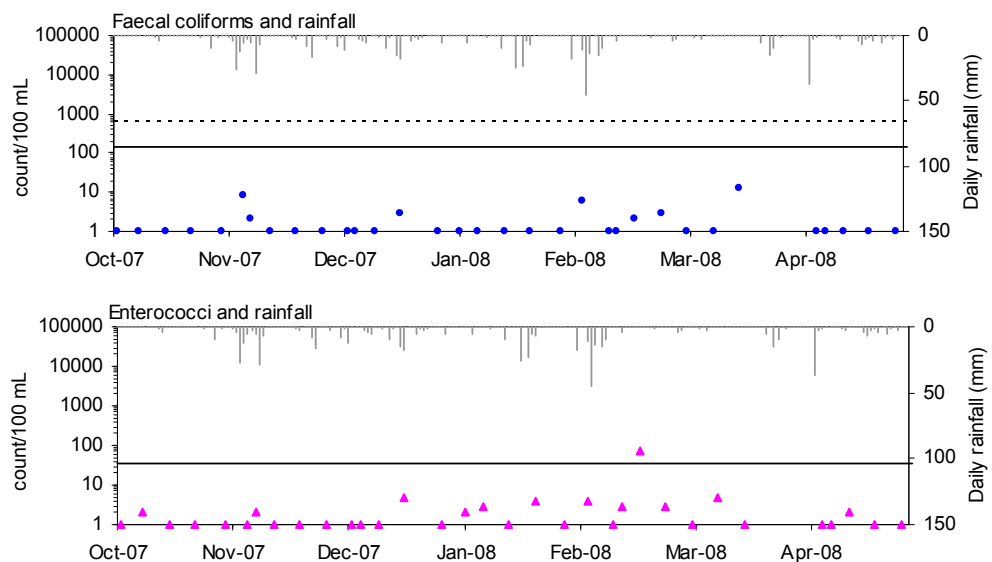
Pollution sources Urban stormwater from the nearby residential area and outflow from Tuross Estuary may potentially affect water quality at the beach. Overflows from a nearby sewage pumping station and leachate from onsite wastewater management systems may also contribute to faecal contamination at this site.

Compliance Faecal coliform and enterococci levels at Tuross Main Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

Compliance with NHMRC (1990) swimming guidelines at Tuross Main Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots Levels of faecal coliforms and enterococci were generally very low throughout the monitoring period. A slightly elevated enterococci level was recorded on one occasion in February 2008 in dry weather conditions.



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Brou Beach

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Description Brou Beach is approximately 6.5 kilometres long and located to the north of the township of Dalmeny. The sampling site is near the entrance of Lake Mummuga. Access to the beach is via the southern end, which is also popular for surfing and fishing.



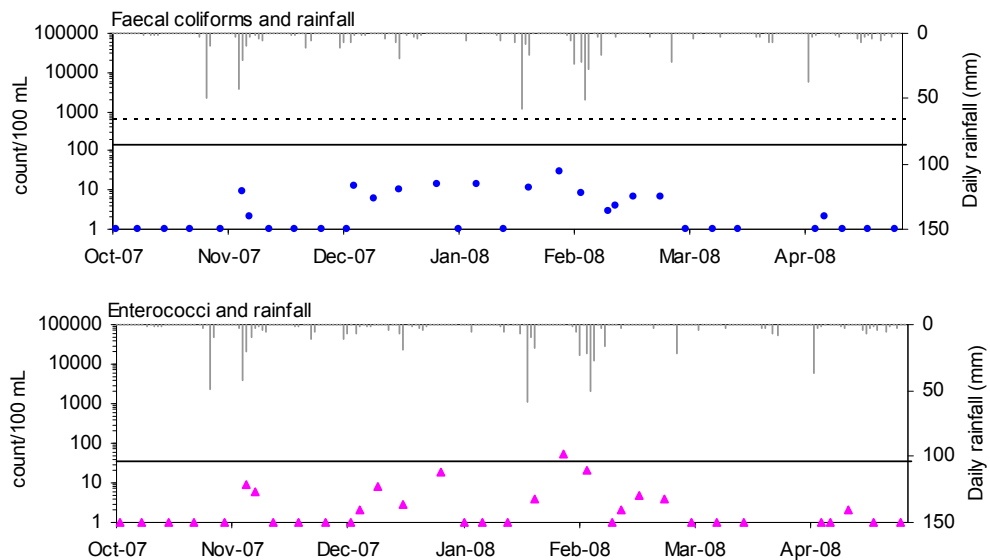
Pollution sources Urban stormwater from the town of Dalmeny potentially affects water quality at the beach. Outflow from Lake Mummuga may contain faecal contamination from rural runoff and overflows from sewerage pumping stations.

Compliance Faecal coliform and enterococci levels at Brou Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

Compliance with NHMRC (1990) swimming guidelines at Brou Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots Levels of faecal coliforms and enterococci were generally low throughout the monitoring period, with a slightly elevated enterococci level recorded during dry weather on one occasion in January 2008.



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Narooma Main Beach

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Description

Narooma Beach is approximately 750 metres long and is a popular for surfing and fishing. The sampling site is located at the northern end of the beach, adjacent to the surf club.



Pollution sources

Urban stormwater from the residential area behind the beach and a nearby industrial estate potentially affect water quality at Narooma Main Beach. Runoff from Narooma golf course and overflows from the sewage pumping station in the Little Lake catchment may also contribute to faecal contamination at the site.

Compliance

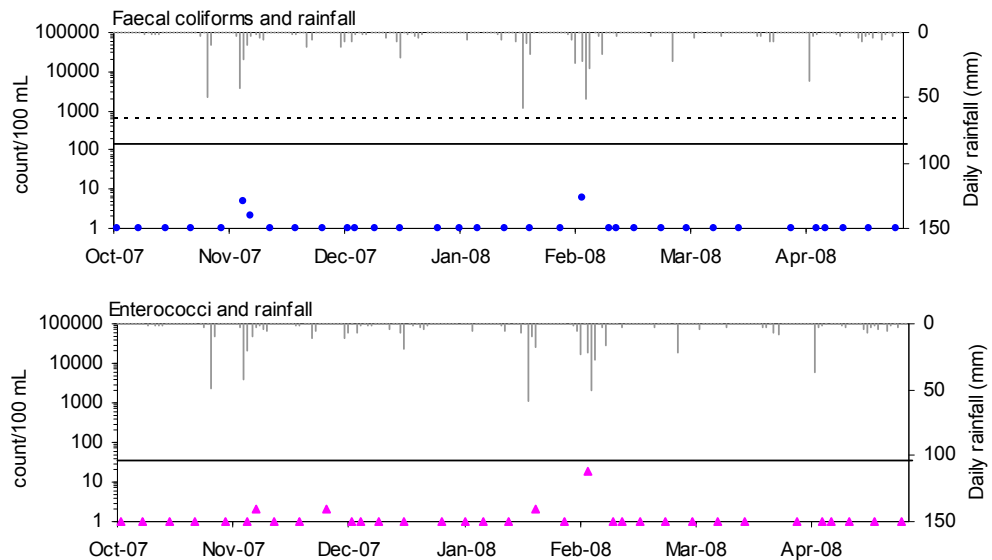
Faecal coliform and enterococci levels at Narooma Main Beach complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.

Compliance with NHMRC (1990) swimming guidelines at Narooma Main Beach

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots

Levels of faecal coliforms and enterococci remained low throughout the monitoring period, providing no evidence of sewage contamination.



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Wagonga Inlet

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Description The swimming site is a netted section of beach within the mouth of Wagonga Inlet. The township of Narooma is located on the southern side of the inlet. The netted area is very popular with the local community and visitors.

Pollution sources Outflow from the Wagonga Inlet may be affected by urban stormwater runoff and rural runoff from the upper catchment. Recreational and commercial boating traffic, together with onsite wastewater management systems, may also contribute to faecal contamination at the swimming area.

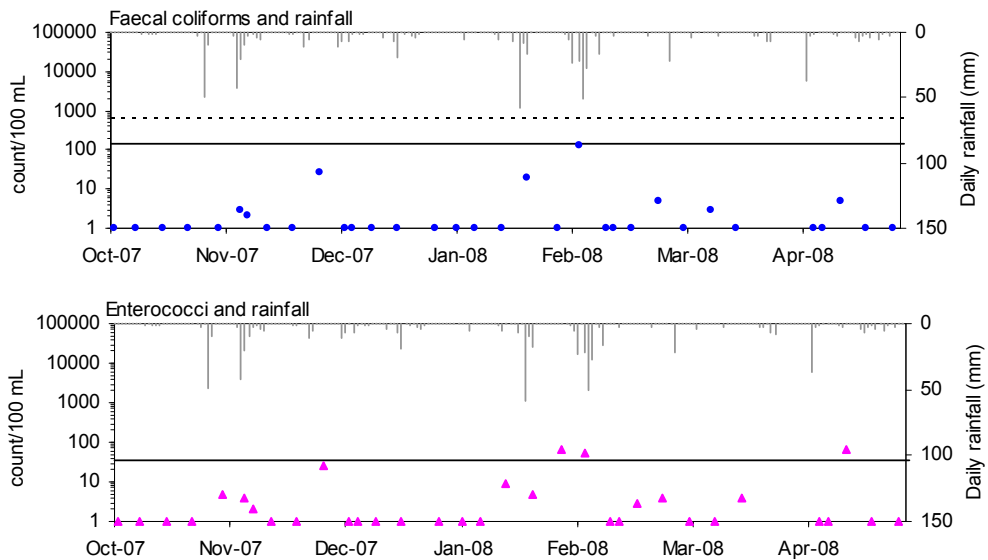
Compliance Faecal coliform and enterococci levels at Wagonga Inlet complied with NHMRC (1990) swimming guidelines in all seven months of the 2007–2008 summer swimming season.



Compliance with NHMRC (1990) swimming guidelines at Wagonga Inlet

	OCT '07	NOV '07	DEC '07	JAN '08	FEB '08	MAR '08	APR '08
FC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
ENT	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Timeseries plots Levels of faecal coliforms were generally low throughout the monitoring period. Slightly elevated enterococci levels were recorded on several occasions in both wet and dry conditions.



See page 5 for key to graph