

## Bega Valley Council

**Ocean beaches:** Camel Rock, Horseshoe Bay, Beares, Tathra, Short Point, Merimbula Main, Pambula, Aslings, Cocora. **Lagoons/estuaries:** Wallaga Lake Bridge, Mogareeka Boat Ramp, Mogareeka Lions Park, Spencer Park, Mitchies Jetty, Bar Beach, Pambula River Mouth, Cuttagee Inlet, Back Lake. **Tidal pools:** Bruce Steer Pool, Big Blue Pool.



## **Local government area description**

Bega Valley Shire is situated on the South Coast of New South Wales. It is the largest coastal council in the State, covering an area of 6,279 square kilometres. The council stretches from Wallaga-Lake Bermagui to the north to the Victorian border to the south.

Almost two-thirds of the Shire is either National Park or State Forest, with a further 20% used for agriculture. The major industries in the region are agriculture, tourism, fishing and forestry.

The population of the Bega Valley exceeds 32,600. The main towns are Bega, Merimbula, Eden, Pambula and Bermagui, with numerous small villages (Bega Valley Shire Council 2008).

Research by Tourism Australia indicates that, on average each year, more than 500,000 people holiday in the Bega Valley Shire and a further 312,000 people visit for the day. 'Going to the beach' is listed as a top activity by almost 70% of international tourists and almost 50% of domestic tourists holidaying in the area (Tourism Research Australia, 2008).

## **Program outline**

Twenty swimming sites were monitored by Bega Valley Council: nine ocean beaches, nine lagoon or estuarine sites and two pools.

Faecal coliform samples were collected between the end of November 2008 and early February 2009. However, sufficient samples to assess compliance with NHMRC (1990) swimming guidelines were collected at only two sites. Compliance was assessed at Cuttagee Inlet in December 2008 and Bar Beach in January 2009.

All sites have been monitored since summer 2004–2005 and data are available in the State of the Beaches reports (DEC 2006a and 2006b, DECC 2007 and DECC 2008).

Bega Valley Council issued joint media releases with DECC 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 Narooma, Bega and Eden (Timbillica). Rainfall for each site is from the closest rain gauge.

## **Ocean beaches**

Although there were insufficient samples to assess compliance with the NHMRC (1990) swimming guidelines, faecal coliform levels measured at the nine ocean beaches during the 2008–2009 summer swimming season were low.

Similarly low bacterial levels have been measured during previous summer swimming seasons (DEC 2006a, DEC 2006b, DECC 2007 and DECC 2008).

## **Lagoons and estuaries**

Sufficient samples to assess compliance were collected at Cuttagee Inlet in December 2008 and Bar Beach in January 2009. Both locations passed the NHMRC (1990) swimming water quality guidelines in these months.

Levels of faecal coliforms were generally low at all other locations, providing no evidence of sewage contamination.

Similar results were recorded in summer swimming seasons (DEC 2006a, DEC 2006b, DECC 2007 and DECC 2008).

## **Tidal pools**

Although there were insufficient samples to assess compliance with the NHMRC (1990) swimming guidelines, faecal coliform levels measured at the Bruce Steer Pool and Big Blue Pool during the 2008–2009 summer swimming season were low.

Similarly low bacterial levels have been measured during previous summer swimming seasons (DEC 2006a, DEC 2006b, DECC 2007 and DECC 2008).

# Camel Rock Beach

**Description**

Camel Rock Beach is situated at the northern end of Haywards Beach, which runs south to Bermagui. Much of the beach is cobbled and gravelled, and the point is named for its camel-shaped rock. The beach is popular with surfers and is one of the few beaches protected from marine stingers during north-east winds. Access is via the Camel Rock carpark.

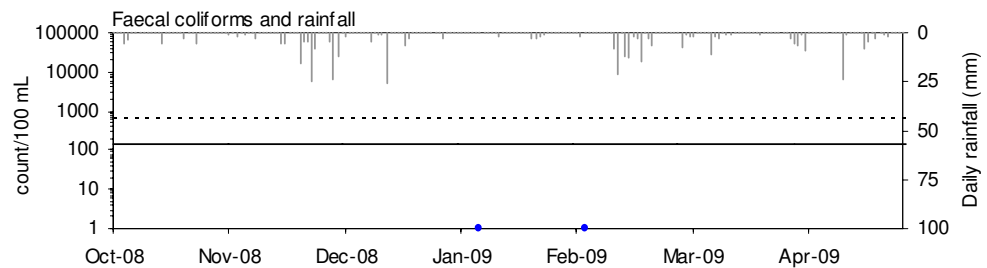
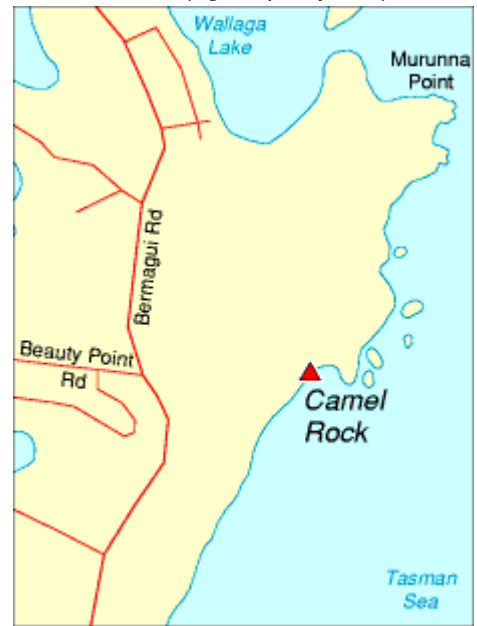
**Pollution sources**

There are no known pollution sources for this beach.

**Timeseries plots**

Although only two samples were collected from this site, levels of faecal coliforms were very low.

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# Horseshoe Bay

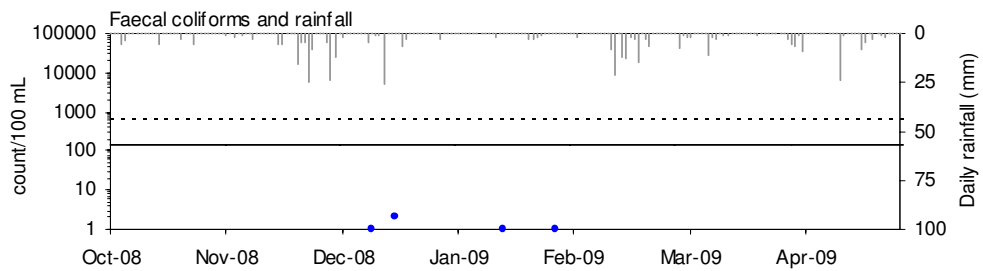
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**Description** Horseshoe Bay is approximately 300 metres long and runs from Bermagui Point towards Point Dickinson. The beach is backed by a park, playing field and car park. The bay faces the north and usually has small surf conditions, ideal for children. It is relatively safe and is patrolled during summer.



**Pollution sources** Stormwater runoff from the main business district of Bermagui and car parks may affect the bay following heavy rain. The bay is also used for commercial beach fishing (hauling), which may temporarily affect beach amenity.

**Timeseries plots** Although only four samples were collected from this site, levels of faecal coliforms were very low.



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# Beares Beach

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**Description**

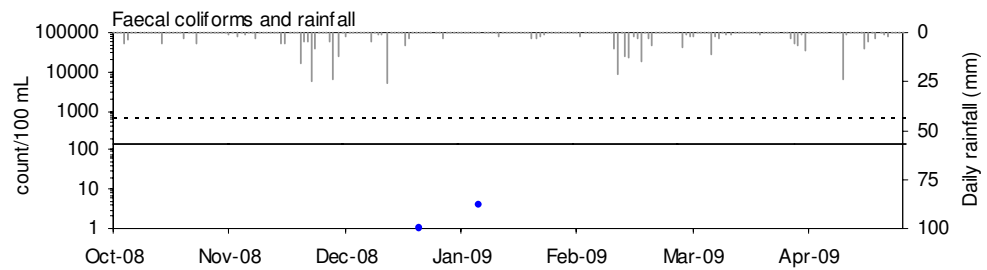
This unpatrolled surf beach is situated on the southern outskirts of Bermagui. The beach is approximately one kilometre long and because it is protected from north-east winds during summer it is a popular tourist and surfing beach. Access is via the carpark at the northern end of the beach.

**Pollution sources**

The Bermagui Sewage Treatment Plant discharges treated effluent to the ocean via a near-shore outfall approximately 350 metres south of Beares Beach. Stormwater from the surrounding residential area discharges through a drain across the beach.

**Timeseries plots**

Although only two samples were collected from this site, levels of faecal coliforms were very low.



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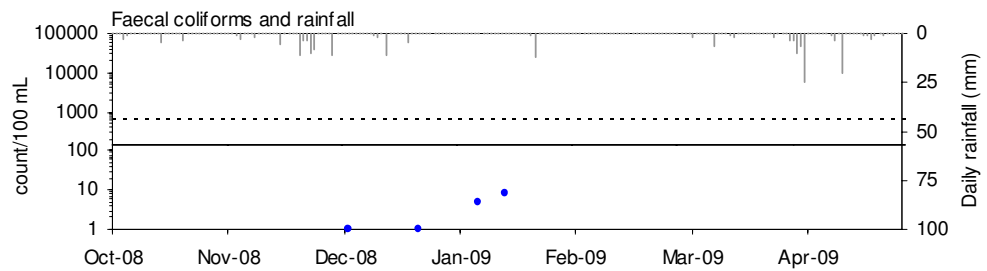
# Tathra Beach

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**Description** Tathra Beach is approximately five kilometres long and is the main swimming beach in Tathra. The sampling site is located near the patrolled area at the surf club in the southern corner of the beach. The beach is protected from southern swells and popular with the local community and tourists.

**Pollution sources** Runoff from the small urban area drains to the beach and there is a caravan park behind the dune near the site. It is possible that the Tathra Sewage Treatment Plant, which may discharge to the Bega River estuary during very high rainfall, could affect the water quality at this location in these conditions.

**Timeseries plots** Although only four samples were collected from this site, levels of faecal coliforms were very low.



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# Short Point Beach

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## Description

Short Point Beach is a popular beach located between Merimbula and Tura. The sampling site is located at the southern end of the beach and is patrolled during summer. The beach is backed by a carpark and caravan park. A large rock platform and rocky reefs can create dangerous swimming conditions. The majority of beach users tend to be surfriders.

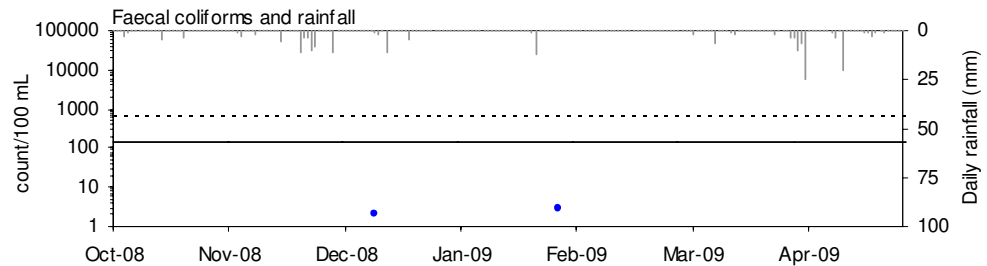


## Pollution sources

The adjacent Back Lake is intermittently open to the ocean and receives urban runoff during heavy rain. The upgraded Tura Beach Sewage Treatment plant was opened in August 2005. Treated effluent from the plant is discharged for reuse on the adjacent golf course. Council also has an EPA licence to use exfiltration beds in the dune system adjacent to Tura Beach.

## Timeseries plots

Although only two samples were collected from this site, levels of faecal coliforms were very low.



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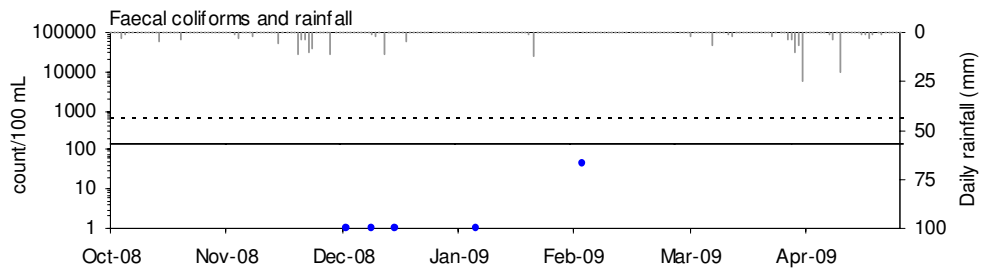
# Merimbula Main Beach

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**Description** Merimbula Main Beach is the northern end of a six kilometre long beach that extends from the entrance of Merimbula Lake south to Pambula. The beach is patrolled during summer and, owing to its proximity to the town centre, it is popular with the local community and tourists. The beach faces south-east and offers calm conditions in the prevailing summer north-east winds.

**Pollution sources** The Sewage Treatment Plant for Merimbula and Pambula is located approximately 3.5 kilometres south of the site and discharges tertiary-treated effluent via a near-shore outfall at the beach. A portion of effluent is currently reused on the adjacent golf course.

**Timeseries plots** Although only five samples were collected from this site, levels of faecal coliforms were low.



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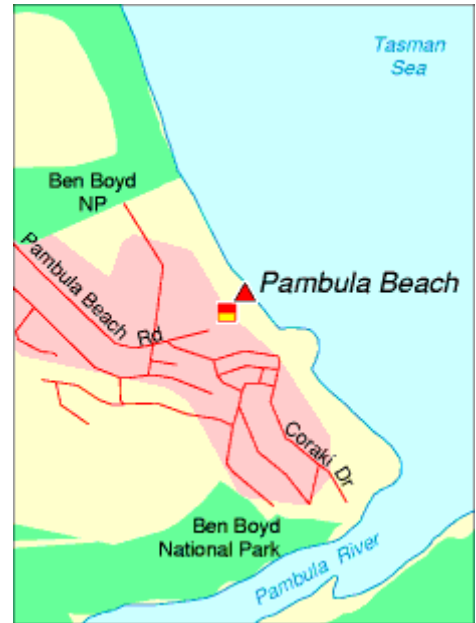


# Pambula Beach

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## Description

Pambula Beach is located at the southern end of a six kilometre long beach that extends to the entrance of Merimbula Lake in the north. The beach is patrolled during summer and is popular with the local community and tourists. A carpark and caravan park are located behind the beach. The sampling site is at the patrolled section of the beach.

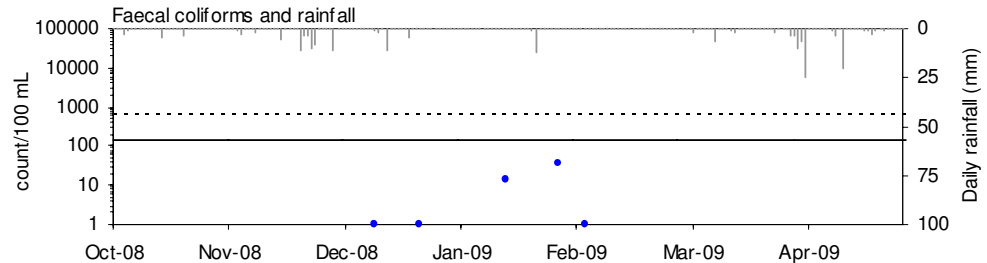


## Pollution sources

The Sewage Treatment Plant for Merimbula and Pambula is located approximately 2.5 kilometres north of the site and discharges tertiary-treated effluent via a near-shore outfall at the beach. There have been community concerns about the cleanliness of the water in this area. There are also caravan parks and camping grounds adjacent to the beach. Over the past three years Pambula Beach has experienced problems with blooms of several species of non-toxic marine algae induced by ocean upwellings.

## Timeseries plots

Although only five samples were collected from this site, levels of faecal coliforms were low.



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# Aslings Beach

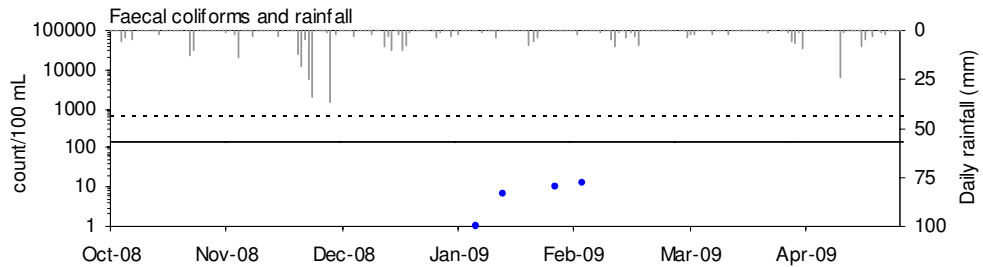
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**Description** Aslings Beach is the main surf beach in Eden. It is popular with the local community and tourists. The southern end of the beach is patrolled during summer. The beach is backed by a cricket oval, carpark and parkland with picnic facilities. The beach forms part of a barrier dune separating Curalo Lagoon from the ocean.



**Pollution sources** Curalo Lake intermittently discharges to the beach approximately two kilometres north of the sampling site. Urban stormwater runoff drains to both the lake and the beach and following heavy rainfall this may be a source of pollution. Eden Sewage Treatment Plant discharges treated effluent approximately 500 metres south of the southern end of the beach. Samples are collected at the southern end of the beach to monitor this possible source of pollution.

**Timeseries plots** Although only four samples were collected from this site, levels of faecal coliforms were very low.



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# Cocora Beach

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**Description**

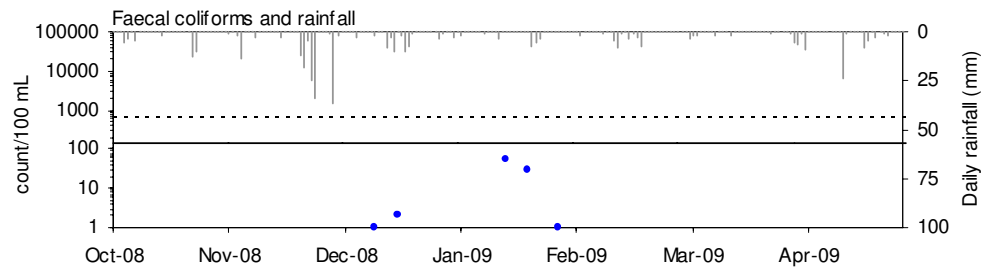
Cocora Beach is a protected ocean beach approximately 300 metres long and located in the north of Twofold Bay. The sampling site is near the centre of the beach, approximately one kilometre from Eden's town centre. The beach is not patrolled but remains popular with families with small children in summer.

**Pollution sources**

There is a small cluster of holiday homes and dwellings adjacent to the beach, and the urban centre of Eden is within one kilometre. Accidental or illegal spills and discharges from vessels using the port could affect the water quality from time to time.

**Timeseries plots**

Although only five samples were collected from this site, levels of faecal coliforms were low.



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# Wallaga Lake

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## Description

The sampling site is located at a popular fishing spot approximately one kilometre from the mouth of the Lake. The Lake is usually closed to the ocean, so the area is non-tidal and calm. This area of the lake is also used for swimming, sailing, prawning and water skiing. The area has great spiritual significance to local Aboriginal people. The surrounding Gulaga National Park, which incorporates the former Wallaga Lake National Park, has been handed back to the Aboriginal owners for joint management as a National Park.

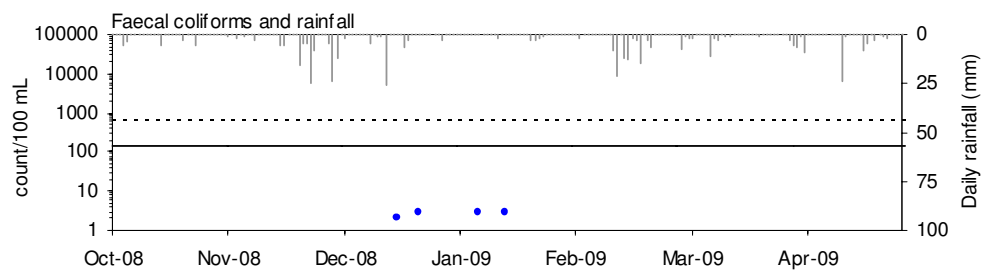


## Pollution sources

Until recently residents and caravan parks in the surrounding area relied on septic tanks with absorption trenches and some pump-out systems. At peak holiday times the capacity of these systems could be exceeded, and sewage could affect the water quality of the lake. The Bermagui Wallaga Lake Sewerage Scheme (BWLSS) is now operational and property connections to the pressure sewerage system commenced on 31 March 2008.

## Timeseries plots

Although only four samples were collected from this site, levels of faecal coliforms were very low.



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# Cuttagee Inlet

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## Description

The sampling site is located at the entrance to Cuttagee Lake, a near-pristine coastal waterway a few kilometres south of Bermagui town centre. The sample site is sandy and protected, ideal for children. The inlet is occasionally open to the ocean at Cuttagee Beach. The area is popular for swimming, prawning, fishing (commercial and recreational) and picnicking.



## Pollution sources

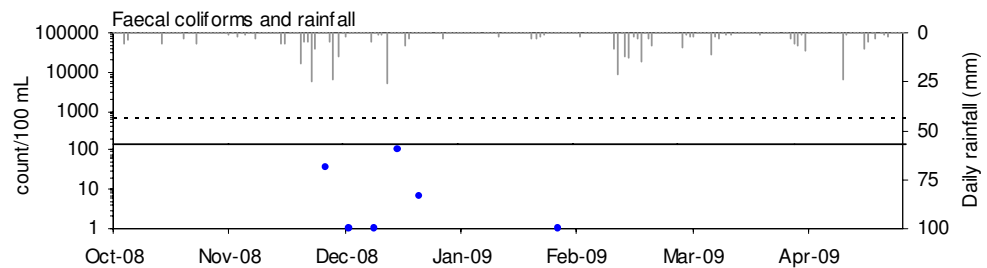
Although the catchment contains part of Biamanga National Park, during heavy rain the water quality in the lake can be affected by turbid river inflows. There is a roadway and bridge immediately adjacent to the site; these could also be sources of localised pollution.

## Compliance

Faecal coliform levels at Cuttagee Inlet complied with NHMRC (1990) swimming guidelines in December 2008.

## Timeseries plots

Although only six samples were collected, levels of faecal coliforms were low, remaining below the median guideline limit.



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# Spencer Park

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**Description**

This swimming area is located in Merimbula Lake, adjacent to the Big Game Fishing Club and close to the centre of town. The small beach is on the northern side of the entrance channel and is popular in summer for water sports and swimming. It is also close to parks and amenities.

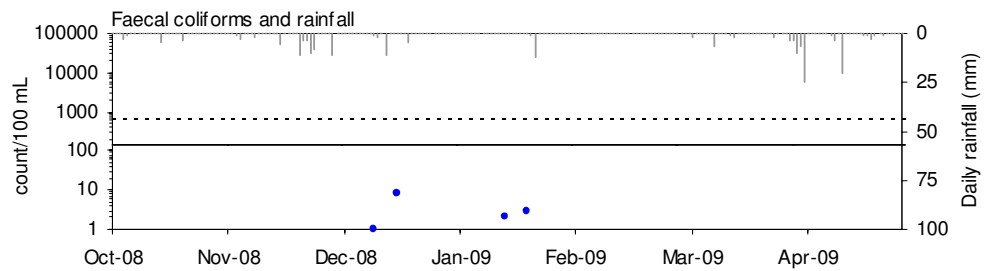


**Pollution sources**

Urban runoff from the town centre of Merimbula may affect this location during heavy rain. This area is also adjacent to waterfront holiday homes and picnic areas.

**Timeseries plots**

Although only four samples were collected, levels of faecal coliforms were very low.



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# Back Lake

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## Description

Back Lake is a small lagoon located behind Short Point Beach. The lake entrance is at the southern end of the beach and is periodically open to the ocean. The shallow waters of the lake offer a warm, safe swimming environment for young children, particularly as the ocean beach is not always ideal for swimming.

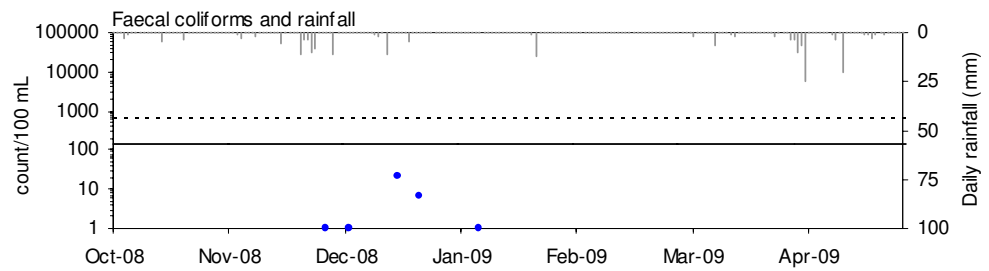


## Pollution sources

Back Lake is intermittently open to the ocean and receives urban runoff during heavy rain.

## Timeseries plots

Although only five samples were collected, levels of faecal coliforms were low.



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## Mogareeka Boat Ramp

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### Description

This is a popular swimming area located on the northern side of the Bega River estuary, approximately 500 metres upstream of the entrance. The Mogareeka Inlet is intermittently open to the ocean. This area is also well known for water-sports and is popular for picnics. Threatened shorebirds such as the Little Tern nest at the entrance to the estuary.

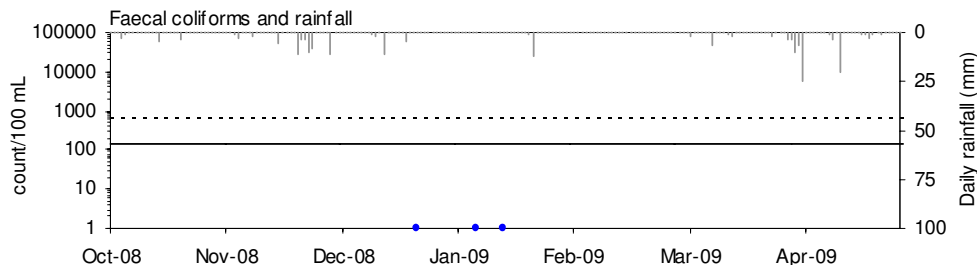


### Pollution sources

The Tathra Sewage Treatment Plant discharges to the estuary and has historically caused some pollution of the Bega River Estuary. The plant has recently been upgraded to cope with larger peak season loads and wet weather storage. There may be some runoff from nearby urban areas such as Tathra and Mogareeka. There is also some community concern about faecal pollution from dairy farms located in the upper catchment.

### Timeseries plots

Although only three samples were collected, levels of faecal coliforms were very low.



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# Mogareeka Lions Park

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## Description

This is a popular swimming area located on the southern side of the Bega River estuary, approximately 500 metres upstream of the entrance. The Mogareeka Inlet is intermittently open to the ocean. This area is also well known for water-sports and is popular for picnics. Threatened shorebirds such as the Little Tern nest at the entrance to the estuary.

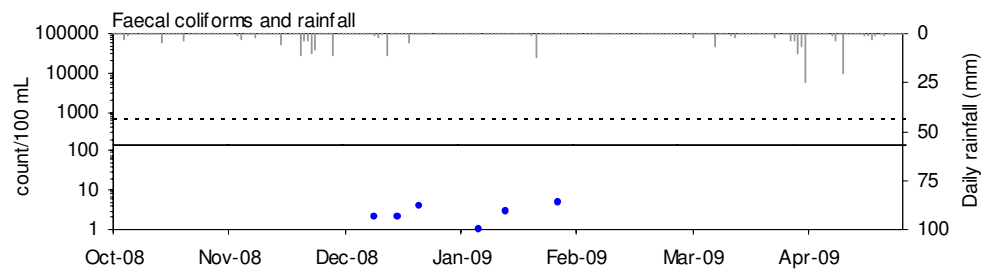


## Pollution sources

The Tathra Sewage Treatment Plant discharges to the estuary and has caused some pollution of the Bega River Estuary. The plant has recently been upgraded to cope with larger peak season loads and wet weather storage. There may be some runoff from nearby urban areas such as Tathra and Mogareeka. There is also some community concern about faecal pollution from dairy farms located in the upper catchment.

## Timeseries plots

Although only six samples were collected, levels of faecal coliforms were very low.



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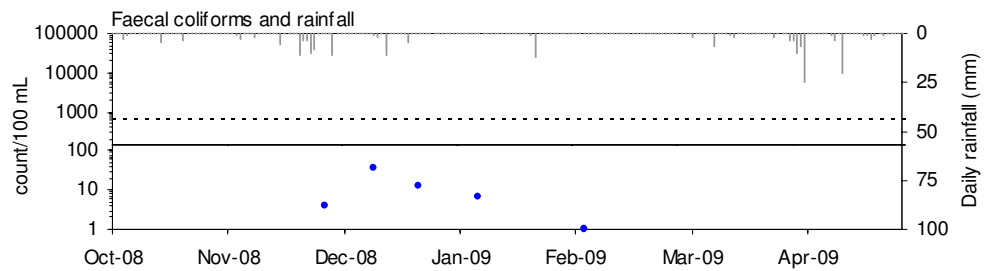
# Mitchies Jetty

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**Description** This is a protected swimming area located on the southern shore of the entrance to Merimbula Lake, approximately 400 metres from the ocean. The site is adjacent to historic fish pens and a boat hire business. The area is shallow and sandy, providing a protected and calm swimming and play area that is very popular with families with small children.

**Pollution sources** Urban runoff from the town centre of Merimbula may affect this location during heavy rain.

**Timeseries plots** Although only five samples were collected, levels of faecal coliforms were low.



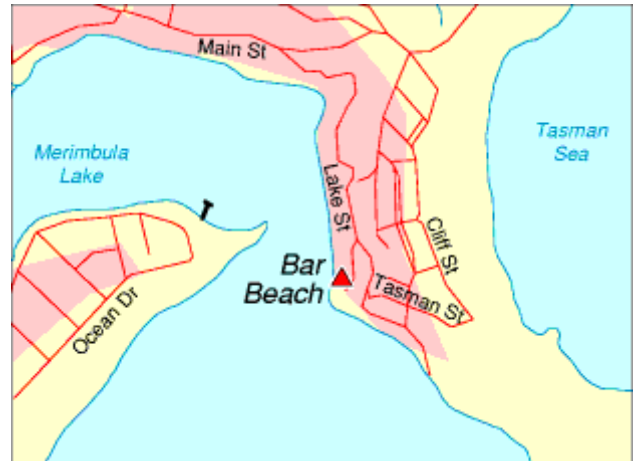
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# Bar Beach

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**Description**

Bar Beach is a sandy intertidal area located on the northern side of the inlet to Merimbula Lake. The beach is popular with local families during summer and is backed by a carpark. The area is used for boating and swimming, although it is subject to strong tidal currents and is not patrolled.



**Pollution sources**

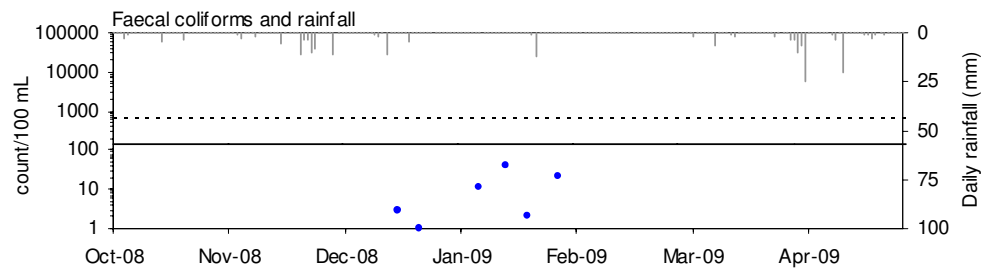
Urban runoff from the town centre of Merimbula may affect this location during heavy rain. This area is also adjacent to waterfront holiday homes and picnic areas.

**Compliance**

Bar Beach complied with NHMRC (1990) swimming guidelines in January 2009.

**Timeseries plots**

Although only six samples were collected, levels of faecal coliforms were low.



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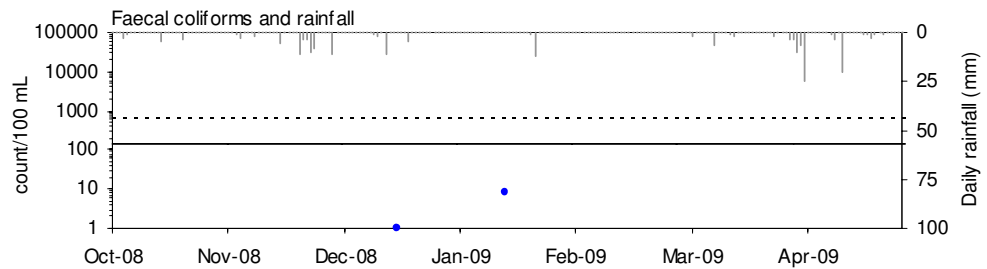
# Pambula River Mouth

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**Description** The mouth of Pambula River is a sandy tidal reach that is shallow, calm and protected from ocean swells. The river is well flushed and provides an alternative to the nearby Pambula Beach swimming area for families with small children. The southern side of the channel is part of Ben Boyd National Park.

**Pollution sources** Pambula Lake contains little development and much of the lake catchment is bushland or national park. The sewage treatment plant for Merimbula and Pambula discharges to the ocean approximately 2.5 km north of the location. Caravan parks and camp grounds with septic systems are located in the vicinity of the site.

**Timeseries plots** Although only two samples were collected, levels of faecal coliforms were very low.



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# Bruce Steer Pool

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**Description**

This large netted enclosure is located in protected waters near the entrance to Bermagui Harbour, about 200 metres from the ocean. The baths are shallow and popular with children.

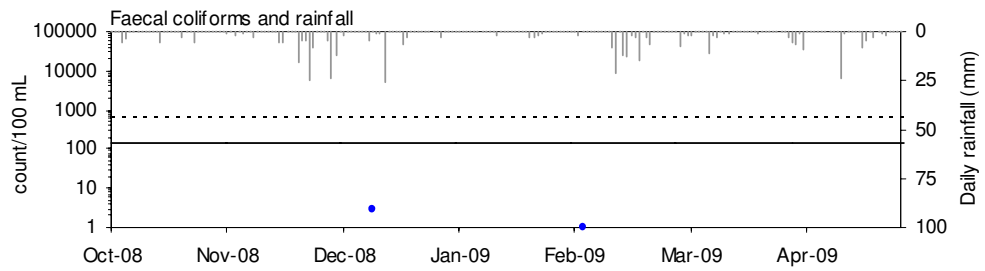


**Pollution sources**

Urban stormwater runoff and outflow from Bermagui Harbour in wet weather may affect water quality. As well, Bermagui harbour is home to a commercial and game fishing fleet, which could affect water quality through accidental or illegal spills and discharges. The harbour entrance is periodically dredged, and this may have short-term impacts on water clarity.

**Timeseries plots**

Although only two samples were collected, levels of faecal coliforms were very low.



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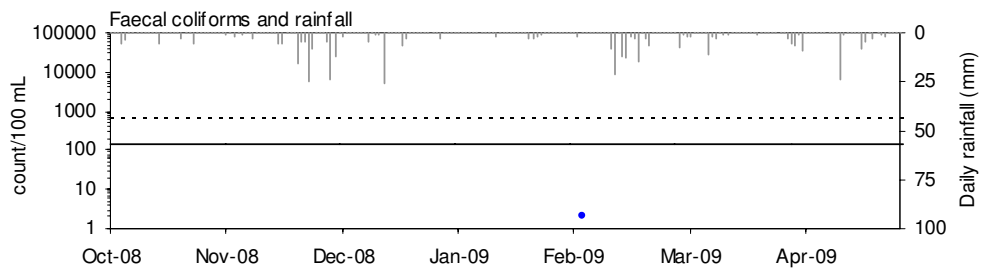
# Big Blue Pool

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**Description** Blue Pool is a historic swimming area located around the headland from Horseshoe Bay, to the south of Bermagui town centre. The big pool is approximately 40 x 20 metres and up to five metres deep. It is popular for swimming and snorkelling. The pool is well-flushed with seawater and a popular location for lap-swimming all year and for families in summer.

**Pollution sources** The Bermagui Sewage Treatment Plant discharges treated effluent to the ocean via a near-shore outfall approximately two kilometres south of the pool.

**Timeseries plots** Although only one sample was collected, the level of faecal coliforms was very low.



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