The Merri River estuary is located in Warrnambool in southwest Victoria. The river has two openings to the sea, one at Stingray Bay and one at Rutledge’s Cutting. The river was diverted in an attempt to prevent sedimentation in Lady Bay. The Stingray Bay channel flows into the Merri Marine Sanctuary. Little Penguins, Short-tailed Shearwaters and seals can be found in the sanctuary. The Rutledge’s Cutting channel flows through Saltwater Swamp and Kellys Swamp. There are 15 species of bird recorded in Kellys Swamp that are listed under the Japan and Australia Migratory Bird Agreement (JAMBA) and Chinese and Australia Migratory Bird Agreement (CAMBA).

The Merri River estuary is a popular spot for walking, bird watching, horse riding, rowing, canoeing and fishing. Seasonal algal blooms are one of the main threats to the social usage of the Merri River estuary.

In 2015 the river mouth at Rutledge’s Cutting remained closed to the sea for the entire year. No closures were recorded for the Merri River at Stingray Bay.

Over the 12 months salinity in the estuary ranged from 0.6 - 30.6 ppt. During the summer months the lower estuary was mostly brackish. For the whole year, salinity at the upstream site (M2) resembled that of influent fresh river water, no salt water penetrated up the estuary to this site. As river flows increased salinity levels reduced nearer the estuary mouth and were completely fresh in September. The increasing seasonal river flows stratified the waters of the lower estuary leading to reduced dissolved oxygen levels in the brackish bottom waters, low levels were recorded from April to August in the lower estuary (lowest DO 0.7% saturation). The upper estuary maintained healthy dissolved oxygen levels throughout the year. The pH levels were stable throughout the year ranging from 6.6 – 8.6 pH units. The temperature of the water ranged from 23.1°C in summer to 9.4°C in winter.

EstuaryWatch records at the Merri River Estuary extend from 2013 and can be viewed at www.estuarywatch.com.au

### Threats to estuary health

- Poor water quality
- Invasive fauna and flora
- Livestock access
- Inappropriate artificial estuary openings
- Urban sprawl/residential development and subsequent increases in stormwater

### What can you do?

- Join the Merri River EstuaryWatch group contact: ghcma@ghcma.vic.gov.au
- Register the estuary as a clean-up site for Clean Up Australia Day.
  - www.cleanupaustralia.org.au
- Join a local environment group such as Making a Difference (MAD) for the Merri or Fishcare to find out about working bees and information sessions.
  - www.glenelg-hopkins.landcarevic.net.au/madfmerri
  - www.fishcare.org.au
- Share what you have learnt from this annual summary with a friend or family member.

### Estuary Fact File

- **Type of Estuary:** Wave dominated and extensively modified
- **Location:** -38.372136, 142.440723
- **Nearest town:** Warrnambool
- **Estuary length:** Section flowing into Stingray Bay 1.5km
  - Section flowing into Rutledge’s Cutting 2.75km
- **River length:** 110km
- **Mouth state:** Intermittently open
- **Description:** The Merri River has two channels to the sea, one at Stingray Bay and one at Rutledge’s Cutting.

Stakeholders in the Merri River estuary are invited to register the estuary as a Clean Up Australia Day site by contacting the Glenelg Hopkins Catchment Management Authority at 03 5571 2526 or ghcma@ghcma.vic.gov.au.
For all four monitoring sessions chosen for the EstuaryWatch Snapshots, photo point photos and a longitudinal profile of the estuary from site M1 (Stanley Street Bridge) to M2 (floating pontoon at the end of The Esplanade) is displayed. The longitudinal profile shows the depth, salinity and percent saturation of dissolved oxygen (DO) at each monitoring site from the surface of the water column to the bottom.

EstuaryWatch members recording details of the Merri River estuary mouth at Stingray Bay on April 11 2015

In 2015 most of the Glenelg Hopkins region experienced severe rainfall deficiencies. Low rainfall and soil moisture patterns resulted in below average river flows entering our estuaries during 2015. Consequently, the bulk of these systems have displayed intermittent opening and closing cycles, several months ahead of typical seasonal trends.

It is also very interesting to note that the standard summer wind patterns (afternoon south-easterly winds) have been apparent through much of October. Such wind patterns result in the natural deposition of beach blown sand into our estuary mouths, and when combined with low stream flows, have a strong influence on estuary mouth closing cycles.

Common Galaxia, *Galaxias maculatus*

The Common Galaxias adults live in calm waters of low-elevation streams, during autumn they migrate downstream to spawn. Thousands of small eggs are laid in vegetation on the margins of estuaries at spring tides, and often spend up to two weeks out of water until the next spring tide. The larvae then leave the estuary and spend 5 to 6 months at sea as juveniles before returning to the estuary as whitebait moving upstream to the freshwater to mature.

See more at: http://australianmuseum.net.au/common-galaxias-galaxias-maculatus#sthash.tCABw6N7.dpuf

Photo: Whitebait stage Common Galaxias. Photographer: Rudie Kuiter ©