About the Estuary

The picturesque St George River estuary is located south of Lorne on the Great Ocean Road. The meanders of this very scenic estuary can be observed from the road as it sweeps down into the river valley crossing a small bridge before climbing back onto the cliff edge of the Great Ocean Road.

The St George River flows out of the Great Otway National Park. The estuary is approximately 1km in length with a small catchment of 215.8Ha with approximately 75% comprising native forest. It is the only estuary in the Corangamite region which was listed as being in a ‘near-pristine’ condition in an audit of all estuaries in the region in 2003.

The St George River catchment contains many walks and attractions including: Phantom Falls, Hendersons Falls, The Canyon, Cumberland Falls and Cora Lynn Cascades. The estuary is popular for recreational activities, with families, fisherman and beach users enjoying the expanses of fine sand and safe swimming areas.

What can you do?

- Join the St George River EstuaryWatch group.
  www.estuarywatch.org.au
- Register the estuary as a clean-up site on the Clean Up Australia day.
  www.cleanupaustraliaday.org.au
- Join a local environment group such as LorneCare to find out about walks, working bees and workshops that might be happening in Lorne.
  www.landcarevic.org.au/groups/corangamite/lornecare
- Share what you have learnt from this annual summary with a friend or family member.

Threats to estuary health

Threats to the St George River estuary
- acid sulfate soils
- fish barriers
- degraded water quality
- disturbance of acid sulfate soils
- degraded estuarine vegetation

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ST GEORGE RIVER ESTUARY 2016
An interpreted summary of data


Summary of data

This brochure summarises twelve months of EstuaryWatch estuary mouth condition data. St George River EstuaryWatch volunteers record observations and take photos of the estuary mouth once a month. In 2016, volunteers conducted 13 monitoring sessions in the 12 months.

On eleven out of the twelve monthly monitoring sessions tidal influence was recorded in the St George River estuary. Water levels were only recorded on four occasions, with water levels ranging from 1.02m – 1.29m AHD. At times the water level gauge board was out of the water due to the shifting sands within the estuary isolating the gauge board from the main channel resulting in an inability to record this information.

The St George River estuary is an intermittently open estuary. In 2016 no estuary mouth closures were recorded. On one occasion the estuary was recorded as perched (water level: 1.2m AHD) on March 30. A perched estuary is when the estuary is closed to the sea but the estuary water level is higher than the average sea level. A perched estuary is often a temporary mouth state before it opens to the sea. During this time the waters within the estuary are likely to stratify potentially resulting in low dissolved oxygen levels in the denser bottom waters.

EstuaryWatch records at the St Georges River extend from 2008 and can be viewed at www.estuarywatch.org.au

EstuaryWatch is a community based estuarine monitoring program, aiming to:

Raise awareness and provide educational opportunities to the community in estuarine environments, and enable communities and stakeholders to better inform decision making on estuarine health.

EstuaryWatch volunteers are supported by EstuaryWatch coordinators. Volunteers meet with their coordinator every six months to conduct Quality Assurance/Quality Control (QA/QC) refresher training. These sessions ensure that EstuaryWatch monitoring methods are consistent across the state and data collected by volunteers is credible.
For all four monitoring sessions chosen for the Estuary Snapshots, photo point photos from the lower Teddy’s Lookout at the end of George Street, Lorne. ([StP3](#)) are displayed. Estuary condition observations recorded on the day are also displayed.

**An unusual occurrence was recorded on April 14 2016. The water of the estuary was a grey colour (top photo) and had a sulphurous odour. On the same day pooled water (bottom photo) near the gauge board had an iridescent sheen.**

On April 14 2016 an unusual occurrence was recorded by EstuaryWatch volunteers. The water in the main pool of the estuary, upstream of the Great Ocean Road was a grey colour and had a smell of sulphur. On investigation, the dissolved oxygen levels were recorded as 3% saturation. A smaller pool near the gauge board appeared to have an iridescent sheen. This event is likely due to a combination of reduced river inflows with the potential for groundwater inputs as water levels decline, reduced connectivity to the ocean and an accumulation of organic matter within the estuary.

Extremely low dissolved oxygen levels combined with a sulphurous odour are often observed in small estuaries resulting from the microbial breakdown of organic matter, particularly seaweed.

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**Southern Shortfin Eel, Anguilla australis**

Southern Shortfin Eels pass through estuaries during several phases of their lifecycle. The adult eels spend up to 20 years in freshwater rivers, lakes and dams, before migrating to the sea to breed in the Coral Sea of north-east Australia. Following successful breeding the transparent leaf-like larvae are transported southwards via the East Australian Current, and grow into glass eels before migrating to estuaries in south-eastern Australia. Glass eels are often observed entering Victorian estuaries during their migration to freshwater, the young eels are able to climb barriers such as waterfalls and dam walls.

See more at: [https://australianmuseum.net.au/southern-shortfin-eel-anguilla-australis](https://australianmuseum.net.au/southern-shortfin-eel-anguilla-australis)


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**Water quality guidelines for riverine estuaries**

In 2011 the Environmental Protection Authority (EPA) established a framework for assessing the environmental condition of riverine estuaries. These guidelines can be used to assist management decisions to protect or improve the health of estuaries.

A broad range of estuary types were used to develop the guidelines.

Keep in mind that not all Victorian estuaries have been sampled and measurements have not been collected under all environmental conditions — for example, following flooding bushfires or storm surges.

Below is a table to assist you to interpret the EstuaryWatch data discussed in this summary. The guidelines detail what you would expect from a single monitoring session on an estuary in Victoria.

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>SINGLE SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>surface</td>
</tr>
<tr>
<td>Dissolved Oxygen (DO)</td>
<td>70–110%</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>18</td>
</tr>
<tr>
<td>pH (pH units)</td>
<td>6.9–8.3</td>
</tr>
</tbody>
</table>

EstuaryWatch volunteers also measure the salinity (ppt) throughout the water column. A rough guide for salinity in estuaries is 0ppt (freshwater) to 35ppt (seawater).

To find out more about the parameters EstuaryWatch volunteers use to measure estuary condition, [Interpreting Estuary Health Data](#). EstuaryWatch Victoria is a fantastic resource.

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**Get to know your local estuary species**

**Southern Shortfin Eel, Anguilla australis**

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**Daily rainfall for 2016 recorded at Mt Cowley rain gauge (Site 231803). Sourced from DELWP. The highest total daily rainfall was recorded on September 14, 2016 (42.8mm).**