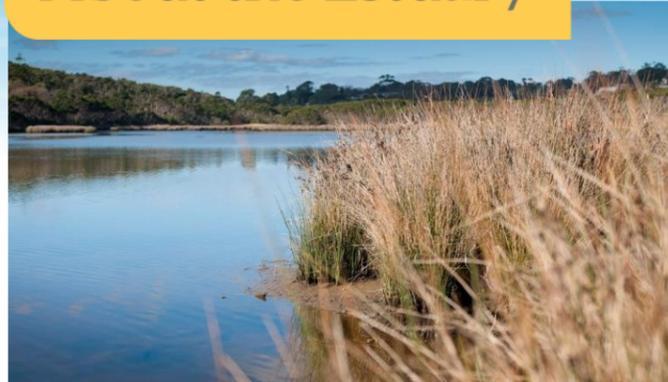


About the Estuary



The beautiful Balcombe Creek estuary in Mt Martha, Victoria

Balcombe Creek, with its estuary, is the last unspoilt waterway entering the eastern side of Port Phillip Bay. The Balcombe Creek Reserves cover 44 hectares of natural bushland along the creek's lower reaches. The estuary exits to Port Phillip Bay in the township of Mt Martha.

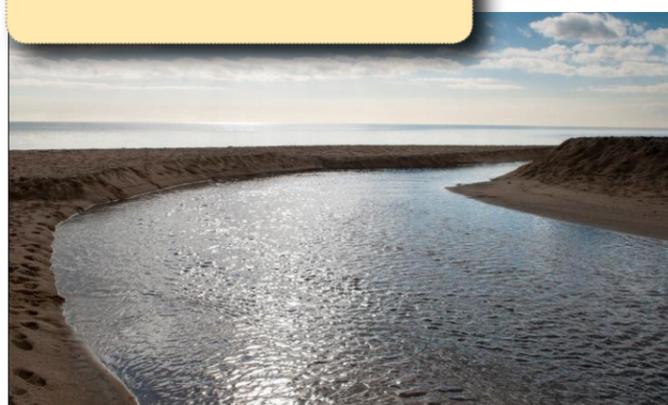
The Boonerwung, the Mornington Peninsula's traditional owners, called the Balcombe Creek area Tji'tjin'garook – *the voice of frogs*.

A boardwalk and walking tracks run about 3.5 km through bushland along the south bank, from the estuary to the Nepean Highway, with two bridges to the north bank creating a circuit. At the highway, the track connects with walking tracks in The Briars Park.

Threats to estuary health

Threats to the Balcombe Creek estuary

- Land use pressures
- Active erosion
- Cleared vegetation
- Sedimentation
- Altered hydrology – dams / urbanisation



The mouth of the Balcombe Creek estuary as it exits to Port Phillip Bay

What can you do?



The crew from Balcombe Estuary Reserves Group doing their bit on Clean Up Australia Day

- Join the Balcombe Creek EstuaryWatch group
<http://www.melbournewater.com.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 BERG to find out about walks, working bees and workshops that might be happening in Mt Martha.
<http://www.berg.org.au>
- Share what you have learnt from this annual summary with a friend or family member.

Melbourne Water
PO Box 4342 Melbourne Victoria 3001
(T) 131 722 (F) 03 9679 7099
www.melbournewater.com.au



BALCOMBE CREEK ESTUARY 2015

An interpreted summary of data

Date range:
1/01/2015 – 31/12/2015

Summary of data



This brochure summarises twelve months of EstuaryWatch estuary mouth condition and physical and chemical data. Balcombe Creek EstuaryWatch volunteers monitor one physical and chemical site during each monitoring session. In 2015, monitoring was conducted in 5 out of 12 months.

The Balcombe Creek estuary is an intermittently open estuary. In 2015 there were no estuary openings recorded. Two natural estuary closures were recorded on March 13 and July 1. Estuary mouth closures were recorded at many other estuaries in Victoria during 2015. This was most likely due to lower than average rainfall, resulting in very low river inflows.

Due to the relatively small number of monitoring sessions conducted this assessment is from March to July and December. Over the months monitoring occurred salinity levels indicate the estuary waters to be brackish. The salinity ranged from 19.1 – 34.4 ppt. The dissolved oxygen levels reduced with depth on all occasions with the exception of December when the salinity levels were stable, indicating possible mild stratification. The dissolved oxygen levels ranged from 37 – 95 % saturation, the lowest level was recorded on December 7 throughout the water column. The pH levels remained in the healthy range 7.2 – 8.2 pH units and the temperature ranged from 11.9 – 26.4°C.

EstuaryWatch records for the Balcombe Creek estuary can soon be viewed at www.estuarywatch.com.au

Estuary Fact File

Type of Estuary:
Intermittently closed coastal lagoon

Location: -38.26473, 145.01552

Nearest town:
Mt Martha

Estuary length:
2.65km

River length: 18.6km

Mouth state:
Intermittently open

Description: The Balcombe Creek estuary is in Mt. Martha. The estuary extent is limited by the outfall at Briars Park wildlife reserve and is open intermittently to Port Phillip Bay



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

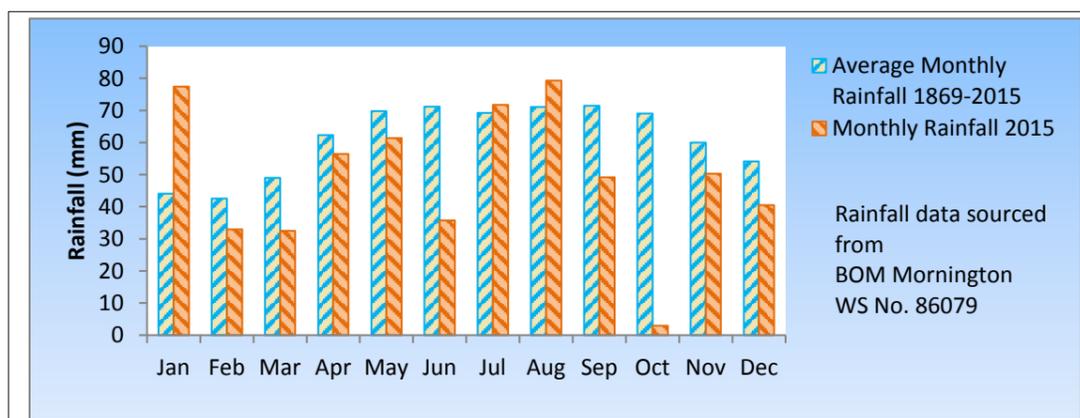
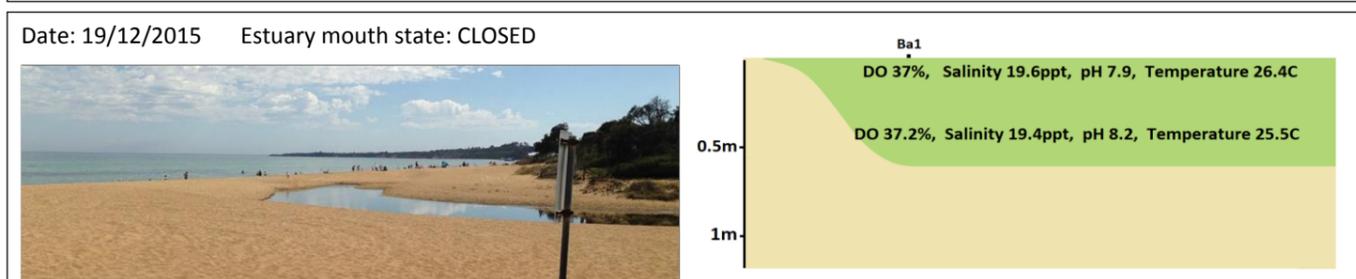
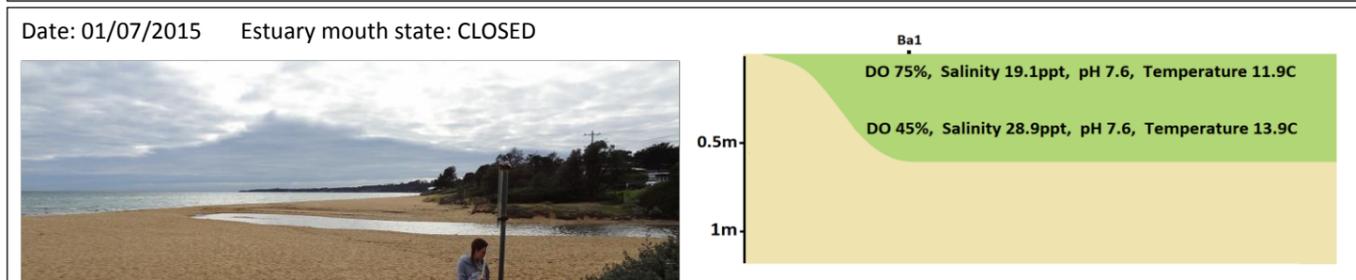
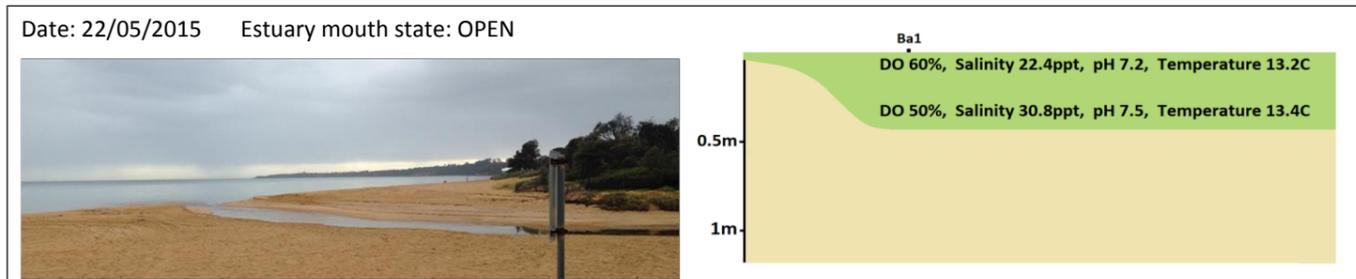
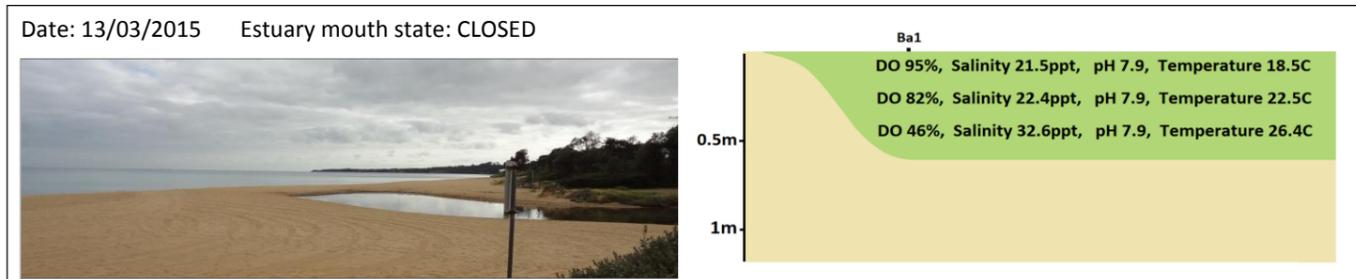
Raise awareness and provide educational opportunities to the community in estuarine environments, and enable communities and stakeholders to better inform decision making on estuarine health.

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.



Map of the Balcombe Creek estuary including the EstuaryWatch and Waterwatch site locations. Google Maps satellite image.

For all four monitoring sessions chosen for the EstuaryWatch Snapshots, photo point photos and a profile of the estuary for site Ba1 (Jetty near mouth) is displayed. The profile shows the depth, dissolved oxygen (DO) percent saturation, salinity, pH and temperature at the monitoring site from the surface of the water column to the bottom.



A comparison of 2015 monthly total rainfall and the average monthly total rainfall (1869-2015).

The average annual rainfall (1869-2015) was 740mm, the 2015 total rainfall was 591mm. The highest total rainfall was recorded in August (79mm).

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.

INDICATOR	SINGLE SAMPLE	
	surface	bottom
Dissolved Oxygen (DO) % saturation	70–110%	15–110%
Turbidity (NTU)	18	26
pH (pH units)	6.9–8.3	6.8–8.2

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.

Estuary Events



Reflections on the Balcombe Creek estuary

On March 12 the Melbourne Water EstuaryWatch Program held its “Estuaries Unmasked Night Seminar” for the Balcombe Creek volunteers. Held at The Briars Visitors Centre it was an educational evening, participants learned about estuarine fish and what they can tell us about the health of an estuary.

The evening was presented by Fiona Warry, an Estuarine Scientist. Fiona discussed how “fish play an important role in the food web of estuaries and are influenced by the physical and environmental conditions of the estuary”, indicating fish to be environmental indicators of estuarine health.

The study of Balcombe Creek and its fish population was presented and discussed in the context of state wide studies.

Get to know your local estuary species

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 Kuitert ©

