

ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES

Estuary 619 (YARRA RIVER)

Estuary ID 619
Name YARRA RIVER
Location VIC
Latitude / Longitude -37.852 144.905 **Datum** GDA94

Condition Assessment This estuary is in modified condition

Initial Classification In the first stage of this condition assessment this estuary was classified as being modified.

Basis of Initial Classification

Processed-Based Classification



The way Yarra River function is primarily a result of river energy. It is a wave dominated delta. This means that the estuary would have low sediment trapping efficiency; naturally low turbidity, salt wedge/ partially mixed circulation and there is a low risk of habitat loss due to sedimentation

Issues:

General Comments / Notes:

Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
STATE COMPONENT (OVERALL)	3	B	3
ECOSYSTEM INTEGRITY INDEX		D	
Eutrophication			
Chlorophyll a (µg/L) [median(80th)] HEAD			

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Chlorophyll a ($\mu\text{g/L}$) [median(80th)] MIDDLE

Chlorophyll a ($\mu\text{g/L}$) [median(80th)] MOUTH

Chlorophyll a ($\mu\text{g/L}$) [median(80th)] AVERAGE

Harmful algal blooms

Turbidity [median(80th)]

Turbidity (NTU or secchi depth) HEAD

Turbidity (NTU or secchi depth) MIDDLE

Turbidity (NTU or secchi depth) MOUTH

Turbidity (NTU or secchi depth) AVERAGE

Shellfish closures

Fish/bird kills

Pathogens

Faecal coliforms (no/100mL) [median(80th)] HEAD

Faecal coliforms (no/100mL) [median(80th)] MIDDLE

Faecal coliforms (no/100mL) [median(80th)] MOUTH

Faecal coliforms (no/100mL) [median(80th)] AVERAGE

Critical habitat loss

Anoxic and hypoxic events

Invasive species

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	Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
HABITAT CONDITION INDEX	No deviation calculated		D	2
Seagrass species present				
Seagrass coverage				
Mangrove species present				
Mangrove coverage				2
Saltmarsh coverage				2
Wetland coverage				

	Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
FISH CONDITION INDEX			D	
Diversity	Fish species present: Black Bream, Barracouta, Yank Flathead, Mosquito Fish, Red Mullet, Snapper, Mulloway, Goldfish, Redfin, Carp, Short-finned Eel, Silver Travally, Yellow Eyed Mullet, Tamar River Goby, Bridled Goby, Australian Salmon.			1
Abundance				
Health				
Recruitment				

	Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
WATER QUALITY INDEX			D	
Nutrients [median(80th)]				
Dissolved oxygen [median(20th)]				
Dissolved oxygen [surface] (%sat or mg/L) HEAD				

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Dissolved oxygen [surface] (%sat or mg/L) MIDDLE				
Dissolved oxygen [surface] (%sat or mg/L) MOUTH				
Dissolved oxygen [surface] (%sat or mg/L) AVERAGE	93 (80) % saturation	1	A	1
Dissolved oxygen [bottom] (%sat or mg/L) HEAD				
Dissolved oxygen [bottom] (%sat or mg/L) MIDDLE				
Dissolved oxygen [bottom] (%sat or mg/L) MOUTH				
Dissolved oxygen [bottom] (%sat or mg/L) AVERAGE				
pH				
Heavy metals	Yarra River contributes over 60% of the heavy metal load to Port Phillip Bay			1
Are heavy metals a problem in this estuary (Y/N)?				
Other toxicants (including pesticides)				
Salinity				
Temperature	Annual temperature range from 6 to 30 deg C			
Depth				
Ammonia (µg/L) AVERAGE	0.060 (0.140) [mg/L]		A	1
Oxidised nitrogen (µg/L) AVERAGE	0.130 (0.510) [mg/L]		A	1
Phosphate (µg/L) AVERAGE	0.110 (0.256) [mg/L]		A	1
	Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
SEDIMENT QUALITY INDEX			D	
Sediment toxicants				
Sediment load TN				
Sediment load TP				

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Invertebrate diversity

Invertebrate abundance

	Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
PRESSURE COMPONENT (OVERALL)		4	B	
UTILISATION INDEX	This estuary is in modified condition	4	B	4
Recreation Pressure				
Aesthetic & Amenity				
Yachting & Boating				
Shellfish				
Swimming				
Recreational Fishing				
Infrastructure Pressure				
Sewage Treatment Plants	None			1
Urbanisation and urban runoff	Flows through Melbourne - major metropolitan area			3
Dredging				
Commercial Pressure				
Industry				
Aquaculture	Absent			
Reclamation / Declamation				
Commercial fishing				
Tourism				
Agriculture				
Habitat clearing				

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Ports & Port Works Present
Shipping Activity

Notes, Data and Supporting Qualitative Text

**Rating
(1-4)**

**Data
Confidence**

References

SUSCEPTIBILITY INDEX

D

Flow-modifying structures
Catchment loads
Flows and flushing
Acid sulphate soils

RESPONSE COMPONENT (OVERALL)

Institutional Arrangements
Management Actions
Community Initiatives
Details of References
Key Contacts

1. VIC state data, 2. AGSO, 3. Expert opinion through state workshop, 4. Derived from BRS landcover data