

ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES

Estuary 615 (ANDERSON INLET)

Estuary ID 615
Name ANDERSON INLET
Location VIC
Latitude / Longitude -38.65 145.721 **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 severely modified.

Basis of Initial Classification This was based on the changes to the catchment natural cover: substantial clearing.

Processed-Based Classification



The way Anderson Inlet functions is primarily a result of wave energy. It is a wave dominated estuary. This means that the estuary would have high sediment trapping efficiency; naturally low turbidity, salt wedge/partially mixed circulation and there is high risk of sedimentation.

Issues:

General Comments / Notes: Initial workshop indicated high nutrient levels causing eutrophication - no data found to support this

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

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Chlorophyll a (µg/L) [median(80th)] MIDDLE		
Chlorophyll a (µg/L) [median(80th)] MOUTH		
Chlorophyll a (µg/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	Wetland loss and drainage	3
Anoxic and hypoxic events		
Invasive species	Spartina	3

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HABITAT CONDITION INDEX				
	Anderson Inlet was mapped in 2001 and the following facies areas were calculated: Fluvial-bayhead delta 0.8 sq.km; Flood and ebb tidal delta 2.7 sq.km; Intertidal flats 13.3 sq.km; Mangroves 1.0 sq.km; Saltmarsh/Saltflats 5.6 sq.km; Tidal sand banks 0.2 sq.km; Total facies area 24.0 sq.km. The following habitat deviations from expected were identified -1; No central basin.		D	2
Seagrass species present				
Seagrass coverage				
Mangrove species present				
Mangrove coverage	0.04			2
Saltmarsh coverage	0.232			2
Wetland coverage				
FISH CONDITION INDEX				
			D	
Diversity	Fish species present: Southern Sea Garfish, Sea Mullet, Australian Salmon, Luderick, Sand Flathead, Black Bream, King George Whiting, Greenback Flounder, Yellow Eyed Mullet			1
Abundance				
Health				
Recruitment				
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WATER QUALITY INDEX	no data	D	3
Nutrients [median(80th)]			
Dissolved oxygen [median(20th)]			
Dissolved oxygen [surface] (%sat or mg/L) HEAD			
Dissolved oxygen [surface] (%sat or mg/L) MIDDLE			
Dissolved oxygen [surface] (%sat or mg/L) MOUTH			
Dissolved oxygen [surface] (%sat or mg/L) AVERAGE			
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			
Are heavy metals a problem in this estuary (Y/N)?			
Other toxicants (including pesticides)			
Salinity			
Temperature			
Depth			

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

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PRESSURE COMPONENT (OVERALL)			D	
UTILISATION INDEX	1995 BRS data: Crop/pasture & Plantations comprise 0.277384 % of the catchment. Native woody vegetation comprises 13.3933 % of the catchment.		D	4
Recreation Pressure				
Aesthetic & Amenity				
Yachting & Boating	2 swing moorings present			
Shellfish				
Swimming				
Recreational Fishing	Present - 4 boat ramps			
Infrastructure Pressure				
Sewage Treatment Plants	None			
Urbanisation and urban runoff				
Dredging	No dredging			1
Commercial Pressure				
Industry				
Aquaculture	None present - previous mussel farm			
Reclamation / Declamation				
Commercial fishing				
Tourism	Tourism increasing - 2 hours from Melbourne; popular destination in summer			3

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Agriculture	Lots of agriculture in area	3
Habitat clearing		
Ports & Port Works	Absent	
Shipping Activity		

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SUSCEPTIBILITY INDEX				D
Flow-modifying structures	None			
Catchment loads				
Flows and flushing	Width of entrance varies; spit opens and closes			3
Acid sulphate soils	No mapping/survey			

RESPONSE COMPONENT (OVERALL)

Institutional Arrangements	No estuary protected areas
Management Actions	
Community Initiatives	Waterwatch
Details of References	1. VIC state data, 2. AGSO, 3. Expert opinion through state workshop, 4. Derived from BRS landcover data
Key Contacts	