

**ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES**

**Estuary 858 (PORT BROUGHTON ESTUARY)**

**Estuary ID** 858  
**Name** PORT BROUGHTON ESTUARY  
**Location** S CENT  
**Latitude / Longitude** -33.6 137.9      **Datum** GDA94

**Condition Assessment** This estuary is in extensively modified condition under moderate to high pressure

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

**Basis of Initial Classification**

**Processed-Based Classification**



The way Port Broughton Estuary function is primarily a result of tide energy. It is classed as a tidal flat/tidal creek. This means that the estuary would have low sediment trapping efficiency; naturally high turbidity, well mixed circulation and there is low risk of sedimentation

**Issues:**

**General Comments / Notes:**

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

**ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES**

**Estuary 858 (PORT BROUGHTON ESTUARY)**

Chlorophyll a (µg/L) [median(80th)] MIDDLE			
Chlorophyll a (µg/L) [median(80th)] MOUTH			
Chlorophyll a (µg/L) [median(80th)] AVERAGE			
Harmful algal blooms	Present, 3.5 wks/yr	3 - periodi c proble m	1
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			

**ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES**

**Estuary 858 (PORT BROUGHTON ESTUARY)**

**Invasive species**

	<b>Notes, Data and Supporting Qualitative Text</b>	<b>Rating (1-4)</b>	<b>Data Confidence</b>	<b>References</b>
<b>HABITAT CONDITION INDEX</b>	Port Broughton Estuary was mapped in 2000 and the following facies areas were calculated: Intertidal flats 3.6 sq.km; Mangroves 1.2 sq.km; Saltmarsh/Saltflats 4.0 sq.km; Tidal sand banks 19.3 sq.km; Total facies area 28.0 sq.km. The following habitat deviations from expected were identified -1; no flood and ebb tidal delta.	3	B	2
Seagrass species present	Yes			1
Seagrass coverage	23 km2			1
Mangrove species present	Avicennia marina (63472001)			1
Mangrove coverage	0.043			2
Saltmarsh coverage	0.14			2
Wetland coverage				

	<b>Notes, Data and Supporting Qualitative Text</b>	<b>Rating (1-4)</b>	<b>Data Confidence</b>	<b>References</b>
<b>FISH CONDITION INDEX</b>		3	B	
Diversity				
Abundance				
Health				
Recruitment				

	<b>Notes, Data and Supporting Qualitative Text</b>	<b>Rating (1-4)</b>	<b>Data Confidence</b>	<b>References</b>
<b>WATER QUALITY INDEX</b>			D	

**ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES**

**Estuary 858 (PORT BROUGHTON ESTUARY)**

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

	<b>Notes, Data and Supporting Qualitative Text</b>	<b>Rating (1-4)</b>	<b>Data Confidence</b>	<b>References</b>
SEDIMENT QUALITY INDEX			D	
Sediment toxicants				
Sediment load TN				
Sediment load TP				
Invertebrate diversity				

**ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES**

**Estuary 858 (PORT BROUGHTON ESTUARY)**

Invertebrate abundance

	<b>Notes, Data and Supporting Qualitative Text</b>	<b>Rating (1-4)</b>	<b>Data Confidence</b>	<b>References</b>
<b>PRESSURE COMPONENT (OVERALL)</b>				
UTILISATION INDEX		3	C	3
Recreation Pressure				
Aesthetic & Amenity				
Yachting & Boating	Yacht marinas absent; 1 boat ramp present			1
Shellfish				
Swimming				
Recreational Fishing				
Infrastructure Pressure				
Sewage Treatment Plants				
Urbanisation and urban runoff				
Dredging				
Commercial Pressure				
Industry				
Aquaculture	Present (oysters)			1
Reclamation / Declamation	Reclaimed area for boat ramp			1
Commercial fishing	10 operators			1
Tourism				
Agriculture				
Habitat clearing				
Ports & Port Works				

**ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES**

**Estuary 858 (PORT BROUGHTON ESTUARY)**

Shipping Activity

	<b>Notes, Data and Supporting Qualitative Text</b>	<b>Rating (1-4)</b>	<b>Data Confidence</b>	<b>References</b>
<b>SUSCEPTIBILITY INDEX</b>			D	
Flow-modifying structures				
Catchment loads				
Flows and flushing				
Acid sulphate soils	Acid sulphate soils are a potential problem but no mapping has been done			1

**RESPONSE COMPONENT (OVERALL)**

Institutional Arrangements				
Management Actions	Yes (29.4 km2)			
Community Initiatives	No			
Details of References	1. SA state data, 2. AGSO, 3. Derived from BRS landcover data			
Key Contacts				