

ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES

Estuary 428 (PROSERPINE RIVER)

Estuary ID 428

Name PROSERPINE RIVER

Location

Latitude / Longitude -20.491 148.729 **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 This was based on the changes to land use: agriculture.

Processed-Based Classification



The way Proserpine River function is primarily a result of river energy. It is a tide-dominated delta. This means that the estuary would have low sediment trapping efficiency; naturally high turbidity, well mixed circulation and there is a low risk of habitat loss due to sedimentation.

Issues:

General Comments / Notes:

<u>Notes, Data and Supporting Qualitative Text</u>	Rating (1-4)	Data Confidence	References
STATE COMPONENT (OVERALL)	3	C	
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	Proserpine River was mapped in 2000 and the following facies areas were calculated: Intertidal flats 8.1 sq.km; Mangroves 34.7 sq.km; Saltmarsh/Saltflats 4.0 sq.km; Tidal sand banks 10.6 sq.km; Total facies area 57.4 sq.km. The following habitat deviations from expected were identified -1; no flood and ebb tidal delta.		D	2		
Seagrass species present						
Seagrass coverage						
Mangrove species present						
Mangrove coverage					0.605	2
Saltmarsh coverage					0.07	2
Wetland coverage						

	Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
FISH CONDITION INDEX	In the 1997 RFISH diary program (not a comprehensive geographical survey), ranked recreational catch for Proserpine River + Repulse Creek included Whiting, Mud Crab, Shark, Bream, Grunter, Sweetlip, Catfish Unspecified, Unknown, Parrot Fish, Flathead (14 species total)		D	1
Diversity				
Abundance				
Health				
Recruitment				

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<p>WATER QUALITY INDEX</p> <p>Nutrients [median(80th)]</p> <p>Dissolved oxygen [median(20th)]</p> <p>Dissolved oxygen [surface] (%sat or mg/L) HEAD</p> <p>Dissolved oxygen [surface] (%sat or mg/L) MIDDLE</p> <p>Dissolved oxygen [surface] (%sat or mg/L) MOUTH</p> <p>Dissolved oxygen [surface] (%sat or mg/L) AVERAGE</p> <p>Dissolved oxygen [bottom] (%sat or mg/L) HEAD</p> <p>Dissolved oxygen [bottom] (%sat or mg/L) MIDDLE</p> <p>Dissolved oxygen [bottom] (%sat or mg/L) MOUTH</p> <p>Dissolved oxygen [bottom] (%sat or mg/L) AVERAGE</p> <p>pH</p> <p>Heavy metals</p> <p>Are heavy metals a problem in this estuary (Y/N)?</p> <p>Other toxicants (including pesticides)</p> <p>Salinity</p> <p>Temperature</p> <p>Depth</p>	D		

Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
<p>SEDIMENT QUALITY INDEX</p> <p>Sediment toxicants</p>	D		

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Sediment load TN
 Sediment load TP
 Invertebrate diversity
 Invertebrate abundance

	Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
PRESSURE COMPONENT (OVERALL)			D	
UTILISATION INDEX	1995 BRS data: Crop/pasture & Plantations comprise 0.238409 % of the catchment. Native woody vegetation comprises 95.2233 % of the catchment.		D	3
Recreation Pressure				
Aesthetic & Amenity				
Yachting & Boating				
Shellfish				
Swimming				
Recreational Fishing	Total estimated recreational catch (harvest & released) for Proserpine River + Repulse Creek in 1997 was 12,082 fish (0.02% of Qld total) from 878 trips (0.008% of Qld total). Estimated catch (top 5 species by no.) Whiting 2,124, Mud Crab 1,679, Shark 1,631, Bream 1,508, Grunter 920			1
Infrastructure Pressure				
Sewage Treatment Plants				
Urbanisation and urban runoff				
Dredging				
Commercial Pressure				
Industry				

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Aquaculture		
Reclamation / Declamation		
Commercial fishing	A maximum of 5 boats fished Proserpine River + Repulse Creek in 1999, for a total catch of 8.67 tonnes. Commercial fishing effort (days fished) by method comprised line (7), net (148), pot (213), trawl (9), not stated (43).	1
Tourism		
Agriculture		
Habitat clearing		
Ports & Port Works		
Shipping Activity		

Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
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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. QLD state data, 2. AGSO, 3. Derived from BRS landcover data