

ESTUARY ASSESSMENT FRAMEWORK FOR NON-PRISTINE ESTUARIES

Estuary 674 (SHERLOCK RIVER)

Estuary ID 674
Name SHERLOCK RIVER
Location NORTH WEST (PILBARA)
Latitude / Longitude -20.7 117.7 **Datum** GDA94

Condition Assessment This estuary is in largely unmodified condition

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

Basis of Initial Classification This was based on the changes to the land use: grazing.

Processed-Based Classification



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

Issues:

General Comments / Notes: General comments relate to all Pilbara estuaries (660 Ashburton to 684 Pardoo Creek)

Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
STATE COMPONENT (OVERALL)	2	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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Ammonia ($\mu\text{g/L}$) HEAD

Ammonia ($\mu\text{g/L}$) MIDDLE

Ammonia ($\mu\text{g/L}$) MOUTH

Ammonia ($\mu\text{g/L}$) AVERAGE

Oxidised nitrogen ($\mu\text{g/L}$) HEAD

Oxidised nitrogen ($\mu\text{g/L}$) MIDDLE

Oxidised nitrogen ($\mu\text{g/L}$) MOUTH

Oxidised nitrogen ($\mu\text{g/L}$) AVERAGE

Phosphate ($\mu\text{g/L}$) HEAD

Phosphate ($\mu\text{g/L}$) MIDDLE

Phosphate ($\mu\text{g/L}$) MOUTH

Phosphate ($\mu\text{g/L}$) AVERAGE

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)?

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Other toxicants (including pesticides)

Salinity

Temperature

Depth

Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
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SEDIMENT QUALITY INDEX

D

Sediment toxicants

Sediment load TN

Sediment load TP

Invertebrate diversity

Invertebrate abundance

Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
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PRESSURE COMPONENT (OVERALL)

3

C

UTILISATION INDEX

2

C

Recreation Pressure

Aesthetic & Amenity

Yachting & Boating

Shellfish

Swimming

Recreational Fishing

Infrastructure Pressure

Sewage Treatment Plants

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Urbanisation and urban runoff		
Dredging		
Commercial Pressure		
Industry	Some mining in catchments	3
Aquaculture	Not in estuaries	3
Reclamation / Declamation		
Commercial fishing		
Tourism	Camping	3
Agriculture	Grazing in catchments	3
Habitat clearing	Catchment modification but not clearing	3
Ports & Port Works		
Shipping Activity		

	Notes, Data and Supporting Qualitative Text	Rating (1-4)	Data Confidence	References
SUSCEPTIBILITY INDEX	Arid, sandy catchments; vulnerable systems	4	B	3
Flow-modifying structures				
Catchment loads				
Flows and flushing	Entrances generally well flushed			3
Acid sulphate soils				

RESPONSE COMPONENT (OVERALL)
Institutional Arrangements
Management Actions
Community Initiatives

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Details of References

1. Auditcapture database (WA state data), 2. AGSO, 3. Expert opinion through state workshop

Key Contacts