



Darwin - Palmerston report card 2009

Water quality at the Darwin - Palmerston upper estuary monitoring sites is in very good condition and, with the exception of high total nitrogen, complies with water quality objectives. Water quality at the ambient freshwater monitoring sites is in excellent condition, and complies with water quality objectives. The water-bug community at the biological monitoring sites is assessed as similar to reference or significantly impaired. One site was assessed as severely impaired in 2005.

Nature of system

- Long residence time and poor flushing in the tidal creeks
- Light limitation during the wet season
- A large proportion of the catchment has been urbanised

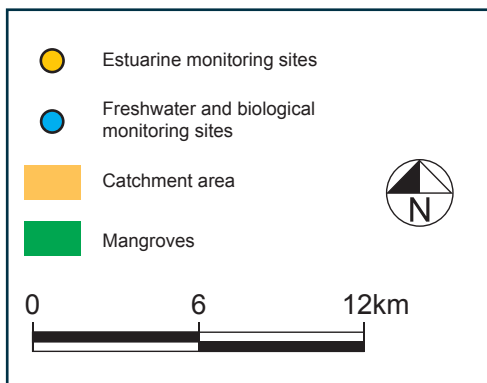
Sources of pollution

- Several sewage treatment plants with wastewater discharge from Darwin and Palmerston
- High sediment, nutrient, industrial and other human-related pollutant loads during the wet season












Mitchell Creek is the natural drainage system for the Palmerston escarpment, and residential suburbs in the east of the City of Palmerston. It is the only creek system in Palmerston with a defined channel. The Mitchell Creek catchment is under increasing pressure from urban residential development, such as the proposed suburb of Johnston. Proposed development in Johnston includes initiatives such as protection of much of the main channel. 'Water sensitive urban design' features that are being planned will help improve stormwater quality draining from some proposed urban areas to Mitchell Creek. The Northern Territory Government has monitored water quality and water-bugs in Mitchell Creek since 2001. Photo by Gisela Lamche

Darwin - Palmerston area

Darwin-Palmerston area catchment showing subcatchments, features and monitoring sites.



Darwin-Palmerston area ambient freshwater quality

Symbol	Indicator and units	Water quality objective	Current condition	Sample number for current condition	Compliance
	Electrical conductivity (µS/cm)	<200	72	11	✓
	Turbidity (NTU)	<20	4.6	11	✓
	pH	6.0 – 7.5	6.0 – 6.6	11	✓
	Dissolved oxygen (%)	50 – 100	76 – 92	4	✓
	Total suspended solids (mg/L)	<5	5	9	✓
	Chlorophyll a (µg/L)	<2	1	7	✓
	NOx (µg N/L)	<8	4	10	✓
	Ammonia (µg N/L)	NA	7	8	
	Total nitrogen (µg N/L)	<230	113	10	✓
	Total phosphorus (µg P/L)	<10	4	10	✓
	Filterable reactive phosphorus (µg P/L)	<5	2	10	✓












Period sampled for current condition is 2001-2005. NA Not available



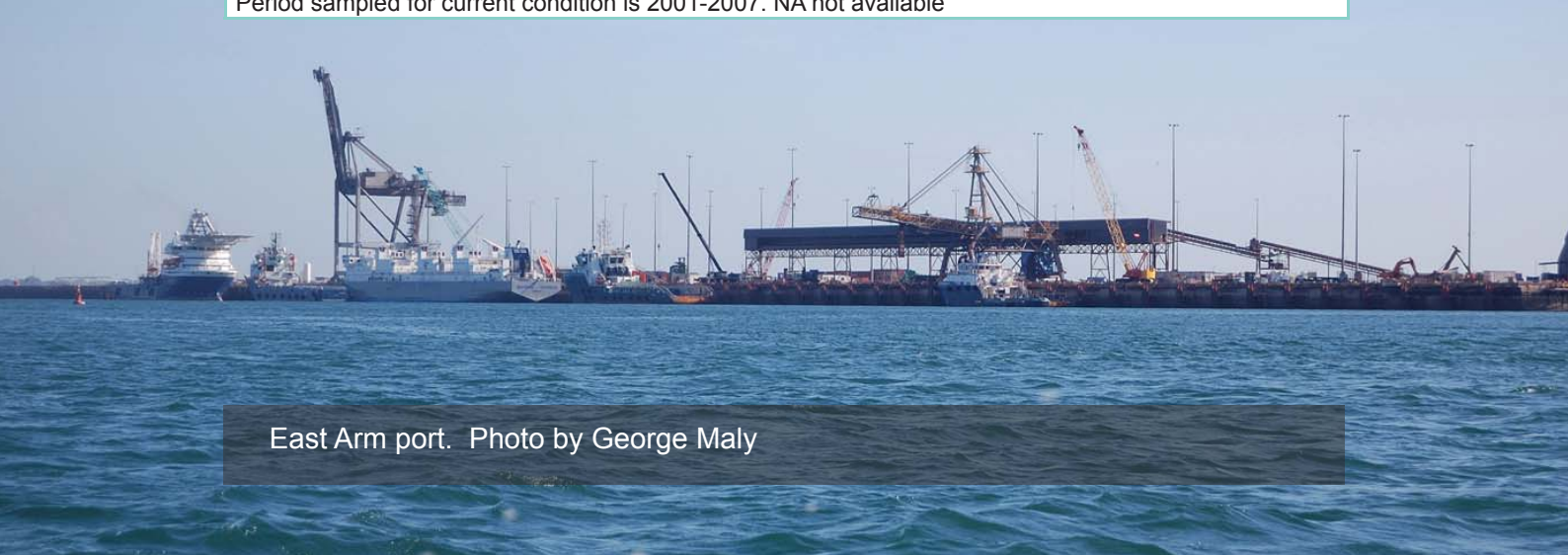
Biological health using the AUSRIVAS score

Site number	2001	2002	2003	2004	2005	2006	2007
DW23	A	A	B	A	C	B	B
DW41	A	B	B		B	B	
DW55					B	A	

Darwin-Palmerston area marine ambient water quality

Symbol	Indicator and units	Water quality objective	Current condition	Sample number for current condition	Compliance
	Electrical conductivity (µS/cm)	NA	51700	19	
	Turbidity (NTU)	NA	2.4	19	
	pH	6-8.5	8.2-8.4	19	✓
	Dissolved oxygen (%)	80-100	83-89	19	✓
	Total suspended solids (mg/L)	<10	2	14	✓
	Chlorophyll a (µg/L)	<4	2	50	✓
	NOx (µg N/L)	<20	2	51	✓
	Ammonia (µg N/L)	<20	5	44	✓
	Total nitrogen (µg N/L)	<300	1250	22	✗
	Total phosphorus (µg P/L)	<30	15	50	✓
	Filterable reactive phosphorus (µg P/L)	<10	4	47	✓

Period sampled for current condition is 2001-2007. NA not available



East Arm port. Photo by George Maly



Indo-Pacific humpback dolphins (*Sousa chinensis*) are residents of Darwin Harbour and estuaries—important areas for foraging, calving and raising young. Indo-Pacific humpback dolphins can be identified by their distinctive triangular dorsal fin, and long slender nose. The dorsal fin usually has distinctive pink to white pigmentation. This dolphin surfaces with a characteristic roll. The dolphin is vulnerable to habitat degradation, boat strikes, pollution and increased shipping traffic. The Coastal Dolphin Research Project is undertaking research on this species in Darwin Harbour. Further information on identifying dolphins in Darwin Harbour and the Northern Territory, and the project can be found at <http://www.nt.gov.au/nreta/wildlife/programs/dolphin/index.html> Photo by Catherine Orme