Northern Territory Government

Darwin Harbour report card 2009

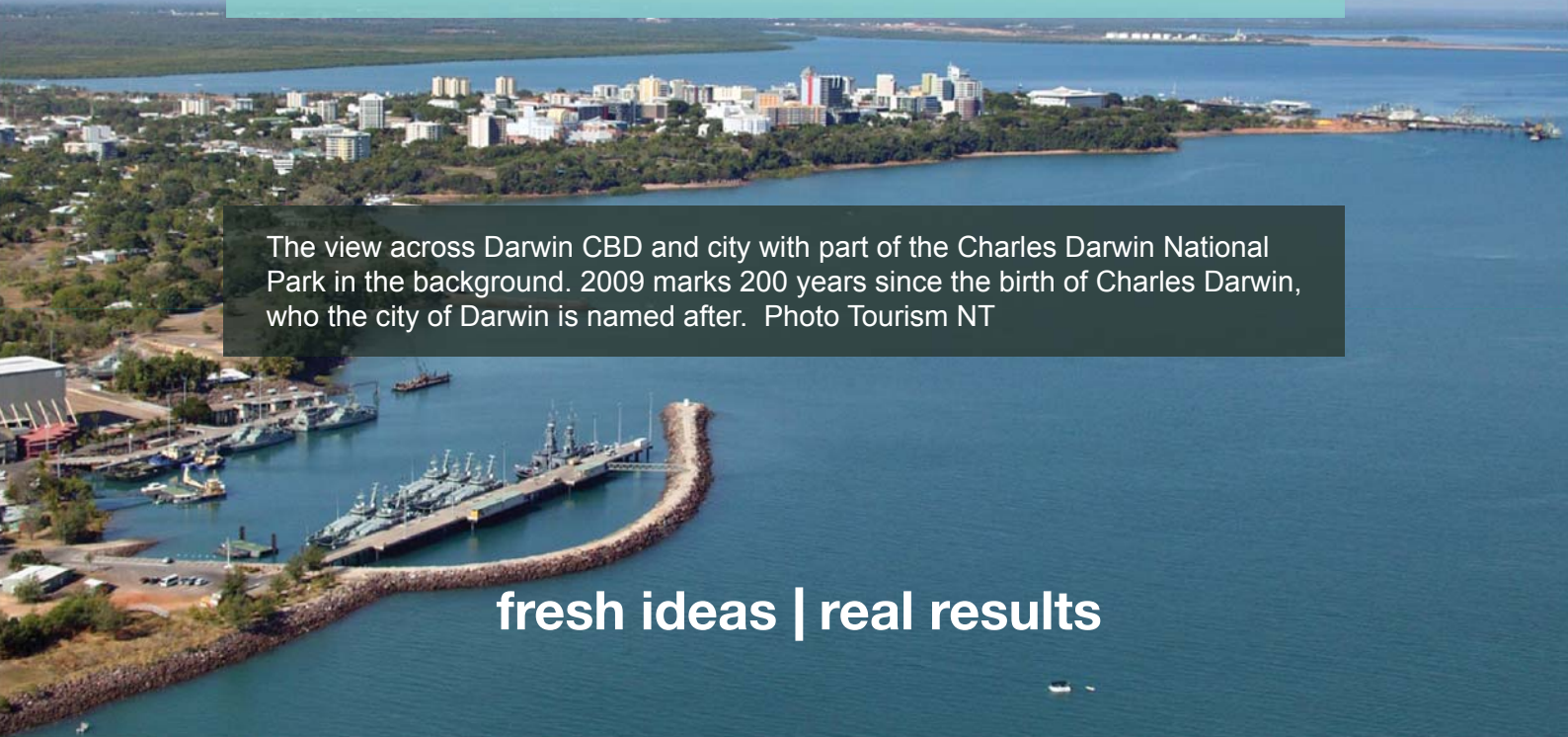
Water quality at the outer and mid Harbour monitoring sites is in excellent condition and complies with water quality objectives.

Nature of system

- Estuarine system with outer estuary well mixed via tidal inflows and outflows
- Upper estuary and tidal creeks have long water residence times and are poorly flushed so are likely to be most prone to effects of pollution
- Maximum tidal height variation of nearly 8 m
- Perennial freshwater inflows from Howard River and Darwin River
- Extensive mangrove habitat and inter-tidal mudflats

Sources of pollution

- High sediment, nutrient, industrial and other human-related pollutant loads during the wet season
- Sewage treatment plant wastewater discharges at several points in the Harbour
- Other licensed wastewater discharges at several points in the Harbour
- Sediment and nutrient loads in stormwater runoff from rural, urban and industrial catchment diffuse sources during the wet season



The view across Darwin CBD and city with part of the Charles Darwin National Park in the background. 2009 marks 200 years since the birth of Charles Darwin, who the city of Darwin is named after. Photo Tourism NT

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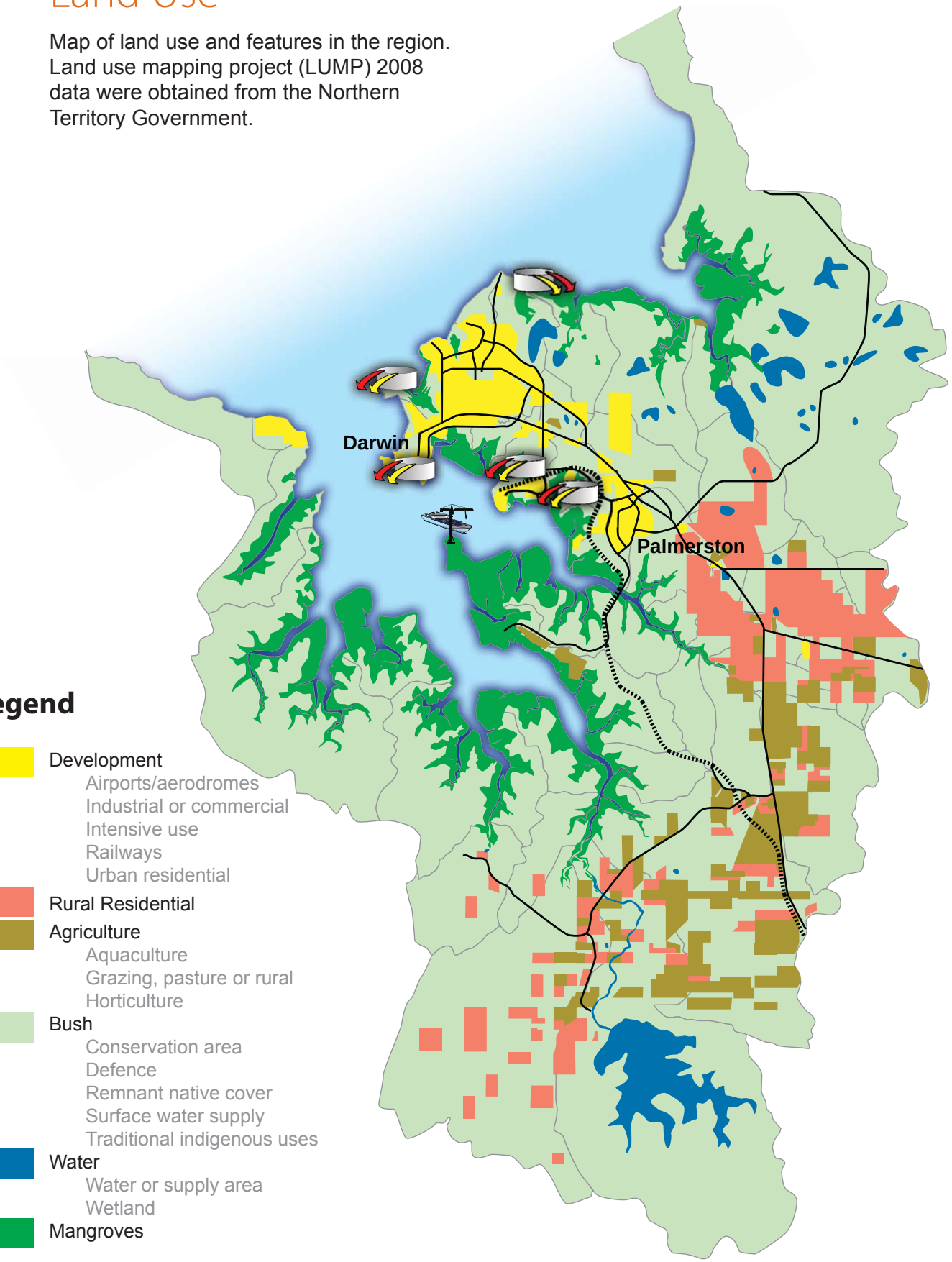
Land Use

Map of land use and features in the region. Land use mapping project (LUMP) 2008 data were obtained from the Northern Territory Government.



Darwin Harbour outer 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	53700	38	
	Turbidity (NTU)	NA	5.2	38	
	pH	7.0-8.5	8.1-8.3	38	✔
	Dissolved oxygen (%)	80-100	89-94	38	✔
	Total suspended solids (mg/L)	<10	4	33	✔
	Chlorophyll a (µg/L)	<1	0.5	36	✔
NOx	NOx (µg N/L)	<10	5	37	✔
AM	Ammonia (µg N/L)	<20	5	36	✔
TN	Total nitrogen (µg N/L)	<440	363	30	✔
TP	Total phosphorus (µg P/L)	<20	5	37	✔
FRP	Filterable reactive phosphorus (µg P/L)	<10	7	37	✔

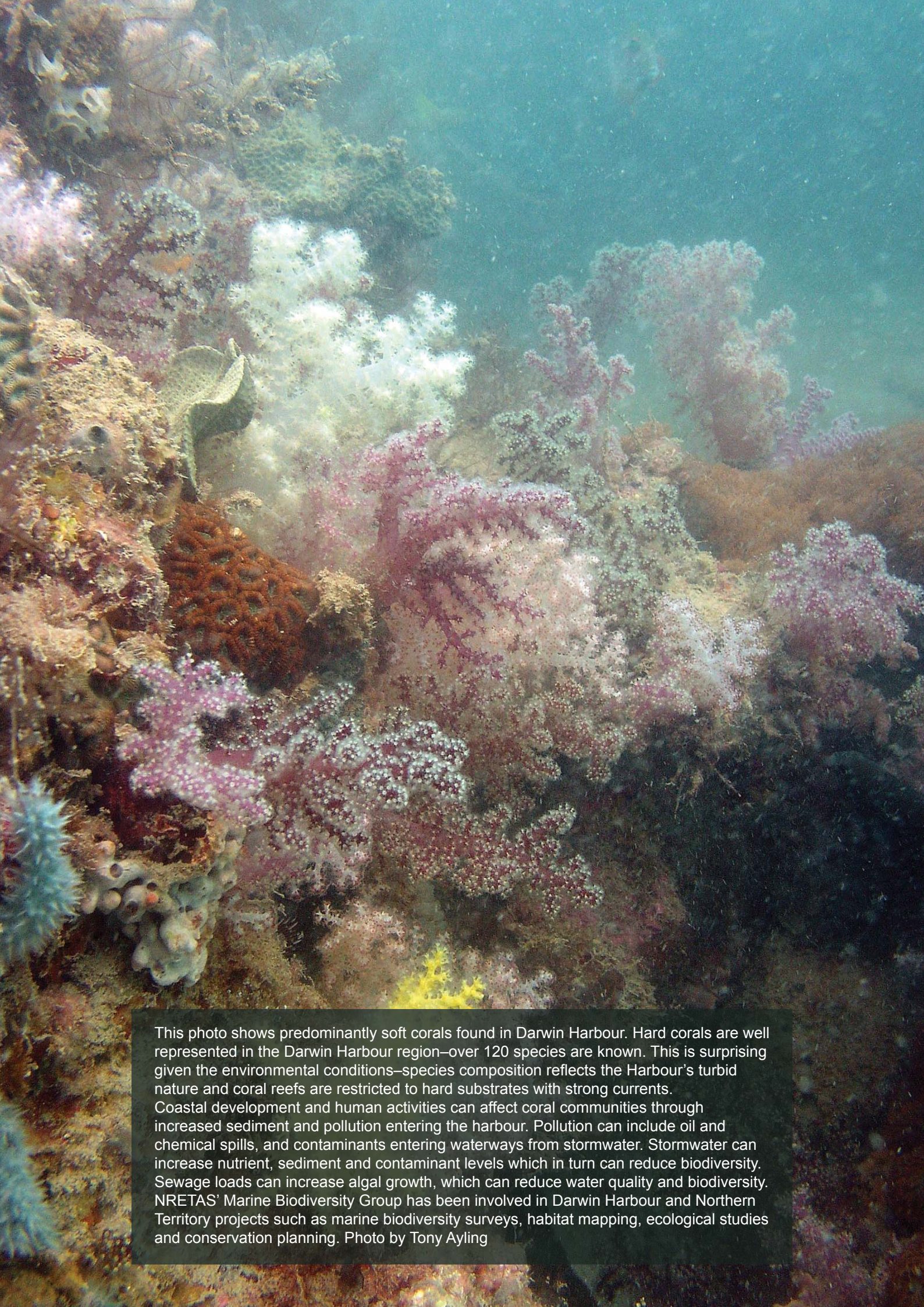
Period sampled for current condition is 2003-2006. NA not available

Darwin Harbour mid estuary marine ambient water quality

Symbol	Indicator and units	Water quality objective	Current condition	Sample number for current condition	Compliance
	Electrical conductivity (µS/cm)	NA	51500	55	
	Turbidity (NTU)	NA	2.2	55	
	pH	7.0-8.5	8.2-8.4	55	✔
	Dissolved oxygen (%)	80-100	84-90	55	✔
	Total suspended solids (mg/L)	<10	5	40	✔
	Chlorophyll a (µg/L)	<2	0.9	49	✔
NOx	NOx (µg N/L)	<20	2	55	✔
AM	Ammonia (µg N/L)	<20	4	37	✔
TN	Total nitrogen (µg N/L)	<270	141	43	✔
TP	Total phosphorus (µg P/L)	<20	11.5	52	✔
FRP	Filterable reactive phosphorus (µg P/L)	<5	3	53	✔

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

Wharf and Darwin City. Photo by George Maly



This photo shows predominantly soft corals found in Darwin Harbour. Hard corals are well represented in the Darwin Harbour region–over 120 species are known. This is surprising given the environmental conditions–species composition reflects the Harbour's turbid nature and coral reefs are restricted to hard substrates with strong currents.
Coastal development and human activities can affect coral communities through increased sediment and pollution entering the harbour. Pollution can include oil and chemical spills, and contaminants entering waterways from stormwater. Stormwater can increase nutrient, sediment and contaminant levels which in turn can reduce biodiversity. Sewage loads can increase algal growth, which can reduce water quality and biodiversity.
NRETAS' Marine Biodiversity Group has been involved in Darwin Harbour and Northern Territory projects such as marine biodiversity surveys, habitat mapping, ecological studies and conservation planning. Photo by Tony Ayling