



## Roebuck Bay Working Group

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### **RE: ALGAL BLOOM OF THE BLUE-GREEN ALGAE 'LYNGBYA' ROEBUCK BAY, BROOME**

An algal bloom of the blue-green algae '*Lyngbya*' is predicted to soon present at the environmentally sensitive site of Roebuck Bay, Broome. With the weather warming up conditions will soon be conducive to its growth. Members of the RBWG will be in place to monitor its development

#### **BACKGROUND**

Roebuck Bay, listed as a wetland of international importance under the Ramsar Convention, has been subjected to outbreaks of algal blooms during mid summer for the last two years.

*Lyngbya*, also known as Maidens Hair, is a blue-green algae which threatens sea grass beds that support marine life such as turtles and dugong. The algal bloom at Roebuck Bay is characterised by mats of fine, dark cotton wool like strands that can attach to the seagrass or form free floating clumps which may then wash onto beaches.

The algae may also cause reactions in humans soon after exposure. Reactions can include skin and eye irritation, and in severe cases, the affected skin may blister and peel off. If inhaled or ingested it may cause irritation to the respiratory and gastrointestinal tracts.

Algal blooms of *Lyngbya* may be a symptom of an imbalance in the nutrient cycling of the near-shore waters of Broome, although the nature of *Lyngbya* means it may respond to environmental factors other than solely nutrient enrichment. The bloom of summer 2006 became a topic of community concern and discussion at the Celebrate the Bay Forum in 2006.

#### **CURRENT STATUS**

*The cause of the algal bloom is as yet unknown. Department of Environment and Conservation (DEC) staff in Broome collected and submitted toxicology samples to*

*Queensland Health Service for analysis on 5 February 2007, which have subsequently returned results that detected no toxins.*

*During the processing of 2kg of Lyngbya for toxicology testing, a DEC staff member observed four juvenile crabs (<10mm) and 10 jelly prawns (<30mm) all of which were dead*

*The extent of the bloom was mostly across the west side of Roebuck Bay on the local seagrass beds which are estimated at a few hundred hectares. From these beds detached drift algae which moved from up Dampier Creek to beyond Entrance Point with the tidal flows. The blooms density has declined with the onset of the dry season, but is predicted to increase again with the change of season.*

DEC and scientists have established a research program that will study nutrient cycling and fluxing as well as conducting further monitoring of the ecological impacts of algal blooms. It is co-funded by DEC, Water Corp and the Broome Shire and Broome Port Authority. Linked to this research is a CoastWest funded community project to monitor the health of inter-tidal sea grass beds of Roebuck Bay that is hosted by Environs Kimberley, and assisted by DEC

## **URGENCY**

The algal bloom potentially threatens a sensitive aquatic environment, poses risks to sea grass beds and the organisms that are reliant upon it and to people who come in contact with the bloom. The nutrient cycling research will take a number of years to complete. Until it is finalised, and if it finds that nutrient enrichment is to blame, there is very little that managing bodies or other parties can do to stop the algal bloom.

## **RECOMMENDATIONS**

Key organisations that have some management responsibilities for the Roebuck Bay area form an alliance to monitor the progress of the research and begin to consider the issue of nutrient run off and subsequent remedial action if required.