

## 8. DISCUSSION

At present, DPAs essentially only protect dugongs from netting and other pressures that are related to fishing practises, thereby raising concerns that general dugong health in the existing 16 DPAs may not be adequately protected. The risk assessment in Section 5 indicates a clear need to address water quality issues in DPAs, particularly in those DPAs that were rated to be at a high or moderate risk, to ensure that the existing DPAs are sanctuaries for the protection and rehabilitation of GBR dugong stocks.

It is now widely recognised that the loss of sediment, nutrients, fertilisers and pesticides from the rivers of the GBR catchment needs to be reduced. The GBRMPA has recently prepared a report on targets for pollutant loads to the GBRWHA in response to the Great Barrier Reef Ministerial Council meeting on 8th June 2001. A scientific working group was established, which:  
reviewed the available water quality data and existing national water quality guidelines;  
prioritised the Queensland catchments according to the risk present to the Reef; and  
recommended minimum targets for pollutant loads that would halt the decline in water quality entering the Reef.

Data and guidelines included in the scientific working group's review were drawn from a variety of sources, such as the National Land and Water Resources Audit, the Australian Institute of Marine Science, the CRC Reef Research Centre, the Australian and New Zealand Environment and Conservation Council, and the GBRMPA.

These data and guidelines were used to formulate 10-year targets (2011) for reduction of pollutant loads entering the GBR. The targets set for the entire Great Barrier Reef catchment are as follows:

Sediment – 38 % reduction from 5,000,000 tonnes per km<sup>3</sup> to 3,100,000 tonnes per km<sup>3</sup>  
Nitrogen – 39% reduction from 19,500 tonnes per km<sup>3</sup> to 12,000 tonnes per km<sup>3</sup>  
Phosphorous – 47% reduction from 3,800 tonnes per km<sup>3</sup> to 2,000 tonnes per km<sup>3</sup>  
Chlorophyll –30 to 60% reduction below present levels.  
Heavy metals and pesticides –reductions in detectable levels.

These targets are included in the Water Quality Action Plan (WQAP) prepared by the GBRMPA for Ministerial Council. This is the first phase in a staged approach aiming to reverse the trend in declining water quality and eventually allowing for the recovery of inshore reefal ecosystems.

The water quality targets need to be specifically considered in relevant plans under the National Action Plan for Salinity and Water Quality (NAP) (which covers the Burdekin, Fitzroy and Burnett River Catchments) and within the Natural Heritage Trust 2 framework for catchments not covered by the NAP. In this way, the water quality targets for the Great Barrier Reef will be delivered within a framework that ensures strategic Commonwealth input but with the responsibility for on-ground implementation at the appropriate level.

Examples of actions that will contribute to reducing land-based inputs to the GBRWHA include:

Maintenance of sufficient vegetation cover on agricultural lands to minimise sheet erosion and thus minimise the amount of sediment lost from the GBR catchment.

- Implementation of effective waterway, bank erosion management strategies to minimise the amount of sediment lost from the waterways of the GBR catchment.
- Introduction of legislative regulation regarding disturbance and management of acid sulfate soils.

Inclusion of soil nutrient analysis as a necessary component of land and water management plans.

Management of fertiliser and pesticide application rates in the GBR catchment through land and water management plans.

Application of measures to reduce pollutant loads will be critical to maintain and preserve the health of the water quality in the GBR. In particular, measures to protect water quality will be essential to the DPAs that were rated as being at high or moderate risk of water and habitat quality impacts, if these areas are to be maintained as suitable protected habitats for dugong populations in the long term. From the risk analysis, the major catchments that require management focus include the catchments of the Herbert, Proserpine, O'Connell, and Pioneer Rivers, and Plane Creek.

An integrated, whole of government approach is required for successful management of this issue. The 25 Year Strategic Plan for the Great Barrier Reef World Heritage Area (GBRMPA 1994) was developed by Commonwealth, Queensland and Local government agencies, industries and community groups to identify a clear set of management objectives for all decision-making related to the GBRMP. This plan includes a commitment by all groups to better catchment management and the reduction of pollutant input from the land to the GBRWHA.

## **9. CONCLUSION**

The DPAs in the Great Barrier Reef World Heritage Area are under threat from land-based activities in the adjacent Great Barrier Reef catchment. These activities influence water quality, particularly in coastal areas, which has potential negative impacts on dugong health and dugong habitat, especially seagrass beds.

With the cooperation of Government agencies, peak industry organizations and the community, water quality and habitat protection can form a key part of the strategy to help recover the declining dugong population in the Great Barrier Reef south of Cooktown.