



Rainforest CRC



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CONNECTING COMMUNITY AND CATCHMENTS

What does Nature provide for free that would cost billions of dollars to replace? It's the healthy environment that supports our grazing, agriculture, fishing and tourism industries.

A new booklet and poster reveals how everything from bacteria to barramundi provide the 'ecosystem services' we take for granted, such as fertile soil, clean water and air, even waste removal.

The full colour eight-page booklet and poster were designed to assist community understanding of the importance of a whole-of-system approach to managing coastal catchments to maintain the water quality we all depend on.

Scientists from the *Catchment to Reef Program*, a joint initiative between the Rainforest and Reef Cooperative Research Centres (CRCs), have shown how maintaining good water quality and managing coastal catchments to protect the health and integrity of our river systems is crucial to the long-term health of our communities and the Great Barrier Reef.

"Are you connected?" is the question asked by the authors of the guide, which describes the natural connections between plants, animals and waterways.

Program Leader, Professor Richard Pearson of James Cook University, explained how processes between the land and sea could be linked.

"Clearing land for purposes such as agriculture, grazing and urban activities has substantially increased the amounts of sediment and nutrients that enter our streams. This reduces water quality and can severely affect the health of downstream ecosystems, leading to the loss of important habitats for fish and wildlife in catchments and damage to inshore marine ecosystems."

"Our science is targeted to provide the community with best practice guidelines for maintaining the quality of our environments. We hope our booklet will help land managers and community groups to understand the real benefits of maintaining the natural pathways between land and sea," Professor Pearson explained.

Professor Angela Arthington of Griffith University commented on the research program. "As a result of Rainforest CRC research and Government agency support, we now better understand how upland streams support a rich and unique biodiversity, and how they work as ecosystems, intimately linked to the surrounding riparian vegetation and forests."

"We now aim to extend this understanding to the complex processes that operate in lowland rivers, floodplains and associated estuaries, where urban and agricultural development is rapidly increasing to the detriment of riverine landscapes and biodiversity," Professor Arthington explained.

The Catchment to Reef Program seeks to support catchment communities to operate sustainably and to preserve the World Heritage Values of the Great Barrier Reef and its catchments. The Program recognises that land-sourced contaminants are a major threat to the well being of the Great Barrier Reef and seeks to reduce this threat by providing information on ways of improving land and water management in the Great Barrier Reef catchments.

Other Catchment to Reef products include the publication of a resource book on freshwater fishes of northern Australia. *Freshwater Fishes of North-Eastern Australia* (Pusey, B. J., Kennard, M. J. and Arthington, A. H. 2004) is available from CSIRO Publishing (www.publish.csiro.au). Researchers from James Cook University have also produced a novel way to store and communicate vast amounts of biological data with the development of an interactive, Web-based *Biophysical Atlas*.

Copies of the "Are You Connected" booklet and poster may be obtained by contacting the Rainforest CRC on (07) 4042 1244.

THE FACTS ABOUT OUR CATCHMENTS

- Since European settlement in the Great Barrier Reef catchments, the community has drained and filled 90% of the region's freshwater wetlands and altered the flow of water that replenishes them.
- The Great Barrier Reef receives runoff from 30 major river systems extending up to 450 km inland and draining 25% of Queensland.
- Since intensive development of reef catchments, river plumes have carried much greater contaminant loads, causing major changes in the health and distribution of reefs.
- The network of waterways is crucial to migrating animals that maintain the biological links between freshwater and the sea.
- The interdependence of animals and plants in Catchment to Reef ecosystems is part of their natural healthy functioning.

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