Marine and Coastal

National Environmental Science Program

PROJECT 3.4

Building knowledge for healthy northern Australian catchments and coasts

The challenge

Economic development in northern Australia brings greatest benefits to northern communities when there are no adverse effects on river catchments, estuaries and marine waters. To achieve this, the potential environmental impacts of developments must be understood, predicted, and included in economic and regional planning deliberations and decisions.

Currently, a full scientific understanding of how various industries affect northern environments is lacking. This means that present day decision-makers cannot predict the environmental and associated outcomes of developments with a high degree of certainty, nor accurately plan for mitigation.

This project addresses this knowledge shortfall by evaluating and analysing the environmental data and other information pertaining to three northern Australian catchments.

The approach

The project will examine cause-effect links and critical scientific information gaps relevant to: the Flinders and Gilbert catchment in Queensland; the Daly catchment in the Northern Territory; and the Keep catchment, in both the Northen Territory and Western Australia.

Components of the study will include:

- analyses of the impacts of catchment runoff on marine health and productivity;
- investigation of hydrographs and satellite imagery to calculate flows, sediment plumes, etc.;
- change analysis modelling of mangrove distribution;
- effects of catchment nutrient inputs on estuarine and coastal productivity; and
- isotopic measurement of groundwater contributions to estuarine flow.

Collaborative workshops will be undertaken with Traditional Owner groups, land managers and other stakeholders, for shared learning and knowledge exchange.

Expected outcomes

- Better catchment data for planners and managers.
- Prosperous communities within sustainably managed lands and seascapes.
- Future economic enterprises with minimal impacts on terrestrial runoff and receiving marine waters.

Project leader

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FRONT: Mouth of Gilbert River by Stephen Faggotter.
BACK: Gulf estuary by Stephen Faggotter.

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This project is supported with funding from the Australian Government under the National Environmental Science Program.