



Make amends for 150 years

Helen Bennett

If we could have predicted 150 years ago the impact that our actions would have on the Murray-Darling Basin rivers, we would have done things differently. The crisis facing that area is one that state and federal governments are wrestling with in a race against time to save one of Australia's most crucial resources.

Perhaps with better knowledge and foresight, south-eastern Australia would have been better equipped to deal with the crippling drought conditions of recent years and the increasingly dry conditions brought on by climate change.

As rivers dry up in southern Australia, governments are examining the potential for a broad range of economic development opportunities that draw on the land and water resources of northern Australia. But these decisions about managing northern rivers need to be made with the best available knowledge.

The Tropical Rivers and Coastal Knowledge (TRaCK) project brings together more than 70 leading researchers from 15 organisations to improve our understanding of the rivers, catchments and estuaries across northern Australia.

TRaCK receives major funding for its research through the Australian Government's Commonwealth Environment Research Facilities initiative and its Raising National Water Standards Program, Land and Water Australia and the Queensland Government's Smart State Innovation Fund.

The TRaCK consortium is led by Charles Darwin University, CSIRO, Griffith University, Land & Water Australia, the North Australia Indigenous Land and Sea Management Alliance and the University of Western Australia.

Decisions about river use in Australia 150 years ago were made by people with knowledge and experience of European conditions.

Decisions about the further development and use of northern river systems need to be better informed by local knowledge, including knowledge that Indigenous people have had for millennia and that ecologists are just beginning to gain.

TRaCK is targeting the knowledge gaps about northern Australian rivers identified by water planners and the various water users of northern Australia: Indigenous communities, pastoralists, miners, horticulturists, tourists, fishers and others.

"We want to answer the basic questions: how do our rivers work, how do people value them, what enterprises could be developed around or from our rivers, and how we can make good decisions about our rivers," says Associate Professor Michael Douglas, TRaCK director.

State and territory water planners and policymakers want this knowledge now so they can make decisions about water allocation.

"We need the information yesterday, but tomorrow will have to do," says Peter Whitehead, a water planner with the Northern Territory Government.

A broad question is, how much can we change the landscape in river catchments and still have healthy rivers that keep the values of greatest public concern?

Douglas believes TRaCK is well on the way to providing such knowledge.

The Fitzroy (in northern Western Australia) is at an early stage of the planning processes while in the Daly (in the Northern Territory), TRaCK is already feeding information into the decisions being made about water planning now. The Mitchell (in north Queensland) already has a water plan, so TRaCK is providing information that can feed into monitoring and future planning activities.

Some tropical rivers are already experienc-

Research fellow level B – NT regional knowledge and adoption co-ordinator

Research fellow level B – River health assessment

Research associate level A – Aquatic ecology

Where: Charles Darwin University, NT

Closing date: November 21

Salary: Level B \$67,510-\$80,170; Level A \$47,258-\$64,135

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ing the impact of development, while for others those pressures are just starting to emerge. The Fitzroy and Mitchell catchments face further development of the grazing and mining industries, with the Mitchell already experiencing high levels of erosion.

The Daly, recognised worldwide as one of the best rivers for fishing, is relied on heavily by the local community as a critical water resource. The town of Katherine depends on the Daly for water, particularly from groundwater, for consumption and irrigation, says John Childs from the Daly River Management Advisory Committee.

There are several Indigenous language groups living in the catchment and they use the Daly for food and for cultural ceremonies.

It is also an important river for recreation and tourism, especially the Katherine Gorge, which attracts a lot of tourists, says Childs.

In the Flinders catchment several shires want to develop agricultural industries around the river in a responsible way. They are looking at water infrastructure, dams and off-river storages but they want to make sure this will not cause future environmental problems for the river, Charles Curry from Southern Gulf Catchments says.

More agricultural development would increase the vitality of communities around the river as it would reduce their reliance on the cattle industry.

Curry also believes that controlling the spread of weeds on the river and better protection of the riparian vegetation are important factors to consider in any agricultural development.

The Fitzroy has come under development pressures in the past and this pressure is likely to increase as water becomes scarcer. Some groups are demanding action to protect it from further damage, and so far these actions have effectively stopped the damming of the Fitzroy.

The TRaCK program is working within seven themes, including:

- Identifying the different types of river systems and assets of the north,

- Understanding how changes in land and water management might affect water quality and quantity,

- Understanding what plants and animals are in the rivers and how they might be affected by changes in water quality and quantity;

- Identifying sustainable and culturally appropriate enterprises which use the rivers' resources.

Three researchers are needed to join the program. The NT regional knowledge and adoption co-ordinator will join a team that co-ordinates and integrates research activities, knowledge management and communication between researchers, stakeholders and land-owners. The research fellow — river health assessment, will be engaged to focus on the framework for the Assessment of River and Wetland Health trial to rivers in the Daly River and Darwin Harbour catchments.

The aquatic ecology research associate will assist the food webs and biodiversity theme, as these projects are aimed at developing a better understanding of river and riparian food webs and flow ecology relationships.



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Knowledge: Sampling in Sandy Billabong at Fitzroy catchment is a critical part of water quality research