

# Scientist profile - meet Dr Kate Brandis



Dr Kate Brandis' work takes her to wetlands across Australia.

## Dr Kate Brandis

**Job title:** Joint Research Fellow, University of New South Wales (UNSW) Australia and the Australian Nuclear Science and Technology Organisation (ANSTO)

### What are your main areas of research?

My main areas of research are investigating colonial waterbird breeding, wetland ecology, environmental flow management for ecological outcomes, stable isotope ecology, and waterbirds at a landscape scale.

### What is a typical work day like for you?

My work includes a mixture of lab time, fieldwork and office time in front of a computer.



Patricia Gadd (left) and Dr Kate Brandis analysing the results of feather analysis at ANSTO.

A typical day usually involves processing samples such as feathers sent to me as part of the Feather Map of Australia Project (see below), analysing data, writing reports, helping students and answering emails.

Sometimes I undertake fieldwork. A field trip to a wetland normally lasts for at least 3-4 days. During the excursion I use a canoe to move around the wetland quietly to check waterbird nests for eggs and chicks.

### How does your job impact on the environment and the community?

My job helps the environment by improving our understanding of waterbirds and wetlands, so that water resources can be better managed to ensure wetlands and waterbirds survive. This also helps the community as wetlands provide important ecosystem services, which include filtering water, reducing sedimentation and erosion and providing habitat for flora and fauna.

### When and how did you become interested in science?

I was first interested in science in high school while doing experiments in the lab.

### What did you study to get where you are today?

I completed a Bachelor of Science (Hons) with a double major in Resource Management and Biology; then I did a Masters of Environmental Science and finally a PhD. I've spent A LOT of time at uni!



The Straw-necked Ibis (*Threskiornis spinicollis*) is central to Dr Brandis' Waterbird Diets and Stable Isotopes project and a key bird of interest in The Feather Map of Australia Project (Image © Kathy Zonnevylle).

### What are your current major projects?

My four main projects are:

- **Waterbird Diets and Stable Isotopes** - This project looks at changes in the diet of Straw-necked Ibis that occurred during a large breeding event in the Lowbidgee Wetlands, a major wetland on the lower Murrumbidgee river in Western New South Wales between 2010 and 2011.

Using a combination of research techniques including analysis of carbon and nitrogen stable isotopes, we can look at dietary changes during the breeding period and further understand the feeding habits of colonially-breeding waterbirds.

- **Eastern Australia Waterbird Survey** - This annual aerial survey is one of the largest wildlife surveys in Australia, taking around 100 hours of flying time. Two observers survey up to 2000 major wetland sites in the Murray-Darling Basin.

Commencing in 1983, the survey provides invaluable information on the ecosystem health of wetlands and rivers. The survey data has led to major improvements to the onground management of waterbirds, rivers and wetlands; provided evidence to water resource managers about the importance of inland wetlands; protection of the Paroo River and Cooper Creek; contributed to water management policies for the Macquarie Marshes, Menindee Lakes, Lowbidgee floodplain wetlands; and informed discussions concerning bilateral agreements on migratory waterbirds with Japan, China and the Republic of Korea.

- **The Feather Map of Australia Project** - The Project aims to collect waterbird feathers from inland wetlands around Australia. These feathers will be analysed using nuclear techniques to track the movement of waterbirds around Australia and understand both the health of wetlands and wetland birds.

This information is of interest to water and wetland managers, helping inform decision making regarding environmental flows and water management issues. It is also important for understanding the ecology and life cycles of waterbirds and waterbird populations to ensure that populations of Australia's waterbirds are maintained or increased.

Members of the public are invited to assist with collecting feathers, visit [www.ansto.gov.au/feathermap](http://www.ansto.gov.au/feathermap).

### Have you had the opportunity to travel for your job?

Yes, I've travelled to some amazing wetlands in Australia. Normally I visit wetlands when they are in flood and are full of birds, frogs and fish. I have also been overseas to South America to visit wetlands there.



Sunset at an Ibis colony.

### What's the strangest thing you've ever done as part of your research?

Collecting bird poo – because it tells us what the birds have been eating!

### What do you like to do in your spare time?

What's spare time? When not at work, I enjoy doing things with my two children and a black Labrador.