

Putting the  
**'eco'**  
in **tourism** at  
**Kakadu**

Magela floodplain,  
Kakadu National Park,  
Northern Territory.

*A Northern Territory study shows how ecotourism can do more for its patrons while at the same time taking greater care of the environment on which it depends. Tim Thwaites reports.*

**E**ight saltwater crocodiles at one sitting is enough to satisfy the average ecotourist; any fewer and the tourists are likely to be left begging for more. That's just one snippet of the wide array of information uncovered in a pioneering study of how best to manage and sustain a wildlife tourism operation in the Northern Territory.

The study, by researchers from the CSIRO Division of Wildlife and Ecology and the Northern Territory University, analysed one of Australia's best known wildlife experiences: the Yellow Waters boat tours in Kakadu National Park, east of Darwin. It investigated the environmental, social and economic factors behind the successful and profitable continuance of the tours.

Overall, the research found that satisfaction with the boat tours – which are taken by more than half the visitors to the park – is high. And at present the tours cause little disturbance to wildlife and habitat. These conclusions are presented in a report, *Wildlife Tourism at Yellow Waters*.

But the importance of the study is greater than its findings. The research tested an approach to analysing ecotourism which blends social science and biology and can

serve as a model for future studies. Many of the results were able to be used to make practical recommendations for future management of the tours, such as how boats should be designed, what makes a good guide and how to protect the environment.

In fact, the study has been a demonstration of what research can do for the tourism industry. According to Dr Dick Braithwaite, coordinator of CSIRO's multi-divisional program for tourism and leader of the Yellow Waters team, research of this kind has particular value in relation to ecotourism.

'The natural environment is Australia's strongest tourism selling point, but we need to take care that large numbers of tourists don't spoil the very thing they came to see,' Braithwaite says. 'Unless appropriate research is done with a view to management, these magnificent places will inevitably deteriorate. We still have the opportunity to get it right.'

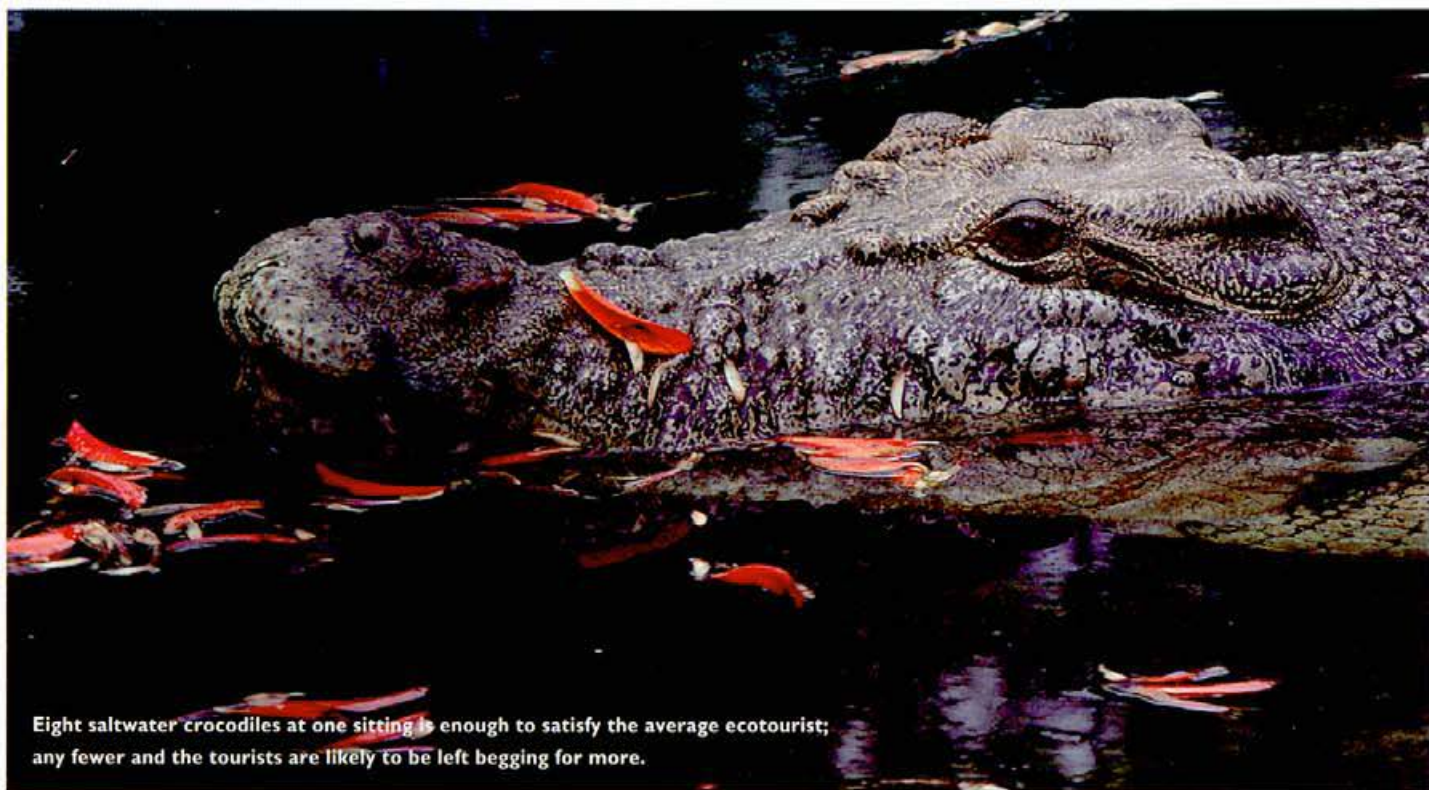
'The tourist industry is as important as agriculture in terms of its contribution to the Australian economy. It employs many more people, yet agriculture receives 50 times as much research funding.'

The boat tours operate along the South Alligator River system from Yellow Water Billabong near Cooina. The tour business is owned by Kakadu National Parks's traditional owners, the Gagudju people, and is operated by Southern Pacific Hotels Corporation. Braithwaite was joined in the work by the Associate Dean of the Faculty of Tourism and Hospitality at Northern Territory University, Dr Paul Reynolds.

In order to study the tours, the research team established a novel measure, the 'focus event', to integrate environmental, social and economic factors. A focus event was defined in terms of the time between when a particular species was pointed out and when attention moved on to another species. The event could last two seconds or 12 minutes.

On 195 boat tours spread through the day and the year, an observer recorded a set of information for each of more than 9000 focus events. The data included time, temperature, humidity, identity of species, numbers, how the boat approached the species, whether it was disturbed and if there was any reference to Aboriginal cultural matters.

Statistical and graphical analysis of focus events was then combined with information from surveys of the attitudes of boat tour



Eight saltwater crocodiles at one sitting is enough to satisfy the average ecotourist; any fewer and the tourists are likely to be left begging for more.

Jiri Loebman, Lochman Transporencis

passengers, economic data on the operation of the tours and general climatic and environmental information. The resulting data set was used to explore several important issues of ecotourism, particularly how to present a natural experience to large numbers of people without destroying the wilderness.

That compromise is met head on in the issue of disturbance of wildlife. It's a potentially serious problem. 'If animals have to move away they experience stress, stop feeding and expend considerable energy,' Braithwaite says. 'If they do this often enough, they may be unable to breed. If they do it more often, they may lose weight and die. But before this happens they usually leave the area. Whichever way it works out, the wildlife experience is clearly diminished.'

Most of the research on the habituation of animals has occurred in laboratories where

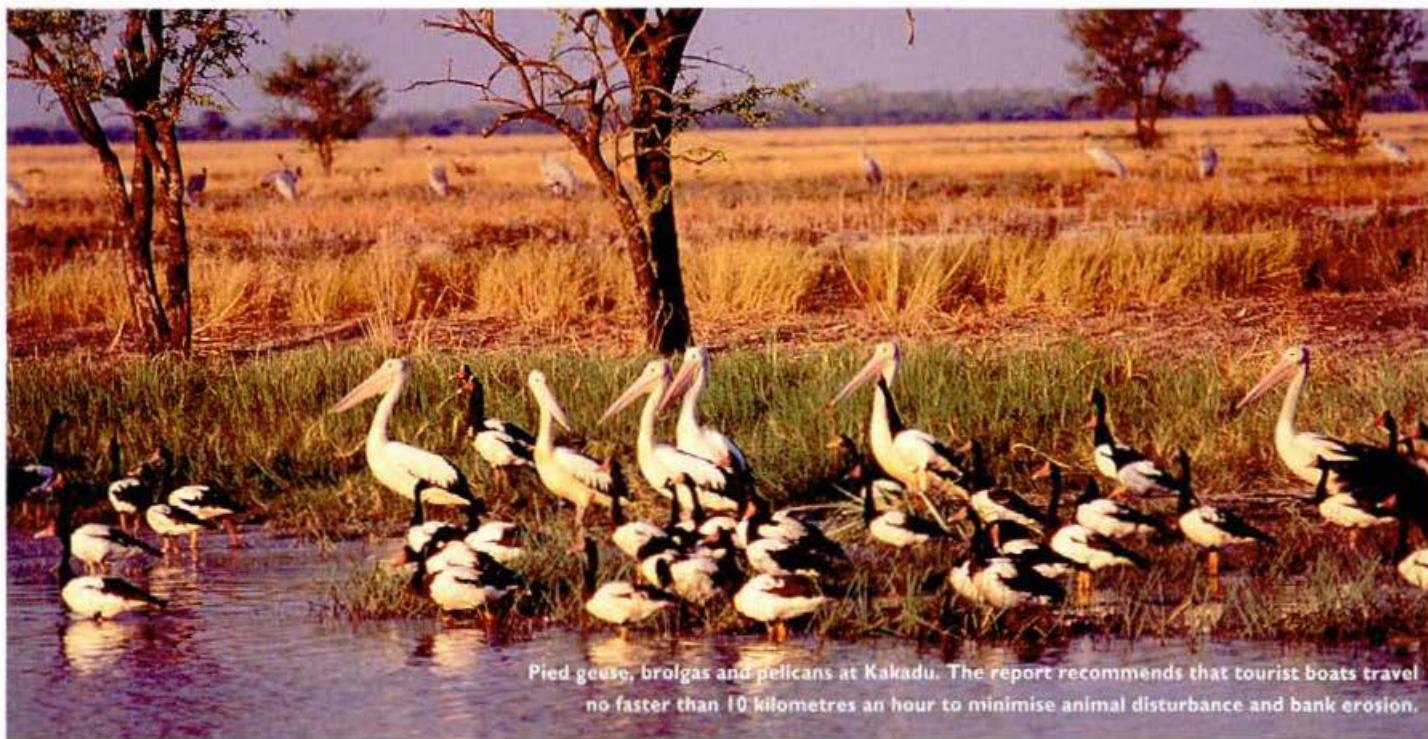
movement of flocks of magpie geese and the launch of crocodiles into the water. In fact, the tourists welcome such disturbances as part of the experience. It is only through education that the public will recognise these events as potentially harmful, the report says.

The study showed that disturbance was one of several factors which changed with the season. But the seasonal variation in the wet-dry tropics at Kakadu is of a type with which few visitors are familiar. There are six seasons at Kakadu. So the report recommends multi-lingual pamphlets to explain these seasons to tourists and the changes that mark them. The report argues that these pamphlets could help tourists form appropriate expectations as to what they might encounter during each season. Crocodiles, for instance, are far less likely to be seen when water levels are high and the animals tend to disperse widely.

Australia hope to learn something of Aboriginal arts and culture, and that the boat tours are owned by an Aboriginal organisation, the report noted it was curious that little Aboriginal culture was presented. It recommended that Aboriginal guides and boaties be recruited, trained and employed.

The work at Yellow Waters was financed by a grant of \$40 000 from the Federal Department of Tourism's national ecotourism program. This was supplemented by \$10 000 from the Australian Nature Conservation Agency and matching funds from the Gagudju Association, the CSIRO Division of Wildlife and Ecology and the Northern Territory University.

The Yellow Waters study was one of the first outcomes of the CSIRO's thrust into tourism. 'This study was an important step in expanding tourism research. The industry has



Pied geese, brulgas and pelicans at Kakadu. The report recommends that tourist boats travel no faster than 10 kilometres an hour to minimise animal disturbance and bank erosion.

unlimited food is available, Braithwaite says. The Yellow Waters study, through its focus events, has highlighted how important it is to study what actually happens in the wild.

The researchers found that while disturbance to wildlife in general was not high, at least 15 species were sensitive. These species, the authors argued, would be useful in indicating when the pressure of people or boat traffic was becoming too much for wildlife to bear. They also recommended that boats travel at a maximum speed of 10 kilometres an hour to minimise both disturbance of animals and erosion of the banks.

Another recommendation arising out of the work on disturbance was for better education of tourists. Some tourists are not concerned about the response of some wildlife to being disturbed, for example the mass

The wet season also is a time of heat and high humidity, when visitors are far less comfortable and fewer animals in general are seen. The report recommends changing the tour regimen during the wet season, making individual tours shorter and focussing on Aboriginal culture. Other issues of passenger comfort are the inclusion of toilets on boats – particularly if longer tours are planned – and the provision of water, in bottles to avoid pollution from styrofoam drinking cups.

Visitors wanted their guides to be both knowledgeable and vibrant, the study found. Ability as a naturalist didn't necessarily translate into being a good tour guide. Personality was very important. Observations of this kind led to a series of recommendations about guide behaviour and training. Given that nearly half the foreign visitors to

little experience of research and the benefits it can bring,' Braithwaite says.

'We wanted to present a study which integrated ecotourism with its biological base. The costs and profits of ecotourism are highly dependent on people's satisfaction with the environment in which they are placed.'

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#### More about Yellow Waters

Braithwaite RW Reynolds PC and Pongracz GB (1996) *Wildlife Tourism at Yellow Waters: An analysis of the environmental, social and economic compromise options for sustainable operation of a tour boat venture in Kakadu National Park*. Final Report, CSIRO Darwin.