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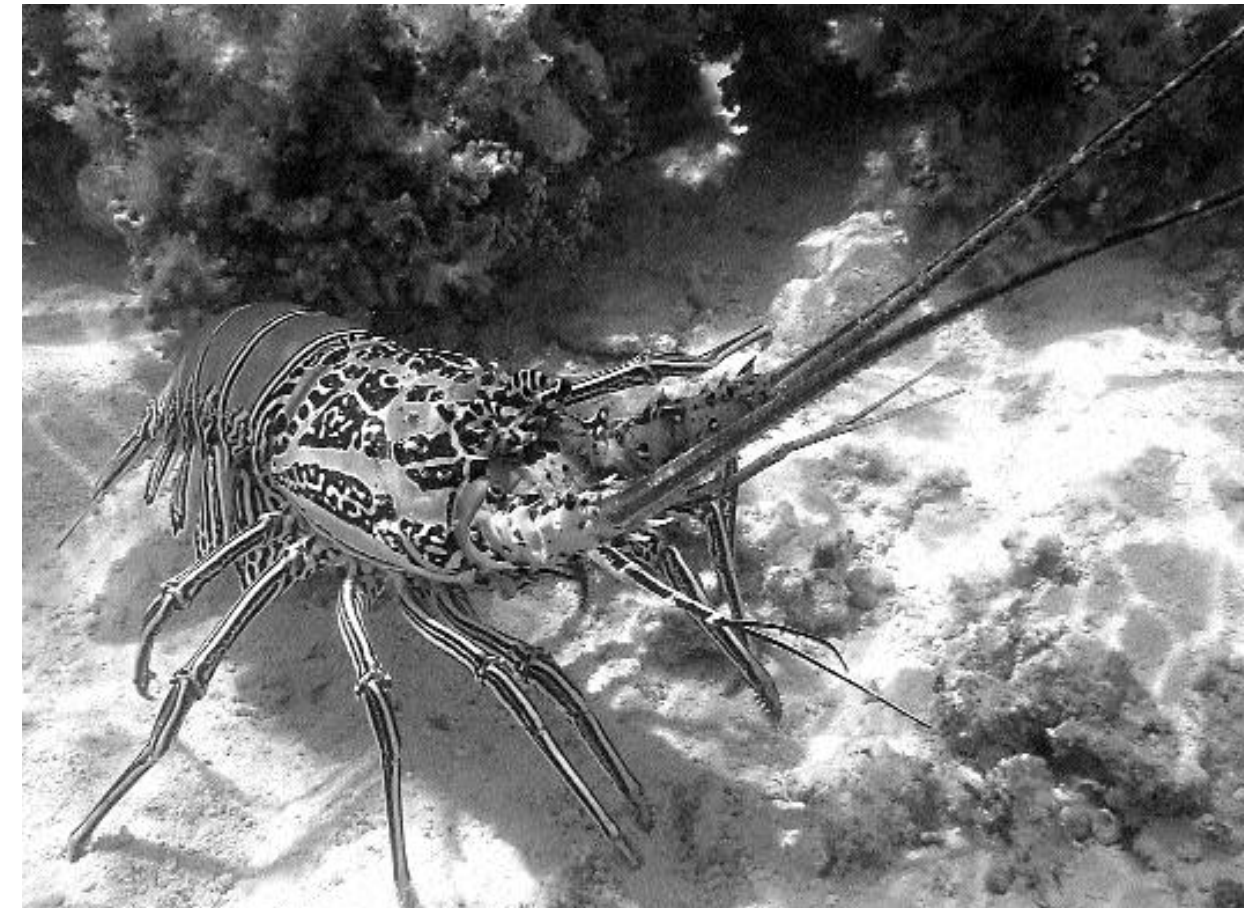
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Cover Story



Postgraduate student Kylie Anderson is investigating a disease that could destroy sugar cane crops. Photo by Linden Woodward.



Marine Biology PhD student Ashley Frisch studied the living habits of crayfish on coral reefs.

Crayfish world takes prize

Bachelors seek house and harem: A new tagging technique reveals the cryptic world of crayfish on coral reef.

That's the title of the paper that won a *Science at the Cutting Edge* journalism competition, run at James Cook University. The competition is aimed at PhD and Masters students, giving them the chance to have a paper about their work published in *Australasian Science*.

Marine Biology PhD student Ashley Frisch won the inaugural competition, earning him \$1000 as well as a published article.

Jodi Rowley took out the second prize of \$250 for her article on *'Uncovering the secret life of frogs'*.

These prizes will be up for grabs again next year when the *Science at the*

Cutting Edge competition runs for the second year. It is open to postgraduate students from all JCU Schools and requires them to write a creative, general interest news article about new results in their field (their own research if possible).

Organiser Lena Evins said the competition can be a good way for postgraduate students to start the writing process for their project work.

The following is an extract from Ashley Frisch's winning article.

"Ornate in colour, bizarre in appearance, and good to eat. Until now this was almost all that was known about the painted crayfish, *Panulirus versicolor*, a decapod crustacean which inhabits the Great Barrier Reef. In fact, an internet search reveals that we know more about cordon bleu recipes for this

seafood than we do about its day to day life on coral reefs. But this is no surprise to a crustacean biologist, since crayfish are incredibly difficult to study in their natural environment."

His article goes on to describe the living habits of crayfish, which he discovered by using a new internal tagging method that involves a rubber-like compound. Conventional external tags don't work as crayfish regularly shed their shells.

Runner-up Jodi Rowley wrote about her work in trying to find out why some of Australia's native frog species have declined dramatically in the past several decades, while other frog species appear to be doing just fine.

For more information about the Science at the Cutting Edge competition, contact Lena Evins on email at lena.evins@jcu.edu.au

JCU Outlook is the magazine of James Cook University in Townsville and Cairns. It appears monthly from March to November. The editorial deadline is the 15th of each month for the following edition. Please send emails to katrina.kalleske@jcu.edu.au.

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Design: Tony Cowan (Logicmedia)

Circulation: 2,500 copies per month
Printed by Penfold Buscombe Pty Ltd

Further articles and photographs can be accessed at the University's website <http://media.jcu.edu.au>
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ISNSN 1328-3332



JCU's Kylie Anderson is hoping to prevent Australia's sugar cane industry being invaded by the dangerous Ramu Stunt disease, which is spread by the planthopper, *Eumetopina flavipes* (above). Left photo by Linden Woodward.

cover story

Invaders threaten cane

Tropical Biology postgraduate student at James Cook University, Kylie Anderson, is playing a vital role in the fight against invertebrate invaders.

The planthopper, *Eumetopina flavipes* has the potential to devastate Australia's billion-dollar sugar cane industry and is threatening garden sugar cane in the Torres Strait Islands and northern Cape York Peninsula communities.

Ms Anderson explained that Ramu Stunt, one particular invasive disease that is spread through the planthopper, is in Papua New

Guinea and has the potential to invade Australian shores. "Ramu Stunt was first discovered at Ramu Sugar Limited, in Papua New Guinea in about 1985," Ms Anderson said.

"It destroyed about 96% of the total growing crop and devastated the fledging PNG cane industry. Fortunately they have recovered by planting resistant varieties."

Approximately one third of all cane varieties grown in Australia may be susceptible to Ramu Stunt, which equates to a potential loss of \$300 million.

"This is pretty scary stuff for cane farmers," Ms Anderson said. "The planthopper that carries Ramu Stunt occurs in Papua New Guinea, most of the Torres Strait Islands and at Bamaga on Cape York."

The potentially dangerous planthopper is a small insect, about 2.8mm long and is a dark shiny brown colour with yellow legs and large moveable spurs on its hind legs.

"Feeding by the uninfected planthoppers doesn't appear to harm the cane too much, unless the population numbers are huge," Ms Anderson said. "However the disease greatly reduces the growth of the cane, the leaves become short and stiff and the roots stunt and become necrotic. Overall it gives the cane a 'trashy' appearance and makes the crop useless."

"Ramu Stunt disease and *Eumetopina flavipes* are a high priority concern to state and federal quarantine authorities and currently there are few barriers to the spread of either."

Kylie Anderson has been involved in quarantine entomology for nine years, first with the Queensland Department of Primary Industries and then with the Australian Quarantine and Inspection Service's Northern Australian Quarantine Strategy (AQIS- NAQS). She became aware of the need for research into invasive pests in the Torres Strait while working with AQIS-NAQS.

Ms Anderson's research is supported by a \$129,000 grant from the Sugar Research Development Corporation and will involve travelling around the Torres Strait Islands with AQIS.

"These islands form a stepping stone arrangement right from PNG to the Cape York Peninsula," she said. "It is well recognised that they're a high risk pathway for the incursion of exotic pests and diseases into Australia."

"Thanks to the support from AQIS I'll be able to hitch a ride with their helicopter around that region. I'll also be spending a fair amount of my time working in the laboratory looking at the population genetics and dynamics of the beast."

"This will allow us to determine the major driving factor that has led to the current distribution of *Eumetopina flavipes* and whether it could spread and survive in any cane growing region in Australia."

Ms Anderson hopes that her research will help to improve how quarantine agencies monitor for invasive pests by developing an innovative predictive model for possible Ramu Stunt incursions throughout the Torres Strait.

"Early warning of impending incursions means that an appropriate response, such as eradication or control, can be decided," she said.

"The results of this project may be applicable for similar pests and disease, such as screw worm fly and fruit flies on the Torres Strait Islands with potential global application."

Ms Anderson believes this project will be very exciting. She is looking forward to travelling between some of the most beautiful islands in the world and her research may also contribute to the knowledge base of island dispersal mechanisms, conservation and evolution.

— NIKKI ROBINSON

Tourism home to leading scholars



Philip Pearce



Glenn Ross



Bruce Prideaux



Gianna Moscardo

A paper that has been published on a leading tourism web site has listed three James Cook University lecturers in the top 50 tourism scholars.

Philip Pearce ranked 12th, Glenn Ross 31st and Bruce Prideaux 43rd.

These rankings were based upon the number of papers published in peer-reviewed journals. When the authors of the report took into account other factors such as co-authorship of papers and educational background, the rankings went up for the JCU academics – Philip Pearce to 11th, Glenn Ross to 12th and Bruce Prideaux to 38th.

The ranking also places JCU at the top for having the highest number of tourism scholars in the top 50. The top spot is shared with the Surrey University and the University of Calgary.

The results come from a paper written by Zhao Weibing and J.R Brent Ritchie that is awaiting publication in the *Tourism Management* journal. However it has recently been published on the *Tourism Management* web site.

This follows a similar study that was published last year. In that study JCU's Gianna Moscardo was also included in the top 50. However she missed out this time because the study only counted the number of papers published in a more limited set of tourism journals.

The most recent study also looked at the total number of papers published in the past 20 years and Dr Moscardo's high performance has been over the past 10 years.