

Invasional meltdown



Rat research by University scientist Dr James Russell has laid to rest fears that some invasive plants and animals on islands help each other create a destructive “invasional meltdown” – a finding with important implications for New Zealand conservation.

James Russell, funded by the New Zealand Foundation for Research, Science and Technology, and French scientist Lise Ruffino made the finding in a two-year study of introduced black rats (*Rattus rattus*) on the Mediterranean island of Bagaud. By trapping, tagging and releasing rats, they wanted to see if the rodents and their food source, an introduced

succulent iceplant (*Caprobrotus spp*) helped each other spread.

“We were worried that invasive species might interact in what is called ‘invasional meltdown’ – helping one another,” says James from the Department of Statistics and School of Biological Sciences. “So the invasive rats may eat an invasive iceplant, each benefiting one another as the rat gets food and seeds get dispersed.”

Begaud Island has a colony of yellow-legged seagulls (*Larus michahellis*), with the birds breeding at one time of the year and the iceplant fruiting at another. “We wanted to know if rats ‘track’ these resources by moving from

one habitat to another between seasons, finding the best food – left-over fish, dead chicks, insects and the like – and dispersing seeds more widely.”

Using a sophisticated animal survival and movement statistical model that James terms “elegantly complex”, the scientists found that rats weren’t roaming to find food. This, he says, “is encouraging news – it tells us that invasive species aren’t each other’s friends. It’s most likely the rats still got enough food where they were and that aggression between rats kept them in their usual habitats.”

Black rats, iceplants and seagulls are common on New Zealand islands, says James, and it’s likely the same patterns would replicate here. “On New Zealand islands we see similar multiple invasions by interacting species, and it’s not always clear how they help and hinder one another.”

The research also tracked rainfall on the island, and found that the more rainfall, the better the survival of invasive plants and animals. “This is not encouraging news,” says James. “With increasing climate change and more intense rainfall, the invasive species will do better.”

The research, titled “The influence of spatio-temporal resource fluctuations on insular rat population dynamics”, has just been published in the Royal Society’s flagship biological research journal, *Proceedings of the Royal Society B*.

From the inside



Feeling like you’ve been “kicked out of home and into the Matrix?” as Law student Laura (pictured above) does. Or how about the experience of being woken up by pots and pans at 5am to be taught O’Rorke chants, as Health and Science student Arahia did during Orientation Week.

Welcome to the world of The Inside Word

Student Blog, a Schools Partnership initiative to give high school students an idea about what university life is like.

Julian Rosser manages the blogs and selected the six bloggers by advertising on The University of Auckland website. Capturing the essence of what it is like to become a University of Auckland student are Therese, Logan, Hammond, Laura, Courtney and Arahia. The freshers collectively offer an insightful view into the world of the undergraduate on campus.

“The blogs have run for over a year now and awareness along with web traffic is growing. We had four bloggers in 2010, six this year and we hope to increase it in 2012,” says Julian.

No doubt the web traffic is due to the popularity of social media and the accessibility potential students have to the blogging undergraduates’ wealth of knowledge. Medical student Logan laments at how having all his

exams in one week means he has more holiday time to miss being at University; he uses his downtime to study ahead and learns that Biochemistry isn’t boring at all, “covering topics like lipid digestion, nitrogen metabolism and antibiotics, which is relevant to medicine, isn’t it?” he cheerfully adds.

As a result, high school students’ response to Logan’s blog range from questions about how much study is needed to attain good grades to whether healthsci or biomed is the better option to take at Year 13 in order to be accepted into Med School. And, Logan’s answers are all there on the page for everyone to see.

If you need to know where to go to lunch and how to work the washing machines in the halls of residence, The Inside Word Student Blog provides an interesting insight into student life. “I’ve personally learnt a lot about the student experience from reading them,” says Julian.