

Putting a price on a predator-free New Zealand

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A vision of a New Zealand free from the worst introduced predators is not a fantasy, say scientists, who have analysed the costs of such a project for the first time.

University of Auckland School of Biological Sciences and Department of Statistics ecologist Dr James Russell and colleagues say the cost of ridding New Zealand of pests over a 50-year timeframe is estimated at \$9.04 billion.

When compared with the cost of defending New Zealand against all agricultural pests over the same period - estimated at \$15.96 billion - the benefits outweigh the costs. Their research group have published their paper in the prestigious international journal *BioScience*, raising the international profile of the 'Predator-Free New Zealand' idea for the first time.

"Fifty years ago we didn't dream of being able to clear whole islands of pests, but today we are talking about every last island in New Zealand" Dr Russell says.

"We would be foolish not to imagine what could be achieved in the next fifty years, and with over 40,000 people visiting Tiritiri Matangi a year, foolish not to imagine the cross-sector benefits."

The researchers, including Andrea Byrom, John Innes and Pike Brown from Landcare Research, estimate the economic and tourism benefits of a predator-free New Zealand at \$9.32 billion. That figure comes from off-setting the cost of damage to crops and timber caused by pests, while adding in an estimated boost to tourism from an enhanced natural environment.

Key to achieving such an ambitious goal is the development of new control techniques for invasive predators such as species-specific toxins, automated self-resetting traps and new fertility control agents, Dr Russell says.

"Most current predator control technologies were developed over fifty years ago. What we really need are more new tools, particularly those that are more humane while reducing costs at the massive scale required," Dr Russell says.

The study is timely, with the National Science Challenge 'New Zealand's Biological Heritage' proposing exactly such novel and exciting research to address the long-standing issue of predator control across New Zealand landscapes.

"Our plan is to unite researchers across the universities and Crown Research Institutes in driving towards this goal", says Dr Andrea Byrom, a Programme Leader in the Challenge. "This is one of our flagship projects".

However the researchers admit that issues such as domestic pets remain a challenge.

"Addressing the challenges involved means scientists involved in pest eradication will have to step outside traditional boundaries and work with social scientists, economists and policy makers to deliver the solutions," Dr Russell says.

"But if successful, eradication of invasive predators would be an outstanding scientific and socio-ecological achievement on a global scale, equivalent to an Apollo program for New Zealand, as the late physicist Sir Paul Callaghan suggested."

The new study is published today in *Bioscience* at:
<http://bioscience.oxfordjournals.org/lookup/doi/10.1093/biosci/biv012>

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