

CAUGHLEY MEDAL NOMINATION – JOHN PARKES

Nominated by:

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John Parkes has been actively involved in wildlife research for over 30 years. During that time, John has made an extraordinary and unique contribution to the management of vertebrate pests in New Zealand and Australia, and, more particularly, to the research undertaken to facilitate this management. In a general sense, John's contribution has evolved out of three principles that characterise the nature of his research:

1. Set clear and measurable goals based on the outcomes of pest control, not the inputs necessary to achieve it
2. Set priorities by reconciling these outcomes against resources available for pest control
3. Improve your ability to achieve 1 and 2 by using monitoring to better link control inputs, the response of pest populations to control, and variation in outcomes

Collectively, these principles outline a strategic approach to pest management that John espoused widely well before measuring pest impacts (let alone linking inputs to outcomes), was fashionable. In a similar vein, John's early work on island eradications has recently become extremely topical (and cited accordingly) as scientists strive to generalize principles from the increasing number of successful pest eradications being attempted world wide.

In this nomination we will outline John's long career of service to wildlife research in New Zealand and Australia, and argue that he is a deserved recipient of the Graeme Caughley medal.

Career and contributions

After completing a BSc and MSc at Massey University, John was recruited as a scientist by the Forest Research Institute, where he undertook work on a range of introduced mammals. While at FRI, John was commissioned by the fledgling Department of Conservation, to develop systems to prioritise and rank control operations for a range of ungulates¹. The resultant systems applied a set of ecologically based criteria to reprioritize expenditure on ungulate control as pre-determined goals were achieved in different areas of the reserved estate. For the first time, this exercise brought together John's ecological training with a rare understanding of internal Departmental politics and a healthy dose of common sense. It remains a model for how the cost and policy drivers for vertebrate pest control can be consolidated in a systematic process to prioritise the expenditure of limited resources to

¹ Parkes, J.P. (1988). A review of the options to manage Himalayan thar in New Zealand. Forest Research Institute Report to Department of Conservation, Wellington, NZ.

Parkes, J.P. (1990). Procedures for ranking and monitoring feral goat control operations. Forest Research Institute Report to Department of Conservation, Wellington, NZ.

Parkes, J. (1994). Management of pests of conservation values in New Zealand. Landcare Research Contract Report LC9394/73 to Department of Conservation, Wellington, NZ.

achieve conservation outcomes. Its subsequent abandonment remains a clear demonstration that while ecological principles and common sense remain constant, Departmental politics does not.

Another feature of the prioritisation systems John established at this time was the clearly articulated need to link monitoring to management intervention and reprioritization. As we now commonly acknowledge, monitoring is the lynch-pin of effective vertebrate pest management and indeed a key requirement for effective adaptive management in any system. John has come back to this point in a recent opinion piece published in the *Wildlife Society Bulletin* which reviews the application of adaptive management principles to publicly funded pest management².

Following the incorporation of the Forest Research Institute into Landcare Research (a Crown Research Institute) in 1992, John continued his work on introduced mammals, but broadened that focus to consider the epidemiology of rabbit haemorrhagic disease following its introduction to New Zealand in 1997³. Beyond the role of rabbits as vectors for the disease, the research John undertook with a number of co-workers focused on the effect that rapidly reduced rabbit densities had on other biotic components of dryland and other ecosystems. This work has led to a more holistic consideration of the influence RHD has on these ecosystems, and the realization that many New Zealand landscapes support multi-trophic assemblages entirely comprised of introduced species. Moreover, this work provides a graphic example of how single-species pest control can have unforeseen and often unfavourable consequences through responses like meso-predator release⁴. This area of research is now a very strong characteristic of pest ecology in New Zealand, and has an increasing profile in Australia.

During this time, John continued his work on vertebrate pest impacts on conservation assets. However, the realization that this type of research in-and-of-itself will not facilitate sustainable national outcomes prompted John to become involved in national pest control plans, led by the Department of Conservation. The objective of these national plans is to integrate “best practice” approaches into strategic and tactical management decisions which dictate where, when and how resources are allocated to maximize net benefit⁵. Based on this work, John was invited to Australia as a Bureau of Rural Sciences Fellow in 1997 to review integration of best practice approaches into a series of national pest management strategies being developed for Australia at that time.

² Parkes, J.; Robley, A.; Forsyth, D.; Choquenot, D. (2006). Adaptive management experiments in pest control in New Zealand and Australia. *Wildlife Society Bulletin*, 34:229-236.

³ Parkes, J.P.; Heyward, R.P.; Henning, J.; Motha, M.X.J. (2004). Antibody responses to rabbit haemorrhagic disease virus in predators, scavengers, and hares in New Zealand during epidemics in sympatric rabbit populations. *New Zealand Veterinary Journal* 52: 85-89.

Parkes, J.P.; Norbury, G.L.; Heyward, R.P.; Sullivan, G. (2002). Epidemiology of rabbit haemorrhagic disease (RHD) in the South Island, New Zealand, 1997-2001. *Wildlife Research* 29: 543-555.

⁴ Norbury, G.; Heyward, R.; Parkes, J. (2002). Short-term ecological effects of rabbit haemorrhagic disease in the short-tussock grasslands of the South Island, New Zealand. *Wildlife Research* 29: 599-604.

⁵ Holloway, J.; Parkes, J.P.; West, C.J.; Scobie, S.; Sheldon, J. (1994). Managing the impacts of pests and weeds: the problem and DOC's organisational response to achieve conservation goals. Report to the NZ Conservation Authority.

Parkes, J. (1994). Management of pests of conservation values in New Zealand. Landcare Research Contract Report LC9394/73 to Department of Conservation, Wellington, NZ.

In addition to high-level national strategies, John was also working on refining the role monitoring should play in tactical decisions around pest control. Specifically, he and colleagues explored the issue of how the response of biological entities affected by pests could be used to more selectively trigger management intervention to increase control effectiveness⁶.

Against this background of high performance in key areas of strategic importance to wildlife managers, John has never lost his core interest in the ecology of introduced mammals. He has continued to publish prolifically on the more fundamental aspects of this group while maintaining the profile of his more management aligned work. For example, in 2005 John produced three chapters of Kim King's revision to the Mammals of New Zealand, and refereed several others.

The past 5 years has seen John return to some of his earliest interests in the eradication of pests from offshore islands. There has been a global upsurge of interest in the role that island eradication can play in protecting vulnerable species. John's long involvement in resolving the technical barriers to these approaches, and to scientifically cataloguing successes and failures has put him in hot demand for feasibility analysis and advice. John's recent involvement in projects in Australia, California, and the Galapagos Islands is testament to his international reputation in this area. Typically, John has translated this interest into a series of reports and papers that consolidate the ecological constraints and opportunities of this approach, with his characteristic common-sense approach⁷.

Nomination

Throughout his career John has undertaken research into vertebrate pest ecology and management of the very highest caliber, publishing more than 200 key papers and reports. The ease with which this research has been integrated in pest management strategy and practice at local, regional and national levels is a clear demonstration of both its value and impact. The key characteristic of John's scientific career to-date has been the integration of ecological principles with a common-sense approach to management based on logical analysis. His views and capacity for critical thinking continue to be valued highly within New Zealand and Australia, and are increasingly sought after by the rest of the world as they catch up with how we do things down here. A hallmark of John's influence is that some of his keystone contract reports have had more influence on many wildlife ecologists than many "classic" scientific papers.

⁶ Forsyth, D.M.; Parkes, J.P. (2005). Browse on mahoe and kamahi leaf-fall as a trigger for possum control. *New Zealand Journal of Ecology* 29: 311-320.

Choquenot, D.; Parkes, J. (2001). Setting thresholds for pest control: how does pest density affect resource viability? *Biological Conservation* 99: 29-46.

⁷ Parkes, J. (in press). Eradication of vertebrate pests: are there any general lessons? In: C. Feare & D. Cowan (Eds). *Advances in Vertebrate Pest Management IV*. Filander Verlag, Furth, Germany.

Hone, J.; Bomford, M.; Parkes, J. (in press). An evaluation of criteria suggested for eradication of vertebrate pests. *The Berryman Bulletin* 1:

Parkes, J. (2004). Mid term evaluation of the pilot project to eradicate feral ungulates from northern Isabela – Output 3 of Project ECU/00/G31. Landcare Research Contract Report LC0405/33 to the United Nations Development Program, Quito, Ecuador.

Parkes, J.P.; Ruscoe, W.; Fisher, P.; Thomas, B. (2004). Benefits, constraints, risks and costs of rodent control options on Lord Howe Island. Landcare Research Contract Report LC0304 to the Lord Howe Island Board.

John has also taken the time to work with a large number of young ecologists in the role of formal graduate supervisor and as a mentor to early career scientists. While John no doubt influences the scientific thinking of these people, it is the critical analytical abilities and systematic way of laying out a wildlife management issue that most of us look for in those that have worked closely with John.

While John no doubt has many productive years ahead of him, we believe that it is both timely and appropriate to award him the Graeme Caughley medal. Over the course of his career John has received many honors, including a bronze medal from the Royal Society of New Zealand (2003), the 2002 Graeme Caughley Fellowship, and an Honorary Life Membership from the New Zealand Ecological Society (1997). John has also sat as New Zealand's representative on the Vertebrate Pest Committee of the Australian Ministerial Committee on Land, Water and Biodiversity, the IUCN Invasive Species Specialist Group, and as a member of the Ecology, Evolution and Behaviour Panel of New Zealand's Marsden fund. However, recognition by AWMS of John's unique contribution to wildlife research and management in New Zealand and Australia, through the award of the Graeme Caughley medal, would seem to us the most appropriate recognition of all.