

Dr Nigel Barlow (a posthumous nomination)

Nigel Barlow died on the 4th of June 2003 aged 53 after a courageous battle with cancer. Over the last 25 years Nigel made an enormous contribution to New Zealand ecosystem science through the use of mathematically-based computer models to understand how and why animal populations fluctuate. In particular, he worked on insect pests like grassgrub and vertebrate pests like possums and his contributions were critical to the development of ecologically-acceptable ways of dealing with such problems.

His research on bovine TB in possums estimated threshold densities for the disease. Field managers could aim to suppress possums to below these densities in order to achieve local eradication or control of TB. In a field dominated by an expanding host-disease range, in terms of an increasing number of species being identified as hosts, and an expanding geographical range of TB in wildlife, Nigel's research provided a more objective approach to the development of practical solutions. His research helped form the basis for initial control strategies which have controlled TB over large areas of New Zealand. He developed excellent working relationships with relevant end-users, for example Ministry of Agriculture, Animal Health Board, and the Department of Conservation, because of his emphasis on user-friendly models.

Nigel developed models to assist the evaluation of lethal versus fertility control for control of pests and bovine TB. These models were of wide application to many species and demonstrated that lethal control could produce large reductions in pest abundance in the short-term but in the long-term both methods produced similar results.

With changes in wildlife management, Nigel's research also changed. He examined the rapidly emerging topic of rabbit calicivirus and developed quantitative models of the dynamics and effects of the disease in New Zealand and Australian rabbit populations. He also studied predator/prey dynamics, especially the dynamics of ferrets in New Zealand relative to rabbit abundance and demonstrated the effects of different levels of ferret control on their population dynamics.

That Nigel was exceptionally capable was reflected in his consistent ability to gain funding from the prestigious Marsden Fund. He was also an excellent scientific writer. He was the editor of the New Zealand Journal of Ecology and later, the Journal of Applied Ecology. In 1996 Nigel received the New Zealand Ecological Society Award for his outstanding contribution to applied ecology. Nigel completed his PhD at the University of East Anglia in 1977 and in 1979 arrived in New Zealand working initially in Palmerston North and for the last 12 years for AgResearch Limited at Lincoln. That Nigel moved to Canterbury was no coincidence; he had an abiding love of the mountains of which he made meticulously detailed scale models but most of all, he never lost his enthusiasm for climbing the peaks in the Southern Alps and elsewhere. As a true polymath Nigel was enthusiastic about all natural history and geography generally. In particular he developed a detailed knowledge of bird-winged butterflies. He published on these extraordinary butterflies and at the same time produced expert films and videos illustrating their natural history. At home Nigel was incredibly enthusiastic about lots of things and had an excellent eye for detail. At work he was resistant to bureaucratic interference and very good at his science. His motivation and diverse interests were contagious and he graciously passed on his abilities and insights to his students and numerous admiring colleagues.