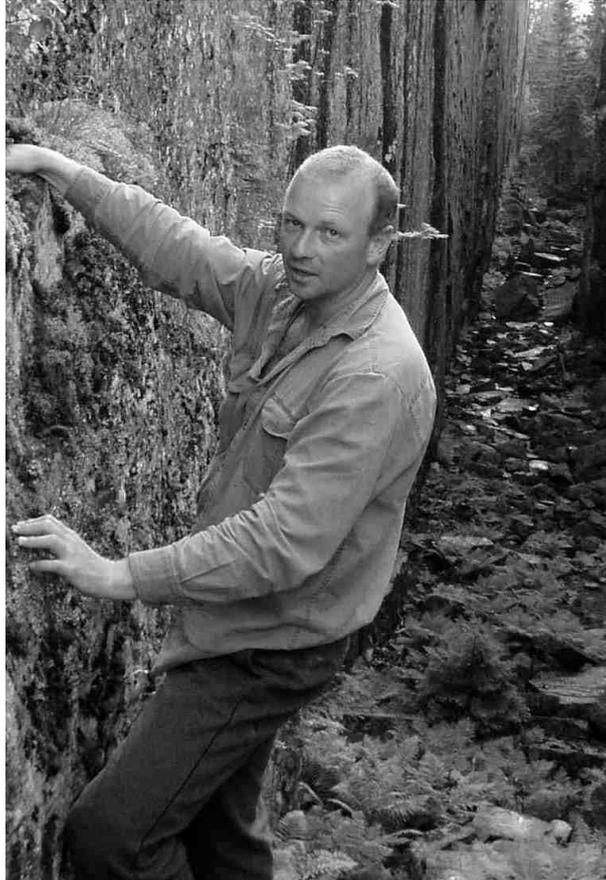# Sean William Husheer

BIRTH:	Napier, New Zealand — 27 November 1968
ADDRESS:	15 McElwee St, Jervoistown, Napier, New Zealand
EMAIL:	shusheer@clear.net.nz —PH:+64 21 487 433

- Skills in analysis of New Zealand vegetation monitoring data, especially in statistical modelling in *R* of forest and grassland plot data, programming-based data management (e.g. LINUX, mySQL, C), Bayesian analysis (JAGS and STAN) and geo-statistics (*R* & GRASS).

- Over three decades work in forest mensuration (plotting) and botany, including work in forest carbon measurement, auditing and offsetting. Measurement of 100–200 20 m × 20 m plots per season. Over 3,000 plots measured since 1987 in all regions of New Zealand.

- A decade of consultancy experience in forest monitoring and data analysis using **R**, employing up to ten field- and office-based staff. LUCAS vegetation plot measurement, technical report production and technical advice to a wide range of clients.

- Two years contracted as Lecturer in Plant Ecology at under- and postgraduate levels at Lincoln University. Academic teaching commendations for teaching plant ecology and botany (repeatedly assessed as top lecturer by students). Examiner for Principles of Ecology, Biological Conservation and Nature Conservation. Lecturing Botany and Applied Ecology courses. Teaching postgraduate students in **R**.

- PhD and Masters degrees involving development of advanced field and statistical analysis techniques including monte-carlo procedures. Collaborative research based on sophisticated analyses of large vegetation data sets.

- Still actively publishing with an emerging publication record (nine papers published or in press, four in preparation).

Referees

Dr Alastair Robertson, **Massey University**, Palmerston North
PhD supervisor —A.W.Robertson@massey.ac.nz

Dr David Coomes, Plant Science, **Cambridge University**, England
PhD supervisor —David.Coomes@plantsci.cam.ac.uk
Prof Richard Duncan, **University of Canberra**, Australia.
Teaching colleague —Richard.Duncan@canberra.edu.au

Prof David Wardle, **Swedish Uni. of Ag. Sciences**, Umeå, Sweden
Research collaborator — david.wardle@svek.slu.se

Bill Fleury, **Department of Conservation**, Wanganui
Client - data analysis and reporting —bfleury@doc.govt.nz

Education

2004   PhD in ECOLOGY, **Massey University**, Palmerston North, New Zealand
        "The effects of introduced deer on Kaimanawa beech forests"

Work Experience

Current –FEB 2004	*Consultant*, New Zealand Forest Surveys. -www.nzforestsurveys.co.nz Applied Research undertaking fieldwork, statistical analysis in **R**. Work based in forests throughout New Zealand for government agencies, particularly DOC and MFE. Impacts of introduced plants and animals, effects of exotic species on carbon sequestration and vegetation. Development of community-based projects. Typically employing four to ten staff with contracts exceeding $20,000 month.
AUG 2007 – AUG 2009	*Lecturer in Ecology*, Lincoln University, Canterbury Examiner for undergraduate and postgraduate courses in **R**, Plant Science, Ecology, Nature Conservation and Botany. Supervision of postgraduate dissertations. During two years contract teaching at Lincoln I received commendations from academic managers for *"teaching excellence at both undergraduate and postgraduate levels"*. Feedback from students was consistently constructive and positive.
APR 1996 – JAN 2004	*Forest Monitoring*, Dept of Conservation, Turangi Applied ecological restoration of forests and threatened species. Collection of vegetation monitoring data. Statistical analysis of ecological data sets. Management of up to 20 students, volunteers, and research staff. During this time I supervised three masters degree projects and five undergraduate projects
JAN 1996 – APR 1996	*Forest Monitoring*, Dept of Conservation, Wellington Vegetation plot measurement in the Wellington Region
NOV 1994 – MAY 1995	*Conservation Worker*, Dept of Conservation, Raoul Island Plant conservation - plots, weeding and boating
OCT 1991 – MAY 1992	*Milford Track Guide*, Fiordland Interpersonal skills and safety in a challenging environment
OCT 1990 – MAY 1991	*Goat Culler*, Dept of Conservation, Marlborough Hunting - Richmond Forest Park, Molesworth, Awatere and Clarence Valleys
FEB 1989 – APR 1987	*Deer Culler*, Kaweka Forest Park, Hawkes Bay Government and commercial hunting, tracks, weeding
AUG 1986 – APR 1987	*Trainee Forester*, Mohaka Forest, Hawkes Bay Silviculture, forest monitoring

Consultancy Experience

Over the past ten years I have built a dynamic business (NZ Forest Surveys) providing plotting and data analysis services to clients in a very challenging and competitive environment. This required flexibility and first-rate interpersonal, organisational, management, field and scientific skills. Clients demanded quality plot measurement, data analysis, reporting and technical support at short notice and at a competitive price. In this environment it is essential to be really easy to work with, competent and timely. I bring a client-focused attitude.

My previous data analysis and reporting work has had an impact on ecological management. For instance, work that has been published internationally (see below) has shown changes in beech forest vegetation that has led to the implementation of deer culling in the Hawkes Bay Area. My research is also relevant to understanding general principles about the interactions between herbivores and plant communities. In research currently being prepared for publication, experimental data has shown how browsing from introduced ungulates can alter nutrient cycling and forest regeneration. In other collaborative papers in preparation, data-mining techniques are being used to show the effects of introduced herbivores on vegetation composition.

Over the past decade I have developed key skills for teaching and interacting with a diverse group of people. Applying ecological research techniques requires flexible interpersonal skills. These skills were tested, proven and improved in 2007–2009 while lecturing at Lincoln. A demanding workload was successfully managed. I focus on student learning of basic skills (scientific numeracy, literacy, literature search and critical thinking) in an entertaining and enjoyable way. Interaction among students and their environment is fostered. Field staff and students gifted with academic or practical skills, motivation and commitment are identified, and provided additional challenges. At Lincoln, the most successful students often helped with my own research, providing them with further challenge and reward. As an example of innovative techniques, my under- and post-graduate Nature Conservation classes attended the same three day field trip to learn practical field skills in plant, invertebrate and bird monitoring. The postgraduates were taught to assist undergraduates to submit high quality reports. Undergraduates improved their report writing, and postgraduates learnt valuable skills in leadership and report reviewing. This approach proved so successful that it has been more widely adopted at Lincoln University. In my consultancy work I identify and foster staff who can use R for data manipulation and checking. This approach repeatedly improved staff satisfaction and increased productivity. Teaching skills have also been successfully applied during frequent lecture-style presentations to managers and clients of my research consultancy business, New Zealand Forest Surveys.

Published Reports and Papers

Husheer, S. 1999. The impact of predators on *Powelliphanta marchanti* in Kaimanawa Forest Park. – Ecological Management 7: 17–21.

— 2003. Impacts of Deer on Kaimanawa Beech Forests. Ph.D. thesis, A Thesis Presented in Partial Fulfilment of the Requirements for the Degree of Doctor of Philosophy in Ecology.

— 2005. Vegetation Monitoring, Tararua Forest Park, New Zealand, 1958–85. – DOC Research & Development Series 212: 1–42.

— 2006. Changes to the Forests of Egmont National Park, 1977–2001. – DOC Research & Development Series 257: 1–24.

— 2007. Introduced red deer reduce tree regeneration in Pureora Forest, central North Island, New Zealand. – New Zealand Journal of Ecology 31(1): 79–87.

Husheer, S., Allen, R. and Robertson, A. 2006a. Suppression of regeneration in New Zealand mountain beech forests is dependent on species of introduced deer. – Biological Invasions 8(4): 823–834.

Husheer, S., Coomes, D. and Robertson, A. 2003. Long-term influences of introduced deer on the composition and structure of New Zealand *Nothofagus* forests. – Forest Ecology and Management 181(1-2): 99–117.

Husheer, S. and Frampton, C. 2005. Fallow deer impacts on Wakatipu beech forest. – New Zealand Journal of Ecology 29(1): 83–94.

Husheer, S., Hansen, Q. and Urlich, S. 2005. Effects of red deer on tree regeneration and growth in Aorangi Forest, Wairarapa. – New Zealand Journal of Ecology 29(2): 271–277.

Husheer, S. and Robertson, A. 2005. High-intensity deer culling increases growth of mountain beech seedlings in New Zealand. – Wildlife Research 32(4): 273–280.

Husheer, S., Robertson, A., Coomes, D. and Frampton, C. 2006b. Herbivory and plant competition reduce mountain beech seedling growth and establishment in New Zealand. – Plant Ecology 183(2): 245–256.

Wright, D., Tanentzap, A., Flores, O., Husheer, S., Duncan, R., Wiser, S. and Coomes, D. 2012. Impacts of culling and exclusion of browsers on vegetation recovery across New Zealand forests. – Biological Conservation 153: 64–71.