



Curriculum Vitae (December 2008)



Nancy Jennings

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British, born 28 January 1970

Freelance editorial consultant and training provider (see also dotmoth.co.uk)

- Editorial services: editing of scientific papers, grant proposals, letters etc., for grammar, structure, organisation, content, and consistency
- Scientific writing and report writing
- Workshops and lectures in scientific writing and presentation skills
- Managing Editor of the Mammal Society's scientific journal, *Mammal Review*

Previous appointments

January-March 2007: Senior Postdoctoral Research Associate. University of Bristol. Project title: 'Interactions between taxonomic diversity and agricultural habitat diversity: the importance of spatial scale', funded by the Lady Emily Smyth Agricultural Research Station (LESARS), University of Bristol.

2002-December 2006: Senior Postdoctoral Research Associate and Contractor. University of Bristol. Project title: 'Interactions between agricultural management, biodiversity, and life history: insectivorous mammals and their prey as bioindicators', funded by the Department for Environment, Food and Rural Affairs (Defra) and English Nature (EN). I obtained funding (£306,000 over 3 years) and had responsibility for reporting to Defra, achieving the research output, and managing the project and budget.

1997-2002: Postdoctoral Research Assistant. University of Bristol and University of York. Project title: 'Integrating farm management practices with hare *Lepus europaeus* conservation', funded by the Ministry of Agriculture, Fisheries and Food (MAFF; now part of Defra).

1997: Commissioning Editor (Biology and Medicine). Imperial College Press, London. Editor for ca. 300 academic books and one journal. Responsibilities: generating ideas for books, recruiting authors, issuing contracts, editing, and liaising with authors, copy-editors, and production editors.

1987-2003: Research Assistant, part time (hours variable). Harderwijk Marine Mammal Park, The Netherlands. Responsibilities: editing papers and book chapters, research (on sensory ecology, behavioural enrichment, acoustic alarms, and other methods for bycatch reduction in fisheries) and community activities.

Academic qualifications

1992-1996: PhD University of Bristol. 'Partitioning of foraging habitat resources among bats (Chiroptera) in Great Britain'. Advisors: Profs G. Jones and S. Harris. Funding: NERC.

1989-1992: BSc (2.1 Honours) in Biological Sciences. University of Durham.
Research projects: 'Adaptations of alpine plants' and 'Cognition in the California sea lion'.
Final year specialisations: crops and man, behavioural and evolutionary ecology, adaptations to extreme environments, palaeoecology, pollution ecology, pest control and species conservation.

1988-1989: Department of Biology, Central Michigan University, Michigan, USA.
Undergraduate courses taken: general zoology, marine biology, human ecology, conservation of natural resources, natural history of the vertebrates, biological illustration. (In USA for one year.)

Professional activities and skills

- Licensed bat worker (English Nature/Natural England) since 1997, with experience in ecological consultancy work on bats (field sampling for foraging habitats and surveys of hibernacula).
- Full member of the Institute of Ecology and Environmental Management.
- Fluent Dutch speaker. Good passive knowledge of French and German.
- Invited referee for *Journal of Applied Ecology*, *Acta Chiropterologica*, *Acta Theriologica*, *Ecography*, *Biological Conservation*, *Mammal Review* and other primary research journals.
- Member of the UK Government's Biodiversity Action Plan steering group for the hare. Steering groups advise government on the implementation, feasibility, and outcomes of Biodiversity Action Plans.
- Plenary speaker at the symposium 'Decline of European hares: an interdisciplinary research task', at the Research Institute of Wildlife Ecology, Vienna, and the Institute of Zoo and Wildlife Research, Berlin, in 2001. Invited speaker at other conferences.

Teaching

In 2007 I designed and taught two one-day workshops for postgraduate students at Bristol University: Scientific Writing and Presentation Skills, and taught the ecology field course 'the Urban Jungle' with Prof. Jane Memmott.

When working at the University of Bristol I taught the third year undergraduate course Applied Ecology for six years. My aim was to foster in the students a keen interest in the conservation of natural resources. I also taught statistics, experimental design, and supervised research projects on the residential field course 'Bats, bugs, and biodiversity' for five years. I advised two MSc students and co-advised three PhD students, and was tutor or assessor for a further five PhD students; much of the work involved consists of editing written work. I have lectured on community ecology and given a practical on mammalian anatomy in the MRes in Ecology and Environmental Management at the University of York. I have conducted one PhD *viva voce* as internal examiner and one as external examiner at the University of Sussex. At the University of Bristol, I provided advice on writing, research methods, experimental design and statistics to postgraduate students.

Scientific research

In research on insectivorous mammals and their prey as bioindicators of agricultural intensification, I used field data to derive numerical indices of sensitivity to agricultural intensification for bioindicator taxa. This research enhanced the management of agricultural ecosystems for biodiversity by: 1) revealing mechanisms underlying variation in responses to anthropogenic ecosystem change, and 2) allowing accurate monitoring of agricultural intensification with bioindicators.

In research on the hare (a species with a UK Government Biodiversity Action Plan, because it is classed as globally threatened or declining), I employed interdisciplinary methods to quantify the fundamental constraints on population growth in agricultural systems. I made recommendations to Defra for the achievement of the Biodiversity Action Plan target by habitat management through financial incentives to farmers.

Research grants awarded

I have obtained one substantial research grant and five small project grants (£315,000 in total) since starting my PhD in 1992.

Source	Title of project	Amount	Dates
LESARS	Interactions between taxonomic diversity and agricultural habitat diversity.	£5000	2007
Defra / EN	Interactions between agricultural management, biodiversity, and life history.	£306,000	2002-2006
British Council in Austria	Age determination methods in hares (<i>Lepus europaeus</i>).	£700	2002
British Ecological Society (BES)	Do tick-transmitted pathogens contribute to regional differences in hare (<i>Lepus europaeus</i>) numbers?	£1000	2001
BES	Are bats which pollinate and disperse forest plants particularly sensitive to disturbance?	£1650	1999
BES	Bat (Chiroptera) diversity and abundance in banana plantations and rain forest.	£712	1993

Publications (my maiden name was Vaughan):

1. **Jennings, N.** & Pocock, M.J.O. (2009) Relationships between sensitivity to agricultural intensification and the ecological traits of mammals and arthropods. *Conservation Biology*, in press.
2. Kastelein, R.A., Verboom, W.C., **Jennings, N.**, de Haan, D. & van der Heul, S. (2008) The influence of 70 and 120 kHz tonal signals on the behavior of harbor porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research* 66, 319–326. [DOI: 10.1016/j.marenvres.2008.05.005]
3. Kastelein, R.A., Verboom, W.C., **Jennings, N.** & de Haan, D. (2008) Behavioral avoidance threshold level of a harbor porpoise (*Phocoena phocoena*) for a continuous 50 kHz pure tone. *Journal of the Acoustical Society of America*, in press.
4. **Jennings, N.**, Parsons, S. & Pocock, M.J.O. (2008) Human vs. machine: identification of bat species from their echolocation calls by humans and by artificial neural network. *Canadian Journal of Zoology*, 86, in press.
5. Kastelein, R.A., Verlaan, M. & **Jennings, N.** (2008) Number and duration of echolocation click trains produced by a harbor porpoise (*Phocoena phocoena*) in relation to target and performance (L). *Journal of the Acoustical Society of America* 124, 40-43. [DOI: 10.1121/1.2924132]
6. Kastelein, R.A., van der Heul, S., Verboom, W.C., **Jennings, N.**, van der Veen, J. & de Haan, D. (2008) Startle response of captive North Sea fish species to underwater tones between 0.1 and 64 kHz. *Marine Environmental Research* 65, 368-377.

7. Pocock, M.J.O. & **Jennings, N.** (2008) Testing biotic indicator taxa: the sensitivity of insectivorous mammals and their prey to the intensification of lowland agriculture. *Journal of Applied Ecology* 45, 151-160.
8. Kastelein, R.A., van der Heul, S., van der Veen, J., Verboom, W.C., **Jennings, N.**, de Haan, D. & Reijnders, P. J. H. (2007) Effects of acoustic alarms, designed to reduce small cetacean bycatch in gillnet fisheries, on the behaviour of North Sea fish species in a large tank. *Marine Environmental Research* 64, 160-180.
9. Kastelein, R. A., **Jennings, N.** & Postma, J. (2007) Feeding enrichment methods for Pacific walrus (*Odobenus rosmarus divergens*) calves. *Zoo Biology* 26, 175-186.
10. Pocock, M.J.O. & **Jennings, N.** (2006) Use of hair tubes to survey for shrews: new methods for identification and quantification of abundance. *Mammal Review* 36, 299-308.
11. Kastelein, R.A., **Jennings, N.**, Verboom, W.C., de Haan, D., & Schooneman, N.M. (2006) Differences in the response of a striped dolphin (*Stenella coeruleoalba*) and a harbour porpoise (*Phocoena phocoena*) to an acoustic alarm. *Marine Environmental Research* 61, 363-378.
12. **Jennings, N.**, Smith, R.K., Hackländer, K., Harris, S. & White, P.C.L. (2006) Variation in demography, condition and dietary quality of hares *Lepus europaeus* from high-density and low-density populations. *Wildlife Biology* 12, 179-189.
13. Kastelein, R.A., van der Heul, S., Verboom, W.C., Triesscheijn, R.J.V. & **Jennings, N.V.** (2006) The influence of underwater data transmission sounds on the displacement behaviour of captive harbour seals (*Phoca vitulina*). *Marine Environmental Research* 61, 19-39.
14. Smith, R.K., **Jennings, N.V.**, Tataruch, F., Hackländer, K. & Harris, S. (2005) Vegetation quality and habitat selection by European hares (*Lepus europaeus*) in a pastoral landscape. *Acta Theriologica* 50, 391-404.
15. Vaughan, R. & **Jennings, N.V.** (2005) *The stone curlew* *Burhinus oediceus*. Isabelline books.
16. White, P.C.L., **Jennings, N.V.**, Renwick, A.R., & Barker, N.H.L. (2005) Questionnaires in ecology: a review of past use and recommendations for best practice. *Journal of Applied Ecology* 42, 421-430.
17. Seymour, A., Varnham, K., Roy, S., Harris, S., Bhageerutty, L., Church, S., Harris, A., **Jennings, N.V.**, Jones, C., Khadun, A., Mauremootoo, J., Newman, T., Tatayah, V., Webbon, C. & Wilson, G. (2005) Mechanisms underlying the failure of an attempt to eradicate the invasive Asian musk shrew *Suncus murinus* from an island nature reserve. *Biological Conservation* 125, 23-35.
18. Smith, R.K., **Jennings, N.V.** & Harris, S. (2005) A quantitative analysis of the abundance and demography of European hares *Lepus europaeus* in relation to habitat type, intensity of agriculture and climate. *Mammal Review* 35, 1-24
19. Kastelein, R.A., Verboom, W.C., Muijsers, M., **Jennings, N.V.** & van der Heul, S. (2005) The influence of acoustic emissions for underwater data transmission on the behaviour of harbour porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research* 59, 287-307
20. Smith, R.K., **Jennings, N.V.**, Robinson, A., & Harris, S. (2004) Conservation of European hares *Lepus europaeus* in Britain: is increasing habitat heterogeneity in farmland the answer? *Journal of Applied Ecology* 41, 1092-1102.
21. Wickramasinghe, L.P., Harris, S., Jones, G. & **Jennings, N.V.** (2004) Abundance and species richness of nocturnal insects on organic and conventional farms: effects of agricultural intensification on bat foraging. *Conservation Biology* 18, 1283-1292.
22. **Jennings, N.V.**, Parsons, S., Barlow, K.E., & Gannon, M.R. (2004) Echolocation calls and wing morphology of bats from the West Indies. *Acta Chiropterologica* 6, 75-90.
23. Jones, G., **Vaughan, N.**, Russo, D., Wickramasinghe, L.P., & Harris, S. (2004) Designing bat activity surveys using time expansion and direct sampling of ultrasound. *Bat Echolocation Research: Tools, Techniques and Analysis* (eds. R.M. Brigham, E.K.V. Kalko, G. Jones, S. Parsons & H.J.G.A. Limpens). Bat Conservation International, Austin, Texas.
24. Wickramasinghe, L.P., Harris, S., Jones, G. & **Vaughan, N.** (2003) Bat activity and species richness on organic and conventional farms: impact of agricultural intensification. *Journal of Applied Ecology* 40, 984-993.
25. **Vaughan, N.**, Lucas, E.-A., Harris, S., & White, P.C.L. (2003) Habitat associations of European hares *Lepus europaeus* in England and Wales: implications for farmland management. *Journal of Applied Ecology* 40, 163-175.

26. Glendell, M. & **Vaughan, N.** (2002) Foraging activity of bats in historic landscape parks in relation to habitat composition and park management. *Animal Conservation* 5, 309-316.
27. Kastelein, R.A., **Vaughan, N.**, Walton, S. & Wiepkema, P.R. (2002) Food intake and body measurements of Atlantic bottlenose dolphins (*Tursiops truncatus*) in captivity. *Marine Environmental Research* 53, 199-218.
28. Kastelein, R.A., de Haan, D., **Vaughan, N.**, Staal, C., & Schooneman, N.M. (2001) The influence of three acoustic alarms on the behaviour of harbour porpoises (*Phocoena phocoena*) in a floating pen. *Marine Environmental Research* 52, 351-371.
29. Jones, K.E., Barlow, K.E., **Vaughan, N.**, Rodríguez-Durán, A. & Gannon, M.R. (2001) Short-term impacts of extreme environmental disturbance on the bats of Puerto Rico. *Animal Conservation* 4, 59-66.
30. Jones, G., **Vaughan, N.** & Parsons, S. (2000) Acoustic identification of bats from directly sampled and time expanded recordings of vocalizations. *Acta Chiropterologica* 2, 155-170.
31. Kastelein, R.A., Schooneman, N.M., **Vaughan, N.** & Wiepkema, P.R. (2000) Food consumption and growth of California sea lions (*Zalophus californianus californianus*). *Zoo Biology* 19, 143-159.
32. Kastelein, R.A., Rippe, H.T., **Vaughan, N.**, Schooneman, N.M., Verboom, W.C. & de Haan, D. (2000) The effects of acoustic alarms on the behavior of harbor porpoises (*Phocoena phocoena*) in a floating pen. *Marine Mammal Science* 16, 46-64.
33. McDonald, R.A. & **Vaughan, N.** (1999) An efficient way to prepare mammalian skulls and bones. *Mammal Review* 29, 265-266.
34. Vaughan, R., Vaughan, M., & **Vaughan, N.** (1999) *Catch figures from duck decoys in the Netherlands, 1853 to 1970*. IBN Scientific Contributions Series, Wageningen, the Netherlands.
35. Kastelein, R.A., de Haan, D., Goodson, A.D., Staal, C. & **Vaughan, N.** (1997) The effects of various sounds on a harbour porpoise (*Phocoena phocoena*). *The Biology of the Harbour Porpoise* (*Phocoena phocoena*), pp. 367-383 (eds. A.J. Read, P.R. Wiepkema & P.E. Nachtigall). Woerden, the Netherlands, De Spil Publishers.
36. Kastelein, R.A., **Vaughan, N.**, Groenenberg, H.J., Boekholt, H.A. & Schreurs, V.V.A.M. (1997) Respiration in harbour porpoises (*Phocoena phocoena*). *The Biology of the Harbour Porpoise* (*Phocoena phocoena*), pp. 203-215 (eds. A.J. Read, P.R. Wiepkema & P.E. Nachtigall). Woerden, the Netherlands, De Spil Publishers.
37. Kastelein, R.A., Schooneman, N.M., Au, W.W.L., Verboom, W.C. & **Vaughan, N.** (1997) The ability of a harbour porpoise (*Phocoena phocoena*) to discriminate between objects buried in sand. *The Biology of the Harbour Porpoise* (*Phocoena phocoena*), pp. 329-342 (eds. A.J. Read, P.R. Wiepkema & P.E. Nachtigall). Woerden, the Netherlands, De Spil Publishers.
38. **Vaughan, N.** & Vaughan, R. (1997) Changes in populations of Kittiwakes *Rissa tridactyla* and Common Guillemots *Uria aalge* breeding on the Flamborough Headland, 1967-1994. *Naturalist* 122, 3-11.
39. **Vaughan, N.** Jones, G. & Harris, S. (1997) Habitat use by bats (Chiroptera) assessed by means of a broad-band acoustic method. *Journal of Applied Ecology* 34, 716-730.
40. **Vaughan, N.**, Jones, G. & Harris, S. (1997) Identification of British bat species by multivariate analysis of echolocation call parameters. *Bioacoustics* 7, 189-207.
41. **Vaughan, N.** (1997) The diets of British bats (Chiroptera). *Mammal Review* 27, 77-94.
42. **Vaughan, N.** & Hill, J.E. (1996) Bat (Chiroptera) diversity and abundance in banana plantations and rain forest, and three new records for St. Vincent, Lesser Antilles. *Mammalia* 60, 441-447.
43. **Vaughan, N.**, Jones, G. & Harris, S. (1996) Effects of sewage effluent on the activity of bats (Chiroptera: Vespertilionidae) foraging along rivers. *Biological Conservation* 78, 337-343.
44. Kastelein, R.A., Mosterd, P. & **Vaughan, N.** (1992) Cognition and decision-making by a California sea lion (*Zalophus californianus*) in visual discrimination tests. *Marine Mammal Sensory Systems*, pp. 685-696 (Eds. J. Thomas et al.). New York, Plenum Press.
45. Kastelein, R.A., Wiepkema, P.R. & **Vaughan, N.** (1991) The suckling period of a grey seal (*Halichoerus grypus*) while the mother had access to a pool. *Aquatic Mammals* 17, 42-51.
46. Kastelein, R.A., Wiepkema, P.R. & **Vaughan, N.** (1990) The food consumption of grey seals (*Halichoerus grypus*) in human care. *Aquatic Mammals* 15, 171-180.
47. Kastelein, R.A., **Vaughan, N.** & Wiepkema, P.R. (1990) The food consumption of Steller sea lions (*Eumetopias jubatus*). *Aquatic Mammals* 15, 137-144.

48. Kastelein, R.A. & **Vaughan, N.** (1989) Food consumption, body measurements and weight changes of a female killer whale (*Orcinus orca*). *Aquatic Mammals* 15, 18-21.