

VOLKER BAHN, PH.D.

CURRICULUM VITAE

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EDUCATION

- 2005-present **Postdoctoral Scholar**, McGill University, Montréal, Québec, Canada
- 2002-2005 **Ph.D.**, University of Maine, Orono, Maine, USA
Wildlife Ecology
Dissertation title: Implications of spatial autocorrelation and dispersal for the modeling of species distributions.
- 1991-1998 **Master's of Science**, Philipps-Universität, Marburg, Germany
Biology (German: Diplom Biologe, which includes undergraduate years)
Thesis title: Habitat requirements and habitat suitability index for the Marbled Murrelet (*Brachyramphus marmoratus*) as a management target species in the Ursus Valley, British Columbia.
Major: Nature Conservation; Minors: Botany, Ecology, and Cultural Anthropology
- 1994-1995 **Visiting Student**, University of Victoria, Victoria, BC, Canada
Classes in Biology, Environmental Studies, and English
- 2005 **Professional Grant Writing Certificate**, The Grant Institute
Workshop at the University of Portland, Maine.

PROFESSIONAL EXPERIENCE

- Research Scientist**, University of Victoria, British Columbia, Canada, 2000-01
- Collaboration with Dr. Alan Burger in the analysis and publication of Marbled Murrelet research results;
 - Publication of multi-year Marbled Murrelet study in Clayoquot Sound, Canada for British Columbia Ministry of Environment, Land and Parks;
 - Further publications in peer reviewed journals.
- Research Associate**, Auburn University, Auburn, Alabama, USA, 2000
- Participated in initial phase of wetland rehabilitation project in Lillian Swamp: literature research, database design, exploration of study area, biodiversity inventory: collection and identification of plants and selected animals, specimen and data management, and GIS data acquisition from the internet.

Project Leader, University of Victoria, Victoria, BC, Canada, 1999 and 2000

- Managed 5 long-term Marbled Murrelet research projects for a professor on sabbatical;
- Executed all aspects of the projects (employees, budget, logistics, study design, field work, safety, data storage and analysis);
- Analyzed data from 1991-97 field seasons, wrote journal papers and reports (to the Science Council of B.C., WWF, and the Habitat Conservation Trust Fund).

Field Biologist and Project Co-Supervisor, Ministry of Environment, Lands and Parks, Nanaimo, BC, Canada, summers of 1995, 1997, and 1998

- Initiated multi-year conservation-focused study and inventory of Marbled Murrelets: from research biologist (1995 and 1997) to project co-supervisor (1998);
- Initially assisted with, in 1998 fully responsible for: recruitment of crew members, study design and research layout, selection of study sites, transportation, safety plan, data management and analysis, reports to the Ministry of Environment, Lands, and Parks, and presentation at conferences;
- Completed extended periods of remote field work in difficult terrain in a two person team;
- Collected data for my Master's Thesis and designed habitat suitability index for Marbled Murrelets.

REFEREED PUBLICATIONS

Bahn, V., R. J. O'Connor, and W. B. Krohn. In press. Importance of spatial autocorrelation in modeling bird distributions at a continental scale. *Ecography*.

Bahn V., R. J. O'Connor, and W. B. Krohn. In press. Effect of dispersal at range edges on the structure of species ranges. *Oikos*.

Newsom, D. N., **V. Bahn**, and B. Cashore. In press. Does forest certification matter? An analysis of operation-level changes required during the SmartWood certification process in the United States. *Forest Policy and Economics*.

Burger A. E., and **V. Bahn**. 2004. Inland habitat associations of Marbled Murrelets on southwest Vancouver Island, British Columbia. *Journal of Field Ornithology* 75(1):53-66.

Bahn V., and D. N. Newsom. 2002. Can Marbled Murrelet use of nesting habitat be predicted from mapped forest characteristics? Pages 89-100 in: Burger A. E., and T. A. Chatwin, editors. Multi-scale studies of populations, distribution and habitat associations of Marbled Murrelets in Clayoquot Sound, British Columbia. Victoria, B.C.: Ministry of Water, Land and Air Protection.

Bahn V., and D. N. Newsom. 2002. Habitat suitability mapping for Marbled Murrelets in Clayoquot Sound. Pages 101-119 in: Burger A. E., and T. A. Chatwin, editors. Multi-scale studies of populations, distribution and habitat associations of Marbled Murrelets in Clayoquot Sound, British Columbia. Victoria, B.C.: Ministry of Water, Land and Air Protection.

Conroy C. J., **V. Bahn**, M. S. Rodway, L. Ainsworth, and D. N. Newsom. 2002. Estimating nest densities for Marbled Murrelets in three habitat suitability categories in the Ursus Valley, Clayoquot Sound. Pages 121-137 in: Burger A. E., and T. A. Chatwin, editors. Multi-scale studies of populations, distribution and habitat associations of Marbled Murrelets in

Clayoquot Sound, British Columbia. Victoria, B.C.: Ministry of Water, Land and Air Protection.

Burger A. E., **V. Bahn**, and A. R. M. Tillmanns. 2000. Comparison of coastal fringe and interior forests as reserves for Marbled Murrelets on Vancouver Island. *Condor* 102(4):915-920.

PUBLICATIONS UNDER REVIEW AND IN PREPARATION

Bahn, V., W. B. Krohn, and R. J. O'Connor. Under review. Dispersal leads to autocorrelation in animal distributions: a simulation model. *Journal of Applied Ecology*.

Bahn, V., B. J. McGill. In revision. Null models for distribution modeling.

McGill, B. J., and **V. Bahn**. In revision. Ecoinformatics: moving past the fad phase.

Bahn, V. and D. Lank. In prep. A habitat suitability model for the Marbled Murrelet validated with independent data. To be submitted to the *Journal of Wildlife Management*.

Matthews, S., M. W. Schwartz, **V. Bahn**, L. R. Iverson, and A. M. Prasad. In prep. Projected changes in bird distributions and biodiversity under climate change in eastern North America.

McGill, B. J., N. J. Gotelli, and **V. Bahn**. In prep. The role and limits of model selection in ecology.

THESES

Bahn, V. 2005. Implications of spatial autocorrelation and dispersal for the modeling of species distributions. Ph.D. Thesis. University of Maine, Orono, ME, USA. 103 pp.

Bahn, V. 1998. Habitat requirements and habitat suitability index for the Marbled Murrelet (*Brachyramphus marmoratus*) as a management target species in the Ursus Valley, British Columbia. M.Sc. Thesis. Philipps-Universität Marburg, Germany. 167 pp.

CONFERENCE PRESENTATIONS

Bahn V., R. J. O'Connor, and W. B. Krohn. 2005. The effects of dispersal on animal distributions: a simulation model. Ecological Society of America / INTECOL meeting, August 7-12, 2005, Montréal, Québec, Canada.

Bahn V., R. J. O'Connor, and W. B. Krohn. 2004. The role of dispersal in shaping bird distributions. American Ornithologists' Union / Society of Canadian Ornithologists meeting, August 16-21, 2004, Université Laval, Québec City, Québec, Canada.

Bahn V., R. J. O'Connor, and W. B. Krohn. 2003. Model selection for species distribution models incorporating spatial autocorrelation. 59th Northeast Fish and Wildlife Conference. Northeast Section of the Wildlife Society, 13-16 April 2003, Newport, RI, USA.

Bahn V. 1999. Marbled Murrelet as a target species for land management in coastal British Columbia. Page 735 in: Darling L., editor. *Biology and management of species and habitats at risk*. Volume 2. 15 - 19 February 1999, Kamloops, B.C. B.C. Ministry of Environment, Lands and Parks, Victoria, B.C. and University College of the Cariboo, Kamloops, B.C.

Bahn V. and D. N. Newsom. 1999. Habitat evaluation for Marbled Murrelets in large, continuous forests of coastal British Columbia. *Pacific Seabirds* 26(1):22.

INVITED PRESENTATIONS

2006 “Implications of spatial autocorrelation and dispersal for distribution modeling.” McGill University.

2004 “Spatial autocorrelation in species occurrence models.” University of Maine.

2002 “Big trees, big money, little bird: the case of the marbled murrelet in the old-growth temperate rainforest of Clayoquot sound, British Columbia.” University of Maine.

1997 “Autoecology of the marbled murrelet.” Long Beach Model Forest, Ucluelet, B.C.

TECHNICAL REPORTS

Burger A. E., **V. Bahn**, and A. Young. 2000. Assessment of nesting habitat for Marbled Murrelets in the coastal Douglas-fir forests of southeast Vancouver Island in 1998 and 1999. Victoria, B.C., Canada: Department of Biology, University of Victoria. 36 pp.

Bahn V., A. E. Burger, and D. Newsom. 1999. Distribution, relative densities, and habitat associations of Marbled Murrelets in the Ursus Valley, 1995-1997. Pages 270-333 in: Chatwin T. A., A. E. Burger, and L. E. Jones, editors. Inventory of Marbled Murrelets in Clayoquot Sound 1997. Vancouver Island Regional Office, Nanaimo, B.C.: B.C. Ministry of Environment, Lands, and Parks.

Bahn V., and D. N. Newsom. 1999. Clayoquot Sound Marbled Murrelet inland inventory 1998: Habitat evaluation and activity monitoring. Vancouver Island Regional Office Nanaimo, B.C.: Ministry of Environment, Lands and Parks. 60 pp.

Burger A. E., **V. Bahn**, and D. N. Newsom. 1995. Marbled Murrelets in the Ursus Valley, Clayoquot Sound: Population density, distribution and habitat use. Vancouver Island Regional Office, Nanaimo, B.C.: Ministry of Environment, Lands and Parks. 21 pp.

TEACHING EXPERIENCE

Lecturer, BIOL 206 Methods in Biology of Organisms, McGill University, Oct. 2006
Modules III & IVb: Experimental design, basic statistics, and regression analysis

Guest Lecturer, BIOL 510 Advances in Community Ecology, McGill University, Sept. 2006
Topic: Factors determining the distribution of species

Guest Lecturer, WLE 650 Distribution Modeling, University of Maine, 2004
Topic: Spatial Autocorrelation in Species Occurrence Models

Workshop Instructor, University of Victoria, Victoria, B.C., 1999
Training of new Marbled Murrelet researchers in theory and field skills

Teaching Assistant, Philipps-Universität, Marburg, Germany 1996-97, for the following courses:

Plant Identification: collected plant material, assisted undergraduate students in using keys for plant identification, led field trips;

Cultivated Plants: supervised laboratory work and helped students with plant preparations and technical drawings of plant anatomy;

Fundamental and Practical Aspects of Nature Conservation: conducted weekly oral examinations and answered questions on course readings

Mathematics Tutor, Mathe-Helfer, Marburg and Taufkirchen, Germany, 1986-90, 95-96
Tutored high-school seniors in advanced mathematics

GRANTS AND POSITIONS AWARDED

Postdoctoral Scholar - McGill University; CAD 35 000 per year

Outstanding graduate student award 2005; USD 600

NSERC - Canadian national scholarship doctoral 2 years; CAD 38 000 - declined

Research Assistantship, 3.5 years - University of Maine; approximately USD 80 000

BAFOEG - German national grant/loan. 10% of the loan part forgiven for being in the best 30% of students in my year, 5% forgiven for finishing degree in a timely fashion; EUR 500 (CAD 783).

SEMINAR AND WORKSHOP ORGANIZATION

“Null Hypothesis Testing: Must Progress Always Ride on a Hearse?” by David Anderson at the University of Maine, September 30, 2002.

“Information-Theoretic Methods in Empirical Science and Management: Making Formal Inference from Several Models” by David Anderson at the University of Maine, October 1, 2002.

“Certification: Changing Biodiversity Management in Maine's Forest” by Linda Alverson, October 28, 2002.

“Unified theories of distribution and abundance” by Brian McGill, July 12, 2004.

SERVICE

Reviewer for *Ecography*

Community ecology discussion group organizer, 2006

Student representative for faculty meetings, 2003-04

Department seminar organizer, 2002

Elected member of the biology department council, 1993-94

Active member of the graduate student society, 1991-94

STATISTICS AND COMPUTER SKILLS

Statistical techniques

- All basic statistical techniques: contingency tables, t-test, all ANOVA designs, correlations, regressions, general linear models, etc.;
- Multivariate techniques: cluster analysis and PCA;
- Spatial analyses techniques: K-function, Mantel test, Moran's I, kriging, conditional autoregressive regressions;
- Advanced techniques: quantile regressions, classification and regression trees, power analysis, Koenig's modified correlograms, Borcard's partitioning of variances, Akaike's information criterion (AIC), Area under Curve for Receiver Operating Characteristic curves (AUC for ROC);

Statistical packages and data management: Splus and R (command line and programming), SPSS, Systat, Excel, BLOSSOM;

Geographic Information Systems (GIS): ArcView and basic skills in all ArcGIS products;

Other: Webdesign/html, RedHat Linux, Microsoft Windows and Office products.

PROFESSIONAL AFFILIATIONS

Ecological Society of America (2005)

INTECOL (2005)

Society of Conservation Biology (2002-present)

Pacific Seabird Group (1999-2000)

VOLUNTEER EXPERIENCE

Volunteer Researcher, Friends of Caren, Sunshine Coast, B.C., 1993

Volunteer, Voluntary Workcamp Association of Ghana Accra, Ghana, 1990-91

Volunteer, Passamaquody Native Reservation, Maine, USA, 1991

Civil Service Nurse, Kreiskrankenhaus Harlaching, Munich, Germany, 1989-90

LANGUAGES

Fluent in German and English, basic French.

References available upon request.