

**CHRISTOPHER S. NATIONS, *Biometrician*****EDUCATION**

M.S.	University of Wyoming, Laramie, Wyoming	1998	<i>Statistics</i>
M.S.	University of Wyoming, Laramie, Wyoming	1994	<i>Zoology</i>
B.S.	University of North Carolina, Chapel Hill	1981	<i>Zoology</i>

**PROFESSIONAL EXPERIENCE**

1999-Present	<i>Biometrician</i> , Western EcoSystems Technology, Inc., Cheyenne, Wyoming
1998-1999	<i>Research Scientist</i> , Department of Zoology, University of Wyoming, Laramie, Wyoming
1990-1998	<i>Graduate Teaching Assistant</i> , Department of Zoology and Statistics, University of Wyoming, Laramie, Wyoming
1994-1995	<i>Biological Technician</i> , Intermountain Research Station, USDA Forest Service, Laramie, Wyoming
1983-1990	<i>Research Specialist</i> , Respiratory Physiology Program, Harvard School of Public Health, Boston, Massachusetts

**SPECIALTY AREAS**

**Statistical Analysis and Modeling.** Experience in a variety of techniques in ecological statistics: sampling design; capture-recapture and band-recovery estimation of survival and population size; resource selection for diverse animals such as elk, passerines, and snakes; home range estimation based on telemetry data; statistical and mathematical models for animal movement; and, population modeling including age- and stage-based matrix methods, and demographic sensitivity analysis. Training and experience in multivariate methods, survival analysis, linear models including mixed models, generalized linear models, and computer intensive techniques including simulation and nonlinear optimization. Recent projects: analyses of slickspot peppergrass abundance and its relationship with environmental factors in southern Idaho; abundance estimation of long-billed curlews throughout the western United States and Canada; assessment of field survey methods for marbled murrelets in southeastern Alaska, including comparative statistical power to detect population trends; several studies of northern spotted owl demography and resource selection in California; and assessment of effects of noise from offshore oil and gas field activity on bowhead whale migration and ringed seal densities in the Beaufort Sea.

**Wind Power Studies.** Marine radar studies of local bird and bat flight patterns. Development of new methods for analysis and presentation of marine radar data, including estimation of and adjustment for detection probability. NEXRAD studies of larger-scale bird migration, including development of specialized software for automated analysis of large quantities of NEXRAD data. Developed software for automated classification of acoustic data from passive remote bat detectors. Design of a mathematical model for quantifying probability of bird/turbine collisions, including analysis of parameter sensitivity. Analysis of visual survey data. Quantitative avian risk assessment.

**PROFESSIONAL SERVICE**

Reviewer for: *Journal of Wildlife Management; Ecology; and Ecological Modeling.*

**PROFESSIONAL PUBLICATIONS**

- Jones, S.L., C.S. Nations, S.D. Fellows, and L.L. McDonald. 2008. Breeding abundance and distribution of long-billed curlews (*Numenius americanus*) in North America. *Waterbirds* 31:1-14.
- Suring, L.H., M.I. Goldstein, S.M. Howell, and C.S. Nations. 2008. Response of the cover of berry-producing species to ecological factors on the Kenai Peninsula, Alaska, USA. *Canadian Journal of Forest Research* 38:1244-1259.
- Nations, C.S. and R.C. Anderson-Sprecher. 2006. Estimation of animal location from radio telemetry data with temporal dependencies. *Journal of Agricultural, Biological, and Environmental Statistics* 11:87-105.
- Williams, M.T., C.S. Nations, T.G. Smith, V.D. Moulton, and C.J. Perham. 2006. Ringed seal (*Phoca hispida*) use of subnivean structures in the Alaskan Beaufort Sea during development of an oil production facility. *Aquatic Mammals* 32:311-324.
- Suring, L.H., M.I. Goldstein, S. Howell, and C.S. Nations. 2006. Effects of spruce beetle infestations on berry productivity on the Kenai Peninsula, Alaska. *Forest Ecology and Management* 227: 247-256.
- Moulton, V.D., W.J. Richardson, R.E. Elliott, T.L. McDonald, C. Nations, and M.T. Williams. 2005. Effects of an offshore oil development on local abundance and distribution of ringed seals (*Phoca hispida*) of the Alaskan Beaufort Sea. *Marine Mammal Science* 21:217-242.
- Hayward, G.D., D.G. Miquelle, E.N. Smirnov, and C. Nations. 2002. Monitoring Amur tiger populations: characteristics of track surveys in snow. *Wildlife Society Bulletin* 30:1150-1159.

- Nations, C.S.** and M.S. Boyce. 1997. Stochastic demography for conservation biology. In: *Structured-Population Models in Marine, Terrestrial, and Freshwater Systems*, S. Tuljapurkar and H. Caswell (eds.), Chapman and Hall, New York.
- Pugesek, B.H., **C. Nations**, K.L. Diem, and R. Pradel. 1995. Mark-resighting analysis of a California gull population. *Journal of Applied Statistics* 22:625-639.