

# **Anne Elizabeth Black**

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Landscape Dynamics Lab (208) 885-5788  
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## **EDUCATION**

**University of Idaho** Moscow, ID. PhD Candidate, Ph.D. expected fall 1998, School of Forestry, Wildlife and Range Sciences.

**Yale University** New Haven, CT. Master of Environmental Studies, May 1992. School of Forestry and Environmental Studies; in Natural Resource Conservation and Sustainable Development

**University of Montana** Missoula, MT. B.S. Resource Conservation, *Cum Laude*, 1984. School of Forestry

**University of Michigan** Ann Arbor, MI. Undergraduate studies, Sept. 1979-May 1980.

## **EXPERIENCE**

Idaho Dept. of Fish and Game

### **Senior Wildlife Technician**

*Sept. 1997- June 1998*

Responsible for landscape assessment of 13,000 ha area managed by Idaho Dept. of Lands for timber production. Am analyzing landbird monitoring data, correlating these to a cross-walk vegetation classification between remotely sensed data, aerial photo interpretation, timber type maps and field data to describe general habitat parameters; using landscape metrics of historic aerial photo data from similar landscapes to define a 'historic range of variability' for various shape, size and interspersions.

University of Idaho

### **Instructor - Continuing Education in Ecosystem Management**

*October 1997*

Designed and taught 16 hours of landscape assessment techniques in short course for mid-career natural resource professionals.

### **Field Assistant**

*July 1996, 1997*

Field crew for ecological studies of vegetative response to disturbance and ground-truthing remotely-sensed data.

### **Teaching Assistant - Field Ecology**

*May 1996, 1997*

### **Berklund Fellow**

*Sept. 1993-Dec. 1996*

Assistantship supporting dissertation research: Social and Ecological Correlates of Change in Inland Northwest Forests.

Private Contractor

### **Idaho Dept. of Fish and Game**

*Sept. 1996 - present*

Mapping important wildlife habitat in Latah County, ID (using the most recent version of GAP's remotely sensed vegetation data for western Montana and northern Idaho) and to devise subdivision and land use restrictions to protect important habitats.

### **BRD Idaho Cooperative Fish and Wildlife Research Unit**

*August 1996 - June 1997*

Land Use History of the Palouse Project Coordinator: Historical review of land use and consequences on biological resources.

### **Landscape Dynamics Lab**

*January 1994 - present*

Assist on various lab projects, conduct my own research and analysis. The lab is a cooperative venture of the USGS Biological Resources Division's GAP Analysis Project, the Idaho Cooperative Wildlife Research Unit, and several natural resource faculty.

### **Nez Perce Tribe Forestry/Wildlife**

*July 1996-present*

Developed wildlife guidelines for 10 year Forest Management Plan.

### **Upward Bound Math/Science Program**

*July 1997*

Taught groups of high school students basic ecology and land use planning concepts in ½ day field trip.

USDA Forest Service

### **Research Assistant**

*June 1994-Sept 1994*

Team member for modeling fire regimes of the Interior Columbia River Basin under contract to USDA Forest Service. Drs. P. Morgan and S. Bunting (principals). Rule based and statistical modelling, GIS analysis.

### **Research Assistant**

*January 1995*

### **Staff Assistant - Ecologist/Interdisciplinary**

*Sept 1992-June 1993*

### **Fire Lookout - Helena National Forest**

*June - August 1983*

Winrock International Institute for Agricultural Development  
**Farmer-to-Farmer Program** - Development Specialist

August 1993

Northern Rockies Conservation Cooperative. Jackson, WY (*Private wildlife research institute*)

**Wildlife Research Associate**

Principal researcher for ferruginous hawk nesting habitat study in north-central Montana .

June-October 1992

Yale University School of Forestry and Environmental Studies. New Haven, CT

**Research Assistant** - Dr. William Bentley

Researched role of forests in the development of agricultural economies in transition: United States, Nepal.

October 1991-May 1992

**Academic projects** - Dr. William Burch

Prepared critique of Nepal's Master Plan for the Forestry Sector (1991) focus: institutional reform.

Northern Plains Resource Council. Glendive & Billings, MT (*Statewide grassroots farm/conservation organization*)

**Project Director**

Directed and conducted analysis of western state and national hard rock mining law policy. Developed policy options.

August 1989-April 1990

**Research Coordinator**

Lead policy staff. Forest Service planning and NEPA analysis coordinator.

October 1986-April 1988

**Community Organizer**

Field organizer and field office administrator.

June 1984-April 1988

## PUBLICATIONS

1997. (submitted) Black, A.E., E. Strand, J.M Scott, R.G. Wright, P. Morgan. Land Use History of the Palouse Bioregion: pre-European to present. Land Use Planning and Urban Development.

1997. Black, A.E., E. Strand, J.M Scott, R.G. Wright, P. Morgan. Land Use History of the Palouse Bioregion: pre-European to present. USGS Biological Resources Division, Pilot project published on the world wide web USGS LUHNA homepage.

1995. Morgan, P., S. C. Bunting, A.E. Black, T. Merrill and S. Barrett. Fire Regimes in the Interior Columbia River Basin: past and present. Final Rept for RJVA-INT-94913; on file at Intermountain Fire Sciences Laboratory, INT, Missoula, MT. 12/29/95.

1993. Shands, W., A. Black and J. Giltmire. From New Perspectives to Ecosystem Management: A report of an assessment of New Perspectives. Pinchot Institute for Conservation. Springfield, VA.

1992 Black, A.E. Ferruginous Hawk Reproduction and Habitat Survey. Northern Rockies Conservation Cooperative. Jackson, WY. under contract with the Bureau of Land Management.

1991. Principal author and team leader: "Jones Falls Preliminary Watershed Plan" in Doing More with More. A series of Preliminary Plans for Improving Environmental Management and Community Development through Baltimore's Parks and Recreation Systems. A 5 part series. Working Paper #9. Urban Resources Initiative. New Haven, CT.

1991. "Structural Analysis of the Institutional Subplan of the MPFSN: Good Theory, Poor Development"; in Critique of the Master Plan for the Forestry Sector Nepal Vol I, IOF Project Discussion Paper No. 91/1. Tribhuvan University, Institute of Forestry, Yale University, School of Forestry and Environmental Studies, International Resources Group, Ltd. US. Agency for International Development. Pokhara, Nepal.

1991. Contributing Author: Reclaiming the Wealth: A citizens guidebook to hardrock mining in Montana. Northern Plains Resource Council. Billings, MT.

1989. For Current and Future Generations Vol I A Comparison of Non-Renewable Natural Resource Taxation in Colorado, Montana, North Dakota and Wyoming. Western Organization of Resource Councils. Billings, MT.

## PRESENTATIONS

1998. International Association for Landscape Ecology. Michigan State University, MI. March 1998.
1997. Land Use History of the Palouse Bioregion: pre-European to present. Society for Conservation Biology (poster session). University of British Columbia, Victoria BC. June 6-9, 1997.
1997. Land Use History of the Palouse Bioregion: pre-European to present. International Association for Landscape Ecology. (oral presentation) Duke University, Durham, NC. March 12-22, 1997.
1994. An evaluation of the Forest Service's New Perspectives Program. The Fifth International Symposium on Society and Resources Management. (oral presentation) Colorado State University, Fort Collins CO. June 7-10 1994.

## GRANTS

1993. Berklund Fellowship for Doctoral Studies. \$12,000/yr for 3 years.
1996. Disturbance ecology in Central Idaho \$23,000 USDA National Research Initiative Competitive Grants Program. Principal Investigators: A. Black, M. Rollins, P. Morgan.

## GIS EXPERIENCE and SKILLS

### *Academic GIS and spatial statistics courses:*

- Introduction to GIS Fall 1994
- GRID modelling Spring 1994
- Geostatistics Fall 1995
- Directed Study in geostatistics Spring 1996
- Remote Sensing Fall 1994

### *University-based projects*

#### Landscape Change in the interior Pacific Northwest

#### Modeling current and historic fire regimes Summer 1995 - Fall 1996

Under contract to USDA ICBEMP. Used GIS and logistic regression to analyze fire regimes in the interior Columbia River Basin.

#### Land Use History of the Palouse Bioregion: pre-European to present Fall 1996 - Spring 1997

#### Effect of process on pattern: a theoretical investigation of how disturbance influences the spatial and temporal structure of vegetative conditions.

This is a project that uses GIS to establish a neutral landscape, then simulate various disturbance regimes (GRID program is written and has been tested).

### *Idaho Fish and Game projects in cooperation with the Landscape Dynamics Lab*

#### Using landscape ecology to conserve wildlife on state timber lands: a landscape assessment of Silver Creek.

#### Mapping key wildlife habitat in Latah County for county land planning process

#### Riparian and wetlands conservation

I am currently working with IDFG on a project proposal for reconnaissance and mapping of remaining riparian and wetland resources in the Clearwater region.

#### Assessing impact of development in Blaine County, ID on elk movements

### GIS software skills:

- ARC/INFO - modules used: ARC, GRID, AML, INFO, TABLES, HELP
- ARCView - views, layouts, overlay, selection, tabulation, spatial analysis
- ERDAS - basic image manipulation, unsupervised classification
- S+ spatial statistics, CART

## Curriculum Vitae, Geoffrey R. Geupel

Director, Terrestrial Research Program, Point Reyes Bird Observatory

Point Reyes Bird Observatory (PRBO)

4990 Shoreline Highway, Stinson Beach CA 94970

Ph: 415 868 1221 or 0655, Fax 868 9363, Email: ggeupel@prbo.org

Birth date: April 19, 1956; Place: Indianapolis, Indiana

SS # 301 58 9233; Married, two children.

**Education:** Lewis and Clark College, Portland, OR BS in Biology 1978; University New Mexico, Albuquerque, NM post graduate course work.

### Professional Employment:

1989 to present: Director, Terrestrial Research Program, PRBO

1987 to 1989. Terrestrial Program Manager PRBO

1981 to 1987 Staff biologist (seasonal position) PRBO Landbird Research program.

1985 to 1989. Research biologist (seasonal position) PRBO Antarctic Research program.

1982 to 1984 Biological Technician (seasonal position) Univ. of New Mexico, Albuquerque, NM

1982 (Sept-Dec) Farallon Island Biologist, PRBO.

1980 (March to Aug.) Field Biologist (internship), Landbird Research Program, PRBO.

1979 Principal investigator NSF-SOS grant Washington ground squirrel population study.

1978 Principal investigator; Nature Conservancy research grant. Small mammal inventory of native grasslands in Oregon.

1977. Teaching Assistant (Field Ornithology), Malheur Field Station, Burns, OR.

1974 to 1976. Field Assistant, Colorado State Univ., Fort Collins. CO. Vulture population study.

Teaching Assistant (General Biology), Lewis and Clark College, Portland, OR

Internships for college credit: The Nature Conservancy (Natural Area Inventory) and Calackamous County, OR. Planning Commission (Willamete Greenway Proposal)..

### Professional activities

American Ornithologist Union (member)

Association of Field Ornithologists (member)

Cooper Ornithological Society (member)

National Audubon Society (member)

Partners In Flight Initiative (past monitoring chair of PIF Western Working Group and current chair of California PIF)

Society for Ecological Restoration (member)

The Wildlife Society (member)

Western Bird Banding Association (board member and past President)

Wilson Ornithological Society (member)

### Selected Publications

Gardali, T, A. King, and G. R. Geupel. In press. Brown-headed cowbird parasitism and nest success of the Lazuli Bunting in the Sacramento River valley. *Western Birds*.

Silkey M., N. Nur, and G. R. GEUPEL, in press. The use of mist net capture rates to monitor annual variation in abundance: A validation study. *Condor*

Nur N., G. R. Geupel and G. Ballard in press. The use of constant-effort mist-netting to monitor demographic processes in passerines: Annual variation in survival, productivity, and floaters. In *Strategies for Bird conservation: The Partners in Flight Planning Process*. (Proceedings of 2nd International Conference on Status and Management of Neotropical Migrant Birds.) D. Pashely, R. Boney, Ed. Cornell Lab of Ornithology.

Nur N., G. R. Geupel and G. Ballard in press. Estimates of adult survival, capture probability and recapture probability: evaluating and validating constant effort mist netting. In: *Proceedings of the First International Mistnet Conference, Point Reyes, CA.* (ed. By C. J. Ralph and W. Peach). USDA Forest Service Gen. Tech. Report

Chase, m., N. Nur, and G. R. GEUPEL 1997. Long-term demographics of a Wilson's Warbler (*Wilsonia pusilla*) population using data from standardized mist-netting. *Auk* 114:354-366.

YANEGA, G. M., P. PYLE AND G. R. GEUPEL 1997. The timing and reliability of bill corrugations for ageing hummingbirds. *Western Birds* 28: 13-18.

GEUPEL, G. R. 1996. The unbalance of nature: songbirds in the Mount Visiosn Fire Zone. *The Observer*, quarterly journal of the Point Reyes Bird Observatory. 108 pg 1-3.

JOHNSON, M. AND G. R. GEUPEL 1996. The importance of productivity to a Swainson's Thrush population. *Condor* 98:133-141.

Ralph, C. J., G. R. GEUPEL, P Pyle, T. E. Martin, D. F. DeSante AND B. MILA'. 1996. *Manual de metodos de campo para el monitoreo de aves terrestres*. Gen. Tech. Rep. PSW-GTR-159. Albany CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture, 44p.

GEUPEL G. R. AND I. WARKENTIN 1995. Field methods for monitoring populations parameters of landbirds in Mexico, Pp. 242-248. in *Conservation of Neotropical Migratory Birds in Mexico* (Proceedings of a symposium in Veracruz, Mexico. November 1993) M. Wilson and S. Sader (Eds.), Maine Agricultural and Forest Experiment Station Miscellaneous Publication 727. Orno, Maine.

BAKER M. , N. NUR, AND G. R. GEUPEL 1995. Correcting biased estimates of dispersal and survival due to limited study area: Theory and an application using Wrentits. *Condor*: 97: 663-674.

GEUPEL G. R. and D. Hardesty 1993. *The Palomarin Handbook: PRBO's Terrestrial Programs procedures manual*. PRBO publication, Stinson Beach, CA

Martin, T .E. and G. R. GEUPEL. 1993. Nest monitoring plots: Methods for locating nests and monitoring success. *J. Field. Ornith.* 64:507-519.

GEUPEL, G. R. AND N. NUR. 1993. Monitoring bird populations: The role of bird observatories and non-governmental organizations. Pp. 275-279. in *Status and Management of neotropical migratory birds*. D. M. Finch and P. W. Stangel (Eds.). USDA Forest Service Publication: GTR RM-229, Fort Collins, Co.

NUR, N. and G.R. Geupel, 1993. Evaluations of nest monitoring, mist-netting, and other methods for monitoring demographic processes in landbird populations. P.p. 237-244 in *Status and Management of neotropical migratory birds*. (D. M. Finch and P. W. Stangel Eds.). USDA Forest Service Publication: GTR RM-229, Fort Collins, Co.

Ralph, C. J., G. R. GEUPEL, P Pyle, T. E. Martin, AND. F. DeSante 1993. Handbook of field methods for monitoring landbirds. USDA Forest Service Publication, PSW-GTR 144, Albany, CA. 41p.

Taylor, D.M., D. F. DeSante, G. R. GEUPEL, AND K. Houghton 1993. Autumn populations of landbirds along central coastal California: 1976-1986. *J. Field Ornith.* 65:169-185.

Geupel, G. R., and D. F. DeSante. 1990. Incidence and determinants of double brooding in Wrentits. *Condor* 92: 67-75

Murphy, M. E., J. R. King, T. G. Taruscio, and G. R. GEUPEL 1990 Amino acid composition of feather barbs and rachises in three species of pygoscelid penguins. *Condor* 92: 913-921.

Trivelpiece, S. G., G. R. GEUPEL, J. Kjelson, A. Myrcha, J. Sicinski, W. Z. Trivelpiece, and N. J. Volkman. 1988. Rare bird sightings at King George Island, South Shetland Islands, Antarctica: 1976-1987. *Cormorant* 15:59-66.

Trivelpiece, W. Z., S. G. Trivelpiece, G. R. GEUPEL, J. Kjelson, and N. J. Volkman. 1989. Adelie and Chinstrap Penguins: Their potential as monitors of the southern ocean marine ecosystem. Proc. of the Symposium on Antarctic Biology (SCAR). Brenerhaven, France

DeSante, D.F., and G. R. Geupel 1987. Landbird productivity in central coastal California: the relationship to annual rainfall and a reproductive failure in 1986. *Condor* 89: 636-653.

Trivelpiece, S. G., G. R. GEUPEL, J. Kjelson, and W. Z. Trivelpiece. 1987. Pygoscelis penguin population studies at King George Island. *AJUS* 22:222.

Kjelson, J., W. Z. Trivelpiece, G. R. Geupel, and S. G. Trivelpiece. 1986. Population studies of Adelie, Gentoo, an Chinstrap Penguins. *AJUS* 21:207.

### **Selected Presentations**

Geupel, G. R., N. Nur, G. Ballard, and D. Wollington. The impact of Brown-headed Cowbirds on riparian bird communities of the central valley of California. Paper presented at the "Research and Mangment of the Brown of the Brown-headed Cowbird in Western and Earstern landscapes. Sacramento, CA. October 1997

G. R. GEUPEL AND N. NUR 1993b. Evaluation of migration monitoring at the Palomarin Field Station: Population trends in California and the West, 1980-1992. Paper presented at the "Workshop to Develop a North American Monitoring Program for Landbird Species Nesting, in Northern Canada and Alaska". Simcoe, Ontario. September 1993.



- Calif. Dept. of Fish & Game, Impact of Cantara Spill on Terrestrial Bird populations, 1992-96, \$310,000.
- California Dept. of Fish & Game, Impact of Chronic Oiling on Seabirds, 1994-1996, \$110,000.
- National Biological Service, Population status and conservation of Tidal Marsh Birds, 1996-1997, \$48,000
- National Biological Service, Population viability and metapopulation analyses of Ashy Storm-petrels and Xantus' Murrelets (2 grants), 1995-1998, \$86,000
- National Fish & Wildlife Foundation, \$196,000, 1994-1999, "Songbird conservation in riparian habitat [3 grants].
- NSF Office of Polar Programs, Factors Affecting the Size and Distribution of Adelie Penguin Colonies in the Ross Sea, 1996-1999, \$442,900.
- NOAA, El Nino 1997-1998 and Spatio-Temporal Patterns of Productivity for the California Current and Gulf of Alaska Coastal Marine Ecosystems, 1998-1999, \$121,556.

### SELECTED PUBLICATIONS RELEVANT TO THIS PROPOSAL

- Nur, N. 1984. Increased reproductive success with age in the California Gull: due to increased effort or improvement of skill? *Oikos* **43**, 407-408.
- Nur, N. 1984. Fitness, population growth rate and natural selection. *Oikos* **42**, 413-414.
- Nur, N. 1984. The consequences of brood size for breeding blue tits: I. Adult survival, weight change and the cost of reproduction. *Journal of Animal Ecology* **53**, 479-496.
- Nur, N. 1984. The consequences of brood size for breeding blue tits: II. Nestling weight, offspring survival and optimal brood size. *Journal of Animal Ecology* **53**, 497-517.
- Nur, N. 1984. Feeding frequencies of nestling blue tits (*Parus caeruleus*): Costs, benefits and a model of optimal feeding frequency. *Oecologia* **65**, 125-137.
- Nur, N. 1986. Is clutch size variation in the blue tit (*Parus caeruleus*) adaptive: An experimental study. *Journal of Animal Ecology* **55**, 983-999.
- Nur, N. 1987. Parents, nestlings and feeding frequency: A model of optimal parental investment and implications for avian reproductive strategies. pp. 457-475, in *Foraging Behavior*, (ed. by A. Kamil, J.R. Krebs, and H.R. Pulliam). Plenum Press, New York.
- Nur, N. 1987. Alternative reproductive tactics in birds: Individual variation in clutch size. pp. 49-77, in *Perspectives in Ethology*, v. 7, (ed. by P.P.G. Bateson and P.H. Klopfer). Plenum Press, New York.
- Nur, N. 1987. Population growth rate and the measurement of fitness: a critical reflection. *Oikos* **48**, 338-341.
- Nur, N. 1988. The cost of reproduction in birds: an examination of the evidence. *Ardea* **76**, 151-162.
- Nur, N. 1988. The consequences of brood size for breeding blue tits. III. Measuring the cost of reproduction: survival, future fecundity and differential dispersal. *Evolution* **42**, 351-362.
- Nur, N. 1990. The cost of reproduction in birds: Evidence from manipulative and non-manipulative studies. pp. 281-296 in *Population biology of passerine birds, an integrated approach*, (ed. by J. Blondel, et al.). Springer-Verlag, Heidelberg.
- Nur, N. & Geupel, G.R. 1993. Evaluation of mistnetting, nest-searching and other methods for monitoring demographic processes in landbird populations. pp. 237-244 in *Status and Management of Neotropical Migrant Birds*. D. Finch & P. Stangel (Eds.) USDA Forest Service Gen. Techn. Rep. RM-229. USDA, Fort Collins, CO.
- Pyle, P., Nur, N., Henderson, and DeSante, D.F. 1993. The effects of weather and lunar cycle on nocturnal migration of landbirds at southeast Farallon Island, California. *Condor* **95**, 343-361.
- Spear, L. and Nur, N. 1994. Brood size, hatching order and hatching date: Survival and recruitment in four life-history stages of the Western Gull. *Journal of Animal Ecology*



- 63, 283-298.
- Nur, N., Ford, R.G., Ainley, D.G., and Berumen, T. 1994. Farallon Seabirds 1.4. Stochastic computer modeling program developed for Gulf of the Farallones National Marine Sanctuary. Documentation in: User's Manual for Farallon Seabirds 1.4, 1994.
- Ainley, D.G., Nur, N., and Woehler, E.C. 1995. Factors affecting the distribution and size of penguin colonies in the Antarctic. *Auk* **112**, 171-182.
- Spear, L., Ainley, D.G., Nur, N. and Howell, S.N.G. 1995. Population size and the behavioral and physical factors affecting at-sea distributions of four threatened procellariids in the tropical Pacific. *Condor* **97**, 613-638.
- Baker, M., Nur, N. and Geupel, G.R. 1995. Correcting biased estimates of dispersal and survival due to limited study area: Theory and an application using wrentits. *Condor* **97**, 663-674.
- Cooch, E., Pradel, R. and Nur, N. 1996. A Practical Guide to Capture/Recapture Analysis using SURGE. 125 pp. Centre d'Ecologie Fonctionnelle et Evolutive - CNRS, Montpellier, France.
- Pyle, P., Nur, N., Sydeman, W.J, and Emslie, S. 1997. Cost of reproduction and the evolution of deferred breeding in the Western Gull. *Behavioral Ecology* **8**, 140-147.
- Chase, M., Nur, N., and Geupel, G.R. 1997. Survival, productivity, and abundance of a Wilson's Warbler population. *Auk* **114**, 354-366.
- Beissinger, S.R. and Nur, N. 1997. Appendix B: Population trends of the Marbled Murrelet projected from demographic analysis. Pages B1-B35 in *Plan for the Marbled Murrelet (Branchyramphus marmoratus) in Washington, Oregon, and California*. U.S. Fish & Wildlife Service, Portland, OR.
- Nur, N., Geupel, G.R., and Jones, S.L. 1998. A Guide to Statistical Analysis and Design of Avian Population Monitoring Programs. Biological Report, USF&W Service, in press.
- Nur, N., Pyle, P., Sydeman, W.J., and Stenzel, L.E. In press a. Effects of chronic oil pollution on seabirds in central California: temporal, spatial and species-specific patterns. Invited chapter in *Seabirds and Oil Pollution*. J. Wiens and M. Tasker, Ed. Cambridge Univ. Press.
- Ainley, D.G., Podolsky, R., DeForest, L., Nur, N., and Spencer, G.. In press. The status and population trends of the Newell's Shearwater on Kauai--Insights from modeling. In press in *Studies in Avian Biology*.
- Nur, N. and Sydeman, W.J. In press. Demographic Processes and Population Dynamic Models of Seabirds: Implications for Conservation and Restoration. In press in *Current Ornithology*.
- Nur, N. and Sydeman, W.J. In press. Population dynamics and demographic processes of Brandt's Cormorants in a variable environment: survival, breeding probability, and reproductive success. In press in *Bird Study*.

CURRICULUM VITAE -- W. DAVID SHUFORD

BORN: February 26, 1949

EDUCATION

M.S., Ecology, University of California, Davis, 1973

B.A., Biology (honors), Colby College, Waterville, Maine, 1971

PROFESSIONAL EXPERIENCE

1983 to present: Staff Biologist, Point Reyes Bird Observatory.

Major projects include research on the ecology and reproductive biology of California Gulls at Mono Lake, California; surveys throughout California of various species of inland-breeding seabirds, including the Black Tern; the Marin County Breeding Bird Atlas; Glass Mountain Breeding Bird Atlas; seasonal abundance and occurrence patterns of aquatic birds on Point Reyes; surveys of Snowy Plover populations throughout California; documentation of the importance of wetlands throughout the West to shorebirds via the Pacific Flyway Project, with particular focus on the seasonal use and abundance patterns of shorebirds in the interior of California.

1982 to 1983: Field Biologist, Point Reyes Bird Observatory.

Coordinated and completed field work and analyzed data for the Marin County Breeding Bird Atlas, the first project of its kind in the western United States.

1979 to 1981: Field Biologist, Point Reyes Bird Observatory.

Part of a team of five PRBO biologists that conducted extensive waterbird censuses and beached carcass surveys to assess the size and mortality rates of the estuarine and inshore bird communities of Point Reyes.

1977 to 1979 (summers): Field Biologist, Museum of Vertebrate Zoology, University of California, Berkeley. Conducted censuses (and behavioral observations) to determine habitat preferences of tundra-nesting birds on the North Slope of Alaska.

1977 to 1979: Field Biologist at Bodega Marine Lab for the Museum of Vertebrate Zoology, University of California, Berkeley. Conducted extensive censuses, observations of banded birds, and invertebrate sampling to study aspects of the winter ecology of the Sanderling (*Calidris alba*).

1979 to 1980: Co-regional editor of the Middle Pacific Coast Region of *American Birds*.

Four times a year wrote seasonal reports for all landbirds. The notebooks compiled by all the past and current editors provide the single most important source of unpublished data on the status, distribution, and abundance of northern California birds.

## RESEARCH AND AVOCATIONAL INTERESTS

Main research interests are documenting the status, distribution, abundance, and population trends of California birds, particularly species facing human-induced threats (e.g., Snowy Plover, California Gull, and other wetland-dependent species). A broad knowledge of the California avifauna has been gained via 25 years field experience with birds in California, an extensive knowledge of the literature on the state's avifauna, and a large network of contacts with ornithologists and field observers in federal and state agencies, private organizations, conservation groups, local Audubon Society chapters, and the general birding community.

## PROFESSIONAL AFFILIATIONS

Member of American Birding Association, California Bird Species of Special Concern Technical Advisory Committee, California Native Plant Society, Cooper Ornithological Society, Society of Conservation Biology, and Western Field Ornithologists (Board member).

## RELEVANT PUBLICATIONS

Page, G. W., L. E. Stenzel, W. D. Shuford, and C. R. Bruce. 1991. Distribution and abundance of the Snowy Plover on its western North American breeding grounds. *J. Field Ornithol.* 62:245-255.

Sealy, S. G., H. R. Carter, W. D. Shuford, K. D. Powers, and C. A. Chase III. 1991. Long-distance vagrancy of the Asiatic Marbled Murrelet in North America, 1979-1989. *W. Birds* 22:145-155.

Shuford, W. D. 1986. Have ornithologists or Red-breasted Sapsuckers extended their range in coastal California? *W. Birds* 17:97-105.

Shuford, W. D. 1993. *The Marin County Breeding Bird Atlas: A Distributional and Natural History of Coastal California Birds*. Bushtit Books, Bolinas, Calif. 480 pp.

Shuford, W. D. 1998. Surveys of Black Terns and other inland-breeding seabirds in northeastern California in 1997. Report 98-03, Bird and Mammal Conservation Program, Calif. Dept. Fish and Game, Sacramento.

Shuford, W. D. In press. Status assessment and conservation plan for the Black Tern (*Chlidonias niger surinamensis*) in North America. U.S. Fish and Wildl. Serv., Denver.

Shuford, W. D. and C. Alexander. 1994. Nesting population survey of California and Ring-billed gulls in northern California in 1994, with notes on historical status. Contribution No. 656 of Point Reyes Bird Observatory.

Shuford, W. D., and Fitton, S. 1998. Status of owls in the Glass Mountain region, Mono

- County, California. *W. Birds* 29:1-20.
- Shuford, W. D., C. M. Hickey, R. J. Safran, and G. W. Page. 1996. A review of the status of the White-faced Ibis in winter in California. *W. Birds* 27:169-196.
- Shuford, W. D., S. A. Laymon, and S. Fitton. 1995. Fifty years after Grinnell and Miller: Organizing for a better future. *W. Birds* 26:205-212.
- Shuford, W. D. and P. J. Metropulos. 1996. The Glass Mountain Breeding Bird Atlas Project: Preliminary results, 1991 to 1995. Report of Point Reyes Bird Observatory to the U.S. Forest Service, Inyo National Forest.
- Shuford, W.D., G. W. Page, J. G. Evens, and L. E. Stenzel. 1989. Seasonal abundance of waterbirds at Point Reyes: A coastal California perspective. *W. Birds* 20:137-265.
- Shuford, W. D., G. W. Page, and C. M. Hickey. 1995. Distribution and abundance of Snowy Plovers wintering in the interior of California and adjacent states. *W. Birds* 26:82-98.
- Shuford, W. D., G. W. Page, and J. E. Kjelson. 1998. Patterns and dynamics of shorebird use of California's Central Valley. *Condor* 100:227-244.
- Shuford, W. D. and L. B. Spear. 1988a. Surveys of breeding penguins and other seabirds in the South Shetland Islands, Antarctica, January-February 1987. NOAA Technical Memorandum NMFS-F/NEC-59. 27 pp.
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- Shuford et al. – 9 reports (1989-1995) on the status of shorebirds in various regions of the western United States.
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# CURRICULUM VITAE: NILS WARNOCK

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## Education

Ph.D. Ecology, University of California, Davis and San Diego State University 1994  
B.A. Psychology, University of Colorado, Boulder 1983

## Post-Doctoral Experience

1994 - 1996. Environmental and Resource Sciences, University of Nevada, Reno (with Dr. Lewis Oring) and Department of Biological Sciences, Simon Fraser University (with Dr. Fred Cooke)  
1997 - 1998. Forest and Rangeland Ecosystem Science Center, US Geological Survey and Oregon State University (with Dr. Susan Haig).

## Research Experience

1984-1987 Point Reyes Bird Observatory, Stinson Beach, CA. *Wintering ecology of shorebirds, breeding ecology of seabirds and marine mammals, ecology of breeding and migratory landbirds.*

1987 USDA Forest Service, Fresno, CA. *Breeding landbirds and comparative census techniques.*

1987-1988 Point Reyes Bird Observatory, Stinson Beach, CA. *Wintering shorebird ecology, breeding requirements and population dynamics of interior nesting Snowy Plovers.*

1988 United States Fish and Wildlife Service, Seward Peninsula, AK. *Breeding distribution and habitat requirements of the Bristle-thighed Curlew on Seward Peninsula, Alaska.*

1988-1992 University of California, Davis; San Francisco Bay area, CA. *Biotic and abiotic factors affecting the distribution and abundance of Dunlin.*

1988-1989 Biology Dept., San Diego State University. *Estuarine restoration and enhancement*

1989 Point Reyes Bird Observatory, Stinson Beach, CA. *Abundance and distribution of shorebirds in San Diego County, CA, Salton Sea, CA, and northern Baja California, Mexico.*

1990-1993 Troy Ecological Research Associates; Prudhoe Bay, AK. *Impact of oil development on arctic breeding bird communities; Breeding and dispersal of Spectacled Eiders using radio and satellite telemetry.*

1992 University of California, Davis; San Francisco Bay, CA. *Migration ecology of Western Sandpipers using radiotelemetry.*

1994-1996 University of Nevada, Reno; Honey Lake, CA. *Life history strategies of breeding Killdeer; Post-breeding dispersal of Killdeer and American Avocets using radiotelemetry.*

1994-1996 Simon Fraser University; Ensenada, Mexico. *Demography of a wintering Western Sandpiper population.*

1995-1996 University of Nevada, Reno; San Francisco, CA, Honey Lake, CA, Grays Harbor WA. *Migration ecology and conservation of Western Sandpipers along the Pacific Flyway.*

1997 Forest and Rangeland Ecosystem Science Center, Corvallis, OR. *Local and metapopulation dynamics of western Great Basin shorebirds.*

1998 Point Reyes Bird Observatory, Stinson Beach, CA; *Monitoring and reintroduction of the Endangered San Clemente Loggerhead Shrike.*

## Other Jobs

1996-1997 Statistician (GS-9), US Forest Service, Corvallis, OR

1997-1998 Statistician (GS-9) - Forest and Rangeland Ecosystem Science Center, United States Geological Service and Oregon State University, Corvallis, OR.

### **Relevant Publications**

- Warnock, N. 1989. *Piracy by Ring-billed gulls on Dunlins*. Wilson Bull. 101: 96-97.
- Warnock, N. 1990. *Apparent age-segregation of Dunlin within Bolinas Lagoon - a preliminary study*. Wader Study Group Bull. 60: 27-30.
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- Iverson, G. C., S. Warnock, R. Butler, M. A. Bishop and N. Warnock. 1996. *Spring migration of western sandpipers along the Pacific coast of North America: a telemetry study*. Condor 98: 10-21.
- Warnock, N. 1996. *Local and regional differences in habitat utilization by Dunlins (Calidris alpina) as revealed by radiotelemetry; conservation implications*. In Shorebird ecology and conservation in the Western Hemisphere. (P. Hicklin et al., Eds.). International Wader Studies 8: 35-38.
- Warnock, N. and R.E. Gill, Jr. 1996. *Dunlin (Calidris alpina)*. In The Birds of North America No. 203 (A. Poole and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington D. C.: The American Ornithologists' Union.
- Warnock, N. and L. W. Oring. 1996. *Nocturnal nest attendance of Killdeers: more than meets the eye*. Auk 113: 502-504.
- Warnock, N. and S. Warnock. 1996. *Tracking shorebirds*. Bird's-Eye View 4: 4-5.
- Butler, R. W., T. D. Williams, N. Warnock and M. A. Bishop. 1997. *Bird migration: an obligate requirement for wind-assisted flight?* Auk 114: 456-466.
- Johnson, O. W., N. Warnock, M. A. Bishop, A. J. Bennett, P. M. Johnson, and R. J. Kienholz. 1997. *Hawaii to Alaska migration by radio-tagged Pacific Golden-Plovers and their subsequent survival*. Auk 114: 521-524.
- Reed, J. M., N. Warnock and L. W. Oring (Eds.). 1997. *Conservation and management of shorebirds in the western Great Basin of North America*. International Wader Studies 9: 1-81.
- Reed, J. M., N. Warnock and L. W. Oring. 1997. *Censusing shorebirds in the western Great Basin of North America*. International Wader Studies 9: 29-36.
- Warnock, N., J. M. Reed and L. W. Oring. 1997. *Synthesis: shorebirds in the arid western Great Basin of North America*. International Wader Studies 9: 80-81.
- Warnock, N., G. W. Page and B. Sandercock. 1997. *Local survival of Dunlin Calidris alpina wintering in California*. Condor 99: 906-915.
- Warnock, N., S. Warnock and M. A. Bishop. 1997. *Marvels of migration: the northward flight of the Western Sandpiper*. Tideline 17: 1-3.
- Warnock, N. and M. A. Bishop. 1998. *Stopover ecology of migrant Western Sandpipers*. Condor 100: 456-467.
- Warnock, N. and M. A. Bishop. 1998. *Northwest passage*. Natural History Magazine 107: 50-53.
- Bishop, M. A. and N. Warnock. In press. *Migration of Western Sandpipers: links between their stopover areas and breeding grounds*. Wilson Bull.
- Warnock, N., S. M. Haig, and L. W. Oring. In press. *Monitoring species richness and abundance of shorebirds in the western Great Basin*. Condor.

### **Significant Reports**

- Evens, J.G., G.W. Page, L.E. Stenzel, and N.D. Warnock. 1986. *Distribution, density and habitat of Black Rails in Marin county marshes*. A special scientific report of the Point Reyes Bird Observatory.

- Page, G.W., H.R. Carter and N.D. Warnock. 1986. *Number of beached oiled birds*. Sec. 3 in *Impacts of 1986 San Joaquin Valley Crude oil spill on marine birds in central California*. (G.W. Page and H.R. Carter, Eds.) A special scientific report of the Point Reyes Bird Observatory.
- Warnock, N., S.E. Griffin and L.E. Stenzel. 1989. *Results of the 22-23 April 1989 shorebird census in coastal wetlands of San Diego County and northern Baja California*. Report of the Point Reyes Bird Observatory.
- Warnock, N. and D. Troy. 1992. *Distribution and Abundance of Spectacled Eiders at Prudhoe Bay, Alaska*. Report for BP Exploration, Anchorage, AK.
- Warnock, N. 1995. *Progress Report on Western Sandpiper Project: Estero de Punta Banda, Ensenada, Mexico October 1994 - February 1995*. CWS/NSERC Research Chair in Wildlife Ecology, Department of Biological Sciences, Simon Fraser University, Burnaby, Canada.
- Bishop, M.A. and N. Warnock. 1995. *Conservation of Western Sandpipers Along the Pacific Flyway: Year-end Report, June 1995*. Report for National Fish and Wildlife Foundation, Washington, DC
- Warnock, N., H. de la Cueva Salcedo and L.W. Oring. 1996. *Report on Western Sandpiper Project: Estero de Punta Banda, Ensenada, Mexico, 1994 - 1996*. CWS/NSERC Research Chair in Wildlife Ecology, Department of Biological Sciences, Simon Fraser University, Burnaby, Canada
- Warnock, N. and M.A. Bishop. 1996. *Conservation of Western Sandpipers Along the Pacific Flyway: Summary Report, 1995-1996*. National Fish and Wildlife Foundation, Washington, DC.
- Warnock, N. and M.A. Bishop. 1996. *Spring migration of Western Sandpipers at the San Francisco Bay Estuary*. Report for Don Edwards San Francisco Bay National Wildlife Refuge, Newark, CA and San Francisco Bay Estuary Project, Ecological Services, USFWS, Sacramento, CA.

### **Grants and Contracts**

- United States Department of Agriculture, Forest Service, Cordova Ranger District and Copper River Delta Institute, *Analysis and publication of Western Sandpiper migration data*: \$16,475.00 (1996).
- United States Fish and Wildlife Service, Don Edwards San Francisco Bay National Wildlife Refuge, *Data analysis and report on spring migration of Western Sandpipers passing through San Francisco Bay*: \$2,300.00 (1996).
- United States Fish and Wildlife Service, Region 1, Nongame Migratory Bird Program, *Radiotelemetry study of the spring migration of Western Sandpipers*: \$14,000 (1995), \$13,800 (1996, with M.A. Bishop).
- United States Fish and Wildlife Service, Ecological Services, San Francisco Bay Program, *Radiotelemetry study of the spring migration of Western Sandpipers*: \$6,000 (1995), \$6,270 (1996, with M.A. Bishop).
- Canadian Wildlife Service/NSERC Wildlife Ecology Research Program, *Radiotelemetry study of the spring migration of Western Sandpipers*: \$4,500 (1995), \$4,250 (1996, with M.A. Bishop).
- National Fish and Wildlife Foundation, *Radiotelemetry study of the spring migration of Western Sandpipers*: \$15,000.00 (1995, with M.A. Bishop).
- United States Fish and Wildlife Service, Region 7, Coastal Marine Bird Program, *Radiotelemetry study of the spring migration of Western Sandpipers*: \$5,000 (1995, with M.A. Bishop).
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- Chase Wildlife Foundation, *Radiotelemetry study of the spring migration of Western Sandpipers*: \$4,000 (1995, with M.A. Bishop).