

BWG

# Biometrics Working Group – Summer Newsletter

Vol. 7, No. 2 July 2002

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## **President's Message -- Issues for the Bismarck Annual Meeting**

*by Christine Ribic*

There are two issues that the Executive Board would like to discuss with the group membership this year at the Annual Meeting. They are Student Membership and BWG support of symposia/workshops not part of the TWS annual meeting.

### (1) Student Membership

This year we had a pilot Student Travel Grant program to try to increase student involvement in BWG via the TWS meeting. The membership authorized two grants and we advertised in the January Wildlifer. As of June 1 (the deadline for application), we had only one application. What should we do (if anything) to increase awareness of this program? What else should we be doing to increase student involvement? One question has to do with the fee for joining the working group. The current fee is \$5 for Regular and Student Members. TWS keeps \$1 of the fee. There was some discussion among the Board that we may want to reduce rates for students to \$3. Most members felt that \$5 was not a barrier to students joining but others would like to see this discussed again. Since BWG would like to attract students, the question is: Would a reduction in membership fees for students help in getting students to join? The second question is what else (if anything) do we need to do to attract students?

Please think about this so we can have a good discussion at the annual meeting. If you cannot come to the meeting but have strong feelings about this issue, please feel free to send your comments to any of the Board members.

### (2) BWG support of symposia/workshops not part of the TWS annual meeting

This year, BWG was approached about sponsoring a workshop on MARK and a workshop/symposium on Adaptive Management at the 3rd International Wildlife Management Congress in Christchurch, New Zealand. The requests came close enough to the application deadline so that there was not enough time to have the entire membership look at the proposals, debate them, and vote. The BWG Executive Board therefore acted in place of the membership, following precedent set by previous BWG Executive Boards. In this case, the Congress is sponsored by The Wildlife Society, no monetary support was requested, current BWG members were active in developing and will participate in the workshop and workshop/symposium, and the workshop and workshop/symposium were on topics that BWG had previously sponsored at annual TWS meetings. Therefore, the current Executive Board agreed to sponsor the two activities at the 3rd International Congress.

Some Board members were uncomfortable with this and would like to have a policy developed to give better guidance about what the BWG Board should do in these situations. The discussion revolved around (1) what is the benefit to BWG to sponsor workshops/symposia not part of the annual TWS conference, (2) what is the downside, and (3) what is the difference between endorsement and sponsorship. See the accompanying article for the two sides to this issue and come prepared to discuss this at the annual meeting in Bismarck.

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## **Sponsorship of Activities by BWG**

*by David Otis and Steve Sheriff*

What role should the Biometrics Working Group(BWG) play in sponsoring and/or endorsing workshops, symposia, and conferences in addition to those supported at the annual TWS Conference? This question has been a topic of discussion among Executive Board members this year, and one that we believe deserves the consideration of the entire membership.

The BWG charter states that the goal of BWG is to facilitate communication and the exchange of information among our members on the development and application of quantitative methods appropriate for use in the research and management of wildlife resources. To accomplish this goal, we clearly should promote forums that encourage and facilitate learning and discussion of quantitative methods useful in natural resources management. To this end, our main focus has been on sponsorship of workshops, symposia, and poster sessions at the annual TWS Conference. The general procedure is to solicit proposals during the year and to discuss and finalize them at the annual meeting.

However, when we receive an ad hoc request for sponsorship or endorsement of a symposium, workshop, or conference outside of our normal annual TWS meeting cycle and at a time when the membership cannot discuss the issue, what should our policy be? Is there a difference between sponsorship and endorsement?

The liberal view is to consider BWG sponsorship for activities beyond the annual TWS Conference and outside the normal process. Providing the BWG name to "sound" events promotes BWG as being an active organization beyond the confines of a single setting. If these events are international, it provides opportunities for our international members to participate and actively promote BWG and our cause. In cases where organizers are willing to allow BWG to hang our billboard without funding, BWG gains in familiarity among the natural resource professionals. Through this low-cost marketing, BWG gains in membership and recognition.

A more conservative view is to avoid endorsement of non-BWG solicited events and consider sponsorship of BWG events once annually at the TWS meeting. This policy would allow the membership or the Board to discuss, debate, and vote on the proposal and help guide its development and organization. This policy would help ensure the quality and appropriateness of the event within the context of BWG's goals and objectives.

Given these differing views, where should BWG be? What procedures should be followed in providing BWG's name as a sponsor or endorsement of an event? Should BWG only provide its name to activities in which BWG members are active organizers? What activities would be appropriate to receive BWG sponsorship and/or endorsement?

Please think about these questions and come to our annual BWG meeting in Bismarck, North Dakota. Your thoughts on this topic are important in helping guide BWG as we strive to accomplish our goals.

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## How to Sign Up for the BWG Listserve

Yes, the address has changed!

Go to <http://rana.er.usgs.gov>

Then select "Monitoring Program Lists", "stat\_tws", "join stat\_tws"

Alternatively one can go directly to

[http://rana.er.usgs.gov/scripts/lyris.pl?enter=stat\\_tws&text\\_mode=&lang=english](http://rana.er.usgs.gov/scripts/lyris.pl?enter=stat_tws&text_mode=&lang=english)

and select "join stat\_tws"

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## Student Travel Grant Award Committee Report

*by William R. Gould, Christine Ribic and Glen Sargeant*

**Justin K. Vreeland** is the first recipient of the BWG student travel grant award. Justin is currently a graduate research assistant in the Wildlife and Fisheries Science program at The Pennsylvania State University. Justin has been a member of TWS since 1992 and a member of the Biometrics Working Group since approximately 1994. Currently, Justin is investigating white-tailed deer fawn survival, cause-specific mortality, and how landscape characteristics influence fawn survival with his advisor, Dr. Duane R. Diefenbach. Justin has a keen interest in the application of statistics to wildlife management as demonstrated by several courses he has taken directly related to statistics, modeling, population estimation, and analyses of ecological data. Justin has worked for the Vermont Department of Fish and Wildlife and the University of California Cooperative Extension in various capacities including analyzing deer harvest data and examining wildlife-habitat relationships. Justin will be presenting two papers during the TWS meeting in Bismarck. The first talk is titled, 'White-tailed deer fawn survival in northcentral Pennsylvania'. The second talk is titled 'Vegetative Characteristics of Oak Woodland-Grassland Edges in Central-Coastal California'.

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## **CONFERENCE AND WORKSHOP ON RESOURCE SELECTION BY ANIMALS**

THE DEPARTMENTS OF STATISTICS, ZOOLOGY and PHYSIOLOGY,  
UNIVERSITY OF WYOMING,  
and  
WESTERN ECOSYSTEMS TECHNOLOGY (WEST, INC.)  
wish to announce the

### **FIRST INTERNATIONAL CONFERENCE ON RESOURCE SELECTION BY ANIMALS**

13-15 January 2003

and

PRE-CONFERENCE WORKSHOP ON RESOURCE SELECTION FUNCTIONS,  
11-12 January 2003.

The purpose of this conference is to bring together wildlife and fisheries scientists, biologists, ecologists, conservationists and statisticians in order to discuss common issues on all aspects of the design, analysis and implementation of studies of resource selection by animals.

#### **INVITED/FEATURED SPEAKERS**

- MARK S. BOYCE, Alberta Conservation Association Chair of  
Fisheries and Wildlife, Department of Biological Sciences,  
University of Alberta, Edmonton, Canada
- WALLACE ERICKSON, WEST, Inc., Cheyenne, Wyoming, USA
- WAYNE HUBERT, Wyoming Cooperative Fish and Wildlife Research  
Unit and Department of Zoology and Physiology, University of  
Wyoming, Laramie, Wyoming, USA
- JOSHUA J. MILLSPAUGH, The School of Natural Resources,  
Department of Fisheries and Wildlife Sciences, University of  
Missouri, Columbia, Missouri.

#### **SUBMISSION OF PAPERS**

Abstracts may be submitted until November 15, 2002. Proceedings of the conference will be peer reviewed and published either electronically or as a book.

#### **PRE-CONFERENCE WORKSHOP**

WEST, Inc. will conduct a 2-day workshop on Resource Selection Functions prior to the conference (Saturday and Sunday, 11-12 January 2002). The workshop will be based on the

Second Edition of Resource Selection by Animals: Statistical Design and Analysis of Field Studies.

## REGISTRATION

The conference registration fee is \$300 USD, with a student fee of \$150. The workshop registration fee is \$300 (\$150 for students). The combined fee is \$550 (\$275 for students). A 20% late conference registration fee will be imposed after 15 November 2002. Coffee breaks and lunches are included. <http://west-inc.com/>

## FOR MORE INFORMATION, CONTACT

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Cheyenne, Wyoming 82072  
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Fax 307-637-6981  
[Mailto:admin@west-inc.com](mailto:admin@west-inc.com)

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## BWG Election Information

### Candidates and Biographies

#### CHAIR ELECT:

**Grey W. Pendleton**, Alaska Department of Fish and Game

**Grey Pendleton** is a biometrician with the Alaska Department of Fish and Game (since 1996). Previously he worked for 10 years as a biological statistician at the Patuxent Wildlife Research Center. Current work is divided between pinniped research (population dynamics, survey methods, and habitat use by Steller sea lions, harbor seals, and ringed seals) and ecology of temperate rainforest wildlife (brown bears, goshawks, American martens, and blacktail deer). Grey has M.S. degrees from South Dakota State University (wildlife) and the University of Wyoming (statistics). He has served 2 terms on the BWG board and 1 term as secretary.

**William L. Thompson**, USGS Arkansas Cooperative Fish and Wildlife Research Unit

**Bill Thompson** is Assistant Unit Leader (Wildlife) of the USGS Arkansas Cooperative Fish and Wildlife Research Unit, University of Arkansas, Fayetteville. He has degrees in wildlife and fisheries biology (B.S., University of Vermont), fish and wildlife sciences (M.S., Pennsylvania State University), and biological sciences (Ph.D., Montana State University; statistics minor). Bill previously worked as an environmental research consultant in Bozeman, Montana, as a postdoctoral research fellow at Colorado State University, Fort Collins, and as a research biologist for the U.S. Forest Service, Boise, Idaho, before moving to the Unit program in December 2000. His interests include sampling and monitoring fish and wildlife populations, evaluating wildlife-habitat relationships, and applying the information-theoretic approach to modeling ecological data. He co-chaired (with Dr. Chris Ribic) a BWG-sponsored symposium on evaluating the usefulness of null hypothesis testing in wildlife science at the 5th Annual Conference of TWS in Buffalo during 1998, and will be chairing a BWG-sponsored symposium on sampling rare or elusive species at the 9th Annual Conference of TWS in Bismarck this fall

SECRETARY:

**David L. Otis**, USGS Iowa Cooperative Fish and Wildlife Research Unit

**Dave Otis** has been the Unit Leader of the USGS/BRD Iowa Cooperative Fish and Wildlife Research Unit since 2001, after serving as the Unit Leader for the South Carolina Cooperative Fish and Wildlife Research Unit at Clemson University from 1991-2001. From 1977-1990, Dave was a biometrician and research administrator at the Denver Wildlife Research Center. He received his graduate education in statistics at Colorado State University, and was a post-doctoral research associate at Utah State University. His current research interests include design and analysis of habitat selection studies, population analysis of mourning dove populations, and estimation of herptofaunal population parameters in restored wetlands. David served as Secretary for the BWG in 2000-2001 and 2001-2002.

**Justin K. Vreeland**, Pennsylvania State University

**Justin Vreeland** currently is a M.S. candidate in Wildlife and Fisheries Science at The Pennsylvania State University. He is housed at the Pennsylvania Cooperative Fish and Wildlife Research Unit in the USGS, BRD. Originally from Vermont, Justin received two B.S. degrees (wildlife management, forestry) from the University of Maine at Orono (1994) and will receive his M.S. in 2002. While at Maine, Justin served as secretary and president of the student chapter of The Wildlife Society and also completed an honors thesis investigating response of summer foods of white-tailed deer to herbicide application. Since receiving his undergraduate degrees, Justin has worked on projects from Vermont to California, including deer harvest management; habitat relationships and response to prescribed fire by small mammals, songbirds, and herptofauna of California oak woodlands; and developing an index to woodrat abundance. Justin's master's project involves estimating survival rates of white-tailed deer fawns and assessing how landscape characteristics influence fawn survival. Justin also is involved with work on black bear denning ecology in Pennsylvania and developing a statistically appropriate vegetation monitoring program for Shenandoah National Park. "I first became interested in statistical ecology in a sophomore biostatistics class at UMaine. I have maintained my interest in statistics since, which is one reason I became a member of BWG while an undergraduate. The BWG has been fortunate to be the recipient of so much attention given recent concerns about hypothesis testing and shifting focus to information-theoretic approaches. BWG has responded enthusiastically and intelligently and I think BWG can and should continue to provide leadership and guidance to TWS in these and other statistical matters through publications, symposia, and workshops."

TREASURER:

**Gary C. White**, Colorado State University

**Gary White** is currently a Professor in the Department of Fishery and Wildlife Biology at Colorado State University (since 1984) where he receives half-time support from the Colorado Division of Wildlife. He graduated with a BS (1970) from the Department of Fisheries and Wildlife at Iowa State University, an MS (1972) in Wildlife Biology from the University of Maine at Orono, and a Ph.D. (1976) in Zoology from the Ohio State University. He spent 1976-77 as a post-doctoral researcher with the Utah Cooperative Wildlife Research Unit at Utah State University. From 1977-84, he was a scientist in the Environmental Science Group at Los Alamos National Laboratory. Gary's research on ungulate population dynamics while at Los Alamos National Laboratory, and later the Colorado Division of Wildlife, has focused on some of the most fundamental concepts in wildlife population dynamics, such as density-dependent and compensatory responses. Experimental field research for 17 years in northwestern Colorado has demonstrated cause-and-effect relationships between mule deer density and winter fawn survival.

From 1993 to present, he has served on the Mexican Spotted Owl Recovery Team, and is currently designing a monitoring scheme for this species. His research and teaching have benefited from collaboration with others to contribute to the techniques of statistical modeling, population estimation, and survival analysis for wildlife research and management. Dr. White has co-authored some 100 refereed scientific papers, 2 books, and 40 technical papers. He also is the architect of the software programs CAPTURE, SURVIV, RELEASE, NOREMARK and MARK. Gary is active in COTWS, CMPS, and is currently an Associate Editor for WSB. He received The Wildlife Society's 51st Aldo Leopold Memorial Award and Metal in 2000.

**Julie L. Yee, USGS Western Ecological Research Center**

**Julie Yee** is currently with the Western Ecological Research Center of the US Geological Survey. Julie helps to design surveys, program and perform analyses of data, and write and review manuscripts. Her training includes a Ph.D. in statistics with emphasis in biostatistics from the University of California at Davis, 1997; a M.S. in statistics also from UC Davis, 1993; and a B.S. in mathematics from the California Institute of Technology, 1991. She was the recipient of the 1995 UC Davis Graduate Student Excellence in Teaching award. Her lifelong interest in mathematics is matched by interests in statistical modeling of wildlife behavior and in ensuring statistical tools are accessible and understandable to all researchers. She is a member of the American Statistical Association and The Wildlife Society. Julie served as a BWG Board Member in 2000-01 and BWG Treasurer in 2001-02.

**BOARD MEMBERS:**

**William R. Clark, Iowa State University**

**Bill Clark** is a Professor of Animal Ecology at Iowa State University where he has been for over 20 years. He received a B.S. in Environmental Science from Rutgers University, an M.S. in Wildlife Ecology from Utah State University, and a Ph.D. in Ecology from Utah State University. His research expertise is in population and landscape ecology, population modeling, and wetland ecology. His graduate students have worked on models of snow geese, pintails, and most recently individual-based models of pheasants. Other students have contributed to the statistical literature on survival analyses and mark-recapture of closed populations. He is currently directing field studies of the landscape ecology and predatory effects of raccoon, skunk, and red fox on ground nesting birds. Work on muskrats in experimental wetlands at Delta Manitoba was recognized with TWS award for Outstanding Edited Book. Besides TWS, he is active in the American Society of Mammalogists, Ecological Society of America, and the Iowa Academy of Science, and he is former Chair of the Ecology and Evolutionary Biology Graduate Program at ISU. He was elected to the BWG Board last year and is currently serving as Nominations Chair. "At least I didn't have too much trouble talking myself into running for reelection."

**Gail S. Olson, Oregon Cooperative Fish and Wildlife Research Unit**

**Gail Olson** is a Research Assistant Professor with the Department of Fisheries and Wildlife at Oregon State University, Corvallis. She received a Ph.D. in Wildlife Biology from Colorado State University, an M.S. in Ecology (Statistics minor) from North Carolina State University, and a B.S. in Zoology from the University of Rhode Island. She worked as a biometrician for the Missouri Department of Conservation for over 7 years, and is currently responsible for estimation and modeling of population parameters for northern spotted owls in Oregon. Her research interests include spatial aspects of population dynamics (such as dispersal and spatial heterogeneity), abundance estimation, and meta-analysis. She is a charter member of the Biometrics Working Group and proud to be part of such a dynamic and successful group. As a

current Board Member of the BWG, she feels she's learned a lot and would like to continue to apply that experience over the next year to the benefit of BWG members.

**Eric A. Rexstad**, University of Alaska

**Eric Rexstad** is an Associate Professor of quantitative wildlife biology in the Department of Biology and Wildlife/Institute of Arctic Biology, at the University of Alaska Fairbanks. He has formerly served as software editor of the Wildlife Society Bulletin, and associate editor of The Journal of Wildlife Management. He has also served on the Alaska Chapter executive board, and has been faculty advisor to the student chapter of The Wildlife Society for 9 years. His current research interests are in abundance and survival estimation of small mammals, as well as the development of long-term monitoring designs for natural areas.

**Lyman L. McDonald**, Western EcoSystems Technology, Inc.

**Lyman McDonald** is President and a Senior Biometrician with Western EcoSystems Technology, Inc., a statistical and environmental consulting company headquartered in Cheyenne, Wyoming. Lyman has over thirty years of experience in the application of statistical methods to design, conduct, and analyze field and laboratory studies. His specialties include sampling of biological communities, calibration of biased sampling procedures, linear models, and multivariate analysis. His experience has led to appointments on regional and national technical advisory and review committees, including the Independent Scientific Advisory Board (ISAB) to the Northwest Power Planning Council (NPPC) and the National Marine Fisheries Service (NMFS) and the Statistical Design and Analysis Team for the U.S. Environmental Protection Agency Environmental Monitoring and Assessment Program (EMAP). As a member of the ISAB for four years, Dr. McDonald has been a contributor to over 30 technical reports to the NPPC and NMFS on fisheries and habitat issues in the Columbia River Basin. Dr. McDonald is the author of more than 75 papers in the scientific literature and is joint author on the book entitled Resource Selection by Animals: Statistical Design and Analysis for Field Studies. He is a Fellow of the American Statistical Association.

**Wayne E. Thogmartin**, USGS, Upper Midwest Environmental Sciences Center

**Wayne Thogmartin** is a Statistician (Biology) with the USGS/BRD Upper Midwest Environmental Sciences Center in Onalaska, WI. He received a B.A. in Ecology/Behavior/Evolution from the University of California, San Diego, an M.S. in Zoology from the University of Arkansas' Cooperative Fish and Wildlife Research Unit, and a Ph.D. in Zoology from Southern Illinois University's Cooperative Wildlife Research Laboratory. He is a certified Associate Wildlife Biologist (TWS) and Ecologist (ESA). Wayne is currently modeling the relative abundance of avian species-of-concern in the Upper Midwest; his statistical interests are in the application of spatial statistics and the integration of geographic information systems and statistical analyses. Wayne would like to contribute his time and energy to continuing the work of the BWG in educating and advising the wildlife profession on biometrics applications.

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## **Book Review: “New Methods of Geostatistical Analysis and Graphical Presentation: Distributions of Populations over Territories”**

*by David Mann*

“Populations”, “territories”, and “distributions” -- you would think a book with terms like these in the subtitle would be of high interest to wildlife managers. That is what caught my eye when I first saw New Methods of Geostatistical Analysis and Graphical Presentation: Distributions of Populations over Territories by Roberto Bachi. “New methods”, “geostatistical analysis”, “graphical presentation”, not words that usually inspire wildlife managers; maybe quantitative-type wildlife managers, but not normal run-of-the-mill wildlife managers. I don’t consider myself a quantitative-type wildlife manager, but I couldn’t resist. I jumped in. I began to read.

Bachi makes a clear distinction between his “new methods” of geostatistical analysis and what he calls the geological geostatistical analysis of Matheron. Bachi’s work comes from the geographical perspective with roots in centrography. I quickly learned that if I were looking for ways to estimate wildlife populations this was not the book. On the other hand, if I wanted to compare a population distribution over a territory with a uniform distribution; or with another population distribution over the same territory this book was full of ways to make those comparisons.

The book is divided into five parts comprising 17 chapters and 10 appendices. Part I, “Basic Concepts”, is a gentle introduction to Bachi’s new methods using a number of examples. Like a number of books from European authors there are concepts with their own vocabulary, such as “geoset”; and there are different definitions for common words, such as “habitat” and “surplus”. Part II, “Graphical Presentation of Geographical---Statistical Data” might be the strongest section of the book. Part II is a condensed version of Bachi’s 1968 book on the same subject. He has developed the symbolic presentation of statistical data into an art form. In Part III Bachi returns to the geostatistical analysis with five chapters on “Parameters Measuring Characteristics of Primary and Derived Geosets”. Part III and Part IV, “Parameters of Position of Geosets: Coincidence, Congruence, and Similarity” are the most difficult mathematically, and I had to work to understand. Part V, is the epilogue. It is only one chapter long and not a bad place to start reading, because the author gives a good short overview of the previous 412 pages. The epilogue and Part I should give wildlife managers enough background to determine if more study is worth their time.

My major frustration with the book was the unavailability of software to help learn the new methods. The last part of chapter 17 talks about who developed and how the software package was developed, and Appendix J introduces a PC version of the software called GeoStat. But, I have been unsuccessful in finding this particular GeoStat. I didn’t understand how many people have called their software GeoStat. These new geostatistical methods still hold my interest, and some day I hope to continue my study backed with the software.

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## **BWG Contact Information**

### **OFFICERS**

Chair Christine Ribic, Wisconsin Cooperative Wildlife Research Unit,  
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Past-Chair John Sauer, USGS Patuxent Wildlife Research Center,  
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Secretary David Otis, Iowa Cooperative Fish and Wildlife Unit,  
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Treasurer Julie Yee, USGS Western Ecological Research Center,  
**julie\_yee@usgs.gov**

### **BOARD MEMBERS**

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William Gould (membership committee chair)  
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Steve Sheriff (advisory committee chair)  
**sheris@mail.conservation.state.mo.us**

Gail Olson (technical sessions committee chair)  
**gail.olson@orst.edu**

### **WEB CONTACT**

Douglas Johnson **Douglas\_H\_Johnson@usgs.gov**

### **BWG Web Page:**

<http://www.npwrc.usgs.gov/bwg>