



*Newsletter of the Biometrics
Working Group, The Wildlife Society
Edited by Bill Gould
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Message from the Chair

Doug Johnson

When I moved from Jamestown, North Dakota, my friends at Northern Prairie gave me a shirt that said “Cynical Thinker.” I was pleased that they thought me a thinker, but I certainly am not cynical (he says). But I can be skeptical. I have to admit that I was skeptical a decade ago when a small group of folks in TWS suggested establishing a working group on biometrics. Why was such a group needed? There were so few statisticians in the wildlife field that I figured we could meet in a phone booth. (OK—I realize that the youthful among us have no idea what a phone booth is, so for them, think of meeting in a Mini Cooper.)

Nonetheless I signed a petition to establish the Biometrics Working Group. The BWG is now celebrating its 10th birthday—and how it has grown! It has lots of members, and we have been successful in drawing officers and board members from throughout the group; unlike many groups, we have not had to rely on a small cadre of perennial officers who rotate among the offices. More importantly, at each annual meeting the BWG sponsors workshops and symposia directed toward “typical” wildlifers. Those TWS members hear and read about lots of statistical topics, so they come to our sessions to get a better understanding of these new tools and ways

of thinking. BWG thus serves as a critical bridge between the disparate fields of statistics and wildlife biology. And I am pleased to admit that my skepticism was unwarranted.

To celebrate our 10th birthday, the BWG has developed a symposium, Biometrics in Wildlife, as part of the program for the annual TWS meeting in Tucson. The symposium will feature overview presentations on certain key advances in quantitative methods useful to wildlifers. We expect it to be a popular and practical session, as have been so many BWG workshops and symposia in the past.

Now, on another topic, many of you have been clamoring for the latest news about Brett Favre. (OK—“many” in this case is one. And he might have been kidding...) Anyway, Brett will be returning this season
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[Due to lack of space, the newsletter editor has moved the rest of this column to an appendix, which will be available online, uh, sometime. Maybe.]

It's Election Time Again!

Starting September 1, online voting will be available via QuestionPro.com, an online balloting website. Balloting will be open until September 21, at which point all votes will be tallied for announcement at the annual meeting in Tucson. Further instructions will be sent via email prior to elections. Please join us in thanking this year's candidates for agreeing to be nominated! Short biography sketches for each candidate are provided below.

Many thanks to Paul Conn for setting up the electronic voting for BWG officers this year!

Chair-Elect:

Terry Shaffer has been a statistician with the U.S. Geological Survey, Northern Prairie Wildlife Research Center in Jamestown, North Dakota, since 1983. He holds an undergraduate degree in mathematics and computer science from Moorhead State University and a master's degree in statistics from North Dakota State University. His many interests include various statistical applications in wildlife ecology, sampling design, experimental design, modeling, and statistical consulting. His current research includes developing and improving methods for nest survival modeling, evaluating monitoring procedures for numbers and productivity of endangered least terns and piping plovers on the Missouri River, modeling impacts of the Conservation Reserve Program on productivity of upland-nesting ducks, evaluating roadside bias in surveys of secretive marsh birds, and exploring the use of adaptive management principles to address invasive plant issues on lands managed by the U.S. Fish and Wildlife Service. He is an active member of BWG, participating in numerous BWG-sponsored workshops and symposia. He was co-

organizer of a symposium on observational studies held during the Madison meeting. That symposium led to a special section on observational studies that will be published in *The Journal of Wildlife Management* in 2008. Terry served as BWG Chair in 2005.

Julie Yee is a statistician with the Western Ecological Research Center of the US Geological Survey. Julie provides various forms of statistical support for the biologists in her center, including study design, data analysis, manuscript review, and collaboration. Her academic training includes a Ph.D. in statistics with emphasis in biostatistics from the University of California at Davis (1997); M.S. in statistics from UC Davis (1993); and B.S. in mathematics from the California Institute of Technology (1991). She was a recipient of the UC Davis Graduate Student Excellence in Teaching award in 1995. Her statistical interests are wide-ranging, reflecting the breadth of problems and challenges encountered by ecologists. Being technically meticulous, she is motivated to making statistical tools efficient, informative, and accessible for biological researchers. Julie has served in the BWG as a Board Member (2001) and Treasurer (2002 & 2003), and in the Sacramento Statistical Association, a chapter of the American Statistical Association, as Secretary (2002), Vice-President (2003), and President (2004)

Secretary:

Larissa Bailey is currently a Research Wildlife Biologist with the USGS Patuxent Wildlife Research Center in Laurel, MD. Her primary responsibility is serving as the Northeast Coordinator of the USGS Northeast Amphibian Research and Monitoring Initiative (ARMI). Her research focuses mainly on developing and applying quantitative methods to address scientific and management questions about amphibian systems and their dynamics. She holds a B.S. in Biology and B.A. in History (Mesa State College, CO 1993, 1994), Masters in Biomathematics (North Carolina State University, 1997), and Ph.D. in Zoology (North Carolina State University, 2002).

Gail Olson is currently a Research Scientist with the Washington Department of Fish and Wildlife, where she recently started a new position as a Prairie Ecologist for the Wildlife Program's Science Division. Her affiliation with the Biometrics Working Group dates to its inception, and she served the group previously as a Board Member-at-Large. She is a co-organizer of the Symposium on Biometrics in Wildlife: Past, Present, and Future to be held at the 2007 TWS meeting in Tucson. She has a B.S. degree in Zoology from the University of Rhode Island, an M.S. in Ecology from North Carolina State University, and a PhD in Wildlife Biology from Colorado State University. She served as a biometrician with the Missouri Department of Conservation for 7 years and was a research assistant professor with Oregon State University for 7 years. Her research interests include population dynamics and parameter estimation and modeling, especially for mammals, but she also has extensive experience with analyses for the northern spotted owl.

Treasurer:

Sarah Converse is currently a Post-doctoral researcher with the Colorado Cooperative Fish and Wildlife Research Unit, stationed at Patuxent Wildlife Research Center, in Laurel, Maryland. Beginning in July 2007, Sarah will start a new position as a researcher in the Endangered Species Program at USGS – Patuxent Wildlife Research Center, with a research program focused on whooping cranes and other endangered and threatened species. Sarah has a B.S. in Fisheries and Wildlife from Michigan State University (1996), an M.S. in Natural Resource Sciences from the University of Nebraska (1999), and a Ph.D. in Fishery and Wildlife Biology from Colorado State University (2005). Sarah's research interests are in applied population ecology and conservation, with particular interests in demographic estimation, modeling, and decision theory. She is currently working on several research projects, including modeling various scenarios for management of Florida manatee winter habitat, and designing long-term studies of albatross populations. Sarah has been a member of the Biometrics Working Group since 2004 and a member of The Wildlife Society since 1999.

Clint Moore is a research statistician with the USGS Patuxent Wildlife Research Center stationed at the University of Georgia, where he holds an adjunct faculty appointment. After receiving degrees in wildlife biology (B.S. Forest Resources, Univ. Ga.) and statistics (M.Stat., N.C. State Univ.), he worked for the Florida Fish and Wildlife Conservation Commission, National Biological Service, and U.S. Fish and Wildlife Service before returning to the University of Georgia to earn his doctoral degree in wildlife biology. His primary areas of research interest are population and

habitat modeling, statistical modeling, decision analysis, and their integration under adaptive resource management. Clint is the current treasurer (2005-2007) of the Working Group. He also served on the steering committee (1995-1996) that established the BWG, acting as the working group's interim treasurer.

Board Members (4 Positions):

Chris Fannesbeck is an Associate Research Scientist with the Fish & Wildlife Research Institute (FWC) in St. Petersburg, FL and an Adjunct Assistant Professor at the University of Georgia. Chris' research focuses primarily on the conservation ecology of the Florida manatee and North Atlantic right whale, and on the development of software for Bayesian estimation and modeling. Other research interests include adaptive resource management, avian ecology and statistical inference.

Brett T. McClintock is pursuing a Ph.D. in Fish, Wildlife, and Conservation Biology and a M.S. in Statistics at Colorado State University. His primary interests lie in quantitative ecology focusing on terrestrial vertebrate population and community dynamics. He is also interested in evaluating current and developing new statistical methods for the estimation of demographic parameters in less expensive and less invasive mark-resight studies. The focus of his current research is the development of a generalized mark-resight estimator robust to a variety of sampling conditions often problematic in these studies, including sighting heterogeneity and sampling with replacement. In the field, he has applied these methods to bighorn sheep, black-tailed prairie dog, and burrowing owl in Colorado. Brett is a member of TWS and the International Biometric Society, and he

is eager to become more involved with BWG. For more information on Brett and his research, please visit <http://holly.colostate.edu/~btm119>.

Krishna Pacifici: I grew up in Blacksburg, VA and was fortunate enough to spend most of my time outdoors in the Blue Ridge Mountains. I received a B.S. in Wildlife Biology from North Carolina State University and gained valuable field experience working on several projects ranging from amphibians to mammals. I completed a M.S. in Zoology from North Carolina State University working with Drs. Ken Pollock and Ted Simons investigating factors affecting detection probability and quantifying sources of variation on aural avian point count surveys. I am currently pursuing a Ph.D. at the University of Georgia working on sampling rare species with Drs. Mike Conroy and Bob Cooper. My interests relate to sampling issues in wildlife ecology, statistical modeling of biological populations, and parameter estimation. I see the appropriate use of quantitative methods as an important component of maintaining a high level of rigor in natural resource management and science. I have been very fortunate to work with excellent researchers that have provided great opportunities, helpful advice, and a foundation of appreciation for the finer points of quantitative wildlife biology. I feel I can make valuable contributions to the Biometrics Working Group by bringing my unwavering enthusiasm and interest in the application of quantitative methods to help the BWG meet the goals and objectives outlined in the Charter.

Larkin Powell is an Associate Professor in the School of Natural Resources at the University of Nebraska, Lincoln. He teaches courses in the Wildlife Ecology and Management, Wildlife Management

Techniques, GIS, and Parameter Estimation. Larkin is a population ecologist; most of his research has been with waterfowl, upland gamebirds, and songbirds, but he also marks and attempts to recapture turtles and iguanas. His research interests include estimating demographic parameters to monitor population viability, assessing the effects of landscape on dispersal in wildlife populations, and using stable isotopes to answer source/sink questions for songbirds. Larkin received his MS at Iowa State under the direction of Bill Clark and his PhD at University of Georgia with Michael Conroy.

Nathan Zimpfer: I hold a B.Sc in environmental and forest biology from State University of New York College of Environmental Science and Forestry at Syracuse. I also have a M.Sc. in Forest Resources from the University of Georgia. My thesis focused on population ecology of American black ducks. This research was a part of a larger effort to develop an adaptive harvest management strategy for the management of these populations. After graduating I was previously with the New Jersey Division of Fish and Wildlife for 5 years, as a senior wildlife biologist for the waterfowl ecology and management program. I am currently employed as a population ecologist with the US Fish and Wildlife Service, Division of Migratory Bird Management at Patuxent Wildlife Research Center. Past research has mainly focused on population modeling. Current research is focused on understanding and using Bayesian statistics, application of spatial modeling in a Bayesian framework, and optimal decision making. National TWS member since 1997, BWG member since 2000 or 2001, Well it was somewhere around there anyway. I am also a member of the Ecological society of America. I believe that the BWG should continue to increase the awareness of the wildlife

community of new methodologies for data analysis, and better or more appropriate uses of existing methods for data analysis.

Election & Nominations Committee:
Paul Conn (Chair), Steve Dinsmore, Bill Kendall

Call for 2008 Workshop/Symposium Proposals

Do you have an idea for a biometrics session for the 2008 TWS conference in Miami, FL? Current options include workshops, symposia, round tables, panel discussions, and special poster sessions. Please consider submitting a 1-2 page proposal describing your idea. The proposal should include a brief introduction discussing the importance of the topic, a short description of the session, and (for symposia and panel discussions) a list of potential speakers and/or topics. Please email your proposals to Jon Runge (Jon.Runge@state.co.us) by September 15 so that we can distribute them to BWG members prior to the business meeting in Tucson the third week of September. Also, feel free to contact Jon if you have any questions or would like assistance developing an idea.

Annual TWS Conference

The 14th Annual Conference of the Wildlife Society will be held in Tucson, Arizona, during 22-26 September 2007. Conference program highlights, including workshops and a symposium sponsored by BWG (see below), can be viewed at <http://www.wildlife.org/conference/index.cfm>

Tucson Workshops

A workshop entitled 'Estimation of population change from count data' will be given by BWG members John Sauer, Bill Link and Andy Royle on Saturday, September 22 from 8-5pm in the Apache TCC. The workshop is being sponsored by the BWG. In this workshop, they will describe current methods used to analyze data from count-based surveys such as the BBS and CBC. Estimation of change in abundance using hierarchical log-linear models fit using Markov-chain Monte Carlo (MCMC) methods will be a focus of the workshop.

'Introduction to Modern Methods for Analyzing Capture-Recapture Data' is being offered by BWG members Trent McDonald and Bryan Manly on Saturday, September 22, from 8-4:30pm in Gila TCC. The full day workshop will be based on a subset of material in the *Handbook of Capture-Recapture Analysis* (2006, Princeton University Press). The morning session of this 1-day workshop will be devoted to modeling of data from closed populations, while the afternoon will be devoted to modeling of data from open populations.

Tucson Biometrics Working Group Symposium

Steve Sheriff

The 'Biometrics in Wildlife: Past, Present and Future' symposium sponsored by the Biometrics Working Group will be presented on September 26 in the AM during the TWS Conference in Tucson, Arizona. This symposium (Session 44) will look at the major analytical applications in wildlife science and management. Speakers are arranged to provide overviews of the selected topics followed by an application

paper on the subject. The speakers and titles of the presentations are:

Chris Bunck - Advances in biometrical methods over the last decade and their consequences

Jim Nichols - Selection and Estimation of State Variables in Wildlife Biology

Larissa Bailey – Application of Population Abundance and Occupancy Estimation to Amphibian Systems

Gary White – Past, Present, and Future: Survival Rate Estimation

Jay Rotella - Mark-recapture Analyses of Possible Sources of Variation in Survival Rates of Weddell Seals: Influences of Age, Reproductive Decisions, Environment, and Individual Quality

Doug Johnson and Terry Shaffer - Estimating Nest Success: the Old and the New

Lyman McDonald – The Past, Present, and Future of Resource Selection Functions

Evelyn Merrill – Interpretation of Probability in the Resource Selection Probability Function

Abstracts for these presentations can be found online by searching through the *Program in Detail* portion of the TWS Conference web-site at:

<http://www.wildlife.org/conference/tucson07/index.cfm>.

I would like to thank the speakers and their co-authors as well as my co-organizers, Gail Olson and Chris Ribic, for what should prove to be an outstanding symposium on the Biometrics Working Group's 10th Anniversary as a chartered organization.

Future Meetings of Interest

The International Statistical Ecology Conference will take place at St. Andrews, Scotland, on July 9-11, 2008, immediately preceding the International Biometrics Conference in Dublin, Ireland.

The International Environmetrics Society (TIES) will be meeting in Kelowna, British Columbia, June 8-13, 2008. Technical sessions (among other topics) include: Assessing status and trends, Network design and efficient data collection, Space-time modeling, Monitoring, modeling, and managing environmental systems. For more information, go to <http://web.ubc.ca/okanagan/msp/TIES2008>

BWG Student Travel Grant Results

Ryan Nielson, Glen Sargeant, and Jon Runge

Jacob Ivan, Chadwick Rittenhouse, Jamie Sanderlin, David Miller, and Krishna Pacifici were selected as recipients of BWG travel grants for 2007. Each will receive a check to help defray costs of attending the 14th Annual Conference of The Wildlife Society, in Tucson, Arizona.

Jacob Ivan has a M.S. in Wildlife Biology. After working as a professional wildlife biologist for the Nature Conservancy and U.S. Fish and Wildlife Service, Jacob has returned to school and is pursuing a Ph.D. in Wildlife Biology and Colorado State University under the direction of Gary White. Jacob will present a paper titled "Using telemetry to correct for bias: a new approach to estimating density from trapping grids". Gary White and Tanya Shenk are coauthors.

Chadwick Rittenhouse has a M.S. from the University of Missouri-Columbia, and is currently pursuing a Ph.D. there under the direction of Joshua Millspaugh and Frank Thompson. Chad's work involves box turtles, and he has published three papers directly related to his work. Chad will present a paper titled "Resource selection by translocated three-toed box turtles in Missouri". Joshua Millspaugh, Michael Hubbard, Steven Sheriff, and William Dijak are coauthors.

Jamie Sanderlin is currently pursuing a Ph.D. in Wildlife Ecology and Management, and a M.S. in Statistics from the University of Georgia, under the direction of Mike Conroy. Jamie's dissertation focuses on the central Georgia black bear population, and she will present a paper titled "Optimal genetic misidentification error estimation for mark-recapture abundance models". Michael Conroy is a coauthor.

David Miller has a M.S. in Wildlife Biology from Auburn University, and is currently working towards a Ph.D. in Ecology and Evolutionary Biology at Iowa State University. David will present results from his work on mourning dove recruitment in a presentation titled "Towards range-wide estimates of mourning dove recruitment: initial results from a national harvest wing collection pilot program". David Otis is a coauthor.

Krishna Pacifici recently completed his M.S. thesis at North Carolina State University. Krishna plans to continue with his education this fall as a Ph.D. student under the direction of Mike Conroy at the University of Georgia. Krishna will present a paper titled "Effects of vegetation and background noise on the detection process in auditory avian point count surveys". Theodore Simons and Ken Pollock are coauthors.

Treasurer's Report

Clint Moore

The account balance this period reflects 136 paid memberships for 2007 received through the second quarter of 2007. Our expenses for this period were for the services of a web page developer. Membership size and account balance one year ago stood at 128 and \$14,143.33, respectively.

Balance as of 19 Jan 2007		\$14871.22
Income:		
Dues		\$544.00
Interest:		\$3.72
Expenses:		
Website development		\$148.75
Balance as of 23 Jul 2007		\$15,270.19

BWG Webpage Update

Bill Thompson

Our webpage is back on the TWS website (<http://www.wildlife.org/wg/biometrics/index.cfm>). TWS is currently overhauling its website, which will include a listserv/forum to serve chapters, sections and working groups. Thus, it may be some time before our webpage is fully updated, but we have updated links to notes from annual business meetings (1999-2006), wildlife-related software, student travel grants, and BWG-sponsored workshops and symposia. I'm trying to track down the meeting minutes prior to 1999, so if anyone has a copy from one or more of these years, please contact me. Also, the current link to the BWG Members Area is not functioning correctly; it does not allow members to login. The TWS webmasters have not yet solved the problem so this year's online elections will be implemented through online survey software, QuestionPro. Paul Conn is handling the details.

Member News

Lyman McDonald visited the University of Canterbury, Christchurch, New Zealand on an Erskine fellowship.

Trent McDonald is developing coursework for a computer intensive introduction to statistics for engineers based on a National Science Foundation grant.

Ryan Nielson has developed a website dedicated to resource selection by animals. The site contains book listings, software, announcements of workshops, and other related material. Please visit <http://www.ResourceSelectionByAnimals.com> for more information.

BWG Contact Information

CURRENT OFFICERS

Chair	Doug Johnson, USGS Northern Prairie Wildlife Research Center, Douglas_H_Johnson@usgs.gov
Chair-elect	Bill Gould, New Mexico State University, wgould@nmsu.edu
Secretary	Bridgette Flanders-Wanner, US Fish and Wildlife Service, bridgette_flanders-wanner@fws.gov
Treasurer	Clint Moore, USGS Patuxent Wildlife Research Center., cmoore@warnell.uga.edu
Past-Chair	Bill Thompson, National Park Service, bill_thompson@nps.gov
Board member – Nominating and Elections Committee	Paul Conn, Colorado State University, <u>pconn@cnr.colostate.edu</u>
Board member – Membership Committee	Ryan Nielson, WEST, Inc. rnielson@west-inc.com
Board member – Technical Sessions Committee	Jon Runge, Georgia Cooperative Fish and Wildlife Research Unit, Jon_runge@hotmail.com
Board member – Advisory Committee	Sarah Converse, Patuxent Wildlife Research Center, sconverse@usgs.gov