



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

Bill Thompson

The annual election of BWG officers is upon us! Our BWG Board member in charge of Nominating and Elections, Larissa Bailey, has worked hard to provide us with a fine slate of candidates. Later in this newsletter you will find a list of this year's candidates and their biographies. Please take time to review this material and go to the BWG webpage to cast your on-line votes. Many thanks to Larissa for her efforts!

This year's 13th Annual Conference of The Wildlife Society in Anchorage is just around the corner. BWG is sponsoring one workshop and one symposium. Steve Dinsmore and Terry Shaffer will be offering the workshop, *Approaches for Modeling Avian Nest Survival*, during 8:00am-5:00pm on Saturday, September 23. The workshop is currently scheduled to meet in Summit Hall, Space 5. Melinda Knutson and John Sauer have organized a half-day symposium, *Objectives and Metrics for Monitoring Wildlife on Public and Private Lands*, which is scheduled for Cook during 8:00am-12:10pm on Wednesday, September 17. Please double-check the final conference program for locations and times. Information on the annual conference, including instructions for on-line registration and links to program sessions and

workshops, can be viewed at www.wildlife.org/conference/index.cfm.

We have had discussions with the parent society regarding the possibility of offering video podcasts of conference events, including workshops, which would allow those unable to attend the conference an opportunity to participate, i.e., distance learning. Chris Fonnesbeck first suggested video podcasts as an option and graciously agreed to research the issue further. He discusses his findings later in the newsletter.

The Wildlife Society hired a new webmaster, Earl Wyatt (earl@wildlife.org), to replace James Mathiesen, who accepted another position. Our web design committee, chaired by Terry Shaffer, will be working with Earl on updates to our webpage. Ultimately, we would like to move the stat_tws listserv to The Wildlife Society's website as well; the listserv has been inoperable for many months.

Finally, I encourage those attending the Annual Conference to come to the annual business meeting of the BWG, which is scheduled to meet in the Egan Center Board Room, Second Floor, during 12:00noon-2:00pm on Sunday, September 24. Please pass along an invitation to nonmembers who might like to attend our WG meeting. I look forward to seeing you in Anchorage!

Nominations and Short Biographies of Candidates for BWG Positions

Chair-elect:

Gail S. Olson has been a Research Assistant Professor in the Department of Fisheries and Wildlife Biology at Oregon State University for the past 7 years, but in August she will be beginning a new position as a Research Scientist with the Washington Department of Fish and Wildlife. Previous positions she has held have included Instructor in the Department of Wildlife at Humboldt State University, Assistant Wildlife Biometrician for the Missouri Department of Conservation, and Computer Programmer at the University of North Carolina. In common to all of those positions has been the application of quantitative methods to wildlife problems which is her primary interest. She has a B.S. degree in Zoology from the University of Rhode Island, an M.S. degree in Ecology (with Statistics minor) from North Carolina State University, and a Ph.D. in Wildlife Biology from Colorado State University. She has been a member of the Biometrics Working Group since its inception and previously served the BWG as a Board Member-at-Large.

Bill Gould is a professor in Experimental Statistics at New Mexico State University where he has been on faculty for the past 12 years. He spends most of his time consulting with faculty and students in biology and wildlife and fisheries and in teaching graduate statistics courses. He spends far too much time at his desk and not enough time in the field. His research interests pertain to sampling and estimation problems in biological populations. Recently, he has conducted the hunt draws for the New Mexico Department of Game and Fish. He has served twice as a board member for

BWG. He believes the Biometrics Working Group has and will continue to be important group as they continue to instill rigor in wildlife science. He has maintained memberships for several years in the American Statistical Association, the Biometric Society, the Wildlife Society and Gamma Sigma Delta.

Secretary:

Bridgette Flanders-Wanner is a wildlife biologist for the U.S. Fish & Wildlife Service at Huron Wetland Management District in South Dakota. She has a B.S. in Zoology from North Dakota State University and an M.S. in Wildlife Biology from Colorado State University. She is a member of the USFWS Dakota Working Group Grassland Monitoring Team, which works to coordinate and design Dakota-wide grassland research. She is currently the President of the South Dakota Chapter of The Wildlife Society and a Board Member of the Biometrics Working Group. Her professional interests include the use of sound monitoring and research techniques to adaptively manage wildlife habitat, protecting biodiversity as opposed to local species diversity, and the restoration of grassland habitat for grassland-dependent wildlife. She has work experience on three National Wildlife Refuges (NWR) and two USFWS Wetland Management Districts in: inventory and monitoring of wildlife and plant populations; summary and interpretation of biological data; and making recommendations on the conservation and management of wildlife resources based on sound biological information. Her past achievements include initiation, design, and implementation of a grassland-monitoring plan for a 21,500-acre NWR and publication of 21 years of complex biological data collected on a NWR. Her current project involves the design and implementation of

the first-ever biological program on Huron Wetland Management District.

Mary Conner is a research assistant professor at Utah State University, where she is jointly funded by Colorado Division of Wildlife and Utah Division of Wildlife Resources. Her duties include teaching a graduate course in population ecology, advising graduate students and increasing research connections between state agencies and academic institutions. Her research interests lie at the interface of empirical data and methods and the use of quantitative ecology, estimation of parameters, and population dynamics modeling. She is particularly interested in using these tools to evaluate effects of management actions in the face of temporal and/or spatial environmental variation. Mary has a BS in Agricultural/Mechanical Engineering from California Polytechnic University, a MS in Wildland Resource Science from University of California, Berkeley and a PhD in Wildlife Biology from Colorado State University. Since completing her PhD, Mary has worked on a diverse array of species including Neotropical migrant passerines, cougars, an endangered sucker, and black bears, as well as exploring mule deer movements in relation to spatial patterns of chronic wasting disease.

Treasurer:

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. Current projects include optimal forest harvest scheduling under uncertainty for bird conservation objectives and optimal strategies of bird release for establishing a viable non-migratory whooping crane population in Florida. Clint is the current treasurer (2005-2006) 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):

Paul Conn is currently a PhD Candidate in the Department of Fishery and Wildlife Biology at Colorado State University. His main interests lie in the demography and ecology of wildlife populations, with current research focusing on use of state space and hidden process models to estimate demographic parameters from multiple data sources. In particular, he is interested in how to better use commonly collected age-at-harvest data to monitor wildlife populations. Prior to enlisting with Gary White at CSU, Paul graduated with a master's degree in Biomathematics at North Carolina State University, and a bachelor's degree in mathematics from Grinnell College. He also worked at Patuxent Wildlife Research Center as a research associate following his master's degree.

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. Sarah has a B.S. in Fisheries and Wildlife from Michigan State

University (1996), a 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, with a particular interest in demographic estimation. She is currently working on several research projects, including modeling various management scenarios for winter habitat of Florida manatees, and designing mark-recapture methods for 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.

Brett T. McClintock is pursuing a Ph.D. in Fishery and Wildlife 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 mark-resight (NOREMARK) studies. His M.S. program in Fishery and Wildlife Biology combined the theoretical development of a mark-resight abundance model with field application to bighorn sheep in Colorado. 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 is applying this model to black-tailed prairie dog colonies 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>.

Jon Runge is a population ecologist with the Georgia Cooperative Fish and Wildlife Research Unit. In the past Jon has worked on a variety of vertebrates including songbirds, small mammals, and waterfowl. Currently he is evaluating the effects of rainwater runoff on trout in an urban Georgia river, population viability of Alabama beach mouse, and conducting demographic and decision analyses on American black duck. He received a PhD in Fish and Wildlife Biology from The University of Montana (2005), a BS in Biology from Montana State University (2001), and an AS in Forestry from Flathead Valley Community College (1998). Like many TWS members, Jon has enjoyed and benefited from symposia and workshops sponsored by BWG and hopes to help with their implementation in the future.

Ryan Nielson is a biometrician with Western EcoSystems Technology, Inc., in Laramie, WY. Ryan graduated with a M.S. in Statistics from Colorado State University and a B.S. in Environmental Studies from the University of Oregon. His interests include developing new statistical methods for analyzing resource selection by animals, and adaptive management for species impacted by mining and oil and gas development in the intermountain west. Ryan is currently involved in monitoring golden eagle populations in the western US, and designing an aerial survey for polar bears in the Chukchi Sea.

Guthrie Zimmerman is a post doctoral researcher at Colorado State University where he is investigating variation in reporting rates of goose reward bands. In January, he will be employed as a population ecologist for the US Fish and Wildlife Service Division of Migratory Bird Management at the Patuxent Wildlife Research Center. Guthrie received a B.S. in

Zoology from Colorado State University (1994), a M.S. in Zoology from the University of Maine (1998), and a Ph.D. in Wildlife Biology from the University of Minnesota (2006). Although Guthrie's background is primarily in field biology, his research interests focus on applying robust quantitative methods to the analysis of field data and questions of interest. He has experience with a variety of taxa and data (e.g., demography, mark-recapture, habitat use, behavior), and is currently is furthering his model development and programming skills.

TWS Video Podcasting

Chris Fonnesebeck

The Biometrics Working Group (BWG) of the Wildlife Society is always exploring promising new avenues for promoting the development and application of biometric methods in the study and management of wildlife resources. Currently, workshops at TWS annual conferences are the primary channel for training and development, and have been very well attended in the past. However, only a fraction of TWS members are able to attend annual conferences and benefit from the workshop and seminars sponsored by the BWG or other working groups. Recently, the notion of broadcasting workshops via videoconference has been considered as a way to bring BWG content to a wider audience. However, videoconferencing requires a considerable investment in specialized equipment and expertise in order to yield a high-quality, functional product. Moreover, videoconferencing participants would similarly require access to videoconferencing hardware to participate, which may be available in some, but not all, academic and government institutions. An alternative solution that may provide a means for distributing high-quality media to

distance users is video podcasting, which requires only off-the-shelf consumer electronics.

What is video podcasting?

Vodcast, a portmanteau of 'video podcast,' refers to the online delivery of video on demand video clip content, usually via [RSS](#) feeds. From a web server, a video podcast can be distributed as a file or as a stream; both methods have their advantages and disadvantages. Downloading complete vodcasts in advance gives the user the ability to play the file offline on, for example, a portable media player. Streaming allows seeking (skipping portions of the file) without downloading the full video podcast, better statistics and lower bandwidth costs for the servers. However, users on slow connections may experience pauses in playback. Podcasts, once downloaded, may be played back on most portable media devices, such as video iPods, many of the popular video playback software, such as RealPlayer or Quicktime, or simply burned to media such as compact disc or DVD.

How would TWS use video podcasting?

Video podcasting is a conduit for distributing high-quality audio-visual recordings of seminars and workshops at low cost via the internet. Commercial software for video podcast editing is now readily available, often pre-packaged with new computers, such as [iMovie](#). Such editing capability allows for live video and audio to be combined with full-screen digital slides from presentations, and could include other digital presentation materials provided by instructors. Although podcasting is not interactive, as videoconferencing is, the resulting media tends to be of better quality and resolution. Using RSS feeds, members can subscribe to working group video podcasts and be notified or even automatically download them when they

become available, as a subscription. Conceivably, TWS could build a library of workshops that may be accessed on-demand by members.

What sort of equipment is required to produce video podcasts, and how much does it cost?

Four main components are necessary for producing video podcasts:

- *Digital camera:* Digital recording makes recording, transfer and editing of high-quality video media straightforward, and allows the use of a variety of commercial video editing packages. Hand-held digital video cameras offer features such as image stabilization, good low-light performance and optical zoom for a reasonable price, often below \$500.
- *Microphones:* An effective production requires audio clarity, particularly for longer presentations. A number of professional-quality microphones are available for under \$400, and many conference facilities may already have this equipment on hand. A workshop podcast would likely require two microphones, one for the speaker and a walk-up standing microphone for participant questions.
- *Computer with digital storage:* Many newer home computers and business workstations are designed for some type of video editing. Most have the capability for high-speed data transfer, via USB or Firewire, and many systems are bundled with editing software (see below). Apple Macintosh computers are specifically marketed to audio-visual users, and hold several advantages over Windows PC systems in this arena. A suitable system should cost no

more than \$2000. Most systems, however, do not retain very large digital storage by default; as a result, the purchase of a larger external hard drive is usually necessary.

Fortunately, storage media are currently affordable, with 500 GB drives available for under \$500.

- *Audio-video editing software:* AV editing software is used to transform raw video footage to a distributable digital media file. This involves removing unusable sections of the video, and integrating other types of media, including still images and audio. [iMovie](#), part of the iLife suite is a versatile digital video editing package that comes bundled with all new Macintosh computers. Alternatively, Adobe offers [Premiere](#), a professional video editing software package, though at a premium of around \$700, with a consumer-level product, [Premiere Elements](#) for under \$100.

Treasurer's Report

Clint Moore

The Working Group membership as of June 2006 stands at 128. Although a few additional memberships trickle in during the third quarter each year, this total represents a drop-off from the 2004 and 2005 levels of 144 and 147, respectively.

However, the financial picture is still very good, as our workshops continue to be well-attended and to generate substantial income. The Working Group did not provide a student travel grant this year but will support the travel (up to \$500) of at least one of the

presenters at the sponsored symposium on wildlife monitoring.

Balance: 20 September 2005 \$13,755.58

Income

Dues	552.00
Workshop (R) fees	825.00
Interest	10.96
Total income	1,387.96

Expenses

Workshop travel	500.00
Workshop material	100.21
Student travel grant	400.00
Total expenses	1,000.21

Balance: 26 July 2006 \$14,143.33

Analysis of Home Range, Resource Selection, and Space Use

Edward O. Garton and Jon S. Horne,
Department of Fish and Wildlife Resources,
University of Idaho,
Moscow, Idaho 83844-1136

This workshop will be presented at the Annual Conference of TWS in Anchorage. It is sponsored by the GIS/Remote Sensing/Telemetry Working Group but should be of interest of many BWG members as well.

The primary objectives of this workshop are to briefly review historic methods for analysis of home range, resource selection and space use and describe a new approach that uses information theoretic tools to evaluate multivariate models of animal movement, resource selection and space use based on underlying ecological processes (e.g. defending a territory, provisioning a nest/den, foraging, accumulating knowledge of resource distributions, dispersing) and

fundamental theoretical models (e.g. random walks, optimal foraging).

The secondary objective is to introduce biologists to new software available to analyze radio tracking location data that simultaneously estimates home range and habitat selection.

Objectives and Metrics for Monitoring Wildlife

This half-day symposium will be held at the 2006 TWS meeting in Anchorage, AK. It is co-sponsored by the Biometrics Working Group and the Biodiversity Working Group. The purpose of the symposium is to improve the quality of information derived from monitoring programs by (1) examining wildlife monitoring objectives and the metrics used to evaluate progress in achieving them and (2) offering case studies of successes and lessons learned by land management agencies with regard to objectives and metrics in wildlife monitoring programs.

Accessing/Joining STAT_TWS

To read messages previously posted on the BWG forum/listserv, STAT_TWS, go to:

http://rana.er.usgs.gov/read/?forum=stat_tws

You must be a member of STAT_TWS to post messages. To join STAT_TWS, go to:

http://rana.er.usgs.gov/read/all_forums/?&max=100&skip=0&orderby=ListName+ASC

and scroll down to “stat_tws,” click on “subscribe” in the far right column of that line, and follow the instructions.

BWG WEBPAGE

www.wildlife.org/wg/biometrics/index.cfm

BWG Contact Information

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