



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

Terry Shaffer

This year marks a milestone of sorts for BWG. Ten years ago BWG was in its infancy. In 10 short years, BWG has developed into a vital, highly regarded Working Group of The Wildlife Society. Your efforts are making an invaluable contribution to the wildlife profession. Many people are responsible for helping BWG become what it is today. I am honored to be your Chair and look forward to helping continue the tradition of excellence.

I'd like to thank last year's officers and the organizers of BWG-sponsored events held in Calgary in September, 2004. The officers did a great job. I had the privilege of attending one of the sponsored workshops and the symposium. Both were excellent. In addition, I heard lots of positive comments on the other workshop. These events clearly measured up to the 'high bar' that past BWG-sponsored events have established.

I'd like to offer my congratulations to this year's officers on their elections to BWG posts. Their names and committee assignments are listed below. I'd like to point out that many of the Board members (myself included) are "first-timers" on the Board, a clear indication that our organization is growing, and also proof that

you don't need a lot of experience to contribute to BWG in this important way!

The 2004 business meeting in Calgary was well attended. The membership considered a proposal to increase the number of student travel grants, the award amount, or both. After much discussion, a motion was approved that allows for awards up to \$400 each, totaling no more than \$1,200.

Four proposals for symposia and 1 proposal for a workshop to be offered at the 2005 annual meeting in Madison, WI were put forth for consideration by the membership. After a bit of discussion which involved the organizers of one symposium agreeing to recast their idea as a workshop, we decided to offer primary sponsorship of two symposia and two workshops. In addition, we agreed to sign on as a secondary sponsor to the other symposium proposal which was developed cooperatively with the GIS/Remote Sensing/Telemetry Working Group. I am pleased to say that all proposals were approved by the TWS Program Committee. This will undoubtedly be another banner year for BWG at the TWS Annual Meeting! Congratulations and a huge thank you to those who developed such quality proposals!

Here are the BWG-sponsored workshops and symposia for the 12th Annual Conference in Madison.

Workshops

Estimating Utilization Distributions: Methods and Applications –

Organizers/Instructors: Ryan Nielson (West, Inc.) and Lyman McDonald (West, Inc.)

Introduction to R: Free Software for Statistics and Graphics –

Organizers/Instructors: Glen Sargeant (USGS/BRD) and Brian Yandell (Univ. of WI)

Symposia

Statistics, Logistics, and the Estimation of Detection Rates from Aerial Surveys – Organizers: Mark Koneff (USFWS) and John Sauer (USGS/BRD)

Observational Studies: When You Can't Control Nature – Organizers: Terry Shaffer (USGS/BRD) and Doug Johnson (USGS/BRD)

Overview and Treatment of Spatial Errors in GIS Applications – Organizers: Wayne Thogmartin (USGS/BRD), Chris Ribic (USGS/BRD), Tom Sklebar (USGS/BRD) and Bill Thompson (NPS) (Sponsor: GIS/Remote Sensing/Telemetry WG; Co-sponsor: BWG)

Bill Thompson, your Chair-elect, has been working diligently on your behalf. Below you will find a helpful article by Bill (with input from several others) that provides suggestions for organizing an effective symposium. In addition, Bill has been working with folks at TWS to find a new home for our webpage. We are interested in forming an ad hoc “Web Design and

Content Committee” (WDCC) to provide feedback and recommendations on the BWG website. We’d like to see our website enhanced to further the mission of BWG. A year ago, Grey Pendleton called on the membership to provide ideas for how we as working group might better serve TWS members who can not attend the annual meeting. The BWG website is one way of reaching out to those members. We are asking for volunteers to serve on the WDCC committee. Please contact Bill or me if you are interested.

Finally, I’d like to call on each of you to use your network of professional contacts to help build membership and participation in BWG. Each of us probably knows someone who doesn’t belong to BWG, but who could contribute to our mission and benefit from being part of our organization.

BWG Webpage

As many of you are aware, the BWG webpage can no longer be supported by the USGS-Northern Prairie Wildlife Research Center. We have made arrangements with the parent society to have them host our webpage. Migration of material from the old website has been completed and can be accessed at <http://www.wildlife.org/wg/biometrics/index.cfm>. An updated webpage should be available shortly.

One addition to the BWG webpage will be a web document that lists all workshops and symposia sponsored or co-sponsored by BWG at the 11 Annual Conferences to date. This document will include titles of workshops or symposia, names and affiliations of instructors or organizers, links to PDF documents containing the relevant pages from the original conference programs, and a list of the 2 edited volumes,

2 journal Special Features, and 1 stand-alone journal article that were produced from BWG-sponsored symposia.

BWG Election Results

This year's BWG elections consisted of several hotly contested races once again. After the dust and votes settled, Bill Thompson was selected as Chair-elect, Mary Conner was elected Secretary, Glen Sargeant was elected Treasurer, and Wayne Thogmartin, Paul Lukacs, Steve Dinsmore, and Paul Doherty were elected Board Members At Large. Their contact information is listed at the end of this newsletter. Congratulations to the victors and MANY THANKS to all who agreed to run for offices!

Summary of the Symposium, “Collaboration of Biometricians and Researchers in Large-Scale Research: Lessons from Case Studies”

Duane Diefenbach

Organizers: Duane R. Diefenbach (USGS, Pennsylvania Cooperative Fish & Wildlife Research Unit) and Lyman L. McDonald (WEST, Inc.)

The objective of this symposium was to present a series of case studies to illustrate the issues that researchers and biometricians need to consider when designing and executing large-scale studies. “Large scale” meant spatially or temporally large studies, or both. We hoped that the series of talks would address issues researchers should expect from biometricians when designing studies and, essential steps or issues that biometricians should expect when designing and analyzing data from large studies. We expected the talks would address both

successes and failures in these endeavors, and we weren't disappointed.

Kirk Steinhorst presented Idaho's study of the effects of supplementing wild Chinook salmon with wild-hatchery hybrids. Kirk's talk was mostly a lesson in what collaboration should have occurred, or rather, what not to do. But that's fine, especially if it results in history not repeating itself.

The second talk was presented by Steve Sheriff on the Ozark forest ecosystem project (MOFEP). In contrast to the first talk, MOFEP has had collaboration between researchers and statisticians from the beginning – but that still doesn't mean doing this type of research is easy. Steve did a great job of providing an overview of the process of designing this study and types of challenges that arose and are still ongoing.

Gary White's presentation was on monitoring prairie dogs in Colorado and the trade-offs that were required to best meet the monitoring objectives. Gary outlined how logistical constraints required modifications of study design and monitoring objectives.

The fourth presentation by John Young described how ecologists, geographers, and statisticians collaborated to design a study to assess the loss of biodiversity from loss of eastern hemlock stands in the Delaware Water Gap NRA. They used GIS information in the study design to incorporate variability from a heterogeneous landscape while controlling for confounding factors and isolating the effect of eastern hemlock from other landscape correlates.

The final case study was presented by Duane Diefenbach on a long-term vegetation monitoring program for Shenandoah National Park. Not only was this a case study in what not to do (similar to

Kirk's presentation), but provided an overview of how the monitoring program was evaluated and subsequently modified to meet stated objectives.

The capstone presentation for the session was provided by Doug Johnson who turned everything on its ear! Doug made the case that many small studies could be treated as a contributing to a large-scale question. Because this requires a meta-analytical approach, Doug provided some thoughts on how small studies should be conducted so that ultimately they could contribute to such an effort.

12th Annual Conference of The Wildlife Society

The 12th Annual Conference of The Wildlife will be held in Madison, WI during September 25-29, 2005. The deadline for submitting abstracts for contributed papers and posters is February 15, 2005 (for more information, see <http://www.wildlife.org/conference/index.cfm?tname=2005cfp>).

New TWS Policy for Workshop Registration Fees

The following excerpt was taken from the new "Symposium, Workshop, and Special Poster Session Policies" for the Annual Conference, which was recently released by TWS.

A new workshop registration fee policy will be implemented in 2005. TWS will set a baseline workshop registration fee of \$25 for all workshops. The purposes of the baseline fee are to reduce the number of 'no-shows' at workshops and to help cover the increasing costs of meeting space, audio-visual

equipment, and refreshment breaks associated with workshops. These expenses previously had been paid out of conference registration receipts. The new policy is more equitable in that only those who attend the workshops pay for workshop expenses.

Workshop organizers may request that the baseline registration fee be increased to cover additional expenses that they will incur. Additional expenses may include workbooks, supplies, special audio/visual or computer equipment, and expenses of instructors from outside of the wildlife profession. Fees may not be increased to cover the expenses of instructors from within the wildlife profession. Workshops sponsored by TWS working groups may include as an 'add-on' an administrative fee of no more than \$25 per registrant to help support the working group.

BWG Student Travel Grants

The Biometrics Working Group of the Wildlife Society is offering student travel grants of up to \$400 for TWS student members presenting papers or posters at the annual Wildlife Society Meeting. The purpose of the travel grants is to promote student interest in biometrics. Applicants must be students and members of The Wildlife Society. Preference will be given to applicants who demonstrate strong statistical or mathematical skills. To be considered, submit: 1) a request for award (1 page maximum) that documents your interest in the application of statistics or mathematics to wildlife/ecological research; 2) a letter of support from a mentor or supervisor; and 3) an abstract of paper or

poster to be presented following guidelines in the Call for Contributed Papers and Posters. The deadline for submission of travel grants is 1 June 2005. Please share this announcement with interested students. For more information contact:

Glen Sargeant, USGS Northern Prairie Wildlife Research Center,
glen_sargeant@usgs.gov, or

Paul Lukacs, USGS/BRD and National Park Service, Paul_Lukacs@partner.nps.gov

Suggestions for Organizing An Effective Symposium

Bill Thompson

BWG-sponsored workshops and symposia have become an important conduit for providing biometric education to members of BWG and, especially, to the general TWS membership. These events also provide a great opportunity for new or less active BWG members to become more involved in the working group by organizing these events. It is mainly toward this group that this article is focused. Because I have not organized a workshop for the Annual Conference, I will leave this topic for seasoned workshop organizers/instructors to discuss in a future newsletter, and will concentrate on symposia. This is by no means an exhaustive list of suggestions, but it is hopefully a useful one.

Selecting a Topic

This may seem like a no-brainer, but choose a topic in biometrics or quantitative ecology that is timely and/or innovative and hence is certain to have broad appeal. Although BWG sometimes may sponsor a symposium that is mainly geared toward its membership, this is usually the exception rather than the rule.

* Solicit feedback on your proposal idea from folks who have experience in organizing symposia and from anyone else who can offer useful advice.

* Try to attend the BWG business meeting at the Annual Conference where proposals are discussed and voted on. You can obtain a lot of useful feedback from other BWG members during these discussions.

* Review the symposia sponsored by BWG at previous annual conferences (see BWG webpage) to discover which topics have been sponsored in the past and how their agendas were organized.

Choosing Speakers

Lining up speakers is the most time-consuming aspect of organizing a symposium, but it also is the most important. This step will make or break your symposium.

* Choose speakers who can communicate effectively to an audience ranging from biologists to biometricians. “Communicate effectively” means providing a wildlife or an ecological context to the topic in non-technical language, preferably via real-world examples. A speaker who is talking over everyone’s heads will empty a room quicker than someone screaming “Fire!”. If you do not have personal knowledge about a person’s public speaking ability, find someone who does before offering an invitation.

* Try to find a speaker who is well-known in the field or specialty to give the introductory presentation, assuming he/she meets the criterion above. Of course, the better known a person is, the more constraints are placed on his/her time. Thus, develop a list of suitable candidates and focus on landing at least one of them.

* Consider speakers outside of the wildlife profession *if* they meet the first criterion in this section. Non-wildlife professionals often can provide new and interesting perspectives to wildlife issues. However, they may require additional funding to cover travel expenses so prepare a contingency plan for this ahead of time. BWG will provide up to \$1000 per symposium to cover travel and TWS will provide a limited number of conference registration waivers for non-wildlife professionals or wildlife professionals not from the US or Canada.

* Avoid choosing graduate students as invited speakers because they usually do not possess the in-depth knowledge or perspective that experience provides, although there are exceptions to this.

Symposium Format

Symposium presentations must follow the schedule format of breaks (morning, lunch, and afternoon) on the same 20-minute cycle as the contributed paper sessions. However, there is flexibility regarding how many presentations can be allocated to these 20-minute blocks, e.g., 2 20-minute presentations or 1 40-minute presentation

can be allocated to a 40-minute block of time.

* Consider organizing a half-day symposium first and then go to a full-day format if necessary. Half-day symposia are generally more effective than their full-day counterparts because of the difficulty maintaining interest in a topic over a full day. Half-day symposia also offer more flexibility in scheduling with other sessions and tend to be favored by Conference Selection Committees.

* Try to organize your symposium (and speakers) by themes or subtopics. This nested framework will make for a more coherent format overall.

* Encourage your speakers to read each other's abstracts prior to developing their presentations. This will increase continuity among talks and decrease the probability of redundancy. Excessive redundancy among presentations can be especially distracting to the audience.

* Allocate more time (e.g., 40 minutes) to the introductory speaker and to other speakers providing summary or detailed presentations. Applied examples can be useful as 20-minute presentations. Allocating 40 minutes for all talks may be reasonable when they are either summaries or detailed introductions to innovative approaches. Speakers outside the wildlife profession may not accept an invitation unless they are allowed 40 minutes to present their material.

* Consider setting aside the last 20 minutes for an open forum between the speakers and the audience. If you do so, prepare your own list of questions for the panel of speakers in case none are immediately forthcoming from the audience. An open forum can be a great educational tool as long as the discussion moves along. Long pauses can be awkward.

Miscellaneous Comments

Organizing a biometrics symposium can be a rewarding experience and does not require a lot of effort, although it does require some care and thought. Reviewing past symposia and soliciting advice from other BWG members are useful first steps. Don't be discouraged if either your symposium idea is not accepted for sponsorship by BWG or your submitted proposal is not selected by the Conference Selection Committee. Keep trying! Two previous symposium proposals, one rejected by BWG and the other rejected by the Selection Committee, later were accepted and ultimately produced an edited volume and a journal Special Feature. So, go for it!

Thanks to Chris Ribic (especially!), Bill Gould, and Duane Diefenbach for their useful input into this item.

SpamBayes - A Spam Filter Most Appropriate for BWG

Duane Diefenbach

When I returned to the office from a 3-day weekend and had 150+ emails of which about only 10 were real, I realized I needed help. It only took me about 2 days to figure out that Microsoft Outlook's "rules" were a waste of time. Googling for "spam filter"

turned up a number of payware programs, but also revealed an open source program called SpamBayes. Cool!

SpamBayes uses a statistical approach to identifying spam. SpamBayes works in this manner:

1. A series of emails is classified by the user as either "spam" or "ham".
2. Each email is broken down into 'tokens' (basically words, but not necessarily) that are then tabulated as to how many times each token is used in spam or ham. For example, if the token "mortgage" occurs in 20 of 500 spams and 4 of 500 hams then the token's spam probability is

$$p_i = \frac{200/1000}{200/1000 + 4/500} = 0.9524$$

3. Use the 15 tokens from the email that are furthest from 0.5 and calculate a spam probability for the email by assuming pairwise tokens are independent and symmetry in the combination of token classifications (i.e., spam or not spam).

$$P(spam) = \frac{\prod_{i=1}^{15} p_i}{\prod_{i=1}^{15} p_i + \prod_{i=1}^{15} (1 - p_i)}$$

More details on this formula can be found at

<http://www.mathpages.com/home/kmath267.htm>.

4. What is interesting is that the probability of assignment of most emails is either very near zero or very near 1.0. But one can set a

cutpoint that would then classify the email as unsure whether spam or ham. For example, if the spam probability is between 0.15 and 0.85 then classify it as a Junk Suspect.

I have gleefully used SpamBayes for a couple of months and rarely find an email incorrectly classified. I'm to the point that I rarely check my Junk Email folder. It almost makes my virus software superfluous because it treats virus emails as spam. What is even more beautiful is that as you receive more spam, even if it changes form, the program continues to learn and updates the token probabilities used to classify a message as spam.

SpamBayes was designed to be a plug-in to Microsoft Outlook. But it can also work as a filter between your POP3 server and your mail client of choice (e.g., Eudora, etc.), or IMAP protocol, or procmail environment. But SpamBayes is not alone and there are many other Bayesian spam-blocker programs on the web. Just Google "spam filter" or check out <http://www.paulgraham.com/filters.html>.

SpamBayes
<http://spambayes.sourceforge.net/index.html>

Sampling Rare or Elusive Species

"Sampling Rare or Elusive Species: Concepts, Designs, and Techniques for Estimating Population Parameters," which was edited by Bill Thompson and had many BWG members contribute to its 17 chapters, is now available for purchase in either hardcover (\$70US) or paperback (\$35US) from Island Press (www.islandpress.org) or from your favorite bookstore (online or otherwise).

Signing up for the BWG Listserv

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=<=english

and select "join stat_tws"

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