

# Wildlife Toxicology Working Group Newsletter

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## From the Chair

**Louise Venne**

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Greetings to each of you! I'm excited about the upcoming year and what I would like to see the WTWG accomplish this year.

Thank you to our outgoing and/or transitioning Board members. Beth MacCallum is outgoing as Vice Chair. Jeff Levengood completed his three-year term in the various steps of being the Chair. Brian Hiller transitioned from Chair to Past-Chair. He continues to help Stephanie with Facebook and Twitter. Carrie Marr decided she wanted to be involved differently with the Executive Board and after serving many years as Secretary, handed off the reigns to Andrea. Carrie is now our Vice Chair. Welcome to our new Board members: Kristin Falcone (Chair-elect) and Andrea Erichsen (Secretary).

Jeff Levengood continues to represent the WTWG in other ways. Jeff had been nominated to represent the WTWG on the Editorial Advisory Board (EAB) for TWS Publications a year or more ago. While our WTWG is not one of the six TWS Working Groups selected to be on the EAB for the next two years, Jeff is our Point of Contact with the EAB so they know who to contact for wildlife toxicology related expertise. This also gives the WTWG a way to suggest article ideas for The Wildlife Professional. The Board has been discussing ideas for articles, but we would love to hear your ideas! Please share them with us.

Our membership has remained steady, but the demographics of our membership seem to be changing. As I talked with many of you about being on the WTWG Board, I sometimes heard "well, I have an interest in toxicology, but don't practice it daily". I would like to make sure that what we do within the WTWG keeps all of us interested and engaged. Please take a couple quick minutes to answer 10 questions to help me assess what the WTWG membership looks like. <https://www.surveymonkey.com/r/XGFN88J>

The board has been working on a number of items. The Pb position statement is taking shape and we hope to submit that to TWS Council this spring. Please direct any questions about it to [Brian](#). The Board decided not to sponsor a symposium or a workshop at the TWS meeting this fall due to challenges with travel for government employees. Canada is hosting the TWS meeting this year. Despite this, please consider submitting an abstract and/or attending the conference in Winnipeg. It would be great to see some wildlife toxicology presentations at the meeting!



## Member Profile - Woody Hill

### History

Wildlife toxicology is the essence of my career. However, my first professional job was as a wildlife manager (BA, San Jose State College) with the Nevada Fish and Game Department (now Nevada Department of Wildlife) studying wildlife populations in southeastern Nevada. After four years I moved to Florida with the National Communicable Disease Center (CDC) to evaluate the potential hazard of mosquito control chemicals, e.g., DDT and malathion, to captive and free-ranging wild birds. Three years of laboratory and field experience with the CDC led me to transfer to the Patuxent Wildlife Research Center to continue my education (PhD, University of Maryland) and research on xenobiotic toxicity to wildlife. Despite the pluses of 27 years at Patuxent, I returned to Nevada and now conduct research and other professional activities as a private contractor.

### Interest in wildlife and toxicology

My interest in wildlife dates to third or fourth grade while tagging along with my father on fishing and prospecting trips in the mountains of the Great Basin and the Sierra; mining--the elusive gold strike—seems to be in my ancestral

bloodline. Beginning in the sixth grade I often accompanied local biologists on routine wildlife surveys and helped them stock trout and pheasants. I was hooked, my career plans were sealed and eventually realized by employment as a wildlife manager as mentioned above.

Interest in wildlife toxicology stemmed from my cooperation with researchers at the National Center for Radiological Health (U.S Public Health Service) studying the fate of strontium 90 in mule deer and desert bighorn on and adjacent to the Nevada Test Site. My management area of responsibility was just east of the Test Site where above ground testing of nuclear weapons—and yes mushroom clouds—had only recently ceased prior to my arrival. These studies coupled with my just having read Rachel Carson's "Silent Spring" brought real world issues to the fore. At the encouragement of the PHS staff, I submitted Form 57 (earlier version of Form 171) indicating interest in employment and continuing my education. While awaiting appointment, the CDC noticed my application and interest and offered a similar research position in Florida studying wild birds and insecticides. I said "yes" and never looked back and found myself on an incredible career track.

### Role models and mentors

The most influential role models were those who encouraged me from my early years to follow my chosen path. First was my father who had a way of questioning my goals and decisions but in the end was always supportive and, I think proud, though he was not the type to lavish praise. Another was Ted Frantz, a Nevada fisheries biologist, who I assisted on stream surveys in central Nevada. Ted was a demanding and highly respected biologist; a teacher by example. Three months of sharing a house trailer in the Great Basin desert, field work, and double checking data nearly every day, was a solid introduction for a kid just out of high school. Then there was Professor William Graf my undergraduate advisor and professional sounding board. Dr. Graf was a thoughtful idealist who taught sciences from introductory zoology through

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...*Woody Hill, continued from page 2*

wildlife management and zoogeography, but most important left his wildlife students with the following advice: “Never trade your professional integrity for political expediency.” He lived by this principal. Seemed obvious to me at the time, but in today’s political climate?? I doubt Bill could have handled it!

Though I had many colleagues for whom I had/have utmost respect and learned from I never had a formal mentor. My professional career was generally as a loner. In Nevada I had a one-person field station, in Florida I was the only wildlifer among a bunch of entomologists and chemists, in Maryland all scientists were expected to work independently, and did so. Presently I’m again at a one-person field station, but on the eastern slope of the Sierra rather than “just east of a nuclear test site.”

### **Favorite project(s)**

No single project or study was my favorite, but all seemed to have been contributory, timely and well-received by the scientific community. From my perspective the best outcome was a composite of nearly three decades of contaminant research at the Patuxent Wildlife Research Center. My time, by coincidence, coincided with the peak of the “environmental movement” which gave birth to a new sensitivity to what we are doing to Mother Earth, and, of course, its wild inhabitants. A major product of the time was establishment of the Environmental Protection Agency and key regulations such as the Clean Air, Clean Water, and Toxic Substances Control Acts. Many Patuxent scientists, including myself, were involved in the evolution of EPA’s environmental hazard assessment protocols and, to this day, serve on diverse scientific advisory panels. I believe the outcome has contributed toward a safer planet.

Several lines of personal research seemed most important and productive. For example, I published many papers and book chapters on refinement and utility of several testing protocols used in regulation of agricultural and industrial chemicals (see EPA above). A particularly interesting piece of research with excellent outcome was on the hazard of organophosphorus and carbamate pesticides to wildlife and associated diagnostic methodology of anticholinesterase poisoning.

Finally, a little history and the future. My great grandfather was a miner and mill worker near Virginia City, Nevada, during the time of the Comstock Lode (circa 1865). Thus he directly participated in release of mercury effluent into the Carson River, one of the most mercury-contaminated systems known. Now his great grandson is

working on its resolution, both as an advisor to the National Institute of Environmental Health Sciences (this portion of the river is a designated Superfund Site), and doing studies on wading bird reproduction. We (Dr Charles Henny, past of Patuxent) are now completing a 10-year field study on the system from near Dayton to its terminus. Will this river system recover? Who knows?



## Member News

Deborah Rudis retired in March 2014 from the USFWS Ecological Services office in Juneau where she was the Contaminants Biologist for the past 25 years. Deb's first work in AK was on the Exxon Valdez oil spill and included numerous other oil spills over the years, including the BP spill in the Gulf of Mexico. Much of her work focused on mining issues in SEAK, and contaminants on National Wildlife Refuge lands, particularly in the Aleutians. Deb will be staying in Juneau and doing some part-time consulting work when she is not enjoying hiking, skiing, running, sea kayaking, or traveling. Her email is [akwildlife@gci.net](mailto:akwildlife@gci.net).

## Toxicology in the News

**Oiled Marine Mammals & Sea Turtles at the Texas City "Y" Spill** (April 7, 2014)

<http://www.vetmed.ucdavis.edu/ohi/news/galveston-oil-spill-ziccardi.cfm>

**Research Project: Native fish monitoring, food web dynamics, and heavy metal transportation in Southern Arizona's aquatic ecosystems**

[http://www.alec.arizona.edu/current\\_research\\_mining\\_aquatic.html](http://www.alec.arizona.edu/current_research_mining_aquatic.html)

**Bill Would Limit Regulation on Lead Ammunition**

<http://wildlife.org/bill-would-limit-regulation-on-lead-ammunition/>

## Member Publications

Rattner, BA, KE Horak, RS Lazarus, SL Schultz, BG Abbo, and SF Volker. 2015. Toxicity reference values for chlorophacinone and their application for assessing anticoagulant risk to raptors. *Ecotoxicology*. DOI: 10.1007/s10646-015-1418-8

*Abstract* - Despite widespread use and benefit, there are growing concerns regarding hazards of second-generation anticoagulant rodenticides to non-target wildlife which may result in expanded use of first-generation compounds, including chlorophacinone (CPN). The toxicity of CPN over a 7-day exposure period was investigated in American kestrels (*Falco sparverius*) fed either rat tissue mechanically-amended with CPN, tissue from rats fed Rozol® bait (biologically-incorporated CPN), or control diets (tissue from untreated rats or commercial bird of prey diet) ad libitum. Nominal CPN concentrations in the formulated diets were 0.15, 0.75 and 1.5 µg/g food wet weight, and measured concentrations averaged 94% of target values. Kestrel food consumption was similar among groups and body weight varied by less than 6%. Overt signs of intoxication, liver CPN residues, and changes in prothrombin time (PT), Russell's viper venom time (RVVT) and hematocrit, were generally dose-dependent. Histological evidence of hemorrhage was present at all CPN dose levels, and most frequently observed in pectoral muscle and heart. There were no apparent differences in toxicity between mechanically-amended and biologically-incorporated CPN diet formulations. Dietary-based toxicity reference values at which clotting times were prolonged in 50% of the kestrels were 79.2 µg CPN consumed/kg body weight-day for PT and 39.1 µg/kg body weight-day for RVVT. Based upon daily food consumption of kestrels and previously reported CPN concentrations found in small mammals following field baiting trials, these toxicity reference values might be exceeded by free-ranging raptors consuming such exposed prey. Tissue-based toxicity reference values for coagulopathy in 50% of exposed birds were 0.107 µg CPN/g liver wet weight for PT and 0.076 µg/g liver for RVVT, and are below the range of residue levels reported in raptor mortality incidents attributed to CPN exposure. Sublethal responses associated with exposure to environmentally realistic concentrations of CPN could compromise survival of free-ranging raptors, and should be considered in weighing the costs and benefits of anticoagulant rodenticide use in pest control and eradication programs.

## Job Posting

Assistant Professor in Statistics/Biostatistics  
Texas Tech University  
The Institute of Environmental and Human Health  
Department of Environmental Toxicology

The ideal candidate will be able to apply a wide range of data analytics, data visualization, data mining, predictive modeling, and statistical graphics tools to diverse environmental and human health scenarios. The successful candidate must also demonstrate the promise of sustaining an extramurally funded research program through a record of scholarship, including grant writing experience and publication of peer-reviewed literature.

This position requires experience as a statistician/biostatistician with an applied research focus consistent with environmental health science and/or human health science. A strong background in applied research in one or more areas of environmental health science would be ideal, but is not required. The successful candidate will be expected to teach two graduate level statistics courses: –“Statistical Applications in Environmental Toxicology” and –“Modeling and Simulation in Ecotoxicology”. Experience teaching statistics, research methods, and/or research design is advantageous.

Candidates who have very strong records of scholarship supported by extramural funding and who have the proven capacity or clear potential to bring externally sponsored research to Texas Tech University are encouraged to apply. Service duties include program-building, as well as commitment to extra-curricular activities. Service to the department, college, university, and community is expected.

The candidate should demonstrate the ability to work independently and collaboratively on applied research that complement current faculty interests, demonstrate excellent written and verbal communication skills, and be willing to play a key role in an interdisciplinary team of investigators.

Academic degree as defined by the academic unit and as appropriate for the position held. Demonstrated record of effectiveness as a teacher, a record of peer reviewed publication and/or peer-reviewed creative activity which has contributed to the discipline or field of study, to the candidate’s intellectual and artistic development, and to the quality of the academic enterprise; a record of professional service appropriate to the discipline; promise of growth in teaching and research or artistic and creative activity.

A PhD degree in statistics, biostatistics, or a relevant scientific field with a strong statistical emphasis is required.

As an Equal Employment Opportunity/Affirmative Action employer, Texas Tech University is dedicated to the goal of building a culturally diverse faculty committed to teaching and working in a multicultural environment. We actively encourage applications from all those who can contribute, through their research, teaching, and/or service, to the diversity and excellence of the academic community at Texas Tech University. The university welcomes applications from minorities, women, veterans, persons with disabilities, and dual-career couples.

Please also submit your application to the [online HR site at Texas Tech](#) . Please search for job number 2295BR from the “search openings” link.



Thank you to the following contributors to this newsletter.

Woody Hill  
 Brian Hiller  
 Carrie Marr  
 Barnett Rattner  
 Deb Rudis

**WTWG Executive Board**

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**WTWG NEWSLETTER NOTES**

The WTWG newsletter is a quarterly publication. Email contributions by March 31 to Louise at [lsvenne@gmail.com](mailto:lsvenne@gmail.com).

WTWG archived newsletters, meeting minutes, and more are online at <http://wildlife.org/toxicology/index.php>

The WTWG is on Facebook. Visit us (even without a Facebook account). [www.facebook.com/WildlifeToxicology](http://www.facebook.com/WildlifeToxicology)

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Louise Venne, *Editor*