

## Wind Wildlife Research Meeting VIII

October 19-21, 2010  
Lakewood, Colorado

### Speaker and Poster Presenter Biographies

#### **Taber Allison, Massachusetts Audubon**

Dr. Taber Allison is Vice President for Science, Policy and Climate Change at Mass Audubon, where he supervises science staff responsible for coordinating land management of our sanctuaries, running bird conservation programs, and providing support for our education and advocacy programs. Taber holds a master's degree in forest ecology from the Yale School of Forestry & Environmental Studies and a Ph.D. in ecology from the University of Minnesota. Taber has served on the faculty of Ohio State University and the University of Colorado, and was a research associate at Harvard University. He has led outdoor programs in North America, Belize, Europe, and New Zealand. Taber has also served as a member of the U.S. Fish & Wildlife Service's Federal Wind Turbine Guideline Advisory Committee to develop recommendations for a scientifically based approach to assessing potential risk to wildlife and their habitats from wind-energy development.

#### **John Anderson, American Wind Energy Association**

John M. Anderson, Director of Siting Policy for the American Wind Energy Association, leads the Association efforts on siting issues including wildlife policies, land use, federal and state agency siting policies, visual resource management, sound and public health, and radar and airspace conflicts.

Mr. Anderson has over 18 years of experience in environmental planning, permitting, regulatory and analytical fields. Prior to joining AWEA, he was Eastern Regional Manager of Environmental Affairs for BP Wind Energy. In this position Mr. Anderson served as the senior environmental permitting and policy advisor responsible for the development of new wind energy projects in the eastern half of the U.S., as well as management of post-construction environmental issues at BP Wind's operating facilities across the United States.

#### **Ed Arnett, Bat Conservation International**

Dr. Ed Arnett is a Conservation Scientist and Director of Programs at Bat Conservation International (BCI). From 2004 to 2010 he also served as the Program Coordinator for the Bats and Wind Energy Cooperative (BWEC, [www.batsandwind.org](http://www.batsandwind.org)). Dr. Arnett has studied bats for the past 15 years, focusing extensively on habitat ecology and resource selection of forest bats, which was the topic of his dissertation research. He has led research efforts on bats and wind energy development over the past 6-years, primarily in the eastern U.S. and has published several journal articles and peer-reviewed

reports on bats and wind energy to date. He served on the Federal Advisory Committee for developing recommendations for the US Fish and Wildlife Service's guidelines for wind energy and wildlife, serves on the Association of Fish and Wildlife Agencies' subcommittee on wind energy, and chaired The Wildlife Society's technical review committee on wind energy impacts on wildlife.

### **Jesse Barber, Colorado State University**

After completing his B.S. at the University of Wyoming, Jesse Barber went on to obtain an M.S. in the U.W. Department of Zoology and Physiology. His doctoral training was completed at Wake Forest University in the Department of Biology. Dr. Barber is currently a postdoc at Colorado State University in the Department of Fish, Wildlife and Conservation Biology where he closely collaborates with the Natural Sounds Program of the National Park Service. He studies the sensory ecology of bats and owls.

### **Kimberly Bay, WEST, Inc.**

Kimberly Bay received her B.S. in Mathematics/Statistics in 2000 and her M.S. in Statistics in 2003, both from the University of Wyoming. She has been a Biometrician with WEST, Inc. since 2001. She currently holds the position of Data Analyst and Report Manager, where she coordinates the personnel responsible for the majority of data entry, database management, quality assurance and quality control of data, analysis of data, and compiling the results for reports. She has worked, in coordination with Ecologists and other Biometricians, on over 100 pre-construction studies at proposed Wind Energy developments and over 30 post-construction studies at developed Wind Energy Facilities. This work spans over 25 states. She is also a proud mother of three children.

### **Regina Bispo, ISPA - Instituto Universitário and CEAUL**

Regina Bispo is an Assistant Professor, Departamento de Estatística, ISPA - Instituto Universitário, Lisboa, Portugal and a researcher at CEAUL - Centro de Estatística e Aplicações da Universidade de Lisboa, Portugal. She has a Master in Probability and Statistics and a PhD in Agronomic Engineering. Her main research areas include applied statistics in health, environment and ecology. Her current research interests are focused on avian mortality estimation at wind energy facilities.

### **Rob Bouta, Westwood Professional Services**

Rob Bouta is a Senior Environmental Scientist and wildlife biologist who has been an environmental consultant with Westwood Professional Services for 20 years. He was previously employed by six federal, state, and nonprofit wildlife agencies. Rob holds an M.S. in wildlife biology, a B.S. in wildlife management, and an A.A.S. in natural resources. He is certified as a senior ecologist by the Ecological Society of America and as wetland delineator by the State of Minnesota. Rob's expertise has supported over 45 wind energy and transmission projects in 14 states. He serves as a technical expert and regulatory strategist on issues related to wildlife, wetlands, environmental assessments, and permit applications. Rob has led more than 50 environmental review processes. He frequently coordinates with interdisciplinary teams on regulatory, technical advisory, and quality assurance processes. Rob's career includes experience with endangered and threatened species, ecological restoration, and sensitive prairie, forest, and wetland habitats. He has led public meetings to introduce new programs and developed and led technical and local advisory committees to integrate public and agency involvement into sensitive environmental designs and assessments.

### **Kristen Chodachek, WEST, Inc.**

Kristen Chodachek joined WEST Inc as a Project Manager/Wildlife Biologist in 2008. She received her B.S. in Zoology from the University of Manitoba, Canada and her M.S. in Wildlife from Louisiana State University. Kristen's experiences include working with and managing waterfowl, raptors, and conducting

aerial surveys from a fixed wing aircraft for big game and birds. Her experiences in avian ecology include trapping, monitoring, radio telemetry (aerial and foot), and nuisance wildlife management in Louisiana, Manitoba, North Dakota, and Wyoming.

Before moving to North Dakota, Kristen lived and worked in the Powder River Basin in Wyoming, conducting both aerial and ground-based field surveys for threatened, endangered, and special-status species in relation to the industrial developments (natural gas, surface coal mining, wind energy, and power line projects). Her current work with WEST Inc includes managing pre- and post-construction environmental studies at wind energy developments throughout the Midwest, including initial site evaluations, avian use surveys, bat acoustic surveys, ground and aerial raptor nest surveys, land cover/habitat mapping, T&E species surveys, and avian and bat fatality monitoring. As a project manager, Kristen is responsible for budget preparation, client correspondence, training field technicians, designing and implementing wildlife studies, and report preparation and review.

Kristen lives in Bismarck, North Dakota with her husband Paul and dog Aiden. In her off time, she enjoys outdoor recreation, hockey, baking, crafts, and spending time with her family and friends.

### **Caitlin Coberly, Merlin Environmental**

Caitlin obtained her doctorate at Duke University in 2003 in Ecology and Evolution. Caitlin has been involved in environmental planning and monitoring since 1995, and has been professionally involved in ecological assessment and restoration for nearly 7 years. She has been conducting wind power assessments since 2006, and most recently served as a technical advisor to the USFWS FAC committee on Wind and Wildlife. Currently, Caitlin is the principle ecologist at Merlin Ecological ([www.merlinenv.com](http://www.merlinenv.com)).

### **Andrea Copping, Pacific Northwest National Laboratory**

Andrea Copping is the research lead for environmental effects of offshore wind, and marine and hydrokinetic energy development at Pacific Northwest National Laboratory (PNNL). Dr. Copping is a biological oceanographer who has spent most of her career looking at effects of human activities on the marine environment. Tasked by DOE to understand the highest risks to seabirds and other marine animals, Andrea leads a team of national laboratories and university partners engaged in research to support efficient siting and permitting of ocean energy devices. The PNNL-lead team carries out numerical modeling, as well as laboratory and field studies of interactions between sensitive marine environments and species with tidal, wave and wind generation devices. Prior to joining PNNL in 2006, Dr. Copping was Associate Director of the Washington Sea Grant Program and a faculty member in the School of Marine Affairs at the University of Washington.

### **Jim Cummings, Acoustic Ecology Institute**

Jim Cummings is a writer, editor, and father. His longtime work writing for a lay audience about science and the environment led to the founding of the Acoustic Ecology Institute in 2004. Since then, AEI has become a leading source of clear, unbiased information on a full array of sound-related environmental issues, with agency staff and scientists being the most enthusiastic supporters of the news and science summaries and special reports produced by the Institute. Jim has twice been a plenary speaker at the Alberta Energy Utilities Board biannual noise control conference, and has been an invited presenter on ocean and wind farm noise issues in Canada, the US, and Ireland. He is the author of many freelance magazine articles, including "Listen Up! Opening our Ears to Acoustic Ecology" (Zoogoer, 2002), edited the books *Why do Whales and Children Sing?* (EarthEar, 1999) and *Investing With Your Values*

(Bloomberg, 2000), and is executive producer of eleven EarthEar environmental sound art CDs. He received a B.A. from Wesleyan University in 1979 and a M.A. from John F. Kennedy University in 1987. (<http://www.AcousticEcology.org>, <http://www.AEInews.org>, <http://www.EarthEar.com>)

### **Jenny Davenport, DeTect, Inc.**

Jenny Davenport is a Wildlife Biologist for DeTect, Inc. of Panama City, Florida specializing in wildlife impacts (birds and bats) at windfarms. She has a B.S in Biology from the University of Wisconsin – La Crosse and a M.S. in Wildlife Science from the University of Tennessee – Knoxville. Her master's work researched bird and bat mortality and activity at a windfarm in Tennessee. Jenny then worked as a biologist for the Tennessee Valley Authority conducting environmental reviews, continuing work at the TVA windfarm, and specializing in bat monitoring throughout the Tennessee River Valley before joining DeTect. Jenny's work with DeTect includes bird and bat survey, study design, data interpretation, and quality assurance/quality control with emphasis on risk assessment and mitigation for wind energy projects. She has focused on the application of avian radar systems to assess and manage bird and bat mortality issues at wind energy sites throughout the U.S. and Europe.

### **Marc d'Entremont, Stantec Consulting and University of Northern British Columbia**

Marc d'Entremont, M.Sc., R.P.Bio. is a wildlife biologist with Stantec Consulting Ltd. based in Burnaby, British Columbia. He has 20 years of experience in natural resources research and management and environmental sciences and serves as a key senior resource for work relating to regulatory affairs, environmental assessment, and assessments of impacts to birds, wildlife and terrestrial and marine resources. Marc is a registered professional biologist in the province of British Columbia and sits on the Audit Committee with the College of Applied Biology, which is a public interest self-governing body. Marc is also a PhD Candidate at the University of Northern British Columbia where he is working on a project to assess the collision risk to nocturnally migrating birds at a wind energy project in northeastern British Columbia. The goal of this research is to measure movement patterns and behavior of nocturnal migrants in relation to a ridge top wind farm by using digitization hardware and tracking software that is being developed for use with marine surveillance radars. Marc is conducting detailed studies on both the flight paths, as well as altitudinal patterns of migrants in relation to topography and weather, as well as using radars and GIS analysis to determine whether birds exhibit evidence of detection and avoidance of wind turbines.

### **David Drake, University of Wisconsin – Madison**

David Drake is an extension wildlife specialist and associate professor in the Department of Forest and Wildlife Ecology at the University of Wisconsin-Madison. He completed his Ph. D. in Forestry at North Carolina State University, received a Master's degree in Wildlife and Fisheries Sciences from Texas A&M University, and graduated with a bachelor's degree in Biology from Macalester College in St. Paul, MN. David's research interests include the human impact on wildlife, wildlife management on private lands, wildlife damage management, suburban/urban wildlife, and wildlife policy.

### **Wally Erickson, WEST, Inc.**

Mr. Wallace P. Erickson is a Sr. Statistician/Senior Manager with WEST since 1991. He has over 20 years of consulting experience related to the design and analysis of environmental and wildlife studies. His primary research interests include habitat selection methodology with applications to GIS and study designs and analysis for detecting impacts from environmental perturbations. He has been lead statistician and/or WEST project manager for baseline studies, environmental permitting, and/or operational monitoring/research at over 50 wind energy projects in 20 states. He is an author/co-author on over 30 professional journal articles, book chapters or peer reviewed proceedings papers, and is co-

author of the 2nd edition of the book "Resource Selection by Animals". He has presented over 30 papers/posters at national/regional meetings. His duties with WEST Inc. involve using current state-of-the-art statistical principles in designing ecological studies and analyzing subsequent data. He has recently helped develop models and approaches for modeling collision risk and other impacts of birds with wind facilities, including marbled murrelets, golden eagles and Indiana bats.

### **Greg Forcey, Pandion Systems, Inc.**

Dr. Greg Forcey is an avian ecologist with Pandion Systems based in Gainesville, Florida. Greg has a BS degree in Wildlife and Fisheries Science from Penn State, a Master's Degree in wildlife and fisheries resources from West Virginia University, and a PhD in zoology from North Dakota State University. Greg's graduate research focused on evaluating avian survey techniques and modeling waterbird abundance in relation to land use and climate on a landscape scale. His current research interests focus on avian interactions with utilities, modeling temporal changes in bird distributions using existing data sets, and spatial tools for modeling collisions with wind turbines.

### **Joelle Gehring, Michigan Natural Features Inventory**

Dr. Joelle Gehring is Senior Conservation Scientist at Michigan State University, (in the Zoology Section at Michigan Natural Features Inventory). Dr. Gehring designed and currently oversees a multi-year, landscape scale study of the variables associated with bird collisions at communication towers. Research results have provided information on methods to reduce bird collisions with communication towers. Dr. Gehring collaborates with the Michigan State Police, Michigan's Office of the Attorney General, Michigan Department of Natural Resources, United States Fish and Wildlife Service, National Fish and Wildlife Foundation, United States Forest Service, Federal Aviation Administration, and the Federal Communications Commission, the communication tower industry, and environmental groups to accomplish this conservation effort.

Dr. Gehring is involved in pre-construction data collection for bird and bat use of over 16 wind farm projects in Michigan and offshore in the Great Lakes. In addition, she is collecting data on the basic movement biology of birds and bats using the Great Lakes region – both onshore and offshore. Dr. Gehring is particularly interested in avian ecology, migration, wildlife responses to human-induced changes in the landscape, and determining methods of reducing wildlife - human conflicts. She believes that many human-related issues potentially affecting wildlife populations can and should be addressed using sound science and collaboration with stakeholders.

Dr. Gehring completed her Ph.D. in Wildlife Ecology at Purdue University in 2003. Her research focused on the flight patterns and behavior of Red-tailed Hawks in forested and agricultural habitats with direct implications and application to reducing bird-aircraft collisions via flight behavior models and a U.S. Air Force Bird Avoidance Model. In 1997, Dr. Gehring finished her M.S. in Wildlife and Fisheries Resources at West Virginia University. The topic of her research was the assessment of wildlife habitat quality in central Appalachian hardwood forests following three different timber harvest techniques. In 1993, Dr. Gehring completed her B.S., in both Biology and Wildlife Management at the University of Wisconsin - Stevens Point. Dr. Gehring has a beautiful 10-year old son, Forrest, who shares her interest in conservation and nature.

### **Patrick Gilman, U.S. Department of Energy**

Patrick Gilman is an Environmental and Policy Specialist in DOE's Wind and Water Power Program. Since joining DOE in 2008 as a Presidential Management Fellow, Patrick has served the program in a number of roles, managing research and engagement on a number of issues related to the deployment of land-

based wind, marine and hydrokinetic, and most recently offshore wind technologies. He currently leads the program's efforts to address siting and permitting issues associated with both land-based and offshore wind energy. He recently returned to DOE from a seven-month assignment with the State Department's Office of Global Change, where he acted as the State Department's staff lead for climate change adaptation and served as a negotiator on the U.S. delegation to the United Nations Framework Convention on Climate Change. Prior to his tenure at DOE, Patrick held a variety of staff and consulting positions in energy, environmental, and urban policy and planning, most recently with the World Resources Institute. Patrick holds a BA in Politics from Whitman College, and an MA in International Affairs and International Economics from the Paul H. Nitze School of Advanced International Studies at Johns Hopkins University.

### **Gino Giumarro, Stantec Consulting, Inc.**

Mr. Giumarro is a Certified Wildlife Biologist and Senior Associate at Stantec Consulting. He has extensive experience in windpower assessments, regional natural resources planning, wildlife management planning, natural resources damage assessments, and permitting. He is responsible for designing field studies, coordinating and performing data collection, and report preparation. He has specialty expertise with bird and bat surveys, with a focus on rare species and habitat restoration. In addition to solving specific natural resources questions, Mr. Giumarro also serves as principal scientist for windpower impact assessments, FERC license applications, threatened and endangered species surveys, ecological community characterizations, NRDA, biological assessments, Section 7 consultations, emergency response, environmental planning, fish and wildlife surveys, and document preparation in accordance with the NEPA. Mr. Giumarro's client experience includes a wide array of federal, state, local, and private clients. He is certified by the US Army Center for Health Promotion and Preventative Medicine in the Evaluation of Environmental Noise and currently has spent that past three months acting as a natural resources advisor for the Gulf of Mexico Oil Spill. He lives in Freeport, Maine with his wife and two sons.

### **Caleb Gordon, Pandion Systems, Inc.**

Caleb Gordon is a senior ornithologist at Pandion Systems specializing in wind-wildlife interaction biology. He is broadly experienced in migratory bird ecology, and his original research has been published in numerous technical journals on a wide variety of topics within this field. Caleb holds a PhD in ecology and evolutionary biology from the University of Arizona, where he studied wintering migrant grassland bird community ecology. He performed research on bird communities in coffee plantations in Mexico as an NSF postdoctoral fellow based at the Instituto de Ecología, A. C. in Xalapa, Veracruz, Mexico. Before joining Pandion, he taught ecology, evolution, and environmental studies at Lake Forest College, where he also conducted research on migratory songbird stopover biology in the Great Lakes region. He is deeply experienced in conducting bird field surveys and research throughout North America and the American tropics, and is a federally licensed Master Bird Bander.

At Pandion, Caleb is designing and managing several avian-wind interaction research projects. He is director and principal investigator of the Shrub Nesting Passerine Collaborative research program, conducting studies of Black-capped Vireo and other shrub-nesting songbird reproductive success in relation to distance from wind turbines at several sites in Texas. He is also principal investigator and project manager for three multiyear research projects that Pandion is conducting for the Bureau of Ocean Energy Management, Regulation, and Enforcement (USDOJ, BOEMRE), relating to remote wildlife sensing technologies and risk assessment to support offshore wind facility leasing in United States waters. He has also designed and conducted various bird risk assessments and permitting studies for a

wide variety of private wind developers, including a preconstruction risk assessment for the first commercial scale wind facility to be constructed in Honduras.

### **Steve Grodsky, University of Wisconsin – Madison**

Steve Grodsky will be finishing his Master's degree this fall at the University of Wisconsin – Madison in the Department of Forest and Wildlife Ecology. Steve received his undergraduate degree from Rutgers University in Natural Resource Management. Steve is originally from New Jersey and has been living in Madison, Wisconsin for the last two years, where he has been bow hunting, fly-fishing, and consuming large amounts of cheese. He is grateful to have come into such an interesting and applicable arena of research in the wind and wildlife interface and hopes that his work will help contribute useful information towards a balanced management of valuable renewable resources and necessary wildlife conservation.

### **Jeffery Gruver, WEST, Inc.**

Jeff Gruver has been involved in bat research since 1996, and joined the staff at WEST in 2007 as Lead Bat Biologist. Jeff has studied bat ecology in the Pacific Northwest, the Rocky Mountains, and the Badlands of southern Alberta. He earned a Bachelor of Science in Economics from Penn State University and an M.S. in Zoology and Physiology from the University of Wyoming. Jeff's graduate research examined the assemblage of bats near a wind power facility in southern Wyoming in relation to documented bat fatalities at the facility and physiological ecology of bats in relation to roost selection. Jeff has authored or co-authored scientific publications on topics ranging from species conservation assessments to factors influencing bat fatality risks at wind energy installations.

### **Joseph Grzybowski, University of Central Oklahoma**

Joseph A. Grzybowski (Ph.D.) is broadly trained in biology and zoology. He is currently a Professor in the College of Mathematics and Science, University of Central Oklahoma, and a Research Associate at the Sam Noble Oklahoma Museum of Natural History, University of Oklahoma. His research interests have included a diversity of topics such as the winter ecology of grassland birds, population dynamics and management of endangered species (focusing largely on the Black-capped Vireo, an endangered species occurring in Oklahoma and Texas), brood-parasite/host interactions in birds, analytical modeling of seasonal fecundity, population modeling of cowbirds/host community interactions, distribution and phenology of birds in Oklahoma, and impacts of wind-energy development on birds and bats. He has supported students and colleagues in research design issues and in analytical modeling of seasonal fecundity, among other topics. In addition, he is currently Regional Editor--Southern Great Plains for North American Birds (20+ yrs), Associate Editor (Birds) for The Southwestern Naturalist, supports odonate distribution databases, serves on the Oklahoma State Anatomical Board, and reviews papers and reports for a broad spectrum of professional science journals, agencies and consulting groups. In general, he enjoys problem-solving, research/design analytical issues and learning theory; also, less formally, in birding, bird identification, herping, and hunting odonates.

### **Amanda Hale, Texas Christian University**

Amanda Hale is an Assistant Professor of Biology at Texas Christian University in Fort Worth, Texas. Her areas of expertise include ecology and evolution, genetics, and conservation biology. Amanda received her MS in Ecology from Purdue University, W. Lafayette, IN and her PhD in Biology from the University of Miami, Coral Gables, FL. Amanda has field experience in a wide range of habitats including hardwood deciduous forests of Indiana, endangered pine rockland of south Florida, and cloud forests of Costa Rica. In the majority of her research projects she has combined the use of genetic markers and detailed field studies to address ecological and evolutionary questions in avian biology. Her taxonomic interests are

broad, however, and several ongoing research projects address evolutionary and biogeographical questions in flowering plants. Amanda is also collaborating with colleagues at TCU, Texas Parks and Wildlife Department, and the Fort Worth Zoo on a conservation genetics study of the threatened Texas horned lizard, *Phrynosoma cornutum*.

### **Kevin Heist, University of Minnesota**

Kevin Heist is a 2<sup>nd</sup> year PhD student in the Conservation Biology Graduate Program at the University of Minnesota. He received a BA in Environmental Studies in 2004 from the University of Colorado, where he studied the development of the wind industry in Denmark and the United States. After that, he worked for an information technology company and then for a wind energy services company in Philadelphia. Interested in helping to find solutions to critical wind-wildlife issues, he applied to the University of Minnesota to work under Douglas H. Johnson, PhD. Kevin is currently conducting a study focused on predicting bird and bat collision fatalities at potential wind farm sites using easily repeatable methods.

### **Michael Herder, Bureau of Land Management**

Michael Herder is the Associate District Manager for BLM's Ely District in Eastern Nevada. Mike has been with BLM for 23 years, including more than 19 years as a Wildlife Biologist for the Arizona Strip District in St. George, Utah. Prior to working as a Wildlife Biologist, Mike was a Marine Biologist with California Department of Fish and Game, Pacific Whale Foundation, and the National Marine Fisheries Service. He has worked as a Park Ranger in California and as a Psychiatric Technician at a mental hospital, both experiences that have helped him prepare for supervising federal employees. Mike holds a BA in Wildlife Management and a MS in Marine Biology, both from Humboldt State University in California.

After working 8 years on whales, porpoises, and harbor seals, he moved to the desert and became interested in bats, the other echo-locating mammals. Mike has done research on diurnal movements and roosting behavior of spotted bats, big free-tailed bats, and a variety of forest dwelling species. He was among the charter members of the Western Bat Working Group and served on their Board for 8 years. Mike is currently the BLM agency co-lead for bats. His professional interests include developing policy and guidance for addressing White-nosed Syndrome, bat surveys in underground mines, and building bat-friendly escape ramps in water troughs.

### **Manuela Huso, Oregon State University**

Manuela Huso has been a statistician in the Department of Forest Ecosystems and Society at Oregon State for almost 15 years, publishing on topics ranging from chemical signals of decaying Alaska yellow cedar to effect of grazing on native plant populations in the North Great Basin. Recently, she has begun to focus on issues related to wind power, applying her statistical design skills to pre-construction study design and analysis as well as curtailment and deterrent study design. In addition, she has been working on ways to improve current estimators of mortality in order to better assess impacts of wind power generation facilities on wildlife and the potential for mitigation of these effects through deterrents or management techniques.

### **Douglas Johnson, USGS Northern Prairie Wildlife Research Center**

Douglas Johnson is a Research Statistician at the Northern Prairie Wildlife Research Center, a Senior Scientist with the U.S. Geological Survey, and Adjunct Professor at the University of Minnesota. He has advanced degrees in Statistics and Zoology, and has spent his career developing and applying quantitative methods for use in wildlife ecology and management. With several colleagues, he has been involved in wind-wildlife issues for much of the past decade, including field studies of avoidance of wind

generators by grassland birds, designing a Rapid Assessment Method for evaluating risks to wildlife from wind development, use of acoustic and ultrasonic monitors for assessing the intensity of low-elevation flights of birds and bats, and a variety of working groups dealing with wind and wildlife.

### **Greg Johnson, WEST, Inc.**

Greg Johnson has been an Ecologist and Project Manager for WEST since 1991. He received a B.S. degree in Wildlife Conservation and Management and a M.S. degree in Zoology and Physiology from the University of Wyoming. He has over 23 years of consulting experience in wildlife and ecological studies. He is a Certified Wildlife Biologist through The Wildlife Society, a Professional Wetland Scientist through the Society of Wetland Scientists, and a certified Senior Ecologist through the Ecological Society of America. His specialty areas include wildlife research with an emphasis on wind power development and contaminants; endangered species; and wetland science. Mr. Johnson has 15 years of experience conducting avian, bat and other wildlife research associated with windpower developments in 16 U.S. states and Alberta, Canada, including an offshore project on Long Island. Research experience includes baseline avian and bat surveys, threatened and endangered species assessments, avian and bat mortality studies, rare plant surveys, and assessing indirect effects to birds and other wildlife. He is currently project manager for the first large-scale greater sage-grouse telemetry research study to quantify impacts of wind energy development on sage-grouse. He has prepared several risk assessments for proposed wind farms, prepared EAs for proposed wind energy projects, contributed to several other NEPA documents for wind power developments, and has served as an expert witness during hearings related to wind project permitting. He has extensive experience with bat/wind power interactions and has been invited to present several talks on this subject at national wind power workshops and conferences. He is a member of the National Wind Coordinating Collaborative Wildlife Working Group, Ecological Society of America, The Wildlife Society, Society of Wetland Scientists, and the Wyoming Bird Records Committee. He is the author/coauthor of 27 publications and 30 presentations at scientific meetings on wind power interactions with birds and bats.

### **Dave Johnston, H. T. Harvey & Associates**

Dave Johnston is a Senior Wildlife Ecologist at H.T. Harvey & Associates and has worked with California bats since 1992 when he began his Ph.D. thesis on pallid bats at York University under Dr. Brock Fenton. Dr. Johnston has since collaborated with Fenton and others on several scientific papers involving the biology of bats in Africa and Central America. Through H. T. Harvey & Associates, Dave has worked on over 50 transportation-related projects involving mitigation measures for bats, and he has also conducted large scale surveys for bats on federal lands for many agencies. Additionally, he works with populations of the salt marsh harvest mouse, the dusky-footed woodrat and other small mammals with special-status. Dave taught Mammalogy and Ecosystems of the San Francisco Bay Area as a lecturer at Santa Clara University and is now an Adjunct Professor at San Jose State University. He and his students are investigating the foraging ecology of various bats in California, the impacts to bat populations from urbanization and transportation issues, and swimming behavior in bats. Dr. Johnston and his colleagues at H. T. Harvey & Associates are currently researching methodologies to study wind turbine impacts to bats and birds at the Montezuma Hills Wind Energy Area. Dave teaches workshops on bats through the California Academy of Sciences, The Wildlife Society, and Bat Conservation International. He serves on the scientific advisory committee for San Francisco Bay Bird Observatory, as a peer reviewer for the journal *Mammalia*, and on the Scientific Advisory Committee for the Altamont Pass Wind Energy Resource Area (APWERA) and in other advisory capacities. Dr. Johnston is currently working on a Conservation Plan for Bats of California and has on-going bat projects in Belize and Baja California.

### **Jason Jones, Tetra Tech EC, Inc.**

Jason Jones, Ph.D., is a lead wildlife biologist with Tetra Tech, based in Vancouver, British Columbia, Canada. Prior to joining Tetra Tech, Jones was on faculty at Dartmouth and Vassar Colleges. His research during this period focused on habitat selection, population dynamics, and conservation ecology of migratory animals and resulted in over 40 scientific publications, presentations, and invited seminars. Since joining Tetra Tech, Jones has worked primarily within its energy program, particularly in support of renewable energy development. Jones's responsibilities with Tetra Tech have included study design, population modeling and statistical analysis, quality control and senior review, and endangered species consultation with provincial, state and federal agencies.

### **Todd Katzner, West Virginia University and Cellular Tracking Technologies**

Todd Katzner is a Research Assistant Professor in the Division of Forestry and Natural Resources at West Virginia University and a co-founder and Officer of the wildlife telemetry company Cellular Tracking Technologies, LLC. Todd received his Ph.D. in 2003 from Arizona State University for work focused on ecology and conservation of eagles in the Republic of Kazakhstan.

Todd is currently conducting long-term research on potential impacts of and mitigation for development of wind energy, as it is relevant to migration and wintering of birds of prey in the central Appalachian region of eastern North America. This work focuses on the region's rarest regularly occurring raptor, golden eagles, as an umbrella species for protection of the suite of species that move through these mountains. The goal of this study is to model animal movements to identify areas of relatively high and low risk to birds from development of turbines on migration routes. This work also uses new high-frequency GPS-GSM telemetry systems designed by Cellular Tracking Technologies. These telemetry units provide data at up to 30-second intervals, thus providing a novel perspective on wildlife movement and ecology. In addition to his studies on birds of prey and wind energy, Todd maintains his involvement in research in Kazakhstan and in demography and population modeling especially of birds of prey.

### **Bill Kendall, U.S. Geological Survey Colorado Cooperative Fish and Wildlife Research Unit**

Bill Kendall is a research ecologist and assistant professor at the U. S. Geological Survey, Colorado Cooperative Fish and Wildlife Research Unit, at Colorado State University. Previous to this position he worked for USGS Patuxent Wildlife Research Center, and for the USFWS Division of Migratory Bird Management. He received his Ph.D. in Biomathematics in 1992, and has a master's degree in statistics and ecology, all from North Carolina State University. His areas of research are estimation of demographic parameters, wildlife population dynamics, wildlife management science, and study design. He has been involved with wind turbine / avian interactions off and on since 1994, and was a contributing author for the publication *Studying Wind Energy/Bird Interactions: a Guidance Document*, published by the NWCC in 1999.

### **Ellen Lance, Anchorage Fish and Wildlife Field Office**

Ellen W. Lance is a wildlife biologist with the US Fish and Wildlife Service in the Alaska Region. For the past 10 years, Ellen has worked in the Endangered Species Branch of Ecological Services in the Anchorage Field Office. She received a B.S. degree in wildlife and fishery science from the University of Arizona and a M.S. degree in wildlife biology from the University of Alaska, Fairbanks. Previous to working for the US Fish and Wildlife Service, she was a wildlife biologist for the Tongass National Forest on the remote island of Prince of Wales in southeast Alaska. Ellen's interest in wind-wildlife interactions is a result of the Endangered Species Act, section 7 process. Because threatened spectacled and Steller's eiders (*Somateria fischeri* and *Polysticta stelleri*, respectively), are susceptible to collisions with on-land

structures, Ellen became interested in the potential effects of wind industry development along the Alaskan coastline on eiders that occupy the same coastal habitats.

### **Ronald Larkin, Illinois Natural History Survey**

Ron Larkin does conservation-oriented research on flying animals, including use of radar, bioacoustics, and radio tracking. His laboratory operates a stationary-beam bird- and bat-counting radar and the only tracking radar used for non-classified research in the Western Hemisphere. He has published about 40 papers in refereed scientific journals including prominent review articles on use of radar to observe animals and wind/wildlife interactions. Dr. Larkin is a regular speaker on the topic of wind energy effects on flying wildlife. Research sponsors have included US Army, Navy, and Air Force; FAA, National Science Foundation, US Fish and Wildlife Service, US Department of Agriculture, US Department of Energy, and several conservation NGOs.

### **Jesper Kyed Larsen, Vattenfall Wind Power**

Jesper Kyed Larsen is Environmental Manager in Vattenfall Wind Power, and responsible for coordinating and advancing key biological issues related to the construction and operation of wind farms. Vattenfall is a leading European power company, owned by the Swedish state. Among others, Jesper advises on and manages major environmental monitoring programmes and research studies within Vattenfall. Jesper holds a master's degree in waterbird ecology from The University of Aarhus, Denmark, and has a background as researcher at The National Environmental Research Institute, Denmark, within wind farm and waterbird interactions. Jesper is a member of a number of European strategic research groups/committees related to environmental impacts of wind power, and currently chairman of the steering committee of the Danish Demonstration Programme on environmental impacts of large-scale offshore wind farms.

### **David Maddox, Sound Science**

David Maddox (Chief Scientist, Sound Science LLC) is committed to the protection of the health of the natural environment, the implementation of effective ideas for the sustainable and productive use of natural resources, and the application of ecosystem services for human welfare. As a co-founder of Sound Science LLC his work combines strategic management skills with the robust use of scientific research and principles to craft effective programs across a diverse range of natural resource issues, including strategic program management, urban ecology, livelihoods and the human-ecological connection, climate change, endangered species, statistical methodology, monitoring, and measures of success and impact.

### **Albert Manville, U.S. Fish & Wildlife Service Division of Migratory Bird Management**

As a Senior Wildlife Biologist with the Division of Migratory Bird Management (DMBM), U.S. Fish & Wildlife Service, Arlington, VA, Al serves as the national lead on anthropocentric causes of bird mortality from structures and fishery impacts. He chairs the Communication Tower Working Group, a Service wind turbine working group, a Service electric power line committee, and a waterbird bycatch working group. He co-chairs the Interagency Seabird Working Group, represents the Service on the Wildlife Workgroup and "Core" Group of the National Wind Coordinating Collaborative, on the Avian Power Line Interaction Cmt., on the Technical Advisory Cmt. for Audubon National Wildlife Refuge, co-chairs a Service wind turbine guidelines working group, and is the Service's technical advisor to the Bird-Safe Glass Working Group.

He received a B.S. in zoology (Allegheny College, PA), an M.S. in natural resources and wildlife management (Univ. WI, Stevens Point), and a Ph.D. in wildlife ecology and management (MI State

Univ.). In addition to studying and handling over 100 black bears in MI and WI, and assessing brown bear-human interactions in AK, Al conducted 6 summers of research in the Aleutian Islands on the impacts of marine debris on seabirds, sea lions, and seals; and studied impacts of the Exxon Valdez oil spill on seabirds for 5 years. He worked as a Mandarin Chinese interpreter at the National Security Agency (while performing his U.S. Navy military service) and was designated a “Certified Wildlife Biologist” by The Wildlife Society. Al has served as Big Game Records Coordinator for the Boone and Crockett Club, VP/Director of Science Policy for Defenders of Wildlife, a member of the U.S. Scientific Delegation on High Seas Driftnetting, Executive Director of the Adirondack Mountain Club, a member of the Steering Committee for the Endangered Species Coalition, a branch chief with DMBM, and leads bird strike, policy, and related international migratory bird issues for his Division. In 1999, Al received the Conservation Service Award from the Secretary of the Interior for bird conservation efforts with the electric utility industry. He recently served on the Board of Managers of the Washington Biologists’ Field Club and has been nominated for membership in the Cosmos Club. He is a member of numerous professional societies.

Al has testified some 40 times before Congress and related bodies; conducted numerous research efforts globally; published more than 145 professional and popular papers, chapters, and book reviews; and given more than 160 invited presentations. He served on the Editorial Advisory Board of the Nature Conservancy Magazine; was the wildlife consultant for the Walt Disney/Touchstone Pictures movie White Fang (Jack London); and has conducted hundreds of radio, television, and print media interviews. He also serves as an Adjunct Professor for Johns Hopkins University’s Krieger School of Arts and Sciences teaching graduate-level evening wildlife ecology and conservation biology courses. Al also is a private pilot, wildlife photographer, kayaker, and dog aficionado.

### **Ana Teresa Marques, Bio3, Lda.**

Ana Teresa Marques is a zoologist, specialized on ornithology, mainly on steppe birds. She has participated in research and monitoring projects, and during the last six years has been working with impacts from wind farms and power lines on wildlife. She joined the Bio3 team in 2008 as a head of projects, where works on monitoring studies and Environmental Impact Assessment.

### **Miguel Mascarenhas, Bio3, Lda.**

Miguel Mascarenhas graduated in Applied Plant Biology (FCUL), Master in Environmental Impact Assessment (Instituto de Investigaciones Ecological Malaga) and a post graduated in Geographic Information Systems, Production, Management and Spatial Data Analysis (ISA). Technical Specialist Environment, awarded by the Biologists Association. Miguel began his professional activity in scientific research and later started his activity in consultancy in the environmental area, including environmental impact assessments and biological monitoring. Besides coordinating the technical aspects of Bio3 activities, Miguel is also one of the company managers, having developed his skills in project management and financial management.

### **Roel May, Norwegian Institute for Nature Research**

Roel May is a research ecologist at the Norwegian Institute for Nature Research (NINA). In 1996, he received his MSc at the Wageningen University, the Netherlands. After that he worked at an ecological consultancy in the Netherlands with wildlife and forest ecology as his field of expertise. Between 2003 and 2007 he conducted his PhD on the spatial ecology of wolverines at the Norwegian University of Science and Technology (NTNU). His work now mainly focuses on environmental effects of renewable energy; especially wind energy and power lines. Studying spatio-temporal effects on wildlife; employing

different survey (e.g. satellite telemetry, avian radar) and modeling techniques are his main field of expertise. Apart from that, he is involved in ecosystem studies within the boreal region.

#### **Cara Meinke, Stantec Consulting, Inc.**

Ms. Meinke is a wildlife biologist with 15 years of experience conducting and coordinating a wide range of ecological studies throughout the United States for private, governmental, and academic institutions. Her work over the past four years has focused on understanding impacts to bats and birds from wind power development. Her current efforts are focused on developing a landmark Habitat Conservation Plan for Indiana bats for a wind facility in OH. For this HCP, Ms. Meinke has developed unprecedented methods for assessing impact to Indiana bats, including a habitat suitability model and collision risk model that incorporate empirical, site-specific data on Indiana bats. Prior to her focus on wind-wildlife interactions, Ms. Meinke's research focused on diverse topics and focal species, including investigating the effects of wolf reintroduction on coyote behavior and demographics in Yellowstone National Park, WY; understanding patterns and social dynamics of coyote predation at the UC Davis Hopland Research and Extension Center in Hopland, CA; documenting mountain lion habitat use relative to human activity in Redwood National Park, CA; and evaluating impacts to greater sage-grouse and sagebrush-associated species in the Intermountain west. Ms. Meinke has authored multiple peer-reviewed papers and book chapters. She is a co-author of two chapters in a special monograph in *Studies in Avian Biology* that examines trends in greater sage-grouse populations and relationships among sage-grouse, sagebrush habitats, and land use. Ms. Meinke is passionate about conducting research that furthers scientific understanding about the ecology and management of species of conservation concern.

#### **Kely Mertz, BHE Environmental, Inc.**

Kely Mertz: Ms. Mertz is a biologist with over ten years experience in Endangered Species Act (ESA) compliance. As a Senior Biologist and Manager for BHE, Ms. Mertz manages ESA compliance by conducting informal and formal agency consultation, preparing Habitat Conservation Plans (HCPs) under Section 10 of the ESA, preparing Biological Assessments under Section 7 of the ESA, and managing related ESA and National Environmental Policy Act processes. Ms. Mertz has primary authorship of several successful, permitted HCPs and is currently Technical Team Project Manager for the Section 10 consultation process on a nine-state, multi-species HCP on behalf of several wind industry developers. She earned her degree in Biology from Hanover College in 1999.

#### **Sílvia Mesquita, Bio3, Lda.**

Sílvia Mesquita participated in several projects regarding nature conservation in several Non-Governmental Organizations, having also acquired experience in Environmental Education. During 2005 she completed a post-graduation in Nature Tourism. In early 2006 started her activity in Bio3 and until today she has participated in more than 100 environmental impact assessments, monitoring programs and strategic environmental assessments. Regarding wind farm monitoring programs, Sílvia has been responsible for more than 12 projects since 2006. Sílvia has also been involved in Bio3 Business & Biodiversity activities and recently developed an innovative methodology for Appropriate Assessments of Plans and Programs under the Habitats Directive of the European Union.

#### **Tracey Librandi Mumma, Pennsylvania Game Commission**

Tracey M. Librandi Mumma is a Wildlife Biologist for the Pennsylvania Game Commission (PGC), Bureau of Wildlife Habitat Management, Division of Environmental Planning and Habitat Protection. She is the Habitat Protection Section Chief and responsible for the development, review, and evaluation of environmental plans and planning policies. She is responsible for coordinating and reviewing changes to the Pennsylvania Natural Diversity Index for the Division and developing research criteria methodologies

for various wildlife species in order to address potential impacts to wildlife and their habitat. In addition, she supervises the wind energy project coordinator and the environmental reviewer for private development. From August 2007 – August 2010, she served as the wind energy project coordinator responsible for being the lead liaison and coordinator for the implementation of the PGC Wind Energy Voluntary Cooperative Agreement. Prior to her position as wind energy project coordinator, from November 2004 – August 2007, she was a wildlife research associate for the PGC Bureau of Wildlife Management. Prior to her career with the PGC, Tracey earned a Bachelor of Science degree in Marine Biology at Millersville University in 1999. She worked as a marine mammal trainer before deciding to pursue her Master of Science degree. Tracey graduated from Shippensburg University in 2003 with a Master of Science degree in Biology. Her professional affiliations include the Northeast Bat Working Group and the Pennsylvania Chapter of The Wildlife Society, and she is involved in the Pennsylvania Wind and Wildlife Collaborative and Great Lakes Wind Collaborative.

### **Laura Nagy, Tetra Tech**

Dr. Laura Nagy is the Natural Resources Discipline Lead for Tetra Tech EC. She is an ecologist and project manager with 19 years of experience, specializing in avian systems, population ecology, threatened and endangered species, and statistical ecology. Dr. Nagy is currently working with wind and solar projects on golden eagle issues, Section 7 and 10 permitting (Biological Assessments and Habitat Conservation Plans), and other wildlife permitting issues. Dr. Nagy works with clients and agencies to develop and execute research and study protocols to identify risks to wildlife due to development and then avoidance, minimization, and mitigation measures that are appropriate for the level of impacts. Focal species include Indiana bats, whooping cranes, golden eagles, bald eagles, sage grouse, black-capped vireos, and golden-cheeked warblers. Dr. Nagy also works with clients to evaluate appropriate non-listed, wildlife-related concerns.

### **Alicia Oller, Tetra Tech EC, Inc.**

Ms. Alicia Oller is a Senior Biologist and Project Manager at Tetra Tech EC, Inc. in Portland, OR. She has a strong technical background in impact assessment; integrated natural resource management strategies; environmental planning and permitting; threatened and endangered species; and habitat assessment and management. Her recent focus is on providing ecological assessments, permitting, and project management support to the wind energy industry nationwide. This work includes developing avian and bat protection plans, preparing and implementing post-construction mortality studies, Endangered Species Act (ESA) compliance, and developing habitat conservation plans and incidental take permits for wind energy projects. Recent species of interest include whooping crane, marbled murrelet, Hawaiian petrel, Hawaiian hoary bat, Hawaiian goose, and Newell's shearwater. In addition, she facilitates coordination between wind energy developers and federal and state agencies to ensure that wind facilities are in compliance with state and federal regulations and guidelines.

### **Chris O'Meilie, U.S. Fish & Wildlife Service Oklahoma Ecological Services Field Office**

Chris O'Meilie is a wildlife biologist for the Oklahoma Ecological Services Field Office of the U.S. Fish and Wildlife Service. O'Meilie received his M.S. in Rangeland Ecology and Management and B.S. in Wildlife Ecology and Management from Oklahoma State University. Over the last nine years, O'Meilie has served as the office expert for addressing wildlife and habitat conservation issues concerning red-cockaded woodpecker, whooping crane, black-capped vireo, lesser prairie-chicken, fire management, range management, power lines and wind energy developments throughout Oklahoma.

### **Robert Pastorok, Integral Consulting, Inc.**

Dr. Robert Pastorok is an ecologist specializing in ecological risk assessment and natural resource damage assessment. With more than 30 years of experience developing and applying quantitative empirical techniques and ecological models, Dr Pastorok has managed or served as technical lead on projects to address siting of industrial, municipal, and commercial facilities, cleanup of chemically contaminated urban-industrial habitats, restoration and conservation of habitat, and management of aquatic and terrestrial ecosystems. He was instrumental in the development of technical approaches in the USEPA framework for ecological risk assessment, the Washington State Model Toxics Control Act program, the Puget Sound Estuary Program, and the USEPA training program for use of population modeling in ecological risk assessment. Dr. Pastorok was the lead author and editor of the seminal book titled *Ecological Modeling in Risk Assessment: Chemical Effects on Populations, Ecosystems, and Landscapes* (2002, CRC Press). He contributed substantially to two SETAC Pellston workshops and the resulting books (*Uncertainty Analysis in Ecological Risk Assessment* and *Population-Level Ecological Risk Assessment*). Dr. Pastorok currently serves as the Senior Editor for *Ecological Risk Assessment* for the international journal *Human and Ecological Risk Assessment*. Dr. Pastorok received his B.S. in Biology from the University of Notre Dame in 1971 and his Ph.D. in Zoology from the University of Washington in 1978. He also completed a year of post-graduate study in Regional Planning at the University of Pennsylvania.

### **Steve Pelletier, Stantec Consulting, Inc.**

Steve Pelletier is a Certified Wildlife Biologist and Principal Scientist at Stantec Consulting with over 25 years of professional experience. He specializes in landscape and site level habitat analyses, including bat and avian risk assessments related to wind energy, wetland ecology, and impact compensation. As a field scientist, Mr. Pelletier has been involved in the design and performance of avian and bat surveys at more than 85 wind farms throughout the US, including over 150 seasons of migration studies using avian radar and acoustic detection. He offers particular expertise in impact evaluations and developing mitigation measures for wind energy projects.

### **Trevor Peterson, Stantec Consulting, Inc.**

Trevor Peterson is a project manager responsible for performing wildlife research, developing ecological survey protocols, and assisting in ecological inventories, including wildlife population surveys, rare species surveys, habitat studies, and water quality monitoring surveys. He has most recently been involved in evaluation of potential natural resource impacts at proposed wind power projects throughout the eastern United States and post-construction assessments of bird and bat collision mortality at active wind projects. He has played a leadership role in developing methods for ecological risk assessments for proposed wind projects as well as post-construction mortality surveys at operational wind farms. Mr. Peterson serves as a technical lead within Stantec for acoustic bat surveys, responsible for updating equipment, survey methods, and data analysis/reporting methods.

Mr. Peterson's previous research experience includes the design and implementation of a project documenting the effects of an unchecked population of introduced snowshoe hares on the regeneration and recruitment of trees in New Brunswick, Canada. From a young age, he worked as a field assistant for the wolf and moose research project on Isle Royale National Park, collecting data and performing necropsies of moose, wolf, and beaver; using telemetry equipment to locate den and rendezvous sites of radio collared wolves; and conducting many other wildlife surveys, including breeding bird, loon, and amphibian surveys.

### **Shannon Romeling, MSU**

Shannon Romeling graduated in 2009 with a B.S. in Wildlife Biology from the New York College of Environmental Science and Forestry in Syracuse, NY. Immediately after graduating she joined Dr. Lynn Robbins' bat lab at Missouri State University. She is pursuing her Master's in Natural and Applied Sciences with a primary emphasis in Biology and a secondary emphasis in Geospatial Information Sciences. Her primary area of research is bats and wind energy related issues. More specifically she is working on methods that could assist the U.S. Fish and Wildlife Service in making decisions regarding Habitat Conservation Plans for the endangered Indiana bat.

### **Hall Sawyer, WEST, Inc.**

Hall Sawyer is a research biologist and project manager with WEST. Hall earned a BS degree in wildlife biology from Colorado State University and MS and PhD degrees in Zoology from the University of Wyoming. Hall worked with the Wyoming Cooperative Fish and Wildlife Research Unit as a research scientist from 1997-2001, coordinating research projects that focused on elk, mule deer, white-tailed deer, pronghorn, and bighorn sheep. Hall joined the WEST team in 2002 and his specialty areas include migration ecology, resource selection, animal capture, GPS-telemetry, and impact assessment of ungulates. He currently leads several long-term studies that evaluate the migration ecology and potential impacts of energy development on mule deer, elk, and pronghorn. Hall lives in Laramie, Wyoming and enjoys backpacking, skiing, rock climbing, and hunting.

### **Jesse Schwartz, ICF International**

Dr. Jesse Schwartz received his Master's Degree from the Antioch Graduate School of New England for research on Loon's in New England lakes, and received his PhD from Boston University for research on ecosystem services in Lake Victoria, East Africa. He has worked for local, state, federal, and tribal agencies, and today serves as a senior analyst with ICF's Ecosystem Biometrics practice in Portland, Oregon. Currently Dr. Schwartz serves as the lead analyst on the Altamont Pass Wind Resource Area monitoring project, and as Project Manager on a US DOE effort to develop a generalized framework for evaluating wind energy impacts to birds and bats. In addition Dr. Schwartz serves as the lead developer for ICF's Ecosystem Diagnosis & Treatment model, and the Watershed Examination Toolkit.

### **Lynn Sharp, Tetra Tech EC, Inc.**

Lynn Sharp is a wildlife ecologist, environmental permit specialist, and project manager based in Tetra Tech EC, Inc.'s Portland, Oregon office. She began studying the ecological effects of wind power in 1994 and is currently involved in a number of wind power projects in the western U.S. Lynn's specialties related to wind power include specific issues such as sage grouse and raptors, as well as development of mitigation strategies. Her current wind-related work includes preparation of a conservation plan for a proposed wind project on greater sage-grouse in Idaho, an avian and bat protection plan for a wind project in Washington, baseline studies of wind projects in Washington and Idaho, and post-construction monitoring of bald eagle use at the Kodiak Pillar Mountain wind project.

### **Angela Sjollema, UMCES and Frostburg State University**

Angela Sjollema is a master's student in wildlife biology at both the University of Maryland Center for Environmental Science, Appalachian Laboratory and Frostburg State University located in western Maryland. Her study on near and offshore bat migration will conclude at the beginning of November 2010 and her thesis will be done by March of 2011. She received her Bachelor's degree in wildlife biology from the University of Minnesota, Twin Cities in 2003 and pursued field research with many taxa including bats, passerines, raptors, wading birds, fish, and ungulates before returning to school.

### **Donald Solick, WEST, Inc.**

Donald Solick is a wildlife biologist with over 15 years experience conducting research on bats and other wildlife throughout North America and Canada. He received his M.S. in Ecology from the University of Calgary, Alberta, and his B.S. in Wildlife Biology and B.A. in Environmental Studies from The Evergreen State College, Washington. Donald joined WEST in 2007 in our Cheyenne office.

With WEST, Donald helps coordinate our bat research program, providing support with field work, data analysis, report-writing, and project management. His background in bat research is extensive, and includes acoustic monitoring surveys (using Anabat and full-spectrum detectors) to determine bat activity at proposed wind energy facilities, radar and night-vision surveys to monitor bat (and bird) migration and behavior, mist-netting and harp-trapping surveys to determine presence/absence of species (including threatened and endangered species), radio-telemetry studies to determine roosting, foraging, and thermoregulatory behavior, and nightly emergence counts of bats at building, mine, and tree roosts.

Donald also has a broad background surveying other wildlife, including experience conducting point counts and nest-searching for birds, live-trapping small mammals, collecting and identifying insects and aquatic macroinvertebrates, call surveys for frogs and toads, monitoring for sea turtles, tree-climbing to assess canopy moss communities, electroshocking for fish, and assessing the health of streams. Donald lives in Fort Collins, Colorado, with his wife and daughter, and enjoys soccer and travel.

### **Michelle Sonnenberg, WEST, Inc.**

Michelle Sonnenberg is a statistician in WEST Inc. Cheyenne office. Prior to employment at WEST in 2008, Michelle earned two M.S. degrees from Colorado State University, in Mathematics (1996) and Statistics (2008). For her Statistics master's project, she investigated group sequential methods in clinical trials. Shortly after graduation, she worked briefly for the USDA modeling avian influenza. Michelle's primary responsibilities at WEST include pre-construction bird and bat use estimation and post-construction fatality estimation for wind energy projects, and writing, editing and running code in SAS and R. Her areas of interest include multivariate data analysis, non-parametric methods, and time series analysis.

### **Tony Starfield, University of Minnesota (emeritus)**

Tony Starfield has developed models for ecology, conservation biology, and resource management for the past 35 years. He is particularly interested in modeling at the interface between science and decision making. He is the author of four books and over 100 journal articles. He has offered more than 100 modeling workshops during the past 30 years to organizations that include the US Forest Service, the Bureau of Land Management, the Fish and Wildlife Service, and the US Geological Survey, as well as various groups in nations such as South Africa, Namibia, Australia, Saudi Arabia, Sweden, and Switzerland. Tony was Distinguished Professor in the Department of Ecology, Evolution & Behavior at the University of Minnesota until retiring from academia about five years ago. Since then he continues to do some selective consulting and to offer a limited number of workshops.

### **Kenton Taylor, WEST, Inc.**

Kenton Taylor is a project manager and wildlife biologist for Western Ecosystems Technologies, Inc (WEST). Kenton received a B.S. in Zoology and Physiology from the University of Wyoming in 2001 and an M.S. in Zoology and Physiology, with a minor in Statistics from the University of Wyoming in 2004. Kenton's graduate studies were focused around waterfowl production on created wetlands in N.E. Wyoming. Kenton has worked for WEST since 2004 and has extensive experience working on biological

surveys and risk assessments of wind energy projects as well as other development projects across the western US.

### **David Tidhar, WEST, Inc.**

David Tidhar has been a Research Biologist and Project Manager for WEST since 2005. He received his Bachelor of Arts degree in History and Political Science from the University of Montana, Missoula in 1997 and a Master's of Science degree in Ecology from the University of Aberdeen, Scotland in 2000. David's M.S. thesis was an investigation of the behavioral and short-term spatial effects of recreational human disturbance on red deer on a Scottish estate. He has over 12 years of experience encompassing a variety of research, inventory and monitoring projects principally related to assessments of the potential effects of human activities on wildlife, population dynamics. David's work for WEST has included studying the effects of wind power, oil and gas development and linear pipeline construction on wildlife. David served as Field Supervisor on a range-wide population level survey of golden eagles in the western U.S. for U.S. Fish and Wildlife Service in 2006 and 2007. He is currently acting as a Project Manager for WEST on a number of pre- and post-construction wind-energy wildlife studies in several Northeastern, Mid-Atlantic and Southwestern states.

David is the Branch Manager for the WEST Northeast/Mid-Atlantic satellite office located in Waterbury, VT, where he lives with his wife, Wendy, and dog, Sally. He is an avid ski-mountaineer and hiker who enjoys spending as much free time as he can muster outdoors. David is a member of the Wildlife Society and the Hawk Migration Association of North America.

### **Junior Tremblay, MRNF**

Junior A. Tremblay is biologist at the Ministère des Ressources naturelles et de la Faune du Québec. He is in charge of research projects concerning birds of prey and he is the provincial coordinator of wind and wildlife issues. His main research is focused on telemetric monitoring of endangered raptors (Bald and Golden Eagles and Peregrine Falcon) that breed near wind farm. This research aims to develop mitigation measures for wind farm development. His research also focuses on the breeding ecology of Golden Eagles in Quebec.

### **Rafael Villegas-Patraca, Instituto de Ecología AC**

Rafael Villegas-Patraca became a researcher in the Instituto de Ecología AC in 2006. He received his B.A. from Universidad Veracruzana in 1990, a MS in conservation Biology in University of Kent at Canterbury in UK in 1997 and a Ph.D. from Edinburgh University in UK in 2004. Rafael combines his extensive field experience with explicit research goals focused on bird migration, ecology of birds and radar ornithology. He conducts his fieldwork on anthropogenic impacts on wildlife in wind farms in numerous locations across Mexico, while pursuing a variety of other ornithological projects, including Raptor research in tropical rain forest.

### **Kristen Watrous, Stantec Consulting, Inc.**

Kristen Watrous began her career studying Indiana bats in 2003 with her Master's degree work at the University of Vermont. Since then, Ms. Watrous has collaborated with state and federal biologists in the northeast region to monitor bats during migration, the summer maternity season, and hibernation. In 2007, Ms. Watrous began working for Stantec Consulting as a project scientist, conducting mist-net, radio-telemetry, and acoustic surveys, and is currently responsible for designing, conducting, and managing surveys for endangered bat species at several proposed wind power projects.

## **David Young, WEST, Inc.**

David Young has been a Project Manager and Wildlife Biologist for WEST since 1992. He received his B.S. in Biology from Earlham College in 1986 and a M.S. in Zoology from the University of Georgia in 1988. His specialty areas include threatened and endangered (T&E) species and wind power research and has been conducting wildlife studies at wind projects since 1995. He has working experience at wind facilities in over 20 states and Canada, and has addressed all aspects of wind-wildlife interaction. His experience includes pre-construction Phase 1 assessments and site characterization studies, baseline resource studies, post-construction avian and bat impact monitoring, T&E species surveys, Biological Assessments, Habitat Conservation Plans, and environmental impact statements. He has been an invited speaker to Wildlife Society chapter meetings, the National Wind Coordinating Committee, AWEA Siting Committee, and Northern Arizona University Renewable Energy Department to discuss wind power and avian and bat interactions and impacts.

In addition to studies of wind and wildlife, his specialty areas include threatened and endangered species, Endangered Species Act compliance and National Environmental Policy Act projects for a variety of industries including wind and solar power, highways, and water development projects. He has received formal training in Endangered Species Act, Section 7 Consultation and Section 10 Habitat Conservation Plans

## **NWCC Staff**

### **Abby S. Arnold, Kearns & West**

Abby Arnold mediator at Kearns & West, has managed the NWCC for 17 years, and is the American Wind Wildlife Institute's Executive Director. A technically proficient spokesperson and skillful coalition-builder, Ms. Arnold brings over 20 years' experience in creating common ground for competing interests in the rapidly evolving world of renewable energy and water issues. She is currently responsible for convening, facilitating, and mediating projects or advising leaders on how to address development of policy and specific siting issues for wind power, other renewables, and transmission lines. Emphasizing shared technical and scientific information, she has enabled significant progress in wind, geothermal, solar, and other renewable technologies, demand side management, and transmission planning. As consultant, mediator, and facilitator and recently successfully mediated the Secretary of the Interior's Wind Turbine Advisory Committee. She is also involved with development of habitat conservation plans, and other wind wildlife, transmission, and resource forums, as well as a wide range of scientific committees, commissions and boards. When she is not working, Ms. Arnold retreats to Alaska, her second home, with her husband and three children, or is found jogging or cooking a good meal.

### **Jennifer Bies, Kearns & West**

Jennifer Bies, Senior Associate with Kearns & West, has experience providing strategic process consultation, facilitation and project management services for mediation of multi-party, consensus-oriented natural resource public policy dialogues. Jennifer also has experience facilitating strategic planning and collaborative decision-making processes. Her work has focused on issues related to natural resource management, hydroelectric relicensing, wind energy, national collaborative efforts, environmental justice, brownfield redevelopment, water resource management, infrastructure and transportation. Jennifer is expert at organizing and managing projects that allow groups to efficiently and effectively collaborate to resolve issues and develop mutually acceptable solutions. The unique qualifications that Jennifer provides include: strong relationships with diverse stakeholders; competency in assimilating highly technical information and translating it at a high level for public consumption;

expertise in design and implementation of collaborative processes; excellent communication skills; experience coordinating with multi-disciplinary teams of professionals; and exemplary attention to detail and overall project management capabilities. In addition, Jennifer has experience utilizing Web 2.0 technologies in collaborative processes and public education/involvement activities (e.g., virtual meetings, webinars, and wikis).

### **James Damon, RESOLVE**

James Damon is the Outreach Coordinator for the National Wind Coordinating Collaborative (NWCC). As NWCC Outreach Coordinator, Mr. Damon assists the organization to identify issues that impact the use of wind power, establishes dialogue with key stakeholders, and catalyzes action on strategic issues for wind development. He assesses the needs of respective constituencies and identifies events or opportunities for NWCC to pursue. Well acquainted with the issues and stakeholders, Mr. Damon supports and facilitates the activities of workgroups involved with various issues such as transmission, wildlife/wind power interactions, and siting. The NWCC is a respected resource on wind energy and Mr. Damon prepares or assists the collaborative to write reference documents. He also manages the NWCC website and budget. Mr. Damon holds a Masters degree in City and Regional Planning from The Ohio State University and a Bachelors degree in Urban Studies and Political Science from The University of Connecticut.

### **Lauren Flinn, RESOLVE**

Lauren Flinn is a program associate for the National Wind Coordinating Collaborative (NWCC), working out of RESOLVE's Washington, DC office. Ms. Flinn coordinates the NWCC's Wildlife Workgroup and siting activities. Specifically, Ms. Flinn supports the identification of research priorities, the production of reference and outreach materials, the organization of technical and information meetings and workshops, the communication of scientific and political developments, and the development of solutions to issues associated with interactions between wind energy development and wildlife. Ms. Flinn holds a Master's Degree in Environmental Science and Management from the Bren School at the University of California, Santa Barbara, and a Bachelor's Degree in Biology with a concentration in Environmental Studies from Williams College. Before joining RESOLVE, Ms. Flinn worked as an associate consultant for ICF International in the company's Energy and Resources Practice.

### **Support Staff**

Tim Sandusky, RESOLVE

Danielle Ravich, Kearns & West