

MRRIC Independent Science Advisory Panel (ISAP)
Member Bios

Sturgeon Biology / Aquatic Ecology

Steven R. Chipps, Ph.D.

Unit Leader
Adjunct Professor
U.S. Geological Survey
South Dakota Cooperative Fish & Wildlife Research Unit
South Dakota State University

Dr. Chipps is Unit Leader at the USGS, South Dakota Cooperative Fish and Wildlife Research Unit and an adjunct Professor at South Dakota State University (SDSU). His areas of expertise include bioenergetics modeling, sturgeon biology, aquatic nuisance species, and mercury contamination in fishes. Graduate student education plays a fundamental role in Dr. Chipps' research program. He has served as a thesis or dissertation advisor for 40 graduate students. Research projects directed by Dr. Chipps have focused on understanding how habitat attributes, food availability, and water temperature variation influence growth dynamics of age-0 Pallid Sturgeon. He led efforts to develop *Fish Bioenergetics 4.0*, an R-based application that was used to estimate daily food consumption by age-0 Pallid Sturgeon and proved useful for evaluating habitat quality. Results from Dr. Chipps' research program are being used by multiple Federal, State, and Canadian partners for management, including Lake Trout in Pactola Reservoir, Lake Sturgeon in Namakan Reservoir, and introduced trout in the Black Hills, SD.

Dr. Chipps' work has been funded by state, federal and local organizations that include the U.S. Environmental Protection Agency, U.S. Fish & Wildlife Service, National Park Service, U.S. Geological Survey, South Dakota Department of Game, Fish & Parks, Ontario Ministry of Natural Resources, The National Science Foundation, U.S. Department of Energy, and the South Dakota Department of Environment and Natural Resources.

Dr. Chipps is active in scientific societies and has served as President of the Education Section of the American Fisheries Society, President of the Dakota Chapter-American Fisheries Society, Science Editor for *Fisheries*, Editor for *Proceedings of the South Dakota Academy of Science*, and Associate Editor for *Wetlands*. He has authored or co-authored more than 115 scientific journal articles and book chapters in fish/aquatic ecology.

Large River Hydrology / Geomorphology

Melinda Daniels, Ph.D.

Associate Research Scientist
Director of Fluvial Geomorphology
Stroud Water Research Center

Dr. Melinda Daniels is an Associate Research Scientist and Director of Fluvial Geomorphology at the Stroud Water Research Center in Avondale, PA. Previously, Dr. Daniels was a tenured Associate Professor and Director of the Graduate Program in Geography at Kansas State University. She now teaches at the University of Pennsylvania. Her specializations include Fluvial Geomorphology, Hydrology, River and Watershed Restoration Science and Policy, Stream Ecosystem Ecology, and Natural Resource Management.

Dr. Daniels' research program focuses on modern and legacy human influences on river and watershed dynamics and the complex interactions between hydrology, geomorphology and ecology that govern stream ecosystem dynamics. Her work has been funded by federal, state, local, and non-governmental organizations including The National Science Foundation, the U.S. Environmental Protection Agency, the U.S. Geological Survey, the U.S. Department of Agriculture, The Nature Conservancy, the National Fish and Wildlife Foundation, and the William Penn Foundation. Her current projects focus on innovative science-based whole-watershed restoration strategies for ecological resiliency and flood control, the impacts of climate change on coupled human-watershed systems in the Central Great Plains, the effects of riparian reforestation on sediment and nutrient pollution reduction, the impacts of organic and conservation farming practices on surface water quality, and the role of biological ecosystem engineers in regulating stream sediment transport processes. She is the author of over 50 peer-reviewed publications and more than 200 conference papers. Dr. Daniels served on the USCAE Environmental Advisory Board, serves as a frequent panelist for several programs at the National Science Foundation, and is a member of the Army Science Board.

Indigenous Cultural and Natural Resources Management**John William Norder, Ph.D.**

Associate Professor of Anthropology
Michigan State University
Enrolled Member, Spirit Lake Tribe of North Dakota

Dr. Norder is an enrolled member of the Spirit Lake Dakota Tribe and descendant of the Turtle Mountain Band of Chippewa Indians. He received his B.S. in Anthropology from the University of Wisconsin and his Ph.D. in Anthropology from the University of Michigan with an emphasis on North American Indigenous history and cultural and natural resource management. In addition to his faculty appointment in the Michigan State University Department of Anthropology, Dr. Norder served from 2015 to 2018 as the Director of the Native American Institute in the College of Agriculture and Natural Resources of Michigan State University. Most recently, he served as an advisor to the Provost's Office of Michigan State University on federal compliance under the Native American Graves and Repatriation Act (NAGPRA). In his professional service for the past 25 years he has served in a variety of capacities as an advisor

and reviewer on issues related to NAGPRA, the National Historic Preservation Act (NHPA), the National Environmental Protection Act (NEPA), and the Ontario Heritage Act.

Dr. Norder has extensive experience working on collaborative community-based research, assessments, and partnerships with a number of U.S. Tribes, Canadian First Nations, Indigenous organizations, and international scholarly working groups. Topics have ranged from historical Indigenous landscape use to the intersection of Indigenous Knowledge in environmental resource management and economic development projects. His most recent work has focused on the construction, valuation, and use of Indigenous knowledge as part of community and land-based education initiatives among tribes in the Great Lakes region. Specific topical examples include: assessment of the prevalence and use of Indigenous Knowledge in forest ecosystem management, the development of Indigenous methodologies for the reintroduction and management of wild rice (*Zizania aquatica and palustris*), consultation on the development of University/Tribal programs on the study and management of selected wildlife populations, and the development of an organic agribusiness model that aligns with Tribal values and beliefs.

Large River Ecology / Conservation Biology

Dennis D. Murphy, Ph.D.

Adjunct Research Professor

University of Nevada, Reno

Dr. Murphy has worked on conflict resolution in land-use planning on private property since the first federal Habitat Conservation Plan on San Bruno Mountain. He won industry's oldest and most respected prize in conservation, the Chevron Conservation Award, has been named a Pew Scholar in Conservation and the Environment, and received the California Governor's Leadership Award in Economics and the Environment. He has authored or co-authored more than 200 scientific journal articles and book chapters in ecology, conservation biology, and applied sciences. Dr. Murphy has served a number of scientific societies and environmental organizations, and is Past President of the Society for Conservation Biology. He has served on the Water Science and Technology Board and Board on Environmental Studies and Toxicology at the National Research Council (of the National Academy of Sciences). His professional activities outside of academia include service on the Interagency Spotted Owl Scientific Advisory Committee, enjoined by Congress to develop a solution to that planning crisis in the Pacific Northwest, as chair of the National Park Service's Scientific Advisory Committee on Bighorn Sheep, as co-chair of the State Department's American-Russian Young Investigators Program in Biodiversity and Ecology, as codirector of the statewide Nevada Biodiversity Initiative based at the University of Nevada at Reno, and as chair of the Scientific Review Panel to California's first Natural Community Conservation Planning Program in southern California's coastal sage scrub ecosystem. He served the National Academy of Sciences on its Committee on Scientific Issues in the Endangered Species Act, on the Committee on Threatened and Endangered Species on the Platte River, and on the Committee on Hydrology, Ecology, and the Fishes of the Klamath River Basin.

Dr. Murphy's activities in the area of conservation planning and adaptive management include service on the Science Board to the CalFed Ecosystem Restoration Planning Program for the Sacramento and San Joaquin river systems, development of a conservation strategy for the imperiled Tahoe yellow cress for the U.S. Fish and Wildlife Service, development of a watershed-based ecosystem management framework for the Truckee, Carson, and Walker hydrological units in the Humboldt-Toiyabe National Forest, and in science design for the nation's largest Habitat Conservation Plan under the Endangered Species Act, in Clark County, Nevada, and several other major HCP efforts in southern California and southern Nevada. Dr. Murphy served as team leader for the committee of scientists carrying out the Lake Tahoe Watershed Assessment, a Presidential deliverable to the Tahoe Federal Interagency Partnership via the U.S. Forest Service, and subsequently sat with the science committee of the Tahoe Science Consortium. He also has chaired a number of commissions and committees for NGOs, recently including the Commission on Performance Measures for State Wildlife Conservation Strategies at the Heinz Center in Washington, D.C. Dr. Murphy has testified more than a dozen times before Senate and House committees and subcommittees on issues mostly pertaining to implementation of the federal Endangered Species Act.

Least Tern / Piping Plover Specialist

Steve Dinsmore, Ph.D.

Professor

Interim Department Chair

Departments of Natural Resource Ecology and Management and Entomology
Iowa State University

Dr. Dinsmore is a Professor of wildlife ecology and Interim Department Chair in the Departments of Natural Resource Ecology and Management and Entomology at Iowa State University. His teaching responsibilities include undergraduate courses in Ornithology, Ecological Methods, Vertebrate Biology, undergraduate seminars on several topics, and numerous Study Abroad travel course offerings. He also teaches a graduate level Avian Ecology course. His administrative experience includes 6 years as an Associate Department Chair before becoming Interim Chair in 2019. He has served professional organizations such as the American Ornithological Society, of which he is a Fellow, the Biometrics Working Group of The Wildlife Society, and others. He has also served on several panels reviewing wildlife issues on the Upper Mississippi and Missouri River systems. He gives seminars and scientific presentations nationwide and enjoys teaching workshops on the use of Program MARK and the analysis of wildlife demographic data.

Dr. Dinsmore's research program lies at the intersection of avian ecology and population biology. His primary interests are avian ecology, population biology, capture-recapture analysis, and monitoring animal populations. His research program at Iowa State University emphasizes studies of avian population biology although his work encompasses other taxa too. He has a special interest in shorebirds, as evidenced by his long-term work with the Mountain Plover. His past research has included work with the Piping Plover and Least Tern in Iowa, as well as work with the Least Tern in coastal Mississippi. Much of his work involves demographic studies of

wildlife (estimating population size, survival and movement rates, etc.) and strives to provide practical solutions to wildlife management needs. Increasingly this is linked to the management of forests and grasslands to benefit diverse wildlife taxa.

Quantitative Ecology / Statistical Methods

William Warren-Hicks, Ph.D.

Dr. William J. Warren-Hicks is CEO of EcoStat, Inc, a small woman-owned company located in Mebane, NC. He holds a Ph.D. from Duke University in Environmental Statistics. He has over 35 years of consulting expertise in the areas of environmental data analysis, uncertainty analysis, Bayesian inference and decision, probabilistic risk methods, experimental and survey design, time-series modeling, messy data analysis, hypothesis testing, multivariate analyses, and model validation studies. He has over 100 peer-reviewed publications, 2 books, and 8 book chapters in the areas of environmental statistics, probabilistic modeling, decision sciences, and risk assessment. In all cases, his role was to support ecologists, biologists, toxicologists, and ecosystem modelers by supplying expertise in data analysis methods that lead to effective management decisions. Typical work products include developing monitoring programs in support of management decisions, geospatial analysis using advanced methods generally in three or more dimensions, assessment of population impacts using Bayesian and frequentist probabilistic methods, communication of complex results to decision makers, and working collaboratively with scientists of multiple disciplines including ecosystem ecologists and modelers.

Recently, he has focused on Natural Resource Damage (NRD) cases including the Deepwater Horizon oil, Hudson River (avian species), Passaic River (fish species), Tittabawassee River (sediments), Tennessee River (fish species), and Duwamish River (fish species). He has extensive experience with rare and endangered species. For example, in the Deepwater Horizon NRD, Dr. Warren-Hicks examined the effect of toxicants on endangered piping plover populations from oil spills along the gulf coast. And for NOAA, he provided an assessment of white sturgeon population response to toxicants in the Duwamish River marsh areas. At issue in both of these projects is the generation of survey designs for somewhat rare species that are highly mobile with a large home range. In these projects, he focused on the creation of surveys to establish exposure of fish and avian species to toxic chemicals, restoration of selected portions of the river, and support of possible management actions.

Resource Economy / Sociology

John Loomis, Ph.D.

Professor

Department of Agricultural and Resource Economics

Colorado State University

Dr. Loomis' expertise is in environmental and natural resource economics. He has over twenty years of experience with stakeholder driven scientific review panels including adaptive management in large watersheds such as the Grand Canyon Monitoring and Research Center. He has brought his expertise to USACE independent external review (IEPR) processes in New Orleans and in the Cache-La Poudre River in Colorado. Dr. Loomis has authored over 250 scientific publications (e.g., *Water Resources Research*, *Journal of Environmental Economics and Management*) and five books including coauthoring *Determining the Economic Value of Water, 2nd Edition*, covering economic valuation of water in uses such as irrigation, hydropower, industrial uses, ecosystem services and recreation.

Dr. Loomis taught undergraduate recreation economics, and graduate courses in research methods, public lands management and environmental economics at Colorado State University for 25 years.

He has served as an expert witness for state and federal agencies in cases involving water, fisheries, wildlife and survey design. He has worked with University of Georgia and Portland State University in conducting training courses on natural resource economics for the U.S. Forest Service.

He is a Distinguished Scholar of the Western Agricultural Economics Association, a Fellow of Agricultural and Applied Economics Association as well as a Fellow of the Association of Environmental and Resource Economists.