**Missouri River Recovery Program Standing Independent Science Advisory Panel (ISAP)**
**MEMBER BIOS**

Aquatic/Riverine Ecologist

Margaret A. Palmer, Ph.D.
Professor of Entomology and Biology
University of Maryland
Professor and Director
Chesapeake Biological Laboratory

Margaret Palmer received her Ph.D. in oceanography, but in the last 20 years has turned her attention to freshwater systems. The broad objective of Palmer's research is to understand what controls stream ecosystem structure and function. She specifically focuses on how land use and urbanization influence stream ecosystems and on producing the best science to guide ecologically effective restoration of rivers and streams.

Palmer has more than 90 peer reviewed publications and numerous awards including American Association for the Advancement of Science Fellow and Aldo Leopold Leadership Fellow. She currently has an active research lab of 12 graduate students, postdocs, and research technicians working on various aspects of stream ecosystem science, and is a national coordinator of the National River Restoration Science Synthesis Project.

Dr. Palmer has served on numerous advisory boards and scientific panels including for the Grand Canyon Research and Monitoring Program, National Center for Ecological Analysis and Synthesis, Freshwater & Marine Ecology Faculty of 1000, EcoHydrology Science Agenda Committee, National NEON Design Consortium and National Network Design Committee, and National Research Council Committee on River Science. Palmer led the Ecological Society of America's committee to develop an action plan for the ecological sciences for the 21st century. She was Program Director of Ecology at the National Science Foundation from 1999-2000. She also has been actively involved in scholarly work on women in science.

River Hydrologist/Geomorphologist

Martin W. Doyle, Ph.D.
Associate Professor
Department of Geography
University of North Carolina

Martin Doyle is an environmental geographer with training in hydrology and engineering, specializing in rivers. His research is at the interface of science, economics and policy of environmental management and restoration, particularly focusing on the use of market mechanisms for environmental management and restoration. His research on infrastructure includes decommissioning dams and levees, as well as research on financing rehabilitation of aging drinking water and wastewater treatment infrastructure.

Dr. Doyle works collaboratively with ecologists, engineers, and economists, as well as with state and federal agencies, and private industry. He has developed long-term research programs in which he and

his students work alongside entrepreneurial mitigation bankers in order to more fully understand the realities and financial motivations for private investment in environmental markets.

Least Tern/Piping Plover Specialist

Adrian H. Farmer, Ph.D.
Principal Scientist
Wild Ecological Solutions

Dr. Farmer conducts shorebird research, with an emphasis on effects of global change on migration schedules and fitness. As an integral part of his research on shorebird migration, he has collaborated with other scientists from North America and Europe to develop applications of dynamic programming in the study of bird migration.

Management of large river systems is of particular interest to Dr. Farmer. He has had considerable experience over the last 30 years with water and habitat management issues of the Platte River of Nebraska. Most of this work has been on modeling relationships between hydrology and crane habitat. For many years, he conducted migratory shorebird research along the Missouri River in the state of Missouri, and is familiar with the system dynamics as well as the general issues affecting bird use of that system. He has developed habitat models for both Least Terns and Piping Plovers for the US Army Corps of Engineers and US Bureau of Reclamation for purposes of habitat management in the Platte River and along the beaches of Fire Island, NY.

Sturgeon Specialist

Christopher S. Guy, Ph.D.
Assistant Unit Leader
Affiliate Associate Professor
U.S. Geological Survey – Biological Resources Division
Montana Cooperative Fishery Research Unit
Montana State University

Dr. Guy designs and conducts research funded by Federal, State, and private contracts and directs the research of graduate students and other personnel. He also leads research teams and serves as a bridge among resource managers and other researchers assuring appropriateness of research questions and hypotheses. The overall mission of the MTCFRU encompasses fish ecology, physiology, population dynamics, limnology, hydrology, wildlife, endangered species, habitat and landscape ecology, and environmental contaminants.

Dr. Guy's research contributes to understanding ecosystem-level issues that are scientifically challenging because of scale, complexity, and spatial and temporal dynamism. Most of his research falls within the broad mission of ecology of fishery and aquatic resources. A major, consistent research theme has been on native fish assemblage restoration, a prominent ecological and societal issue in Rocky Mountain and Great Plains ecosystems. Habitat degradation, introduction of non-native species, and overexploitation have caused widespread decreases in ranges and abundances of native fish species at the same time that anglers and agency administrators are becoming aware of ecological concepts, biodiversity issues,

and the importance of maintaining naturally structured and functioning ecosystems. He has a comprehensive native species research program involving life history, movements, habitat use, population ecology and dynamics, exploitation, hybridization, non-native eradication, and disease components. His research includes evaluation of post-stocking dispersal of hatchery-reared pallid sturgeon; movements, diet, and habitat use of pallid sturgeon and shovelnose sturgeon; spawning locations and early life history of shovelnose sturgeon; effects of spawning location on survival of pallid sturgeon and shovelnose sturgeon; impacts of flow modifications on distribution and spawning by pallid sturgeon and shovelnose sturgeon; interactions between sauger and sympatric non-native walleye; distribution and population characteristics of non-native lake trout in Lake McDonald, Glacier National Park, with implications for suppression; landscape factors affecting the distribution and genetic diversity of bull trout and sympatric non-native lake trout in Glacier National Park; movement of resident and non-resident anglers and implications for transferring aquatic nuisance species; effects of angling on salmonids during high water temperatures; biogeographical and human influences on fish assemblages in prairie streams; and spatiotemporal dynamics of fishes in prairie streams.

Quantitative Ecologist/Statistician

Steven M. Bartell, Ph.D.
Principal Scientist
E2 Consulting Engineers, Inc.

Formerly a research scientist in the Environmental Sciences Division at the Oak Ridge National Laboratory, Dr. Steven M. Bartell is currently a Principal Scientist with E2 Consulting Engineers, Inc. and manages the E2 office in Maryville, TN. He is also an adjunct faculty member in the Department of Ecology and Evolutionary Biology at the University of Tennessee, Knoxville.

Dr. Bartell's areas of expertise include systems ecology, ecological modeling, ecological risk analysis, risk-based decision analysis, vulnerability analysis, numerical sensitivity and uncertainty analysis, environmental chemistry, and environmental toxicology. He works with public and private clients in ecological risk assessment, environmental analysis, ecological planning, and ecosystem restoration. Dr. Bartell has conducted ecological risk assessments for a diverse set of environmental stressors: ecological disturbances from commercial navigation on the Upper Mississippi and Illinois Rivers (USACOE); risk of invasive species establishment (USDA); habitat alteration and degradation (USDOE, USACOE); multiple chemical stressors in the Patuxent River and estuary (NOAA, USEPA); radionuclides and toxic metals (several Canadian mining companies); and herbicides and pesticides (Syngenta). Bartell is currently working on large-scale projects in adaptive management and restoration for the Florida Everglades, the Lower Columbia River, and the Upper Mississippi River.

Conservation Biologist

Dennis D. Murphy, Ph.D.
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 the 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.

Dr. Murphy has served a number of scientific societies and environmental organizations, and is Past President of the Society for Conservation Biology. He serves currently on the Water Science and Technology Board and until recently on the 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 co-director 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 ongoing and recent 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 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 also has 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 now sits with the science committee of the Tahoe Science Consortium. He also has chaired a number of commissions and committees for NGOs, currently 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.