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Advisers to the Nation on Science, Engineering, and Medicine

**DIVISION ON EARTH AND LIFE STUDIES
BOARD ON ATMOSPHERIC SCIENCES AND CLIMATE
BOARD ON AGRICULTURE AND NATURAL RESOURCES**

Evaluation of Landscape Conservation Cooperatives

Statement of Task

The National Academy of Sciences will convene an ad hoc committee to examine the Landscape Conservation Cooperatives (LCC) program. This committee will evaluate the purpose, goals, and scientific merits of the program within the context of similar programs, and whether the LCC program has resulted in measurable improvements in the health of fish, wildlife, and their habitats. This will include:

- 1.** An evaluation of the scientific merit of the LCC program and its goals.
- 2.** A comparison of the stated purpose and goals of the LCC with other similar programs. How are these programs similar, and how do they differ? Is there substantial overlap in their mission and purpose? If so, is there rationale for and benefit from this overlap? Is there sufficient coordination with these related programs?
- 3.** A comparison of the types of projects, activities, and collaborations supported by LCC and related programs.
 - Do the projects, activities, and collaborations supported by the LCC program overlap significantly with the traditional portfolio of other FWS programs (as the primary sponsoring agency)? Is there sufficient coordination and integration with these related programs? What benefit, if any, is gained by moving and/or consolidating this work within the LCC program? What effectiveness or efficiency is lost, if any, by housing this work within the LCC program? What changes can the FWS consider to address concerns?
 - Do the projects, activities, and collaborations supported by the LCC program overlap significantly with the portfolio of related programs in other agencies? Is there sufficient coordination with these related programs?
- 4.** An examination of the evaluation process for the LCC program. What is FWS's strategy to assess the effectiveness (output and outcomes) of the LCC program? What are reasonable short, medium, and long-term metrics for the effectiveness of the LCC program in achieving its stated purpose and goals?
- 5.** An assessment of the impacts of the LCC program at various scales. What goals (and/or objectives) have been achieved? What improvements in managing and conserving habitat and fish and wildlife species might be reasonable to expect from the LCC program in the timeframe it has existed? What longer-term impacts are likely to be realized?

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Committee Bios

CHAIR: Dorothy J. Merritts – Franklin and Marshall College

Dorothy J. Merritts is the Harry W. and Mary B. Huffnagle Professor and chair of the Department of Earth and Environment at Franklin and Marshall College in Lancaster, Pennsylvania. In 2004-2005 she was the Flora Stone Mather Visiting Distinguished Professor at Case Western Reserve University in Cleveland, Ohio, and in 2011-12 she was the Cox Visiting Professor at Stanford University. In the western United States, she conducted pioneering research on the San Andreas fault of coastal California, and her international work focuses on fault movements in South Korea, Indonesia, Australia, and Costa Rica. Her primary research in the eastern United States is on streams in the mid-Atlantic Piedmont, particularly in southeastern Pennsylvania and northern Maryland, where she is investigating the impact on streams of the transformation of woodlands and wetlands to a predominantly agricultural and mixed industrial-urban landscape since European settlement. She is the author of two textbooks and more than 40 scientific articles and the editor and contributing writer for numerous scientific books. Dr. Merritts has done extensive work on inquiry-based learning in the classroom, particularly for non-science majors at the undergraduate level, and has assisted in presenting original inquiry-based materials and demonstrations online through the Science Education Resource Center at Carleton College, Minnesota. Dr. Merritts received her B.Sc. in geology from Indiana University of Pennsylvania, her M.Sc. in engineering geology from Stanford University, and her Ph.D. in geology from the University of Arizona.

F. Stuart (Terry) Chapin, III (NAS) – University of Alaska

Terry Chapin is a Professor Emeritus of Ecology at the University of Alaska, Fairbanks. His research focuses on ecosystem ecology with particular interests in the resilience of social-ecological systems and plant physiology. Dr. Chapin has been the recipient of several honors and awards. His recognitions at the University of Alaska, Fairbanks, include the Usabelli Award (for top researcher in all fields), Distinguished Professor and Distinguished Professor Emeritus recognitions, as well as Lifetime Achievement Award. Dr. Chapin has served on several editorial and advisory boards, and was the President of the Ecological Society of America between 2010 and 2011. Dr. Chapin is also a member of the American Academy of Arts and Sciences, and the National Academy of Sciences. He has served on several committees, boards, and roundtables at the Academies. He received a Ph.D. in biological sciences from Stanford University.

Holly D. Doremus – Berkeley Law, University of California

Holly Doremus is the James H. House and Hiram H. Hurd Professor of Environmental Regulation; Co-Director, Center for Law, Energy, and the Environment; and Director, Environmental Law Program at Berkeley Law. In addition to her law school teaching experience, she has taught in the graduate ecology program at University of California, Davis, in the College of Natural Resources at UC Berkeley, and at the Bren School of Environmental Science and Management at University of California, Santa Barbara. She has been a principal investigator on two major NSF IGERT interdisciplinary training grants and a multidisciplinary grant dealing with hydropower relicensing in California. She has co-authored papers with economists and ecologists, and has been a member of two National Research Council committees. Dr. Doremus received her Ph.D. from Cornell University in plant physiology and her J.D. from the University of California Berkeley.

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Craig Groves – The Nature Conservancy

Craig Groves is a Senior Scientist at The Nature Conservancy (TNC). There he currently staffs the Science for Nature and People Initiative (www.snap.is), which is a collaboration among TNC, the Wildlife Conservation Society (WCS) and the National Center for Ecological Analysis and Synthesis that is using a multi-disciplinary team approach to addressing major conservation and science issues. Mr. Groves is also the Series Editor for the International Union for Conservation of Nature's World Commission on Protected Areas Best Practice Guidelines. Prior to working for The Nature Conservancy, Mr. Groves served as a conservation biologist and planner for WCS. He has published a book on conservation planning, *Drafting a Conservation Blueprint*, as well as numerous scientific articles on conservation planning and ecology. His second book, *Conservation Planning: Informed Decisions for a Healthier Planet* (with co-author Eddie Game) is due out in early 2015. He received a M.S. in ecology from Idaho State University.

Jessica Hellmann – University of Notre Dame

Jessica Hellmann is an Associate Professor of Biological Sciences at the University of Notre Dame. There she also leads the Climate Change Adaptation program at the Notre Dame Environmental Change Initiative and serves as the scientific lead for Notre Dame Global Adaptation Index (ND-GAIN). In her ND-GAIN leadership role, Hellmann advises research staff and seeks the consult of Notre Dame and other experts so that ND-GAIN and its related activities capture cutting-edge knowledge about the nature of climate change and strategies for reducing the impacts of climatic change. She also directs an interdisciplinary training program for PhD students called GLOBES that builds student capacity for scientific outreach. Dr. Hellmann's background is in ecology, where she studies the impacts of climate change on species and ecosystems and effective methods for managing nature in the face of climate change. Her research has been published in leading academic publications including the Proceedings of the National Academy of Sciences, Conservation Biology, and Ecology. She received her Ph.D. from Stanford University.

Elizabeth McNie – University of Colorado

Elizabeth McNie is a Research Scientist at the Western Water Assessment at the University of Colorado's Cooperative Institute for Research in Environmental Science where she is also a Research Affiliate at its Center for Science and Technology Policy Research. She is an expert in science policy and the design and implementation of use-inspired research, particularly in the field of climate-change adaptation. She currently serves as the evaluation coordinator at WWA where her research focuses on understanding the effectiveness of use-inspired research and boundary organizations. She has also been working with the Consortium of Science, Policy, and Outcomes at Arizona State University/Washington D.C. in developing a typology of research approaches to improve the usability of science for decision making. Previously she was an Assistant Professor at Purdue University in the departments of Political Science and Earth & Atmospheric Sciences. Dr. McNie received her Ph.D. from the University of Colorado, Boulder in Environmental Studies with a concentration in Science and Technology Policy Research.

Philip W. Mote - Oregon State University

Philip W. Mote is a Professor in the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University. He also is the Director of the Oregon Climate Change Research Institute for the Oregon

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University System. Before joining Oregon State University, he was a research scientist at the University of Washington and the State Climatologist for Washington. Dr. Mote's research interests include climate variability and change in the Pacific Northwest; regional climate modeling; mountain snowpack and its response to climate variability and change; sea-level rise; impacts of climate change on water resources, forests, and shorelands; and adaptation to climate change. Among his publications in these areas is an analysis of sea-level rise in the coastal waters of Washington State. Dr. Mote has served on several committees associated with climate change and sea-level rise, including the National Research Council Panel on Adapting to the Impacts of Climate Change and the IPCC. He received a Ph.D. in atmospheric sciences from the University of Washington.

John A. O'Leary – Massachusetts Division of Fisheries and Wildlife

John O'Leary is the Assistant Director for the Massachusetts Division of Fisheries and Wildlife. He works to enhance the conservation and management of fish and wildlife resources. Mr. O'Leary also served as co-chair of the Vulnerability Assessment Sub-Committee of the Association of Fish and Wildlife Agencies Climate Change Committee, which developed a guidance document meant to aid states in making State Wildlife Action Plans climate-smart. He participated in a national working group convened by the National Wildlife Federation and the U.S. Fish and Wildlife Service which produced the document, *Scanning the Conservation Horizon*, a guidance document centered on providing detailed information on vulnerability assessment techniques. Mr. O'Leary received a M.S. in fisheries and wildlife biology from the University of Massachusetts, Amherst.

John Rogan - Clark University

John Rogan is a geographer specializing in landscape ecology, fire ecology, optical remote sensing and GIScience. Recent research projects have involved monitoring land cover change in California using remote sensing data, mapping wildfire burn severity in southern California and southeastern Arizona, and mapping forest types in Massachusetts using multi-season Landsat data. John Rogan joined the faculty as Assistant Professor in Fall 2003. Dr. Rogan received his Ph.D. (Geography) degree from the joint doctoral program at San Diego State University and the University of California, Santa Barbara, where he was funded by a research grant from NASA's Land Cover and Land Use Change Program. He received M.A. and B.A. degrees (Geography) from the University of Arizona.

Rebecca R. Rubin – Marstel-Day, LLC

Rebecca Rubin is the Founder, President, and CEO of Marstel-Day, LLC an environmental consulting enterprise. She established Marstel-Day in 2002 as an expression of her commitment to the conservation of natural resources, especially habitat and open space, energy, water, and the resolution of issues at their intersections. She has extensive experience in program evaluation and policy analysis. Prior to founding Marstel-Day, she served as the Director of the Army's Environmental Policy Institute and before that as a member of the professional research staff at the Institute for Defense Analyses. She was a committee member on the National Research Council committee on Alternatives for Controlling the Release of Solid Materials from NuRC-Licensed Facilities. Ms. Rubin has a M.A. in international security from Columbia University's School of International and Public Affairs.

Dale Strickland – Western EcoSystems Technology, Incorporated (WEST)

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Dale Strickland is the President and Senior Ecologist with Western EcoSystems Technology, Incorporated (WEST). He has over forty years of experience in ecological research and wildlife management. Prior to his employment with WEST, he served as a scientist and administrator with the Wyoming Game and Fish Department and on the faculty of the Department of Statistics at the University of Wyoming. His areas of expertise include the design and conduct of wildlife studies, impact and risk assessment, and natural resource damage assessment studies. He has taught courses in wildlife management and statistics as a visiting professor at the University of Wyoming. He contributed to documents for the National Oceanic and Atmospheric Administration regarding the quantification of injury due to oil spills. He was a committee member on the National Research Council report titled Environmental Impacts of Wind-Energy Projects. He served as the Executive Director of the Platte River Endangered Species Partnership. He also served as an Associate Editor and is a frequent reviewer for the Journal of Wildlife Management. Dr. Strickland received a Ph.D. in zoology from the University of Wyoming. He is a Certified Senior Ecologist by and a member of the Board of Certification for the Ecological Society of America and a Certified Wildlife Biologist by the Wildlife Society.

Eric Toman – The Ohio State University

Eric Toman is an Associate Professor in the School of Environment and Natural Resources at The Ohio State University. He has an interdisciplinary background that includes training and experience in the social and natural sciences. His research focuses on developing a better understanding of the social dimensions of coupled human and natural systems. Using theory and methods from sociology and social-psychology, Dr. Toman examines the factors that influence the adoption of behaviors that enable adaptation to changing environmental conditions. He received a M.S. in Forest Resources and a Ph.D. in forest resources from Oregon State University.