STATEMENT OF QUALIFICATIONS
Harry M. Ohlendorf

EDUCATION
Ph.D., Wildlife Science, 1971, Texas A&M University
M.S., Wildlife Science, 1969, Texas A&M University
B.S., Wildlife Management (Fisheries Option), 1962, Texas A&M University

PROFESSIONAL REGISTRATION
Certified Wildlife Biologist; The Wildlife Society

CURRENT EXPERIENCE
Technology Fellow, Ecological Risk Management, CH2M Inc, 1990–present. Duties include planning, implementation, and reporting of site ecological characterizations and surveys, contaminant exposure and effect analyses, risk characterization, and project impact evaluations for a wide variety of environmental projects. Many projects focus on selenium as a constituent of concern for water management at various locations (such as mining operations, petroleum refineries, coal-fired power plants, and agricultural drainage disposal sites).

PREVIOUS EXPERIENCE
Wildlife Research Biologist, U.S. Fish and Wildlife Service, Patuxent Wildlife Research Center 1971-1990. Research focused on the occurrence and effects of contaminants in aquatic and terrestrial ecosystems. Studies included the sampling of various wetland and terrestrial food webs and assessment of the effects observed in higher trophic levels, especially birds. They were conducted in the eastern United States, California, Alaska, and Hawaii.

SELECTED RELATED EXPERIENCE
- Bay Delta Conservation Plan (BDCP), California Department of Water Resources, 2008-present. Developed and calibrated selenium bioaccumulation models used to evaluate potential effects of alternatives on water quality and completed modeling of selenium bioaccumulation in fish and in bird eggs to determine significance of expected changes for alternatives in comparison to baseline conditions and no action alternative. Where significant effects were predicted to occur, identified mitigation that would reduce the impacts.
- Ecological Restoration Plan for Salton Sea, California Department of Water Resources, 2004-2011. Served as technical lead for evaluation of selenium-related as well as other contaminant issues pertinent to future restoration of Salton Sea as part of the Environmental Restoration Study and Programmatic Environmental Impact Report. Evaluation included review and synthesis of all selenium-related information and data for the Salton Sea, identification of data gaps and ways of filling those gaps, sampling and analyses as well as laboratory studies to address data needs, understanding and description of selenium biogeochemistry as it may relate to evaluation of management alternatives, evaluation of treatment technologies for selenium removal, and identification of management approaches for reducing bird exposures to harmful levels of selenium.

- Strategic Advisory Panel on Selenium Management, Teck Coal Limited, Alberta and British Columbia, Canada, 2010-2015. Served as a member of this panel brought together to develop an independent, strategic management plan integrating environmental, social, and business opportunities and risks associated with selenium management and to develop a conceptual implementation plan for individual operations, focusing on ecological risk management and selenium ecotoxicology. Work of panel concluded with development of the strategic plan in 2010; subsequently assisted Teck Coal, regulators, and other stakeholders in the development of data quality objectives for collecting environmental data in an extensive research and development program and several sampling/monitoring programs.
- SETAC Pellston Workshop: Ecological Assessment of Selenium in the Aquatic Environment, Pensacola, Florida, 2007-2010. This Society of Environmental Toxicology and Chemistry (SETAC) Workshop brought together key individuals from business, academia, government, and nongovernmental organizations to develop a consensus on the state of the science and a path forward for assessment of selenium in the aquatic environment. Results included key findings for problem formulation, environmental partitioning, bioaccumulation, trophic transfer, toxic effects, and risk assessment. Served as a steering committee member and was an editor for the resulting book that was published in 2010.
- Development of a Guide for Site-specific Assessment of Selenium in Aquatic Systems. North American Metals Council - Selenium Working Group, 2007-2011. Senior author in the development of an approach for conducting site-specific assessments of selenium bioaccumulation and effects. Guide describes a phased approach for field and laboratory assessments of selenium bioaccumulation in fish and aquatic-dependent birds that can be applied in different environmental settings with the goal of developing and interpreting a tissue-based selenium value. Guide also summarizes extensive data on the effects of selenium on fish and bird species and was published as a critical review article in the journal *Integrated Environmental Assessment and Management*.
- Development of a Site-specific Standard for Selenium in Open Waters of Great Salt Lake, UT; Utah Department of Environmental Quality, 2006-2013. Open waters of the Great Salt Lake (GSL) were protected for their beneficial uses through the application of a narrative criteria clause in the state water quality standards. The Utah Department of Environmental Quality (DEQ) initiated a process in 2004 to develop a site-specific numeric water quality standard for selenium for the open waters of the GSL. Collaborated with the DEQ, the Steering Committee, and the Science Panel, and provided technical support to complete the studies required to provide essential information for derivation of the site-specific standard, which was based on bird eggs.
- San Francisco Bay Regional Monitoring Program and Surface Water Ambient Monitoring Program, 2002-present. Have served as a technical reviewer for the San Francisco Bay Regional Monitoring Program's (RMP's) Exposure and Effects Pilot Study since 2002, and currently serve as the external reviewer for the RMP's Selenium Workgroup. In addition, have served as an external

reviewer for the Surface Water Ambient Monitoring Program (SWAMP) studies of contaminants in California coastal fish and in fish of the State's lakes, reservoirs, rivers and streams as a member of the Bioaccumulation Oversight Group.

SELECTED PUBLICATIONS

Ohlendorf, H.M. 2011. Selenium, salty water, and deformed birds. J.E. Elliott, C.A. Bishop, and C.A. Morrissey, eds., *Wildlife Ecotoxicology: Forensic Approaches; Emerging Topics in Ecotoxicology: Principles, Approaches and Perspectives*, Vol. 3, Pp. 325-357. Springer, New York, NY.

Ohlendorf, H.M., S.M. Covington, E.R. Byron, and C.A. Arenal. 2011. Conducting site-specific assessments of selenium bioaccumulation in aquatic systems. *Integrated Environmental Assessment and Management* 7:314-324.

Ohlendorf, H.M., and G.H. Heinz. 2011. Selenium in birds. W.N. Beyer and J.P. Meador, eds., *Environmental Contaminants in Biota: Interpreting Tissue Concentrations*, Second Edition, Pp. 669-701. CRC Press/Taylor and Francis Group, Boca Raton, FL.

Ohlendorf, H.M., J. DenBleyker, W.O. Moellmer, and T. Miller. 2009. Development of a site-specific standard for selenium in open waters of Great Salt Lake, Utah. A. Oren, D. Naftz, P. Palacios, and W.A. Wurtsbaugh, eds. *Saline Lakes around the World: Unique Systems with Unique Values*. Natural Resources and Environmental Issues, Vol. 15, Article 4. Pp. 23-36. S.J. and Jessie E. Quinney Natural Resources Research Library, Logan, UT. Available at: http://digitalcommons.usu.edu/nrei/vol15/iss1/4

Ohlendorf, H.M., T.S. Pulley, B.E. Sample, S.P. Long, E.R. Byron, and K.J. Nielsen. 2007. Ecological risk assessment for selenium in the evaluation of restoration alternatives for Salton Sea, California. A.J. Clemmens and S.S. Anderson, eds. Proceedings of U.S. Committee on Irrigation and Drainage Fourth International Conference on Irrigation and Drainage, Pp. 97-116. October 3-6, Sacramento, CA.

Ohlendorf, H.M. 2003. Ecotoxicology of selenium. D.J. Hoffman, B.A. Rattner, G.A. Burton, Jr., and J. Cairns, Jr., eds. *Handbook of Ecotoxicology*, Second Edition, Pp. 465-500. Lewis Publishers, Boca Raton, FL.