Katherine von Stackelberg

Researcher and Project Manager
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Contact Information

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Education

Sc.D., 2006, Environmental Science and Risk Management, Harvard School of Public Health
Sc.M., 1998, Environmental Health and Health Policy and Management, Harvard School of Public Health
A.B., 1988, cum laude in General Studies, Harvard College

Research Interests

Katherine von Stackelberg specializes in developing models and methods to quantify the probability that ecological and human receptors will develop adverse effects as a result of exposure to chemicals in the environment. She also focuses on methods for integrating economics and risk assessment to quantify the benefits of proposed risk reductions of management or regulatory actions for use in cost-benefit, cost-effectiveness, and value of information analyses. She has particular experience in the assessment and evaluation of contaminated sediments through the US Army Corps of Engineers dredged material management program, and modeling of bioaccumulative compounds. Much of her work has focused on incorporating quantitative uncertainty analysis (e.g., analytical, probabilistic, and fuzzy methods) into the risk assessment process.

Ms. von Stackelberg served as technical lead for the development of a probabilistic bioaccumulation model used to evaluate remedial alternatives for the Hudson River Superfund Site, and she was the technical lead for the ecological risk assessment, which incorporated a joint probability model for predicting potential effects. Under a Phase I SBIR grant, she

led the effort to develop a prototype Bayesian hierarchical model for predicting the potential for ecological effects associated with exposures to military unique compounds (e.g., smokes and obscurants, energetics) for which toxicity is poorly characterized and/or highly uncertain. She is currently leading the effort to develop a probabilistic decisionmaking framework for evaluating the suitability of disposal of dredged materials at the Historic Area Remediation Site (HARS) in NY-NJ Harbor.

Ms. von Stackelberg's dissertation, completed under a STAR grant, entitled "Contingent Valuation for Ecological and Noncancer Risk Reductions within an Integrated Human Health and Ecological Risk Framework," explored the use of stated preference techniques for eliciting values consistent with economic theory for risk reductions associated with exposure to PCBs in the environment. She developed a valuation function for risk reduction, and incorporated that into a risk assessment model using exposures to PCBs in the Hudson River as a case study.

Select Publications

von Stackelberg, K., M. Nelson, B. Southworth, and T. Bridges. 2006. An Evaluation of Risk Drivers in a Sample of Risk Assessments Conducted for the US Army, submitted, *Human and Ecological Risk Assessment*.

von Stackelberg, K., S. Luoma, R. McCormick, K. Scrabis, E. Dorward-King and S. Polasky. "Complexity in Ecological Systems," chapter in *Valuation of Ecological Resources: Integration of Ecological Risk Assessment and Socio-economics to Support Environmental Decisions*. Stahl, R.G., Kapustka, L., Munns, W. and Bruins, R. (eds). SETAC Press, Pensacola, FL. 2006. in press.

Goyal, A., Small, M., von Stackelberg, K., Burmistrov, D., and Jones, N. 2005. Estimation of fugitive lead emission rates from secondary lead facilities using hierarchical Bayesian models. *Environmental Science and Technology* 39(13):4929-4937.

von Stackelberg, K. and C. Menzie. 2002. A cautionary note on the use of species presence and absence data in deriving sediment quality criteria. *Environmental Toxicology and Chemistry* 21(2):466-472.

von Stackelberg, K., D. Burmistrov, D.J. Vorhees, T.S. Bridges, and I. Linkov. 2002. Importance of uncertainty and variability to predicted risks from trophic transfer of PCBs in dredged sediments. *Risk Analysis* 22(3):499-512.

von Stackelberg, K., D. Burmistrov, I. Linkov, J. Cura and T.S. Bridges. 2002. The use of spatial modeling in an aquatic food web to estimate exposure and risk. *Science of the Total Environment*. 288(1-2):97-110.

Vorhees, D.J., S.B. Kane Driscoll, K. von Stackelberg, J.J. Cura, and T.S. Bridges. 2002. An evaluation of sources of uncertainty in a dredged material assessment. *Human and Ecological Risk Assessment*. 8(2):369-389.

Linkov, I., K. von Stackelberg, D. Burmistrov and T.S. Bridges. 2001. Uncertainty and variability in risk from trophic transfer of contaminants in dredged sediments. *Science of the Total Environment* 274:255-269.