

## Resumé:

### TOM BIKSEY

*Tom Biksey serves as a project manager and technical expert on multi-disciplinary environmental assignments throughout the world. These projects include both baseline information development and spatial and temporal analysis of existing and projected impacts on human and ecological receptors. As manager and senior technical lead on these projects, he interacts directly on the client's behalf with U.S. Environmental Protection Agency and state regulatory agencies as well as various international, regional, and local departments and authorities. In addition, through his overseas assignments in Australia, United Kingdom, United Arab Emirates, Bahrain, Oman, Qatar, Spain, Portugal, Nigeria, Sweden, Yemen, and Venezuela, Mr. Biksey has an appreciation of the cultural and technical challenges of international work.*

### Education

- BA, Biology, Washington and Jefferson College
  - Sea Semester, Boston University Marine Program
  - Graduate Studies Marine Biology, University of Alabama, Marine Environmental Science Consortium Fellowship
- MS, Marine Biology, California State University at Long Beach
  - Graduate Studies Environmental Engineering, University of Maryland
- MPH, Environmental Occupational Health, University of Pittsburgh
  - Risk Certificate
  - Doctorate Program in Public Health

### Professional Affiliations

- Delta Omega Society, Omicron Chapter
- Adjunct Lecturer Washington and Jefferson College and University of Pittsburgh
- Pennsylvania Cleanup Standards Science Advisory Board Committee Member
- Association for the Environmental Health of Soils
- Allegheny Erie Society of Toxicology
- Society of Risk Analysis – Pittsburgh Chapter Executive Committee
- Interstate Technology Regulatory Council (ITRC) Vapor Intrusion Committee

- Southern California Association of Marine Invertebrate Taxonomists
- Northwest Association of Marine Invertebrate Taxonomists
- Water Environment Federation – Ecology and Literature Committee
- ASTM Committees: E47 Biological Effects and Environmental Fate /E50 Environmental Assessment
- Society of Environmental Toxicology and Chemistry
- American Chemical Society

### Certification and Training

- Certified SCUBA Diver
- Certified Ecologist – Ecological Society of America
- Certified Risk Assessment – University of Pittsburgh
- Hazardous Materials Incident Response Operations
- Occupational Safety and Health Administration 40-hour Health and Safety – Current 8-hour Refresher Training

### Key Projects

In his primary role, Mr. Biksey provides technical input from work plan through remedial alternative selection and risk communication, and has designed and conducted over 150 ecological and human health risk assessments

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for site investigations and remedial response actions at regulated and non-regulated facilities. The significance of the potential risks characterized is the key cost-benefit factor for determining the level of effort required for any additional risk assessment phases versus overall site cleanup costs. To meet client expectations, he focuses the risk assessments in a cost-effective manner that demonstrates responsibility for assessment of impacts and ensures environmentally sound protective strategies. His overall approach provides the risk manager with the information necessary to eliminate unwarranted remediation activity through the identification of aggressive remediation goals for realistic risk-reduction. Tom also conducts risk analysis in support of insurance liability and coverage, and REACH compliance.

Mr. Biksey's primary responsibilities include human health and ecological risk assessments, sediment and water quality issues, and natural resources assessments. In addition, he provides expert testimony and legal support on projects including recovery of cleanup costs and safe remediation of sites. As a client advocate, he reviews and develops comments on proposed regulations and guidance documents, and provides overall technical guidance to project teams developing risk-based solutions to environmental management issues. He has developed position papers, participated on technical guidance development committees, chaired and presented technical sessions at conferences, peer-reviewed technical manuscripts, and conducted technology transfer workshops and seminars. Mr. Biksey has published extensively in the scientific literature, and he is an adjunct professor and undergraduate research advisor.

Mr. Biksey also provides technical and negotiating support to clients pursuant to regulatory permitting, due diligence, fate and transport modeling, natural resource

assessments, NEPA activities, and licensing requirements. Actions included revising carcinogenic criteria, FIFRA preemption, determining metal bioavailability, forensic investigations, conducting thermal variance studies, and investigating fish kills. He participated in studies for permitting applications that included QSAR analysis, hydrodynamic and sedimentation modeling, jurisdictional wetlands, oil field decommissioning, and wetland treatment systems. To aid the client in managing and analyzing complex data sets, he has designed and developed data base management systems for application with GIS programs.

Mr. Biksey has significant experience working on projects in New York. The following summarizes some of these projects:

- Ecological risk assessor for a Fish and Wildlife Impact Analysis (FWIA) pursuant to an Order on Consent with the New York State Department of Environmental Conservation (NYSDEC) for an operable unit. The FWIA describes the ecology of the site and the surrounding environment including fish and wildlife resources and associated flora and fauna for the ecological communities within the study area, and evaluates the exposure to, and ecological effects of identified constituents of concern on the identified ecological receptors. The objective of the FWIA, currently in the Step 3C phase, is to present conclusions relative to the potential ecological risk posed by the site and provide information useful to risk managers to support remedial decisions related to the site.
- Conducted an ecological study to determine if a complete exposure pathway existed linking residual constituents in onsite tributaries to a receiving creek or directly to ecological receptors at a Superfund site. The purpose of this study was to provide the USEPA, New York State Department of Environmental Conservation (NYSDEC), and United States Fish and Wildlife Service

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(USFWS) with the best available information to make a risk management decision regarding the potential impacts associated with sediment removal to either the creek or directly to ecological receptors. Based on these results, the NYSDEC and the USFWS recommended to the EPA that sediment excavation is not warranted except for one small area in an onsite tributary. EPA agreed with the conclusion. Thus, a cost-effective exit strategy for the sediments was negotiated that ensured environmentally sound protective strategies and eliminated unwarranted remediation activity through the identification of aggressive remediation goals for realistic risk-reduction.

Prepared a risk-based plan to evaluate wastefill material that slumped into the Buffalo River, and that remains between the river and a slurry cutoff wall. The overall objectives of the plan was to characterize potential risks to human and ecological receptors, evaluate the effectiveness of remedial measures conducted to date, and identify environmentally sound and cost-effective measures for addressing the wastefill materials. A conceptual site model was prepared to describe the complex interrelationships of soil, groundwater, sediments, and potential receptors by qualitatively evaluating the general exposure scenarios that would apply to the wastefill area. The objective was to estimate the type and magnitude of potential human and ecological exposure to the identified COIs based on current and foreseeable conditions, and to consider all institutional and engineering controls, as well as similar controls that are applicable within the Buffalo River watershed. A risk perspective compared the absolute risks from the wastefill materials to the relative risks from other sources of COIs in the river.

- Assisted in the risk assessment portion of a PRP cost allocation evaluation for a Superfund landfill site. The goal of the evaluation was to develop a fair and objective discussion of cost allocation for all activities associated with an Order on Consent requiring remedial investigation and feasibility study activities at the site. The Order of Consent is with the State of New York and is considered an approved state action settlement for purposes of 42 USC 9613(f). The evaluation consisted of two phases. The first phase included a review of site files, an internet research, and construction of an Access database summarizing the file chronology, PRP participants, background information on the PRP participants, PRP related constituents of interest, industry-related constituents of interest, and site analytical data. The next phase of the project will include a probability analysis and evaluation of Gore factors and other court approved allocation decision tools to develop a PRP allocation percentage for each of the activities required under the Order of Consent.

### Publications and Presentations

Biksey, Thomas M.; Schultz, Amy Couch; Bernhardt, Aaron M.; Marion, Brett; Peterson, Chrissy 2010. Literature Review: Ecological and Human Health Risk Assessment. Water Environment Research. Water Environment Research, 82(10): 2067-2094.

Biksey, Thomas.M., Susan Zickmund, Felicia Wu. 2010. Disparities in Risk Communication: A Pilot Study of Asthmatic Children, Their Parents, and Home Environment. Journal of the National Medical Association. In Press.

Raina, Dhruv S., Biksey, Thomas M., Baker, Jeffrey R. 2010. Mitigation of Vapor Intrusion Risks: Passive Wind Driven Turbine System. Presented at The Business of Brownfields 2010 Conference. April 20-21, 2010, Pittsburgh,

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### Pennsylvania

Biksey, T.M. 2009. Renewable Fuels: Public and Environmental Health Model. Presented at Society of Risk Analysis 29th Annual Meeting – Risk Analysis: The Evolution of a Science” December 6-9, 2009 - Baltimore, Maryland.

Biksey, T.M., F. Wu. 2009. Letters: Biofuels By-Products. *Science*. Volume 326: 1344-1345

Biksey, Thomas M.; Schultz, Amy Couch; Bernhardt, Aaron M.; Marion, Brett; Isbister, Chrissy 2009. Literature Review: Ecological and Human Health Risk Assessment. *Water Environment Research*. 81(10): 2170-2210.

Biksey, Thomas M.; Schultz, Amy Couch; Bernhardt, Aaron M.; Smith, Preston; Marion, Brett; Isbister, Chrissy 2008. Literature Review: Ecological and Human Health Risk Assessment. *Water Environment Research*. 80(10): 1997-2025.

Biksey, Thomas M.; Volz, Conrad Danier; Zubritsky, Lindsey. 2008. Metals in Channel Catfish from the Allegheny, Monongahela and Ohio Rivers near Pittsburgh, Pennsylvania: Potential fish consumption issues. Presented at the Society of Environmental Toxicology and Chemistry's North America 29th Annual Meeting in Tampa from 16-20 November, 2008

East, R., S. Morgan, T. Biksey. 2008. Integrating Brownfields Redevelopment and Education: The Detroit Street Redevelopment Project Update. Presented at The National Brownfields 2008 Conference. May 7-8, 2008, Detroit, Michigan.

Biksey, Thomas M.; Schultz, Amy Couch; Bernhardt, Aaron M.; Smith, Preston; Marion, Brett; Isbister, Chrissy 2007. Literature Review: Ecological and Human Health Risk Assessment. *Water Environment Research*. 79(10): 2170-2191.

East, R., S. Morgan, T. Biksey. 2007. Integrating Brownfields Redevelopment and

Education: The Detroit Street Redevelopment Project. Presented at The Business of Brownfields 2007 Conference. April 18-20, 2007, Pittsburgh, Pennsylvania.

Wu, F., T. Biksey, M. Karol. 2006. Can Mold Contamination of Homes Be Regulated? Lessons Learned from Radon and Lead Policies. *Environmental Science and Technology* 41(14): 4861-4867.

Kremer, F., D.V. Nakles, T.M. Biksey. 2006. Monitored Natural Attenuation Forum: Monitored Natural Recovery of Contaminated Sediments. *Remediation* 17(1): 139-146.

Biksey, T.M., F. Wu. 2006. "Indoor Agent Exposure and Public Health Policy: Lessons Learned". Invited speaker for Symposium on Health Risks in Home Environments: Sources and Solutions, Society of Risk Analysis 26<sup>th</sup> Anniversary Meeting of SRA: Risk Analysis in a Dynamic World: Making a Difference. December 3-6, 2006, Baltimore, Maryland. *Best Paper Award - Biological Stressors Committee*.

Biksey, T.M., A. Couch Shultz, A.M. Bernhardt, B. Marion. 2006. Literature Review: Ecological and Human Health Risk Assessment. *Water Environment Research*. 78(10): 2097-2135.

Interstate Technology Regulatory Council. 2006. Technical and Regulatory Vapor Intrusion Guidance. Contributing author for Data and Risk Evaluation Framework Chapter.

Biksey, T.M. 2006. "Constructed Wetland Systems." Invited guest lecturer for course entitled Land Reclamation at Washington and Jefferson College, Washington, Pennsylvania, March 28, 2006.

Biksey, T.M. 2006. "Risk Management Strategies for Pennsylvania Act 2." Invited guest lecturer for course entitled Land Reclamation at Washington and Jefferson College, Washington, Pennsylvania, March 2, 2006.

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Biksey, T.M. 2005. "The ITRC Vapor Intrusion Guidance: A Nationwide Risk-Based Approach". Invited speaker for Symposium on Indoor Environmental Exposures, Society of Risk Analysis 25<sup>th</sup> Anniversary Meeting of SRA: Past Present, and Future of Risk Analysis, December 4-7, 2005, Orlando, Florida.

Biksey, T.M. 2005. "Human Health Exposure Assessment, Southeast Federal Center, Washington, D.C." Invited guest lecturer for course entitled Principles of Environmental Exposure at University of Pittsburgh, Pittsburgh, Pennsylvania, November 9, 2005.

Biksey, T.M., A. Couch Shultz, A.M. Bernhardt. 2005. Literature Review: Ecological and Human Health Risk Assessment. Water Environment Research. 77(6): 2835-2901.

Biksey, T.M. 2004. "Ecological Risk Assessment". Invited guest lecturer for course entitled Introduction to Risk Assessment at University of Pittsburgh, Pittsburgh, Pennsylvania, December 2, 2004.

Biksey, T.M., A. Couch Shultz, A.M. Bernhardt. 2004. Literature Review: Ecological and Human Health Risk Assessment. Water Environment Research. 76(5).

Biksey, T.M. 2004 "Risk Mitigation and Land Reclamation." Invited guest lecturer for course entitled Land Reclamation at Washington and Jefferson College, Washington, Pennsylvania, March 31, 2004.

Biksey, T.M., A. Couch Shultz, W.H. Phillips, A.M. Romano, and A. M Bernhardt. 2003. Literature Review: Ecological and Human Health Risk Assessment. Water Environment Research. 75(5).

Biksey, T.M. 2003. "A Map and Toolbox for Ecological Risk Assessment." Invited presentation for Allegheny Erie Society of Toxicology Spring Meeting on April 25, 2003 in Pittsburgh, Pennsylvania.

Couch Schultz, A and T.M. Biksey. 2003. Arsenic Speciation and its Effect on Soil Cleanup Standards. Environmental Claims Journal. 15(1):107-118.

Ingersoll, C., T. Biksey, A. Burton, I. Hartwell, J.Diamond, S. Ireland, M. Johns, P. Landrum, D. Moore, L. Saban, and E. Smith. 2003. ASTM Standard Guide for Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Testing (E1391-02). ASTM Committee E47 on Biological Effects and Environmental Fate and Subcommittee E47.03 on Sediment Assessment and Toxicology.

Biksey, T.M. 2002. "A Water Quality Strategy and Tools for the Future." Presented at the Society of Environmental Toxicology and Chemistry's 23rd Annual Meeting, 16 - 20 November 2002, in Salt Lake City, Utah.

Biksey, T.M. and C. Cowan-Ellsberry. 2002. The Dirty Dozen (PPTs). Water Environment and Technology. Vol 14(11): 30-33.

Biksey, T.M. 2002. "Surface Water Risk-Based Criteria for Groundwater Remediation Systems: Process and Application." Presented at 8<sup>th</sup> Annual Industrial Waste Technical and Regulatory Conference, 11 - 14 August 2002, in Atlantic City, New Jersey.

Biksey, T.M., and B. Kramer. 2002. Criteria for Change (Water Quality Standards Program Strategy). Water Environment and Technology. Vol 14(6): 36-39.

Biksey, T.M., A. Couch Shultz, W.H. Phillips, A.M. Romano, and E.D. Gross. 2002. Literature Review: Ecological and Human Health Risk Assessment. Water Environment Research. Vol 74 (5).

Biksey, T.M. 2002 "Ecological Risk Assessment." Invited guest lecturer for course entitled Intro to Environmental Studies at Washington and Jefferson College, Washington, Pennsylvania, April 17, 2002.

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Biksey, T.M. and E.D. Brown. 2001. "The Hyporheic Zone: Linking Groundwater and Surface Water – Understanding The Paradigm." Remediation Journal. 12(1).

Biksey, T.M., C.L. Boben, R.A. Carlson, M.P. Peramaki, and R.M. Rohlf. 2001. "Use of a Groundwater to Surface Water Mixing Model to Support Risk-Based Action Levels in a Riverine Ecosystem." Presented at the Society of Environmental Toxicology and Chemistry's 22nd Annual Meeting, 11 - 15 November 2001, Baltimore, Maryland.

Biksey, T.M. 2001 "Constructed Wetlands for Treatment of Waste Streams." Invited guest lecturer for course entitled Watershed Management at Washington and Jefferson College, Washington, Pennsylvania, October 31, 2001.

Biksey, T.M. 2001. "IRCC Brownfields Eljer Park – Formerly Eljer Plumbingware Site, Marysville, Ohio." Presented at the Society of Risk Analysis Greater Pittsburgh Chapter Meeting on October 23, 2001, Pittsburgh, Pennsylvania.

Biksey, T.M., A. Couch Shultz, and W.H. Phillips. 2001. Literature Review: Ecological and Human Health Risk Assessment. Water Environment Research. Vol 73(5).

Biksey, T.M. 2001. "Ecological Risk Assessment Workshop – How is it performed? What is it used for?" Presented at Society of Risk Analysis Greater Pittsburgh Chapter July 28, 2001, Pittsburgh, Pennsylvania.

Biksey, T.M. 2001. "Eco-Risk: Process and Tools" Presented at the Academy of Certified Hazardous Materials Managers Laurel Highlands Chapter July 20, 2001, Johnstown, Pennsylvania.

Biksey, T.M. and E. Brown. 2001. "In the Hyporheic Zone" Water Environment and Technology. Vol 13(6):40-45.

Biksey, T.M. 2000. "Ecological Risk Assessment." Chairman and Presenter: Workshop at the Water Environment Federation's 73<sup>rd</sup> Annual Conference & Exposition on Water Quality and Wastewater Treatment on October 15, 2000, Anaheim, California

Biksey, T.M., A.M. Bernhardt, D.G. Aubrey, and S.B. Aubrey. 2000. "Environmental Baseline Assessment of Oil Fields in the Arabian Gulf." Presented at the Society of Environmental Toxicology and Chemistry's 21st Annual Meeting, 12 - 16 November 2000, Nashville, Tennessee.

Biksey, T.M. and A.M. Bernhardt. 2000. "The Right Tool for the Job" (Ecological Risk Assessment) Water Environment and Technology. Vol 12(3): 30-35.

Monson, B. and T.M. Biksey. 2000. "TMDLs Should Consider Their Ecological Relevance." Water Environment and Technology. Vol 12(2): 47.

Biksey, T.M., M.E. Kimes, A.M. Bernhardt, M.A. Suminski, and C. Penny. 1999. "Long-Term Aquatic Monitoring Program at a Naval BRAC Site". Presented at the Society of Environmental Toxicology and Chemistry's 20th Annual Meeting on November 14 – 18, 1999, Philadelphia, Pennsylvania.

Biksey, T.M., M.E. Kimes, A.M. Bernhardt, M.A. Suminski, and C. Penny. 1996 "Assessment of Ecological Risks Prior to A Naval Base Closure." Presented at the Society of Environmental Toxicology and Chemistry's 17th Annual Meeting on November 17-21, 1996, Washington, D.C.

Biksey, T.M. 1995. "Use of Chesapeake Bay Restoration Goals Index in Ecological Risk Assessments." Presented at the Society of Environmental Toxicology and Chemistry's Second Work Congress (16th Annual Meeting) on November 5-8, 1995, Vancouver, British

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Columbia.

Biksey, T.M. 1995. "Cleanup Standard Development" and "Arsenic Status Update." Presented at a Technology Transfer Seminar on "Remediation Issues" for PPG Industries, August 22, 1995, Pittsburgh, Pennsylvania.

Biksey, T.M. 1995. "Focused Risk Assessments for Groundwater and Soil Contamination." Invited guest lecturer for graduate course entitled Subsurface Contamination Assessments at University of New Haven, May 23, 1995, West Haven, Connecticut.

Biksey, T.M. and W.C. Stuenkel. 1994. "Managing Airport Watersheds." Water Environment and Technology. Vol. 6(7): 42- 45.

Biksey, T.M. 1994. "Ecological Risk Assessment for Operable Unit 2 of the Marine Corps Base, Camp Lejeune, North Carolina." Presented at the Water Environment Federation's 67th Annual Conference and Exhibition on October 16-20, 1994; Published in Proceedings of the Surface Water and Ecology Symposia of the Conference.

Biksey, T.M. and W.C. Stuenkel. 1993. "Pittsburgh (Pennsylvania) International Airport Water Quality Management Program." Presented at the Water Environment Federation's 66th Annual Conference and Exhibition on October 3-7, 1993; Published in Proceedings of the Surface Water and Ecology Symposia of the Conference.

Biksey, T.M. 1993. "Human Health and Ecological Risk Assessments." Invited guest lecturer for graduate course entitled Subsurface Contamination Assessments at University of New Haven, May 24, 1993, West Haven, Connecticut.

Biksey, T.M. 1993. "Ecological Risk Assessment." Presented to the DuPont Remediation Advocacy Team, June 10, 1993, Wilmington, Delaware.

Biksey, T.M. 1993. "Risk Assessment." Presented at Technology Transfer Seminar on "Controlling Costs on Remediation Projects" for United Technologies Corporation, April 20, 1993, Hartford, Connecticut.

Biksey, T.M. 1993. "Risk Assessment." Presented at Technology Transfer Seminar on "RI/FS Technologies" for PPG Industries on March 2, 1993, Pittsburgh, Pennsylvania.

Biksey, T.M. 1993 "Risk Assessments." Invited speaker for the Pittsburgh Chapter of the American Industrial Hygiene Association monthly meeting, February 1993.

Biksey, T.M. 1992. "Application of Risk Assessment to Small Site Remediation." Technology Transfer Seminar. Presented to Conoco Inc. September 29, 1992, Houston, Texas.

Biksey, T.M. 1991. "National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges." Invited Panelist for Illinois Public Airports Association's Session at the Illinois Aviation Conference, May 1-3, 1991, Peoria, Illinois.

Biksey, T.M. 1990. "An Ecological Assessment of Cumulative Non-Point Source Impacts in the Vermilion River." Presented at the Water Pollution Control Federation's 63rd Annual Conference and Exhibition on October 7-11, 1990, Washington, DC.

Biksey, T.M. 1990. "Public Health Evaluation and Environmental Assessment for the Berks Sand Pit Superfund Site." Presented at the Hazardous Waste and Hazardous Materials' 7th National RCRA/SUPERFUND Conference and Exhibition, May 2-4, 1990, St Louis, Missouri, and at the Air and Waste Management Association's 83rd Annual Meeting and Exhibition, June 24-29, 1990, Pittsburgh, Pennsylvania.

Biksey, T.M. 1988. "Log-normal Distribution of

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the Benthic Community in Organically Enriched Outer Los Angeles Harbor." Presented at the 73rd Annual Ecological Society of America Meeting, August 14-19, 1988, University of California, Davis, California.

Biksey, T.M. 1987. An Ecological Analysis of the Benthic Community in Organically Enriched Outer Los Angeles Harbor. Masters Thesis. California State University at Long Beach.

Biksey, T.M. 1986. "An Ecological Analysis of the Benthic Community in Organically Enriched Outer Los Angeles Harbor." Presented at the Sixth Annual U.S.-Mexican Symposium of the Southern California Ocean Studies Consortium and the Universidad Autonoma de Baja, California Sur, Southern California Academy of Sciences Annual Meeting, May 2-3, 1986, San Bernadino, California.

Biksey, T.M. 1983. "Invertebrate Intercalibration Program." Presented at the New England Estuarine Research Society Annual Meeting, April 21-23, 1983, Portland, Maine.

Reish, D., T. Biksey, and R. Ware. 1982. "The Effect of the Change in Municipal Waste Treatment on Marine Benthic Communities." Presented at Ocean Disposal in the 80's Symposium, Southern California Academy of Sciences Annual Meeting, April 30, 1982, Los Angeles, California. Proceedings Published in Waste Disposal in the Oceans, Minimizing Impact, Maximizing Benefits, Eds. D.F. Soule and D. Walsh, Westview Press, Boulder. 1983, pp. 234-245.