

Philip J. Murphy

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At InfoHarvest, which I founded in 1995, I currently serve as CEO. I architect, design and manage development of decision analysis tools and services, including the multi-criteria decision analysis tool, Criterium DecisionPlus. I work with federal agencies to design spatial decision support systems for strategic and tactical planning for natural resources, infrastructure and regional development. I work with mediators to deploy decision technologies to support their work in engaging the public in collaborative planning processes, at the local, state and federal scales. I conduct workshops on multi-criteria decision analysis around the world.

At the University of Washington, I teach GIS for Decision Support, a course in a two year masters in GIS for Sustainability Management program. I focus on the geodesign workflow for urban and regional planning, and have designed a set of GIS labs that teaches all steps and models in the geodesign framework to professional masters students.

At the University of Redlands 2011-2015, I was the principal investigator for the desert tortoise spatial decision support (SDS) / adaptive management system in development with California Energy Commission and U.S. Fish and Wildlife Service (USFWS). I conducted scientific research and technology development, and served as senior project manager for a number of large, multi-year projects with the USFWS, Department of Defense / Army Corps of Engineers, and other agencies.

My current research interests include spatial workflow design and automation, uncertainty estimation for complex spatial computation systems, conceptual modeling for geodesign and decision support for public participation.

Education

Post-doc	1987-89	String Theory	Trinity College Dublin, Ireland
Ph.D.	1987	Theoretical Physics	The Johns Hopkins University
M.A.	1983	Physics	The Johns Hopkins University
B.A.	1981	Mathematics	Trinity College Dublin, Ireland

Positions

2014-present Instructor, Department of Geography, University of Washington, GIS in Sustainability
1995-present. CEO, InfoHarvest, Inc., WA (MCDA, GIS, Public Participation).

2010-2014. Senior Research Analyst, Redlands Institute, University of Redlands (Spatial decision support).

1992-1995. Analyst and Program Manager, Sygenex Inc., WA (MCDA).

1989-1992. Research Scientist, Benesse Corporation, Okayama, Japan (AI, machine learning).

In press Publications

Murphy, Philip J., Catherine R. Darst, Nathan W. Strout, Improving Decision Support for Environmental Review and Planning of Proposed Solar Energy Projects Relative to Mojave Desert Tortoise. Final report accepted by the California Energy Commission March 2016

Selected Recent Publications

Fox, Carie, and Philip Murphy. "The Paradox of Bureaucratic Collaboration Government Bureaucracies in Robust Collaboration with the Public." *Journal of Sustainable Development* 9, no. 1 (January 26, 2016): 217. doi:10.5539/jsd.v9n1p217.

Reynolds, Keith, Steven Paplanus, Bruce Miller, and Philip Murphy. "Design Features behind Success of the Ecosystem Management Decision Support System and Future Development." *Forests* 6, no. 1 (December 26, 2014): 27–46. doi:10.3390/f6010027.

Murphy, P. Chapter 3 Criterium DecisionPlus in Reynolds, K.M., P.F. Hessburg, and P.S. Bourgeron (eds). 2014. *Decision Support for Environmental Management: Applications of the Ecosystem Management Decision Support System*. New York: Springer.

Murphy, Philip J., Strout, Nathan W., Darst, Catherine R.. (University of Redlands, Redlands Institute and U.S. Fish and Wildlife Service Desert Tortoise Recovery Office). 2013. *Solar Energy and the Mojave Desert Tortoise: Modeling Impacts and Mitigation*. California Energy Commission. Publication Number: CEC-500-2014-011.

Darst C.R., Murphy P.J., Strout N.W., Campbell S.P., Field K.J., Allison L., Averill-Murray R.C. 2013. A Strategy for Prioritizing Threats and Recovery Actions for At-Risk Species. *Environmental Management*: 51 (3) pp. 786-800

Fox, C. and Murphy, P.J. 2012. *Ethics of Public Participation*. *Environmental Practice* 14 (3) pp. 212-219, Cambridge University Press.

Henk, J., Li, N., Murphy, P., Strout, N., Ong, S. and Desmarais, A. 2011. Spatial decision support and geodesign case study findings. *Papers of Applied Geography Conferences* 34: 65-73.

C. Fox & Murphy, P. 2011. Face-to-face and internet collaboration for the Giant Sequoia National Monument. Report for the US Institute of Conflict Resolution.

Murphy, P., Li, N., Averill-Murray, R.C., Burgess, P., and Strout, N. 2008. Smart knowledge capture for developing adaptive management systems. *Proceedings of the 14th Americas Conference on Information Systems*, August 14-17, 2008, Toronto, Canada.

Projects

2016 – Now. Guiding the evolution of the Ecosystem Management Decision Support (EMDS) system into a full GeoDesign system. With the completion of EMDS 5.3 the EMDS system now supports impacts analysis for individual actions.

2014 – Now. CDP upgrades to support the Ecosystem Management Decision Support system. USDA Forest Service

2012-2015 Designed and managed online decision process support for water planning for the City of Santa Cruz, CA

2013-2014. EMDS proof-of-concept to support collaborative strategic action planning for Prescott National Forest. USDA Forest Service

2012-2013. iBET Phase II System Engineering Support. Created a proof-of-concept for a web based enterprise budget planning system for the Corps. U.S. Forest Service & U.S. Army Corps of Engineers.

2012-2016. P.I. Improving Decision Support for Environmental Review and Planning of Proposed Solar Energy Projects Relative to Mojave Desert Tortoise. California Energy Commission, Public Interest Energy Research.

2010-2012. Spatial Decision Support for Resource Management. U.S. Forest Service.

2010-2012 Solar Energy and the Mojave Desert Tortoise: Modeling Impacts and Mitigation. California Energy Commission.

2010-2011. Optimizing Invasive Plant Management on Army installations. Army Research Office, DoD.

2009-2014. A Joint Project in Developing a Comprehensive GIS Based Tool that Provides a Cumulative View of Recovery Information for the Desert Tortoise. U.S. Fish & Wildlife Service.

2007-2011. Planning support for Giant Sequoia National Monument. Used MCDA to support agency and public participation in a contentious planning process. US Institute for Environmental Conflict Resolution

2007-2013. GIS Program Initiative to Enhance Knowledge, Skills and Technology for DoD Research Facilities. Army Research Office, DoD.

Memberships

Founding member of the SDS Consortium (<http://www.spatial.redlands.edu/sds/consortium/>)

Founding member of the EMDS Consortium (<http://www.spatial.redlands.edu/emds>)

Member of the National Association of Environmental Professionals (<http://www.naep.org/>)

Software Created

Criterion DecisionPlus – a Multicriteria Decision Analysis (MCDA) modeling tool for Windows

DecisionHarvest – an online MCDA website for public participation in decision processes

WDObj – MCDA engine for integration into 3rd party services

Priority Analyst – an MCDA component of the Ecosystem Management Decision Support system