EXPLORING THE DECISION LANDSCAPE: INTEGRATION OF HUMAN AND NATURAL SYSTEMS USING THE DRIVER-PRESSURE-STATE-IMPACT-RESPONSE FRAMEWORK AND DYNAMIC WEB APPLICATION

Ingrid Heilke[12], *Marilyn Buchholtz ten Brink*[1], *Thomas Stockton*[4], *Bryan Dyson*[13], *and Claudette Ojo*[12]

[1] U.S. EPA Office of Research and Development, Atlantic Ecology Division, Narragansett, RI, USA
[2] Oak Ridge Institute for Science and Education
[3] U.S. EPA Office of Research and Development, Cincinnati, OH, USA
[4] Neptune, Inc., Los Alamos, NM

Presenting Author: Ingrid Heilke
Heilke.ingrid@epa.gov

Making decisions to increase community or regional sustainability requires a comprehensive understanding of the linkages between environmental, social, and economic systems. We present a visualization tool that can improve decision processes and improve interdisciplinary research, analysis, and development by enhancing understanding of system contexts and access to pivotal information resources. The tool is simple to use and intended for anyone who can benefit from a comprehensive understanding of human-environmental systems, including planners, natural resource managers, policy makers, journalists, scientists, modelers, and many more. The visualization tool allows practitioners to better analyze decision options and tradeoffs, and to accomplish their sustainability goals by (1) understanding interactions and feedback loops within human-environmental systems; (2) identifying metrics, indicators, and datasets to aid in assessing problems, evaluating options, and measuring performance or progress; (3) identifying pertinent objectives, goals, and corresponding management options; and (4) identifying areas of the system not previously considered and therefore avoiding or mitigating unintended consequences of a given management option. In addition to identifying variables for system models, the tool can also be used by researchers engaged in other types of complex systems analysis. The comprehensive underlying framework allows crosswalking to most other sustainability-based analytic frameworks, and can provide a common method of categorization for datasets with multiple qualitative variables.