

Session title: Diverse approaches to diverse policy needs and evidence streams: systematic review and evidence integration for national environmental decision-making

Organizers: Micah Bennett (bennett.micah@epa.gov), Caroline Ridley, Kate Schofield
U.S. Environmental Protection Agency, Office of Research and Development
National Center for Environmental Assessment
Washington, DC USA 20460

Team: Tara Greaver, Meredith Lassiter, Jeff Herrick, Emmi Felker-Quinn, Steve LeDuc

Integrating evidence across levels of biological organization in the U.S. EPA Integrated Science Assessments: from organism to ecosystem

Draft abstract: The United States Environmental Protection Agency (EPA) periodically reviews the National Ambient Air Quality Standards (NAAQS) for welfare, which includes ecological effects. The scientific foundation of the NAAQS review is the Integrated Science Assessment (ISA), a synthesis and evaluation of policy-relevant science developed from a systematic literature review, typically including thousands of papers. The ISA is intended to be a comprehensive assessment of all ecological effects at the national-scale. It is primarily a narrative assessment, but may include new quantitative analysis, with the goal of describing the strength of causality between pollutant and effect. The large scope of the ISA causes a challenge for how to best organize and evaluate ecological effects that vary among species, across broad taxonomic groupings (i.e. plants, invertebrates, vertebrates) and habitats, especially when the evidence base varies from the organism level (e.g. physiological stress) to the population and community level (e.g. biodiversity).